





THE  
**British Medical Journal.**

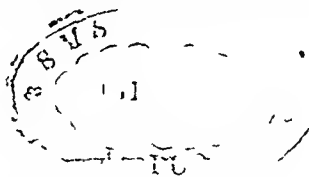
THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

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AND

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## KEY TO DATES AND PAGES

THE following table, giving a key to the dates of issue and the page numbers of the BRITISH MEDICAL JOURNAL and SUPPLEMENT in the second volume for 1927, may prove convenient to readers in search of a reference

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# THE British Medical Journal

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

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## An Address ON ACROMEGALY FROM A SURGICAL STANDPOINT

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### PART I

ONE of the tinnest of the Virgin Islands, a speck named Little Vandyke, almost too small to be designated on a map was once given over—and may still be for all that is known—to the growing of cotton. On this plantation there happened to be born on November 22nd, 1744 of Quaker parents, a boy who a few years later was sent to England to get his education. His chief asset appears to have been a negro "shuffle" which he had learned from his father's slaves, and without this chance accomplishment, so the story goes, the attention of the Reverend Samuel Fothergill of Warrington would probably not have been drawn to the inconspicuous lad. As it was, he gave him a halfpenny, ere long became his guardian and in course of time recommended him to the consideration of his brother Dr John Fothergill of London, whose protégé he was destined to become. This, in small compass was the early story of John Cockerill Lettison the founder and chief benefactor of the venerable society I have the privilege of addressing.

Being the first of my countrymen so far as I am aware to give this Annual Oration, it is fitting that I should call to mind the debt we owe to Fothergill and Lettison for their unflinching kindness to a succession of American students who in the early days came here to walk the hospitals. Fothergill even found occasion to give a helping hand in starting two of our oldest medical schools—at first in Pennsylvania, established shortly before the separation of the colonies, and that in the State of Massachusetts shortly afterwards.

Since I happen to occupy a chair in this latter school, I may recall to you that Benjamin Waterhouse one of its founders and its first Professor of Medicine was a relation of Fothergill's—sufficiently close to call him Uncle—and also that, through Waterhouse, Lettison once presented to Harvard a large and valuable collection of minerals to encourage in our backward land the study of natural science. Thus do some of the medical traditions of my country become interlocked with those of the Medical Society of London.

Men of the calibre of Fothergill and Lettison were universalists in medicine, with interests comprehensive and manifold. This was more possible in their time than in ours and I fear they would have looked askance on the modern tendency to ultra specialization as something foreign to the best interests of our medical guild. I feel somewhat conscience-stricken over this. Since I have chosen to devote my address to a consideration of the surgical aspects of a malady which would have seemed to them, and I fear may to many of you, as small a speck on the medical horizon as is Little Vandyke on the geographer's chart

Though we be in our professional lives with a general training, we very soon find that there are certain malady or phenomena of disease that particularly interest us and from opportunity or force of circumstance concentrate us to engage our attention. It is in this way by progression from the general to the particular that specialization arises and though in the process the field may narrow, at the same time the point of view may broaden. Concentration on a given subject however small makes it loom large to the observer and as Lettison's significant life had an obscure beginning, so the subject I propose to discuss may, if fortune favours be expanded into something worthy of this occasion.

For those of us whose student lives go back to the "Muetie" the pituitary body was too inconspicuous an object to attract much notice or it noticed it as being aside as a vestigial relic of no recognizable importance. There were glimmering to be sure of trouble for the disorder to which Pierre Marie had recently given a name but this was about all. Once pointed out the disorder was unmistakable and yet acromegaly was looked upon for long as little more than a freak of nature which called for staring in its extreme forms fit only for the "side show" to be exhibited with the giant, the dwarf, the idiot woman, and the fat boy whose hypophyseal and not its relationship was as yet unrecognized.

Of the manifold functions of the pituitary body and of its relation to the other glands of internal secretion there was then not the slightest conception. How different a contrast to day when the problem of endocrinology has brought the attention of such a lot of investigators that scarcely a month passes without one or another from one paper or another, being shed on the endoscopic subject! No since the early discovery in bacteriology and in pathology anything comparable to acromegaly to be recorded has been picked up by such. And in Graves' Club and in many others who were the pioneer. But this is not the gold field did not begin until the discovery of an effective substitution therapy for the disease of exophthalmic goitre as it is called in the literature. And when a decade later the real discovery of hypoparathyroidism began to be better understood and the discovery made that all the ductless glands were interdependent and less interdependent than the rest of the profession at large finally admitted but the carrying of the duty as well in consequence of which for popular consumption much twaddle has come to be written on the subject.

There are certain general principles on which right or wrong we have come to base our conception of the function which the ductless glands discharge in the body. The first of these is grounded on the presumption that the secretions of the glands are counterpoised to the functions of the body and that the primary or function for every individual is a so-called endocrine function. It is assumed that each of the secretions is the cause of every malady and each of the secretions is the cause of every malady and its own peculiar clinical syndrome. Some of these already recognized and some few of which are still in the deprivation states like myxoedema, cretinism, encephaloidism, tetany and so on may be produced in man. This is a leap as our working hypothesis is even though it is supported by experimental reproduction of the secretions of glands. Its activity has so far largely baffled us.

This hypothesis has been largely the outgrowth of our experiences with thyroid disorders, and surgery has played no small part in its elaboration. I need recall only a few incidents in the well known story. That Gull's myxoedema was really due to thyroid deprivation, Kocher's experiences with post-operative "cachexia strumipriva" served to make probable, and the success of Haisley's and Murray's substitution therapy left no doubts in the matter. On the other hand, the view advanced by Moebius and Greenfield that exophthalmic goitre was possibly due to glandular overactivity, first suggested by the disclosure that thyroid extracts exaggerated the syndrome, was finally substantiated by Halsted's discovery that experimental hyperthyroidism of the thyroid is characterized by the same histological alterations that are found in the goitre of Graves and Basedow. Thereby it was shown why extirpation of the thyroid in this peculiar form of goitre would serve to ameliorate its symptoms. We accordingly have come, with a good deal of confidence, to speak of hyperthyroidism as opposed to hypothyroidism, of which states the basal metabolic rate now gives us a fairly reliable measure.

Thus, briefly, is the first principle, and on this basis it might well enough have been anticipated that for each of the other glands, acting more or less independently of one another, a clinical syndrome of overactivity and underactivity would by this time have come to be recognizable. However, in the case of the hypophysis alone has this anticipation finally been realized, and though clues serviceable in partially solving the thyroid riddle were persistently followed, even this has been a most complicated task.

An enlargement of the thyroid is for all to see, and in regions where goitre is endemic the surgeon was primarily induced to operate upon cases in which life was endangered or made insufferable from pressure of the enlarged gland on the trachea. Hazardous procedures they proved to be. They were critical enough in themselves, without the unforeseen dangers that lurked in the background of convalescence until, through experience and experiment, it slowly dawned on men's minds that a residuum of thyroid tissue must be left and that the parathyroid glands must be spared if subsequent health—even life itself—was to be maintained.

In comparison, even to get a start in untangling the pituitary problem was far more difficult. Not until roentgenology came to be sufficiently perfected as a diagnostic aid could we really tell with any assurance when the gland was actually tumefied, and its inaccessibility long served to remove it from surgical temptation. Even its experimental removal in animals was difficult to accomplish and gave contradictory results, due in large measure, as we now know, to coincidental lesions of nervous centres adjacent to, and which possibly preside over, the activity of the neuro-hypophysis. In short, hypothalamic injuries long led to as much confusion in the interpretation of the results of experimental hypophysectomy as did the removal of the parathyroids in interpreting the consequences of thyroidectomy.

One of the first questions to be raised in regard to acromegaly concerned its possible relation to the pituitary tumour found in some of the first cases submitted to autopsy, and the acromegalic skeletons in pathological museums the world over were being examined to see whether they showed an enlargement of the sella turcica, which most of them did. However, from time to time examples of acromegaly came to be described in which there was no demonstrable tumefaction of the gland, and, to make the confusion worse, examples of undoubted pituitary tumour, to judge from the syndrome of an enlarged sella combined with a primary optic atrophy and bitemporal hemianopsia, were being put on record which showed no trace whatsoever of acromegalic overgrowth. Quite the contrary, these patients exhibited a medley of inexplicable symptoms, such as dwarfism, sexual dystrophy or infantilism, diabetes insipidus, adiposity, amenorrhoea, myxoedematous atrophies, and so on.

But out of this chaotic jumble order has begun to shape itself, and we are at least coming to close quarters with the riddle. To its partial solution countless persons have made contributions, which piece by piece have been fitted together. The physiologists and biochemists have chiefly

continued their attention on the active substance discovered in extracts of the neuro-hypophysis. The pathologists have, with some measure of success, come to differentiate certain of the hyperplasias and other tumefactions which affect the gland. The morphologists have shown how, in the development of Rathke's pouch, the epithelial anlage of certain of the congenital tumours may arise. The experimentalists have laboriously undertaken to determine the secondary effects of ablation of the gland or of portions of it, the amphibian embryo no less than the adult mammalian animal having been called upon for the purpose. As a combined result of these many disconnected studies, the obscurities of the past are here and there sufficiently clarified, so that we begin to have a partial explanation at least of some of the constitutional effects of deranged pituitary function. Curiously enough, it was not acromegaly, but the reverse condition, that had its first experimental counterpart brought to light.

Following the grudging acceptance of the view that the syndrome of Marie was usually associated with, if not positively due to, a pituitary tumour, it was a natural assumption that the normal function of the gland, whatever it might be, had been abolished, and consequently that its experimental ablation ought to reproduce the symptoms of acromegaly. But those who undertook to corroborate this assumption reported most conflicting results, some claiming that the removal of the gland had no effect whatsoever on the organism, others that its removal led to cachexia and death. No one claimed to have produced anything suggestive of acromegaly, but it was finally observed that certain incomplete extirpations on adult animals led to adiposity and sexual dystrophy, symptoms quite comparable to those which had been seen in clinical cases, and so long it was found that similar procedures in young animals led to skeletal dwarfism and prevented sexual development. Here, then, were experimental states due so obviously to lessening or deprivation of function as to force the conclusion that acromegaly must be ascribable to a counterposed state—namely, to glandular overactivity.

Reduced to simple terms, these early experiments showed that the hypophysis secretes a substance or substances which not only influence growth, but which have a marked effect upon the activity of the reproductive organs. Just what portion of the gland possessed these properties was long a matter of uncertainty. A physiologically active principle had been found only in extracts of the posterior lobe, but most physiological experiments dealt with acute reactions, and it was not until an experimental morphologist took the matter in hand that the growth-stimulating principle was convincingly shown to be the property of extracts of the anterior lobe alone.

Since the time of Galvani the frog has been hailed as the chief contributor to physiology. No less in these present days does the domesticated rat, the biometrical standards of whose life-history have been accurately established, promise to play this important role in experimental morphology. And it is to the rat in the hands of certain investigators that our thanks are due for giving the first wholly dependable and clear-cut results in the hypophyseal problem.

We have learned that menstrual disturbances characterize all forms of pituitary disorder in the female, and strangely enough it was primarily through his studies of the oestrous cycle in rats that Professor H. M. Evans of the University of California first came to investigate the effects of injecting pituitary extracts into these animals. He found that fresh anterior lobe extracts would not only interrupt oestrus in adult female rats but would prevent its onset when given to pre-adolescent animals. He found, further, that when intraperitoneal injections of these extracts were continued over a long period the growth of the animals was greatly accelerated, and that experimental gigantism could thereby be produced.

How excited Lettsom's friend John Hunter, who so ardently sought for an explanation of growth, would have been in these disclosures, whose fundamental importance can hardly be overstated! Not only have they served to lay the growth principle exclusively at the door of the anterior hypophysis, but, for the first time, in the case of any member of the ductless gland series, there has been

reproduced in the laboratory what heretofore has only been theoretically assumed to be a clinical state, due to excessive rather than to a perverted glandular secretion. Dr. Evans's observations have been confirmed in my laboratory by Tracy J. Putnam, who has succeeded in producing some gigantic animals and I may show (Fig 1) the toad of gigantism of one of them with its control

The large female rat on the right was born on October 23th 1925 of a thoroughbred stock. On January 21st 1926 when she weighed 165 gram intraperitoneal injection of a neutral filtered aqueous extract of anterior lobe beef hypophysis in amounts equivalent to about one-tenth of a bee gland daily were begun. The rat was taken on August 5th 1926 at which time she weighed 500 grams.

The small (control) rat on the left also a female of the same stock was born on November 2nd 1925. On January 21st 1926 she weighed 165 grams. She was given injections of commercial anterior lobe extract which proved to be without effect. At the time the rat was taken she weighed 250 grams.

The chief difficulty in the way of success in these experiments lies in the securing of an active extract for the hypophysis which acts as the normal source of supply seem to vary to a great extent in the amount of the somewhat unstable principle they contain and it has been my impression for some years that cattle have a seasonal wave of relative pituitary inactivity. Much labour will have to be expended before we have at our command a reliable extract which can be standardized and kept sterile so that it may be employed for clinical purposes but the discovery that the pars anterior actually contains a growth-stimulating principle will doubtless spur the biochemist to run it down. And when this substance comes to be isolated as it almost certainly will be there will be a different story to tell.

To be sure, these experiments have not reproduced acromegaly, but only gigantism. The nevertheless bring support to the view, long held that these two clinical conditions are closely related, are both hypophyseal in origin, are both ascribable to an excessive secretion of the anterior lobe. As long conjectured, the one (gigantism) probably is the result of a process which has started before the epiphyses have become ossified—which they never do in the rat—whereas the other (acromegaly) is an expression of the same influence which has started after epiphyseal growth has ceased.

If we are indebted to the rat for the illuminating discoveries just mentioned, we are no less indebted to this same animal for more exact information than we have heretofore possessed in regard to the reverse state of pituitary insufficiency. Most of the early observation on experimental hypophysectomy were made on the cat and dog and though they have taught us much, control observations have not been wholly reliable or satisfactory, owing to the slower development and life cycle of these animals and to their great variability in kind. It is quite otherwise

with the rat, and Professor P. E. Smith of Leeland Stanford University has devised an operative procedure whereon hypophyseal or parahypophyseal lesions on this animal may be accurately made with results far more dependable than any heretofore attained. Not only are the symptomatic effects of the operations more promptly and strikingly shown than in other animals, but the possibilities of replacement therapy to atone for the glandular deprivation have been for the first time convincingly demonstrated. In comparison, all antecedent observation on the effects of experimental hypophysectomy laboriously made on the dog are become superseded, and remain of little more than historical interest.

In a recent series of papers written with the collaboration of my late assistant, Dr. L. M. Davidoff we have

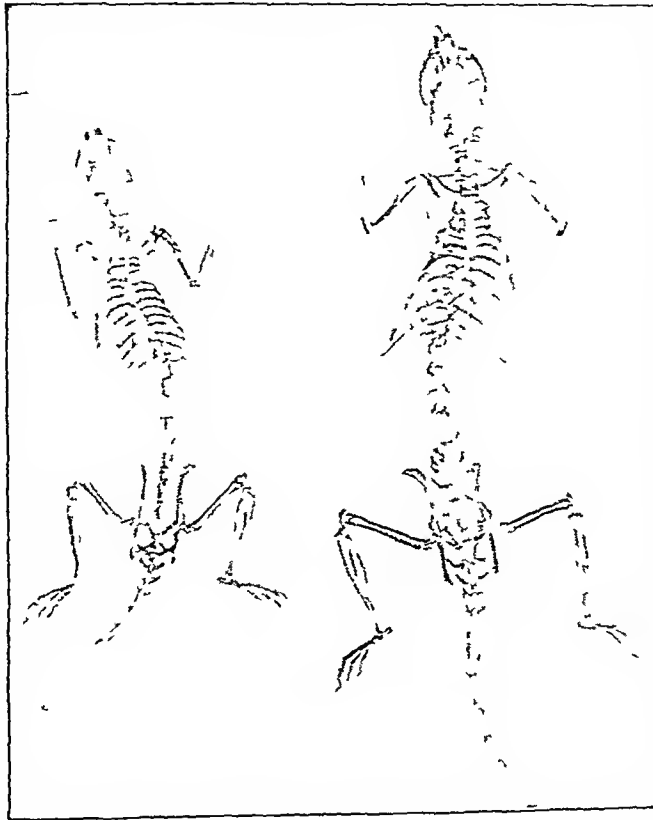


FIG 1.—I. Rat (one-third natural size) of experimentally produced gigantism in the rat (as in case of T. J. Putnam).

performed a series of experiments with Dr. Smith on the outcome of some conditions with Dr. Smith on the subject of his hypophysectomy. The results of his hypophysectomy were very striking and have been reported in the literature. The results of his hypophysectomy were very striking and have been reported in the literature. The results of his hypophysectomy were very striking and have been reported in the literature.

The next two rats (Fig 2) were born on October 22nd 1925. The rat on the left was born on October 22nd 1925. The rat on the right was born on October 22nd 1925. The rat on the left was born on October 22nd 1925. The rat on the right was born on October 22nd 1925. The rat on the left was born on October 22nd 1925. The rat on the right was born on October 22nd 1925.

organs are shown. The dwarfed and sexually infantile animal was then given each day a homoplastic hypophyseal transplant, and on April 20th he mated with a female in oestrus and a litter resulted. Daily pituitary transplants were continued until the hypophysectomized animal had almost caught up in weight (268 grams) with its control brother (385 grams). On May 9th, when the photograph (Fig. 4) was taken, the pair was sacrificed and the remaining testis of each is shown in the figure.

The next photograph (Fig. 5) shows two litter mate sisters born on December 25th, 1923, the animal to the right having been subjected on February 5th 1924 to an injury of the hypothalamic region without hypophyseal extirpation. On February 27th, 1925, this animal weighed 840 grams to 299 grams for the control. The animal was sacrificed on this date, and an extensive atrophy of the sex apparatus was disclosed, the other ductless glands being of normal size.

measures, surgical or otherwise. These several syndromes have come to have a varied and somewhat confusing nomenclature, which must for a moment detain us.

#### NOMENCLATURE

When terms such as myxoedema, exophthalmic goitre, cretinism, acromegaly, and so on, descriptive of certain clinical states of unknown etiology, become, through use, thoroughly established, it is difficult to uproot them. Even to suggest doing so is perhaps discounting to those who planted the seed. Descriptive terms, however, may prove to be exceedingly inconvenient from a nosological stand-

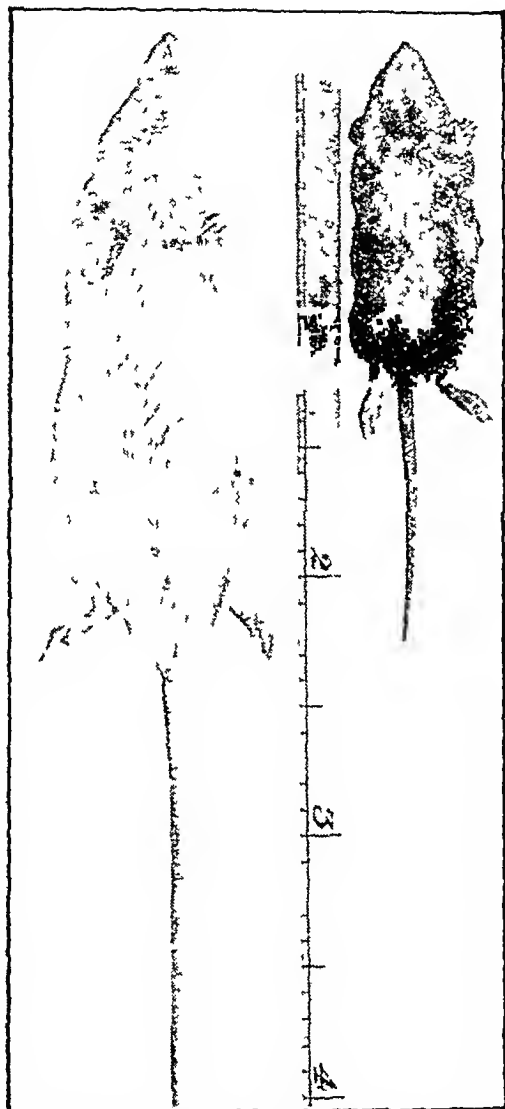


FIG. 2—Littermate brothers, showing effect of early hypophysectomy in producing dwarfism with atrophy of the endocrine system. Measurement in centimetres (P. L. Smith)

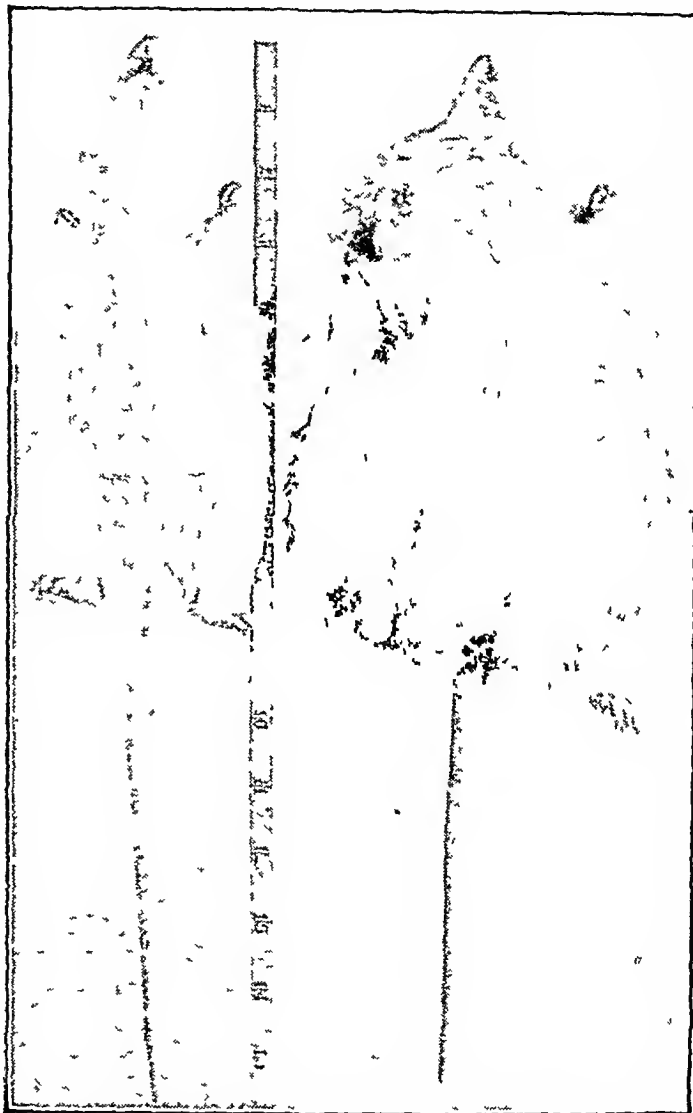


FIG. 5—Experimental hypothalamic syndrome. Measurement in centimetres (P. L. Smith)

Taken in conjunction with the observations by H. M. Evans and his co-workers on experimental anti-gigantism, these illustrations of the counterposed state, to the study of which P. L. Smith has confined himself, show what an immense field has been opened up for future investigations of pituitary function, which can be far more precise, owing to the species chosen for experimentation, than any heretofore undertaken.

This is only the beginning of what we shall some day know about this amazing structure which conducts the endocrine orchestra and brings therefrom harmony or disharmony, overtones or undertones, according to its physiological mood. But let us see, from the striking results already attained what light may be thrown upon the several clinical syndromes we have come to recognize, and in what ways the experiments concern our therapeutic

point, and were there any choice permissible it would be preferable to cling to such non-committal monisms as the syndrome of Gull, or of Graves, or of Marie, as we have done with Addison's disease.

The particular inconvenience in the case, for example, of *acromegaly*, is that the term, which is now associated in the minds of all with a state due to hypophyseal overaction, merely described an enlargement of the acral parts of the body. It accordingly gives no opening for an opposed term to describe the now recognized counterstate of all that "*acromegaly*" once conveyed, for *acromicria*, a smallness of the extremities, would mean nothing at all, and other designations that have been suggested are no more satisfying.

Had the designation *macrosomia*, implying overgrowth in general, suggested, I believe, by Hastings Gilford as appro-

prate for Maries syndrome, not fallen on sterile soil, *acromegaly* would have been a convenient term for the growth deficiencies which are the striking features of the reverse state. Adipogenital dystrophy merely calls up a syndrome which may not necessarily be hypophyseal at all and though such eponyms as Itsek's disease, Lorain's disease and Simmonds' disease bring to mind certain recognizable clinical types of pituitary deficiency, there are still others unnamed.

However much those who know the appeal of medical history may wish to dwell upon and cherish the names of its eponymous heroes, it would be better for medical terminology to abandon or at least to modify symptomatic

associated tumour or may properly add a fourth, *apituitarism*, indicating the complete loss of pituitary activity.

Let us now consider briefly what are the clinical expressions of the four gradations of pituitary pathological lesions (some of which have definite surgical bearing) they are brought about. We may summarize the effects of complete glandular deprivation.

#### A PITUITARISM

Does such a condition *acromegaly* hypophyseal or due to acute destruction of the gland whether by operation, pathological, or surgical process *acromegaly* or *apituitarism*. This is an

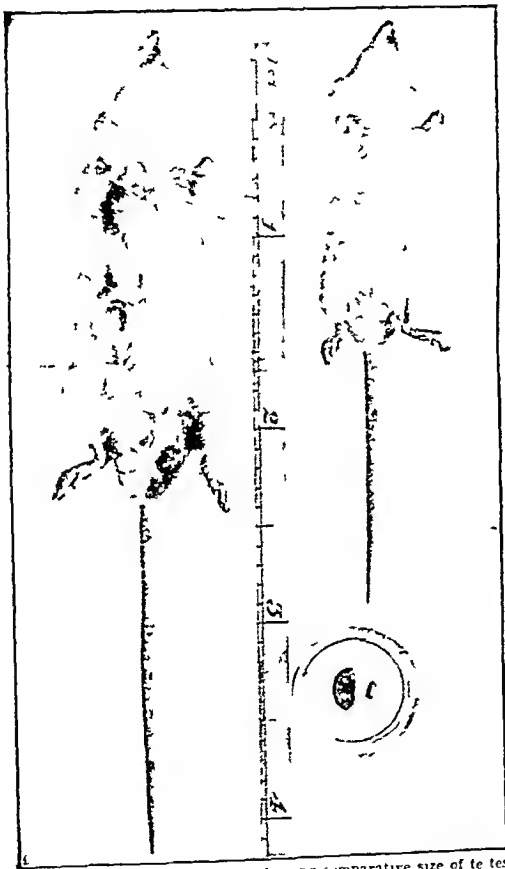


FIG. 3—Litter mate brothers showing comparative size of testes of control and of dwarf three months after hypophy ectomy. Measurement in decimetres. (P. E. Smith)

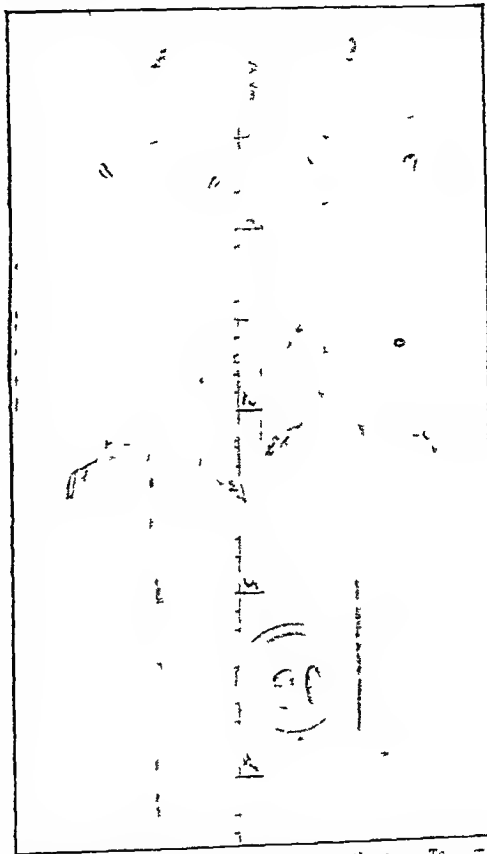


FIG. 4—Same animals as in FIG. 3 three months later. Testes of the growth stimulating effect of subcutaneous injection of hypophyseal extract. Measurement in decimetres. (P. E. Smith)

designations and eponyms when they no longer convey what a single term should convey. So in the case of the thyroid disorders, though the terms Graves's or Basedow's disease and exophthalmic goitre for the state counterposed to myxoedema and cretinism, have long served a useful purpose, they are coming to be superseded by hyperthyroidism and hypothyroidism, as being more precisely descriptive, particularly since we have grown to recognize types of thyroid overactivity not associated with exophthalmos.

For similar reasons some years ago the terms *hyperpituitarism*, *hypopituitarism*, and *dyspituitarism* were suggested as correspondingly proper substitutions for *acromegaly*, for its counterposed state, and for overlapping types of the two and though these words are quite a mouthful, and what is more have a mongrel derivation hyper and hypopituitarism were phonetically quite impossible. To these three terms which of course apply merely to varying grades of glandular activity and have nothing to do with the presence or absence of an

important question for the surgeon. In the hypophyseal tumour, if it is to be removed in its entirety without serious ill effects, the problem of treatment of the tumour must be representative of the commonest form of tumour affecting the gland, for the commonest form of tumour affecting the gland becomes greatly simplified. It can be other hard cases consequences are likely to occur or may occasionally occur the operation or total or subtotal hypophysectomy may be deferred until some method of substitution therapy has been found sufficiently effective to offset them.

It is obviously a matter to settle in the laboratory in the clinic. But the laboratory so far has given conflicting results. My own impression is that the extirpation of the gland provokes a peculiar train of events passing from exophthalmos to coma and to death. It is a sequence to be sure, more likely to appear in older animals than in younger animals, but even in the older animals the same operative procedure short of total extirpation leads to no comparable ill effects. On the other hand, Dandy and Ralston have recently reported a case of acromegaly, claiming that the operation of subtotal hypophysectomy



There have been, all told, 81 verified examples of these tumours in my series, and, as it happens one of the patients, a dwarf who exhibits certain evidences of senium praecox suggestive of progeria, is at this writing under observation in the hospital.

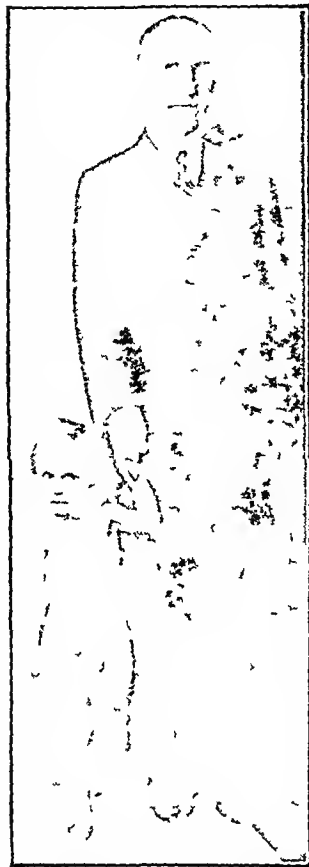


FIG 10—Pituitary infantilism with diabetes insipidus due to a crano-pharyngeal pouch (Rathke's tumour) (Child with father)

(Surg No 25031) A girl, aged 3½ years, a child of Hungarian parents, was originally admitted on October 21st, 1925, owing to a rapid loss of weight associated with head aches, vomiting, polyuria, and polydipsia, of four months' duration.

She was (Fig 10) an extremely undersized, undernourished child, weighing only 20 lb and 34 in in height. The optic discs showed marked pallor, to gross tests there was a bilateral loss of vision, and the x-ray revealed a slightly widened sella with superimposed calcification (Fig 11)\* which left no doubt as to the diagnosis.

An operation was not thought advisable and she was discharged, but a month later, owing to an increase of symptoms with subnormal temperature, somnolence, and an exaggeration of her polyuria, she was readmitted to the hospital and was operated upon on November 17th, 1925.

By the usual right frontal osteoplastic approach (Figs 12 and 13) a crano-pharyngeal pouch cyst was encountered and was withdrawn apparently in its entirety (Fig 14). The operation was extremely well borne, her headaches completely subsided and the symptoms of diabetes insipidus ceased. Subsequent to her discharge she began to gain in weight, and there was a marked improvement in vision.

Following an attack of scarlet fever, and because of a tendency of headaches to return she was brought back to the hospital for observation on May 16th 1927. During the eighteen months' interval, though she has increased 10 lb in weight, she has

these cysts, even when there is no pre-existent polyuria, diabetes insipidus may be produced by contusing the deformed hypothalamic region. The fact that she has not grown, or grown very slightly, since the operation makes it probable that the anterior lobe has been permanently damaged either from the long compression by the tumour or in the course of its removal. And this brings up again the point from which we cannot get far away—the essential need of substitution therapy if we are to deal effectively with these secondary symptoms, whether they are associated with a tumour or not. In this particular child Dr Putnam is attempting to see what can be done to stimulate growth by parenteral injections of an active anterior-pituitary extract he has elaborated, fully realizing, in view of Dr Smith's experiences, that homoplastic transplants, were they obtainable, would be far more effective.

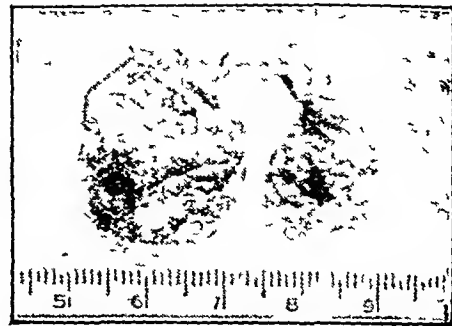


FIG 14—Portions of the crano-pharyngeal pouch cyst removed at the operation

### 3 Hypopituitary States Associated with Chromophobe Adenomas

Of all pituitary syndromes, these are most often encountered, and they occur almost exclusively in adult life. To May 1st, 1927, there have been in my series 188 histologically verified examples—almost three times as many as the chromophile adenomas associated with acromegaly.

Though the disorder is a very common one, as common in all probability as goitre, one would hardly venture to make a diagnosis in the absence of definite local evidences of the growth, and since these patients, with rare exceptions, have already attained their full stature, the constitutional evidences of diminished glandular function are often inconspicuous, being limited to the well known cutaneous changes, with a tendency to adiposity and loss of hair, to sexual dystrophy, and so on. Unquestionably these states in

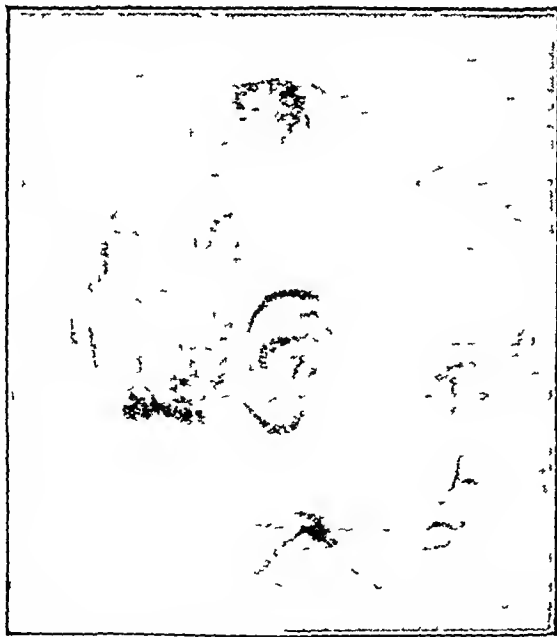


FIG 12 and 13—11 patient ten days after operation showing the customary incision in the scalp exposing the hypophyseal region by an osteoplastic flap

grown a scant half inch. However her vision is apparently normal, and the x-rays show no trace of suprasellar calcification.

That this child should have recovered from the diabetes insipidus is unusual for in the effort to dislodge one of

these minor grades, when the patient has no particular complaints, entirely escape attention, and, indeed, even when deficiency symptoms, in addition to those of tumour, have become unmistakable, it is not unusual for the patient to be treated as a presumptive case of myxoedema.

\* This will be published in our next issue.

It was the experimental reproduction of similar states in adult dogs (without the tumour signs of course) that gave the first clue to these disorders, and what was then not so clear the symptoms in all probability are almost wholly due to deficiency of the anterior lobe from which the adenomatous tissue originates. For even though the tumours may attain a large size and extend into the cranial chamber, they rarely cause hypothyroid symptoms.

To be sure one sees occasional exceptions to the usual syndrome—namely, in adult patient with primary optic atrophy, bitemporal hemianopsia, and a ballooned sella, coupled with the constitutional evidences of diminished pituitary activity. We have, for example, encountered a typical chromophobe adenoma in a young child, and I have recently operated upon a middle-aged woman with primary optic atrophy and bitemporal hemianopsia associated with a sella turcica quite normal in size, in whom, owing to the absence of any hypopituitary symptoms, a small suprasellar meningioma was suspected. Consequently the chiasmal region was exposed by a transfrontal operation, and I found to my surprise a small encapsulated chromophobe adenoma which had arisen from the upper part of the gland and had pushed its way up under the chiasm without having distended the sella in the least.

But this was a most unusual experience. Ordinarily in these cases there is a greatly distended sella, and the usual operation is conducted from below by what is known as a transphenoidal procedure, in the course of which as much of the exposed growth as is thought expedient is spooned or "sucked" out with the sole purpose of counteracting its local pressure effects. The operations in other words, are not undertaken with any expectation of altering the co-existent hypopituitary symptoms. For these either remain unaffected if, as is usual, nothing but adenomatous tissue is removed, or they may be exaggerated if any physiologically active though compressed remnants of the gland happen to be removed together with the tumour tissue, or they may, indeed, be lessened in severity should such remaining normal portions of the gland be enabled to resume their normal activity because of the decompression. Though we have seen examples of all these secondary consequences of the operation, its main purpose has been to preserve or to restore vision, and the degree of hypopituitarism has not entered largely into the question.

### C DYSPIUITARISM

Though this term was originally used to cover all clinical expressions of disordered pituitary function, it would seem preferable to-day, now that these states are becoming clarified to restrict it to that particular group of cases in which preceding hyperpituitary symptoms have become overshadowed by those of the reverse state. The experimental counterpart of dyspituitarism would be produced, accordingly, by hypophysectomy in a giant rat, which would impose a deficiency syndrome on the established hyperpituitary gigantism. Though such a state as this, so far as I am aware, has never been studied experimentally, there is clinico-pathological evidence that such a transitional syndrome exists.

In a recent paper from my clinic by Drs. Dott and Bailer, attention was drawn to certain mixed types of adenoma of which fourteen definite examples have so far been identified out of our total verified cases of 271 adenomas of all kinds—not a large proportion to be sure, but all questionable cases have been excluded. What first called attention to these transitional adenomas formerly classified as chromophobe was the fact that it has been sometimes difficult to tell clinically whether the patient's malady has been accompanied by a deficiency syndrome from the outset, or whether it may not in its early stages have been hyperpituitary, to judge from suggestive traces of pre-existing acromegaly or gigantism.

However since in these mixed or transitional cases the surgical problem does not differ from that discussed above under hypopituitarism, due to chromophobe adenoma we may pass to the consideration of our final and most important group of cases, to which all this long story is merely preliminary.

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## The Mackenzie Davidson Lecture

### ON THE EFFECTS OF RADIATIONS ON PATIENTS AND RADIOLOGISTS, AND ON PROTECTION\*

BY

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#### Introduction

IN December, 1895, the late Professor W. K. von Roentgen of Würzburg, by what has often been described as a fortunate accident when working with a Crookes's tube, forestalled Crookes and others who were working on the same lines and within measurable distance of the momentous discovery of X-rays. Radiology is therefore hardly thirty-two years old, and many of us can compare the face of medicine now with what it was in the days that were earlier. It is to the credit of our profession, often conservative in adopting new ideas and advances, such as those so long advocated by Lister, that the first practical application of X-rays was in surgery and medicine.

Youth has the advantage of enthusiasm and a more or less uncharted field of inquiry before it, and the advances in medicine made by radiology in such a comparatively short time have been revolutionary, thus contrasting with

the changes made in the practice of medicine by the discoveries of percussion by Leopold Auenbrugger (1761) of Vienna, and of auscultation by Laennec (1819) which were slow to take effect. In the preface of the English translation of Laennec's *L'Auscultation mediate* (1821) Sir John Forbes hazarded the prophecy, which indeed was fairly correct, that its general adoption was extremely doubtful. The history of the ordinary method of physical signs when compared with the dramatic rise of radiology and its new revelations suggests some thoughts. Radiology like bacteriology, so frequently appears to clinch the diagnosis in a case which still remains doubtful as the result of ordinary physical examination, that when an X-ray department is available there is a tendency to fly at once to it for a solution, without going systematically through the time- and thought-consuming process of routine examination. This is the easy path and line of least exertion which the student resident or busy physician may be unable to pursue, but unless and until radiological outfit becomes like the wireless or the low priced motor car, within the reach of all medical men there is a nucleus before the man who leaves the well equipped hospital to practice in a remote and isolated district where he performs his duties on his own resources and finds that for him radiology is a lost art. Since the siren-like call of radiology has a potential influence for harm clinically and otherwise, let a useful example or exhaustively investigated and available methods of ordinary examination be the guiding aid of radiology.

There are three personal aspects of radiology to which reference may be appropriate: (1) the radiologist in the medical profession, (2) the patient, and

\* The lecture which was delivered before the Pöntzen Society and the Electro-therapeutic Section of the Royal Society of Medicine on June 30th has been slightly abridged.

effects of radiations on patients, and (3) the physical effects of long-continued work in radiological departments on those thus engaged.

### 1 *The Position of Radiologists in the Medical Profession*

It is natural that there should be a wholesome rivalry between the pure clinicians and the radiologists, analogous to that between the clinicians and the laboratory workers, as to who shall be regarded as the decisive makers of the diagnosis, it is therefore important that clinicians and radiologists should be in constant touch and consult frequently on equal terms, each thus acquiring the special knowledge and perspective of the other. Like the bacteriologist the radiologist should form part of the team for clinical practice and research, and should not be segregated in his department. The radiologist is the helpful colleague of the clinician, and they are both judged as regards their accuracy or mistakes by the conditions found on the operating table or in the *post-mortem* room, it is therefore most essential that the radiologist should, like the clinician, follow through to final demonstration the cases on which he has expressed an opinion, and be imbued with pathological knowledge. Indeed, radiology enables them to see through a clinical telescope and so, like the operating surgeon, though with less inconvenience to the patient, to demonstrate "the pathology of the living." To discover the pathology of the living correctly is the aim of diagnosis, and to do so demands a thorough knowledge of morbid anatomy as it appears in the *post-mortem* room. By their attendance as far as their many engagements will allow, at operations and at necropsies, and by checking their films with the lesions revealed there, radiologists will not only greatly improve their powers of interpretation and diagnosis, but will strengthen their alliance and reputation with their professional colleagues, for in this way their experience will become unrivalled.

There are also the important factors of maintenance of a high standard of efficiency and unity of aim within the specialty of radiology to be considered, those, such as the late Sir Archibald Reid, who laid the future of radiology most at heart were insistent on the establishment of diplomas in radiology such as those subsequently instituted at Cambridge (1919), Liverpool (1920), and Edinburgh (1926). This is a valuable means of insuring a thorough education and training for future radiologists, and is fulfilling its object. There has been a want of a central institute where all persons interested in radiology—medical men of all kinds, physicists, technicians, and manufacturers—can meet on the common ground of the advancement of radiology to discuss all matters of radiological interest, to exchange knowledge and take combined action, when necessary, where teaching can be centralized and research facilitated, where a library of books of reference and periodicals and an ever growing collection of films are available and generally to further the development and welfare of radiology. With these objects the British Institute of Radiology, incorporated with the Roentgen Society was, after long-drawn-out discussions, finally established. The Articles of Association provide that "no member or associate who is not a registered medical or dental practitioner shall accept patients for diagnosis or treatment except under the personal supervision of a registered practitioner" (Article 12) and, on the action and with the approval of the General Medical Council Section 3 (c) of the Memorandum of Association, which provides for granting diplomas and certificates of merit and efficiency has been amended by the addition of the following words: "and that the holder of such diploma or certificate is not thereby entitled to undertake the medical diagnosis or treatment of patients except under the personal supervision of a registered practitioner."

With the rapid growth of radiology it is clearly becoming clear that specialism inside this branch must be anticipated and that the radiological technique necessary for the dental, neurological, neurological and other special departments will inevitably lead to the subjects becoming the life's work of certain men, as this will provide opportunities for intensive study and the accumulation of

more accurate knowledge it should be welcomed as evidence of the success of radiology in the present, and of its promise in the future. Not only will patients benefit by this increase of efficiency, but in certain branches, for example psychology, then comfort and safety depend on special knowledge and technical skill.

### 2 *The Physical Effects of Radiations on Patients*

The untoward effects of radiations on patients are usually acute and in the form either (1) of burns and epilation as a result of excessive dosage, or possibly in very rare instances from idiosyncrasy, or (2) of acute constitutional symptoms which have become more prominent since the introduction of intensive x-ray treatment of deep-seated abdominal malignant disease. The production of burns and dermatitis may entail legal actions for compensation, and a blow to the x-ray worker's reputation. Although the untoward effects of radiation are usually acute, patients frequently exposed to radiations may become gravely ill, but in the cases thus treated it is often difficult to decide between the influence of (a) radiations on the haemopoietic tissues, and (b) of the involvement of the blood-forming tissues by the disease from which the patients are suffering, thus infiltration of the bone marrow by malignant disease or lymphadenoma, or leukaemic change, may be regarded as responsible, cases of aplastic anaemia after x-ray and radium treatment for chronic leukaemia have indeed been reported (Ross, 1925; Whitcher), but are open to alternative explanations.

The acute constitutional symptoms (Roentgen-ray intoxication, radio-toxaemia) are of several degrees. The comparatively mild symptoms of malaise, lassitude, loss of appetite, nausea, and occasional vomiting, comprised by Beclevé (1921) to sea-sickness, have been ascribed to the effect of ozone and noxious nitrous gases in all ventilated x-ray departments, on the other hand, they may be minor results of the process responsible for the graver manifestations. A distinction has been drawn by Mallet and Coliez between (a) the immediate and comparative mild effects, which usually pass off in forty-eight hours, and (b) the more severe constitutional symptoms with delayed onset, fortunately uncommon, and consisting of uncontrollable vomiting, offensive diarrhoea with the passage of blood, abdominal pain and distension, fever which may reach 104° F. profound prostration, progressive cardiac failure, and sometimes a fatal issue. These grave symptoms have been explained in several ways, experimentally it has been shown by Whipple, in collaboration with Hall and with Warren, that massive doses of x rays over the abdomen produce a primary epithelial necrosis in the mucous membrane of the small intestine, which may be entirely responsible for a non-specific intoxication (that is, not due to any constant bacterial infection). According to Mottin and Kingsbury (1924) necrosis is preceded by interference with the production of mucus and invasion of the mucosa by bacteria, which pass into the blood, and thrombopoeia follows. Another view is that there is a general flooding of the circulation with protein products of cells destroyed by the action of radiations, and that the intestinal lesions are secondary. That intensive penetrating radiation of the abdomen is prone to be followed by the severe constitutional symptoms is confirmed by clinical experience, and it would seem reasonable to believe with Whipple that the intoxication is derived from the intestine on the other hand the occurrence of these same symptoms after irradiation of large tumours in the neck and mammary region shows that extensive cell destruction in parts of the body other than the abdomen may have a similar toxic effect. It has also been suggested that acute constitutional manifestations are anaphylactic and due to sensitization to proteins liberated by leucocytes and other tissues damaged by a previous radiation. That this is not applicable to all cases is proved both experimentally (Hall and Whipple) and clinically by the occurrence of acute symptoms after the first irradiation (Jadass and Pemberton).

*The Altered Stimulating Effect of Radiations*—The bacterial effects of radiation on ovarian disorders have been ascribed to a stimulating influence, but the recent work of Parkes, Fielding, and Bramwell seems to show

that it is due to a compensatory regeneration of ovarian tissue after the ovaries have first been destroyed by irradiation. The conclusion of Degradin that any apparent stimulating effect of radiations is a compensatory phase only and is invariably followed by more or less pronounced functional or organic deterioration, is probably correct.

The view that small doses of radiations stimulate malignant growths to greater activity put forward by Waring and Swift and used as an argument in favour of a large dose of radiations, is supported clinically by the occurrence of cases showing more rapid growth after radiation; this, however, may be an argument of the *post hoc, propter hoc* kind for the increased size of a tumour after radiation may, as Waring pointed out, be due to factors other than increased activity of the malignant cell—for example, to vascular engorgement, infection, or serous and haemorrhagic infiltration. While increased proliferation of the neoplastic cells is a result of direct stimulation by radiations appears from numerous observations to be improbable, it is reasonable to believe that damage done by radiation to the surrounding stroma whereby their defensive power is inhibited may explain increased spread of a growth after irradiation. Finally, we reach the conclusion that there is no convincing evidence in favour of the view that small doses of radiations directly stimulate neoplastic cells to more active growth.

**Method of Action of Radiations on Malignant Growths.**—The views of Brishford Murphy and Nakahara and Fung, to the effect that the malignant cells are not acted upon directly by the radiations so much as indirectly by the increase of the defensive activities of the surrounding tissue through fibroblastic proliferation, lymphocytic reaction and obliteration of the vascular supply are in opposition to the conclusion that the malignant cells are killed outright by the radiations. The influence of a general noxious effect, induced by radiation on the local tumour was raised by Opitz and Kol and there is the possibility that cytotoxins produced in the tumour may play a part but Fung's recent work is in opposition to this attractive idea.

[The varying radio-sensitiveness of tumours and of their constituents (malignant cells and stroma) and Bergonie and Tribondeau's law as to the greater radio-sensitiveness of undifferentiated cells, such as lymphocytes than of the more highly developed cells, such as columnar celled or the keratinized squamous-celled carcinoma were mentioned and a discussion was drawn between the two aspects of the changes in the cells and in the stroma. The initial radio-sensitiveness of a tumour and the later acquired resistance after repeated radiation were also discussed and Poussy and Fung's views as to the explanation were quoted. The possibilities of rendering malignant cells specially sensitive to radiations by artificial means such as impregnation with lead, was mentioned.]

### 3 The Physical Effects of Long continued Work in Radiological Departments on those thus Engaged

Soon after the discovery of x rays the harmful effects on the operators and patients became known. In March 1896 information arrived to the effect that Funon and Dr W. J. Morton had suffered with conjunctivitis as the result of some hours exposure (*Nature* 1896 Jan 421). The skin lesions x-ray or radio-dermatitis, were noticed in the same year, and in 1897 D. Walsh first directed attention to acute constitutional symptoms by describing them in x-ray workers in one of whom the symptoms disappeared when the abdomen was shielded by lead. Since then a very considerable literature has grown up on the subject of the untoward effects of radiations. In 1911 Krause stated that fifty-four fatal cases of cancer had been traced to radiations and in 1922 Ledoux Lebard estimated that one hundred radiographers had paid this penalty. In addition, the first noted by Alber Schönberg is now fully recognized physiologically and therapeutically. In 1905 Brown and Osgood found unsuspected sterility in eighteen persons employed in manipulating x rays from half an hour to four hours three times a week for from two to six years—a somewhat startling revelation.

The blood changes in x-ray and radium workers—namely

anaemia, leucopenia, and lymphopenia—are of special importance as they can be detected in an early stage and so further progress, towards grave aplastic anaemia, can be prevented by cessation of exposure. This method of early recognition and prevention being analogous to that practised in lead workers. The leucopenia immediately following irradiation is due to destruction of leucocytes in the circulation, as is shown by their remains seen in blood films whereas the prolonged leucopenia is the result of injury to the haemopoietic tissue. The two grave blood disorders seen in persons long exposed to radio-active substances are acute aplastic anaemia and leukaemia of which Jaulin has recently collected nine and eight examples respectively. It is generally believed that the radiation acts by producing aplasia of the bone marrow but from experiments on guinea pigs Fabricius-Moller believes that a large dose of x rays first produces the leucopenia and then after a week thrombopenia with the haemorrhagic diathesis and that the anaemia is due to haemorrhages. Hann and Faber, however, contend that the x rays cause a quence of events the colour index in the experimental animal should be very low which is not the case as indeed Fabricius-Moller admits. The occurrence of leukaemia was ascribed by Weil and Fung to a stimulating action of radiations on the bone marrow—an explanation which raises the vexed question of the existence of a stimulating influence of radiation.

Considering the relatively large number of x-ray workers radium appears to have a still smaller tendency to cause aplastic anaemia. The few cases reported are to be almost confined to x-ray workers for there is only one exception—the case of myeloid leukaemia reported by Weil and Loefer in a thorium worker.

The personal knowledge that peptic ulcer of the stomach and duodenum and malignant disease of the alimentary canal have occurred in radiologists of long experience coupled with the gastro-intestinal lesions of the constitutional symptoms occasionally seen after repeated applications of x rays to the abdomen naturally creates the suspicion that there may be more here than mere coincidence. It is true that peptic ulcer is rather frequent in medical men who are no radiologists and also that radiologists may like other medical men suffer from the result of irregular meals and too regular smoking. Experimentally massive x-ray exposure of the abdominal cavity causes acute damage of the intestinal mucosa and Lazzari, Barlow obtained similar results with the gamma rays of radium it might therefore be thought that the x-rays though long continued exposure might cause chronic inflammation of the rather extreme proliferative changes in the stomach and exposure of the mucosa of the stomach. Wolfer produced a chronic peptic ulcer. The peptic ulcer cannot be regarded as a radiological lesion but it may be worth while to bear the possibility in mind.

### Detection of Lead in Radium Workers

Soon after the recognition that prolonged exposure to x rays carried with it ill effects Dr J. M. Marsden-Davies in to whom we owe this lecture in a paper devoted to the pioneer of British radiology, Dr J. H. Poynton, Society a simple method of enclosing the worker in a wooden box very thick coated with a mixture of red and white lead with a suitable opening for the eyes of the x-ray worker, made east of Paris in 1904. This led to the use of the tube which was used for the purpose of shielding the operator. But it was not until 1911 that this step of systematic and formal protection was taken on the vital subject of protection of x-ray workers were taken.

The long list of deaths and mutilations among the pioneers of medical radiology is a painful reminder of the notice by a succession of deaths from the same cause. It was then that Dr J. H. Poynton, who died on March 25th 1921. As a result of this, the British Association of Radiologists was formed. It is obvious that the one authoritative authority on the practice of radiology was for the time being in this branch of the profession was not to be regarded as needed but overdue. Accordingly there was set up in 1921 a committee containing physics and radiology.

nominated by the National Physical Laboratory, the Röntgen Society, which exists in the war (in 1915) devised methods of protection, the Electro-therapeutic Section of the Royal Society of Medicine, the British Association for the Advancement of Radiology and Physiotherapy (now the British Institute of Radiology), the Institute of Physics, and the Radium Institute of London, with a representative of the manufacturers' interests, and Professor S. Russ and Dr. Stanley Melville as honorary secretaries. It appeared desirable that the members of the committee should all be resident in London, as the urgency of the matter necessitated frequent and prolonged meetings, and it was therefore reluctantly felt that it would be hardly possible to ask radiologists in the country to make the necessary sacrifice. No time was indeed lost, for the committee issued its recommendations in July, 1921, and after a second revised report in December, 1923, when the amount of preliminary discussion had become much less exacting, the members co-opted three leading radiologists from Edinburgh, Manchester, and Liverpool, in order to strengthen their hands. A third and expanded report, containing a section on ultra-violet therapy, is now in the press. It is not generally known how much radiologists owe to the National Physical Laboratory and the Röntgen Society for the help and the funds necessary for printing and distributing these reports, several thousand copies of which have been sent out to hospitals all over the United Kingdom. Arrangements were made whereby, when requested, experts from the National Physical Laboratory inspected x-ray departments to report whether the protection provided conformed to the recommendations of the committee. After some not unnatural hesitation, as this country was the first to insist on the need for such protective measures, British manufacturers adopted the recommendations, and their reception has been generally satisfactory, thus the early changes in the blood have been shown to be prevented by the adoption of protective precautions. The Ministries of Health and of Pensions in this country have given their support, and other countries, such as the United States of America, Norway, Holland, and Russia have issued recommendations following fairly closely the lines laid down by the committee. It is desirable, as Kray has urged, that international agreement, at any rate on the main questions of protective measures, should be secured. On February 1st, 1924, the Home Secretary issued an order extending the scope of the Workmen's Compensation Act, 1906, to include radio-dermatitis, which thus becomes one of the industrial diseases scheduled as entitling to compensation.

This has naturally been some criticism of these recommendations—for example, by Gloeker and Altschul—but it is noteworthy that this has been directed to show that the protection recommended errs on the side of excess and not of omission, thus it has been asserted that some of the regulations, though they may apply to large busy x-ray departments, are much more than is necessary in the departments of small hospitals, and that the amount of protection as measured in millimetres of lead is not only cumbersome but excessive in the experience of some well known radiologists. In answer to these objections it may be said that the recommendations are directed to render the practice of radiology safe for all those so engaged, and that any system of "graded" protection, for use in x-ray departments of different activities, would, as pointed out by Kray, be difficult and open to the risk of misinterpretation and so favour the occurrence of the evil effects which the recommendations are designed to prevent. An important reason for the maintenance of a high standard of protection is that the use of x-ray installations is far from being entirely in the hands of experts and medical men. The ever-extending use of x-rays will entail installations of special characters in factories and industrial workshops and it is obviously important to leave no loophole whereby the employees may eventually be seriously damaged.

As there is not yet any agreed standard unit of x-ray intensity that can be safely borne by everyone, it has been necessary to calculate the protective thickness of lead so as to cut off all the rays. In other words, the recommendations are worked out from the physical point of view so as to ensure complete protection from irradiations and

not from the biological and clinical standpoint of limiting the amount of irradiation to what can safely be borne by the average individual. As yet there is not any international standard x-ray unit, though an International X-Ray Unit Committee, with representatives from seventeen countries set up at the International Congress of 1925, is at work on it. The question of the measurement of the dose of radiations has recently been reviewed with a full bibliography by Gunsett, and Mutscheller has tried to devise formulae to establish physical standards of protection against the dangers of x-rays whereby the average safe dose of radiations to which an x-ray worker may be constantly exposed can be calculated, but even if the quantity of x-rays expressed in terms of the unit skin dose, which experience shows can be safely tolerated for years by some radiologists, could be satisfactorily determined, there is still the question of idiosyncrasy and acquired supersensitiveness to be taken into account. It is important that the recommendations for protection should be based on the principle of absolute safety first, and err, if they do so at all, on the side of excess, so that, as Melville argues, the life of an x-ray worker should, from an assurance point of view, be a perfectly suitable risk.

### *Idiosyncrasy*

Although in the early days of x-ray work the radiations were weak as compared with those now available from the Coolidge tube, many of the pioneers suffered severely, while others, although they did not take any further precautions, escaped. The much discussed question of personal idiosyncrasy to radiations has been imprudently considered by Colwell and Russ, who quote the answers to Arcelin's questionnaire among radiologists of repute seven believed in its existence and six took the opposite view. Mackee, who defines idiosyncrasy as a severe reaction to a very small dose—one-quarter to one-sixteenth of the unit skin dose—considers it very rare, as he has not seen an example in twenty years' work. The opinion of Dr. A. E. Barclay and Mr. Henry Pinch, which I am allowed to quote, is to the effect that extreme supersensitiveness is rare, and that the real explanation of many reputed examples is undue exposure or faulty technique.

Speaking generally, idiosyncrasy may be congenital or acquired, and may be supersensitiveness, which is that usually implied, or in the reverse direction—namely, insensitiveness. While radiations of sufficient strength and dose will produce reactions in everyone, there is considerable variation in the susceptibility of different persons. Those with light hair and a fair skin give reaction more readily than brunettes—no doubt from the small amount of protective pigment in the skin. According to David, a normal person gives a distinct x-ray erythema, whereas some individuals, probably from a different constitution depending on endocrine influence, give quite a different pathological reaction. Mackee and Eller tested 220 persons with 1/4, 1/2, and 3/4 of the unit dose of x-rays, and found that 11, or 5 per cent, developed erythema with 1/4, 31, or 14 per cent, with 1/2, and 54, or 25 per cent, with 3/4 of the unit dose. It would appear to be impossible to deny the occurrence of an inborn supersensitiveness to radiations, though extreme degrees may be very unusual.

*Acquired supersensitiveness* to radiations is well recognized in the case of the skin, and T. Lewis has shown that damage of the blood vessels by x-rays leaves them in a curious condition of inability to respond to vasoconstrictor stimuli, this has been ascribed to injury to the Rouget cells. The occurrence of post-radiation telangiectases usually within two years, but sometimes longer delayed, even to fifteen years, is well known. They are probably always preceded by an erythema, which, however, may be very slight. The same individual may react differently at different times, Mottram (1924) has shown that an increased blood supply, such as is caused by heat, sunburn, or other factors, makes the skin more prone to react to radium, and, according to Knox, this may be due to secondary irradiations in the iron of the haemoglobin.

Supersensitiveness developing after exposure to radiations has been described both in patients and radiologists. M. and G. Giraud and Pares recorded a case of myeloid leukaemia in which, after tolerance for the long period





In even a brief discussion the serological aspect cannot be omitted. The spinal fluid picture which we have found to be almost constant is a normal or slightly increased cell count, a normal protein content, a negative Wassermann reaction, and a positive reaction to colloidal gold.<sup>15</sup> This latter test, in conjunction with a negative Wassermann reaction, is, in my opinion, of undoubted value in the recognition of early cases of the disease.

### Symptomatology

As regards the symptomatology of disseminated sclerosis, I would like to emphasize one of the earlier manifestations. Retrobulbar neuritis is specially worthy of investigation and experimental research. In one of my cases of frank disseminated sclerosis in a woman aged 37 I obtained the following history. Fifteen years prior to the onset of gross symptoms she had suffered for a short time from bilateral retrobulbar neuritis, but in the interval had appeared to be in good health. Here we would appear to have a latency of infection comparable with syphilis. The occurrence of so-called idiopathic retrobulbar neuritis in a young and otherwise healthy adult should always be carefully investigated as a potential early manifestation of disseminated sclerosis.

### Occupational Incidence

So far I have referred chiefly to laboratory methods in the investigation of this disease. There are other channels into which inquiry may be profitably directed. It is of great importance not merely to study the natural history of a disease, but especially to investigate the circumstances under which the earliest manifestations appeared. The following observations are based on my personal experience of cases in the West of Scotland, and may be governed by conditions peculiar to the district. The majority of the patients I have seen with disseminated sclerosis come from the country, as opposed to the town. The incidence of the disease in this respect would appear to be in direct contrast to that of neuro-syphilis. The typical picture is that of a young adult, usually of good physique and with a healthy family history. It is excessively rare to find two cases occurring in the same family or in the same household—a fact which would point either to special personal susceptibility or to special exposure to infection. In this connexion the theory of insect transmission is worthy of investigation. Such a view has already received the support of Dreyfus<sup>16</sup> in a published paper and Kuhn in a personal conversation. The occupations which seem to me to render the individual most liable to infection are farming, woodworking, game-keeping, gardening, bye-keeping, etc. Persons so employed are essentially earning their living in the open air in country districts. It is not only in these individuals that the disease seems specially liable to occur, but also in various members of their families. Recently McAlpin<sup>17</sup> has referred to the desirability of investigating this occupational incidence of the disease.

Admittedly such a history cannot be obtained in a proportion of cases, but when one realizes the apparent latency of infection, to which reference has already been made, the difficulties of ascertaining when and where the infection occurred will be immediately apparent.

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#### The Use of Thyroid Extract at the Menopause

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In my opinion therefore thyroid extract should not be given as a routine, to women at the menopause.

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There is considerable evidence that the syncope which occurs during the induction of chloroform anaesthesia is associated with fibrillation of the cardiac ventricles and is caused by abnormal irritability of the heart muscle in which the sympathetic nerve supply is involved. Cushman says that this ventricular fibrillation is possible caused by reflexes through the accelerator apparatus, or by an increased action of the suprarenal gland. If as I have shown women at the menopause are sympathetotonic chloroform should be avoided as an anesthetic at this time.

Following a suggestion made to me by Dr W. F. Dixon I have endeavored to ascertain if women at the menopause are particularly susceptible to chloroform syncope owing to the infrequency with which chloroform is administered in these days and the comparatively few cases of chloroform syncope which have been recorded with details of the

menstrual history at the time of the accident. My researches into this question have hitherto been unsatisfactory. It is interesting however to remember that pregnant women in whom the ovaries are present in a condition of increased activity are extremely tolerant to chloroform.

The preparation of the active hormone or hormones of the ovary is attended with many technical difficulties, and I know of no satisfactory product at present on the market. I am satisfied however that some of the ovarian extracts which are available are effective to a limited and varying extent but until an active substance, or standard preparation, is available the clinical value of these preparations must remain inconclusive.

#### Summary

1. The tonus of the sympathetic nervous system of women at the menopause is increased.
2. The increase in tonus of the sympathetic nervous system is responsible for the vasomotor phenomenon and possibly for some of the other symptoms which make up the menopausal syndrome.
3. The increase in tonus of the sympathetic nervous system at the menopause is caused by the arrestation of action of the suprarenal gland, the internal secretion of the ovaries being deficient or absent.
4. Thyroid extract should not be administered to the menopause owing to its adrenal sensitizing action.
5. Chloroform should not be used as an anesthetic in women at the menopause.

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## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL

#### RUPTURE OF THE HEART

An edentulous man aged 71 was given a large cup of hot meat extract at 11 p.m. followed an hour later by a large cup of hot cocoa. He was found dead in bed at 1 a.m. At the post-mortem examination I found a rupture 1 in long in the anterior wall of the left ventricle. The muscle was pale flabby, and fibrotic. The stomach was enormously distended with air. I concluded that in stopping the hot liquid he had swallowed this air and the consequent distension of the stomach embarrassed the heart sufficiently to tear it.

In the interesting paper by Drs Strickland Goodall and Wen (May 7th p. 834) there is a history of recently ingested food or fluid in seven out of fourteen cases. One would like to know the condition of the stomach in the cases and whether flatulent distension was a contributory factor to the rupture.

London W.3

H. STANLEY CHATE, M.B.

#### HEPATIC DEFORMITY OF THE FINGERS

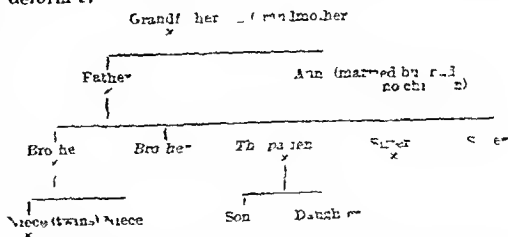
A man, aged 22, presenting the following abnormality of the fingers was admitted to Addenbrooke's Hospital in November 1926, suffering from renal calculus.

The middle and terminal phalange were shortened the fingers being of the average breadth for an adult man. The base of each finger-nail is double. The two parts are separated by almost normal skin which runs distally over the dorsum of the terminal phalanx and continuous with the skin covering the tip of the finger. On either side of this medially a strip of skin nail tissue appears of the normal texture and elasticity. The cuticle is present on each side and overlaps the nails in the usual fashion. The intermediate central part is harder than normal skin and bears longitudinal striations, it is, however quite distinct from the nails. At the distal end there is the usual shallow transverse groove, where the free end of the nail should be. The little finger of the left hand approaches the nearest to

normal. There is here a nail occupying three-fifths of the width of a normal nail. The man used to scratch his finger when a boy in order to make the nail grow.

The thumbs show this peculiarity in the highest degree. The nail bed on each side is represented by a 2 mm width and 4 mm in length each containing a tiny nail. The nail all grows over and seldom require cutting. The feet are normal.

The man stated that several members of his family have hands similar to his own. In the following table the persons marked with a cross are those who exhibit this deformity.



In even a brief discussion the serological aspect cannot be omitted. The spinal fluid picture which we have found to be almost constant is a normal or slightly increased cell count, a normal protein content, a negative Wassermann reaction, and a positive reaction to colloidal gold.<sup>15</sup> This latter test, in conjunction with a negative Wassermann reaction, is, in my opinion, of undoubted value in the recognition of early cases of the disease.

### Symptomatology

As regards the symptomatology of disseminated sclerosis, I would like to emphasize one of the earlier manifestations. Retiobulbar neuritis is specially worthy of investigation and experimental research. In one of my cases of frank disseminated sclerosis in a woman aged 37 I obtained the following history. Fifteen years prior to the onset of gross symptoms she had suffered for a short time from bilateral retiobulbar neuritis, but in the interval had appeared to be in good health. Here we would appear to have a latency of infection comparable with syphilis. The occurrence of so called idiopathic retiobulbar neuritis in a young and otherwise healthy adult should always be carefully investigated as a potential early manifestation of disseminated sclerosis.

### Occupational Incidence

So far I have referred chiefly to laboratory methods in the investigation of this disease. There are other channels into which inquiry may be profitably directed. It is of great importance not merely to study the natural history of a disease, but especially to investigate the circumstances under which the earliest manifestations appeared. The following observations are based on my personal experience of cases in the West of Scotland, and may be governed by conditions peculiar to the district. The majority of the patients I have seen with disseminated sclerosis come from the country, as opposed to the town. The incidence of the disease in this respect would appear to be in direct contrast to that of neuro-syphilis. The typical picture is that of a young adult, usually of good physique and with a healthy family history. It is excessively rare to find two cases occurring in the same family or in the same household—a fact which would point either to special personal susceptibility or to special exposure to infection. In this connexion the theory of insect transmission is worthy of investigation. Such a view has already received the support of Dreyfus<sup>16</sup> in a published paper and Kuln in a personal conversation. The occupations which seem to me to render the individual most liable to infection are farming, woodworking, game-keeping, gardening, bare-keeping, etc. Persons so employed are essentially earning their living in the open air in country districts. It is not only in these individuals that the disease seems specially liable to occur, but also in various members of their families. Recently McAlpine<sup>17</sup> has referred to the desirability of investigating this occupational incidence of the disease.

Admittedly such a history cannot be obtained in a proportion of cases, but when one realizes the apparent latency of infection, to which reference has already been made, the difficulties of ascertaining when and where the infection occurred will be immediately apparent.

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## ON CERTAIN ADRENALINE EFFECTS AT THE MENOPAUSE AND THEIR SIGNIFICANCE

(Preliminary Communication)

By

JOHN H. HANNAN, M.A., M.D., B.Chir Cantab,  
LONDON

In two theses read by myself at Cambridge dealing with the causation and treatment of "flushing" at the menopause, and in a recently published monograph on the same subject (1), I have drawn attention to certain adrenaline effects observed during my researches.

### Flushing Produced by Adrenaline

Intravenous injections of 10 minims of a 1 in 1,000 solution of adrenaline chloride, in women complaining of flushing at the menopause, gave rise, in all cases, to an immediate attack of flushing which was in all respects identical with the attacks which occurred spontaneously.

In order to exclude the possibility of this experimental flushing being caused by an increase in blood pressure, or the painful stimulus of an injection, control injections were made of pituitin and normal saline, in no instance did the control injections give rise to an attack of flushing. It would appear, therefore, that the production of flushing at the menopause by the intravenous injection of adrenaline is due to the specific action of this substance.

A consideration of the results obtained by observers, such as Petzetakis, on the effects of intravenous injections of adrenaline in normal individuals yields no evidence of the production of flushing by adrenaline in such individuals.

### Increased Tonus at the Menopause

Loewi's reaction—namely, dilatation of the pupil following instillation of adrenaline into the conjunctival sac—occurred in 40 per cent of those women at the menopause upon whom the experiment was tried, the reaction was constant on eight consecutive days, only women who complained of flushing were selected for this experiment.

If adrenaline be instilled into the conjunctival sac of a normal individual no dilatation of the pupil occurs, owing to the destruction of the adrenaline (Dixon). In some diseases of the pancreas, however, where there is impairment of the secretory cells, certain adrenaline effects become more pronounced and dilatation of the pupil occurs, this phenomenon being caused, according to Loewi, by the absence of the restraining influence of the pancreas on the suprarenal glands, these glands being physiological antagonists. Bearing in mind, therefore, that pancreatic disease might be present in some of my cases, an examination of the urine was undertaken in those cases where the pupil reaction was positive, in no instance was evidence of glycosuria obtainable.

From my experiments it would appear that the sympathetic nervous system of women, who at the menopause complain of flushing, is in a condition of increased tonus. The menopause is, we know, associated with ovarian atrophy and loss of the Graafian follicles, furthermore, removal of both ovaries will produce a syndrome closely resembling the natural process. My research, therefore, would seem to indicate that the internal secretion of the ovaries and that of the suprarenal glands (medullary portion) are physiological antagonists.

The ovarian extracts which are available at the present time are unsatisfactory, but I have had some success in the treatment of flushing at the menopause by the subcutaneous administration of an extract of the whole ovary in combination with a dry extract of the corpus luteum, or, (2) in two of my cases, Loewi's pupil reaction has disappeared under ovarian substitut on therapy.

### The Significance of Adrenal Sensitiveness at the Menopause

It would appear from my research that the flushings of the menopause are due to an increase in the tonus of the sympathetic nervous system at this time, this increase being caused by the absence of or deficiency in the restraining influence of the internal secretion of the ovaries on the

suprarenal glands. It would also seem possible that this sympatheticism may account for some of the many symptoms such as headache and sensations of tingling and numbness in the extremities, which make up the menopausal syndrome.

#### The use of Thyroid Extract at the Menopause

Thyroid extract is frequently used at the menopause. As I have shown elsewhere (3), the intensity of the attacks of flushing at the menopause is increased by the administration of thyroid extract at this time. This phenomenon is to be expected if, as has been suggested by Coetsch, the internal secretion of the thyroid gland sensitizes the body cells to the action of adrenaline.

In my opinion, therefore, thyroid extract should not be given as a routine, to women at the menopause.

#### The Use of Chloroform as an Anaesthetic of the Menopause

There is considerable evidence that the syncope which occurs during the induction of chloroform anaesthesia is associated with fibrillation of the cardiac ventricle and is caused by abnormal irritability of the heart muscle, in which the sympathetic nerve supply is involved. Cushman says that this ventricular fibrillation is possibly caused by reflexes through the accelerator apparatus, or by an increased secretion of the suprarenal gland. If as I have shown women at the menopause are sympathetotonic, chloroform should be avoided as an anaesthetic at this time.

Following a suggestion made to me by Dr W. E. Dixon, I have endeavoured to ascertain if women at the menopause are particularly susceptible to chloroform syncope, owing to the infrequency with which chloroform is administered in these days, and the comparatively few cases of chloroform syncope which have been recorded with details of the

menstrual history at the time of the accident, my researches into this question have hitherto been unsatisfactory. It is interesting, however, to remember that pregnant women, in whom the ovaries are present in a condition of increased activity, are extremely tolerant to chloroform.

The preparation of the active hormone or hormones of the ovary is attended with many technical difficulties and I know of no satisfactory product at present on the market. I am satisfied, however, that some of the ovarian extracts, which are available are effective to a limited and varying extent, but until an active substance of standardized potency is available the clinical value of my observations must remain inconclusive.

#### Summary

- 1 The tones of the sympathetic nervous system at women at the menopause is increased.
- 2 The increase in tone of the sympathetic nervous system is responsible for the vasomotor phenomena and, possibly for some of the other symptoms which make up the menopausal syndrome.
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London W.3

H. STANLEY CHUTE, M.B.

#### HEREDITARY DEFORMITY OF THE FINGERS

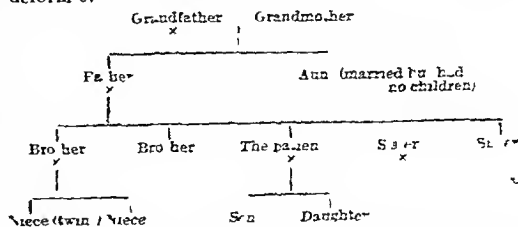
A MAN aged 22 presenting the following abnormality of the fingers was admitted to Addenbrooke's Hospital in November 1926 suffering from renal calculus.

The middle and terminal phalanges are shortened, the fingers being of the average breadth for an adult man. The base of each finger-nail is double. The two parts are separated by almost normal skin which runs distally over the dorsum of the terminal phalanx and is continuous with the skin covering the tip of the finger. On either side of this medially a strip of skin nail tissue appears of the normal texture and elasticity. The cuticle is present on each side and overlaps the nails in the usual fashion. The intermediate central part is broader than normal skin and bears longitudinal striations, it is, however, quite distinct from the nails. At the distal end there is the usual shallow transverse groove where the free end of the nail should be. The little finger of the left hand approaches the nearest to

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The man stated that several members of his family have hands similar to his own. In the following table the persons marked with a cross are those who exhibit this deformity.



The patient could not trace his family further back than the grandfather, nor could he state whether the abnormality had ever been transmitted through one of the female members of the family.

I am indebted to Dr J. Alden Wright for permission to publish details of this case.

NOEL CHILTON, B.A., B.M., B.Ch.  
Late House Physician Addenbrooke's Hospital, Cambridge.  
Surrey.

#### AN UNRECOGNIZED CASE OF FRACTURE OF A CERVICAL VERTEBRA

The following case presents some points which may be of interest.

A man aged 33 was admitted to the Chester Infirmary in May 1926 during the general strike after being run over by a railway lorry which crushed his chest. No fracture of the ribs could be found, and as he had apparently quite recovered, he was discharged after a short stay in hospital.



wrote prior to operation on his frontal sinuses suffice to demonstrate his delusional insanity. And he been satisfied as means it would have been a matter of great difficulty for him to regain the confidence of his bank directors.

(c) Bacteriological examination of the nasal sinus contents demonstrated pure culture of *Staphylococcus aureus*, so often regarded as of little import. Teeth and tonsils were not involved, his previous appendicectomy had apparently removed the only other involved focus of infection, making his a pure nasal infection case.

Let me refer very briefly to one example at the other extreme—the very mild type of chronic nasal sepsis.

A man, aged 56 complained of deafness with post nasal catarrh, never severe, but of twenty-seven years' duration. He had been tired off and on during that long period, but latterly had been getting depressed, lessened mental acuity causing difficulty in carrying on his work, he complained also of general muscular weakness. Exploration of his nasal sinuses revealed no obvious pus, but Dr Todd, who examined the extracted contents found, together with polymorphonuclears, streptococci and Friedländer's pneumobacillus in the right sphenoidal and posterior ethmoidal cells, the other sinuses being sterile. The infected sinuses were opened and drained and he soon felt stronger, increased in weight, and, as he put it, brighter than he had ever done for years past.

It is certainly not intended to suggest that all patients whose tonsils, sinuses, ears, or teeth are mildly infected must be operated on, or that they are the subject of functional psychoses, any more than is the individual who is somewhat melancholic because his liver is sluggish or he is constipated. Few individuals are there who, in the course of common colds or influenzal attacks and so forth, have not been the subject of transient nasal sinusitis, fortunately the great majority of such infections clear up spontaneously by auto-immunization, or with the appropriate measures of ordinary medication, while every medical practitioner knows that rest, feeding up, change of air, and so on are very often all that is required to obtain complete cure.

It is cases of chronic sepsis with mental depression and neurasthenic symptoms which do not yield to ordinary medicinal measures, or that seem to clear up only to recur, that we need to recognize, and to associate the functional psychosis with the physical abnormalities that may be the underlying and removable cause.

It is necessary to emphasize the "latent" or hidden character of the focal sepsis in many patients who nevertheless are the worst sufferers from chronic toxicæmia. First, there is often an absence of pain or other symptoms directing attention to the real source of infection, and, secondly, it is significant that patients with chronic copious purulent discharge but seldom suffer from toxicæmic symptoms as compared with those with little discharge, and that often non-purulent to the naked eye. Many years ago I suggested

that in the numerous polymyositis in the one case, as contrasted with the purity of polymyositis in the others, we have an explanation of the remarkable differentiation to which I have drawn attention.<sup>1</sup> Subsequent experiences have borne out the truth of this, and in the latent character of apical dental sepsis, which often enough can only be detected by radiograms, we have a further exemplification of the cryptogenic character of some of the most potent sources of focal sepsis.

If it be recognized that owing to the existence of focal sepsis a considerable percentage of patients are miserable, the subject of neurasthenia or of functional psychosis of grave character, rendering their lives more or less useless to themselves or a source of danger to the community, it is hardly necessary to urge the duty of ferreting out these septic foci—which involves regard to the gastro-intestinal tract (for example, for evidence of colitis, enteric ulceration, appendicular infection), to the genito-urinary tract, the teeth, fauces, nasal sinuses, the ear, and so forth.

In such investigations we must often invoke the aid of radiology, of analysis of gastric contents and of the feces. How many asylums to day have such essential resources at their disposal? Yet within a few years I believe that with each one will be actively associated a consulting physician, surgeon, dentist, radiologist, laryngologist, and pathologist. Let us cast no stones, for hitherto we as a profession have barely recognized the symptoms which should call for the elimination of focal sepsis as the *fons et origo* of some patients' afflictions in whom the ostensible diseases are

merely the end results. Of this we may feel assured—sepsis is a far deadlier foe to civilized races than tuberculosis.

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## ON AURAL FOCAL SEPSIS AS A SOURCE OF NEURASTHENIA AND INSANITY

BY

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It has long been recognized that disease of the ear may lead to mental disturbance more or less severe. Even so simple a matter as removing a plug of wax has been recorded to have cut short an attack of mania. As regards aural suppuration, attention in the past appears to have been directed in this connection to deafness, tinnitus, pain, vertigo, and intracranial complications. In short, only disease of the organ of hearing, and local complications, seem to have been considered. With such I am not here immediately concerned.

Many instances of the association of one or more of these conditions with mental trouble have been recorded. Tinnitus especially is noteworthy, some writers even go so far as to say that most cases with hallucinations of hearing ought to be classed as suffering from delusions, there being some definite aural lesion to account for their symptoms. Vertigo is well known to induce definite neurasthenia in some cases. We ought to be careful that disinclination to mix in traffic, or a shivering from work, say, as a stoker, or on a scaffolding, is not incorrectly ascribed to neurasthenia, when really due to laudable prudence. I have had the good fortune to see both this false neurasthenia and a true neurasthenia disappear when suitable treatment has relieved the vertigo. A few cases of intracranial abscess have been published where treatment has relieved a definite psychosis, but too many of the records showing this association are from autopsies, no treatment having been instituted. I may summarize the situation by recalling the plea of Forrester<sup>1</sup> which, in 1901, he added to a record of a case successfully treated—that every patient suffering from mental change should have the ears examined. In the same year Dr. Bernard Hollander wrote

By these cases one is forcibly taught the lesson that an apparently slight and unimportant ailment such as a running from the ear, which is apt to be looked upon as an inconvenience rather than a disease, may prove very dangerous.

### TOXÆMIA

Putting aside these local manifestations, I shall omit all cases in which tinnitus, vertigo, or intracranial complications were known to be present, and all cases in which there was not a family history free from mental taint, and shall confine myself to those instances in which surgical treatment of aural sepsis brought relief from the mental symptoms.

Towards the close of last century much attention seems to have been directed to the question whether toxicæmia was a factor of importance in the causation of insanity. Among the records of many discussions, perhaps the most interesting is that at the Medical Society of London on May 11th, 1896, opened by Dr. A. M. Hamilton of New York, on "The connexion of autotoxæmia with certain forms of insanity." The idea that chronic septic absorption could

produce "toxæmia" was not, however, then current, the word was applied rather to poisoning from the presence in the circulation of products of abnormal metabolism, or the result of intestinal stasis. It is not surprising, therefore, that at that time little attention appears to have been given to the middle ear tract as a possible source of chronic toxæmia. But it is now over fifteen years since West and Scott<sup>3</sup> pointed out this possible complication. It seems noteworthy that even now the possibility is in some danger of neglect.

#### NEURASTHENIA

Perhaps for this reason the evidence I shall put forward is less complete than its importance deserves. It is not common in aural practice to find cases of definite insanity. Far more usual is it to see patients with minor disturbances, such as are usually described as neurasthenia. It is remarkable how regularly the same group of mental symptoms occurs in all descriptions of toxæmia, whether considered from a general or a local aspect. There is a sort of mental lassitude, the victim finds that the effort demanded by social duties is becoming too great, work which formerly he performed with ease and pleasure has become laborious, when he forces himself to work, he cannot concentrate his mind, he feels he has lost his initiative, memory may fail or more typically become "patchy", and to make a decision even on some quite minor matter involves a disproportionate effort.

A sufferer from such a condition came to me two years ago. He told me nothing of his trouble, but sought advice for a running ear. I carried out a radical mastoid operation for purely local conditions. Some months later he came to tell me of his neurasthenia, which all his friends had noted. After the operation the whole of the train of symptoms which were practically identical with the series I have indicated above, completely disappeared.

Another case was that of a chef. He had had to give up his work and though he had been trained in a less strenuous occupation he found this also was too great a strain. There was some physical evidence of toxæmia but the most marked feature was his depression and hopelessness. A short fortnight after the operation on his ear—which was performed mainly on account of the general condition—the change in his whole bearing was remarkable. He became bright and cheerful, got work at a big hotel as head chef and has been hard at it ever since—a matter of three years.

#### EPILEPSY

For statistical information on the association of ear disease with epilepsy I would refer to a paper by Dr Omerod.<sup>4</sup> He found an incidence of epileptic fits several times greater in the subjects of otorrhoea than in the hospital population generally. I will cite a case in my own practice.

A man of middle age came to me for otorrhoea of old standing rather profuse and associated with some pain but not much. He was also subject to fits described by his doctor as epileptiform. While other treatment was being tried for the ear, the fits became more frequent—one or two every week. I therefore operated on an extensively diseased mastoid. This was only ten weeks ago but he has had no fits since the operation, and the outlook is distinctly promising.

#### INSANITY

Undoubtedly the most dramatic and convincing cases are those in which definite mental derangement has yielded to surgical treatment. The earliest case that I have found to illustrate my thesis is reported by L. Merz.<sup>5</sup> In this definite association of mental disease with otorrhoea was noted before operation on a chronic mastoid abscess resulted in restoration to mental health. Nearly fifty years ago Dr W. Rhys Williams recorded a very striking case.<sup>6</sup>

A man aged 26 married family history, negative general health good, always industrious and sober. Thirteen days before admission to Bethlem he became depressed and rambling in his speech. Then he became excited, violent and incoherent. He had delusions: (1) that he was firing rockets at Edinburgh Castle; (2) of seeing devils; (3) of persecution by electricity. No aural symptoms were noted but he was noisy and sleepless. After admission he was sullen and quiet but a fortnight later he was again raving. Ten months after a discharge was noticed from the left ear. He stated that he had had this for a long time. Mastoid tenderness and swelling were observed, and a chronic abscess of the Bezold type was treated three operations being performed and 'he became sane at once'. Shortly after he was discharged cured.

I showed at the meeting of this Branch in January last a man who had had mild otorrhoea very chronic with no serious local symptoms. He had been comfortable under palliative treatment

for some months. But somnambulism with a habit of lighting fires and even more serious derangements of conduct developed and it appeared that he was going to become certifiably insane. I performed a radical mastoid operation with the happy result of completely relieving his mental condition and he remains well and is at work.

#### SUMMARY

What deductions are we to draw from these cases? It will not be disputed that an examination of the ears should be a part of the routine examination of every subject of mental disease. But even where there appears no local condition calling for surgical treatment, if we suspect that focal sepsis is at the bottom of the trouble, we must not forget the ears when seeking a possible source of that trouble. This is not less important when dealing with cases of milder mental disturbance, for the patient may think the running ear of little moment and omit to mention it, but such cases seem to yield comparatively readily to treatment. Finally, when considering the question of operative treatment of otorrhoea, we must have in mind the possible effects on the general health, mental as well as physical, of septic absorption from this source.

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## FOCAL SEPSIS AS A FACTOR IN THE CAUSATION OF NEURASTHENIA AND INSANITY

BY

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This question of mental disturbances from focal sepsis is most important, but sufficient attention has not been given to it in the past. It serves to emphasize the absolute necessity for a most scrupulous examination of every patient suffering from neurasthenia or graver mental trouble. This is, indeed, only fair, for there might be found some definite lesion to account for what had been thought an hallucination. In one case, it was alleged as a sign of insanity that the patient said he had a cannon-ball in his chest, this man was found, on x-ray examination, to have a large and unsuspected aneurysm.<sup>1</sup> Further, it is remarkable what gross damage may exist with apparently little mental change; it is necessary to be on guard that a serious intracranial lesion is not overlooked.

In considering the mental changes associated with focal sepsis, I might instance for comparison the well known mental disturbances associated with the onset of infective fevers such as typhoid or pneumonia. If an acute infection could so much disturb the mentality in a few hours, it should cause no surprise that a chronic toxæmia could produce insanity in the course of months. I propose, however, to leave out of account the acute fevers, as not being within the scope of "focal sepsis."

The cases in which chronic septic absorption appears to be a definite factor in causing mental disturbance are of the greatest interest and importance. I will relate one or two that have come within my own observation.

**Case 1**—Just before the war I was called to see a young professional man who had attempted to commit suicide. The family history was exceedingly bad and it was at first thought that the prospect of mental recovery was poor. An alienist called in consultation took a different view. He observed that the periods of depression to which the patient was subject coincided with attacks of constipation so severe as to be absolute for eight or ten days together and he was strongly opposed to the man becoming an inmate of an asylum even as a voluntary boarder. Advice was given as to the proper regulation of the bowels, and the patient was put in the care of friends. He completely recovered and has been since 1916 an active and hard working man.

**Case 2**—A woman was admitted to hospital with acute mania. Observation showed that she had always a slight daily rise of temperature. Further investigation revealed infection by *B. coli* of the urinary tract. Under treatment this was relieved and simultaneously the mental state became normal.

**Case 3**—A working quarrryman, a man of poor education became during the war the owner of a quarry and the possessor of considerable wealth. He began to suffer from delusions and

melancholia and was soon quite insane. It seemed clear that his altered circumstances and the responsibilities of ownership and management had brought about his downfall. He had, however, a very septic mouth; extraction of all his teeth was followed by complete restoration to mental health.

*Case 4*—In this instance a man had no fewer than three sources of septic absorption: he suffered from chronic nasal sinus disease, from dental sepsis, and from chronic appendicitis. The mental state was one of extreme introspection, with definite suicidal tendencies. Surgical treatment of all three foci has been carried out. It is six weeks only since this was completed. He says he is 'a new man'. Although the history is so recent, it is full of promise.

I think it probable that most of the cases of puerperal mania are septic in origin—perhaps the actual focus of infection is small and the grade of infection low. The important point seems to be that, if in a given case of mental disease we can find the cause, and eliminate it, we shall be able to give a good prognosis. This good prognosis we are accustomed to give for example in cases of post-typhoid insanity, because we recognize that the toxic state does not last. It is therefore of the greatest importance that we do not overlook any source of chronic poisoning when called upon to examine a patient with mental disturbance. A careful and thorough physical examination is more likely to be fruitful than investigation of the origin of the mental state along psycho-analytical lines.

### FOCAL SEPSIS OF DENTAL ORIGIN CAUSING MENTAL IMPAIRMENT

BY

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It has not been my fortune to treat any cases of definite insanity, but I have had a number of cases showing severe if non-certifiable mental impairment. I think my best contribution to the discussion will be to give you a short account of three of these.

*Case 1*—The brother of a professional man was brought to me during the war. He was a soldier on sick leave and for eight months there had been no improvement in his condition. He showed the most extreme degree of apathy. If sitting at table he would get up for something and forget before he had taken two steps for what he had risen. In speaking he would leave out words or break off in the middle of a sentence unable to finish. He was dull and listless, dispirited, slow, tremulous and uncertain in his movements. His complexion was a sickly earthy colour. He had some dull dental pain, which did not seem to be a matter of importance, but he had been persuaded to seek advice for this symptom. His mouth was in a terrible state full of crowns and bridges the roots supporting which were mostly suppurating. Under general anaesthesia a complete clearance of the offending teeth was made. Within a fortnight the good effect was apparent. His colour improved, his health became normal, his spirits returned and his mind became alert. He returned to his duty and has remained well since.

*Case 2*—A clergyman on a visit to Clifton was brought to me on account of offensive breath. His appearance was dreadful: his colour ashen grey, his speech slow, hesitating and indistinct. He showed an absolute lack of initiative and volition, and simply did what he was told in everything. He had had to give up his work owing to loss of memory. I found a mouth full of pyorrhoea with teeth mostly loose, and the odour beyond description. A complete dental clearance was made. His health, physical and mental, was restored to normal, he was able to go back to work, and has been busily employed ever since.

*Case 3*—A woman, aged 38, was white haired, wasted, and looked 50. So great was her mental torpor that she showed a long latent period between hearing a question and giving the answer, so that one was inclined to think her deaf. The answer when it came showed that her mental processes were sound. She was suffering from sleeplessness and neurasthenia and was extremely thin. Her mouth was in a shocking state, the few teeth she had left were either loose from pyorrhoea or dead and affected by periostitis. All the others had fallen out. Extractions produced a marvellous effect.

It is interesting to consider the route by which the toxin in these cases reaches the general circulation. In what for convenience I call the "open sepsis" of pyorrhoea the poison is swallowed, and perhaps, for a time, does little general harm. But presently the gastric defences break down, and absorption occurs. On the other hand, in the "closed sepsis" of apical abscess the absorption is directly into the circulation. In either case the toxin in the circulation probably directly affects the brain.

### DISEASE OF THE ANTERIOR ETHMOID CELLS AS A CAUSE OF OPTIC AND RETROBULBAR NEURITIS

BY

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So far as I am aware there are no recorded cases of optic neuritis and retrobulbar neuritis due to disease of the anterior ethmoid cells.

During the last eighteen months four cases of optic neuritis and one of retrobulbar neuritis have been referred to me for examination by Mr. Potts, the surgeon to the ophthalmic department of this hospital, in each the evidence that the anterior ethmoid cells were diseased was definite. With the exception of the case of retrobulbar neuritis there was evidence that the maxillary antrum was involved, no doubt secondarily. Logan Turner and J. S. Fraser have drawn attention to the fact that a definite condition of the eye and a definite condition of the nasal sinuses or antrum should be present before operation, and that it should be clearly directed to the particular nasal condition. The surgeon should have a clear knowledge of the position and relationship of the various nasal sinuses. An x-ray photograph will show if any of the cells are abnormally placed. Transillumination of the frontal sinus and maxillary antrum is an important aid in diagnosis. The directional action of the everted epithelium lining the various cavities should be known.

It is now known that nasal sinus disease may be a cause of albuminuria, arthritis, and certain toxicæmias. These are distant infections, and are curable by operation on the affected sinus or sinuses, but the question arises whether the bones walls may become affected and infection thus spread to the overlying optic nerve. This may be possible in disease of the sphenoidal sinus and posterior ethmoid cells, but does not seem possible in the case of disease of the anterior cells. If infection does not spread by the blood stream nor by contact then I would suggest that spread takes place by the lymphatics. The lining membrane of the orbit and the sheath of the optic and third nerves are continuous, and the lymphatics must be continuous. Moreover, the nasal lymphatics can be injected through the lymphatics of the frontal region.

#### DIAGNOSIS

Cross infection of the sinuses with a large flow of pus, with swelling and moisture of the mucous membrane of the nares, does not seem to be a necessary condition attending optic nerve disease. The most severe cases are those in which the mucous membrane is dry and the pus thick and scanty. In them operation yields the most favourable and dramatic results. In anterior ethmoid disease pus is seen in the anterior part of the middle space, and in the posterior nasal space it is seen winding round the Luschka's cartilage. The position of the referred pain is a useful guide to anterior cell disease. It is assumed that cases of optic neuritis due to causes other than nasal sinus disease, such as cerebral pressure, cysts, etc., of the pituitary fossa, testicular syphilis, or nephritis, will not come into the hands of the rhinologist, but he should be able to say quite definitely whether or no his help will be of use. If the relationship of the rhinologist and the ophthalmologist had been closer in the past, as present-day knowledge impels it to be, then Mr. Rudyard Kipling would have wrought a happier ending in his book *The Light that Failed*.

#### OPERATION

I remove as little as possible of the middle turbinate bone. Anterior turbinectomy is all that is necessary. In a punch forceps and a small ring knife to open the cells. Complete excision may be necessary, and I have even felt the instrument to be in contact with the soft tissues of the orbit. Ecchymosis of the eyelids sometimes follows, it causes no inconvenience to the patient and is soon absorbed. I use lavage for some days previous to operation, if improvement takes place then no operation may

be necessary. An important matter in the after-care of these cases is warmth and free ventilation. If I quote the notes of two cases I think it may be sufficient.

## CASE I

I was sent for on July 1st to see Mrs. J., aged 82. She complained of pain in the left eyeball and along the superior maxilla and almost complete blindness of the left eye. There was ptosis of the lid and the eyeball could only be moved slightly outward and downward; the pupil was contracted. I referred her to Mr. Lott, who reported well marked optic neuritis, central scotoma, paralysis of the third nerve and slight proptosis; he suggested that I might find some nasal trouble. She gave a history of an influenza cold in her head some few weeks previously. Examination showed swelling of the middle turbinate with mucopurulent discharge in the middle anterior part of the space, and in the post nasal space over the Eustachian cartilage, the maxillary antrum was dull. I advised operation as a possible cure. She consented and three days later, under general anaesthesia, I completely everted the anterior cells up to the soft tissues of the orbit. There was ecchymosis of both eyelids. Six weeks later she had completely recovered her sight and movement of the eyeball and ptosis and proptosis had disappeared.

## CASE II

F. C., a gardener, aged 22, was admitted to the eye department of the hospital on October 11th, 1924. Receding optic neuritis of the left eye was diagnosed. He complained of severe supra-orbital headache and occasional occipital pain, that he felt giddy, was sleepy at times and of nausea. On examination I found slight mucopurulent discharge coming from under the anterior end of the middle turbinate bone. In the post nasal space pus was seen winding round the left Eustachian cartilage, there was a similar condition on the right side but less marked. The report as to vision was R.V. = 6/5 (part) L.V. = 6/36. There was slight hyperaemia of the left disc, physiological pit filled in, and lamina not visible.

On October 12th left vision = 6/60. The following day, under general anaesthesia, the anterior ethmoidal cells were opened, right and left gently curetted, both maxillary antra burred and pus evacuated from the left.

On October 16th left vision = 6/36 and on October 27th 6/18. On April 23rd of this year it was 6/12. There is no active optic neuritis now present and vision is practically normal. This case was shown at the laryngological meeting in May, 1925.

## ARTHRITIS DEFORMANS OBSERVATIONS ON ITS ETIOLOGY AND TREATMENT

(Preliminary Communication)

BY

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Under the term "arthritis deformans" (Vuchow) we have included all forms of non-specific hypertrophic or idiopathic, active or inactive, arthritis which we have encountered in a routine investigation of upwards of fifty cases, seen in our wards and privately. This investigation has been conducted from several sides.

1. *Clinical*.—Daily observation has been made in the wards for as long, in some cases, as six months.

2. *Bacteriological*.—The joints have been opened (T. P. McM.) in a large proportion of cases, and from them an organism has been recovered (L. S. A.) which is identical in every case in its cultural and biochemical features. This organism does not correspond to any organism which has been previously described in association with this or any other disease, in so far as we have examined the literature. In only one case has it been recovered from the synovial fluid, in all the others it has been isolated from either the membrane or articular bone. No lesions have as yet been produced in animals, so far only the intravenous inoculation of rabbits has been attempted. Nothing constant has been isolated from foci of sepsis, faeces, urine, blood, or fasting stomach contents.

3. *Metabolic*.—Routine examinations have been made (L. C., H. S. P.) of gastric secretion, basal metabolism, acid-base ratio, renal and hepatic efficiency, and of glucose tolerance. The outstanding features, so far, appear to be the large proportion of cases showing achlorhydria or hypochlorhydria, the practically universal diminution of carbohydrate tolerance, and the relative absence of acidosis, renal or liver defects, or of changes in the basal metabolic rate.

4. *Therapeutic*.—Apart from correction of deformities (T. P. McM.) and removal of focal sepsis wherever practicable, the only routine treatment employed has consisted in the use of large amounts of 0.4 per cent hydrochloric acid and a carbohydrate-free diet extending over a period of months. Improvement—first by diminution of pain and then by increase of mobility—has been obtained in practically every case, even without the removal of focal sepsis.

## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL.

#### A CASE OF REVERSE PERISTALSIS

A congenitally weak-minded boy, aged 13, recently had an attack of diphtheria, which was treated with antitoxin in ordinary doses. About ten days after his admission to hospital, and after all acute symptoms had passed off, he became very constipated and lost his appetite, his tongue becoming furred and dry. Ordinary aperients failing to produce an action of the bowels, a simple enema was administered. This was retained for about three quarters of an hour, when it was returned unchanged, he vomited at the same time, and the motion noticed in the vomit several pieces of oval brown substance, rather less than the size of a small walnut. On examining these about an hour later I found them to be typical, formed faeces. The boy was then quite comfortable, he had had the bowels moved, though by the mouth, and his tongue had already cleared. He has since made a perfect recovery, and his bowels have become normal after the use of aperients.

The enema appears to have set up a reverse peristalsis which carried the faeces from the colon to the stomach in something less than three-quarters of an hour.

Colwyn Bay

ROBERT E. LORD, M.D., B.Sc. Lond.

#### PROLONGED CHEYNE-STOKES RESPIRATION FOLLOWED BY RECOVERY

The following case seems of sufficient interest to be placed on record.

A male infant 1 month old, was brought to the C.M.S. Hospital Pakhoi, South China, at 11 a.m. on May 9th, 1924. The child was cyanosed, the temperature was 99° F., the pulse was very feeble (160), and the respirations very irregular (50 to 60). As there was some history of cough it was for the moment thought to be a case of bronchopneumonia but auscultation of the chest showed nothing abnormal, and suspicion fell on the alimentary system. The mother, who lived on a junk, said that as she had been short of milk she had, the previous day, given the child a quantity of 'yeet'. This concoction very popular among the local Chinese is made of flour, cane sugar and boiling water. Castor oil was given at once and 3 minims doses of brandy, diluted at intervals.

At 2 p.m. the temperature had fallen to 98° F. and the respirations had become markedly irregular and finally, an hour later, assumed the Cheyne-Stokes type. The temperature rose to 100° F. At night the condition of the child was critical. The breathing cycle was of 7 to 9 respirations, the pulse was very feeble and difficult to count. An injection of digitalin gr. 1/1200 and strychnine gr. 1/1200 was given, and a rectal saline containing 20 minims each of brandy and aromatic spirits of ammonia administered. The latter was not retained it was repeated at midnight and again at 4 p.m. On these occasions it was partially retained.

At 8 a.m. the next day the Cheyne-Stokes breathing was very definite, temperature 100° F. and pulse still running. The child could not swallow water.

At 10 a.m. 2 ounces of saline with the addition of 1/2 minim liq. strychninae was injected subcutaneously. This was followed by a very definite reaction and at noon the temperature had risen to 103° F. The child was then able to swallow a little water. The injection was repeated at 4 and at 9 p.m. and though the cerebral control over the breathing was still inhibited the temperature remained at 103° F. during the day and the length of the Cheyne-Stokes cycle increased to 16.

By the following morning the child was able to take the breast which had been massaged and the milk flow improved. The temperature was now about 102° F. and the Cheyne-Stokes cycle about 30. The breathing gradually became normal and by 4 p.m. after forty-four hours of Cheyne-Stokes respiration had become quite regular. The temperature fell steadily, and five days after admission became normal.

Apart from flatulence which was controlled by small doses of salol the infant made an uneventful recovery, and on the tenth day after admission was discharged. It was then feeding and sleeping normally and the mother had a full supply of milk.

As there is no reason to suppose that the preparation given had not been well boiled and was therefore sterile, it would seem that the child was suffering from an auto-infection which was the cause of the medullary centre being depressed.

A. J. WATSON, M.B., B.S. Dunelm

Leikhoi, South China

### ACCESSORY MAMMILL

A CHINESE woman, aged 25, complained on the second day of her puerperium of two painful swellings situated in either axilla. She stated that she first observed them when 15 years of age, they were then the size of a hazelnut. She consulted a doctor, who diagnosed them as "tumours," presumably lipomata, and no treatment was suggested. As they pained her at regular intervals she went, two years later, to a hospital, where a similar diagnosis was made and their removal was offered, operation was refused.

I found over each of these swellings an accessory nipple, and was able to express a small quantity of milk from each. In the following days the production of milk in both normal mammae was superabundant, and they required support. The accessory mammae shared in this full lactation, were freely secreting, and painful. It was felt that belladonna plasters were contraindicated lest normal and accessory mammae might communicate, and the mother so lose her milk or atropine be administered indirectly to the baby. It was hoped that involution would occur as a result of no demand being made upon their function if they were independent, and this has now taken place to some extent, although milk can still be squeezed from either.

These accessory mammae are perfectly formed, hemispherical, each superficially  $\frac{3}{4}$  inches in diameter (the normal mammae are 7 inches). They are symmetrically situated upon the anterior border of each axilla. The nipple is centrally placed, three-eighths of an inch in diameter.

DOUGLAS D. S. STEWART, M.R.C.S., L.R.C.P.

Northampton

## Reports of Societies.

### AUTO-INFECTION IN NEUROLOGICAL LESIONS

A MEETING of the Edinburgh Medico-Chirurgical Society was held on June 3rd, with Sir DAVID WALLACE, President, in the chair.

Dr CHALMERS WATSON showed two cases of disseminated sclerosis to illustrate some of the points of his communication—The role of auto-infection or auto-infection in the etiology of disease of the higher and lower nervous systems.

The first case was a patient whose illness had lasted ten years, commencing with pruritus affecting the soles of the feet, gradually spreading up to the elbows and thighs, and later affecting the small of the back. This condition remained stationary for a year or two. Later she developed some insensitiveness and certain brain symptoms, but improved after a time in hospital. Now she had a recurrence of her symptoms showing Rombergism and a typical ataxic gait. Dr Watson wished to emphasize the importance of the general medical examination, to find out to what particular strain the patient had been subjected. In many cases the condition which this patient showed was found. She suffered from pronounced pyorrhea and constipation of the seven to eight day type. The urine, in accordance with Dr Watson's experience of most of these cases, was comparatively normal—free from albumin and sugar and practically free from bacteria. The other patient was an ex-serviceman who was perfectly healthy up to the time he contracted a severe dysentery. His signs showed a good deal of disturbance in co-ordination. He had a marked gastro-intestinal lesion, and a specially prepared vaccine produced distinct improvement.

Dr Watson drew no particular conclusions from these results except that they were interesting and stimulating, but his reason for showing the cases was to emphasize the association of these physical disorders with these neurological lesions. He referred to the view of French alienists of a hundred years ago, that mental disorders had their origin in abdominal disorders. This teaching had been largely disregarded, and though neurologists had added much to their knowledge of the symptoms and minute anatomy of disorder of the lower nervous system, corresponding advance in the knowledge of etiology and treatment had not been made.

Dr Watson referred to his views as published since 1900, on the factor of auto-infection taking origin in one or other of the mucous surfaces of the body—for example faulty state of teeth and gums, abnormal conditions of the digestive tract as revealed by physical examination, examination of the stools, and x-rays, and abnormalities in the urine, more especially the presence of bacteria and cells. He referred to the recent work on disseminated sclerosis, and to the conclusion tentatively drawn by experts from it, as to the intestinal tract being the primary source of the toxic agent responsible for the changes in the nervous system.

Dr ROBERT ROBERTSON agreed that in early cases of disseminated sclerosis something could be done for patient by studying their cases from a general point of view. Dr Chalmers Watson indicated. He recounted several cases in which removal of septic foci produced considerable amelioration in the nervous system symptoms.

### Tryparsamide in Syphilis of the Nervous System

Mr DAVID LEES then read a communication—a preliminary note—on the use of triparsamide in the treatment of syphilis of the nervous system. He referred to the composition of the drug and to the fact that it was not a powerful treponemacidal agent, its use in the treatment of syphilis being based on other considerations: (1) a powerful stimulative effect on animal economy and on animal resistance, (2) a high degree of penetrability, and (3) a fair or moderate degree of treponemacidal action which, on account of the unusual penetrability of the drug, was equally available for therapeutic purposes in all parts of the body. Mr Lees said that in the beginning of 1924, by the aid of the Medical Research Council, he was able to commence the treatment of five patients, and up to now eighteen patients had been treated by this drug. All the patients suffered from syphilitic infection of the central nervous system, and showed both positive serological reactions and positive findings in the cerebrobiology of the spinal fluid. With few exceptions all had been intensively treated with salvarsan, mercury and iodides, and other forms of treatment, but none of them had shown that amount of clinical or serological improvement in their spinal fluid which justified any hope for any permanency as a result of this treatment, prolonged in some cases for three or four years. The drug was given intravenously in doses ranging from 2 to 3 grams weekly, the former being the initial dose. Mercury or bismuth was also given. Triparsamide was definitely contraindicated in patients with optic atrophy or other disease of the optic tract or albuminuria. No grave constitutional effects were produced. The immunity to disturbance of the liver was noticeable. One patient had severe jaundice under arsenobenzol. So far he had had 90 grams triparsamide and had shown no evidence of liver trouble. As a result of the treatment the general condition of most of the patients was markedly improved. They developed a sense of well-being, their cerebriation improved, and their power of application to work increased. The most marked change was in the cerebrospinal fluid. The cell count decreased in all cases. The amount of globulin progressively decreased. The cerebrospinal fluid under the Wassermann test became completely negative in three cases within a comparatively short period, averaging three months. Lange's gold sol test showed a marked improvement in every case. Mr Lees said that so far as he had been able to evaluate the drug it seemed to be specially



valuable in meningo-vascular syphilis, in early tabes, and in early general paralysis. It did not seem to retard or control advanced paresis. It did not appear to influence the blood Wassermann reaction to any appreciable extent, and so it would appear that adjuvant treatment with salarsan and bismuth should be given. Mr Lees showed six cases to illustrate his paper.

### EDINBURGH OBSTETRICAL SOCIETY

At a meeting of the Edinburgh Obstetrical Society held on June 10th, the President, Professor B. P. WATSON, in the chair, three interesting papers were communicated to the Fellows.

Professor J. A. KILGORN (Dundee) described a case of abdominal pregnancy secondary to tubal gestation, operated on by him after full term. The case was of interest as there were no abnormal signs during pregnancy, and it was not until the patient was going to the maternity hospital thinking she was in labour that she collapsed and fainted, and was admitted to hospital in a serious condition. The condition was diagnosed and the abdomen opened forthwith. On opening the sac fetal gas escaped, followed by a gush of about two pints of chocolate-coloured fluid, and a dead, but not macerated, foetus weighing 5 lb. was delivered. The placenta was easily peeled off with little bleeding, showing that the foetus had been dead for some time, though it was in a good state of preservation. The sac could not be removed owing to adhesions, and it was plugged with a Mikulicz tampon, which was removed in forty-eight hours. The patient made an uneventful recovery. The probability was that the gestation had occurred in the right tube, and had gradually eroded the upper wall and had passed with membranes intact into the abdominal cavity. Spurious labour probably had occurred one month before operation, as foetal movements had ceased at that time and there was a history of slight pain and uterine hæmorrhage then, the sac had become infected later.

Dr DOUGLAS MILLER described his impressions of a visit to certain American and Canadian obstetrical and gynecological clinics. As most of the chief cities had been visited in Dr Miller's two months' stay across the water, his impressions were of great interest, especially when he came to discuss the various hospitals and their regimes and compared them with those in this country.

Dr GIFFORD KENNEDY described a case of unusually slow foetal heart beat (80 a minute), which continued during a long first stage of labour and during the second stage also, but on delivery the child was found to be absolutely healthy, and nothing abnormal could be elicited on auscultation of the heart after birth.

At the annual general meeting of the Chelsea Clinical Society held at St. George's Hospital, Dr GORDON LANE, the retiring president, opened a discussion on Facultative diagnosis. By this expression he meant the employment of the practitioner's powers of clinical diagnosis without resort to laboratory assistance. He thought that perhaps too much reliance was placed upon certain methods of diagnosis without using that power of observation that was inherent in everyone, to a greater or lesser degree. This was, perhaps, especially the case in the diagnosis of functional derangement of the ductless glands. Dr C. O. HAWTHORNE laid stress on exact clinical methods, but was strongly in favour of describing what was observed, and being very exact in the deductions which were to be made logically from those observations. Messrs FITZWILLIAMS, FORBES, A. R. THOMPSON, and Dr CREWDSOM THOMAS took part in the discussion which followed.

At a meeting of the London Dermatological Society held at St. John's Hospital, Leicester Square, on Wednesday, June 17th, the annual oration of the society was delivered by Professor Dubreuilh of Bordeaux on Chronic sunburn and epithelioma of the skin. The annual dinner was held at the Frodoeur Restaurant, Professor Dubreuilh being the guest of the society.

## Reviews.

### TUMOURS AND CANCERS

If a philosopher, a physician, and a biologist agreed to co-operate in writing about cancer they would, it might be expected, produce a book of an unusual pattern which, if the co-operation were close, might resemble Mr HASTINGS GILFORD'S *Tumours and Cancers*.<sup>1</sup> The closer the co-operation of the three hypothetical authors of the hypothetical book, the more striking would be the resemblance of their product to the volume Mr Gilford has produced, for in it we meet the philosopher, physician, and biologist in every page and every paragraph.

The title of the book gives no indication of its distinctive character, and even the qualification "A Biological Study" adds little to satisfy the curiosity awakened by a glance through the table of contents. Here we notice that the volume is divided into eight books, whose titles are—"Introduction, growth and overgrowth," "Development," "The origin of cancer," "Nature and natural history of cancer," "The cause of cancer," "Cause and prevention of cancer," "Retrospect and prospect." Those who take the plunge to find what it is all about will have to wade to a good depth before their curiosity is satisfied, and it may perhaps happen that, even after reading Books V and VI on the natural history and cause of cancer, they will not find it easy to say in a few sentences what they have learnt.

To understand Mr Gilford's views about cancer we must first appreciate the sense in which he uses the word "development" and its distinction from "growth." "Growth is a quantitative change with no reference to quality. To develop, on the other hand, is to become more intricate, to advance in complexity or quality. Though a thing may grow it does not necessarily develop, and though it may develop it need not grow" (p. 32). "Development either makes for progress or is regressive, with a tendency to work back in the form of a *reductio ad antiquum*. Regressive development is but another name for degeneration" (p. 77). He looks upon development, therefore, as first a progressive and later a regressive change, it is essentially a circular movement, "beginning with integration from inorganic elements and ending in disintegration into inorganic elements" (p. 627). Mr Gilford looks on cancers as variations of the regressive development of single cells or cell groups, whereby they become quasi-embryonic and proliferate. Elsewhere the biologist in him speaks of cancers as composed of cells which have been stopped in their upward development, and as a consequence unduly hastened in their downward development. When the physician enters, cancer is referred to as "Nature's punishment for a biological crime", and when the philosopher steps forward he refers to cancer as the "captain of the degenerations," a motley company which includes defective intelligence, imbecility, idiocy, insanity, diabetes, tabes dorsalis, dementia, epilepsy, neurasthenia, alcoholism, and others. All such degenerations are, the author holds, becoming more common as civilization advances.

Such are some of the distinctive ideas of the book. We do not quote these passages as standards by which the book should be judged, but mention them as indicating its general character, in the hope that what we have said may invite others to study it for themselves. It is stimulating matter to read, because on almost every page some provocative idea or some startling generalization is to be met. In particular, Book III deserves special recommendation, for this scholarly and philosophical essay on normal and premature development is a masterly exposition of a difficult chapter in biology. Having said so much in praise, we feel compelled to draw attention to one fault: the book is unconscionably long. It ought to be read through without too much interruption if the thread of the argument is not to be lost, but how many readers will have the leisure or perseverance to continue faithfully to page 700? If

<sup>1</sup> *Tumours and Cancers*. By Hastings Gilford F.R.C.S. With an introduction by Sir Frederick Keeble (B.L.S., Sc.D., F.R.S., London). Selwyn and Blount Ltd. 1925. (Roy. 8vo. pp. xii + 703. £2 2s. net.)

repetitions had been avoided all the information might have been given in perhaps half the space. If Mr Gilford finds that this imposing book does not reach so many busy people as he wishes, it is to be hoped that he will offer the medical world a more compact and less expensive statement of his views.

### PROBLEMS OF PERSONALITY

A STRINGS of studies by well known American, English, French, and Swiss psychologists has been published in a volume entitled *Problems of Personality* as a tribute to the pioneer work of Dr Morton Prince in the sphere of psychopathology. In his early years Dr Prince wrote a number of papers on general medicine and neurology, but he soon began to take a special interest in abnormal psychology. The *Dissociation of a Personality*, in which the complex disintegrations of an hysterical case are portrayed and interpreted, is probably his best known work, and it is interesting to note that he was writing on hypnotism, post-hypnotic suggestion, automatic writing, and double personality in 1890, at about the time when Pierre Janet published his famous work, *L'Automatisme Psychologique*, in which states of mental dissociation were made the subject of psychological investigation. Dr Prince has undoubtedly done much to arouse interest in a previously neglected sphere of medicine, and he has well deserved the respect paid to him which has now found tangible expression in the publication of this volume.

The studies included in the volume are written by workers in both abnormal and normal psychology, and the subjects chosen by the various contributors naturally cover a wide range. As might be expected, many divergent points of view are expressed, and some of the essays are polemical in tone. The book certainly reveals the extent to which psychology and psychopathology are lacking in that coherence and unity which is found in other branches of science, but its contents indicate that considerable advances have been made in the understanding of the human personality since the days when Dr Prince began his investigations. There is much in this work which the psychopathologist will find of interest.

### PATHOLOGY

DR LUDWIG ASCHOFF, professor of pathological anatomy at Freiburg University, has published a series of lectures which he delivered in the United States during 1924, in a book entitled *Lectures on Pathology*. He appears to have travelled from one medical school to another, delivering memorial lectures and addressing medical societies, fourteen of these lectures are gathered together in this volume. The first is on the reticulo-endothelial system of the body, a theme on which Professor Aschoff can speak with paternal authority, for it was he who, in 1913, first proposed this designation for the reticulum cells of the splenic pulp and lymphoid apparatus and the reticulo-endothelial cells of the lymph nodes, blood sinuses of the spleen, capillaries of the liver lobules, bone marrow, adrenal cortex, and hypophysis. He proposed this name because these cells have in common the function of producing reticulum and of lining sinusoid blood and lymph spaces, they act simultaneously as lining endothelial cells and producers of reticulum. That this conception of the reticulo-endothelial system was correct, and the introduction of a new phrase justified, has been supported by the results of many careful studies in microscopical anatomy, and the term "reticulo-endothelial system" is coming into general use. Professor Aschoff's lecture is concerned chiefly with the significance of the reticulo-endothelial system in blood destruction, blood production, and general metabolic functions. The first lecture makes its chief appeal to the histologist, the second, on the pathogenesis of human pulmonary tuberculosis, to the physician, and the fourth, on pathological fatty changes,

will be welcomed by the biochemist. In fact, Professor Aschoff has something to say to nearly everybody, as a bare mention of the titles of the remaining lectures will show. Of these the more important are those on the morphology of the suprarenals, arterio-sclerosis, ovulation and menstruation, the origin of gall stones, the site and formation of bile pigment, the goitre problem, and renal secretion and renal disease. Dr Aschoff in his preface acknowledges his indebtedness to "various gentlemen" who translated the lectures and assisted in their preparation for publication, and he has been fortunate in their help, for the book reads easily without reminding us that it has been translated from another tongue.

*Pathological Technique* by Dr F. B. Mallory and Dr J. H. Wright, has long been a popular book with laboratory workers, and has now reached an eighth edition. It was first issued in 1897 as a practical manual for workers in pathological histology and bacteriology, has grown with the times, and has been built up into a rather expensive but almost indispensable book of reference. For the information of those who do not know the book we may say that it covers the whole field of practical pathology, having sections on histological methods, culture media, microscopical examination of bacteria and fungi, animal parasites, serological technique, and post mortem examinations. The main differences those familiar with previous editions will notice are that the chapter on blood has been rewritten and now presents both the technique of examination and the clinical interpretation of results, that the divisions devoted to bacteriology and serum diagnosis have been enlarged, and that brief directions have been added for photomicrography and the photography of gross pathological specimens. The book has grown to more than 660 pages, with 163 illustrations.

### OPERATIVE SURGERY

THE fourth volume of Dr W. S. Bickham's treatise on *Operative Surgery* deals with thoracic and abdominal surgery and maintains the even and high standard of its predecessors. The descriptions of the operations, which are on the same plan as in the previous volumes, are detailed and alternative methods are given. On the whole the work is written on conservative lines—that is, methods which have been tried and tested are explained, and although it is well up to date the text has not been allowed to digress into controversial matters. On the big subject of gastric surgery the author quotes mainly the work and methods of the Mayos, Moynihan, Billroth, Balfour, and Kocher, and for statistics draws largely on the work of the Mayo Clinic. How recent the statistics with reference to Rammstedt's operation for congenital hypertrophic stenosis are it would be interesting to know, as the average mortality quoted is about 18 per cent. Perhaps the most disappointing chapter, especially in a book of this kind, which must be mainly one of reference, is that on the surgery of the spleen. Here we find little allusion to the "medical" spleens and their relation to splenectomy. The chapters on the biliary apparatus and intestinal surgery are good in that the illustrations are chosen with special reference to the display of operative technique. In the earlier chapters Trendelenburg's operation for embolism of the pulmonary arteries is described, and also three alternative methods of massage of the heart with their relative values are given.

The first section of the fifth volume is concerned with what is called the colo-recto-anal tract, in it are described the various modifications of the operations for colostomy, excision of the colon and rectum, colopexies and colopexions, haemorrhoids, fistulae, and the congenital abnormalities of these parts. It is surprising to find that, in

*Problems of Personality*. Studies presented to Dr Morton Prince. Pioneer in American Psychopathology. Edited by C. MacFie Campbell, H. S. Langfield, William McDougall, A. A. Roback, and E. W. Taylor. The International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trenchard, Trubner and Co. Ltd. New York: Harcourt, Brace and Co. Inc. 1925. (Demy 8vo pp. xiii + 434 18s net.)

*Lectures on Pathology*. By Ludwig Aschoff. M.D. New York: Paul B. Hoeber Inc. 1924. (Med 8vo pp. x + 363 35 shillings 5 dollars.)

*Pathological Technique*. By F. B. Mallory, A.M. M.D. and J. H. Wright, A.M. M.D. S.D. Eighth edition revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1924. (Demy 8vo pp. 666 163 figures 32s 6d net.)

*Operative Surgery*. By W. S. Bickham, M.D. F.A.C.S. Vol. IV and V and index volume. Philadelphia and London: W. B. Saunders Company. 1924 and 1925. (Roy. 8vo Vol. IV pp. iii + 842 77s figures Vol. V pp. iii + 880 111s figures Vol. V pp. iii + 620 122s figures 50s net a volume £15 the set index volume free. Sold in complete sets only.)

dealing with the question of haemorrhoids, injection with carbolic acid is not mentioned. The major part of the volume is devoted to the genito-urinary tract, it contains a vast amount of information, and the author has not spared himself when dealing with such subjects as plastic operations on the ureters, operations for epispadias and hypospadias, and ectopic vesicle. The modifications described are legion. Textbooks are apt to slur over such subjects as the manner of using cystoscopes, urethrotomes, lithotrites, and evacuators, but here a very satisfactory account is given. In spite of the facilities afforded by ureteric catheterization, Lums's separator still maintains its hold on the textbook. Dr Bickham seems to have a partiality for Kelly's direct method of cystoscopy and ureteric catheterization in the female. It is difficult to understand why separate methods should obtain for the two sexes. If it is necessary to master the details of the cystoscope for the male, it would seem far simpler to apply them to the female as well.

The sixth volume, with a separate volume for the general index to all the volumes filling some 190 pages, brings to a close this vast compilation on surgical operative procedure. The sixth volume, after dealing with operations upon the ejaculatory ducts and prostate, proceeds to describe obstetrical and gynaecological operations. The final chapter is devoted to deformities and disabilities of an orthopaedic nature not included in the earlier volumes. The operations on the prostate are very fully discussed, and the liter methods, such as partial prostatectomy by the intraurethral punch method, and transurethral prostatectomy by various criteria for prostatic obstruction, are described. The gynaecological operations are fully detailed and illustrated, and special attention has been given to the numerous plastic devices which are employed in these regions. Where special instruments are required these are clearly illustrated. The midwifery section deals with delivery, version, Caesarean section, and the surgical treatment of the complications associated with pregnancy.

It must be with a great sense of relief that the author can survey the completion of his task. It has been an immense undertaking, and is thoroughly well done, but the volumes, it appears, are not sold separately, and how many surgeons will care to spend so large a sum as the publishers demand for a single book remains to be seen.

### VOLUMETRIC ANALYSIS

SUTTON'S Volumetric Analysis has been a standard work for many years. The fact that it has passed through ten editions is substantial testimony of the appreciation in which it is held. The reason, we think, is not far to seek. It is a manual of technical chemistry as well as of volumetric methods. There are few chemical operations of a quantitative nature in which some attempt has not been made to subordinate them to a volumetric process, and few that cannot be made by one plan or another to yield trustworthy results in the hands of a practised operator. Some of these, it must be confessed, involve such cumbersome preparation that they are only useful when needed repeatedly, a single demand is more expeditiously discharged by a non-volumetric method. In many cases, however, there is no choice but to resort to some form of volumetric process. It is for these cases that the value of the work is inestimable. The new edition<sup>6</sup> describes methods for the determination of a number of materials not treated of formerly and gives a large choice of methods for dealing with operations provided for in former editions. Published methods of procedure have been multiplied so extensively in recent years that there is a danger of some of the best being overlooked among the multitude and thus omitted from the mere lack of space to include all of them. Instances of such omission were inevitable, but the book has the saving merit of containing within a remarkably manageable space a most comprehensive collection of the directions and data needed for laboratory operations. From our first view of the

variety of subjects treated we expected to find a chapter devoted to methods for the chemical determinations employed in physiological laboratories, but none is the only physiological subject we found in the index. The text of the volume appears commendably free from error, and the quality of its contents will maintain the status which the work has so long held.

### THROAT BIOPSIES

The term "biopsy" was introduced into dermatology by Darier to describe the excision and histological examination of a fragment of tissue from a lesion in a living patient in order to elucidate or confirm a diagnosis. Dr AMY has, in *La Biopsie Clinique en Oto-Rhino-Laryngologie*,<sup>7</sup> elaborated in a substantial volume the application of this principle to oto-rhino-laryngology. The information gained by this means does not necessarily stop at the confirmation or correction of a diagnosis, because the more exact and detailed this is rendered by the aid of histological examination, the more accurate will be the prognosis and the more precise will be the indications for treatment, moreover, in certain cases the progress of the patient and the results of treatment can be checked by repeated biopsies. It is almost inevitable that in such a book the author should appear to claim too much for a particular method, but he quite frankly tells of its limitations, its failures, and of the harm that may follow if it be employed in unsuitable cases.

The exposition of the subject includes the histological as well as the clinical and manipulative aspect, and there are numerous excellent illustrations of the histopathology of the special regions concerned.

The book is overweighted with long case histories, and the author would do well on a future occasion to cut these down ruthlessly and devote even more space to illustrations and histological detail. The book as it is does infinite credit to the industry of the author and to the teaching in the clinic of Dr Lemaître.

### BOOKS FOR NURSES

We cannot always find space to review textbooks written for nurses, but we have received two which we think deserve to be brought to the notice of our readers because they are books which give in a plain and trustworthy fashion the sort of information which is necessary for a nurse's education in her work. The first of these, *Elementary Anatomy and Physiology for Nurses*, by Dr H. CLIFFORD BARCLAY, is a book which has already proved its usefulness, for it has run to a third edition.<sup>8</sup> This well illustrated book explains the structure and function of the body in everyday language, and its teaching is made more easily assimilable because of the homely analogies with which the author explains his facts. Anatomy and physiology can only be rightly understood as sections of the larger subject of biology, a fact of which Dr Barclay frequently reminds the reader. "How can these dry bones live?" is a question which many a medical man preparing to lecture to nurses must have asked himself. A spark of physiology may light the fire, but plenty of biology is needed to feed the flames. Dr Barclay's book is well illustrated, and if the easy conversational style gives it a living interest to nurses we think that this success must be ascribed in chief to his wide biological outlook.

The other book, of larger scope, is the well established *Text-Book for Nurses* by Mr HENRY GROVES and the late Dr J. M. FORTESCUE-BRICKDALE. Since first published in 1912 this textbook has been in great demand, and fresh editions or impressions have been called for no less than ten times. The chief aim of the book, which deals with anatomy, physiology, surgery, and medicine, is to enable the nurse to understand the principles underlying the medical and surgical treatment which it is her duty to assist in carrying

Aub. n. Preface de M. le Prof. Agrégé T. Lemaître. Paris. Vigot Frères (Roy. Bro. pp. vii + 334. 39 figures. Fr. 30).

<sup>8</sup> *Elementary Anatomy and Physiology for Nurses*. By H. Clifford Barclay. M.D. Ch.B. M.R.C.S. L.R.C.I. F.R.C.S. Edin. Third edition. London. Baillière Tindall and Cox. 1924. (Demy Bro. pp. x + 411. 49 figures. 12s. net.)

<sup>6</sup> *A Systematic Handbook of Volumetric Analysis*. By Francis Sutton. F.I.C. F.C.S. Eleventh edition, revised throughout with numerous additions. By W. Lincoln Sutton, F.I.C. and Alfred E. Johnson, B.Sc. London. L.C.C. A.R.C.S.E.I. London. J. and A. Churchill. 1924. (Demy Bro. pp. vii + 629. 120 figures. 35s. net.)

wisely omitted. The medical section of the present third edition\* has been revised by Dr J. A. NIXON and to this section a chapter on hygiene has now been added. We need say no more of the scope of the book than that it covers the syllabus prescribed by the General Nursing Council and provides a good basis for studying for the examinations by which a nurse's knowledge is tested.

While speaking of books for nurses we may mention a useful little pamphlet by Miss Louise KINGHAM, matron of the Weymouth and Dorset County Royal Eye Infirmary, entitled *The Nursing of Eye Cases*†. It will give a nurse a clear appreciation of the relative gravity of accidents to the eye, and enable her to follow intelligently the various ophthalmic operations at which she may have to assist.

### NOTES ON BOOKS

THE volume on the human ciliary diaphragm‡ is the second of a series of ophthalmological monographs written by Professor L. BRIEN of Paris. The first, dealing with the cornea and sclera, appeared about a year ago, the third, on the lens, is announced as in course of preparation. In the volume before us the author includes the whole of the uveal tract anterior to the ora serrata. After a summary of the anatomy and physiology of the structures concerned, the nervous and muscular anomalies of the pupil and ciliary body are dealt with in a very clear and comprehensive survey. This section is the most useful in the book. The remaining chapters deal with the diseases of the region seriatim—inflammations, wounds, neoplasms, congenital abnormalities, sympathetic ophthalmia and glaucoma are also considered as being diseases peculiarly associated with the part in question. The monograph is clearly and concisely written, it is authoritative rather than discursive, it does not enter largely into detail, and never becomes overburdened. The illustrations are numerous, but some of them lack clarity.

The relations of dermatology to general medicine are illustrated in two short essays—on the relations of eczema to internal diseases§ by Professor S. EHLMANN, and on the relation of the genital organs to changes in the skin|| by Dr K. WIENER—both forming part of the series of monographs edited by Professor Jadassohn of Breslau and Professor Pinkus of Berlin. After definition of the term "eczematous diseases" Professor Ehlmann discusses the occurrence of eczema in various metabolic diseases, such as diabetes, the urea acid diathesis and nephritis, and then considers the subject of eczema of the outflow of the alimentary canal and genito-urinary tract. The final chapter is devoted to the description, diagnosis, and treatment of the condition variously known as eczema nummular, neurodermatitis circumscripta, and lichen circumscriptus chronicus (Vidal). Dr Wiener's study deals with the various dermatoses associated with puberty, menstruation, pregnancy, labour, and the puerperium, as well as those attributed to diminution, absence, or pathological increase of the activities of the sex glands. A bibliography of recent literature is appended.

The *Synopsis of Medical Terminology*,¶ by Dr M. J. SEIFERT, is a short dictionary of medical terms. It will be useful to students seeking the meaning of technical terms, and, we hope, a guide to anyone who may be labouring under a desire to coin a new word. To previous generations, well grounded in the classics, this book would have been valued only by the forgetful but to-day, when many students commence their course with less knowledge of Latin and perhaps none of Greek, it is likely that such a dictionary will meet a larger need. The habit of analysing all scientific terms greatly simplifies the study of any subject but since most medical terms have their origin in the Greek and Latin languages this good habit often requires the aid of a dictionary.

\* *Text Book for Nurses* by E. W. Hov. Cleave, M.D. B.Sc. M.S. F.R.C.S. and the late J. M. Fortepene Brickle, M.A. M.D. Oxon. F.R.C.P. Lond. The Medical Section revised by J. A. Nixon C.M.G. M.D. Cantab. F.R.C.P. Lond. Third edition. Oxford Medical Publications. London: H. Milford Oxford University Press 1925. (Demy 8vo pp. xxvii + 645 223 figures 20 net.)

† *The Nursing of Eye Cases* by Louise Kingham S.R.N. London: H. Milford Oxford University Press 1925. (Cr. 8vo pp. 16 1s net.)

‡ *Scintologie Oculaire. Le Diaphragme Iriso-ciliaire. Anatomie Physiologie Pathologie* par Professor F. Ch. Terrien. Paris: Masson et Cie 1924. (Roy. 8vo pp. 240 126 figures Tr. 25.)

§ *Beziehungen der ekzematösen Eruptionen zu inneren Leiden* by Hofrat Professor Dr. S. Ehlmann. Halle a. S. Carl Marhold 1924. (Med. 8vo pp. 56 GM 150.)

|| *Die Beziehungen der Genitalorgane zu Hautveränderungen* by Dr. Kurt Wiener. Halle a. S. Carl Marhold 1924. (Med. 8vo pp. 77 GM 2.)

¶ *Synopsis of Medical Terminology* by M. J. Seifert A.B. M.D. F.A.C.S. New York and London: D. Appleton and Co. 1925. (Demy 8vo pp. 30 3s 6d net.)

for its punctual observance. This book, after some observations on the general principles of medical terminology, gives an alphabetical list of medical suffixes, followed by a similar list of word root and an alphabetical list of prefixes. It occupies only thirty pages and it would perhaps have been more convenient if the book had been bound in such a way that it could be slipped into a pocket instead of being destined for the shelf.

Under the somewhat sonorous title of *Hygienic Fundamentals of Food Handling* an unpretentious little book has been prepared by two American writers, CHARLES THOM and ALBERT C. HUNTER. It contains much miscellaneous information often omitted from books on hygiene—about such subjects as the decomposition of eggs, the preservation of fermentable food, and the canning of fruit. On the other hand, it does not give a very good account of the common type of food poisoning due to the salmonella toxin. In this, as in other American books, *B. botulinus* occupies a much more conspicuous place among the agents which threaten danger to food than it does in English presentations of the subject of food poisoning. We cannot picture any one class of people to whom this book would be particularly useful, but we think that some bacteriologists and medical officers of health, whose duties bring them into touch with problems of the preservation of food, would find it useful for occasional reference.

15 *Hygienic Fundamentals of Food Handling* by Charles Thom and Albert C. Hunter Baltimore: Williams and Wilkins Co. London: Baillière Tindall and Cox 1924. (Med. 8vo pp. 223 23 figure 15 net.)

### PREPARATIONS AND APPLIANCES

#### Kharulphan

THE Kharulphan brand of novarsenobenzol is a preparation made by Messrs Burroughs Wellcome and Co. Snow Hill Buildings, I.C.1, for subcutaneous and intramuscular injection. Its special feature is its great solubility; it dissolves rapidly and completely in its own weight of water or saline. As regards its lack of irritant properties the manufacturers state that it can be injected subcutaneously with a minimum of discomfort to the patient. The activity of the drug has been tested biologically under the arrangements approved by the Board of Trade and the Ministry of Health. This preparation should be found of great value by medical practitioners, for novarsenobenzol can be administered in this form with a minimum of trouble both to the practitioner and to the patient.

#### Hexamine and Methylene Blue

Messrs Burroughs Wellcome and Co. put up in tablets a combination of 3 grains of hexamine with 1/4 grain of methylene blue. The purpose of this combination is to enhance the well known action of hexamine as a urinary disinfectant. Methylene blue has a well marked action as a urinary antiseptic and acts equally well in acid or alkaline urine, whereas hexamine only acts under the former condition.

#### "Vacacneum"

"Vacacneum" is a vaccine prepared from *Staphylococcus pyogenes* and *Bacillus prodigiosus*. It is recommended for non specific vaccine therapy. A complete treatment it is stated consists of eighteen injections at intervals of two days. The makers claim that this treatment produces beneficial results in a number of conditions particularly in tabes and asthma. The preparation can be obtained from Messrs H. R. Napp Ltd., 3, Clements Inn, London, W.C.2.

#### "Otalgan"

"Otalgan" is a 5 per cent solution of phenazono (phenyl dimethyl pyrazolon) in anhydrous glycerin. The preparation is recommended for instillation into the ear for the relief of otitis media. This preparation also can be obtained from Messrs H. R. Napp.

#### An Ultraviolet Lamp

A new lamp for ultra violet radiation or 'artificial sunlight' (to use a term which is becoming discredited) has been introduced by the Medical Supply Association Ltd. (167 185 Gray's Inn Road, London W.C.1). Its distinguishing feature is that the radiation is obtained from an arc burning one pencil of tungsten and the other of carbon though if a more rapid reaction is desired both elements may be of tungsten. The visible illumination with this lamp is of less intense quality than with mercury vapour but there is no doubt as to the effectiveness of the ultra violet radiation. The lamp in the design of which the firm had the assistance of Dr Percy Hall is well constructed. The arc is contained in a polished aluminium hood which is supported on a vertical stand and this is mounted on a non base with rubber tyred castors. It has been stated that the carbon arc is the more useful for general treatment while the tungsten arc has its advantages in local use, as in the treatment of sinuses and discharging gland. This apparatus provides for both general and local irradiations the latter by means of a localizing mask which fits in front of the hood and carries a quartz lens. An extremely easy mechanism provides for horizontal and vertical movements and for a rotary movement around the support, the procedure of striking the arc and adjusting the elements is scarcely less simple than that of operating an ordinary electrical switch. The lamp has, we are informed, been manufactured entirely at the firm's London works.

## ROCKEFELLER MEDICAL FELLOWSHIPS.

## GREAT BRITAIN

The Medical Research Council announces that it has awarded Rockefeller Medical Fellowships, tenable in the United States of America during the academic year 1925-26, to the following

DAVID CAMPBELL, B.Sc., M.D. Glas., Pollok Lecturer in Pharmacology and Therapeutics, University of Glasgow

WILLIAM NORMAN CRAIB, M.C., B.A. Camb., of Good Hope, B. Chir. Camb., House Physician, Guy's Hospital, London

MISS KATHERINE HOPE COWAN, M.Sc. Manch., D.Sc. Lond., Assistant in Biochemistry, University College, London

WILLIAM SIFONRIED DAWSON, M.A. B.M.Oxf., M.R.C.P., Senior Assistant, Maudsley Hospital, London

HOWARD WILLIAM FLOREY, M.B. Melb., B.A. Oxf., John Lucas Walker Student, University of Cambridge

ARTHUR DAVIN RITCHIE, M.A. St. And., B.A. Camb., Lecturer in Physiological Chemistry, University of Manchester

GEORGE PALLING WRIGHT, B.A., B.M.Oxf., Macgregor Student and Demonstrator in Histology, University College, London

Dr Craib, Dr Florey, and Mr Ritchie have been appointed on modified conditions, while holding scholarships or emoluments from other sources. Mr Ritchie's Fellowship is being held during a short period of work in Canada this summer.

## EPSOM COLLEGE

The annual general meeting of the Governors of Epsom College was held on June 26th, with the chairman of council, Dr Raymond Crawford, in the chair.

The chairman said that he hoped this would be a memorable year in the annals of the college and one pregnant of far-reaching results. Increased support from the profession and others had enabled the council to face increased commitments in various directions. In its determination to attain the highest educational level, it had made substantial improvements in the pecuniary prospects of the masters. The year had seen the completion of the rebuilding of the chapel as a memorial to the masters and boys who fell in the war. The new chemical block, thought and talked about for so many years, was now actually in hand, and had been made possible by several generous bequests. The vacated space would afford much needed additional accommodation for classrooms and lecture-room, and for a natural history museum, much better than that they now had. The council was now in a position, by the munificence of a benefactress, to carry out a complete transformation of the existing library, and to make it far more attractive and serviceable to the boys than in the past. The chairman expressed the hope that similar help from some other quarter might be forthcoming towards the equipment of a museum worthy of a school that supplied so many recruits to scientific professions. £500 would solve all difficulties in that direction. Another need of the college was the leveling and extension of some parts of the playing fields, so that all the boys might play their games under more inspiring conditions. The bursar had secured an estimate for the work, which showed that it could be well done for £1,500. These things were beyond the capacity of the normal revenue of the college, which this year was bearing the cost of an extensive substitution of electric light for gas, and which would almost at once have to provide better washing and drying facilities in the Lower School and probably in the not distant future to undertake the centralization of a scattered and wasteful system of heating and hot water supply.

The chairman concluded on a note of gratitude to all who had helped them to their good subscribers, donors, and benefactors, to their organization of local secretaries, which he wished to extend far more widely, to the great medical institutions, the British Medical Association and *British Medical Journal*, the *Tanet*, the Medical Insurance Agency, and numerous Panel Committees, to Mr Gerald Stanley, who had established at his own expense a scholarship giving free education at the college, and to Mr Arthur Chudleigh, who had given to the chapel a silver-plated cross, six candlesticks and vases for the altar, and in which dish

He hoped that the generosity of all these might prove contagious in many quarters.

On the motion of Dr de Havilland Hall, seconded by Sir St Clair Thomson Dr Raymond Crawford was appointed a vice president of the college in recognition of the fact that he had collected over £1,000 for the Royal Medical Foundation attached to the college.

## Pensions and Scholarships

The scrutineers, Dr E. Climson Greenwood, Dr Raymond Crawford, and Sir William Hale-White, reported the successful candidates to be as under

Pensionerships	Votes
* Baynes, Donald	4,755
† Ayres, Edith C.	2,004
† Chatterton Percy	1,468
† Stephenson Hilda	1,440
† Goulston Arthur	1,428
† Willis, Joseph D.	1,399
† Kennedy, Florence A.	1,354
† Shaw, Annie C.	1,124
* Christie pensioner	† Ordinary pensioners
† Pugh pensioners	

## Foundation Scholarships

	Votes
McClintock, John H. T.	10,764
Leathwaite, Christopher	9,809
Emrys Roberts, Hugh M.	9,491
Beck, Geoffrey A.	9,025
Allen, Edward V. M.	8,863
Pinniger, John L.	8,208
Burgess, Christopher J. V.	6,648
Ryle, Ian N.	6,319
Marsh, Thomas A.	6,201
Sanderson, Paul B.	6,026
Wolfenden, Henry C. L.	5,665
Farman, Henry C.	5,095
Kee, Eric M.	4,821

## MENTAL INVALIDS

THE Moulton Lectures for 1925 were delivered in the Royal College of Physicians, Edinburgh, by Dr C. C. Easterbrook, Physician Superintendent of the Crichton Royal Institution, Dumfries, on June 22nd, 24th, and 26th. He took as his subject "Mental invalids."

## The Body-Mind

In the first lecture, on the "Body-Mind," he dealt with the conception of the biopsychic nature of the human organism in health, in bodily disease, and in mental disease. He maintained that the integration of the various parts of the organism into a working unit had been effected by the nervous system at gradually ascending levels of its activity corresponding to the phylogeny of man's adjustment with environment, and was represented from below upwards by the vegetative, sensorimotor, and mental provinces of the nervous system. The first of these in its sympathetic and autonomic parts integrated the biological machinery of metabolism, growth, development, and decay, and differences had to be recognized between sympathetic-tonic and autonomic individuals. The sensorimotor nervous system integrated the motor machinery of the body and its parts, and recent work on the constitution and innervation of the skeletal muscles showed that this part of the system had a bearing on the peripheral explanation of the genesis of emotion. The mental nervous system integrated the mental machinery of the body and its parts, subvocal conscious and unconscious mental activity, and its highest level in the cerebral cortex, unified and expressed the individual, put him in relation with his environment, and regulated his conduct. Consciousness—that is self-consciousness—was to be explained by stimulation of the cerebral cortex from within or from without the body. With regard to unconscious mental activity, man's origin of mind must be regarded as coextensive with his body. The new psychology stressed the importance of feeling, desire, and instincts in human mentation and conduct, and lowered the influence of reason, moral sense, will, and self-control, the higher qualities of mind which distinguished man from animals and had made him the master. The lecturer observed that the terms of physics and chemistry were inadequate in biology, and still more so in psychology, for the terms of each science had their own distinctive meaning, and in man biological and psychological occurrences were unique.

\* See BRITISH MEDICAL JOURNAL, February 28th 1925 p. 422.



### *Clinical Examination, Causation and Prevention of Mental Diseases*

In the second lecture Dr Easterbrook dealt first with the clinical examination of mental invalids, and detailed what he considered to be in ideal form of clinical record. He then went on to consider the causation of mental diseases and their prevention. He expressed the opinion that it was better to regard the two great factors productive of mental disease as a nervous constitution, inherited or acquired, which was a predisposing factor, and stress, which was an exciting factor, rather than, as was commonly done, to speak of heredity and stress. The nervous constitution, inherited or acquired, was the essential causal basis of a mental breakdown, and it was very important that it should be recognized by the individual. The sources of evidence of this constitution were six in number—namely: (1) The presence of some congenital nervous, mental, or moral defect. (2) The occurrence in previous life from infancy onwards of some acquired psychosis, psychoneurosis, or neurosis. (3) The occurrence in earlier life of periodic or persistent morbid tendencies—that is, faulty habits and vices. (4) The presence of an abnormal temperament, either inherited or acquired, which was the most frequent and the most subtle sign of a nervous constitution and specially important to recognize, this might include the unusual development of such qualities as irritability, jealousy, waywardness, optimism or pessimism, etc., or it might take the form of an abnormal conflict between the instincts of the "herd" and of self-preservation. (5) The presence of a nervous or degenerate physiognomy and physique had to be considered, but, in the lecturer's opinion, this was apt to be artificial, and was not of great importance. (6) A family history including the occurrence of mental and nervous diseases and of morbid disposition and habits among the individual's nearest blood relatives. Dr Easterbrook classified the various stresses or exciting factors which might produce mental disease in seven classes, which included direct pathologic stresses involving diseases of the nervous system, indirect pathologic stresses involving bodily disease, metabolic disorders, and endocrine disorders, toxic stresses such as the action of alcohol, cocaine, lead, etc., on the nervous system, energetic stresses, which included external agencies producing shock, exhaustion, and poisoning of the nervous system, hygienic stresses, including privations or excesses in mode of life, biologic stresses, including abnormal changes occurring in the organism during the mental and reproductive epochs and crises of life, and psychic stresses, including excessive mental perturbations, such as prolonged worry, and privations, such as solitude and want of occupation.

### *Classification of Mental Diseases, Curative Treatment*

In the third lecture Dr Easterbrook dealt with the classification of mental diseases, and added some remarks on methods and aspects of curative treatment. He proposed a nosological classification of mental diseases by which they were divided into the congenital psychoses, such as mental defectiveness in its various grades, and the constitutional psychoses, which included melancholia, confusion, dementia, delusional insanity, and the psychoneuroses, etc. He pointed out that the great autonomic feature of these disorders was chromatolysis of the cortical cells, which became unduly worn out, and of which numbers disappeared, the organic psychoses included conditions such as cerebral sclerosis, haemorrhage, tumour, and other gross nervous lesions, the organismal or "bodily" psychoses included a great number of infective and other bodily diseases which produced an indirect mental effect, the toxic and energetic psychoses included the influence of drugs and the various energetic traumatism. The lecturer next considered some aspects of curative treatment. He pointed out in the first place the great importance of the movement which was at present taking place for the voluntary admission of patients to asylums. In 1900 the number of voluntary private patients admitted into the Royal and District Asylums in Scotland had been 84 while in 1924 the number had risen

to 431. This was of special importance in regard to the early treatment of mental disease. He considered that no general hospital or medical school could be regarded as complete without its psychiatric clinic. He attached great importance to the open air rest treatment in active psychosis, and showed plans of buildings specially adapted for this purpose. In regard to endocrine therapy, it had, he said, been found that most glandular extracts in all probability acted simply because of their large nucleoprotein content, and without reference to the particular gland from which they were derived. Thus, however, did not apply to thyroid extract which in large doses continued for a week, produced a marked catabolic effect with loss of weight, when the thyroid administration was stopped at the end of a week, a marked anabolic rebound took place in which the patient not only gained quickly in weight, but in which the mental symptoms were likely to disappear, thus greatly shortening the period of treatment.

### THE HEALTH GOVERNMENT OF GERMANY

The League of Nations, in continuance of its policy of giving information to its constituent members in matters of international importance, has issued two statements on the subject of public health services, one relating to Germany, the other to Austria. They have been prepared, the former by Dr. Gottfried Levy, medical director of the central health office in Berlin, and the other by Dr. Hermann Schloetter. The pamphlets, which contain 60 and 80 large octavo pages respectively, would have been much the better for tables of contents. The subjects dealt with include notification of infectious diseases, the procedure for their investigation, the periodic publication of statistics, the registration of births and deaths, public health legislation and sanitary organization, sanitary equipment, hospitals, sanatoriums, lunatic asylums, etc. the campaigns against tuberculosis and venereal diseases, the protection of maternity and of babies and children, housing, water supply, and drainage, and, finally, the control of foodstuffs. Germany is a federation of eighteen States which possess the right of enacting their own laws, so long as the central authority (Reich) does not use its legislative power.

### *Notification of Disease and Registration of Death*

The reader will find many differences between German and English administration. Notifications of infectious disease are made to the police authorities, and by them are forwarded to the district medical officer, any change of the place of residence of an infected person must be intimated to the police of both areas. In puerperal fever the medical officer may only visit with consent of the householder, which, however, is seldom refused. Where anthrax, glanders, dysentery, or typhoid fever occurs the police may order an official post-mortem examination, "if possible by a doctor," before burial. The Reich has not yet adopted the international system of registering causes of death. The birth of a stillborn child must be notified on the following day to the registrar. Illegitimate births must be notified within a week by attending midwives. A stillbirth is defined as one in which no pulsations of the heart are observable after issue from the womb. As regards deaths in general, "the accuracy of entries in the annual 'causes of death' is in the main ensured by the fact that these statistics extend to all the towns, in which medical post-mortem examination is generally compulsory." Registration, however, is done by non-medical persons, and apparently a medical certificate is unnecessary, in some places post-mortem examinations may be made by barber surgeons or "layers-out." Statistics are given for various States showing that in 25 to 30 per cent of fatal illnesses there was no medical attendance.

### *Health Officers*

Candidates for appointments as State health officials must follow a specified course of study and examination. The subjects include forensic medicine, psychiatry, social hygiene, pathological anatomy, and bacteriology. If a

candidato fails to pass any part of the examination he is not allowed to come up for re-examination more than once. "In Prussia it is a condition of appointment as Kreis (district) medical officer that the candidato should have worked five years as an independent medical practitioner after passing the examination." The word "after" will be noted in this quotation as indicating a conception and scheme quite different from that of this country. The same officer deals with public health and forensic medicine, and must have had considerable experience in general practice.

The English reader will find in the pamphlet a curious reminder of the old practice of affixing warning notices to houses in which there are cases of infectious disease. "The marking shall be in a conspicuous place and shall be in the form of a yellow signboard by day and a yellow lantern by night." These marks are required for typhoid fever and relapsing fever. The campaign against alcoholism occupies an important place in Germany.

In Germany the State authorities have always given the fullest attention to the social consequences of alcoholism—for example, the deterioration or destruction of efficiency, increased debility of health and mortality, undermining of family life, degeneracy in children and increased crime and vagrancy. The following measures have been taken by the Government: the establishment of a Reich monopoly for the production and sale of spirits entailing higher prices and consequently lower consumption; restriction of retail sale on dry days in certain highly industrialized districts; prohibition of the hawking of spirits, encouragement of the establishment of temperance hotels and of the production of non-alcoholic refreshing and stimulating drinks; licensing regulations, control of imports, general popular education, and lastly, legislative measures for placing drunkards under guardians or trustees and confining them in sanatoriums.

A considerable percentage of the surplus proceeds of the brandy monopoly (amounting to 20,000,000 marks in 1922) is applied annually to combating alcoholism and diseases consequent, such as tuberculosis and venereal diseases, to subsidizing the establishment of teetotal inns, young people's clubs, and dairies, to instituting training courses for juvenile welfare workers and officers of philanthropic societies and to educational work (anti-alcoholic exhibitions, touring lectures, etc.). In addition to the State administrations the large private welfare associations also receive considerable financial assistance.

The pamphlet contains information on many other matters of interest, not only to public health officers, but to students of sociology in this country. The pamphlet for Austria contains even fuller details.

## Nova et Vetera.

### THE SALERNIAN RULES OF HEALTH

To wander through what were formerly the abodes of splendour or renown is always a melancholy proceeding, but in no case is this more true than in the case of the modern Salerno. Here is a sleepy Italian town of some forty thousand inhabitants. Few people move in the streets, and those few seem in no hurry about their business. Though the town has no natural attractions in itself, its situation at the head of a bay bearing its own name is exceedingly beautiful. From the sea the ground slopes upwards and reaches to the height of small mountains a short distance away. The oldest part of the town stands on high ground and still retains houses dating back to the twelfth, to the eleventh, and even, it is said, to the tenth centuries. Certainly the cathedral dates from the year 1070 and contains sarcophagi which may yet retain the mortal remains of the Norman adventurers who conquered Apulia in the eleventh century. We search in vain for any remains of the once famous medical schools or hospitals, "while memory watches o'er the sad review."

It was in 1075 that Duke Robert of Normandy, while leading the French and Normans to a crusade, arrived at Salerno and remained during the following winter. The crusade was successful, but the Duke, having received a wound, returned to Salerno to be cured. Either the cure was tedious or dalliance in love caused him to spend a whole year in the town, and this long absence abroad may have largely contributed to his loss of the English crown and to his twenty-eight years' imprisonment.

Though its renown as a centre of medical education has

long since gone, Salerno will remain famous by reason of the poem in rhyming Latin verse entitled "*Regimen Sanitatis Salernitanum*." This was composed in honour of Duke Robert and presented to him in 1076. It was esteemed so highly that no fewer than 100 manuscripts still exist, and over 240 printed editions appeared between 1480 and 1846.

It is really a treatise on all matters relating to the preservation of health (*Conseruandae Bonae Valetudinis Praecepta*), and though it contains the accumulated wisdom of the school the main part is thought to have been composed by John de Milano, who, indeed, in a manuscript of date 1418, is named as the author. It is written in a popular style, and in its original form was comparatively short, the edition of Arnould containing but 326 verses. Later writers have added to it to such an extent that the edition of M. Baudry de Balzac contains 2,300 verses, and that of Rienzi 3,520.

The following extracts have been made from the text of Arnould de Villa Nova, who lived close to Salerno in the thirteenth century, and it is this text which Sir Alexander Crooke published in 1830. It is much the same as that entitled "*Conseruandae Bonae Valetudinis Praecepta* longo Saluberrima Regi Anglorum quondam a Doctoribus Scholae Salernitanae. The Salerne schoole or the Regiment of Health. That is Physiell Observations for the perfect preserving of the Body of Man in Continuall Health. Edinburgh, printed by Andro Hart, and are to be sold at his shop, on the north side of the linc Street, a litle beneath the Crosso Anno domini 1613" (Black letter.)

The Salerno Schoole doth by these lines impart  
All health to England's King, and doth advise  
From care his head to keepe from wrath his heart,  
Drinke not much wine, sup light and soone arise  
When meat is gone long sitting breedeth smart  
And after noone still waking keep your cies  
When moov'd you finde your selfe to Nature's needs,  
Forbeare them not, for that much danger breeds

Use three Physicians still first Doctor Quiet,  
Next Doctor Merri man and Doctor Dret

Long sleep at afternoon breeds slouth, agues and rhumes

Great harmes have growne and maladies exceeding  
By leeping in a litle blast of wind  
So Cramps and Dropsies, Colicks, have their breeding  
And Mized brames, for want of vent behind  
Besides we find in stories worth the reading  
A certaine Romaine Emperour was so kind  
Claudius by name he made a proclamation,  
A seapo to be no losse of reputation

Pleares, apples, peaches milke and cheeso  
Salt-meats, Red Deere Hart, Beefe and Goat all these  
Are meates that breed ill blood and melancholy

Wine Women Baths, by Art or Nature warme,  
Usde or abuse, do men much good or harme

Six things that here in order shall insue  
Against all poison have a secret powre  
Peares Garlick Radish roots Nuts, Triacle, Rew  
But Garlick cheese, for they that it devoure  
May drinke, and eat not who their drinke do brew,  
May walk in aires infected every houre,  
With Garlick then hath power to save from death  
Beare with it though it make unsavoury breath  
And scorne not Garlick like to some that thinke  
It onely makes man winke, and drinke and stinke

Though all ill savours do not breed infection  
Yet sure Infection cometh most by smelling  
Who smelleth still perfum'd his complexion  
Is not perfum'd by *Poet Martialis* telling  
Yet for your lodging rooms give this direction  
In houses where you munde to make your dwelling,  
That nere the same there be no evil scents  
Of puddle waters or of excrements  
Let ayre be cleare, and light and free from faults  
That come of secret passages and vaults

If wine have overnight a surfet brought  
Then early in the morning drinke a draught  
And that a kind of remedy shall yield

(The poem then goes on to describe the kinds of wine and when they ought to be drunk.)

It in your drinke you mingle Rew with Sage  
All poyson is expell'd by power of those,  
And if you would withall lusts heat aswage  
Add to the same the gentle floure of Rose

Would not be sick when the seas do rage  
Sea water drinke with wine before he goes

Of washing of your hands much good doth rise,  
'Tis wholesome cleanly and relieves your eyes

Some to drinke onely water are assign'd  
But such by our consent shall drinke alone  
For water and small beere we make no question  
Are enemies to health and good digestion  
And Horace in a verse of his rehearces  
That water drinkers never make good verres

To show what liberties the translator has taken and how he has  
do additions both here and elsewhere, the original runs

Potus atque sumptus fit edendi valde necesse  
Infrigidat stomachumque cibum nititur fore crustum)

We see the better sort thereof [cheese] doth crite  
To make as it were a period of their meat  
The poorer sort when other meat is scant  
For hunger eat it to relieve their want

To close your stomach well this order sutes  
Cheese after Flesh Nuts after Fish or Fruits  
Yet some have said, beleeve them as you will  
One nut doth good two hurt, the third doth kill

Raw pears are heavy to digest we see  
Drink after Pears thies after Apples order  
To have a place to purge yourself of ordure

Cool damsons are good for health by reason  
They make your intestines soluble and slacke

By Figs are lice engendered, Iust provoked

New Rennish wine stirs urine doth not blude  
But rather loose the belly breeding wind

It [vinegar] makes one melanchol hurts their eyes,  
Not making fat nor mending their complexion  
It lessens sperme makes appetite to rise  
But taste and scent is good against infection

Four special virtues hath a rop in wine  
It maketh the teeth white it clears the eyne  
It adds unto an empty stomach fulnesse  
And from a stomach full it takes the dulnesse

Good dyet is a perfect way of curing  
And worthy much regard and health assuring

The wormes that knowes the wombo and never stint  
Are kill'd and purg'd and driven away with mint  
But who can write thy worth (O soveraigne worme)  
Some ask how men can do while thou dost grow

Rew is a noble hearbe to give it right  
To chew it fasting, it will purge the sight  
One qualitie thereof yet blame I must  
It makes man chaste and women fild with lust  
Fayre ladies, if these Physicke rules be true  
That Rew hath such strange qualites as these  
Eat little Rew lest your good husbands rew  
And breede betweene you both a sinew'd disease  
Rew whets the wit and move to pleasure you  
In water boyld it rids a roome of fleas

For writers old and new, both ours and forren  
Affirme the seed [of green willow] make women chaste and barren

If in your teeth you hap to be tormented  
By meane some little wormes therein do breed  
Which paine (if heed be tane) may be prevented  
By keeping cleane your teeth when as you feed  
Burne Frank incense (a gum not evil scented)  
Put henbane unto this and Onyon seed  
And with a Tunnell to the tooth that's hollow  
Convey the smoke thereof and ease shall follow

Four humours raigne within our bodies who's  
And these compared to foure elements  
The Sanguin Cholier Flegme and Melancholy  
The latter two are heavy dull of sense  
The other are more joviall quick and joly  
And may be likened thus (without offence)  
Lyke fire both warme and moist is Sanguin deare,  
Lyke fire doth Cholier hot and dry appeare  
Lyke water cold and moist is Flegmatique  
The Melancholy cold dry earth is like

The Sanguin gamesome is and nothing nyce,  
Loves wine and women and all recreation  
Lies pleasant tales and newes plays cards and dice  
Fit for all company and every fashon  
Though bold not apt to take offence nor usefull  
But bountiful and kind and looking chearefull  
Inclining to be fat and prone to laffer  
Loves mirth and musick, cares not what comes after

(The poem describes the characteristics of Cholier as being  
violent and fierce, ambitious, proud bountiful, often inebriate, a  
right bold speaker and 'as bold a lark' easily roused to anger,  
having a good appetite, 'yet ever looking pin'd')

In younger yeares they use to grow apace,  
In elder hairy on their breast and face

The Flegmatique Most of no great growth inclining rather to  
be fat and square lazy, not well educated, dreamy, or else still  
spitting to avoid the flegme

The Melancholy Very studious and solitary person apt to be  
hateful to others constant sometimes extreme in love, seldom  
in love, mistrusting, sparing, not daring

New though we give these humours severall names  
Yet all men are of all participant  
But all have not in quantity the same  
For some (in some) are more predominant

If Sanguin humor do too much abound  
These signs will be thereof appearing chiefe  
The face will swell, the cheeke grow red and round,  
With burning eyes the pulse beat soft and briefe  
The veins exceed, the belly will be bound  
The temples and the forehead full of griefe  
Unquiet sleepes that so strange dreames will make  
To cause one blush to tell when he doth wake  
Besides the moisture of the mouth and spittle  
Will taste too sweet and saure the throat to tickle

If Cholier do exceed as may sometime,  
Your eares will ring and make you to be wakeful  
Your tongue will seque all rough and oftentimes  
Cause vomit, unaccustomed and hatefull  
Great thirst, your excrements full of slime  
The stomach squeamish sustenance ungratefull  
Your appetite will sceme in nought delighting  
Your heart still grieved with continuall byting  
The pulse beat hard and swift all hot extreme  
Your spittle sowie, of firewore oft your dreames

If Flegme aboundance have due limits past  
These signes are here set downe will plainly shew  
The mouth will sceme to you quite out of taste  
And apt with moisture still to overflow  
Your sides will sceme all sore down to the waste,  
Your meat war lothsome, your digestion slow  
Your head and stomach both in so ill taking,  
One reeking ever gipping t'other raking  
With empty veins the pulse beat slow and soft  
In sleep, of Seas and Rivers dreaming off

But if that dangerous humor over raigne  
Of Melancholy sometime making mad  
These tokens then will be appearing plaine  
The pulse beat hard the colour darke and bad  
The water thin a worke fantastick biane  
Ialse grounded joy or els perpetuall sad  
Affrighted oftentimes with dreames like visions  
Presenting to the thought all apparitions  
Of bitter helches from the stomach coming  
His crye (the left especiall) ever burning

To bleed doth cheere the pensive and remove  
The raging furies bred by burning love

Make your incision large and not too deepe  
That blood have speedy issue with the fume  
So that from sinnewes you all hurt do keepe  
Nor may you (as I taught before) presume  
In sixe ensuing houres at all to sleepe  
Lest some slight blisse in sleepe cause an apostume

First in the Spring for quantity you shall  
Of blood take twyce as much as in the Fall

In Spring and Summer let the Right Arme blood,  
The Left and Winter for the left are good  
The Heart and Liver Spring and Summer bleeding  
The Left and Winter hand and foot doth mend  
One vein cut in the hand doth helpe exceeding  
Unto the spleene voyce breast and intrals lend  
And swages griefes that in the heart are bleeding

#### The Translator to the Reader

But here the Salerne school doth make an end  
And here I cease to write but will not cease  
To wish you live in health and out in peace  
And ye our Physick rules that frindly read  
God grant that Physick you may never neede

These few extracts will show the scope and intention of  
the poem and that it was well suited to the needs of the  
time in which it was written is evident

W G MITCHELL ROBERTSON, M D, D Sc.,  
F R C P Ed (Barri ter at law)

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## CANCER RESEARCHES

INVESTIGATIONS into the biochemical properties of the blood serum in disease, especially when they come to fruition and prove to be of practical service in diagnosis, are of interest to all clinicians. While still in the imperfect stage they are of even greater interest to laboratory workers, who may by their experiments and criticism develop a more finished and certain technique than had been foreseen by the individual who began the work. On the other hand, the play of instructed criticism may prevent the adoption into practical medicine of a jejune or a fallacious method. The sero diagnostic methods in cancer have been numerous and varied, but none so far has satisfactorily passed the test of reliability. Remembering the many attempts in the past, with their claims pitched high and their accomplishments so disappointing, we approach each new reaction with increasing scepticism if only it would exhibit a human amount of fallibility we should bid it a kinder welcome. Probably in most cases the organisms are aware of the clinical diagnosis before recording the results of their reactions (indeed, in working out the method this must be so at the beginning), and unconsciously they are biased in their interpretations, smoothing out the doubtful findings and dismissing or excusing the palpably adverse. The critical student, unimpressed by the reputed perfections of another's bantling, emphasizes the failures. Not infrequently, too, the number of cases tested or recorded is much too small, or the sample of other diseases is too selected for the real worth of the reaction in practice to be estimated. Now and again a method is propounded which, from internal evidence, impresses the reader as worthy of trial.

We publish this week (p. 4) a communication by Dr. H. J. B. Fry of the Cancer Hospital Research Institute giving details of a sero diagnostic method of his own devising which seems to have been sufficiently well tested to be put before the critics, and for which the claims are modestly stated. It is a simple flocculation reaction that apparently gives sharp readings. The "antigens" (why cannot pathologists agree to use a more accurate designation?) have been prepared from mammary carcinomata, and are composed of the alcohol soluble constituents of the material from which substances soluble in saline and acetone have previously been removed. The alcoholic extract, fortified with cholesterol, is standardized and added to four dilutions of the inactivated serum under test. The tubes are incubated, and a preliminary reading is taken at the end of three hours, the final result being determined after twenty-four hours at room temperature. A positive result is indicated by the appearance of flocculi in the tubes. In a series of 500 cases, comprising malignant and non-malignant conditions, 75 per cent of correct results were obtained, positive results were obtained in 71 per cent of the cancer cases, and negative results in 78 per cent of the non-cancerous, while the serums of healthy individuals in all but one instance reacted negatively. The analysis of the results is interesting.

There are two rather surprising findings in the use of this method. Seeing that the "antigen," at least in its mode of preparation, so closely resembles that of Boidet and Ruelens used in the flocculation reaction for syphilis, it might have been imagined that syphilitic serum would be apt to give positive reactions, but when tested in parallel with the Wassermann reaction Dr. Fry's reaction did not seem to be sensitive in this respect. The latter depends on some other reacting substance present in the serum. The other unexpected feature is that the antigens prepared from the epithelial cell carcinomata of the breast reacted even better with serums from other malignant manifestations than they did with the serums of patients suffering from mammary cancer. In fact, a very low percentage of successes (58) was given by breast cancers, while epitheliomata, as of the skin, oesophagus, bladder, and cervix uteri, showed from 80 to 100 per cent of positive results. The antigen also gave satisfactory results with the serum from cases of sarcoma. Taking all the cases of malignant disease together, the results of this reaction are as good as those obtained by means of the Wassermann reaction in all cases of untreated syphilis. So much for the positive side. On the other hand, the reaction proved fallacious in about 20 per cent of the non-cancerous cases. Perhaps this figure is unduly high, for Dr. Fry has considered as non-cancerous all those cases in which a diagnosis of malignancy could not be established. The sensitivity of the reaction with tuberculous serums, in particular, is unfortunate, but, excluding this disease, the results of the reaction are very promising, and would seem to be very helpful in the diagnosis of clinically doubtful conditions. The further exploration of this reaction by Dr. Fry and others will be welcomed.

Another member of the staff of the Cancer Hospital Research Institute, Dr. E. L. Kennaway, contributes to our columns this week (p. 1) an important paper bearing on the problems of the etiology of cancer. He had previously<sup>1</sup> investigated various fractions of coal tar and compounds derived from tar in order to throw light on the chemical constitution of the cancer-producing factor. The finding of such a substance would have been much more than a mere laboratory triumph, for it might have afforded an insight into the unknown substances which, it must be supposed, are responsible for the induction of malignant processes in general; whether we admit that their function is exciting or merely predisposing. The analysis of coal tar, however, having proved disappointing in this respect, Dr. Kennaway has approached the problem from another aspect. From such compounds of known chemical constitution as isoprene and acetylene he has been able to prepare tar-like products of comparatively simple composition, containing no elements other than carbon and hydrogen, which have proved particularly effective in producing epithelioma when applied to mice. The influence of high temperatures on the formation of carcinogenic substances from coal and petroleum, so important industrially, led him to try if similar substances could be produced from previously living tissues. A tar prepared from yeast had the cancer-producing property. A distillation product from human skin also exhibited the same property. It is obvious that in the living body there cannot be such a crude process in action to produce from the tissues this carcinogenic substance, but it is not beyond the bounds of possibility that

<sup>1</sup> BRITISH MEDICAL JOURNAL, March 29th 1924, p. 564.

"the human skin may be capable of forming very slowly substances which, when required in bulk and rapidly, can *in vitro* be produced from skin only at a red heat" The hydrolysis and oxidation of fats and proteins which take place in the body can only be performed in the laboratory by strong reagents and high temperatures. In discussing the results he has obtained in these interesting researches Dr Kennaway dissents from the views of some critics that the carcinogenic agents, as established by the experiments at the Cancer Hospital, merely act because they are "irritants." There are irritants and irritants some may produce cancer, while many do not. The property of producing cancer is a special property, whether a substance possesses it or not cannot be determined from a knowledge of its chemical constitution or its immediate effect on tissues, but only from the slow, unintentional mass experiment on human beings, or, more directly and speedily, by the set experiment on lower animals.

### CLASSIFICATION OF BACTERIA

ALL bacteriologists will agree that the time has come when more serious effort should be made to classify bacteria in a scientific way, but the difficulties of the task are enormous. The earlier classifications, based primarily on morphology, have proved unsatisfactory. Later, when the botanist stepped in to catalogue these tiny members of his extended kingdom, he neglected the physiological behaviour of too many of them, with the result that his cumbersome Latin titles found no favour with the practical bacteriologist. Meanwhile the philistine pathologist has been a flagrant offender in the eyes of the systematic biologist, because he has simply named his germ according to the disease it produces, and neglected the conventions of both botanists and zoologists. As a rule the biologist has only been interested in the bacillus and the pathologist in the disease.

We have been watching with great interest the labours the Society of American Bacteriologists has undertaken with the object of deciding on some acceptable system of classification. In September, 1917, appeared the preliminary report of the committee, presided over by Dr Winslow, on characterization and classification of bacterial types, and in May, 1920, the final report of the committee was published. In 1923 a committee of the same society prepared a manual of determinative bacteriology, which in general followed the classification suggested by Winslow and his colleagues. These publications constitute a notable advance, and should do a great deal to produce order out of the prevailing chaos.

We welcome a further contribution to the same subject from Dr R. E. Buchanan, professor of bacteriology at the Iowa State College.<sup>1</sup> He has written the first of a series of monographs on systematic bacteriology, to be published by the Society of American Bacteriologists. This is a book of close on 600 pages, devoted to the history of the nomenclature and classification of the groups of bacteria hitherto described. The first chapter is an historical account of the various classifications of bacteria that have been proposed. Thence he passes, in the second chapter, to a discussion of codes of nomenclature and their relation to the problems of bacterial terminology. The third and final chapter, which constitutes nearly

two thirds of the book, contains an alphabetical list of the names which have been proposed for subgenera, genera, subtribes, tribes, subfamilies, families, orders, and classes of bacteria, including casual or vernacular terms which have had more or less extensive recognition. Professor Buchanan has attempted with each name to give the original diagnosis of the term, to discuss its usage by bacteriologists, and to point out whether or not its use is legitimate. Wherever practicable the author has quoted the original description and discussed the comments of subsequent writers. Obviously the compilation of such a dictionary as this has necessitated an immense amount of study, and there is no doubt that it will be extremely useful as a guide to correct nomenclature.

### CENTENARY OF THE HOUSE OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

FOUNDED by Thomas Linacre in 1518, and therefore now in its fifth century, the Royal College of Physicians of London has had four homes, three of them close together in the neighbourhood of St Pauls—in Knightbridge Street (1518-1614), in Amen Corner (1614-1666), destroyed by the Great Fire, and in Warwick Lane (1674-1825). Its move in 1825 had been foreshadowed for some time by the alteration in the character of the neighbourhood, which had become "the wrong end of the town," and by the deterioration of the building. In 1814 the College petitioned for, and succeeded in obtaining from Parliament, an Act to allow it to hold its meetings and exercise its powers within the City of Westminster. But the really effective influence in bringing about the removal was that of Sir Henry Hallford, who was elected President at the early age of 54 in 1820 and remained in the chair for the univalled term of twenty-four years—in fact until his death in 1844. He was physician in ordinary to four sovereigns, and through his personal influence with George IV and the Prime Minister, the Earl of Liverpool, was largely responsible for the grant on the present site of the College in Pall Mall East, then valued at £6,000, for ninety-nine and a half years, this was extended in 1864, during the presidency of Sir Thomas Watson, by an Act of Parliament to nine hundred and ninety-nine years. The architect of the present house, Sir Robert Smirke, R.A., also designed the British Museum, the General Post Office in St Martin's le Grand, and numerous other well known buildings. In 1822, while the new College—which with its fittings cost £25,000—was being erected, George IV showed his appreciation of the character and abilities of Sir Henry Hallford by declining that every future President of the College should for the time being hold the office of physician in ordinary to the King. But this high honour to the College apparently lapsed, for the next President (1844-56), Dr John Aitken Paris, did not receive any Court appointment to Queen Victoria. At 3 p.m. on June 25th, 1825, there was a grand ceremonial opening of the new College, attended by no fewer than five dukes of the blood royal and many other distinguished personages, Sir Henry Hallford, wearing the decoration of the Royal Guelphic Order (K.C.H.) conferred on him that morning, delivered an eloquent inaugural oration in Latin to the three hundred auditors, who were subsequently entertained at a sumptuous collation until about 5 p.m., when the President and some fifty of the ninety-one Fellows solemnly retired to the library to hold the Comitia Majora. The centenary of this opening was celebrated at the College on the night of June 25th, 1925, by a *conversazione*, arranged by the Treasurer, Dr S. Phillips, and attended by some four hundred of the Fellows, Members, and guests, including ladies and some of Sir Henry Hallford's descendants.

<sup>1</sup> *General Systematic Bacteriology*. By R. E. Buchanan. Ph.D. Monographs on Systematic Bacteriology. Baltimore: Williams and Wilkins Co. London: Baillière Tindall and Co. 1925. (Roy. Bro. pp. 597)



The guests were received in the library by Sir Humphry and Lady Rolleston. It is a fine room, and in it are hung some of the most precious of the College portraits—those of William Harvey (by Janssen), Radcliffe (Godfrey Kneller), and Sir Thomas Watson, prints were on view in two rooms, and by the generosity of Lord Ashfield of Southwell three cinematograph shows of nature films were given in the lecture room. The censor's room, the handsome panelling of which dates from 1674, when the house in Warwick Lane was built, contains the fine portraits of Richard Warren (Grimsborough), Linacre, Thomas Sydenham, Sir Samuel Grith, William Heberden the elder, of the *Commentaries*, whom Samuel Johnson called "Ultimus Romanorum, the last of the learned Physicians," Sir George Baker, and of other well known physicians. Altogether the College possesses one hundred and twelve portraits in oils and six thousand engravings of physicians, they have recently been catalogued by the Huxleyan Laboratory, Dr Arnold Clapham—a labour of love, but nevertheless a very onerous task. The walls of the reading room on the ground floor also carry a number of fine portraits, especially the full-length presentments of Sir Henry Hallford (Thomas Lawrence), Sir William Jenner, and Sir Richard Quain. The library, of about forty thousand volumes is particularly rich in old books, more than four thousand dating from before 1600, of these about one hundred were rescued from the College when burnt down in the Great Fire of London. Much interesting information of a personal and even gossip character is given in *The Gold-headed Cane*, written by Dr William Macemichael and published anonymously in 1827. A second edition appeared in the following year. It was supposed to be the reminiscences of the cane carried successively by Radcliffe, Mead, Astle, Pitcairne, and Matthew Baillie. In 1884 Dr William Munk published a much expanded edition carrying the story down to 1858. All these editions are now rather difficult to pick up. In 1915 there appeared from the publishing house of P. B. Hoeber (New York) a fourth edition, with an introduction by Sir William Osler and a preface by Dr Francis R. Packard, the editor of the *Annals of Medical History*, thus, like the fifth edition in 1923, with an introduction and annotations by Dr G. C. Percher, reproduced the text of Macemichael's second. The gold-headed cane, one of the curiosities of the College, reposes, with Harvey's dissecting pointer and other interesting relics, in a case in the large library. The exterior of the College has now, to match the adjoining Canada House opened by the King and Queen on Monday, put on creamy white in place of the sombre hue that has characterized it for many a long year.

#### WOMEN'S WAR MEMORIAL

THE FIVE SISTERS WINDOW in York Minster is one of the most famous in Christendom, there is nothing quite like it anywhere else—nothing, at any rate, on the grand scale. The architect must have been a bold man. The window of five lancet lights occupies practically the whole of the end of the lofty north transept, soaring without tracery in austere simplicity to the roof, the middle light is the highest, the others dropping with the curve of the rich York is not rich in stained glass, and the visitor is constantly drawn back to the crossing of the nave from which the great window is best seen. It is in grisaille—that is, the general effect is a pattern in grey with a few spots of colour. It looks like transparent tapestry, and the story is that five sisters in the thirteenth century embroidered the design. The window had got into rather bad condition, and had been glazed outside, thus the amount of light passing through was diminished. The menace of German bombs

caused it to be taken down, it was then seen that both the glass and the lead mouldings were in bad condition. At this stage the idea occurred to Mrs. Little, a lady residing in York, of inducing women to collect money enough to put it in order as a memorial to women who gave their lives in the war. The appeal was immediately successful, the £3,000 required was received within nine weeks, and enough came in afterwards to pay the cost of an oak screen bearing a roll of honour containing the names. It has been placed in the St. Nicholas Chapel near the window, and has twelve panels bearing altogether 1,400 names. One panel contains the names of the medical women—Laura Foster, Elsie Impey, Sybil Lewis, Isobel Tate, Marion Wilson, Elsie Inglis, and Louisa Woodcock. Each panel is covered by a door, and that to the medical women bears the emblem of the medical profession—the rough stick with the twisted serpent—made from a drawing of the emblem designed for the Gates of Honour the British Medical Association has just put up at the new house. The owner of Rievaulx Abbey, in northern Yorkshire, gave the lead for the restoration, it, therefore, is also of the thirteenth century. All the work was done in the Minster workshops, and the reinstated window was unveiled by the Duchess of York on June 24th. Deputations from all branches of women's war services were present in uniform, and the medical members in academic dress. A procession was formed, which passed through the streets, lined by civilians and thousands of spectators, to the Minster, where a short religious service was held. Representatives were present from the Dominions also from the Home Office, the India Office, the Air Ministry, the Royal Navy, the Army Council, the mercantile marine, Queen Alexandra's Royal Naval Nursing Service, Queen Alexandra's Imperial Military Nursing Service, the Territorial Force Nursing Service, Princess Mary's Royal Air Force Nursing Service, Joint Committee of the British Red Cross and Order of St. John of Jerusalem, Queen Mary's Army Auxiliary Corps, Women's Royal Naval Service, Women's Royal Air Force, Women's Foreign Corps, Women's Land Army, Scottish Women's Hospitals, Friends' War Victims Relief Committee, and Serbian Relief Fund. Miss Frances Evans, M.S., M.B. Lond., who had charge of the French hospital at Abbeville Royumont during the war, represented the Medical Women's Federation. At the same time as the ceremonial was taking place in York, commemoration services were being held in South Africa, South and West Australia, Tasmania, New Zealand, and Canada. The knowledge that these services were taking place made the words of the Archbishop in his address particularly true—"The emotion which unites us here is, as it were, a beating of the Empire's heart."

#### THE CIVIL RESEARCH COMMITTEE

A STATEMENT was made about the functions of the new Committee of Civil Research in a Treasury minute issued last week. It stated that the president of the Committee will be the Prime Minister and the regular chairman to act in his absence a Minister nominated by him. The members of the Committee will be such persons as are summoned by the Prime Minister or the chairman. It is modelled on the Committee of Imperial Defence, and, like it, will be an advisory body without administrative or executive functions. Its duty will be to give connected forethought from a central standpoint to the development of economic, scientific, and statistical research in relation to civil policy and administration, and it will define new directions in which inquiry would be valuable within these limits. The Committee will consider such questions as are referred to it by the Cabinet, the president, the chairman, and Government departments, and the president or chairman may summon for consideration of particular business

such outside economic, scientific, or statistical experts as he may think fit. It will be authorized to refer particular inquiries to special subcommittees, which may include outside specialists as well as expert officers of the department or department concerned. Departmental officers may be appointed to act as secretaries of such subcommittees. The scheme has been approved by the Treasury. The Earl of Balfour (Lord President of the Council), in reply to a question by Viscount Haldane in the House of Lords on Tuesday, said that the Committee was an additional wheel required to complete the mechanism of Cabinet government, but would not substantially modify that government. He specified three directions in which its assistance would be immediately available: it would deal with matters which concerned more than one department, with matters which, though they concerned only one department, were abnormal and raised problems of unrecustomed magnitude with which the fixed organization of the department was not well capable of dealing, and it would afford a convenient method by which the Dominions could be called into counsel at their desire if any question were raised in which they were specially interested. The defects of the existing machinery of government could not be cured by any other method. Royal Commissions conducted important investigations, but their functions were not conducive to rapid administrative action, especially because they had fixed references from which they could not depart, and lacked continuity. If the new Committee was to work well it must be with the full assent and co-operation of existing departments. The Committee would not be entitled to dictate in the smallest degree to any Minister or any Ministerial department, but it would serve to bring departments together to deal with problems no department was capable of dealing with alone.

#### ROYAL MEDICAL BENEVOLENT FUND

THE eighty-ninth annual report of the Royal Medical Benevolent Fund, for the year 1924, is a document we have studied with mingled feelings. On the one hand, we find a record of unselfish and devoted work on the part of a few of our colleagues. On the other hand, it is scarcely a credit to our profession that the income of a charity of this kind should be considerably less than £10,000. It is true that the Fund is rather better supported than it was forty years ago. Thus in 1884 there were 25,321 names on the *Medical Register*, and the income of the Fund was £3,068, in 1924 registered practitioners numbered 49,958, and the income was £9,189. Nevertheless, while the demands on the Fund increase steadily every year, the income grows very slowly, nearly half of it is derived from invested property, subscriptions and donations amounting only to £4,846. While the Committee of Management is able to record an increase of £1,000 in new subscriptions, old subscriptions fell off, from death and other causes, by the same sum. The amount expended in grants (numbering 343) was £5,001, and in annuities (numbering 147) £3,467, the working expenses were £1,254. All current subscriptions and donations are paid into the grant account, out of this the monthly grants are made with which our readers are familiar from the summaries of sad cases which appear from time to time in the columns of the *BRITISH MEDICAL JOURNAL*. Not only do the applications for help become more numerous each year, but the increase in the cost of living makes it necessary to give larger grants than formerly whenever possible. The amount of hardship and even starvation of which many of the older applicants complain is so distressing "that if it could only be made better known to the profession, there would at once be a large wave of benevolence, which would pour money into the funds of the society." Among the ways in which

further support has been sought of late years is the sending out of a letter written by a vice-president or a local secretary and reproduced in facsimile, another is the posting of reminders to those whose subscriptions have lapsed for some time. Acknowledgement is made in the report of the great assistance rendered to the Fund by the British Medical Association in the collection of subscriptions. During 1924 the Association forwarded £1,110, being an increase of £200 on the amount collected in the previous year. A gift of £210 from the Medical Insurance Agency is gratefully acknowledged, and in this connection the Committee of Management places on record its regret at the death of one of its members—Dr G. E. Huship, late Treasurer of the British Medical Association, who was instrumental in obtaining liberal grants to the Fund from the Agency, of which he was chairman for fifteen years. The report includes some account of the work of the Guild, or Ladies' branch of the Fund, which renders invaluable help, it has district representatives who get into personal contact with the grantees, and are able to advise about gifts of comforts in the shape of special foods, clothes, and coals. In a great number of cases, especially where there are children to be educated, the two funds work together, and constant and close co-operation is maintained between them. We commend the Fund and the Guild to the sympathetic notice of all our readers.

#### THE CONSERVATIVE TREATMENT OF ECLAMPSIA

THOUGH there is still some disagreement about the details of the treatment of eclampsia, it appears to be generally agreed that conservative measures are superior to such radical procedures as delivery by high forceps, forcible dilatation of the cervix, and vaginal Caesarian section. Last July Professor Stroganoff of Leningrad presented a paper to the Royal Society of Medicine which included an account of the special chloral treatment associated with his name, it was reported in our issue of July 12th, 1924 (p. 53). Three articles on this subject have now been published in the *American Journal of Obstetrics and Gynecology* for March, 1925. Dr H. J. Stander, who has studied the Stroganoff method in Leningrad, discusses this treatment in detail, and points out two steps in the method which appear to him irrational. He believes that chloroform used in the small quantity stipulated by Stroganoff cannot produce a satisfactory narcosis, and the possibility of chloroform poisoning is a further argument against its use. Dr Stander does not agree with Professor Stroganoff that venesection of 200 to 300 c.c. (7 to 11 fl. oz.) will be of any material value in the lowering of the blood pressure or in eliminating toxins, and holds that it should not be employed at all, or alternatively that larger quantities of blood should be withdrawn up to as much as 1,000 c.c. (35 fl. oz.). Dr E. Speidel compares the Stroganoff method with the treatment advocated at the Rotunda Hospital in Dublin, the McPherson system, and the use of veratrum viride. He suggests that the value of veratrum treatment may have been discounted unduly because too small a dose has been given, and states that Dr Gillespie advises that in antepartum eclampsia 60 minims of veratrine—a standardized preparation of veratrum—should be injected hypodermically as the initial dose, and followed by doses of 15 minims every ten minutes, until there is sighing respiration, copious bilious vomiting, and a soft pulse with a rate of 40 to 60. No other advocate of this remedy appears to have recommended such heroic doses. The treatment recommended by Dr Ross McPherson resembles both the Rotunda and Stroganoff methods to some extent, but he depends entirely upon morphine for the narcosis. Dr Speidel, after trying this method for two years, was disappointed with the

results, the maternal mortality being high and the morphine tending to check elimination by the bowels and to produce pulmonary complications, in spite of the simultaneous administration of atropine. He found, moreover, that the morphine was insufficient as a narcotic, and that manipulations incited convulsions. Dr. Speidel, therefore, favours the Rotunda method, and suggests that reports by the larger maternity hospitals on the systems they employ should be collected annually in order to reach some definite conclusion with regard to the treatment of eclampsia. He considers that every hospital ought to establish a definite routine of treatment so that no time may be lost in dealing with any case. His other recommendations include the following: The eclamptic patient should be treated in a well lit room (not a darkened room, as recommended by Professor Stroganoff), she should lie on her side, with her head low and near the edge of the bed, particular care being taken to prevent the aspiration of secretion into the lungs. No anaesthetics should be used during the convulsions, but the administration of oxygen and nitrous oxide is advised as a preventive measure during manipulations. A hot wet pack, together with the uniform and continuous warmth obtainable by the use of an electrically heated blanket, will secure relaxation and hasten delivery. Venesection to the extent of 500 ccm (nearly one pint) followed by the introduction of 500 ccm of 10 per cent glucose solution, should be employed if the blood pressure is above 150 mm Hg and convulsions continue. Dr. C. L. King recommends the use of morphine, 1/2 grain being given to the patient on admission. Venesection to the extent of 500 to 800 ccm follows, the blood pressure being carefully watched and the procedure discontinued immediately it falls to 130 mm. If only a small amount of blood has been withdrawn and the convulsions have not been checked, this procedure is repeated. Dr. King reports that, as a rule, convulsions cease after this treatment, but if they do not 1/4 grain of morphine is given. He has employed 1 grain or more without harmful effects, and sometimes he uses in addition chloral hydrate and potassium bromide. The stomach and the colon are washed out subsequently. Under this treatment he reports that there has been no maternal mortality. Should labour begin during the treatment it is permitted to continue naturally, if it does not begin he thinks it should be induced, but generally not until convulsions have ceased and the patient's condition has improved.

### THE HEATING OF LIVING ROOMS

THE Fuel Research Board of the Department of Scientific and Industrial Research has just issued a "technical paper" on the heating of rooms, and we have fortunately been able to induce Dr. Fraser Harris to study it for us. It is, he writes, a very good example of the investigation of a familiar, everyday problem by the combined methods of physics, mathematics, and physiology. The object of the research was to ascertain and express in scientific terms the conditions making for comfort indoors when the sources of heat were respectively coal, coke, gas, and electricity. Even "comfort" is a relative term, here it means comfort to one whose occupation is sedentary for several hours together. The observations were carried out in the Westminster Technical Institute. The paper opens with a succinct account of the physiology of the production and the loss of animal heat, and calorimetry generally. The equipment of the experimental room is fully described, as well as are the methods for measuring such variables as

air temperatures, wall and floor temperatures, velocities of draughts, and the total volume of air passing through the room in a unit of time. Radiation from the source of heat was measured in absolute units by a Richmond radiometer and by a Bone-Callander-Lates volometer. British thermal units were used. The distinction is clearly drawn between heating by radiation and heating by convection (heating of air), a subject about which there is a great deal of popular confusion. The experimental room received no direct sunlight, and therefore no heat of solar origin. All factors were investigated: the sizes of the rooms (1,000, 2,000, and 4,000 cubic feet), the number of persons (from one to six), the distances from the source of heat at which the occupants experienced comfort or the reverse ("zones of comfort"), and the relative humidity. Some interesting figures are given in comparing the proportion of heat received by the room with the total potential heat of the fuel or source. This ratio is called the "efficiency", thus, with the open coal fire from 17.5 to 25 per cent of the total heat-energy reaches the room as radiated heat, and 5 per cent more is received in convected air, making a total of from 22.5 to 30 per cent "efficiency", the rest (from 77.5 to 70 per cent) is lost up the chimney. The total efficiency of a modern gas fire is about 55 to 60 per cent—45 to 50 per cent by radiation and 10 per cent by convection. The total efficiency of an electric heater is 100 per cent, 70 per cent of this is radiated and 30 per cent convected. The efficiency of a "radiator" system (hot-water coils) is about 50 per cent. The various factors involved in the problem are stated so admirably that we may quote the paragraph: "The rate at which heat must be delivered to a room in order that its temperature may be maintained at a constant level depends upon the size, construction, and position of the room and upon the external weather conditions. When the heat is first turned on to a room in cold weather there is a gradual rise in the temperature of the air and fabric of the room, the total heat capacity usually being so great that a steady state is not attained for some days. When a steady state is reached, and there is no further rise in temperature of the structure, the amount of heat delivered to the room must be exactly balanced by the amount flowing out by conduction through the walls, floor, ceiling, windows, etc., together with that carried away by the air which passes through the room." The paper contains thirteen tables of statistics and six diagrams (curves). Table XIII is one of the most interesting: it shows the cost in pence for a sixteen hour day to heat by radiation rooms of the three different sizes, and with from one to six occupants, by means of the open coal fire, the open low-temperature coke fire, the open gas fire, and the electric heater. In commenting on this table it is remarked that "for continuous heating by far the cheapest means of providing radiation is an open fire of low-temperature coke, open coal fires are slightly more expensive, gas fires are about 2½ times as dear as coal, and electric heaters are 5½ times as dear as coal." The whole investigation, although carried out on lines of such scientific accuracy, is exceedingly practical, as one of the concluding sentences testifies: "Whatever the method of heating adopted, the cost will be closely allied with the completeness of the insulation of the rooms, and it is of the greatest importance to construct houses in such a way as to avoid high conduction losses." Builders, we fear, give very little heed to this principle in the construction of walls. An air space between two thicknesses of brick and double windows are two practical suggestions made. The pronouncement on hot-water radiators is valuable: "It will be seen that at 50 per cent efficiency hot-water radiators prove to be the cheapest method of heating continuously a 1,000 cubic foot room, but that for a 4,000 cubic foot room an open low-temperature coke or coal fire is cheapest

<sup>1</sup> Department of Scientific and Industrial Research. Fuel Research Board. Technical paper No. 12. The Heating of Rooms: a Comparison of the Costs of Different Methods on the Basis of Warmth Comfort. By Margaret Fishenden D.Sc. assisted by R. E. Willgren B.Sc. London. H.M. Stationery Office. Price 1s. net.

until there are more than three people in the room, when hot-water radiators again become the most economical." In an investigation of so exhaustive a character we would have expected some reference to the method of heating by hot-water piping the walls and ceilings of large buildings known as the "panel system," examples of which are to be found in Bush House, Kingsway, and in Austria House in the Strand. Similarly, the method adopted in Liverpool Cathedral, which is practically a return to the Roman method of heating the floors by means of hot air, might also have been alluded to, particularly since this method attracted so much attention in the press in the autumn of 1924. The data are all given in British units and the decimal system is not used, which will make comparison of the statistics with those of Continental works somewhat troublesome. There is a full bibliography and an excellent index, which occupies no less than four pages out of a total of forty-eight pages for the entire monograph.

#### AN INTERNATIONAL HEALTH CONGRESS

As travelling facilities increase the world grows smaller and more convenient for congresses and conferences, that is being discovered by all classes of the community, and questions which were at one time no more than national have become international, whether the objects are health, politics, religion, labour, or revolution. At the same time, owing to the great war, an enormous share of such wealth as has not been destroyed has been transferred from the Old world to the New, and the idealism which finds so congenial a field in America has opportunity for expressing itself in ways which make for the welfare of mankind. A recent example is to be found in the action of the United Fruit Company, whose headquarters appear to be at Boston, Massachusetts, though its activities must be mainly elsewhere. In 1923 it held a round table conference of nine medical superintendents of its hospitals in Central America. It is claimed, indeed, that the company has transformed great tracts of jungle into fertile and wholesome garden lands, has carried civilization into the tropics, and has been a pioneer in looking after the health and welfare of many thousand employees. The conference of 1923 decided that there should be a larger gathering, and invitations were issued to eminent workers in tropical medicine in the four quarters of the globe to meet at Kingston, Jamaica, on July 22nd, 1924, after the conference finished its work (on August 1st) the members were given opportunity to inspect the health activities of the company in Honduras, Panama, and elsewhere. The proceedings of the gathering at Kingston have been issued in a large and handsome volume,<sup>1</sup> with a preface by Professor M. I. Rosenau of the Harvard Medical School. The contributors from this country included Sir Arbuthnot Lane, Sir Leonard Rogers, Sir James Fowler, Sir Arthur Newsholme, Sir Thomas Oliver, Dr Arthur E. Horn, Professor John W. Stephens, and Dr John G. Thomson. Dr Bunting was present from Toronto, and many other well known authorities. Some seventy papers were read, mostly on subjects of great importance. We do not propose to attempt to give any account of the contents of the thousand pages of *Proceedings*, the striking fact is that such a meeting was held. The United Fruit Company is to be congratulated on the way in which it organized the conference. The volume of *Proceedings*, well printed and well illustrated, is defective in that while it has a table of contents there is no index, so that it will be very difficult to use it for reference on particular points as to which it ought to be available for ready consultation. Otherwise there can be nothing but praise for the enterprise and its outcome.

<sup>1</sup> *Proceedings of the International Conference on Health Problems in Tropical America*. Boston, Massachusetts: United Fruit Company, 1924. (Med. 8vo pp xii + 1010. 16 plates.)

#### THE SECRETARYSHIP OF THE ROYAL SOCIETY OF MEDICINE.

THE Royal Society of Medicine has decided to mark Sir John MacAlister's retirement from the office of secretary, which took effect on July 1st, by appealing for funds to raise a memorial to his great work for the society. What this work has been has already been summarized in our columns. It is anticipated that his numerous friends will gladly contribute, and that Fellows of the society will be anxious to see a permanent memorial of the man to whom the existence of their institution is chiefly due. It is hoped that the memorial will take the form of some portrait in oil or stone. At its last meeting the council selected, from a very large number of applicants, Mr. Geoffrey R. Edwards, B.A. Cantab., to succeed Sir John MacAlister as secretary. Mr. Edwards was educated at St. Paul's School and St. John's College, Cambridge. He studied in Germany to qualify for the Woods and Forests Department of the Indian Civil Service. On his return from India he joined the Royal Air Force as a pilot. While up on active service he was wounded and had to fight in the enemy's country, and was imprisoned in Germany for fourteen months. Subsequently he served on the Repatriation Commission in Germany and on the Inter Allied Aeronautical Commission of Control. On demobilization he was appointed assistant secretary to the National Physical Laboratory, Teddington, where he has had considerable experience in library and editorial work and in organization. He takes up his duties on September 1st.

#### LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

In order to obtain designs for the permanent quarters of the London School of Hygiene and Tropical Medicine to be erected on the site adjoining Keppel Street, Gower Street, and Malet Street, near the British Museum, the board of management of the school in December last instituted a competition limited to five architects who had specialized in the planning and equipment of the type of building required, and appointed Sir Frank Brines, Director of Works at H.M. Office of Works, as assessor. The board, under the chairmanship of the Right Hon. Sir Alfred Mond, M.P., has now unanimously adopted the assessor's award in favour of the design submitted by Mr. P. Morley Holder, and he will be appointed architect for the new building. It will be remembered that the funds for the erection of the new building are being provided by the Trustees of the Rockefeller Foundation, who offered the British Government nearly half a million sterling for site, building, and equipment.

We greatly regret to announce the death, on June 27th, as the result of a motor-car accident, of Mr. Hamilton Drummond, F.R.C.S. Ed., assistant surgeon to the Royal Victoria Infirmary, Newcastle-on-Tyne, and a son of Sir David Drummond, formerly President of the British Medical Association. We hope to publish a memoir in an early issue.

THE Committee of the Royal College of Physicians of London and the Royal College of Surgeons of England is about to appoint a Stierfeld Research Scholar. The emolument will probably be £250 per annum and the tenure three years, at the discretion of the Committee. Applications stating the nature of the proposed research should be sent to the Registrar, Royal College of Physicians of London, Pall Mall East, S.W. 1, not later than October 1st. Further particulars will be found in our advertisement columns.

# NINETY-THIRD ANNUAL MEETING of the British Medical Association, BATH, 1925



Doorway of St John's Hospital (From a wood engraving by Horace Gerrard)

THE ninety-third Annual Meeting of the British Medical Association will be held at Bath at the close of this month, under the presidency of Dr F G Thomson, physician to the Royal United Hospital, Bath, and consulting physician to the Royal Mineral Water Hospital. The Annual Representative Meeting will open in the Concert Hall of the Pump Room at Bath on Friday, July 17th. The statutory Annual General Meeting will be held on the afternoon of Tuesday, July 21st, in the Concert Hall, and on the evening of the same day the new President will deliver his Address to the Association in the Palace Theatre. The twelve Sections among which the scientific and clinical work of the meeting is being divided this year, will meet on the three following days, July 22nd, 23rd, and 24th. The list of Sections and sectional officers, together with the full provisional programme and time table and announcements about hotel accommodation, etc., are published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL this week. On the last day of the meeting, Saturday, July 25th, there will be excursions to places of interest in the neighbouring West Country. We publish

below the fourth of a series of descriptive and historical articles on Bath. The British Medical Association last met in that city in 1878.

## BATH AND THE POETS.

BY

JOHN HATTON,

DIRECTOR OF THE ROYAL MINERAL BATHS

BATH certainly has done its share in inspiring the poetic muse. Whether it is the effect of its waters, or the stately grace of its architecture, or the beauty of its situation, or whether it is that literary interests are here rather more strongly developed than is usual and the stirring of wit on it produces almost a shower of divine sparks, might form a pretty subject for debate. Whatever the cause, this much is certain, poets do write about it. About Bath itself, its springs, its buildings, its beauties, natural and artificial. And the men and women of Bath who live only through their creators' pens, but more vividly to many than those of flesh and blood—what a fascinating and very human company they form. Across the pages of the last five hundred years or more they make a goodly procession, these literary characters of Bath. Chaucer is responsible for their leader

A good wife was there of beside Bath  
But she was some deal dwe, and that was scath  
Of cloth making she had such an haunt  
She passed them of Ypres and of Gaunt

Next comes Shakespeare

Cupid lud by his brand and fell asleep  
A maid of Druis thus advent'ge found  
And his love finding fire did quickly steep  
In a cold valley fountain of that ground  
Which borrow'd from his holy fire of love  
A dateless lively heat still to endure  
And give a seething bath which yet me prove  
Against strange maladies a sovereign cure

It is not only the poets who have been inspired by Bath, the novelists and the dramatists demand a place in the procession. Here, headed by the Strip-violeted Rodenel Pandom, is the queer collection gathered together by Dr Tobias Smollett in the intervals of failing to build up a plot and quarrelling with his professional brethren.

Once everybody knew them, now they are but almost forgotten names, and so they pass disconsolate—Miss Snapper and Miss Snapper, and Narcissa. Mr Freeman and Godfrey Gruntlett. A faint "Hallo!" comes from the fox-hunting Squire, and Peregrine Pickle can still find a few nodding acquaintances. Then, strangely incongruous in such surroundings, and like a faint ghost, for he does not really belong here and is only allowed in our procession because his

spirit was evoked in Bath, comes Robinson Crusoe, for here it is said Defoe met Alexander Selkirk and heard from his lips the story which later he gave to the world as the history of Robinson Crusoe.

Tom Jones and Squire Allworthy are far from shadowy, for both have good Somerset blood in their veins, even if the real Squire Allworthy—for he is almost a portrait—was that great Cornishman, Ralph Allen, who became the Man of Bath. Fielding is naturally well represented, for he lived on the edges of Bath, in Twerton and Widcombe, and was a welcome guest at Prior Park, and so Squire Western comes blustering along, and Tom nearly loses Sophia, and Miss Bridget Allworthy and the Blifils complete a group typical of the West Country when George the Second reigned.

There was a breath of the fresh air of the downs in Fielding's men, and something of the West Country apple blossom in his women, but the artificiality of the town is thick on Christopher Anstey's sprightly, amusing, objectionable B---n---r---d Family. Mr Simpkin B---n---r---d, Miss Prudence B---n---r---d, Miss Jennet W---d---n and Tabitha Ruit, in spite of their long journey, find Bath to their liking.

Two hundred and sixty long miles are we come  
Tis a plaguy long way—but I ne'er can repine,  
As my stomach is weak, and my spirits decline  
For the people say here—be whatever your ease,  
You are sure to get well if you come to this place

for after recovering from their journey and the "Charming sweet sounds both of fiddles and bells," which welcomed their arrival, they soon find that

Of all the gay places the world can afford,  
By gentle and simple for pastime adored  
Fine balls, and fine concerts, fine buildings, and springs,  
Fine walks and fine views and a thousand fine things,  
(Not to mention the sweet situation and air)  
What place my dear mother with Bath can compare?

There seems no keeping *The New Bath Guide* out of anything about Bath, and even if we nowadays can scarcely agree with Horace Walpole that "so much humour, fun and poetry, so much originality, never met together before," this witty, slightly indecent book probably gives the truest



picture we have of, at any rate, a large section of Bath society in the eighteenth century.

Now comes a familiar group, benighted and feathered, powdered and perfumed. Sir Anthony Absolute drinking protestingly his glass of water and bullying his son between each dose, Sir Lucius O'Tigger telling Bob Acres of the very snug lying in the Abbey, Lydia, languishing exquisitely, and Julia distracted by her Fankland, Mr Fag (of Bath), David (of the county), and the useful Lucy, and Miss Malaprop herself, destined to bring Mr Sheridan a more lasting fame than all his eloquence and statesmanship.

Fanny Burney has passed quickly with all the people from  *Evelina*, and then there is another faint whiff of bygone perfume—lavender, surely, this time, clean and with just a tinge of pungency—and Catherine Morland appears, with Henry Tilney, and the General. Bath gave Jane Austen many of her characters, and with her one may still sit in the Pump Room and see the perennial comedy played again and again—the same play, but brought up to date and redressed, as the producers say. Miss Thorpe and Isabella and John Thorpe are there, and Miss and Mr Allen, and James Morland and Miss Tilney are not far to seek.

Next we hear the voice of Cyrus Angelo Bantam, Esquire, Master of the Ceremonies.

"Welcome to Bath sir. This is indeed an acquisition. Most welcome to Bath sir. It is long, very long Mr Pickwick, since you drank the waters. It appears an age, Mr Pickwick. Re-markable!"

This leads in Mr Pickwick himself, the devoted Sam Weller, and those sticklers for the rigour of the game, the Dowager Lady Snaphrugh and Miss Colonel Wugsby. (Miss Bolo has already gone home in a flood of tears and a sedan chair) and Mr Winkle, still suffering some embarrassment from his endeavours to be helpful, and a little group of footmen and fat chairmen and thin chairmen who hurry up to take their places in the procession, wiping from their lips the remains of boiled mutton with the usual trimmings.

More and more figures pass. There is Monsieur Beaucaire and the Incomparable Bellairs, but many are shadowy and have fading names. Victorians and Edwardians and an ever-growing group, the creatures of this present age. So we leave them, with Mr H G Wells's Sir Richmond Hardy and Miss Grammont.

"They went to the parapet above the river and stood there, leaning over it elbow to elbow and smoking cigarettes. Away in some sunken gardens ahead of them a band was playing and a cluster of little lights about the bandstand showed a crowd of people down below dancing on the grass. These little lights, these bobbing black heads and the lilting music this little inflamed centre of throbbing sounds and ruddy illumination made the dome of the moonlit world about it seem very vast and cool and silent. Our visitors began to realize that Bath could be very beautiful—there was Pulteney Bridge with its noble arch its effect of height over the swelling river and the cluster of houses above more beautiful than the Ponte Vecchio at Florence. It is the most beautiful bridge in the world," said Miss Grammont.

The members of the British Medical Association may perhaps have some means of rendering themselves immune to the attacks of *B. pocticus*, *B. bathoniensis*, or the close of the Annual Meeting may see a serious outbreak of such Friewell Odes as Lady Mary Wortley Montagu's beginning "To all you ladies now at Bath." And if a few moments have been snatched from Sectional Meetings and other important matters, to view Bath from Beechen

Chiff and see the grey city in its green cup, someone may say with the eighteenth century John Scott

Bath ere I quit thy pleasing scene  
Thy beechen cliff I'll climb again  
To view thy mountains' vivid green,  
To view th' hill surrounded plain  
To see distinct beneath the eve  
As in a pictured prospect nigh  
Those attic structures shining white  
That form th' sunny crescent's bend

Or it may be after nightfall, when the velvet valley is pink with a thousand points of light, and the city is, as Henry Chappell, the porter poet of Bath, says

Bathed in ghostly light  
Asleep at peace beneath the witching beam,  
Seeming within the soft embrace of Night  
To be the beautiful City of a dream

A great poet can praise greatly, and few finer tributes have been paid to any city than Swinburne's *Ballad of Bath*—too long to quote in full here, and too beautiful to quote in clipped extract.

Many writers have found Bath a congenial place of residence. Frederic Harrison spent the last years of his long life here, Mrs C N Williamson, who has ranged over most of the countries of Europe "Rita," who found in Bath both the characters and setting for one of her most popular works, and that distinguished authority on literature and wines, Professor George Santsbury.

Bath has a famous writer this year is Mayoresse, Madame Sarah Grand, who will assist in welcoming the members of the Association to the city she loves and has made her home.

"I happened upon Bath accidentally" (Madame Sarah Grand has written). "One day the question was, 'Where shall we go for a change?' And one said 'Let's go to Bath the Beautiful.' So we went for a month and at the end of the month we were singing a chorus song of praise like the Lotus Eaters and one said, 'Let's stay for ever in Bath the Beloved.'"

So we stayed, where history, archaeology, and the picturesque jostle each other at every turn where poetry and romance are in the air, and character walks the streets where music holds its own and philanthropy has more than enough to do where the invalid throws away his sticks or forsakes his bathchair in a week, where the provision shops overflow with good things for the gourmet and he may have green peas and new potatoes out of his garden till the end of November. And as to society—surely there never was a more sociable, more hospitable, friendlier place or pleasanter people, or more liberal minded. It is not so Bath and die, but see Bath and live, and let live. Differences of opinion all go into the social stockpot here and reappear as food for conversation. Bitterness dies in Bath of the prevalent sense of humour and love of fun.

### SICKNESS INSURANCE FOR MEDICAL MEN

The risk every medical man runs to a greater or less extent of being stopped in his work by disablement through illness or accident is now realized by most members of the profession. The work of the majority is so personal in its nature that if a man is prevented from attending to it himself he must suffer serious pecuniary loss, both direct and indirect. Physicians, surgeons, and specialists have to depend entirely upon their ability to give constant personal attention to their patients, and the same is true of general practitioners, though perhaps to a lessened extent when they are in partnership. Those who are engaged in the public health service, or who hold institutional appointments, are not exposed to quite the same immediate risks, as frequently the contract of service



The Royal Roman Bath and Cross Bath with Royal United Hospital in the background (From a wood engraving by Horace Gerrard)

they hold with a local authority is adequate to help them through a temporary period of illness or disablement, but if the period becomes prolonged they also are exposed to serious losses. It is therefore incumbent on every medical man engaged in practice to build up for himself a strong reserve fund which can be drawn upon to meet the expenses incurred through disability from accident or illness. Probably the surest and safest way of providing for such contingencies is by an insurance contract. Recent experience has shown, what indeed ought to have been obvious, that the terms of the contract must be very carefully examined and that it should not be concluded without obtaining skilled advice.

An interesting example of how men have helped themselves is provided in the development of what is known as the Holloway group of friendly societies. Members of friendly societies enjoy certain privileges, but have to submit to certain restrictions, which tend to impair a society's usefulness to members of the medical profession. There have also been tried during the last fifty years various methods of protection by insurance companies who have sought to meet the requirements of the medical and other professions. The forms of protection offered by the insurance companies have followed two main lines.

1. An annual contract—that is, a policy providing for a fixed payment in the event of disablement from sickness or accident during a period usually not exceeding twenty-six weeks, together with capital sums payable in the event of death or loss of limbs or eyes. As a rule these contracts can be obtained without any medical examination, and it is possible for either party to terminate the contract at the end of the policy year. These contracts are obtainable at a comparatively low premium but they are of less value to the medical man who desires protection over a long period than to commercial classes with less need for sickness insurance.

2. The non-cancellable contract—that is to say, a policy which providing its conditions are complied with can be continued in force until an agreed age, but not beyond age 65.

The companies granting these contracts have no power to vary the conditions of the policy or exclude any diseases no matter how frequent or prolonged the disablements may be. The permanency of these contracts gives them an increasing value, and they have been very largely taken up by all sections of the medical profession. The policies for which there is the largest demand provide for payment in the event of disablement in one of two well established ways.

The first is by a contract for immediate payment for any disability which lasts more than seven days; the payment continues in full for twenty-six weeks but is then reduced by one-half for the remainder of the disablement up to the termination of the agreed period.

The other is the deferred non-reducible system. Under it there is no payment for the first four weeks, three months, or six months of any disablement, as may be preferred, but the full amount is paid thereafter so long as the disablement lasts up to the agreed age.

Quite recently a new form of policy has been granted, which provides for immediate and non-reducible payments. Whilst attractive this form of contract is unsound in theory. In the first place the statistics upon which the premiums have been calculated do not extend to show a non-reducible benefit, and the companies offering this form of contract are therefore experimenting with this class of insurance. In the second place, such a contract removes the principal inducement to an early recovery from disability, which is undesirable both from the point of view of the company and the assured.

Yet another experiment is being made which has appealed particularly to some members of the medical profession, and should receive careful consideration. It is a practice of the friendly societies to make payment to its members who are totally unable to follow the occupation in which they have been engaged. Some insurance companies have granted contracts of a similar nature to surgeons and general practitioners. It would appear that if it is

possible for a friendly society to grant this form of protection then there ought to be no reason why an insurance company should not do it, but it must be borne in mind that while a friendly society has the privilege of altering its conditions by a vote of its members, there is no such freedom reserved by an insurance company. Once an insurance company has granted its contract it is bound by its conditions. It may sound very attractive to a surgeon to be able to get a sickness and accident policy which purports to issue a definite weekly payment if he is unable to follow the specific side of the profession that he is practising, but it must be recognized that the premiums that are charged for sickness and accident insurance are not calculated to provide for any such risk, and, while it may appear a very desirable contract, it may really be that the company is undertaking liabilities for which no adequate provision is being made. This point is of such importance that it needs to be carefully examined. For instance, supposing a surgeon seriously injured his right hand, it might prevent him from following his ordinary professional duties, and be sufficient to enable him to establish a claim within the meaning of the policy, but when the injury had healed, although he might still be unable to operate, the condition of his general health might not be in any way impaired, and he would be able to devote his knowledge and attention to another part of the profession. He might be unable to earn so large an income as when doing his special work, but he might be able to make good in another direction. An insurance company granting such a policy might have to pay an annuity up to the agreed age, although the policy holder was in a position to make an income in another branch of the profession, and was actually doing so. Some of the insurance companies that have had considerable experience in sickness and accident insurance decline to grant such contracts.

Another effect of this condition providing for total incapacity to follow a specific line of practice is to make possible claims for partial disablement. An experienced actuary has given the following opinion upon this aspect of the subject:

"The sickness portion of a permanent sickness and accident policy only covers total disablement. It is always possible for an additional premium to protect oneself against partial disablement by accident for a sum assured, which is usually one-fourth or at the most one-third of the sum assured payable in event of total disablement but it is not possible to effect an insurance against partial disablement by sickness. It would probably be regarded as rashness in this age of enterprise to predict that any particular condition would never lend itself to insurance treatment but if an exception to an otherwise wholesome rule, viz., not to prophesy before you know, could be made, I should venture to claim that this exception must be that of providing partial disablement benefit under a sickness policy. It is a multifarious condition capable neither of precise statement nor of treatment from the insurance standpoint. The system can only be framed upon general lines and it can only provide therefore for total disablement."

The position with regard to sickness and accident insurance has now reached a stage which calls for the most serious consideration of the profession. The companies that have the longest experience have been operating for about forty years, but they will probably require carefully to observe their experience for another fifteen years in order to obtain trustworthy vital statistics. The selection of risks requires special skill, and the incidence of certain diseases demands constant observation. A conservative attitude towards this special class of insurance is therefore to the advantage of both the general public and the companies.

The oldest companies enjoy large reserve funds, which are periodically valued on a stringent actuarial basis. In life assurance it is always possible to know the basis of the valuation that the company uses, and the same public should be given to sickness and accident funds. There is one office that is always prepared to give this information upon application. In all cases a separate account for sickness and accident funds should be produced. It is hoped that the Board of Trade Committee which is considering the Assurance Companies Act, 1909, will make it compulsory upon all companies transacting permanent sickness business to make returns to the Board of Trade.

in the same manner as life companies do at the present time

It is desirable that a medical man, before entering into any contract for sickness and accident insurance, should avail himself of the guidance that is obtainable from the Medical Insurance Agency (British Medical Association House, Tavistock Square, London, W.C.1)

It cannot be too often emphasized that, just as a medical man who intends investing funds seeks either the counsel of his bank manager or stockbroker, from whom he expects an independent opinion, so he should seek in like manner the aid of the Medical Insurance Agency, which exists to give him free, independent, and impartial advice upon all insurance matters

## INTERNATIONAL CONGRESS OF RADIOLOGY

### FIRST DAY'S PROCEEDINGS

THE International Congress of Radiology began its heavy programme of work on July 1st at the Central Hall, Westminster, under the general presidency of Mr C THURSTON HOLLAND of Liverpool. The members attending, exceed by at least one hundred the anticipations of the organizers. Up to the eve of the Congress close upon 500 members had registered, more than half of whom came from abroad. In the first list of 350 arrivals, 60 were from Germany, 30 from France and Belgium, 12 from Italy, and just over 50 from the United States. Constantinople and Buenos Aires and Moscow were all represented, and a contingent came from the State Institute of Roentgenology, Leningrad.

On the evening before the Congress a reception, which was very largely attended, was given by the executive of the Congress at the house of the Royal Society of Medicine. Members and their friends were received by Mr Thurston Holland. An exhibition of old books, prints, and curiosities in the possession of the Royal Society of Medicine had been arranged, there was a cinematograph display, and Dr Murray Levick gave a lecture, illustrated by his own photographs, on the habits of the Adello penguins in the Antarctic.

#### OFFICIAL OPENING CEREMONY

H.R.H. the DUKE OF CONNAUGHT opened the Congress officially on Wednesday afternoon, July 1st. Among those on the platform, besides the President and officers of the Congress, were Mr Neville Chamberlain (Minister of Health), Lord Dawson of Penn, Sir Humphry Rolleston, and Sir George Newman. Delegates were introduced representing the radiological societies of the Dominions and of various foreign countries.

The Duke of Connaught said that it was an eloquent tribute to the value of Roentgen's discovery that, thirty years afterwards, such a large body of scientists and medical men should meet to discuss the many directions in which the science had developed. The dreams of the earlier days might not have been all fulfilled, but there were reasons for believing that with the more intelligent appreciation of the effects of x-rays more striking advances might be made. The consuming question that interested scientists and medical men the world over was the discovery of the cause and treatment of cancer. No surer method of promoting cordial international relations could be imagined than the meeting in congress of the leading intellects of all countries. His Royal Highness went on to speak of the value of mobile x-ray outfits which could be taken to the patient's bedside, of the work of the British Institute of Radiology, and of the research on radium which was proceeding in this and other countries.

Mr NEVILLE CHAMBERLAIN welcomed the members on behalf of the Government. He said that few could have anticipated in the early days of Roentgen's discovery what it meant for mankind. Such succeeding discoveries in this province seemed only to lift the curtain a little higher, and to indicate still further possibilities opening out. He did not believe that advances could be made except by continual research and experiment, to the interplay of

minds devoted to these problems. It was the duty of his department to do all that it could to encourage research. At present this was hampered, so far as radium was concerned, by the fact that radium was both scarce and dear. Mr Chamberlain went on to say that the path of exploration was always strewn with wreckage, and very often with the bones of explorers, and radiology had been no exception. Not a few of the pioneers had fallen victims to dangers which at the beginning were unrecognized. All honour to such pioneers! They had moved the rocks for others. He did not doubt that when the Congress closed all its members would feel that another step had been taken towards further triumphs for the benefit of humanity.

Sir HUMPHRY ROLLESTON conveyed the thanks of the Congress to His Royal Highness, and went on to speak of the British Institute of Radiology and the hopes and ambitions it represented. He could not help feeling that the Congress and the Institute were very closely related. The Congress was in the butterfly stage, and worked intensively for a short time, but the Institute was in the larval stage and carried on its work from day to day. The Institute deserved all possible encouragement and help, for it was a sort of central bureau where all matters connected with radiology could be stored, discussed, and provided to any radiologist or other medical man requiring them. The Institute would become the centre of a worldwide organization for systematic research.

#### INTERNATIONAL UNITS AND STANDARDS FOR X-RAY WORK

A joint meeting of the Sections of Physics and Radiology was held on Wednesday morning to discuss the subject of international units and standards for x-ray work.

Sir WILLIAM BRUCE, in a brief introduction, referred to the difficulties surrounding the problem, which he said, must be settled on the basis of compromise. There were three factors which must be isolated: (1) the determination of a scientific unit, which was a matter of physics pure and simple, (2) the determination of a standard or description of an apparatus which could be used for comparison, (3) the comparison of this standard with the results obtained in treatment. It was of no use arriving at any one of these factors to an extreme conclusion and leaving the others indefinite, because, just as the strongest part of a chain was its weakest link, so any indefiniteness in any one of these divisions would govern the value of the work in others.

Dr H. BLEIBERG, speaking in French, said that radiologists must look to radium to supply the physical unit of dosage for fundamental standardization. He called upon radiologists of all countries to attempt a standardization of dosage which might be common to them all, and to elect an international committee for the study of this very important question, such committee to be composed of medical men and physicists.

Dr N. S. FINZI (London) seconded this proposal. The most difficult question, in his view, would be the setting up of a biological unit on account of the numerous factors, such as wave lengths of radiation employed and duration, which had to be reckoned with. If radium were used in standardization, the beta radiation should be eliminated.

Others who joined in the discussion were Dr W. ALTSCHUL (Pisa), Dr I. SER SOLOMON (Paris), Dr J. H. SHAW (Cardiff), and Dr H. MOORE (London). The last-named expressed the opinion that the most important step was to provide radiologists with a generating apparatus with which they could get an x-ray beam of definite quality. Given this factor, the problem of dosage would solve itself. The solution was in the hands of radiologists if they chose to scrap their present apparatus and to install a constant voltage apparatus, the only deterrent was cost.

A motion to elect an international committee for the study of this question was carried.

#### Periodical International Congresses

The international delegates conferred during the meeting, and it was agreed that the Congress should be constituted the first International Congress of Radiology, which means that it is to be followed by others in different countries.

## Victoria.

[FROM OUR SPECIAL CORRESPONDENT]

### NEW HOUSE OF THE VICTORIAN BRANCH

THE Victorian Branch of the British Medical Association decided a short time ago to build itself a new house. It has recently been completed and was formally opened on May 20th. It is of concrete, in three stories, and has cost £11,000. In the entrance hall a memorial has been erected to members who fell in the great war, on the same floor is a meeting hall capable of seating 350 people. On the first floor is a library, a reading room, the council chamber, and offices.

At the opening ceremony the chair was taken by Dr Argyle, President of the Branch, who was accompanied on the platform by the Attorney-General of Victoria, the Lord Mayor of Melbourne, the two vice-presidents of the Branch, the vice-president of the New South Wales Branch, the Dean of the Faculty of Medicine, Melbourne University, the chairmen of committees, the honorary secretary, and the chairman of the Building Committee. Dr R. H. Fotherston, convenor of the Building Committee, gave a brief history of the old hall and the circumstances which led to the erection of the new building.

#### President's Address

The President (Dr Argyle) then gave an address. In 1879 the Victorian Branch, he said, was founded with 62 members, to-day it had 1,185. He then sketched the development of modern knowledge since the Branch was founded, referring in particular to the establishment of antiseptic surgery by Lister. The system came into use in the Melbourne Hospital in the early eighties, and by a process akin to revolution it had now been replaced by aseptic methods, the use of which rendered it possible for a surgeon to operate on every region of the body with practically no risk at all from the operation. He then touched upon some of the developments of bacteriology which had enabled preventive medicine to become a real force in the community. Typhoid fever had practically vanished in large cities. In Victoria in 1878 the deaths from that fever were 50.7 per 100,000, to-day the rate was only 2 per 100,000. With adequate sewerage in the country towns the disease would vanish altogether. Deaths from diphtheria in Victoria in 1878 were 65.4 per 100,000, to-day the rate had dropped to 7 per 100,000. Tuberculosis in 1878 claimed 1,678 per 100,000, to-day only 71.1. Within the same period physiology and pathology, assisted by biochemistry and physical science, had moved forward in no uncertain way, investigators were busy in the diagnostic field, and in epidemic and tropical diseases the work of biological inquiries had reaped a rich harvest. The greatest contribution to medicine by the physicians was the discovery of the x-rays by Roentgen in 1895. It was almost impossible to overestimate the value of the method in both medicine and surgery. No hospital was complete, no textbook up to date, no practitioner safe, if the x-rays were not regularly used as part of the daily routine for the accurate diagnosis of injury or disease. The discovery of radium by M. and Madame Curie in 1898 added yet another physical weapon for the treatment of cancer and allied conditions. Many puzzling diseases of nutrition were now known to be deficiency diseases due to the lack of some element in the food supply. But though much had been done there remained much to do, especially in regard to tuberculosis and cancer. The net result of all the discoveries and activities during the last forty-seven years was remarkable. In Victoria in 1878 the death rate per 1,000 was 14.56, in 1924 it was 10.05. The medical profession in Victoria had done its part in the great war of 956 members, 407 enlisted for active service (about 42 per cent), and of these 43 (10.5 per cent) died on service. One-third of those who remained behind also did war service.

In declaring the building open Dr Argyle used the words of Dr Osborn Taylor to dedicate it: "To the noble profession, whose gospel is the healing of mankind, whose honour is the Hippocratic oath."

The Attorney General (Mr Eggleston), after congratulating the Branch on its acquisition of such a fine home, said that the general community did not fully realize the extent of its indebtedness to the medical profession, or the magnitude of the sacrifices which members of the profession frequently made.

The Lord Mayor of Melbourne expressed the congratulations of the citizens, and Dr C. G. Laws spoke in the name of the New South Wales Branch, of which he is vice-president. Dr Douglas Stephens, senior vice-president of the Victorian Branch, also responded, and Dr J. Newman Morris, on behalf of the members of the Branch, presented Dr Fotherston with a cheque in recognition of his services for the new building. Afterwards a reception was held in the library.

## Scotland.

### MEMORIAL TO SIR WILLIAM MACCOWEN AT ERSKINE

AT the Princess Louisa Scottish Hospital for Limbless Sailors and Soldiers at Eiskine there was unveiled on June 20th a memorial to the late Sir William Maccowen. As one of the pioneers in the founding of this hospital, Sir William devoted himself with great energy and enthusiasm to the work carried on there during the war, and it was largely to his splendid services and surgical skill that the institution owed its success. The memorial takes the form of a mural tablet, designed by Mr G. H. Paulin, and is placed in the entrance hall of the main building, and upon it due recognition is made, not only of his association with Eiskine, but also of his outstanding achievements and world-wide fame in the realm of surgery. The tablet is of bronze set in marble, and bears the following inscription:

"In honour of Sir William Maccowen C.B. D.L. F.R.S., Honorary Surgeon to the King in Scotland, Regius Professor of Surgery in the University of Glasgow, a world-renowned surgeon, a great man to whom this hospital owes its inception to whose untiring labours its success is due. Who within these walls, by his skill restored to active and useful lives many of those maimed and broken in the Great War."

Over the tablet was placed a wreath designed by H. R. H. Princess Louise, who had hoped to attend the ceremony, but whose health did not permit of the journey north. In her absence the unveiling was performed by Principal Sir Donald MacAlister, Bt., who delivered a graceful and eloquent oration on Sir William Maccowen and his services to the hospital, in the presence of a large company. Sir John Reid, in handing over the memorial to the custody of the Lord Provost of Glasgow on behalf of the hospital, read a personal letter which he recently received from Princess Louise, in which Her Royal Highness expressed her great regret that she could not attend and take part in the proceedings. "It is a very real disappointment to me," she added, "to have to write this to you, as I have been counting all along on coming to be among you all, who have so kindly wished me to be with you for this occasion at Eiskine House, which I am proud of looking upon as my hospital, for, as you well know, I take a true and affectionate interest in it. It was Sir William's special child, which he created and put his whole heart and soul into." Sir John Reid joined in paying tribute to the work of Sir William, as did also Lord Provost M. W. Montgomery in accepting custody of the memorial. Dr James A. Adams spoke in the name of the medical profession. Dr J. A. C. Maccowen, speaking on behalf of Lady Maccowen and his sisters and brothers, expressed appreciation of the graceful tribute that had been rendered to his father's memoir. In proposing a vote of thanks to the Lord Provost, the Marchioness of Ailsa said the tablet spoke with admiration and gratitude of Sir William's services to the hospital, but the real memorial would be the carrying to completion of the ideal he so magnificently conceived of establishing it as a permanent national institution for the benefit of disabled sailors and soldiers.

## WILLIAM AND JOHN HUNTER MEMORIAL AT GLASGOW

The University of Glasgow on June 24th conferred honorary degrees on a number of distinguished men, and afterwards another ceremony took place at which homage was paid to the memory of two great medical brothers, William and John Hunter, who were natives of East Kilbride, the former a student and graduate of Glasgow University. Both proceeded to London, where they achieved great distinction, one as a physician and the other as a surgeon. In common they were creators of great and invaluable museums. William gave to Glasgow University the Hunterian Museum, remarkable not only for collections in anatomy, natural history, and a fine library of books and manuscripts, but also for a world renowned collection of coins. John Hunter, "the pioneer of all that is philosophic in modern biology," presented his museum to the Royal College of Surgeons of England. The memorial to the brothers has been erected in the University grounds on a lawn facing University Avenue, and forms a striking piece of architecture. Built of white stone, it is enclosed in a three-sided rectangular stone court formed by low walls having stone ledge seats, and is approached by a short flight of steps. Rising from its rear wall is the main feature of the monument—a squat stone with two shoulders of panelled wall. On the upper part of the centre stone are the arms of Glasgow University, below which is the following inscription:

"In gratiam memoriam fratrum de scientia naturali et medendi arte Optime meritorum Gulielmi (1718-1783) et Johannis Hunter (1728-1793) quorum uterque famae venitor aeternae hic collegium chirurgicum Londini regum ille Glasguae alumnus idem et dator matrem studiorum Universitatem musaeo condito ornavit

On either side of the main piece are chiselled heads of the two brothers, while on the east and west ends respectively of the higher walls are the arms of the Royal College of Surgeons of England and the Royal Faculty of Physicians and Surgeons of Glasgow. The origin of the memorial dates back to 1893, when the idea was first mooted by the late Dr. George Ritchie Mathew when publishing a biography of the two brothers. Unfortunately, before any steps could be taken in furthering the idea Dr. Mathew died, but his suggestion lived, and has now matured in the present memorial. Mrs. Mathew, his widow, who strongly supported the proposal and has been instrumental in having his wishes carried out, had the privilege, as was most fitting, of unveiling the monument. On behalf of the subscribers Dr. David Murray, chairman of the Memorial Committee, formally asked the University authorities to accept custody of the memorial, "to commemorate two Lanarkshire men who by their own genius, without the aid of powerful friends or by the chances of fortune, attained to the highest eminence, and from whose careers we should learn that whatever is to be of enduring value must be the outcome of individual effort, of self-reliance, and of unremitting labour." Sir Donald MacAlister gratefully accepted custody of the memorial in the name and by the authority of the University Court. In so doing he said that the University, though its field of service was wider than the city, the west country, or the Scottish homeland itself, had yet a special relation and responsibility to these. It had to keep before the eyes of the citizens of Glasgow, and of actual and potential students who frequented its precincts, visible tokens of the things it stood for and sought to foster. Its buildings should be stately and suggest the dignity of learning. Its grounds for health, exercise and recreation should be ample and seemly, and so manifest the fostering care of Alma Mater for the well-being of her alumni. Its public museums should be comprehensive and well furnished, that minus the most various might find therein matter to stimulate interest and evoke intelligent inquiry. Its portraits and memorials of the worthies who were exercised within its walls should be many and conspicuous, that examples of excellence in their several kinds might be held up before all, and set forth visibly as the abiding heritage of their successors for encouragement and imitation. This memorial to the brothers Hunter enriched the University in more than one of these respects. It told in especial of two humble Glasgow students who by dint of

industry and native talent, rose to fame as leaders of science and benefactors of their kind. It said with silent eloquence, "What Glasgow students did, Glasgow students can do." For this additional stimulus to higher endeavour the students and teachers of the University thankfully acknowledged their debt to the contributors. Sir John Blund Sutton, Bt., President of the Royal College of Surgeons of England, who at the graduation was the recipient of the degree of LL.D., spoke as representing John Hunter, and Professor F. K. Monro, President of the Royal Faculty of Physicians and Surgeons of Glasgow, as representing William Hunter. In doing so both paid tribute to the memory of these great medical brothers, who each in his own way had won fame, and whose names are still held in reverence.

## EFFECTS OF THYROID EXTRACT ON ACID FOWLS

At a meeting of the Royal Society of Edinburgh on June 22nd, when Principal Sir Alfred Irving was in the chair, a paper was contributed by Dr. I. A. L. Crow, director of the Animal Breeding Research Department of Edinburgh University, on rejuvenation of the aged fowl through thyroid medication. Dr. Crow said that as a fowl got old its plumage got lighter and its fecundity decreased. Experiments had shown that the cause of this was, possibly, a progressive inefficient functioning of the thyroid gland. Desiccated thyroid had been given to old fowls, with the result that all the birds became rejuvenated, the plumage of the cocks becoming similar to that of normal hens, whilst the egg yield of the hens was increased to a remarkable extent.

## GRANT TO ROYAL SIMPSON MEMORIAL HOSPITAL

On June 24th a deputation from the Royal Maternity and Simpson Memorial Hospital, Edinburgh, met the Lord Provost's Committee of Edinburgh Town Council to support an application for a grant towards capital expenditure. The deputation explained that property in the neighbourhood of the hospital had recently been purchased at a price of £650, and that the cost of alterations necessary to adapt this property for the purposes of the hospital would be about £950. The Lord Provost's Committee agreed to recommend that the town council should grant £950 to the hospital for this purpose.

## CENTRAL MIDWIVES BOARD FOR SCOTLAND

At a meeting of the Central Midwives Board for Scotland on June 24th Dr. James Haig Ferguson was in the chair, and Sir Archibald Buchan-Hepburn, Bt., was appointed deputy chairman in place of the late Dr. Michael Dewar. Intimation was made that the Scottish Board of Health had approved the new rules for extended training of midwifery nurses, which come into force on May 1st, 1926, and will apply to all persons commencing midwifery training thereafter.

## Ireland.

IRISH FREE STATE PENSION RIGHTS  
Important Notification

Medical officials under county health boards and other local authorities should bear in mind that if they desire to avail themselves, for pension purposes, of Section 8 of the Local Government Act, 1919, they must notify their local authorities of their intention at a date not later than July 25th next. The following summary of the pension rights of medical officers under the Acts of 1919 and 1925 has been addressed to Local Medical Committees by the Irish Medical Society. What the medical officers affected have to consider is whether in each individual case the benefits of Section 8 of the Act of 1919, and in certain cases the benefits of the Local Government, 1898 Act, gave more favourable terms than the benefits under the Act of 1925. (1) Generally, the older provisions appear more favourable, but we prefer not to lay down any hard and fast rule, as there may be some cases in which the terms of the more recent Act would operate to greater



advantage than those of the earlier Acts. We desire to call particular attention to the fact that there is no scale save a maximum one prescribed by the 1925 Act. Subject to this the Minister has arbitrary power. (2) Under Section 8 of the Local Government Act, 1919, the fact alone that a medical officer is 60 years of age, and has served as an officer of a local authority for not less than twenty years, entitles him, with the consent of the Minister, (i) to resign his office, and (ii) to receive a mandatory pension on a defined minimal and maximal scale. No medical certificate of permanent disability is required with these conditions. Under the Local Government Act, 1925, a medical officer to resign under the conditions (just mentioned) of the Local Government Act, 1919, must have attained 65 years of age and must have twenty-five years' service—that is, under the 1925 Act, an extra five years is added to each condition. The recent Act (1925) would be more advantageous (a) in the case of women doctors who, on marriage, would resign their offices, (b) in some respects in the case of a medical officer who had served in a pensionable office outside the area of his present pensioning authority—that is, the County Health Board. The following draft letter might be employed by medical officers who prefer to retain their rights under the Act of 1919.

Address and Date  
Board of Health

To the Secretary

Sir,  
I beg to notify you for the information of Board of Health that it is not my intention to avail myself of the provisions of Part 4 of the Local Government Act 1925 with the exception of the several sections which by Section 43 of that Act are made applicable to an officer making the election which I am doing.

I am Yours faithfully

## England and Wales.

### THE LONDON UNIVERSITY SITE

THE correspondence between the Principal Officer of the University of London and the Treasury, which is printed at page 43, would, if taken literally on its face value, appear to amount to a final decision that the University headquarters shall not be established in the Bloomsbury district, as was proposed some time ago, when the Government, through the mouth of Mr H A L Fisher, then President of the Board of Education, made a definite offer of a site, subject to certain contingencies set out in the correspondence. Lord Haldane, when opening the new headquarters of the National Union of Students of the Universities and University Colleges of England and Wales, in Endsleigh Street, Bloomsbury, last week, said that the Royal Commission on University Education in London, of which he was chairman, had, among other things, reported that London must have a university centre, and that the centre should be Bloomsbury. There was no situation in London comparable to that neighbourhood for the home of the University, for headquarters, for lecture rooms, or for a club house and an assembly place for students. The University would not achieve success unless it avoided the extreme act of folly which it seemed about to commit in not setting to work to get a constitution for the University. The Union he was addressing was formed three years ago, and already includes about 30,000 undergraduates. The new building provides an adequate central office and club rooms. A university, Lord Haldane said, was essentially dependent on its atmosphere. In the Union there was a body of students, women as well as men, who represented the university atmosphere from different parts of the world. University students, men and women, wherever they might be, whether in Washington, Tokyo, Berlin, or Paris, thought alike, provided only there was a sufficient height of knowledge. London, the greatest city in point of numbers in the world, and not diminishing in importance, was without a proper university. There were in London many colleges, several of which exceeded

in size universities in the provinces, but they were not brought together under one roof, and it was not easy to bring them under one roof. He himself had been at work on the problem for over thirty years.

### GUY'S HOSPITAL MEDICAL SCHOOL

The annual Guy's Hospital garden party—a pleasant event in pre-war days—was revived on June 29th when H R H the Duke of York, deputizing for the Prince of Wales, who is president of the hospital, distributed the prizes to the successful students in the medical school. The Duke was received by the Treasurer of the hospital (Mr F P Whitbread), the Vice-Chancellor of the University of London (Professor Ernest A Gidner), and the members of the hospital staff, and after a visit to the concert-room for certain presentations, he proceeded to the physiological theatre, where a distinguished company had assembled. The Treasurer extended a hearty welcome to His Royal Highness, and referred to the intimate way in which the progress of the hospital, now in its bicentenary year, had been bound up with the progress of the medical school. The Duke did not address the assembly, but contented himself with distributing the fourteen medical and seven dental prizes and scholarships and individually congratulating the successful students. One remarkable and probably unprecedented success was the winning of the Treasurer's gold medal for clinical medicine and the Treasurer's gold medal for clinical surgery, as well as the Beauchamp prize for pathology, by the same student—Mr D W C Northfield. The brief proceedings concluded with an enthusiastically accorded vote of thanks, moved by Dr Finckh, senior physician to the hospital, who referred to the great traditions of Guy's and the generations of good doctors and wise and humane men who had gone forth from the school. The Duke of York afterwards visited the Henriette Raphael Nurses' Home, where work contributed by the Ladies' Association (of which the Duchess is president) was on view. An interesting collection of antiquities was arranged in one of the departments, it included relics of Thomas Guy and some of the earliest books and prints connected with the hospital. The wards, museum, and laboratories were open to inspection, and each visitor was handed an extremely well got up pamphlet, which contained not only the order of proceedings, but also a history of and guide to the hospital.

### DEPUTATION TO THE MINISTER OF HEALTH FROM THE LONDON COUNTY COUNCIL

A deputation from the London County Council on various matters connected with health administration in London was received by the Minister of Health on June 8th. Mr Neville Chamberlain, in the course of his reply, said that Poor Law reform was part of the programme of the Government for next year, conditional, however, upon the passing during the present session of the Rating and Valuation Bill. One of the questions which would then come up for consideration was the extent to which the present Poor Law infirmaries could be used for the accommodation of advanced cases of tuberculosis, on the surface it seemed as if they would be very suitable, but he thought it was clear that in any satisfactory provision for the institutional treatment of tuberculosis in London there must be some central body capable of taking a survey of the needs of the whole area and seeing that those needs were properly and suitably provided for. This did not necessarily imply with it central administration of the units of institutions—a matter on which he would not like to commit himself at the present time. On another aspect of the tuberculosis problem—that of after-care—the Minister said that he regarded the experiments that had been carried out at Papworth and Preston as extremely interesting and valuable, but they could not provide a complete solution of the problem. There were, however, other experiments in progress or in contemplation for the setting up of workshops in large towns which would be under medical supervision and would work under such conditions as might be laid down by medical advice, but which he did not think could be run without a subvention. He was in communication with the Treasury on the matter, and if he was fortunate enough to soften the heart of the

Chancellor of the Exchequer he might be able to put forward a scheme for grants in aid for certain experimental stations. He also spoke on the subject of refuse disposal and drainage and indicated that he would take steps to secure expert inquiry to see whether certain views put forward by the deputation could be met.

## Correspondence.

### MEDICAL EDUCATION IN WALES

SIR,—As one who has taken a deep interest from its inception in the proposal to establish a really national Welsh School of Medicine, I have read Sir Isambard Owen's letter in your issue of June 20th (p. 1150) with some surprise. I am surprised both by what is said in that letter and by what is omitted from it.

1 Sir Isambard Owen writes "The policy of separating the Cardiff School of Medicine from its parent college was not a recommendation of the recent Royal Commission" that policy, he states, originated with the University and was dictated by financial factors. Sir Isambard Owen omits any mention of the strong move to make a National School of Medicine which developed before the appointment of the Royal Commission. That was, and is, an important factor in the situation, and the final recommendation of the Royal Commission is sufficiently explicit.

216 The endeavour at once to give the School of Medicine a national status and to recognize the special interests of the University College at Cardiff produced a highly complicated plan which was admitted by the Departmental Committee to be only the best that could be devised under disadvantageous conditions. After a careful consideration of the various suggestions in relation to our general task we have decided to recommend the mere simple plan suggested to us by Sir Isambard Owen of organizing the Medical School as a constituent College of the University to be governed under the University by a Council and Senate of its own.

I have italicized the last lines of this quotation because I find it difficult to reconcile them with Sir Isambard Owen's assertion that the policy of separating the Cardiff School of Medicine from its parent college was not a recommendation of the Royal Commission. Any man is as well entitled to change his mind as any woman proverbially is to change hers, but Sir Isambard Owen seems to have executed a complete volte-face.

2 Sir Isambard Owen does not mention that the new scheme of erecting the school as a "school of the university" and not as a "college of the university" was in the first place suggested by the Senate of the College at Cardiff itself. The University Council, in proposing the new scheme of constitution, is in effect bowing to the suggestions of Cardiff College, of the council of which Sir Isambard Owen is a member.

3 Sir Isambard states that the article in the *BRITISH MEDICAL JOURNAL* (which he is criticizing) "seems to suggest that this scheme [that is, the scheme now proposed by the University Council] has the approval of the faculty of medicine of the university, my information is that it has not yet been before the faculty." Sir Isambard Owen is in error when he suggests that the article in the *BRITISH MEDICAL JOURNAL* seems to suggest that the scheme has the approval of the faculty of medicine, although no doubt it would have that approval if submitted to it. The article in the *BRITISH MEDICAL JOURNAL* states quite correctly that the original recommendation of the Royal Commission (in favour of separation as a "college") has been endorsed by the faculty of medicine. It will, perhaps, be a sufficient indication of the way in which the matter is being dealt with by Sir Isambard Owen and his colleagues on the council of Cardiff College if I point out that the college has come to a decision against the scheme, without even taking the opinion thereon of its academic bodies.

4 Another cause of surprise to me is that Sir Isambard Owen, though he refers to the opinion expressed by the Vice-Chancellor of the University of Liverpool in a communication to the *Western Mail*, does not refer to the views previously set out in an article in the same newspaper (February 7th, 1925) by Sir Charles Sherrington, Professor

of Physiology in the University of Oxford, and President of the Royal Society.

Dealing first with the word "separation" as applied to the Medical School, Sir Charles Sherrington said that it might suggest that the school would suffer thereby. It was not, he said, perhaps sufficiently realized that the question of separation will not affect the present academic arrangements, and that those who opposed separation on this ground did so without knowing the true facts of the case. The supreme academic authority of the University is, he pointed out, the Academic Board—composed of representatives of all the faculties of the university. The present academic relationship of the School of Medicine to the University on the one side and to the University College at Cardiff on the other, will remain unaltered in the independent School of Medicine.

He then passed on to consider the question of the independent colleges which would receive from independence. He wrote as follows:

In the first place there will be a more efficient administration of the school, which has to report to (and is subject to) the council of Cardiff College, which again on many matters has to receive the consent of the council of the University. As the Board of Medicine the College Council and the University Council all have their own administrative machinery and sub-committees it is not difficult to see that the present administration of the school is very complicated and slow in action. The proposal to give the School of Medicine independence within the University is essentially a proposal to make its Board of Medicine an effective administrative body with power similar to that of the councils of the constituent colleges of the University. I venture to say that the independence of the school does not entail further academic separation but does involve a more efficient administration of the school.

Under the constitution in favour of which he was writing, the status of the Medical School would, he said, be that of a school of the university carrying on its work in complete harmony with the University College of Cardiff, but functioning as a unit of the university rather than as a department of a constituent college. There was no reason, he believed, why this arrangement of itself should affect academic intercourse, for at Oxford and Cambridge the measure of independence enjoyed by the colleges and the school of medicine did not affect intellectual and take place of how this might be brought about did not depend upon the question of governance. The University of Wales, he continued, occupied a unique position among the universities of Great Britain, not only on account of its federal character, but also because it was a national university in a sense not true of any other British university. It was a single expression of ideals and aspirations of a whole nation, it had several constituent parts, but the university itself was one and undivided. The highest interests of the medical school demanded, in Sir Charles Sherrington's opinion, that it should be associated directly with the national university rather than with one of the constituent parts of that university. This claim was "not only inherent in the federal character of the university, but also records with the importance of medical science as a branch of learning and with its vital bearing upon the well being of the community." The idea of a school of medicine for the whole of the Principality had captured the imagination of the Welsh people, if their hopes were to be realized the young institution must be given full freedom to develop. Complete incorporation of the medical school with the Cardiff College would prevent it from developing on its own lines, would lead to a conflict of interests, and would saddle it with the necessity of submitting to College exigencies. Sir Charles Sherrington concluded his article with the following words:

The nature of the constitution of the University of Wales as well as the national status of the school in my opinion point unmistakably to the recognition of the school as an independent unit of the University. Given the support of the Welsh people and given full freedom of action in framing and directing its own policy it is my hope and expectation that the School of Medicine will go from strength to strength and may come to rank with the finest and most up to date schools in the world.

The real factor in the situation is this that as things

are at present in Cardiff it will not be possible to develop a first-rate school of medicine unless it is separated from the local college and placed directly and fully under the University of Wales itself—I am, etc.,

Leechard, Cardigan hire June 27th JOHN LYNN-THOMAS

### THE DIPLOMAS OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

SIR,—In your notice of the death of Dr. Edwin John Slade-King, which appeared in the JOURNAL last week (p. 1200), you omitted to mention the fact that Dr. Slade-King was the last medical man left who held the diploma of "Extra Urbem Licentiate" of the Royal College of Physicians. The power to grant the diploma of "Extra Urbem Licentiate" was secured to the College by the statute of 14 and 15 Henry VIII (1522-23), and brought under the authority of the College all those who practised medicine in England, with the exception of Doctors of Medicine of Oxford and Cambridge. Before this statute was enacted the College had authority only over those who practised medicine in London and seven miles round. When, however, the Medical Act of 1858 came into force, this provision in the statute was repealed, and the grade of "Members of the College" was instituted in place of the "Licentiates" and "Extra Urbem Licentiates." Under the Medical Act of 1858 a new grade of "Licentiate" was established which referred to those who passed the qualifying examination now known under the letters L.R.C.P. Dr. Slade-King was one of the last to take the "Extra Urbem Licentiate." This he did in 1857, and with his death the diploma becomes extinct—I am, etc.,

London W 1 June 26th

ARNOLD CHAPLIN

### PERINEAL DRAINAGE AND PROSTATECTOMY

SIR,—Mr. William Billington has raised (June 20th, p. 1150) a very interesting topic—namely, perineal drainage in internal urethrotomy and prostatectomy. With regard to perineal drainage in internal urethrotomy, does Mr. Billington enquire this out in all cases? Personally I feel that internal urethrotomy is an operation which has justified its existence by time, experience, and results, and should a case demand perineal drainage, then I would consider it one for external urethrotomy and not internal urethrotomy. The cases of stricture in which I have employed perineal drainage have been those complicated with severe cystitis and a type rarely seen in this country, but frequently in the East—namely, when the perineum is a mass of sinuses and fistulae and dense fibrous tissue. In the latter type external urethrotomy with drainage of the bladder is the only way by which the sinuses can be dealt with and the condition cleared up.

I have on a few occasions done median perineal lithotomy in children for stone when, owing to total lack of nursing and having the bare minimum of instruments with me, no other course was available. Necessity knows no rules, with the open desert as my operating theatre and the beautiful crystal an and "Allah" as my helpers, the results were delightful. Drainage was perfect.

With regard to perineal drainage in prostatectomy, I feel that this is adding another complication to an already sufficiently complicated operation. We must remember that an enlarged prostate is not an affection of the prostate alone, but a symptom of a generalized condition in individuals who are not only past the autumn of their days, but are fast approaching the winter.

Prostatectomy is a serious operation in the hands of even the expert, with its mortality rate nearer 20 per cent than 10 per cent, in the hands of the general surgeon the mortality must be far higher, and if perineal drainage will lower this mortality rate, then by all means let it be fully considered. I have only on one occasion used perineal drainage, and my reason for then doing so was the enormous cavity left after the removal of a big prostate with much sepsis of the bladder, but instead of cutting down on to a Wheelhouse's staff I pushed a long sinus forceps through the prostatic cavity into the perineum and

cut down upon that, using the ends to drag up the drainage tube into the prostatic cavity.

I am convinced that the mortality rate of suprapubic prostatectomy can be still further decreased by more attention being paid to the renal excretion tests. I rely on the urea excretion and phenol sulphonephthalein tests, and also very largely on the general condition of the patient himself. The subjects of prostatectomy will not tolerate long waits in cold and draughty corridors and a subsequent prolonged operation. Rapidity with the choice of a suitable anaesthetic and the production of as little shock as possible are among the many essentials for a lessened mortality rate. I have used gas and intratracheal oxygen for my last two cases, and I have been more than pleased with the complete relaxation obtained and the absence of vomiting and of post-operative shock.

SIR JOHN LYNN-THOMAS (BRITISH MEDICAL JOURNAL, June 27th, p. 1194) mentions the lower rate of mortality from the perineal operation. This may be so, but are the end-results satisfactory? The occasional drainage down to the nerve supply of the compressor urethrae muscle in this operation, with the resulting incontinence, leaves the patient in a worse condition than when he had the original disease. I have lately met with an instance of a patient who had undergone perineal prostatectomy and now spends his time going from hospital to hospital, and from surgeon to surgeon, seeking relief from this terrible affliction.

There is nothing worse from a public standpoint than to operate on doubtful subjects. In doubtful cases permanent suprapubic drainage properly done and a suitable apparatus fitted is a far better procedure than to submit many decrepit old men to the risks of so serious an operation.

I quite agree with Sir John Lynn-Thomas when he states that "we have to look out for weakness in the minute details of the plan of attack." A still greater consideration is the patient himself—I am, etc.,

London W June 27th

THOS CAREY EVANS

### URINARY INFECTIONS

SIR,—Dr. Sangumetti (June 27th, p. 1168) discusses lavage of the bladder with a weak solution of colligol in certain urinary infections. He apparently advocates this method of treatment for acute and chronic conditions indiscriminately, for many different types of infection, and even in cases of a definitely descending character.

In acute infections vesical lavage is usually quite unnecessary and may be positively harmful. The majority of acute cases clear up rapidly, if the patient is put to bed, the bowels attended to, and the urinary tract washed out in the natural way with copious quantities of bland drinks. Potassium citrate followed by hexamine with acid sodium phosphate may be useful in some cases, while sandalwood oil has an almost magic effect if the infection is due to the staphylococci.

Lavage is undoubtedly useful in chronic infections when the bladder is not emptying itself effectually. If it is employed in chronic infections great care must be taken to exclude the possibility of the underlying condition being tuberculosis, which contraindicates irrigation.

Vesical lavage in cases of definite descending infection would appear to resemble cleaning the ball and leaving the living-rooms untouched.

When irrigation is necessary, a solution of silver nitrate is much less messy than one of colligol, and probably just as effective—I am, etc.,

London W 1 June 27th

W K IRWIN

### THE DIAGNOSIS OF PNEUMONIC PLAGUE

SIR,—The great importance of the differential diagnosis of pneumonic plague and plague pneumonia from the point of view of prognosis and prevention cannot be overestimated by workers amidst plague, as pointed out by Dr. N. A. Dree Sharp of Lagos in your issue of December 27th, 1924 (p. 1216). It is surely no satisfaction to anyone concerned with a case of the former to establish its diagnosis after the patient's death. Unfortunately, however, medical literature abounds with expressions like pneumonic plague and plague pneumonia, septicæmia

plague and plague septicaemia, that are loosely applied and held to be interchangeable. And thus confusion becomes worse confounded, inasmuch as these terms are neither identical nor interchangeable.

It is obviously forgotten that bubonic plague is essentially and primarily an infection of the lymph channels, and glands, and remains so in about 30 to 40 per cent of cases admitted to hospital in Bombay. Infection of the blood and internal organs—that is, *plague septicaemia*—occurs at a later stage in about 60 to 70 per cent, and is a secondary manifestation. So also is the advent of pneumonitis, which has been recognized as plague pneumonia.

On the other hand, septicaemic plague is a primary infection of the blood without the intervention of the lymphatic system, and is therefore a far graver infection. Here, too, pneumonitis may supervene as a secondary pneumonia, it is often mistaken for pneumonic plague in the absence of examination of the blood. True pneumonic plague, however, occurs from direct infection of the respiratory tract either from droplet infection from a patient or from a localized focus in the tonsils. I suggested the possibility of the latter mode of infection in 1909, and it was subsequently confirmed by the observations of the Plague Commission in Manchester during the epidemic of pneumonic plague in 1911.

The early diagnosis of pneumonic plague and plague pneumonia (secondary) is at times beset with considerable difficulty in the absence of physical signs during life, and also of the characteristic sputum. No amount of painstaking examination gives any indication of their presence. The physician can therefore only infer its presence on account of the prevailing epidemic. High temperature, exaggerated pulse and respiration ratio, extreme restlessness and delirium, pain and sense of constriction in the chest dyspnoea, and at times cyanosis, are the only indications to guide him or raise his suspicion. Death is rapid—within three to four days. Where, however, buboes exist the above may be considered as positive signs of plague pneumonia. The character of the sputum, when it does appear, is by no means constant. It may be purulent haemorrhagic, or pellets of coagulated blood, or bright red frothy blood-tinged mucus. Any of these characteristics may not develop till shortly before death. The clinician is thus greatly handicapped. At the autopsy, however, deep-seated and localized foci of infection or infarcts, or even solid consolidation, may be found and give pure cultures of the *Bacillus pestis*.

Prognosis, however, differs. Extensive observations at the Bombay hospitals throughout a series of epidemics have shown that cases of plague pneumonia recover to the extent of 10 to 15 per cent provided the lung infection is strictly localized. Pneumonic plague—and, for that matter, septicaemic plague also—are both equally fatal, the mortality being 100 per cent. In my experience, extending over twenty-seven epidemics of plague, I have not observed a single bacteriologically verified case of pneumonic plague recover. The single exception was one in which there existed a symbiosis with the *Bacillus pyocyaneus* in the lungs. This combination was established by frequent cultural and animal experiments with the sputum, until at last the organisms finally disappeared from it.

The above facts thus indicate that small blame should attach to any clinician if he fails to verify the presence of pneumonic plague or plague pneumonia during life. Geimino to the subject, an isolated instance of plague pneumonia causing infection of the bubonic type may be here quoted. An English plague nurse working at the Arthur Road Hospital had severe coryza with injected eyes, and was advised to rest. Whilst bending over a bubonic plague patient to feed him he happened to cough, and some sputum went into one eye. Within two days she developed parotid and cervical buboes, with considerable oedema of the neck and pharynx, oedema of the glottis soon supervened, and death occurred within five days. This case illustrates the possibility of such a contingency—  
I am, etc.,

N H CHOKSY MD, F.C.P.S.,  
Late Medical Superintendent Arthur Road and  
Maratha Plague Hospitals

Bombay Feb 7th

STATICS OF THE SMALL PLYVIC VISCERA  
Sir,—I am sorry that the reviewer of vol. II of my *Statics* (June 27th, p. 1176) should think it a sin for an author to believe in himself. The late Sir Henry Duthie once said to me, "If an author does not believe in himself, who can be expected to believe in him?" And, of course, no worker is going to the pains of writing a book, and much less of getting it published, unless he believes that his point of view materially and in an important manner differs from current opinion. If I am wrong in stating that "many operating gynaecologists are clearly at sea" in the matter of prolapse, I am clearly at a loss to know how I am to be taken into account by the majority of these surgeons. I am sorry, if I can be shown to be wrong I will gladly retract those statements. They were at least made in good faith. But in this respect I remind your reviewer that even as late as last April we heard in exposition on prolapse in which not only the work done on the pelvic floor musculature in this respect was completely ignored, but which imputed prolapse to merely local lesions, and consequently did not take into account the conception "that man is individual." The connective tissue hypothesis does not explain how it is that prolapse—or, as I think it would be better called, "puccendal hernia"—is related to the intra-abdominal pressure (a pressure affecting the whole individual) as other herniae, or how it is related with general metabolism, as shown by its common use in later life. But because I believe so—and show it is so—your reviewer is vexed with me.

Your reviewer accuses me of implying throughout my book that I alone know anything of prolapse. I am sorry, too, if that is so, I was not aware of it, if it be so it was not intentional. I can at least reply that your reviewer, throughout the major part of his review, seems to imply that he knows as much or more of prolapse. Yet as a reviewer he fails in his main and primary task—that of criticism. He, indeed, is critical, but it is of the author, not of the argument. Had he shown that my argument is erroneous he would have put your readers, and more especially myself, under a greater obligation—I am, etc.,  
R H PARSONS, F.R.C.S. Eng  
Rugby June 27th

#### BRITISH MEDICAL WOMEN IN INDIA

Sir,—Having recently been engaged in administrative work in India I can perhaps supply some of the information "Medical Woman" (June 27th, p. 1195) asks for. The population of India is so vast, and the prejudice among Indian women against the attendance of male doctors is so widespread, that the field of usefulness for women doctors is almost unlimited. Unfortunately your correspondent is right in thinking that the opportunities for British medical women are really few.

Religious prejudice and social custom in India are so strong that a newcomer, ignorant of both, and endeavouring to form a private practice, would be seriously handicapped. Moreover, owing to the poverty of the people, she could not hope to make a suitable livelihood outside the large towns.

The Women's Medical Service for India offers good prospects, but it is small and not likely to offer more than two or three openings a year for British medical women. The field in connexion with mission hospitals is larger, but the salaries are small, and special interest in mission work is, of course, required by the societies.

Other appointments are occasionally offered in connexion with Indian States and municipalities. Sometimes a European is asked for, but even then a newcomer in the country would be at a disadvantage, and the employers are usually unwilling to enter on negotiations with people at a distance, which may end in nothing, or to meet the cost of passages.

If a young medical woman had friends in a large town in India and had sufficient capital for a few years' subsistence, she might go out, and would probably be well come as an honorary worker in the women's hospital. She would thus gain experience of the language and country, and might hope to do well later in private practice.

She must however, be competent, and have some experience of her profession. Even if she does not desire private practice she is far more likely to obtain a hospital appointment if she is on the spot, has some knowledge of the country, and can be interviewed.

The Secretary of the Countess of Dufferin Fund, Delhi and Simla, is always glad to assist medical women in India with advice regarding possible openings. I believe also that some of the large women's mission hospitals are willing to appoint young British medical women as house surgeons for a year or two without permanent service. This would give excellent opportunities of acquiring knowledge of the country and tropical work.—I am, etc.,

M I BALFOUR, M.B.,  
Late Secretary of the Countess of Dufferin  
Fund India

Edinburgh June 29th

## FRACTURE OF BOTH PATELLAE BY MUSCULAR ACTION

SIR,—The cases of simultaneous fracture of both patellae reported by Mr Twistington Higgins and Mr W M Cummins in the *BRITISH MEDICAL JOURNAL* of May 30th (p 1006) and June 6th (p 1062) respectively, have reminded me of a similar case which occurred in Cairo in 1915, and which may be of interest.

I was present at an evening performance at a place of entertainment, and a dance performed by an Armenian girl was taking place. During one of the steps the girl collapsed, and it was seen that she was unable to rise and in great pain.

I was accompanied by a friend, Dr Kinnaird, and when the manager came forward and asked if a doctor was present, my friend went and attended the case. He afterwards informed me that both patellae were fractured and that he attributed the fractures to muscular action.

In spite of the almost unanimous opinion of the many Egyptian medical men who soon collected, Dr Kinnaird subsequently wired both patellae, and the woman made an excellent recovery. The "girl" in question appeared, when off the stage and devoid of make-up, to be nearer 40 than 30 years of age.

It was not noticed that great effort was made, or that the step performed at the time of the fracture demanded extraordinary exertion, and the collapse of the woman was a great surprise to the onlookers.—I am, etc.,

London W 14 June 26th

P J SIMPSON, F.R.C.V.S.

## Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

AFTER debating unemployment on June 29th, when a vote of censure on the Government was defeated, the House of Commons has devoted the rest of this week to the Widows, Orphans and Old Age Contributory Pensions Bill, which has been considered in Committee. The text of the Government's Unemployment Insurance Amendment Bill has been issued.

The Medical Committee of the House of Commons, which met on June 29th, when Dr Tiernantle was in the chair, decided to meet again specially on July 2nd to receive a report from the party of medical members of Parliament who had been to Geneva to investigate the Spallinger treatment for tuberculosis. Sir Henry Craik pointed out that announcements had appeared in the lay press describing the party as a subcommittee of the Medical Committee, and announcing that it had been favourably impressed by what it saw. The truth was that the party were not selected or deputed by the Medical Committee, and he protested against a statement having been made before the committee had received a report from the party.

The committee briefly discussed the recently issued Treasury minute on the new Committee of Civil Research, and Dr Tiernantle reported that the Prime Minister had informed him that the appointment of this committee and its work would not come under the review of the House of Commons on any estimate.

**Safety in Aviation**—Captain Guest opened a short debate on fatal accidents in the Air Force and the high premiums charged for insuring the lives of flying officers. He said the risks were taken between the ages of 17 and 28 in the main and twenty years was the extreme flying life of the average officer. Since 1922 the number of flying accidents had been about 120 and he suggested that the Government should organize a compulsory

insurance scheme. The Secretary for Air, Sir Samuel Hoare, said that, judged by the number of flying hours the number of fatal and other accidents tended to decrease every year. The policy of the Air Ministry was that every individual regularly engaged in flying duties should be supplied with an Irvine parachute, and that there should be parachutes available for each aircraft up to the full number of passengers carried besides the pilot. In addition there would be a 25 per cent supply of spare parachutes. The experience of the United States in parachutes had been instrumental in saving a substantial number of lives during the last eighteen months. The Air Ministry was issuing instructions that no parachute descents should be made in bad weather. Descents from aeroplanes were safer than from kite balloons. The Air Ministry was hurrying the delivery of parachutes. He was supplying the Life Offices Association with statistics on air risks, and hoped a reduction of the life insurance premiums for airmen would be arranged.

**Removal of Bethlem Hospital**—On the London County Council Money Bill Dr Haden Guest drew attention to the condition of the 70a Street area of North Southwark. There were 165 persons to the acre in Southwark as a whole, but the death rate had gone down from 21.4 in 1903 to 14.2 in 1924. In 1903 the death rate for the 70a Street area was 40.3 and in 1924 it was 26.6. Certain factors connected with the buildings and with the arrangement of the courts and alleys of that area made its death rate twice as heavy as in other parts of Southwark. A medical report said that the physique of the adults in the area was poor but that the children were in a better condition. To relieve congestion on this area and in Southwark as a whole there might soon be available the site of the Bethlem Hospital with an open space of 13 or 14 acres around it. The hospital authorities had decided to move to a site outside London, and to sell the Southwark site for a commercial price. They were precluded from doing that without bringing a bill before Parliament and a bill for the purpose had already been read a second time in the House of Lords. He advocated the use of the Bethlem Hospital site for the most part as a public open space and for the rest for working class dwellings. The bill was read a second time.

**Medical Services in West Africa**—On June 29th Mr Amery told Lieut Colonel A. McDouneil that the estimates for the four West African Colonies provided for a total of 246 qualified medical officers. There were at present thirty-two vacancies after allowing for selected candidates at present under instruction in tropical medicine. In the East African Medical Service which included the medical staff of Kenya, Uganda, Nyasaland, Zanzibar, Somaliland, and Tanganyika the authorized strength was 152. There were seven posts unfilled. The medical department of Northern Rhodesia had an establishment of thirteen medical officers, and there was one vacancy.

**Ambulance Service in London**—On June 29th Dr Little asked the Minister of Health if the recommendations of the Ambulance Committee of King Edwards Hospital Fund had received his consideration. Mr Neville Chamberlain replied that so far as these recommendations could be dealt with by administrative action they had been put into operation. So far as they required legislation they must await the general measure of Poor Law reform which he had in contemplation.

**Doctors Cars and Obstruction**—Mr N. McLean asked the Home Secretary whether he was aware that regulations existed which rendered doctors liable to prosecution if they left a motor car unattended in the street, and whether he proposed to issue a regulation exempting them when these circumstances arose in the course of their professional duties. Sir W. Joynson-Hicks said that medical practitioners were not exempt from the ordinary law as to driving offences, and the Minister of Transport did not think it practicable to make exceptions to the existing law or regulations in favour of any particular class of persons. The police exercised discretion in regard to prosecuting for obstruction when it was caused by a doctor's attendance on a patient. Mr McLean asked whether the Minister was aware that practitioners visiting sick patients had been summoned, and that only owing to the good sense of the magistrates were they saved from a conviction. He asked whether the Minister would not make some regulation which would enable a medical practitioner to have the particular privilege when visiting sick people of leaving his car unattended. Sir W. Joynson-Hicks said he did not think it desirable to make such a regulation. The police acted with discretion. Quite conceivably it might happen that someone was ill in Bond Street and a medical practitioner might block the whole place for a couple of hours.

**General Nursing Council**—The House of Commons has set up a Select Committee to consider the rules of the General Nursing Council on the prescribed training for nurses and the reservation of seats on the council for matrons. The Committee has power to send for persons, papers and records. Its members are Sir Richard Barnett, Sir George Berry, Mr Rhys Davies, Mr Fisher, Dr Tiernantle, Sir Charles Forrester Waller, Mr G. Hurst, Sir Richard Luce, Colonel Sinclair, Miss Wilkinson and Mr P. Wilson.

**Institutional Treatment of Encephalitis Lethargica**—In answer to Dr Haden Guest Sir Kingsley Wood said the Minister of Health was advised that no special institutional provision was required for cases of encephalitis lethargica in the acute stage. Such cases might in general be properly admitted to isolation hospitals, infirmaries or general hospitals. The provision of a special institution for the reception of children suffering from the after effects of this disease who could not be admitted to mental hospitals, was under consideration.



## Obituary.

SIR H. N. THOMPSON, KCMG, CB,  
late AMS

MAJOR GENERAL Sir Harry Neville Thompson, KCMG, CB DSO, Army Medical Staff (ret.) died at O borne on June 21, aged 64. He was the son of the late Rear Admiral Sir Harry Thompson, rector of Clonmilly, Down, and was educated at Trinity College, Dublin, where he obtained MB and ChB in 1883. Thirty-six years later he was conferred upon him the honorary degree of MD. He entered the army as surgeon on August 2nd 1884 and became colonel on November 17th, 1913 and major general on December 26th, 1917. He was in the army since 1884.

His first experience of active service was in the Nile campaign in 1898 when he received the British and Egyptian medals. In South Africa he served from 1900 to 1902, taking part in the relief of Kimberley, in operations in the Orange River, in the Tlokoeng, and in the actions of Paardeberg, Poplar, Pretoria, and Diamond Hill, and in the actions at Johannesburg. He was mentioned in dispatches in the *London Gazette* of November 15th 1901, and named the Queen's medal with two clasps. In the recent great war he went out with the original expedition to Belgium, as colonel and ADMS of the 2nd Division, and, in the retreat from Mons, remaining with the advanced field hospital, was taken prisoner, and held in Germany as a prisoner of war for six months. The hardships which he then underwent had a permanent effect on his health.

After his release he served successively as ADMS of the 48th Division, as DMS of the 6th Army Corps from May 20th 1915, as DMS of the 1st Army from July 1917 and finally as DMS of the British Army of the Rhine. He was mentioned in dispatches at least five times—in the *London Gazette* of January 1st, 1916 June 15th 1916, December 24th, 1917, May 25th, 1918, and December 30th, 1918, and received the CMC in 1916, the CB in 1918, and the KCMG in 1919. He received also the French Croix de Guerre, the American Distinguished Service Medal and the Portuguese Order of St. Aviz, of which he was a Grand Officer. He held also the Coronation and Durbu medals of 1903, and King George's Coronation medal of 1911.

We are indebted to Lieut.-General Sir William Ellis, KCB, FRCS, Director-General AMS, for the following appreciation.

The news of the death of Sir Harry Thompson will come as a great shock to the members of his old corps and will cause widespread sorrow. Throughout his service he had been one of its most outstanding and popular figures, while his gift of inspiring not only admiration, but also warm affection, earned for him an unusual number of close and lifelong friendships. The soldier never had a bitter friend, and the Royal Army Medical Corps has had few officers devoted more whole-heartedly to its interests and well-being. Sir Harry might have been regarded as expressing through his own personality the very soul of *esprit de corps* that quality so hard to define though so well understood by every soldier and, in its true significance, so misunderstood outside the army. His athletic record, his kindness of heart, and his handsome and genial presence would in themselves have ensured his popularity with his comrades but in a sense these tended to mask the sterling qualities of character which were so abundantly displayed at times when stress or emergency called for the best that was in a man. A striking personality, a gallant comrade, has left us, but he has left a memory and an example which will not readily be forgotten in the corps to which he devoted his life.

**Treatment of Yaws.**—Mr. Oimshy Gore (Under Secretary for the Colonies) told Colonel Day that he was not aware of any increase in the prevalence of yaws in East Africa but that prevalence was undoubtedly serious. Its cure by intramuscular injections of the East African Commission which also noted the delay in utilizing in Kenya the experience gained in Tanganyika. But the remedy had been in active use in Kenya for at least three years and he did not think any special action was necessary to make the preparation available in larger quantities.

**Chinies for ex-Servicemen.**—Major Tryon (Minister of Pensions) said in reply to Captain Hudson that the British Red Cross Society had intimated that it could not continue the claim for disabled men in Broad Street Holborn unless the number of pensions were increased. With the patients had to be directed of cases this was impossible and the general decline in the number to the more permanent clinics of the Ministry among others to that at Buhaga Street Millbank where the facilities for all varieties of treatment were particularly good.

**Ante-natal Work.**—The Minister of Health has stated in answer to questions (1) That of the areas mentioned by the Chief Medical Officer in his report for 1924 as showing excessive rates of infant mortality most as a result of the issue of a circular from the Ministry of Health were already taking steps to provide additional facilities for the ante-natal examination and institutional treatment of pregnant women. The medical officers of the Ministry paid special attention to these points on their visit to the areas concerned. (2) That under the existing National Health Insurance Act attendance at confinements was not included within the scope of medical benefit. The question of providing a maternity service under the National Insurance Acts had been brought to the notice of the Royal Commission on Health in 1924. The Council of the Southwark Borough Council did not provide the instance of Council received notice in 1924 that the aid of doctors was required by midwives for confinements but the London County Council supplied with 961 expectant or nursing mothers during 1924 and refused it in three cases where the income of the family was above that laid down in the scale for necessitous persons. One woman general relieving officer in Southwark is principally concerned with the parents of necessitous children.

**Veneral Disease.**—The Minister of Health informed Mr. Bennett he was aware that Colonel L. W. Harrison of the Ministry of Health had at the Congress of the Royal Institute of Public Health at Brighton on May 29th objected to the honorary secretary of the Society for the Prevention of Veneral Disease quoting from the evidence of witnesses before Lord Trevelthins Committee on the ground that that evidence was confidential. The Ministry of Health had not received from the Trevelthins Committee any request that the evidence should be treated as confidential and Mr. Chamberlain understood that it decided not to ask for publication. In reply to Sir William Davison Mr. Chamberlain said the Government had not yet decided to allocate to the Society for the Prevention of Veneral Disease a portion of the grant for propaganda and education in the prevention and combating of veneral disease.

**Ophthalmic Benefit.**—Mr. Neville Chamberlain informed Mr. Bennett that the new model scheme for the provision by approved societies of ophthalmic benefit is an additional benefit contained a provision that except in the case of renewal or repair of optical appliances the applicant for the benefit must have obtained and furnished his society with a written recommendation from a medical practitioner. Representations both from bodies representing opticians and from representatives of the medical profession including ophthalmic specialists had received due consideration.

**Shortage of R.A.M.C. Officers.**—The Secretary for War answered Major Harvey said it was impossible to deal within the limits of a parliamentary answer with the reasons which might account for the present shortage of Royal Army Medical Corps officers or with the steps the War Office was taking to find a remedy.

**Preservatives in Foods.**—The Minister of Health has stated in reply to questions (1) that the form in which the regulations giving effect to the principal recommendations of the Committee on Preservatives in Foods should be finally made is under consideration. (2) The deaths reported as due to ptomaine poisoning during the five years 1920 to 1924 numbered 32, 48, 22, 21 and 16 respectively. It was not possible to state in how many of these cases the poisoning was due to the eating of tinned foods.

**Bovine Tuberculosis.**—Figures to show the percentage of cattle in the whole country found to be tuberculous when slaughtered are not available. At the Aldgate slaughterhouses in 1924 the percentage of all bovines found to be tuberculous was 0.45 of bulls, 4.40 of calves, 0.04 of cows, 28.0 of heifers, 3.1 and of oxen 2.0. These proportions were probably below the average for the whole country. Tuberculosis is rarely found in sheep slaughtered for food.

**Votes in Brief.**  
In 1924 twelve deaths in England and Wales were returned by medical certificate or coroners inquest as due to insect bites. The Home Secretary states that provision is made under the regulations of the Workmen's Compensation Act whereby in any difficulty the referee can obtain an x-ray examination and that x-ray photographs are frequently arranged for by the medical referees. No representation has been made to him for any further provision.

L J McWELNIA, M D, M Ch, F R C P I,  
 Profes or of Pathology and Bacteriology, University College,  
 Dublin

WE announce with much regret the death, at the age of 61, of Dr L J McWeeney, Professor of Pathology and Bacteriology in University College, Dublin (National University), which took place at his home in St Stephen's Green, Dublin, after a long illness. He was a distinguished man in medical science, and his death at a comparatively early age must be regarded as a national loss.

Ldmoud Joseph McWeeney was the eldest son of the late Mr T McWeeney, at one time a prominent figure in Irish journalism. In his boyhood he gave early promise of distinction in the Catholic University in the years preceding the foundation of the Royal University, subsequently he went to the College of St Beitin at St Omer. He matriculated in the Royal University in 1881, at the first examination after its foundation. In the following year he won a university scholarship in modern languages. In 1884 he obtained his B A degree with first-class honours and, as a result, was one of the first group of graduates of the Royal University in Ireland whose academic career had begun with its foundation. During his arts course he had commenced the study of medicine, and after graduating in arts he gave his undivided attention to medicine. In 1887 he passed his M B, B Ch, and B A O examinations with honours. In 1888 he went to the University of Vienna, where he studied pathology under Rokitsanski. The following year he devoted to the study of bacteriology under Koch at Berlin. On completion of his course of study under Koch, McWeeney returned to Dublin in 1890, trained as few young Irish doctors were at that time in pathology and bacteriology. This training he put at the services of his old medical school in Cecilia Street, at which so many distinguished Irish doctors received their medical education. He took his M D degree in 1891, and three years later won the first medical studentship of the Royal University.

From 1891 to the present year Professor McWeeney was at the head of the department of pathology and bacteriology at the medical school of University College. A tireless worker, he was familiar with the scientific literature of the Continental medical centres, and his contributions to medical literature were numerous. Among the public positions which he held were those of bacteriologist to the Local Government Board, Crown analyst in Ireland, pathologist to the Mater Misericordiae Hospital, and to the Coombe and the National Lying-in Hospitals. In addition to the degrees of his own university, he held the Fellowship of the Royal College of Physicians in Ireland, the D P H of the Royal College of Surgeons, the Fellowship of the Royal Academy of Medicine, and was a member of the British Medical Association for many years.

HENRY CORBY, M D, M Ch,  
 Professor of Obstetrics and Gynaecology, University College,  
 Cork

THE death of Professor Henry Corby, M D, which took place recently at his residence in St Patrick's Place, Cork, has removed one of the foremost members of the profession in the city of Cork.

Henry Corby was born on September 27th, 1848. He was the youngest son of the late William Corby, of Cashel, co Tipperary. He entered at an early age the Queen's College, Cork, which was then one of the three constituent colleges of the Queen's University in Ireland. His first intention was to study for law, but soon after entering the Cork College he changed his mind and entered the medical school. During his time in the medical school he attended the arts lectures and took his B A degree in due course. Having pursued a distinguished medical course he received in 1875 the degrees of M D, B Ch, B A O of the Queen's University. Almost immediately after obtaining his medical degrees, he was appointed house surgeon in the North Charnitable Infirmary, Cork, and later was appointed surgeon to the same hospital. In 1883, on the resignation of Professor Macnoughton Jones from the chair of midwifery in the medical school of the

Queen's College, Cork, Dr Corby was appointed his successor, and occupied the office until his death. Dr Corby also held the positions of consulting physician to the Cork Maternity Hospital and surgeon to the South Charnitable Infirmary, Cork. He was long a member of the British Medical Association, and represented the Munster Branch on the Irish Committee.

Professor Corby was a member of the Cork Corporation, and occupied the position of High Sheriff of the city. At the various literary and scientific societies in Cork he delivered many lectures, which were subsequently published in pamphlet form. Among these were "Experiences of a House Surgeon," "Health Homes," and "Industry and Ability." In 1881 he married Katie, daughter of Thomas Coppinger-Cronin, Kerry Hall, Cork. Of the marriage there were twelve children of whom five survive, the eldest is Dr Cecil Corby of Summerhill, co. Meath. Leo, the youngest son, practised as a dental surgeon in Cashel, co Tipperary, and lost his life in very tragic circumstances while motoring to Cork during the civil strife, he failed to hear the military challenge and was shot dead.

H GRAEME ANDERSON, M D GLAS, F R C S ENG,  
 Surgical Consultant, R A F, Surgeon St Mark's Hospital

WE regret to record the sudden death, on June 28th, of Mr H Graeme Anderson, a surgeon of great ability, who had identified himself, during the war and after, with the medical and surgical aspects of aviation. While playing in a lawn tennis tournament he was seized with a heart attack and died almost at once. Only the day before he had attended, in his official capacity as consulting surgeon to the R A F, the Royal Air Force pageant at Hendon. The news of his untimely death has been received with consternation among a wide circle of colleagues and friends.

Henry Graeme Anderson was born on August 1st, 1882, the younger son of Nicol Anderson of Brailhead, Renfrewshire. After studying medicine at the University of Glasgow, at King's College, London, and at the London Hospital, he graduated M B, Ch B GLAS in 1904, obtained the diploma of F R C S Eng in 1909, and proceeded M D, with commendation for his thesis in 1919. For two years he was house surgeon, and later pathologist, to St Mark's Hospital for Cancer and Diseases of the Rectum, and he acted as clinical assistant at the Hospital for Sick Children, Great Ormond Street, and in the aural department of the London Hospital. His next posts were those of surgical registrar to the Royal National Orthopaedic Hospital, the Metropolitan Hospital, and the Cancer Hospital. On his appointment as assistant surgeon to St Mark's Hospital he began to acquire a considerable experience of rectal surgery, and in particular of the operative treatment of haemorrhoids. He published two papers on this subject in our columns before the war: the first (in 1909) gave the after-results of 300 operations, and the second (in 1913) discussed the three operations in common use at that time at St Mark's.

On the outbreak of war Graeme Anderson joined the Royal Navy as surgeon lieutenant. He was attached as surgeon to the original R N A S Expeditionary Force, and served at Antwerp and Ypres, and on the Belgian and North French coast. In 1917 he was appointed surgeon to the British Flying School at Vendome, France, and in the two following years held the corresponding post at the central R A F Hospital. He was transferred later from the Royal Navy to the Royal Air Force, with the rank of major. He was one of the small number of air medical officers who obtained a pilot's certificate at a time when this qualification was not compulsory, and he devoted much thought and research to the physical fitness of airmen, the prevention and treatment of aerial accidents, and the improvement of flying conditions. At the end of the war he was retained as surgical consultant to the R A F, and continued to give highly valued services in the treatment of aerial injuries and the selection of aviators from the surgical point of view. In January, 1918, he had contributed to the BRITISH MEDICAL JOURNAL a paper on the medical aspects of aeroplane accidents, and in March 1918,

we published a full report of a paper, read by him before the Medical Society of London, on the selection of candidates for the Air Service. In the following year appeared an excellent book on the *Medical and Surgical Aspects of Aviation*, edited and for the most part written by him when surgeon to the Royal Air Force Central Hospital, it was reviewed at some length in our issue of August 16th, 1919.

After his return to civil practice Gwynne Anderson resumed work on the staff of St Mark's Hospital, where he was promoted full surgeon, and at the Belgrave Hospital for Children, where he was senior assistant surgeon. He acted also for a time as surgical specialist to the Ministry of Pensions. With increasing experience in rectal surgery his reputation steadily grew. He contributed articles on this subject to Baughn's *System of Operative Surgery* and to the *Practitioners' Encyclopedia of Medicine and Surgery*, and was elected a member of council of the Subsection of Proctology in the Royal Society of Medicine. Last summer he contributed to our columns, jointly with Dr Cuthbert Dukes, a paper on the treatment of hemorrhoids by submucous injections of chemicals.

Gwynne Anderson leaves a widow and one daughter. At the funeral service on July 2nd, at St Columba's Church, Port Street, the Air Council was represented by Air Commodore David Munro, Medical Administrator, R.A.F., and there was a large gathering of hospital and service colleagues and personal friends.

W J J STEWART, M.D.F., D.P.H. CAMB.,  
Medical Superintendent, Willesden Municipal Hospital

We regret to record the death of Dr Stewart, medical superintendent of the Willesden Municipal Hospital, at the age of 57. He had been in poor health for some time, and his final illness was the result of influenza contracted early this year. His devotion to duty made him continue at work when wiser counsels should have prevailed. He had been in the service of the Willesden Council for the past twenty-two years, and during his period of office the hospital came to be regarded by the public and by the council as one of the best of the municipal institutions of Willesden. Dr Stewart spared himself in no way to make the public understand that the hospital was conducted in their interests and for their benefit, and that he and all the staff were entirely at their service.

William James Johnstone Stewart graduated in medicine at the University of Edinburgh thirty-four years ago, and proceeded M.D. in 1896 after obtaining the D.P.H. at Cambridge in 1895. He devoted his life to the study of infectious diseases and the administration of isolation hospitals, and he came to be recognized as one of the first authorities on these subjects in the country. During the war he was chosen by the War Office to take charge of the Adington Park War Hospital for soldiers suffering from infectious diseases. He built up and administered this large hospital in a manner which gave the highest satisfaction to both the military and civil authorities concerned, and well earned the gratitude of his country.

A colleague, closely associated with him in his work, writes: Stewart's loss will be felt keenly by all his colleagues, for he was a genial man with a kindly heart, ever ready to exert himself and take any amount of trouble to help his juniors and further their interests. Dr Stewart was one of the many silent workers in the municipal service whose works are more the subject of criticism than of praise, but who nevertheless at all times and in all circumstances perform their duties with a singleness of purpose and conscientiousness which is characteristic of the official life of this country. He leaves a widow, to whom we extend our heartfelt sympathy in her sad bereavement.

Professor H. KOSSEL, a well known hygienist of Heidelberg, has died at the age of 61.

Dr BURTON, professor of hygiene in the Lillo Faculty of Medicine, and Dr ANDERSON of the Caen Medical School, have recently died.

## Medico-Legal.

### AN ACTION FOR NEGLIGENCE

POWELL v. MAYBURY

A SPECIAL jury at the Hampshire Assizes on June 20th awarded Mr. Percy John Powell, a fancy goods dealer of Southsea, £1,000 damages against Dr. Alexander Maybury of Hampshire, for alleged improper medical treatment and negligence.

The action was tried by Mr. Justice Shearman, and counsel were for plaintiff Mr. Lyster Goddard, K.C., and Mr. W. Blake Olliver, for defendant Mr. F. B. Charles, K.C., and Mr. W. J. H. Brown.

#### The Pleadings

In the pleadings the plaintiff stated that from September to November 1921 he engaged the defendant to attend and treat him for neuritis in the right arm and alleged that such treatment was negligent and unskilful. On October 26th when the defendant was endeavouring to break down adhesions in the plaintiff's right arm while the plaintiff was under an anaesthetic the defendant dislocated the arm and broke off the lesser tuberosity of the humerus. The plaintiff alleged that Dr. Maybury used greater violence than was necessary or prudent and that the violence was negligent and unskilful. On November 1st the defendant performed an operation on the plaintiff while under an anaesthetic with the object of reducing the dislocation. The operation failed and the plaintiff alleged that, although the defendant continued to attend him up to the middle of November, the defendant took no further step to reduce the dislocation. As the result of the alleged negligence the plaintiff went into the Royal Portsmouth Hospital and underwent a further operation on November 23rd for the dislocation of the shoulder joint and his right arm was now two inches shorter than his left and he could not lift the arm away from the body. The defendant absolutely denied that he was guilty of the alleged negligence and unskilfulness, and said his treatment was proper and ordinary.

#### Plaintiff's Case

Counsel for the plaintiff said actions of this kind were serious and were brought with some reluctance because nobody liked to charge a professional man with negligence in the performance of his professional duties. But there were two sides to the question and one had to remember that they were dealing not only with the status and reputation of a professional man but also with the plaintiff, who would not bring an action of this sort without good ground and unless he had suffered severely. The defendant had been in practice for many years at Portsmouth and the plaintiff was a middle-aged man who throughout his life had been active in conducting his own business besides being a keen tennis player. During some part of his life he was troubled with pain in his shoulder which at one time was diagnosed as neuritis and also with gastric trouble. On September 17th 1921 he consulted Dr. Maybury who correctly diagnosed the gastric trouble as due to pyrosis and advised the plaintiff to have some teeth extracted. Under Dr. Maybury's advice Mr. Powell made considerable progress, and so far as the medical treatment was concerned there was no complaint. Dr. Maybury also diagnosed that the plaintiff was suffering from neuritis in the shoulder and on October 25th while under an anaesthetic there, Dr. Maybury operated to break down any adhesion which might be in the shoulder, and counsel invited the jury to say that in the course of manipulation, Dr. Maybury dislocated the plaintiff's right shoulder. It was a dislocation of some considerable extent. Counsel said that it was essential in the interests of the patient that steps should be taken to reduce the dislocation immediately. If this were left, reduction became impossible without an operation. That was what had happened in this case. Whether Dr. Maybury realized at that time that he had dislocated the plaintiff's shoulder was one of the questions the jury would have to consider. If he did not counsel then submitted he ought to have known. Something happened which caused the doctor anxiety, and that something could only have been the dislocation of the shoulder. Plaintiff was put to bed but no bandage was applied to the shoulder or to the arm. When Dr. Maybury saw the plaintiff the following evening he expressed no anxiety and did not indicate that anything upward had happened. Next morning the plaintiff found himself quite helpless in his right arm, and he could not dress himself without assistance. With Dr. Maybury's consent the plaintiff went home, where he faints and the plaintiff's daughter, a trained nurse with experience in orthopaedic cases at St. Thomas's Hospital, could not understand his collapsed state. She questioned Dr. Maybury who must at the time have had grave suspicions which he did not disclose to her. On four occasions Dr. Maybury pushed his fist under the patient's arm and applied pressure which was the recognized method adopted by surgeons for reducing an ordinary dislocation. On October 31st an x-ray photograph was taken and the plaintiff's daughter was not allowed to be present. Dr. Maybury would not allow a second opinion to be taken, but insisted on a second operation which took place in the nursing home the same two doctors being present. It was not successful, but Dr. Maybury told the plaintiff he was satisfied with the progress he was making, and that everything was going on well. Dr. Maybury refused to allow the plaintiff to see his brother, who was a doctor, but eventually the plaintiff became so dis-

satisfied that he went to Brighton to see his brother. As a result he entered Portsmouth Hospital, where Dr Smith, the house-surgeon, saw at once that his arm was dislocated, and, after an x-ray photograph was taken, an operation was performed by Mr Harold Burrows. After the time which had elapsed it was impossible to reduce the dislocation, and the arm was now shorter by two inches, which meant that the plaintiff was gravely handicapped for the rest of his life. Counsel submitted that the most skilful surgeons sometimes made mistakes, but it anything went wrong the patient expected the surgeon to tell him and take every step in his power to remedy it.

Counsel's opening was borne out by the plaintiff, but both the nursing home sister and nurse said in their evidence, that they heard nothing whatever while the arm was being manipulated.

The plaintiff's daughter in her evidence, said she told Dr Maybury that she thought her father's arm was fractured, but the reply was "No there is nothing to worry about."

Dr N R Smith said when he first saw the plaintiff's shoulder at the Royal Portsmouth Hospital it was obvious that some gross injury had been occasioned, but what it was he did not know at the time.

Mr Harold Burrows F.R.C.S., said the x-ray photograph indicated a dislocation in fact it was obvious apart from the photographs, but it was not clear how long it had been obvious. It was beyond reduction, and when he operated the humerus was dislocated and the lesser tuberosity was torn away. The tearing off of the lesser tuberosity was not recent and healing had taken place. It was not a common thing for a fracture to take place when breaking down adhesions, but he had heard of cases. It ought not to happen. After a dislocation occurred it was important to reduce it at once.

#### Defendant's Case

Counsel for Dr Maybury in opening, said the allegations were every bit as bad as a criminal matter. Dr Maybury had been in Portsmouth for forty years, was well known, and had had dozens and dozens of operation cases which had been successful during the whole of his career; there had never been a suggestion that he was negligent or unskilful. The accusations that he had not exercised the ordinary skill of a general practitioner were absolutely untrue. Was over an attack launched upon a doctor in the circumstances more unworthy, more ungenerous, than this attack? From the very first Dr Maybury attended the plaintiff who was not a rich man, with an assiduity and care that was altogether admirable. It was admitted that the medical treatment was perfectly good. The case was loaded with prejudice. If there were a fracture of the tuberosity it might just as well have been done in the hospital as out of it. Dr Maybury had not to exercise the highest skill, but he had to be reasonably careful and not go below the professional standard. A doctor could not guarantee not to make a mistake. He did not admit that there had been a mistake, but if there had been Dr Maybury would tell them that rightly or wrongly, his impression was that he got the shoulder back to justify the strapping, and he hoped and believed that there would be a reduction of the dislocation as soon as it was released the head of the bone slipped out of position. But for Miss Powell and the plaintiff's brother's interference the operation performed by Mr Burrows would have been performed by Dr Maybury. Counsel maintained that it was Mr Burrows's cutting which had hurtened the plaintiff's arm; any doctor would first try to reduce the dislocation by manipulation before doing what Mr Burrows did, the cutting was the last resource. Dr Maybury's only fault, if there was a fault, was that he was too hopeful and believed he had got the shoulder back so clamped it down and left it to set, but the condition of the shoulder was such that this was impossible.

Dr Maybury bore out counsel's opening statement, and Mr W H Battle and Mr J E Adams, consulting surgeon and surgeon respectively to St Thomas's Hospital, London, gave evidence in support of the defendant.

#### The Judge's Summing Up

Mr Justice Shearman in summing up, said it was for the jury to fix the standard of skill which they considered a patient had a right to expect from a medical man. The jury had to decide whether the defendant was guilty of negligence on October 25th. It was alleged that Dr Maybury was a bungler and was not fit to do his job; that he used violence and dislocated the shoulder through negligence. It was also suggested that the anaesthesia was incomplete, but of that there was no evidence. On the other hand it was stated that such a dislocation could arise under proper and correct treatment, and the jury had to be satisfied before finding in favour of the plaintiff that there was negligence in causing the dislocation. Another difficulty of the case was that the plaintiff said the doctor was negligent in that after the dislocation he did not discover it and immediately put it right. The defendant said he discovered the dislocation immediately it occurred and put it back at once, but the plaintiff said that was untrue and that the doctor did not know it. The dislocation having taken place the jury were asked to say that Dr Maybury did not know it until the x-ray photograph was taken, and it was suggested that not knowing was negligence. Was the defendant guilty of negligence as a surgeon on October 25th 1924 either in pushing the arm out or finding he had pushed it out in not pushing it back? If they took the defendant's view that he did his best and it was not negligence and that anybody might have done it, it was their duty to say so. The defendant claimed that he put the shoulder back and it slipped out afterwards, and that was the fault of the abnormal bone and not his fault.

The jury returned a verdict for the plaintiff as stated above, stay of execution being granted pending an appeal.

## Universities and Colleges.

### UNIVERSITY OF LONDON

#### THE UNIVERSITY SITE

At the meeting of the Senate on June 24th it was announced that the following correspondence had passed between H.M. Treasury and the University on the subject of the Bloomsbury site.

Treasury Chambers  
3rd June, 1925

Sir,

I have had before the Lords Commissioners of His Majesty's Treasury Sir Cooper Perry's letter of the 13th ulto stating that in connexion with proposals by the Delegacy and the Council of King's College for an appeal to the public for funds for new construction or endowments the Co-ordination and Developments Committee of London University desire to be informed of the answers to certain questions addressed to their Lordships in Sir Cooper Perry's letter of the 18th December last. My Lords regret that a reply to the last named letter has been delayed.

I am now to inform you (1) that the Lords Commissioners of His Majesty's Treasury are not able to hold out any hope that Parliament could be asked to contribute a larger sum than £370,000 building the Strand in the event of King's College and the Strand site reverting to the Crown.

(2) On the assumption that King's College would for their part be unwilling to move to the Bloomsbury site or unable to do so on these terms, my Lords apprehend that the University may desire to reconsider the policy of transferring their central buildings to Bloomsbury, and if the University can suggest any practicable alternative for an increase without undue cost of the accommodation for their central offices, my Lords would be prepared to consider it.

(3) My Lords are not without hope that it might be possible to make arrangements with the vendors of the Bloomsbury site whereby at least a part of it might be occupied on terms for other University purposes, but this might depend on the course of negotiations which have not been initiated.

R S MEIKLEJOHN

The Principal Officer,  
London University

University of London  
South Kensington S.W. 7,  
24th June, 1925

Sir,

I am desired to say in reply to your letter of the 3rd June that as the Lords Commissioners of H.M. Treasury have already been informed, the Senate passed a resolution in November, 1923 that in their opinion the removal and reinstatement of the secular and theological Departments of King's College on a scale adequate in the opinion of the Senate to present needs and future requirements should be effected without expense to the University or the Council of King's College in return for the surrender to the Government of the present site and buildings in the Strand. As it is certain that the expense of rebuilding King's College on the Bloomsbury site on the scale contemplated in the above resolution would far exceed the sum of £370,000 and as the Lords Commissioners of H.M. Treasury are not able to hold out any hope that Parliament could be asked to contribute a larger sum than £370,000 a reversal of value of the site and buildings of King's College in the event of reverting to the Strand in the event of themselves compelled to decline the offer contained in Mr Fisher's letter of 7th April 1920 conditionally accepted by the Senate on October 20th, 1920. Amongst the conditions laid down by the Senate was

(5) That the terms of the removal of King's College from the Strand to the Bloomsbury site shall be a matter of subsequent negotiation between His Majesty's Government, the Council of King's College and the Senate of the University, and that an agreement shall be concluded between the said parties.

It is obvious that this condition cannot now be fulfilled.

The important questions raised in paragraphs (2) and (3) of your letter will demand the anxious consideration of the Senate after reference to the relevant Councils and Committees, and to other bodies which may be interested.

The Senate note with satisfaction that the Lords Commissioners of H.M. Treasury recognize the need for increased accommodation for the central offices of the University.

E C PERRY  
Principal Officer

The Secretary,  
H.M. Treasury

#### Vice-Chancellor

Professor E. A. Gardner Litt.D. has been re-elected Vice-Chancellor for the year 1925-26.

#### Emeritus Professor

The title of Emeritus Professor of Hygiene and Public Health in the University has been conferred on Sir William J. R. Simpson, C.M.G. M.D., F.R.C.P. as from the end of the present session on his retirement from King's College after twenty-seven years' service on the closing of the Department of Bacteriology and Public Health.

## Studentship in Physiology

The University Studentship in Physiology for 1925-26 of the value of £50, and tenable for one year in a physiological laboratory of the university or of a school of the university has been awarded to Mr Isaac Cohen, PhD BSc, who will carry out research on tetulin under the direction of Professor I C Dodds at the Bland Sutton Institute of Pathology at the Middlesex Hospital Medical School

## UNIVERSITY OF OXFORD

The following candidates have been approved at the examination indicated

FINAL B M AND B CH (*Materia Medica and Pharmacology*)—H W Allen O A Beadle D H Buntin C Charvonn H I Culbert I C A Davel W N Dickenson H R J Donald C W Humming A A Hamilton R A S Howard G L M R G MacGregor P J W Puh H G W L W H Burtie D H A W Cubitt F J T R Hodgson C D Lucie C E Pobert R W A Simmons I M B West A G Wilson Rosalind V Carruthers Margaret A L Herberton Margaret N Jackson Kathleen G Norton Irene M Piteum (Forensic Medicine and Public Health) D A Abernethy I N Allott F T Bach R B Boudillon H N Bradbrooke C S Broadbent V A Cleumey C P Croft I N C Ford S Harris T H Hodgson A Hendr gott W D B Rad Thornton G P T Wood the Hon Ol Vaughan Rosa S D A Abernethy E J S Jerome A Robinson J G S Thomas R A Walsh I C Whitehall Cooke the Hon Olive B Buckley Ella J Cockram Janet M Vaughan

## UNIVERSITY OF CAMBRIDGE

SIR W B HADY FRS and Dr J L Shore have been reappointed University Lecturers in Physiology for a period of five years

The following candidates have been approved at the examinations indicated

M CHM—W D Doherty  
THIRD M B CHM (*Part I Surgery Midwifery and Gynaecology*)—A Baker W A Barnes I C P Beauchamp C B Blueloy R C L Dargos N F C Burgess J W D Butters G A H Buttle R W M Dalton T H T Davies P O Davies A F D D

Pharmacology—J E Anderson W A Bourne H I Brewer G A H Buttle W E Chiesman W R P Collis H V Coveida J E D Crozier G H C Dalton T H T Davies P O Davies Y W Dr J M Smith G S W E Hart N H R Hat R L Lancaster F Maybury K F T Smith A J Smy I M Halmer (Girton)

## UNIVERSITY OF BRISTOL

THE Markham Sheritt Memorial Prize has been awarded to Macdonald Critchley, M D Bristol  
The dissertation submitted by F J Hector for the M D degree has been approved by the examiners

## UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examinations indicated

M D—Clara D Tingle  
FINAL M B CH B (*Class D*)—John  
in  
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## UNIVERSITY OF GLASGOW

At the graduation ceremony on June 24th the following were among the degrees conferred

LL D (*honoris causa*) Sir John Pland Sutton Bt President of the Royal College of Surgeons of England John A Roxburgh chairman of Western Infirmary Glasgow  
M D—Charlotte A Douglas R J Peters R M Greig  
\* With commendation

The History of Medicine Prize of £60 for an essay on some subject in the history of the science or practice of medicine awarded to Dan McKenzie V D C M, for his essay, 'The infancy of medicine,' was also presented

## UNIVERSITY OF DUBLIN

At the later commencements of Trinity term, held on June 25th, the following degrees and licences were among those conferred

M D (*honoris causa*)—G W Cife C H Mayo  
M D—A G Bowley I K Dixon C W J Ingham J S Quin P Seal T I Wight  
M B B A O—O D T D Broome O Chance I S A Crawford Annie F Deane J J Deane J Dier I C Duffin T C Fether W Gallauber Mary Galvin S M Greaves J R Gregory A G G Kelly I M Mphue C M Anlliff C F D M Callin T A Macdonnell W I T McIntyre Kathleen D Murray W C Soper Vile Tark H Traut J W Wallace H Waters R A Weller T I Wilde A Mannion

PHYSICIAN IN MEDICINE—J L Marshall

## Medical News.

The eleventh annual conference of the National Association for the Prevention of Tuberculosis will be held in London at the beginning of next week. The headquarters are the house of the Royal Society of Medicine (1, Wimpole Street, W). The morning and afternoon sessions of the first day (Monday, July 6th) will be devoted to discussions on tuberculosis in childhood. After the conference has been declared open by Sir Kingsley Wood, MP, Parliamentary Secretary to the Ministry of Health, an introductory address will be given by Professor Pirquet (Vienna) who will be followed by Dr Stanley Griffith (Cambridge) and Dr Richard Wagner (Vienna). The afternoon proceedings will be opened by Sir Robert Philip (Edinburgh), followed by Dr Clive Rintere, Professor A Louise Mellroy, and Dr Iergus Hewat (Edinburgh). At the annual meeting of the association, to be held in the evening, films will be shown, including one entitled "The Invisible Enemy." The discussion on tuberculosis in childhood will be resumed at the morning session on Tuesday, July 7th, when the opener will be Sir Henry Gauvain (Aiton), followed by Dr John Fraser (Edinburgh) and Dr Gordon Pugh. At the afternoon session addresses on the treatment of tuberculosis by sanatorium will be given by Professors Holger Voelgaard and hand Faber of Copenhagen, followed by Professor Lyle Cummings of Cardiff.

At the conclusion of the luncheon given by the staffs of the Manchester and Salford hospitals to the members of the Inter State Post Graduate Assembly of America, noted in our issue of June 27th (p 1179), Dr Charles Mayo bestowed the honorary membership of the Inter State Post-Graduate Assembly upon Sir William Milligan. On the termination of the visit to Edinburgh the officials of the Assembly expressed their satisfaction at the provision that had been made for their instruction and entertainment in that city. Dr Charles Mayo, in the name of the Assembly, conferred the honorary membership of the association upon Lord Provost Sir William Sleight, Sir Alfred Ewing, Vice Chancellor of the University, Sir Harold J Stiles, Sir David Wallace Professor Wallace, Sir Robert Philip, Professor Gulland, and Dr John D Courne.

The operations of the Hellenic Travellers' Club, founded in 1906 by the late Lord Bryce, were suspended during the war, but last spring it arranged a successful cruise, lasting sixteen days, from Venice to the Greek islands, Anzoe and Smyla Brs, and Constantinople. It has now chartered the oil burning yachting steamer *Palatino* of the Lloyd Triestino line for a cruise in the last fortnight of August and for two cruises in September, visiting Dalmatian ports as well as Greek ports. The inclusive cost will be 40 guineas, according to the berth selected. Full particulars can be obtained from the Honorary Secretary, the Rev Wilfrid Ellis, MA, Trinity College, Cambridge.

Dr T Dwyne (Lincoln's Inn), Major W V Corbett, RA MC (ret.), and Dr C N Atlee (Gray's Inn) were called to the Bar on June 24th.

The Fellowship of Medicine announces that on July 9th Mr G Grey Turner will lecture on "Gall stone disease—a pitfall for the practitioner," at 5.30 p.m., in the West Lecture Hall at 1 Wimpole Street, W. The Prince of Wales's General Hospital (North East London Post Graduate College, Tottenham, N) will hold a vacation course in medicine surgery, and the specialties from August 4th to 15th. Beginning on the same date, the All Saints Hospital will give a month's special course in diseases of the urinary system from August 24th to September 5th. The Queen Mary's Hospital, Stratford, has arranged an intensive course in medicine, surgery, and the special departments. The fee for both intensive courses is £3 3s each, or £2 2s for either week, and for the special course in urology £5 5s. Copies of the syllabus of each, together with the Fellowship programme of the general course of instruction available under its scheme, may be obtained from the Secretary at No 1, Wimpole Street, W 1.



A COURSE of lectures and practical instruction for the diploma in psychological medicine of the Universities of London, Cambridge, Durham, etc., will commence at the Bethlem Hospital, Lambeth Road, S.E. 1, on September 14th. Full particulars can be obtained on application to the Medical Superintendent.

THE Midland Branch of the Society of Medical Officers of Health, Birmingham, proposes to commemorate the knight hood conferred on the medical officer of health, Birmingham, by entertaining Sir John and Lady Robertson at a complimentary dinner at the Queen's Hotel, Birmingham, on Friday, July 10th, at 7 p.m. All members of the society are invited. The cost of the dinner will be 10s. 6d. without wine. This amount should be sent to the honorary branch treasurer, Dr. T. Ridley Bailey, at the Health Offices, Fenn Hall, Wolverhampton.

THE managers of the Pleasant Drivon Studentship in Mental Pathology announce that they have made no award this year.

THE annual general meeting of the Council of the Association of Infant Welfare and Maternity Centres will be held at Carnegie House, 117, Piccadilly, W. 1, on Tuesday, July 7th, at 3.30 p.m. The subject for discussion is heliotherapy, with Dr. Eric Pritchard in the chair. The speakers will be Professor Leonard Hill, Dr. G. I. Stehling, Dr. C. W. Sileby, Dr. Stella Churchill, and Dr. Percy Hall. Admission is free without ticket.

At the annual prizegiving of the London (Royal Free Hospital) School of Medicine for Women, on June 25th, the Dean, Dame Louisa Aldrich Blake, announced that Lord Riddell, president of the hospital, had provided for two fellowships for research in maternity and gynaecology at the Royal Free Hospital, and that Mr. Alfred Langton, chairman of the hospital, had endowed another fellowship for research in infant feeding. Dr. Mary Thomas stated that in a few months it was proposed to institute private rooms for paying patients at the Royal Free Hospital.

THE new Watford and District Peace Memorial Hospital, erected at a cost of over £65,000, was opened by H.R.H. Princess Mary, Viscountess Lascelles, on June 24th. The Bishop of St. Albans conducted the dedication service, after which Princess Mary opened the hospital door with a gold key.

THE new wards and other additions made to the Tilbury Seamen's Hospital were opened on June 24th by Viscountess Inesbroke. The Bishop of Colchester having dedicated the new buildings, the company inspected the hospital's new features, including a wing for nurses.

MRS. ELLA ROWCROFT of Torquay announced on June 25th her intention of defraying the whole cost of the erection of the new Torbay Hospital at Torquay. Mrs. Rowcroft and her sister, Miss Wills, have given £123,000 towards the new hospital, which will be begun almost immediately.

MESSRS. MAY AND BAKER, LTD., of Battersea, S.W. 11, have issued a catalogue of their pharmaceutical preparations and of vaccines for the treatment of gonorrhoea and its complications (prepared in the pathological laboratory of the London Lock Hospital). Tables of weights and volumes and of percentage solution equivalents are provided.

WE have received the first number of *La Pediatria, Archivio di Patologia e Clinica Pediatrica*, which is being issued under the editorship of Professors R. Jewmura of Naples and G. Caronia of Rome as a supplement to the fortnightly pediatric journal of the same name, the two journals being now respectively called *Archivio La Pediatria* and *Rivista La Pediatria*. The object of this new journal, which will appear at irregular intervals, is to publish works whose size and character preclude publication in existing journals except at great expense to the author. The present issue contains articles by Drs. G. Cristina and G. Caronia on the etiology of scarlet fever, accompanied by illustrations of the micro-organism which they claim to be the cause of scarlet fever, by Dr. D. Caffarella on the plurality of the antigens in the Wassermann reaction in congenital syphilis, and by Dr. M. Gerbasi on the variability of the strains of the typhoid bacillus. The price is 20 lire.

THE London School of Hygiene and Tropical Medicine, Endelsleigh Gardens, N.W. 1, invites applications for four research studentships, each of the value of £250 per annum. Applications must be sent to the Secretary by August 31st. Particulars will be found in our advertisement pages.

THE following promotions in and appointments to the Order of the Hospital of St. John of Jerusalem in England are announced—As *Knights of Grace*: Lieut. Colonel F. S. Lambert, R.A.M.C. (T); Major General Sir Samuel Guise Moors, K.C.B., C.M.G., D.I.; T. J. Waldo, Captain W. T. Wood, R.A.M.C.; Major Arnold W. Izard, M.D. As *Fringes*: Lieut. Colonel J. C. Strathearn, O.B.E., D.I.; W. C. Rigby, Dr. John Rodley, and Dr. W. H. Curse.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to *The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W.C. 1*.

ORIGINAL ARTICLES and LITTEPS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C. 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are: *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are:

EDITOR of the *British Medical Journal*, Astology Westcott, London.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.) *Articulate Westcott* London.

MEDICAL SECRETARY, *Medicera Westcott* London.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central).

## QUERIES AND ANSWERS

### TREATMENT OF DISSEMINATED SCLEROSIS

J. R. writes to inquire about intravenous injections in the treatment of disseminated sclerosis.

The intravenous injections referred to were probably with one of the salvarsan compounds—for example sodium silver salvarsan. This treatment is founded on the belief now widely held that disseminated sclerosis is an infective disease, and on the fact that certain observers have found spirochaetes in the nervous tissues after death from this disease. It is certain that this organism is not the spirochaete of syphilis and that syphilis is not the cause of disseminated sclerosis, nevertheless treatment by salvarsan and mercury on the same lines as for syphilis is probably the best treatment we have for disseminated sclerosis. In a disease which has a marked natural tendency to remission it is extremely difficult to assess the value of any mode of treatment but the results are quite sufficiently encouraging to justify the continued use of this method if the cases are recognized at a reasonably early stage. In disseminated sclerosis as in so many diseases intravenous injections of protein—for example typhoid vaccine—have also been used either alone or in addition to salvarsan treatment.

### STUDY IN OPHTHALMOLOGY

'OPHTHALMIC' who is a graduate of medicine at present practising in one of the Dominions wishes to know what course he should pursue with a view to obtaining post-graduate study in eye work, towards which he has a strong inclination. He asks what are the facilities in London and Paris and what diploma might be obtained.

There are ample facilities for the study of ophthalmology both in London and in Paris. There is also a choice of English diplomas in ophthalmology. To name the two best known there is the diploma offered by the University of Oxford and that of the Royal College of Surgeons of England. A graduate who obtains either of these diplomas secures the full mail of high attainment in eye work. If our correspondent proposes to undertake the training necessary for the attainment of either of these diplomas his work will be mapped out by the course prescribed by the bodies issuing the diplomas. These he can obtain by inquiry from the Secretary of the Medical School, Oxford University or from the Secretary of the Royal College of Surgeons, Lincoln's Inn Fields, London, W.C. 2. The courses are very similar and require attendance on prescribed courses of study practical work and clinical work. The course is strenuous and means real work. One year's study in a recognized hospital is necessary before a candidate may enter for the examination, and in the case of the Oxford diploma two months of this year must be spent at Oxford. If he is well grounded in general medicine and has a good foundation in the physical sciences, our correspondent should have no difficulty in carrying out the prescribed course of study in the time allotted. If his ambition

do not run to the course prescribed for candidates for the diplomas, he might take up post graduate study of eye diseases and a course of refraction work at any of the British or Parisian hospitals which do post graduate work. The British hospitals are cited in the Educational Number of the BRITISH MEDICAL JOURNAL, published each year early in September, and brief notices of these same hospitals will be found in the Medical Directory under the sections devoted to hospitals and also in the advertisement pages.

#### POWER OF ENTRY BY LOCAL AUTHORITY

"R P" writes: Has an Inspector of nuisances employed by a rural district council the right of authority to demand admission into the private residence of an invalid in order to inspect the house and take measurement of rooms etc?

\* \* Section 102 of the Public Health Act, 1875, relating to nuisances, deals with the power of entry of the local authority. This Section states *inter alia*: "If admission to premises for any of the purposes of this Section is refused any Justice on complaint thereof on oath by any officer of the Local Authority (made after reasonable notice in writing of the intention to make the same has been given to the person having custody of the premises) may by order under his hand require the person having custody of the premises to admit the Local Authority or their Officer." Section 103 of the Public Health Act, 1875 states: "Any person who refuses to obey an order of a Justice for admission of the Local Authority or any of their Officers on any premises shall be liable to a penalty not exceeding £5." Having regard to these sections it is likely that the magistrates would grant an order to inspect the house, but unless it was represented to them that inspection was urgently required on account of some nuisance dangerous or injurious to health they would be unlikely to grant the order to the detriment of the sick person occupying the house. The power of the justice in this matter is discretionary.

#### INSULIN IN CANCER

"A" asks for notes of any experience of the use of insulin in inoperable carcinoma. He would welcome suggestions as to dose, the intervals between doses, and the tests necessary.

#### INCOME TAX

##### Principles of Assessment

"A M H" has purchased a practice having previously resided outside the United Kingdom, and seeks general advice.

\* \* Our correspondent should bear in mind that income tax is payable on earnings, whether realized in cash or not and that the amount of the net cash receipts can be substituted for the profits, computed on the value of the fees booked only when the circumstances justify the assumption that there will not be a substantial difference between these figures. He is liable to be assessed on the basis of the past three years' profits of the practice he has purchased, but if at the end of the year he can show that for some specific cause—for example the change of proprietorship—the profits have fallen short of the amount assessed he can claim an adjustment accordingly. There are several guides to the income tax regulations, that published by Nelsons at 2s 6d, or thereabouts, is a very useful one at the price.

##### Purchase Money

"A E S" owes his late partner a part of the purchase price of his practice and pays interest thereon, the Inspector of taxes insists on deducting this amount in calculating the income on which the earned allowance is due.

\* \* The point has not been settled by judicial authority but we should not regard "A E S's" prospects of appeal as good. In substance, "A E S" is assessed in respect of two incomes—his own earned income and the interest which he pays, and which is, in essence, income of his late partner. On this latter income he accounts for the tax to the Revenue and recoups himself for the amount so paid by deducting it from the interest when he pays his late partner. But that interest is investment income to the recipient and we fear the courts would not uphold a claim to regard it as earned income of the payer.

##### Three Years' Average

"NFLHL's" income from professional earnings has been falling and consequently his average assessment is higher than his earnings for the year of assessment. Has he any remedy?

\* \* The answer is in the negative. The special provision which authorized an adjustment was repealed after the war, and the average is now open to review only in special circumstances—for example, after a change in the proprietorship of the practice, or if an actual loss on working is incurred.

#### LETTERS NOTES ETC

Punch's contribution to the celebration of the railway centenary takes the form of a special supplement to the issue of July 1st giving a full account of his activities as a railway hero's critic, prophet and humorous commentator from 1841 down to the present day.

#### THE MEDICAL WITNESS

DR ABRAHAM ARABIAN (London, W.) writes: I have no doubt that the majority of your readers must have shared my experience of having been twitted by members of the legal profession with our traditional inability to say old unnecessarily long technical terms. And I have no doubt that they will all have shared my experience of having been confronted with that choice piece of pathological hyperbole translated by the learned judge in the case as "just a hunch." I can remember hearing it to the court of at least half a dozen occasions in the past twenty years whenever an article on the subject appears one looks for it with perfect confidence and now I see that even an eminent legal counsel selects this venerable example in his exhortation to medical witnesses to use "simple language." I confess I have always regarded the doctor who was originally responsible for this piece of evidence as a lineal descendant of Mrs Harris the choice perfection of the composition smells too much of the lamp. But it is possible that it really issued from the lips of a colleague whose accuracy and fluency were indeed to be envied if we deplored his lamentable lack of a sense of proportion. And it is equally possible that one of your readers as inquisitive and as sceptical as I, but more enterprising, can supply chapter and verse. But in any case I feel it is about time that we were entitled to receive during the course of instruction when we are to be flattered for our inability to express ourselves in "plain English," another example of what should not be said or which is quite as convincing and, if I may say so, much more probable.

#### POSTURE TO AID DELIVERY OF DETACHED PLACENTA

DR CHARLES J. HILL (Aitken, (Hilthurst near Rotherham) writes: According to Shears (*Obstetric*), "Distraction from the vagina is favoured by the lateral position. If a patient receives a vaginal douche in the dorsal position the solution is retained but if she turns upon her side the solution runs freely from the vagina. A patient delivered herself lying on her back. Thirty minutes later pressure from above failed to deliver the placenta although I felt sure it was in the vagina. The midwife suggested that the patient should turn on her side. This she did and with slight pressure the placenta was on the bed. The pelvis was roomy, the placenta small. In the dorsal position the small placenta lay in the hollow of the sacrum, posterior to the hue of pressure applied. By changing the posture of the patient the placenta was brought into the line of pressure and so was easily delivered."

#### GALL STONES IN ADOLESCENTS

"EVE, M.B." writes: May I add yet another to the already long people instance of the last few months? A schoolgirl between 13 and 14 years of age when she had suffered for a year or two for pains so that the trouble must have been present at an even earlier date. Symptoms occurred periodically, and included jaundice pain referred to the epigastrium, and a rise of temperature—sometimes to 104° F. As my condition did not respond to medical treatment and the outlook seemed desperate, a surgeon was called in. He operated as I was recovering from an exceptionally severe bout and found an enlarged gall bladder quite empty, a widely dilated common duct and a liver showing signs of impeded biliary outflow. Nature had evidently just effected a cure by the passage of a large stone. Drainage was instituted and I made an uneventful recovery, and have never had a recurrence of the familiar symptoms. I or obvious reasons I prefer anonymity, but enclose my card.

#### A WARNING

THE Registrar of the General Medical Council writes: I understand that advertisements for an assistant or a locum tenens have been answered by Mr K R G Shaw. Practitioners should be warned that before engaging him, it is desirable that inquiry as to his registration should be made at the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W. 1.

#### CORRECTION

We are asked to make the following corrections in the paper on the estimation of the cardiac output as a measure of its efficiency by Dr T. Stacey Wilson, published in the JOURNAL of June 27th (p. 1167). Column 1, line 14 from foot for "a certain amount of definite elasticity" read "a certain definite amount of elasticity." Column 2, line 14 from top for "the middle line of the costal arch" read "the middle line on to the costal arch."

#### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 32, 34, 35, 38 and 39 of our advertisement columns and advertisements as to partnerships, assistantships and locum tenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 12.

## The Mackenzie Davidson Memorial Lecture OF THE RELATIONSHIP OF RADIOLOGY AND SURGERY.

DELIVERED BEFORE THE INTERNATIONAL CONGRESS  
OF RADIOLOGY, JULY 3RD, 1925,

BY

SIR BERKLEY MOYNIHAN, Bt, F.R.C.S.,  
Leeds

It must, I feel sure, be difficult for the younger generation of physicians and surgeons fully to realize the magnitude and the high value of the help that is now given to us by the work of the radiologist. Each generation inherits the work of its forerunners, and it requires an effort of imagination denied to most of us to picture the conditions of earlier days in which many of our present resources were still undeveloped. None of us, I think, quite appreciated the difficulties against which Lister had to contend in his early investigations until we were suddenly confronted with the nauseating and startling horrors of those heavily infected wounds with which we had to deal in the first few months of the great war. And the lessons we learnt then increased, if that were possible, both the admiration we all felt for the toilsome and honest work that Lister did, and our gratitude for the imperishable heritage which he bequeathed to us.

So it is also with radiology. It requires a considerable effort of memory, and some skill in reconstruction, to recall for ourselves the days when only the note given by a sound in the bladder as it impinged against a stone made certain the diagnosis of calculus. The word "certain" is too emphatic, for I can still vividly remember Marcus Beck telling us in his ward at University College Hospital of the errors in diagnosis that might then arise when the sound struck the spine of the ischium and produced a muffled note, or when a trilet on the watch chain of the surgeon twinkled at the moment the instrument was rotated in the bladder. Nor can I easily forget the infrequency with which an exploratory operation upon the kidney revealed the presence of the stone whose existence had been confidently predicted, nor the uncertainty and ill success which attended the search for a calculus in the ureter. The change from those days, with the hesitation, the guesswork, the bitter and humiliating disappointments, to these days of confidence and precision is almost immeasurable, and it is to the devoted and skilful workers in the fields of radiology that we are grateful for the transformation. It is natural and fitting that this day should be held as a day of remembrance for one of the greatest of the pioneers—Mackenzie Davidson. It will, perhaps be appropriate if, in my role of a physician doomed to the practice of surgery, I endeavour to show, more particularly in connexion with abdominal diseases, in what degree we have taken advantage of the new methods of diagnosis and of treatment which radiology has afforded us.

### DIAGNOSIS

Let me begin with the pharynx and oesophagus, though in evening's entertainment might not unprofitably be devoted to a discussion of the value of radiology in connexion with the disorders, real or assumed, of the hidden portions of the teeth. It is true that diverticula of the pharynx were known long before the days of radiology. The first case was related in a letter from Mr Ludlow, a surgeon of Bristol, to Dr William Hunter of Glasgow and is recorded on page 85 in volume 3 of the *Medical Observations and Enquiries* of 1767. Ludlow speaks of a "preternatural bag" in the pharynx. The figures he gives are exquisite, and are unsurpassed for beauty and accuracy by any later illustrations. The specimen is in the Hunterian Museum at Glasgow to this day and a recent drawing of it shows that it has changed very little in the last 150 years.

The diagnosis of the condition in its fully developed state

is not difficult. Radiology not only makes the diagnosis quite certain, but it gives a quality of precision that could not otherwise be obtained. We learn not only that the preternatural bag is there, but we know where it lies, how large it is, what attachments it has made, and all details that may be helpful to us at the time of operation.

Of diverticula of the oesophagus we knew nothing before the days of x-ray examinations except that which was learnt from *post mortem* examinations. These little *wayside* turrets are not often of clinical importance. When filled with food they press upon and distort the tube from which they spring, and cause an uneasy suspicion as to the presence of cancer, a suspicion that only time allays.

### Oesophagus

Of the condition known as *cardiospasm* we could, of course, know nothing accurately apart from the examination made by the radiologist. It is true that our museums contain many specimens of "idiopathic dilatation of the oesophagus," but the recognition of this deformity, the knowledge of the size, position, extent, and occasions of emptying the pouch, the extent of the tube involved, and the position of the hiatus, we learn only from the screen examinations. In the first case I saw after I had just learnt of the disease from Professor Milneuz we had "washed the stomach out" many times and removed from it large quantities of fermenting, offensive, and disgusting food that had been long retained. When this little operation was repeated under the control of the x-ray we saw with amazement that the tube never entered the stomach, but lay coiled within the immense cavity formed by dilatation of the oesophagus. We failed completely to pass any bougie into the stomach though careful and repeated attempts were made. A duck-shot tied on to the end of a long piece of silk at last was seen on the screen to enter the stomach and to pass along the intestine until it emerged at the anus. When all the length of silk was entangled in the intestines and formed there a fixed point, I threaded bougies over the strand hanging from the mouth and so guided them safely into the stomach. The obstruction was fully dilated, and the patient taught to pass bougies. When she was expert the silk was cut at the mouth and at the anus, and a week later the whole length of it was vomited. Since those early days I have treated many patients, and though examinations with the oesophagoscope are made, we still rely chiefly upon the radiologist for the information which directs our treatment. There is no doubt that most of these cases were formerly regarded as malignant, and gastrectomy was done for them. A patient in the Leeds Infirmary was seen by me twenty years after this operation had been performed by Mr Ward, on the supposition that a carcinomatous growth obstructed the gullet. An x-ray examination showed the typical appearance of this disease.

The differentiation between "cardiospasm" and carcinoma now presents no difficulties, for the appearance of the oesophagus filled with an opaque medium is quite characteristic in both diseases. The large size of the oesophagus, its tolerance to food, the vigour of the peristaltic waves, which do not move the meal forward, the rounded, blunt end of the shadow which reaches to the diaphragm in cases of cardiospasm contrast as sharply as possible with the slight distension of the oesophagus, the intolerance to food, the incompleteness of the obstruction, and the narrow tapering of a shadow which is very rarely exactly on a level with the diaphragm, in cases of carcinoma.

Diaphragmatic hernia is a rare disease. Its recognition without the aid of radiology is excessively difficult or perhaps impossible. It so happens that I have had four cases in my charge—two in the time before we used the x-rays and two since. Neither of the first two was recognized until the abdomen was opened, and both were discovered with a shock of surprise. The latter two had been recognized by the radiologist, one was on the left side as most cases are, in the other the sac lay in the right side of the chest, and its contents—the stomach and the transverse colon—were easily recognized in the radiograph. I know of only one other similar case, it was operated upon by Sir Hugh Rigby.

## Ulcer of the Stomach

In connection with gastric disease it is hardly too much to say that we owe almost everything to the radiologist. As we look back upon the history of gastric ulcer in respect of its symptoms, its diagnosis, and its treatment, we must now realize that before the radiologist came to the rescue there was little that could meet with our confident acceptance. I do not doubt that more errors have been made in the diagnosis of gastric ulcer than of any other disorder. Its symptoms are mimicked with so much accuracy by other diseases that it is not only the unwary who are deceived. The radiologist has put all this right, or nearly right, and has, I think, explained the cause of the so remarkable plianism by those other diseases which arouse gastric symptoms. It is, however, not only diagnosis that has been at fault, but the treatment that has been based upon it. How can we explain the devotion of physicians to the alkali treatment of gastric ulcer except on the assumption that the diagnosis upon which such methods first were founded were erroneous? For in about 80 per cent of the proved cases of gastric ulcer the free hydrochloric acid content of the gastric juice is either normal or below normal or absent. And the surgeon is far from guiltless in the matter. He has too often been content to accept the diagnosis of "gastric ulcer," and, being, as which, unhappily, he has been led to believe is a principle for all gastric disorders and a swift and certain cure for gastric ulcer. The accuracy with which a competent radiologist, given time, can make a diagnosis of chronic gastric ulcer which the operation will confirm must in time lead to the abolition of these foolish practices by us all, and a radiology will prove the most effective remedial agency for so much of the literature and practice of days that are not yet past. May I urge once again that, until our knowledge is clarified and our practice established in reason, no diagnosis of gastric ulcer based upon clinical evidence alone be accepted as a warrant for treatment? A chronic gastric ulcer, unlike the Emperor's new clothes, is a real thing. It is to be seen, and during operation can be handled, exposed, and demonstrated. If it is there at all it is there for all to see. No gifts of vision are conferred upon the surgeon which are denied to the onlooker. If the surgeon says an ulcer is there, my competent witness can test the truth of his statement. And the accuracy of the radiologist in the diagnosis of this disease nearly approaches that of the surgeon who inspects and handles the stomach. The radiological diagnosis of gastric ulcer is not, however, constant in its accuracy. The greatest difficulties are met with when the ulcers are small, lie on the lesser curvature, are close to the cardiac orifice, and veer towards the posterior surface. The sheltered position of the part of the stomach which harbours them, the overlying liver, the barrier made by the wall of the thorax, and the impossibility of direct palpation of the stomach here, all are hindrances to the exact methods applicable to the exposed gastric area. All these difficulties are, however, in some degree surmounted if the patient is carefully watched as it enters the stomach, and if convergence of the folds of the gastric mucosa to a definite point is observed. There are times when an ulcer may be demonstrated if the filled stomach is pressed down from the epigastrium by a pad of wool, more and more increased in size, the stomach is thus rotated a little on its long axis, and an oblique or transverse view may then disclose an ulcer either. The numerous errors in diagnosis are, however, so few that the accuracy of the diagnosis made with its help is confirmed. If the diagnosis of gastric ulcer is made by no matter whom, let us agree that it is not to be retied upon by the therapist with drugs or weapons unless the radiologist confirms it. It is admittedly true that this expert may sometimes fail to see an ulcer which is undoubtedly present, especially if he is hurried in his examination by the impatience of the physician or the impatience of the sufferer himself. But, given a good chance his errors will be few, for fewer than those of any other investigator. And it must be conceded by us all that the value of any treatment

—dietetic, medicinal, or operative—cannot be gauged unless we know the precise condition for which that treatment has been prescribed. At present, with the best will in the world, I am unable to learn anything which satisfies my intelligence as to the worth of any of the methods of medical treatment in cases of gastric ulcer. And I am not often without the opportunity of seeing lamentable examples of mischances and maddlesome surgery practiced upon those who were unmistakably arranged as the victims of gastric ulcer in need of surgery. In all parts of the world operations are being practiced by those whose natural gifts may perhaps warrant their ambitions to be surgeons, but whose apprenticeship to the most superb and most difficult of all the arts has not been served with that devotion and surrender which alone equip a man for this office. I am amazed at the ready acceptance by patients of the eager ministrations of incompetent operators, when adequate skill and experience are at their command. The frequency of secondary operations when the first, being needless, yet produced effects that must now be undone, and of skilful operations for carcinoma, say of the breast which invite a quick new growth of carcinoma cells distributed over the carcass, wound, are a reproach to surgical work.

I think that the radiologist has done much to explain the reasons for the so frequent inaccuracy of the diagnosis of gastric ulcer. When we inquire as to the conditions which cause the symptoms of this disease, we who deal with the living are quick to admit that it is not only the presence of an open ulcer with its crater of varying depths, that is the responsible and immediate agent, for it is a very common experience to find an open ulcer when the symptoms are in temporary abeyance, the patient enjoying one of the "intervals" so characteristic of the disease. I believe that a state of active increase of the ulcer is essential to the production of symptoms when activity dies down and the ulcer makes its endeavor to heal all is quiet. The enlarging ulcer sets up a spasm in the stomach—the "miseria" of the radiologist. The "notch" on the greater curvature, opposite, or about exactly opposite, the "miseria" on the lesser curvature, is sometimes so deep that it seems to cleave the stomach into two parts. Watched attentively for as long a period as is safe, and examined from time to time, it appears unchanged. The conclusion at first was irresistible that an hour glass stomach existed. Yet when an operation was performed the spasm had vanished. The cause of the symptoms of an ulcer seems clearly to be in this spasm. The pain is doubtless due, in part, to the distension of the zone lying on the cardiac side of this spasm.

The occurrence of spasm is not, however, restricted to cases of gastric ulcer. There is a reflex spasm which in many of its qualities so closely resembles the direct spasm that in haste a false conclusion as to the presence of an ulcer may be drawn. The reflex spasm, even when it is as deep as the direct spasm, is rarely so constant, or so immobile. It is apt to be shallow, fugitive, changing from one part of the stomach to another, and it creeps part persuading one of the conditions so diverse as cholecystitis, tuberculous disease of the intestine or cecum, chronic appendicitis, and certain conditions of the central nervous system. No gastric ulcer, of course, exists without infection, infection may be present, too, in the pyloric part of the stomach when its primary source lies elsewhere. It is long since I described the "pyloric blush" of chronic appendicitis, and Bartholomew, these two conditions, spasm and infection, are present both in the true and in the apparent disease of the stomach, there is little wonder that the symptoms aroused by them should often lead even the alert and earnest diagnostician astray. The only competent authority to distinguish between operation between the spurious and the true is the radiologist, and, as I have before ventured to claim, his work has pride of place among the methods of diagnosis in all forms of gastric disease.

It is not only in the diagnosis of gastric ulcer that our resources have been so greatly augmented, but in the recognition of its occasional complications. Many years ago I laboured hard to discover, and in several papers elaborately described, the various signs which permitted the hopeful recognition of an hour-glass stomach. The signs

were many, the labour to elicit them protracted, the judgement difficult and not free from faults. Now the radiologist will tell us every detail that is relevant, not only is the diagnosis indisputable, but the site of the constriction, the size of the two complements of the stomach, the speed with which one or other will empty, the degree of adhesion if any—all, and even more than these, are stated with unequivocal accuracy.

#### *Cancer of the Stomach*

We shall all, I do not doubt, be prepared to concede our inability to diagnose cases of carcinoma of the stomach in an early stage. Of gastric carcinoma there are, speaking roughly, two great groups. In the one the patient has suffered for years at intervals from mild or severe forms of gastric discomfort. Finally, one attack, at first very like all the others, proves rebellious. Relief is not given by the remedies which hitherto have proved so easily successful. At the operation an ulcer, transformed in part to carcinoma, is found. In the second group are the cases I refer to as 'the bolt from the blue type'. The patient has perhaps been notorious for vigorous gastric health, he scorns the suggestion that he may perhaps have been a little dyspeptic. His denial of former ill health is disdainful to the point of arrogance. Suddenly he becomes ill, and perhaps the illness is ushered in by hæmatemesis of great severity. He loses zest for many things—food, his former activities of work or play, he loses weight, becomes anæmic, and when he is examined a lump is felt in the epigastrium. It is a melancholy but indisputable truth that, despite the activities of a small body of surgeons in this country, carcinoma of the stomach is almost always an incurable and fatal disorder. I should doubt if there are a hundred patients in the whole country who are alive and well five years after operation for the second type of carcinoma to which I have just referred. The reason for this lamentable condition of affairs lies chiefly in our incapacity, by any clinical means, to make a diagnosis in the early stage. As a profession we are not, however, blameless. We have not the courage of our experience. For when a patient over 45 begins with these insidious failures of health our tendency is to procrastinate, when we should not delay a moment. Lives are lost in part through ignorance, in part through timidity. The radiologist is now our strength. He is able, given time, to make a diagnosis of filling defects, to recognize interrupted waves of motion, of a break in peristalsis on the affected curvature, whilst the movement on the normal curvature is unchecked, of deflections of the current of the opaque meal, long before we could be in the least degree confident, by any other means at our command, of the presence of a growth. To ensure a success in treatment greater than that most meagre form we now command, two changes are essential. All patients about whom we have a doubt should be sent forthwith to the radiologist, and the x-ray examination should not be hurried.

#### *Diverticula*

What should we know of diverticula of the duodenum but for the radiologist? I have carefully searched the literature of this subject, and though the condition was first described in 1710 by Chomel, no case had been diagnosed during the lifetime of a patient before 1912. Yet J. T. Case, in a study of 6,847 consecutive patients upon whom a radiological examination of the stomach and duodenum was made, found no fewer than 85 cases of diverticulosis. Not many of the patients who possess these little wayside tracks from the duodenum suffer from them; their removal is therefore rarely necessary. But regard should be paid to them in all operations in which a diagnosis of duodenal ulcer, or of cholelithiasis, is not supported by the conditions disclosed at an operation, for the retention of foodstuffs in these cavities, or its fermentation, may cause symptoms which are apt to be ascribed to other lesions, and when these are not found on inspection the operation may, in ignorance of this condition, be abandoned as a failure.

Of diverticula of the jejunum occurring during life nothing could be known apart from their demonstration by x-ray examination. The cases are few in number, and the little pouches do not often cause much harm. This is all

to the good, for when present they are apt to affect so great a length of intestine as to make removal of the affected segment a matter of difficulty, or even impossible. The best example that has fallen within my knowledge occurred in the practice of my colleague Mr. Brithwaite, the radiological examination and the diagnosis being made by Dr. Rowden.

#### *Colon*

The subject of radiology in relation to diseases of the colon has so recently been discussed in London that I need say little concerning it to day. When I operated upon the first case recognized as diverticulitis in this country on April 2nd, 1906, so slight was our knowledge of the disease that a diagnosis during the life of the patient had never been made. Many of the specimens on our museum shelves bearing the label "carcinoma" were examples of the massive inflammatory thickening round these little crypts, and the fact that the majority of the fistulous tracks from the colon to the bladder were not due to carcinoma was generally unrecognized. The diagnosis of diverticulosis is now made with complete confidence by the radiologist, and by comparison of one radiograph with another taken some months later we are able to judge of the progress of the disease and to come to a decision as to whether operative treatment is likely to be necessary.

I have a number of patients suffering from this disease who are kept in good health, and are sheltered from the attentions of the surgeon, by medical treatment. This ensures a daily emptying of the intestine, and includes an orgy of aperients on the Saturday afternoons and Sundays which are given over, religiously, to the observance of the ritual of free and frequent evacuation. I find that operative treatment in the chronic form of this disease is rarely necessary.

The diagnosis of carcinoma of the large intestine may present such difficulties to the radiologist that great care is needed to avoid error. The opaque meal and the opaque enema both have their uses, but I find far greater help from the latter. Owing to the loading of the colon, and the tenacity with which faecal masses will adhere to the mucous membrane, some days may have to be spent in the administration of aperients and in lavage of the colon before it is empty. A small hard adherent mass of faecal material will show the same filling defect as a growth, and imprisoned gas will prevent the entry of the opaque material. Spasm of the colon, especially in heavy smokers, may suggest an organic stricture, and the overlapping of one part of the bowel by another may cause a deepened shadow or prevent a free entry of the barium mixture. I have been misled both by negative and by positive diagnosis made by the radiologist, but I have been far more often aided than hindered, especially if a day-to-day examination of the faeces for blood, when the diet is free from hæmoglobin, has been made. By collating these two methods of examination, radiological and hæmatological, with the clinical history we are able to recognize malignant disease of the colon before a tumour can be felt, and before obstruction has developed, and having regard to the fact that the colon lends itself to removal better than most parts of the body, and that recurrence after early operation is rare, this a great achievement.

#### *Gall Bladder*

The recognition of diseases of the gall bladder is now receiving help from the radiologist. In making a diagnosis we are all accustomed to speak of cholelithiasis—to say that a patient is suffering from "gall stones." But I believe that we shall be able before very long to look upon gall stones in much the same way as we now regard hæmorrhage from a duodenal ulcer, or its perforation—that is, as a quite unnecessary complication. Gall stones are the expression of tedious events in a terminal stage. Despite my friend Rosing of Copenhagen, I have unchanged belief in the view that gall stones are the consequence of infections which reach the gall bladder from one or more of several sources. Our business is to search out the inaugural symptoms, the symptoms of infection of the gall bladder, and to use all the means that the radiologist—employing, too, the method of Graham—can



bring to our aid. I look forward hopefully and not without confidence to the day when we shall regard cholelithiasis as a preventable disorder. It is true that the clinical diagnosis nowadays is not often at fault. We are able to predict the presence and the position of stones in the gall bladder or the ducts with a large measure of certainty. Even the pre-calculeous stage of this disorder is becoming day by day easier to discover. Though we can clearly see the gall stones on the radiograph in about one-third of the total number of cases in which they are shown by operation to be present, they are not often seen where they are not confidently expected. The indirect signs of cholecystitis are of more interest than the shadow of stones, for they display the changes which the disease has brought about in neighbouring organs by the presence of an enlarged gall bladder, or by the traction exerted by a shrunken gall bladder which has become adherent to them. The advantages of Graham's method would seem to be chiefly in the opportunities afforded for research into the physiological activities of the gall bladder, and into the functions of the liver. We do not yet know in what circumstances and at what rate the gall bladder fills and empties, and we have still much to learn of the secretory activities of the liver. The absence of any shadow after the Graham injection has been made is indicative of a closure of the cystic duct by a stone or by a stricture. But a mistake in the recognition of these two conditions is almost unknown. The danger attaching to Graham's present method appears to be very slight, and doubtless, with enlarging experience, will disappear. The salt used by Graham is useless as a test for hepatic efficiency owing to the fact that its colour is destroyed in serum.

The x-ray examination of the gall bladder after its removal and of the stones which it contained shows that the smaller stones almost always contain nothing but cholesterol. A very few have a nucleus, or an ingredient, of calcium. It is only after a certain size has been reached, and a chronic irritation of the gall bladder has been incessantly at work, that calcium in little spots or in a thin film is laid down on the surface of the stone.

The conclusion I draw from the radiological work done in connexion with cholelithiasis is that it enables a diagnosis to be made which would, in many instances, perhaps be in doubt, that it discovers the existence of associated lesions in neighbouring viscera, and chiefly that it is a powerful instrument of research in enabling us to discover the composition of stones, and therefore to learn something of the processes at work in their formation, and by Graham's method to add something to our very imperfect knowledge of the functions of the gall bladder and of the liver. In other conditions the help of the radiologist to the clinician is still more invaluable. In diseases of the kidney and ureter, in the discovery of stone within the bladder or of diverticula protruding from it we are even in danger of allowing our clinical diagnosis to ignore the history, and to base itself confidently upon radiology alone. No doubt others are as weak as I am. When a patient complains of pain in the loins I am tempted to ask first what the radiologist says, and to accept his word as law. Indeed, he is so constantly right when the clinician alone would be so often in doubt that here too he is both guide and governor. The use of the "bonnet" which so greatly helped us in the removal of projectiles during the war may well be remembered when the kidney, delivered from the wound, is being searched for stones. And here, too, research work upon the normal and pathological anatomy of the kidney and ureter, after opaque injections have been made, and upon the chemical constitution of stones, has added notably to our knowledge.

One of the most delightful uses to which radiology has been put is that which Sierd introduced for the localization and discovery of tumours of the spinal cord. My knowledge of this comes from Mr. Percy Sargent. I confess that I felt a thrill of pleasure when I first learnt of this most ingenious method.

#### Limitations

One very important point remains. All the methods, other than the application of our own senses directly to the patient which we so willingly use in the practice of

surgery, are after all mediocrity. They strengthen our clinical acumen by adding weapons of varied and sometimes, in the case of radiology, of immense value. But they all supplement our clinical resource, they do not, and cannot, supplant them. In regard to gastric ulcer I cheerfully acknowledge that the radiologist is, on the whole, a more competent and a more accurate diagnostician than I am. He has pride of place. But I find an occasional case when, being confident of the existence of an ulcer, I learn that the radiologist doubts, or even denies, the diagnosis which nevertheless in operation confirms. I accept with gratitude a positive diagnosis made by the radiologist but if my clinical sense urges me, after the receipt of a negative report from the x-ray department, to hold to my diagnosis, I may find my tenacity rewarded. In a long series of cases the radiologist will, however, prove to be right more often than the clinician.

When the clinical diagnosis of an ulcer, or of a diseased gall bladder, or of an ectopic growth, is not confirmed by the x-ray report, what is to be done? The whole case must once again be reviewed. In cases of gastric ulcer I hesitate to go contrary to the report of the radiologist, but sometimes I am driven by my own confidence to do so. In cases of duodenal ulcer I prefer my own opinion, linked with that of the chemist, to that of the radiologist. If he gives a negative opinion and I am persuaded of the accuracy of my own, I am prepared to act upon it. And I find I am more often right than he is. In gall bladder disease the clinician, if unsupported by the radiologist, should be prepared to act alone. I could quote many instances where patients, including medical men, have heard the diagnosis of cholecystitis from the clinician, and on learning that it lacks confirmation by the radiologist have been hilled into contentment and a dangerous inactivity, only to be roused by a very formidable catastrophe. If the careful clinician has made a diagnosis of cholecystitis or cholelithiasis a report from the radiologist that gives it no countenance should be disregarded. And so it is with suspected malignant conditions of the large intestine. Though a radiological examination often affords the greatest help when confirmed with the clinical history, and with the direct search for occult blood, the earliest and the most certain diagnosis of these diseases, after all, is made when the barrier of the abdominal wall is lifted and an

#### TUMORS

The treatment of carcinoma wherever it occurs is a disheartening business. The recognition by patients and by medical men of the earlier conditions of malignant disease, even in parts that can be seen or are easily accessible to examination, is unhappily infrequent. It seems almost incredible that patients should allow ulceration of the tongue, for example, to progress to a stage in which remedies are almost hopeless. The diagnosis presents no difficulties, and inspection of the tongue in a mirror ought surely to awaken anxiety. And at every meal time discomforts must be felt or limitations of diet be necessary. When a lump appears in the breast of a woman her natural timidity makes her perhaps, unwilling to submit herself to examination. And when the tumour is plainly felt by a medical man no little time is lost in discussions as to its nature. Nothing but the microscope can settle the diagnosis in a difficult case, to wait for the appearance of those signs which convince the surgeon that the tumour is malignant is to give time for the disease to be disseminated. A review of many cases over a period of twenty years results in this interesting law. "In tumours of the breasts of women over 40 years of age, not less than 80 per cent are malignant, no matter what the physical signs of the tumour may be." Diagnosis, therefore, is largely a matter of the age of the patient. It is a far more reliable guide than any other. Many cases follow upon chronic inflammatory lesions—in the mouth, in the breast, in the stomach, upon the skin, in the colon. Cancer therefore is often a preventable disorder. And in its early stages in most organs of the body it is a curable disorder. To the surgeon two facts about cancer appear indisputable: that it comes as a result of long continued irritation, and that it begins as a purely local disorder and can in that stage be wholly eradicated.

It is pitiable to find so large a number of cases which are inoperable, or which, having been treated by operation, suffer recurrence. To deal with these cases many remedies have been sought. Radium has proved its value in some of them, and the application of x-rays was soon included among our methods. Twenty years ago or more I sent all my breast cases, and all cases in which glands had been removed from the neck after excision of the tongue, to the radiologist. Of the effects produced by the methods of radiology in such cases it was difficult to judge. If the patient remained free from recurrence, one was unable justly to apportion credit between the radiologist and the surgeon, if the disease returned, both had proved powerless. I came tardily and reluctantly to the conclusion then that on the whole more harm than good was done, and I abandoned the method entirely.

When the deep x-ray methods were introduced I felt renewed hope, and with the most skilful and enthusiastic co-operation of Dr. Cooper I have submitted a very large number of patients to his treatment. An exposure to the deep x-ray may be made (a) before operation, (b) during operation, (c) after operation, (d) when operation is impossible.

#### (a) Before Operation

In my own practice this is not often adopted in cases of cancer, for I feel that if a growth is to be removed it may be possible to eradicate it to day and impossible to-morrow, and I never waste one single day. But in cases of carcinoma of the breast, when the activity of the growth and the rate of its extension seem almost inflammatory, it may be worth while to apply the rays, not so much to the growth as to the area around it, in the hope that the cells in lymphatic vessels, which might be set free to implant themselves upon the surface of a wound, may be destroyed.

In cases of carcinoma of the rectum, or of the uterus, with much induration and thickening around the tumour, and when adhesions appear to be present, the rays may cause a change so great as to make one doubt the truth of the earlier observations. The growth shrinks, loses its induration and fixity, and from appearing irremovable seems now to offer no difficulty. In one case in which, in an enfeebled old woman, much distressed by a teasing diarrhoea, I had performed colotomy, the growth entirely disappeared. I had removed a gland at the time of operation, and the diagnosis of carcinoma was not in doubt. No doubt the growth will reappear, but its complete removal is an evidence of the great effect which the rays are able to produce. In all cases of splenic enlargement one or more exposures to x-rays are given. The reduction in the bulk of the spleen is almost incredible from filling the whole abdomen the organ shrinks until a lump the size of a golf ball is felt below the costal margin. Then the spleen may be removed with a safety and with such ease as could not be claimed for any operation upon it in its original state.

#### (b) During Operation

In cases of Crile's operation upon the glands of the neck, and in cases of carcinoma of the breast, I think we might more often expose the entire area of operation to the rays before we close the wound. I have done this in a number of cases, and though it is impossible accurately to gauge its value, on theoretical grounds it certainly appears a very desirable procedure. I have long felt disheartened by our inability to perform more often than we do radical operations for carcinoma of the stomach. I therefore determined to enlist the help of the radiologist. The application of x-rays to the surface of the abdomen, though it may rarely do good in these cases, does sometimes appear to do him. I tried a new method. While the abdomen was opened and the stomach exposed I moved the patient to the x-ray room, and there, bringing the growth as far as possible into a widely opened wound covered by a single layer of mercurochrome gauze, I applied the lamp directly to the stomach for a period of forty minutes. The abdomen was closed. Seven weeks later in one case, nine weeks later in another, I reopened the abdomen and found the growths so changed and shrunken that I was able to remove them, with all their attached glands. Two operations of gastrectomy in this way were performed in 1923 and to-

day both patients are alive and well. One has gained 33 lb in weight, another 9 lb. In both two transfusions of blood were given—one at the time of the x-ray exposure and one before the removal of the stomach was undertaken.

#### (c) After Operation

As soon as the wound is healed after removal of the breast a course of treatment by the radiologist is now advised in all cases. The hope we entertain is that cancer cells in the neighbourhood of the wound will be killed, and that recurrence may be so prevented. Of the prophylactic value of the rays we cannot speak with any certainty. A local recurrence after an operation for mammary carcinoma is in any event so rare that a very long series of cases would be necessary to establish the value of post-operative radiation. But, again, on theoretical grounds the treatment appears so rational that I should not feel content to omit it.

It is perhaps desirable to urge once again the necessity for an x-ray examination of the chest and neck before any operation for carcinoma of the breast is undertaken. The search for metastatic deposits in outlying regions should invariably be made before removal of the primary source is undertaken. When recrudescence of the growth has taken place in the neighbourhood of the wound, or when glands appear in the neck, radiation will often produce the most remarkable results. I have known multiple nodules scattered widely over the chest wall to disappear completely, and to remain absent until the patient's death in consequence of visceral deposits, and glands grossly enlarged and causing pain in the neck and head are diminished in size or caused to vanish, and the lancinating pains soon disappear.

#### (d) Inoperable Cases

A visit to the radiological department engaged in the treatment of these cases is a depressing experience. Cases for which the surgeon can do nothing and cases for which he has done all he can, are sent to this last resort. All the surgical outcasts find refuge here. If radiology could do nothing for them no blame could attach to it, for more unpromising derelict material it would be impossible to find. Yet something is wrought upon these cases that at times approaches the miraculous. Growths shrink and wither away, and foul and extensive ulcers make vigorous attempts to heal, and haemorrhage from excavating caverns ceases entirely. Growths of the thyroid seem to melt away, and growth of the prostate, hard, fixed, and painful, may disappear very quickly. But the return is not long delayed. The most dramatic result I have ever seen was in connection with a carcinoma of the thyroid as large as the patient's head which disappeared almost entirely within a month, only to return with almost equal haste and quickly to prove fatal. There are, of course, many disappointments, and at present one is not able confidently to reckon upon any improvement in the individual case, but the fight for each one is always worth while.

The effects produced upon the patient are sometimes apt to be serious unless great care is taken. The red cells are so diminished in number that great enfeeblement results. I have many times given one or two transfusions of blood in patients who have to submit to x-ray treatment, and hypodermic injections of udon are administered regularly, and most patients are given artificial sunlight baths.

The gifts of radiology to medicine and to surgery have been most lavishly bestowed. When we consider that this science is a newcomer into the fields of diagnosis, of therapy, and of research, the results obtained in so short a time are surely matters for which humanity at large may feel profoundly thankful. If I may for one moment arrogate to myself a greater authority and a wider responsibility, I should like to offer to you, gentlemen, in the name of all your colleagues, my respectful homage for the immense benefit you and your forerunners have already conferred upon mankind, and to express my confident prediction and my warmest hopes for the continued and beneficent progress of the science which you so worthily represent.

# THE CLINICAL VALUE OF THE VAN DEN BERGH REACTION FOR BILIRUBIN IN BLOOD

WITH NOTES ON IMPROVEMENTS IN ITS TECHNIQUE

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The reaction of Hujmans van den Bergh for the recognition and estimation of bilirubin in blood serum, plasma, and other albuminous fluids of the body is now well known to clinicians. More than two years have elapsed since the method was first described in the English language, and since then ample opportunity has been afforded of testing its applications in different directions.

It is not proposed to discuss here the influence of the method on research work in connexion with hepatic disease and bile-pigment metabolism, although this influence has already been great. It seems worth while, however, to reconsider, after two years, the present position and value of the test in its purely clinical aspects, and whether it has been of much service in the routine study of hepatic disease. Certain improvements in technique, which must add greatly to any merits possessed by the test, are also referred to.

During the past two years one of us (J. W. M.) has received a great deal of correspondence from workers, both in America and Great Britain, who have made use of the test. Various points of difficulty have been raised, some easily solved by the results of experience or by experiment and some not easily explainable at a distance without knowledge of the reagents used. From this correspondence, however, several important points have emerged, and require discussion.

Publications on the purely clinical application of the test are already numerous, especially in Germany. No full bibliography need be attempted, but ample records of clinical results are contained in the following:

Feigl and Querner (1919) Lepehne (1920, 1921) Rosenthal and Holzer (1921) Brühl Garban and Weissmann (1922) Andrews (1924) and Hughes (1924). Application of the test to special clinical problems has been made by Strauss and Buckmann (1922) Girard (1924) Schamberg and Brown (1924)—latent and overt salvarsan (arsphenamine) jaundice Schiff and Ehrsberg (1922)—catarrhal jaundice Fishberg (1921)—jaundice in myocardial insufficiency Andrews (1924)—peculiar diazo reaction in uraemia Brown Ames Warren, and Peabody (1925)—study of the blood pigments in pernicious anaemia.

## OTHER CLINICAL TESTS FOR BILIRUBIN IN BLOOD SERUM

Since the introduction of the van den Bergh reaction a number of other colorimetric methods for the estimation of bilirubin in blood serum have been developed, most of them designed for purely clinical use. One well known and simple method is that of Meulengracht (1921), in which the yellow serum is compared with a standard solution of potassium bichromate. By this method quantitative changes in the bilirubin content of an icteric serum are easily determined, but the presence of leucins or carotins in a serum are obvious sources of error. Moreover, the Meulengracht test is unsuitable for the detection of latent jaundice, and gives no qualitative differences such as are brought out by the van den Bergh technique. Van den Bergh has stated (1924) that after an examination by Muller (one of his co-workers) of all the simple colorimetric methods, the conclusion was reached that the original diazo method is still the best, and the present writers are in agreement with this. One other test for bilirubin in blood serum of recent introduction may be referred to here.

This method introduced by Fouchet (1918) has attracted considerable attention particularly in France and although not so delicate as the van den Bergh reaction it is said to give a positive result in a dilution of 1 in 60,000 of bilirubin. It consists essentially in mixing equal volumes of the serum with a reagent made up as follows:

Trichloroacetic acid	5 grams
Ferric chloride solution	2 c cm
Water	20 c cm

The mixture of serum and reagent is stirred with a glass rod, and in the presence of bilirubin a greenish blue colour appears. The maximum reaction is said to be obtained after twenty minutes, and an almost instantaneous coloration in concentrations of bilirubin of less than 1 in 20,000. A scale of standard units of male elute green diluted with pure white lead has been devised to give a rough quantitative method for clinical use. This test does not bear comparison with the diazo-reaction of van den Bergh for clinical purposes, but is important as affording a good and delicate confirmatory test of the presence of bile pigment in blood serum.

## DIFFICULTIES IN THE TECHNIQUE OF THE VAN DEN BERGH REACTION

In an article written by one of us (J. W. M.) in 1923 time limits for the development of different varieties of the "direct" van den Bergh reaction were given as follows:

**Prompt Direct Reaction**—Bluish violet colour, beginning immediately and maximal in ten to thirty seconds.

**Delayed Direct Reaction**—Reddish coloration, gradually deepening to become more violet, begins only after one to fifteen minutes, or even much longer.

**Biphasic Direct Reaction**—Reddish colour appears at once, and either slowly or quite rapidly deepens to violet.

These directions were founded on a moderate experience and formed an average of the results obtained up to that time. It was not expected, however, that different observers, using different reagents, would obtain results within these exact limits, and it was believed that each observer must to some extent interpret his results from his own experience. Andrews (1924), after considering the above directions and the time limit of thirty seconds given for the prompt direct reaction, states:

I have hardly ever found such a reaction and even with fresh bile the colour goes on changing after thirty seconds. If a red colour begins to appear within thirty seconds I consider that the direct reaction is positive.

One point of great importance for the development of the van den Bergh reaction has not been emphasized hitherto, but must always be considered in the interpretation of results. The interval of time between the withdrawal of blood and the carrying out of the test must be known, and should for routine clinical purposes be as short as possible—certainly not longer than two hours or thereabout. Experience has proved that serums showing a prompt direct reaction when tested at once give a slow and often long drawn-out result when retested on the following morning. This has prevented one of us (J. W. M.) from dealing with serums forwarded by post for control examination.

Differences in reaction, either to the acid or alkaline side, are of great importance for the development of the correct colour of the azo bilirubin compound. This can easily be proved after completion of the indirect reaction and addition of diazo-reagent to the supernatant fluid, by testing the effects of very dilute acid alcohol or alcoholic-ammonium hydrate on the colour developed in the test. This point emphasizes the need for care and cleanliness in the reagents and glassware employed.

The occurrence of haemolysis in a serum interferes with the colour reaction in the test, and in recent work we have used oxalated plasma only. In practice, 0.2 c cm of a 10 per cent solution of potassium oxalate is placed in a small wide loosely corked bottle, and evaporated to dryness during sterilization of the bottle. The oxalate is in this way finely distributed over a large surface, and will prevent coagulation of 10 to 15 c cm of blood, if the bottle be shaken.

## IMPROVEMENTS IN TECHNIQUE

### A Lepehne's Technique for the Qualitative Reaction

This method has simplified the reading of results in the direct reaction, since it gives standards for comparison both in respect of the rate of development and time of completion.

Three small test tubes are taken. The first or control tube contains plasma diluted with water. The third tube contains plasma in which the diazo reaction is allowed to develop and reach its maximum by the method described below. The second tube contains plasma to which diazo reagent is added last of all the character of any reaction being watched in comparison with the control tube (I) and the completed reaction (III).

Lepehne has applied an interesting observation of Adler and Strauss (1922) as an aid to completion of the reaction in tube III. These writers found when attempting to

solve the problem of the two varieties of bilirubin apparently differentiated by the diazo reaction, that the addition of a small amount of caffeine-sodium-salicylate induced in many icteric serums an increased rapidity in development of the maximal colour. They quote, for example, one serum giving a delayed reaction (16 units) only, the direct reaction being negative. Addition of a trace of caffeine-sodium-salicylate brought about a prompt direct reaction, maximal in ten seconds, while no change in colour ensued for at least two minutes in the absence of the drug. The original paper should be consulted for an account of the work leading indirectly to this observation. We have made use of caffeine-sodium-salicylate in a number of experiments, but find that the action stated above is by no means constant, at least with the samples of the drug used by us. In some serums the hastening of the colour reaction is definite, at other times no such effect was observed.

The technique of Lepelme, however, is so easy, and gives such good standards for comparison, that we recommend it strongly as the best method of carrying out the direct qualitative test.

#### Method

0.25 ccm of the oxalated plasma is placed in each of three small test tubes. To tube I (the control) add 0.2 ccm of water. Drop a small flake of caffeine sodium salicylate into tube III (shake to dissolve completely), and then add 0.2 ccm of fresh diazo reagent. In this tube a prompt or rapidly developing reaction may be obtained, quickly arriving at its maximum. Some times in our experience, the effect of the drug is negative, but in any case ample time should be allowed for the colour reaction in tube III to be completed.

To tube II then add 0.2 ccm of fresh diazo reagent watching and timing the development of any prompt or biphasic reaction in comparison with the control tube I, and the completed reaction in tube III.

#### B Improvement in the Quantitative Estimation of Bilirubin

It has always been insisted on by van den Bergh that the estimation of bilirubin made possible by the indirect reaction is by no means accurately quantitative. He states (1924) that he has always called it simply "an estimation," and not a quantitative determination. This is because some bilirubin is always carried down and lost in the albuminous precipitate during the performance of the indirect reaction. This is particularly noticed in serums giving a prompt direct reaction, where the loss may be considerable, and the precipitate coloured bright yellow. In serums giving a delayed reaction the loss is much less. Where bilirubin is present abundantly the loss can be reduced by previous dilution of the serum with water, but this method is inapplicable where only small amounts of bilirubin are present.

This difficulty has been solved by Thannhauser and Andersen (1921), who have pointed out that all the azo-bilirubin can be retained for estimation in the supernatant fluid if diazo-reagent be first mixed with the test plasma to allow "coupling" to take place, and then alcohol and saturated ammonium sulphate solution be added. In this way after shaking and centrifuging, a layer of clear ammonium sulphate solution is left at the bottom of the centrifuge tube, above this a white albuminous precipitate, and on the surface the clear reddish-violet alcoholic solution of azo-bilirubin. By this technique all the bilirubin from plasma giving a direct prompt reaction is available for estimation. This method is unnecessary for serums giving the delayed reaction only, where the loss of bilirubin in the albuminous precipitate is slight.

#### Method

The method may be summarized as follows. To 1 ccm of serum add 0.5 ccm of diazo reagent. After a minute or two add 2.5 ccm of 95 per cent alcohol and 1 ccm of a saturated solution of ammonium sulphate. Mix and centrifugize. If the colour of the supernatant fluid is too intense for quantitative estimation, dilute with alcohol 2 parts, water 1 part.

The rationale of this method need not be discussed in detail. It may be mentioned, however, that pure bilirubin is scarcely soluble in alcohol, and in the ordinary indirect reaction it is astonishing how much bilirubin remains in the alcoholic supernatant fluid after precipitation of the protein. Azo bilirubin on the other hand, is freely soluble

in alcohol. Moreover, Adler and Strauss have pointed out that in serums from cases of obstructive jaundice associated with a prompt direct reaction the globulin content of the serum is always diminished. They found that salting out the globulin fraction with magnesium sulphate hastened the development of the direct diazo reaction under experimental conditions. It seems likely that the removal of globulin, or of water, or both, by ammonium sulphate in the method suggested by Thannhauser and Andersen has something to do with the results obtained, but this question requires further investigation. In this method some water certainly goes over into the saturated ammonium sulphate solution, so that the dilution of the serum in the supernatant alcoholic solution is really slightly less than 1 in 4. For practical purposes, however, the dilution of the serum in making the estimation may safely be taken as 1 in 4.

Table contrasting the Results of the Original Method of van den Bergh (I) and the Thannhauser and Andersen Modification (II)

Disease	Type of Reaction	Bilirubin Units	
		I	II
Lost salvarsan jaundice	Direct—either prompt or biphasic	15	60
Pot salvarsan jaundice		10	55
Carcinoma—head of pancreas		30	170
Carcinoma of liver—metastatic		70	150
Catarrhal jaundice	Indirect only	45	55
Ditto—end stage		05	05

#### C Improved Standard Solution

The standard ethereal solution of monorhodanate, originally used by van den Bergh for estimation of bilirubin in "units," has always been a difficulty and source of trouble. In a review on jaundice (1923) some of the criticisms of this standard solution were briefly discussed, and it must be admitted that even when the test is carried out as carefully as possible with clean glassware and carefully prepared reagents, the colours of the test solution and of the standard may not accurately match. Slight changes in reaction of the various reagents may, as already noted, account for this, and one practical point noticed by us is that for diluting the test fluid, in order to bring it within the range of the standard solution, alcohol must be used and not water, or a change in colour tone at once ensues.

The practical difficulties with the ethereal standard solution do not end here. It must be freshly prepared for each set of estimations, and evaporation must, of course, be prevented. During the past summer Professor Højens van den Bergh has informed us of a new artificial standard solution which he and Muller have found can replace the monorhodanate ethereal solution. So far as we are aware this standard has not been published, so we wish to acknowledge its source. The new standard is made up by dissolving 2.161 grams of anhydrous cobaltous sulphate in 100 ccm of distilled water. This solution gives a colour equivalent to 1 unit of bilirubin (1 in 200,000), and is almost identical in colour with the original monorhodanate standard. It is permanent if kept in the dark, and the writers have found it entirely satisfactory in practice, and in direct comparison experiments with the original standard. The cobalt salt must be anhydrous, and at first the supply of the new cobalt standard should be compared with the old ethereal standard and any necessary adjustments in colour made. We have found slight adjustments necessary with the cobalt salt used by us. The ideal thing would be to compare the standard with the diazo-reaction given by a solution of 1 in 200,000 of pure bilirubin, but pure bilirubin is practically unobtainable.

It seems certain that this new and permanent standard must replace the older ethereal solution. If a Hellige wedge colorimeter be used one wedge can be kept full and sealed, and is then available at any time.

#### SUMMARY AND CONCLUSIONS

1 The van den Bergh reaction is the best method so far available for the clinical investigation of the bilirubin

content of blood serum or plasma. It has numerous advantages over other tests which have subsequently been proposed: (a) its extreme delicacy, (b) is not given by other yellow substances which may colour the plasma, (c) gives important qualitative distinctions between certain forms of icterus, (d) can now be used for a satisfactory quantitative estimation of bilirubin.

2. The qualitative reaction may enable a positive diagnosis of obstructive or of haemolytic icterus to be made. Pernicious anaemia, except in the stage of rapid temporary improvement, can be distinguished from secondary anaemias. In some diseases (for example, catarrhal jaundice, subacute liver atrophy, cardiac failure) the reaction may pass through all the stages from completely delayed to prompt direct, as the disease progresses. As a rule, however, in the commonest type of jaundice (the toxic and infective hepatic group) no information of any diagnostic or prognostic value is given to the clinician.

3. The test is of great practical value for the detection of "latent" jaundice.

4. Various alterations in the original technique have improved and simplified its use in clinical medicine.

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## RADIOLOGY OF THE GALL BLADDER BY GRAHAM'S METHOD.

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It is generally admitted that the routine examination by x-rays of the gall bladder area for the presence of stones is subject to serious limitations as regards diagnostic value, for even by means of good radiographs and skilful interpretation their existence can only be clearly demonstrated in, at the outside, 35 to 40 per cent of the cases where they are present. Though an x-ray finding if positive is of definite diagnostic value, a negative finding does not exclude the presence of gall stones and must be ignored.

In the interpretation of shadows found in the gall-bladder area there are two types sufficiently characteristic to be practically diagnostic of gall stones. These are the annular or ring-like shadow (Fig 1) and the cluster of shadows resembling a bunch of grapes (Fig 2). The finding of these shadows in a radiograph of the right upper abdomen is practically certain evidence of the presence of gall stones, especially if, by radiographs taken in different positions of the body, they are shown to be situated nearer the front of the abdomen than the back. Other atypical shadows may be found in the region of the gall bladder which call for more serious thought and skill in interpretation before they can be taken as evidence of gall stones.

A large number of gall stones, however, are not sufficiently opaque to x-rays to throw any shadow at all when they are in the body. Some, indeed, are so translucent that even when the gall bladder containing them is removed and radiographed they are no more opaque than the bile or the walls of the gall bladder by which they are surrounded, in

fact, they may be even less opaque, and may show in the radiograph of the free gall bladder as translucent areas in the shadow of the more opaque gall bladder and bile.

In 1913 Holland and Williams investigated the factor underlying this varying degree of opacity of gall stone. They found that the opacity depended on the proportion of the pigment and other salts of calcium. Those containing a large proportion of cholesterol were the most translucent, while those containing a large proportion of pigment or other salts of calcium were the most opaque. The calcium salts are often deposited at the periphery of the stone and so give rise to the characteristic annular shadow.

Apart from the direct x-ray evidence of gall stone, the existence of a pathological condition of the gall bladder may often be suspected from abnormalities of contour, position, or function, of the stomach or duodenum, found during the examination of the gastro-intestinal tract by the opaque meal, or by a process of elimination, by means of x-rays, of gastric, duodenal, and appendiceal lesions, and of urinary stones.

### GRAHAM'S METHOD OF EXAMINATION.

The method of radiologically investigating the gall bladder, observations on which we wish to record in this paper, is attributable to Graham of St. Louis, U.S.A. It is based on the use of a salt opaque to x-rays which, when injected into the blood stream, is excreted by the liver, enters the gall bladder, and is there concentrated, thus rendering the gall bladder under normal conditions opaque to x-rays.

Rowntree has shown that certain dyes—for example, phenol tetra-chlorophthalen—when injected into the blood stream, are excreted almost entirely by the liver. The rate of disappearance of this dye from the blood stream has been used as a test of liver function. Graham and Cole showed that tetra-brom-phenolphthalen salts—of both calcium and sodium—were excreted by the liver almost entirely and were opaque to x-rays. The iodine compound, although more opaque, was, in their opinion, too toxic for general use. More recently Whitaker and Millen after a careful clinical and



FIG. 1.—Two gall stones showing opaque periphery and nucleus the intermediate portion being more translucent. Annular type of shadow.

\* Read at a meeting of the Liverpool Medical Institution.





FIG. 2.—Gall bladder containing a large number of small opaque gall stones. Cluster type of shadow.

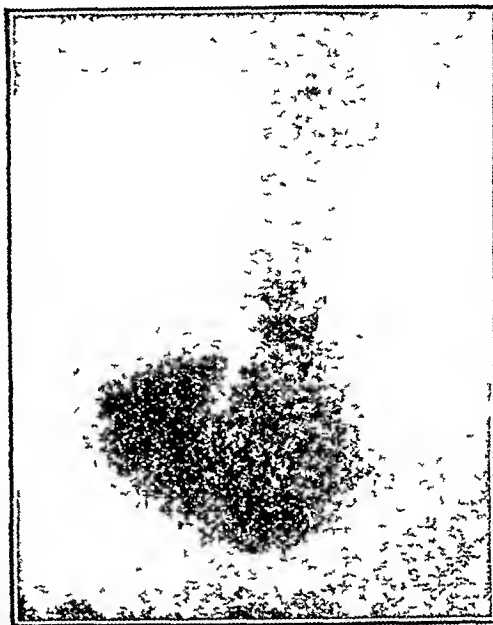


FIG. 3.—Collection of many small opaque stones in the fundus of the gall bladder causing a hemispherical shadow to the outer side of the duodenum. This was an accidental discovery during an opaque meal examination of the stomach and duodenum in the erect position.



FIG. 4.—Normal gall bladder seen eight hours after intravenous injection of sodium salt of tetrabrom phenolphthalein (Graham's method).

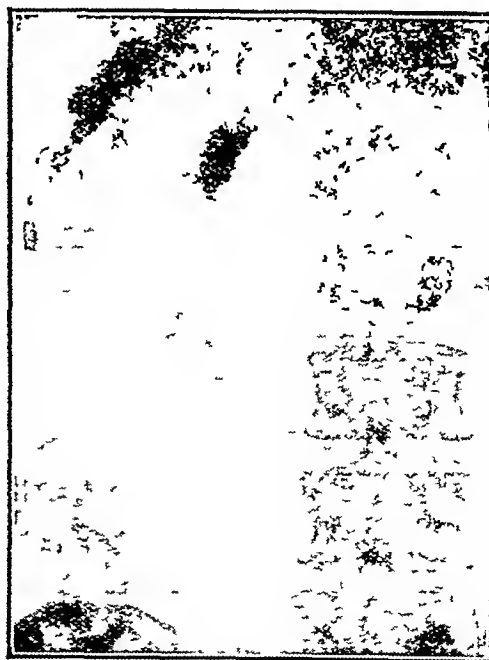


FIG. 5.—Same case as Fig. 4 twenty-four hours after injection. Shadow of gall bladder is smaller but more opaque than in Fig. 4.

experimental comparison of the bromine and iodine salts, state their preference for the latter. In our investigations the sodium salt of tetra-bromophenolphthalein has been used throughout. It was obtained as a crystalline powder from the Mallinckrodt Chemical Works of St. Louis.

#### Method followed in this Inquiry

Our procedure was as follows:

1 All cases were first examined radiologically by the ordinary direct method for gall stones. In every case of our series which was operated on, except one, where a doubtful and non diagnostic shadow was seen in the region of the gall bladder, the result of this examination was entirely negative.

2 The cases were then examined radiologically by Graham's method of intravenous injection of the dye. The technique adopted was as follows:

No special preliminary preparation was made except that during the four hours preceding the injection no food or fluid was allowed.

Five grams of the salt were dissolved in 40 ccm of distilled water and sterilized by boiling for twenty to thirty minutes. This solution was very slowly injected intravenously in two doses, the second being given half an hour after the first. In view of the danger of necrosis which might follow extravasation of the dye into the subcutaneous tissues, the needle was inserted separately into the median basilic vein and blood was allowed to flow freely from it before attaching the syringe. It is most important that the rate of injection should be slow if untoward symptoms are to be avoided. The injection of the dye was followed by a few cubic centimetres of sterile normal saline solution to avoid leakage of the salt when the needle was removed.

During the first day no food other than a glass of milk at lunch and in the evening was allowed. During the second day ordinary fish diet was given. For the forty-eight hours following the injection 40 grains of sodium bicarbonate were given every three hours during the day.

Two and a half hours after the injection (that is one and a half hours before the first radiographic examination) 0.5 ccm of pituitrin was given hypodermically, followed three quarters of an hour later by a simple enema.

Radiographs of the gall bladder area were taken four, eight, twenty-four and thirty-six hours after the injection.

#### Reaction following Injection

The injections occasionally gave rise to unpleasant symptoms of vasomotor shock—such as pains in the back, dizziness, nausea, vomiting, cyanosis, coldness, or "queer feelings"—associated with a lowering of the blood pressure, a preliminary rise was sometimes observed.

We have encountered no serious symptoms in our cases, only a slight reaction occurred in most of them, serious symptoms can be avoided by slow injection. If necessary a hypodermic injection of 10 minims of a 1 in 1,000 solu-

tion of adrenaline hydrochloride may be given, we have never had to use this, occasionally we have given brandy after the injection.

#### The X-ray Appearances of the Normal Gall Bladder after the Injection

The shadow of the gall bladder containing the dye, which has been excited by the liver, can be made on four to five hours after the injection has been given.

1 The shadow increases in intensity, owing to the progressive concentration of the dye, up to anything between eight and twenty-four hours. The shadow is homogeneous, oval or pyriform in shape, and of even contour. After this the shadow became less intense as the dye becomes diluted and passes out.

2 The gall bladder shadow also varies in size, being larger at the earlier examinations (five to eight hours), and then becomes gradually smaller. This variation in size is important evidence of normal distensibility and contractility of the gall bladder.

#### Physiological Requirements

Before the shadow of the gall bladder containing the dye can be produced three requirements must be fulfilled—namely:

(1) The dye must be excited by the liver. This will not take place if there be, for example, gross cirrhosis or carcinoma of the liver.

(2) The dye must be able to pass into the gall bladder. This will not take place if there be obstruction to the cystic duct or common bile duct, such as might be caused by gall stones, adhesions, papilloma, thickened bile, catarrh, etc., or if the gall bladder be filled with gall stones or growth.

(3) The dye must become concentrated in the gall bladder, by absorption from the gall bladder mucosa, contraction of the gall bladder, and retention of the dye for a sufficient length of time. This will not take place if there be chronic cholecystitis or if there be a fistula connecting the gall bladder directly with the gastro-intestinal tract and so allowing the immediate or early escape of the dye from the gall bladder.

#### The Abnormal Gall Bladder

If there is any obstruction due to gall stones, adhesions, thickened bile, etc., we may find either that the gall bladder fails to fill at all with the dye and so gives no X-ray shadow, or that it fills scantily, giving a persistently faint shadow, or that there is delayed filling.

Another evidence of pathology is marked delay of emptying, or an unduly large size of the shadow, due to loss of elasticity of the gall bladder walls. On these may be a

TABLE I—Showing Results of Inie tion on by Graham's Method of Ten Cases who were subsequently Operated on

Case	X ray Findings								Deduction	Operative Findings
	Gall bladder Shadow after Injection									
	Intensity				Size					
W D	4 hrs 2	8 hrs 4	24 hrs 2	36 hrs —	4 hrs 4	8 hrs 3	24 hrs 1	36 hrs —	Normal gall bladder	Normal gall bladder (gastric ulcer)
M J	1	3	4	—	4	4	3	—	Normal gall bladder	Normal gall bladder (pathological appendix)
J O	—	—	—	—	—	—	—	—	Pathological gall bladder	? Normal gall bladder ? Slender adhesion at neck of gall bladder
R C	—	—	—	—	—	—	—	—	Pathological gall bladder	Small pathological gall bladder Stone impacted in cystic duct
V C	—	—	—	—	—	—	—	—	Pathological gall bladder	Gall bladder full of stones Cystic duct completely occluded
F W	—	—	—	—	—	—	—	—	Pathological gall bladder	Gall bladder adherent connexion r with one large stone
V W	—	—	—	—	—	—	—	—	Pathological gall bladder	
M M	1	1	—	—	4	4	—	—	Doubtful	One small stone in gall bladder No evidence of obstruction of cystic duct
M F	—	—	—	—	—	—	—	—	Pathological gall bladder	Healed duodenal ulcer Dense adhesions around neck of gall bladder
H H	2	3	3	3	3	2	3	2	Pathological gall bladder	Pancreatitis and subacute cholecystitis S-shaped twist in neck of gall bladder

numbers 1 2 3 4 have been employed to denote different degrees of intensity and size of the the maximum intensity of the gall bladder shadow seen after injection. As regards size of the gall bladder

TABLE II—Showing Results of Investigation by Graham's Method of Four Cases who were not Operated on

Case	X ray Findings								Deduction	Remarks
	Gall bladder Shadow after Injection									
	Intensity				Size					
D J	4 hrs 1	8 hrs 3	24 hrs 3	35 hrs 1	4 hrs 4	8 hrs 4	24 hrs 3	35 hrs —	Normal gall bladder	Normal individual with no gall bladder symptoms
A H	—	—	—	—	—	—	—	—	Pathological gall bladder	Clinically and biochemically—obstructive jaundice
R F	—	—	—	—	—	—	—	—	Pathological gall bladder	Clinically and biochemically—carcinoma head of pancreas
I W	—	—	—	—	—	—	—	—	Pathological gall bladder	Two gall stones shown by ordinary x ray examination

deformity of contour of the shadow, or mottling, or central defects (indicating stones in the gall bladder itself, but not causing obstruction, or papilloma)

#### RESULTS OF INVESTIGATION

Of the series of cases in which the gall bladders were investigated by Graham's method ten were subsequently operated on and four were not operated on. Our radiological findings and deductions together with the operative or other findings are shown in Tables I and II.

In only one of the ten patients operated on were the surgeon's findings at variance with our radiological deductions. In this case (J O) the evidence obtained by an examination of the gall bladder by Graham's method (on two occasions) indicated a pathological condition of the gall bladder. Yet at operation no gross evidence of pathology was obtained. The only abnormality found was a slender adhesion over the common duct, when this had been divided the gall bladder, previously full, was seen to empty. It is doubtful whether this could be sufficient to prevent the dye from passing into and being concentrated in the gall bladder. We trust that a further examination of the gall bladder by Graham's method after the patient has recovered sufficiently from the effects of the operation may throw further light on the question.

#### CONCLUSIONS AS TO THE VALUE OF GRAHAM'S METHOD

In estimating the value of this method of radiologically examining the gall bladder three facts must be borne in mind:

- 1 That only a maximum of 35 to 40 per cent of gall stones show evidence of their presence by the ordinary method of direct radiography.
- 2 That a negative finding by the ordinary method does not exclude the presence of gall stones.
- 3 That "gall stones are incidental and not essential to a cholecystitis which may necessitate surgery."

It is therefore in those cases which by the ordinary direct method of radiography fail to show the presence of gall stones that this new method is of particular value. By no other means short of operation can we ascertain whether this negative finding signifies a normal condition of the gall bladder or not. In other words, it should be used as an adjunct rather than as an alternative to the ordinary method of examination.

A striking feature of the cases shown in Table I is the fact that of all seven cases where a pathological condition of the gall bladder was found at operation, only one case gave the slightest evidence of this before injection, whilst all gave evidence of a pathological condition when examined by Graham's method. The two cases where a definitely normal gall bladder was found at operation both gave definite indication of a normal gall bladder by Graham's method.

The single remaining case where a pathological gall bladder was deduced from the findings by Graham's method, and where at operation no gross evidence of a pathological condition was found, as already stated, needs further investigation.

However, the successes encountered in all the other cases are, in our opinion, a striking testimony to the value of this method as a diagnostic aid in the examination of the gall bladder.

We wish to express our thanks to Dr Leggate for his valuable assistance and to those physicians and surgeons of the Liverpool Royal Infirmary who have allowed us to investigate their cases.

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## LEPTOSPIRA IN LONDON WATERS

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THE occurrence in the British Isles of sporadic cases of spirochaetal jaundice, although apparently few in number, shows that under certain conditions the disease may be acquired in this country, and therefore any observations throwing light on the origin of these outbreaks may help to eradicate the infection. The following notes on the presence of a leptospira, morphologically identical with *Leptospira icterohaemorrhagiae*, in London tap water, Thames river water, and water from several other sources in the neighbourhood, are published in the hope that they will draw attention to these interesting organisms, which under certain conditions may assume grave importance from the point of view of public health.

Attention was first directed to this subject by the discovery of leptospira in one of Professor Leiper's cultures at the London School of Hygiene and Tropical Medicine, which had been prepared to show the ciliated embryos of the broad tapeworm, *Dibothriocephalus latus*. The faeces of a patient infected with this worm, and containing large numbers of ova, had been mixed with ordinary London tap water in a Petri dish, then incubated at 30° C for sixteen days, and subsequently kept at room temperature for about one week. When examined by dark-ground illumination, the water was found to be swimming with leptospira, there being as many as thirty to forty organisms in each field of the microscope. Under the impression that the leptospira might have had a human origin, the faeces of a number of patients in the Seamen's Hospital, and also from other sources, were mixed with tap water in Petri dishes and the mixtures incubated at 25° C. In every case without exception large numbers of leptospira appeared in the water after an incubation period of ten to fourteen days. Subsequently cultures were prepared by mixing faeces with boiled tap water and incubating, when it was found that these organisms never appeared, thus showing that they were present in the water and not in the faeces. Finally, cultures were made by mixing tap water with faeces, both human and animal, which had been sterilized by boiling, and in every case leptospira appeared after incubating at 25° C for not less than ten days.

From these experiments it was evident that leptospira is present in London tap water, and an attempt was made to determine in what numbers. Although, subsequently, leptospira was found in the slime on the inside of a dripping tap in the laboratory, the direct examination of water under the microscope gave negative results, even

after centrifuging. Therefore a mixture of sterilized water and sterilized faeces was poured into a number of Petri dishes, and subsequently a measured quantity of unboiled tap water added to each, the resulting mixture was incubated at 25° C. It was found that the addition of less than 0.5 c.c.m. of tap water produced inconsistent results, whilst the addition of this amount, or more, invariably resulted in the development of leptospira. Consequently, at the time of the experiment (March) London water must have contained approximately two leptospira in every cubic centimetre.

Subsequently water from other sources was examined, and by employing the method above described leptospira were found in the following: Tring tap water, a rain-water tank in Major S. S. Flower's conservatory at Tring, and water storage tanks at a school in Buckinghamshire. In addition, these organisms were found by direct examination, in London sewage water, in Thames river water off the landing stages at Gravesend and Tilbury respectively, and in the sludge at the outlet of one of the main tanks in the aquarium of the London Zoological Gardens, which was examined through the kindness of Mr. E. G. Boulenger. Finally, my friend Dr. A. Robertson drew my attention to the presence of leptospira, in considerable numbers, in the sludge on the inside of a bowl which received the water draining from the melted ice of an ice-chest in the laboratory.

#### Culture Experiments

Up to the present I have not succeeded in isolating a pure culture of this water leptospira, and therefore it has been grown only in the presence of other bacteria. All attempts to grow it on any of the ordinary culture media used for *L. icterohaemorrhagiae* failed owing to the more rapid growth of the contaminating bacilli and cocci, which decomposed the media before there was any sign of leptospira.

By far the simplest and most successful way of growing these organisms is the coprozoic method mentioned in the earlier part of this article. A portion of human faeces about the size of a pea is mixed in a Petri dish with about 20 c.c.m. of the water to be examined and the mixture kept in the dish at a temperature of 25° to 30° C. Leptospira can generally be found after ten days, and reach their maximum growth about the twentieth day. They usually persist for a period of four to five weeks, gradually diminishing in number, until they seem to disappear, about two months after the preparation of the culture. This disappearance, however, is only apparent, due possibly to the organisms becoming so scanty that they are not easily detected. In order to produce their reappearance it is only necessary to add a small quantity of fresh faeces and continue the incubation at 25° to 30° C.

With this method the organisms can readily be obtained in considerable numbers, and it affords a convenient way of growing them for demonstration. The cultures should be kept either in the dish or in a shaded corner of the laboratory, for exposure to a bright light is rapidly fatal. It is essential to employ Petri dishes, as the same mixtures of tap water and faeces, when placed in test tubes, or flasks, and incubated at 25° C. never showed any development of leptospira. Moreover, when a culture containing large numbers of these organisms was poured into a test tube the leptospira gradually lost their motility and died off in four or five days. In parenthesis, it may be noted that this property of requiring a large surface and not growing in tubes is in marked contrast with that of *L. icterohaemorrhagiae* cultured on Wenyon-Noguchi medium, in which Dr. Okell has found that although growth takes place readily in tubes, the organism does not grow in Petri dishes or Roux bottles exposing a large surface. Obviously, it is difficult to compare the conditions when one organism is growing in association with many kinds of bacteria and protozoa, whilst the other is growing in pure culture, but the ordinary pathogenic strain of *L. icterohaemorrhagiae* may be grown in a mixture of faeces and water, and in these circumstances requires the same large surface as the water leptospira.

The luxuriant growth of leptospira in the presence of

faeces may be due to the production of sulphuretted hydrogen in the water, for Dobell<sup>1</sup> observed that this substance favoured the growth of other water spirochaetes, and the same effect has been noticed by Zucker<sup>2</sup>. These organisms will also grow in a 0.1 per cent solution of potassium nitrate in sterile tap water, but only comparatively small numbers have been obtained in this medium. The food supply of organisms growing in such a medium is a little obscure, the leptospira may obtain its nourishment either from traces of organic matter present in the water, or by synthesis of food substances from the inorganic salts. Further experiments are necessary to decide this question, which is of some interest from a theoretical point of view.

#### Filtration Experiments

The water leptospira will pass through an L3 Pasteur Chamberland filter, and may be observed by direct examination of the filtrate. With an L5 filter of the same make leptospira, as such, could not be detected in the filtrate, even after employing the centrifuge. Nevertheless, when the filtrate was poured into a Petri dish and incubated for about ten days at 25° C., leptospira appeared in the liquid. This experiment has been repeated successfully on three separate occasions, and although it is conceivable that leptospira, as such, may have been present in the filtrate in extremely small numbers, so that they were almost impossible to detect by microscopic examination, the more probable hypothesis is that the organisms were present in some other form. The L5 candle is of such fine texture that it is very difficult to believe that an ordinary leptospira could pass through, and the negative results of direct examination of the filtrate support the view that some other stage must have been present.

#### Animal Experiments

The results of these few experiments are inconclusive, as up to the present I have not succeeded in isolating a pure culture of the water leptospira, and therefore the animals have been inoculated with a mixture of organisms. In no case were leptospira recovered from the inoculated animals, except in three guinea-pigs which died the day after an intraperitoneal injection of 4 c.c.m. of a water culture. The peritoneal fluid of these animals, examined after death, contained actively motile and apparently healthy leptospira. In addition, the following results may be mentioned.

(a) Two guinea-pigs each inoculated intraperitoneally with 0.5 c.c.m. of a suspension of leptospira in water. Both showed febrile symptoms and one died on the tenth day with general darkening of the viscera but subinoculations into two other guinea-pigs gave negative results. The other individual showed rectal haemorrhages on the twelfth, thirteenth, and fourteenth days but no other symptoms.

(b) A young guinea-pig was given by mouth 4 c.c.m. of a suspension of leptospira in water. Its temperature gradually rose to 104° F. and was accompanied by epistaxis on the ninth day. Two days later it was killed and showed slight jaundice and two haemorrhagic spots on the lungs. Blood from the heart and liver was inoculated into two other guinea-pigs, both of which showed febrile symptoms and one of them had rectal haemorrhages on the seventh to the tenth days inclusive.

Owing to the necessity of bringing the investigation to a premature termination, due to the author's sudden departure for China, it has not been possible to continue these experiments, and it is doubtful whether any conclusions can be drawn from the results. Case (b) is the most suggestive, as the symptoms resembled those of a mild case of spirochaetal jaundice, and subinoculations produced fever, in one case accompanied by rectal haemorrhages. The difficulty of recovering leptospira from inoculated guinea-pigs is not sufficiently recognized by authors who have worked with exceptionally virulent strains. Buchanan<sup>3</sup> only recovered the organism from one guinea-pig out of 44 inoculated with leptospira from proved cases of spirochaetal jaundice, which shows the necessity of long-continued observations before their presence can be definitely excluded. Up to the present very little attention has been paid to the minor clinical symptoms of guinea-pigs

inoculated with leptospira, but in view of the existence of strains with varying degrees of virulence, they would probably repay closer attention.

#### DISCUSSION OF RESULTS

Although water leptospira have been recorded from various parts of the world, the only record, so far as I am aware, of their occurrence in this country is by Coles,<sup>12</sup> who found them at Bournemouth. J. G. Thomson and D. Thomson<sup>2</sup> described "a new variety of *Treponema* found in an old specimen of human faeces," which is almost certainly the organism under discussion, but assumed that it came from the faeces and not from the tap water in which the faeces had been kept. In addition, the interesting observations of Buchanan<sup>3</sup> demonstrated the existence of a free living leptospira in the slime on the roofs of coal mines in East Lothian. In the latter case, although the organisms were not discovered in surface water, there is presumptive evidence, in view of their habitat, that they are identical with the water leptospira.

Considering the variety of sources from which this leptospira has been obtained it is evidently a very widely distributed organism, and there is little doubt that further observations will result in its being found in the majority of water supplies, therefore it is of some interest to determine whether it possesses any pathogenic significance. Morphologically it is impossible to distinguish the common water leptospira from *L. icterohaemorrhagiae*, although, perhaps, too much importance should not be attached to such a resemblance in organisms presenting so few morphological characters. On the other hand, there is a biological relationship between them, for agglutination of a leptospira from London tap water was produced by a 1 in 40 dilution of an anti-leptospira serum, prepared at the Wellcome Physiological Laboratories for a virulent strain of these organisms, isolated by Buchanan. For the supply of this serum I am indebted to my friend Dr. Okell, who had used it in his researches on jaundice in dogs.

If we turn our attention to the history of recent outbreaks of spirochaetral jaundice it is obvious that there must be some very widespread source of infection in nature, for it is impossible to explain the origin of the cases in any other way. Certain outbreaks, notably that in Edinburgh described by Lyon and Buchanan,<sup>4</sup> have been traced to human carriers of the infection, and once the disease becomes established in man it seems to be contagious, especially among children. The exact mechanism of transmission in such cases is not obvious, but presumably the infection is conveyed by the urine, which often contains living leptospira. No such explanation, however, can be offered for the origin of most outbreaks, which generally seem to be associated with conditions that would favour the saprophytic growth of leptospira.

The best example of this nature is the outbreak in East Lothian, described by Buchanan,<sup>3</sup> who was able to show that certain coal mines were the source of infection. In the infected mines typical *L. icterohaemorrhagiae* were obtained from the slime on the roof, in situations that appeared inaccessible to rats. Moreover, the inoculation of this slime into guinea-pigs produced the characteristic symptoms of spirochaetral jaundice, to which the animals succumbed, and abundant leptospiral organisms were present in all their organs.

On the Continent various epidemics have been traced to insanitary bathing establishments, amongst which may be mentioned the outbreak near Magdeburg described by Kornei,<sup>5</sup> which was arrested by closing certain bathing sheds. The Vesle outbreaks in Northern France were traced to the river, and leptospiral organisms were found by Etelgeon<sup>6</sup> in the river water and mud. During the great war epidemics of the disease occurred in wet ill drained trenches, where conditions, especially in dug outs, would undoubtedly favour the growth of leptospira.

The disease has also been recorded from among workers in sewers, or, in one or two cases, in persons who had fallen into filthy water.

The best example of such a case is that described by Manson-Bahr<sup>7</sup> of a seaman who fell into the Thames off Gravesend, and was nearly drowned. Five days later he developed a typical attack of spirochaetral jaundice, and

Wenyon and Brown, who made a laboratory examination of this case, were able to recover the leptospira from guinea pigs inoculated with the patient's blood. A subsequent examination, recorded in the earlier part of this paper, supports Dr. Manson-Bahr's view that the infection had originated from immersion in contaminated water, for I found the Thames water at Gravesend to contain as many as one leptospira in every 40 fields of the microscope.

The work of Zuelzer<sup>8</sup> and others on water leptospira shows that non-pathogenic forms may acquire pathogenic properties after prolonged culture, although Buchanan<sup>3</sup> is the only observer who has succeeded in finding virulent leptospira living saprophytically in nature.

The occurrence of a similar infection in wild rats, in which the organism can exist as a harmless commensal, has led to the view that they may serve as a reservoir, and in view of the usual habitat of these animals it seems reasonable to assume that they acquire the infection by drinking filthy water containing leptospira. The observations of Foulerton,<sup>9</sup> Stevenson,<sup>10</sup> and Balfour<sup>11</sup> show that a considerable proportion of London rats are infected with the disease, Balfour<sup>11</sup> finding leptospira in 22.6 per cent of 154 brown rats. Since the organisms are passed out in the urine, these animals may serve to spread the infection, but their agency is not essential, as outbreaks have occurred in which their presence was definitely excluded.

Considering all the known facts concerning outbreaks of spirochaetral jaundice, there is reasonable evidence for the assumption that certain strains of water leptospira may acquire pathogenic properties, and therefore constitute a potential source of human infection. The conditions under which they acquire such properties are not clear, but one important factor is the dose, as the results of inoculation experiments with the water leptospira, as well as with blood spirochaetes, have shown that it is necessary to introduce a minimal number of organisms in order to produce infection. For example, Buchanan<sup>3</sup> failed to infect guinea-pigs by the inoculation of 1 c.c. of slime containing leptospira, but with four times this amount produced fatal infections. On the other hand, the occurrence of laboratory infections among experienced bacteriologists, who have worked with this disease in guinea pigs, suggests that after passage through these animals the virulence for man is considerably increased, and it is possible that similar variations may occur in nature.

The susceptibility of the host is another important factor, for the inoculation of identically the same dose into a number of guinea-pigs produces very different results, ranging from a complete absence of any obvious effects up to the development of a fatal attack of intense haemorrhagic jaundice. Probably the human host is equally variable in susceptibility to infection, and it is a noteworthy feature that most of the recent outbreaks of the disease have been confined to children or young adults.

The presence of leptospira in water in small numbers is obviously harmless, otherwise a considerable proportion of the population would be affected, but under insanitary conditions, and especially when faecal contamination of the water takes place, the organism may increase in numbers and constitute a real source of danger. Under modern sanitary conditions there is little likelihood of the disease assuming any great importance, but under abnormal conditions, such as war, or in countries where sanitation has not yet developed, the infection is likely to continue, as the causative agent is evidently capable of living indefinitely as a saprophyte, either in water or in damp localities containing suitable organic matter. Spirochaetral jaundice may be added, therefore, to the long list of diseases which owe their origin to insanitary conditions and lack of attention to public hygiene.

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## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL.

#### REMOVAL OF AN OVARIAN CYST IN AN AGED WOMAN RICHMOND

15 November, 1923, I was asked by a colleague to tap an ovarian cyst. The patient was an old lady who had previously refused operation for various reasons. The necessity for tapping became more and more frequent, and on each occasion from 16 to 18 pints of thick glaucous fluid were drawn off. The last interval between paracenteses was three weeks. The old lady declared that her life was not worth living with the continuous discomfort of pressure symptoms, and said she would rather be operated on and die under the anæsthetic than endure it any longer. After a lengthy discussion with the patient's doctor I decided to take the risk and make an attempt at permanent relief. I said that if I could not remove the tumour in its entirety in a given time I would not proceed further with the operation. My only fear was that it might be malignant. I tapped the cyst for the last time on May 3rd, and operated exactly one week later.

The operation was performed on May 10th, when the patient was 90 years of age. The usual midline incision was made, and I found a large multilocular ovarian cyst with multiple adhesions to the peritoneum, but fortunately these could easily be broken down by the hand and did not require ligature. The pedicle was clamped, ligatured, and the cyst removed whole. It was not malignant, and contained over a gallon of fluid. The operation took twenty-five minutes.

The patient sat up in a chair on the seventeenth day, and walked from one room to another on the twenty-second day. To use a familiar and unscientific expression, "she did not turn a hair," and continues to enjoy good health. This case may not constitute a record, but it is sufficiently unusual to warrant publication.

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#### SEVERE GENERALIZED DERMATITIS AFTER A LOCAL SCALD

The case of severe dermatitis following ultra violet light reported by Drs. MacCormac and McCler (April 11th, p. 695) is interesting and instructive. Recently I had a case presenting many points in common, but caused by scalding. A lady, aged 55, scalded one foot and instep (probably a scald of the second degree), which was treated rather casually with home remedies, no doctor was called in, and no serious attempt was made to keep the part aseptic. Putrid healing occurred after some months, but then the condition became worse and spread over the body. When I first saw her, three months after the accident, the affected foot was acutely inflamed and there were extensive raw areas—copiously weeping. The other foot was similarly but less severely affected. There was a generalized acute eczematous dermatitis all over the chest, trunk, legs, and arms, with considerable pruritus, the face alone escaped. In ten days, with aseptic treatment of the foot and soothing applications to the rest of the body, and mistura alba, the condition completely cleared up. There was no previous history of eczema, no doubt the generalized dermatitis was produced by toxic absorption from the scalded foot.

London S.W. REDMOND ROCHE, M.R.C.S., L.R.C.P.

#### A NOVEL METHOD OF REDUCING A DISLOCATION OF THE ELBOW

A BRITISH sailor came into the Cottage Hospital at Algiers recently with a typical dislocation of the right elbow, the forearm being displaced forwards. It so happened that Professor Curtillet, surgeon to the Civil Hospital, was in the

hospital—a circumstance which enabled me to watch the reduction of the displacement by what appeared to me to be a novel method.

Standing on the right side of the patient, who was in the erect position, he grasped the patient's right arm firmly above the elbow with both hands, leaving the forearm free. Having raised the limb to an obtuse angle with the trunk he then, suddenly, taking the patient quite by surprise, imparted to the limb a violent flail-like movement, whereupon the displaced forearm slipped back into its place. The pain was no doubt considerable, indeed, the patient collapsed and fell to the ground, but it was only momentary, for he got up smiling. Dr. Curtillet told me he had employed this method many times with invariable success, and it is so simple that it deserves to be more commonly known.

Alger.

ALFRED S. GLENN

#### PLUGGING THE POSTERIOR NARES

The customary method of plugging the posterior nares in operations by the use of a catheter or of Belloq's sound has several disadvantages. The use of a forehead mirror is almost essential, and, when the hæmorrhage is severe, it may be impossible even to see the thread. In a case where the Belloq sound failed the following method was successful.

One end of a piece of packing tape was twisted several times round the tip of the forefinger, which was put into the mouth and pushed up behind the palate into the nasopharynx. With snare forceps introduced through the nose the tape was then easily seized and drawn out through the anterior nares. A roll of gauze was attached and secured in position in the usual manner.

This method, being carried out by the sense of touch alone, can be employed where a suitable light is not available, or where the view of the pharynx is obscured by blood. In such circumstances the method, which I believe to be new, may prove useful.

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#### FACIAL FISTULA OF THE SCROTUM

The case here recorded was shown to the Sierra Leone Branch of the British Medical Association as an interesting case, showing the vitality and resistance to sepsis of some of the natives.

A man aged about 46 was admitted to the Connaught Hospital, Freetown, Sierra Leone, on November 22nd 1924 complaining of a wound in the leg. He was found also to have a facial fistula of the scrotum with a large right inguinal hernia in a much enlarged scrotum. The opening was about three quarters of an inch in diameter and could be probed to a depth of two inches. The patient stated that about eighteen months previously he had been stabbed with a knife while at work on his farm, but there is a suspicion that the wound was inflicted while engaged in burghling as he was known to be a burglar. Very seldom had he used rectum or anus since that time. All faeces passing by the fistula.

An operation was performed by Dr. J. Y. Wood of the West African Medical Staff, assisted by Dr. E. J. Wright and the writer.

As there did not appear to be much adhesion at the external ring an incision two inches long was made just below this with a view to cutting across the loop making an end to end anastomosis and performing a radical cure for hernia. This was found to be impossible owing to adhesion and the wound was closed. A fresh incision was then made above the fistula and enclosing the latter elliptically. The bowel proved to be the cæcum much dilated and not a double loop. One side was embedded in a dense mass of hard fibrous tissues from which it could not be freed. It was found possible however, by careful dissection to free the sac below the mass. The base of the fistula was then cut across by a second elliptical incision—the edge in the fibrous mass being freed sufficiently to catch it with stitches. A row of continuous sutures closed the aperture about two inches long in the bowel. A second row stitched down a fold of the outer coats over this. A third row of interrupted sutures massed the sac over this and the wound in the scrotum was closed. The wound healed by first intention the first dressing not being removed for ten days during which time the patient remained on fluid diet. On the third day after operation the bowels acted naturally, and continued to do so, a purge being given on the tenth day. He was discharged on the eighteenth day completely cured but still with a scrotal hernia, the scrotum at the site of the operation was soft and pliable and the fibrous mass had practically disappeared.

W. F. OUMIRI, TUTOR  
Connaught Hospital, Freetown, Sierra Leone.

AN INDIGINOUS OPERATION FOR STRANGULATED  
HERNIA

Medicine is to some extent spread throughout Mohammedan communities in Northern Nigeria. The physician is the *malam*, or learned man, and the main part of his practice consists in selling amulets and prescribing draughts of water in which are dissolved the ink used to write a sentence of the Koran. The surgeon, represented by the *haiber*, deals with abscesses and wounds, and cures, while the greater part of his work is very crude, it is often founded on sound common sense and occasionally has quite brilliant results, as evidenced in the following case.

Yesufu a Hausa native of Kano province aged about 40 consulted me with regard to a faecal fistula. He said that three years ago a swelling which had come down into his scrotum for a long time and disappeared when he lay down became suddenly larger and refused to disappear. It gave him great pain and he vomited. The village practitioner who treated all acute swellings thus with good results—heated in narrow head until red hot and plunged it into the swelling causing black water to come out and then in a short time faces the pain disappeared and the patient was well but all his motions now came out from the opening which had never closed. He was well nourished and healthy looking. On the anterior surface of the scrotum just below and to the right of the root of the penis, was an opening from which semi-solid faeces were propelled intermittently. Nothing but a small amount of mucus was ever discharged from the anus. I thought it better to see if any obstruction existed internally before closing the fistula. On opening the abdomen the transverse colon was found to be the portion of bowel implicated in the hernia, while coils of bowel consisting of terminal ileum caecum ascending colon and transverse colon were adherent in the right iliac fossa. The adhesions could not be undone so the appendix having been removed an anastomosis was made between the entering loop of colon which was thus and atrophic. Following this operation faeces passed both by the fistula and by the anus. Twelve days later, on the day before the fistula was to be closed the temperature which had never been above normal rose suddenly to 103° and relapsing fever developed—not an unusual complication in the demic conditions the blood was crowded with large spirochaetes but they rapidly fell as did the temperature, after intravenous injection of neo-harsivan.

Under spinal anaesthesia the inguinal canal was opened and the bowel freed from adhesions to the peritoneal sac which was very thick, the fistula was excised and the bowel closed and returned to the abdomen. The sac being dealt with the inguinal canal was obliterated after excising the testicle and cord connection for repair being unfavourable. No further complications occurred and the patient was discharged with the bowels acting by the proper route.

As an emergency procedure with the facilities available the indigenous operation was undoubtedly excellent and probably saved the man's life.

QUINTIN STEWART FRCS,  
West African Medical Service

## Reports of Societies.

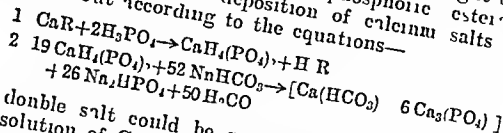
## PEDIATRICS

THE provincial meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine took place at Cambridge on June 20th. By kind permission of Professor Hopkins the meeting was held in the Sir William Dunn Laboratory of Biochemistry, the chair was taken by the President, Dr H. C. CAMERON.

## Bone Formation and Rickets

A discussion on the biochemistry of bone formation and the application of this to the pathology of rickets was opened by Dr H. D. KAY, who briefly stated and criticized the various theories of the biochemical mechanism of the deposition of bone in normal animals which have been advanced by Pfander, Pauli and Sance, Freudenberg and Georgi, and particularly by Robinson and his collaborators. The central discoveries on which new ideas of the mechanism of bone formation depended were (1) that the cells of ossifying cartilage, and to a less extent those of full-grown bone, contained a powerful phosphoric esterase which decomposed most phosphoric esters readily, and (2) that there was a phosphoric ester present in blood upon which this enzyme acted, resulting in the liberation of ossification. Tertiary calcium phosphate (or possibly some compound of even greater lability) was laid down because of the local increase in the concentration of  $PO_4^{3-}$  ions brought about by the enzyme led to the solubility product

of  $Ca_3(PO_4)_2$  (or that of the more basic compound) being exceeded. The evidence on which this modern view rested was critically examined, and it was found to explain many of the facts. Rickets, however, was not necessarily associated with a shortage either in the enzyme activity of the bone, or in the amount of phosphoric ester in the blood, which was hydrolysable by the bone enzyme. Dr H. W. C. VINES suggested that in the light of Dr Robison's discovery of a phosphoric ester in ossifying cartilage, the deposition of calcium salts might be carried out according to the equations—



The double salt could be prepared by the neutralization of a solution of  $CaH_2(PO_4)_2$  by  $NaHCO_3$ . Phosphoric acid or dried calcium phosphate dissolved this salt molecularly with the formation of  $CaHPO_4$ . Taking the view that the  $Ca$  and  $P$  equilibrium of the plasma was directly dependent upon the skeletal  $Ca$  salts through the agency of  $CaHPO_4$ , it was shown that buffered protein solutions to which solid  $CaHPO_4$  was added in certain concentrations came into an equilibrium, in which the percentage  $Ca$  content was about 12 mg, and the  $PO_4$  10 mg, the pH being constant at pH 7.4. From this a graph was built up indicating the probable conditions in the plasma. It was shown that a very slight decrease in the plasma  $PO_4$  concentration would cause a fall in  $Ca$  to below 7.5 mg per cent. This would be compatible with tetanic rickets with low  $Ca$  and normal phosphorus. A further decrease in  $PO_4$  to 50 per cent of the normal value would lead to a  $Ca$  value of 9 mg per cent, indicating perhaps a rachitis with normal calcium and low phosphorus. Any further decrease in  $P_2O_5$  would lead to a lowering of  $Ca$ . From these experiments Dr Vines suggested that rickets might be associated primarily with an error in phosphorus metabolism, and that the calcium metabolism was affected secondarily. A discussion followed in which many speakers took part, and in which the decrease of the grosser forms of rickets during the last few years was emphasized, and the great variety of satisfactory methods of cure was illustrated.

Pulmonary Lesions due to the *Pneumococcus*

Dr J. F. GASKELL described certain experiments on which he had been engaged in an endeavour to elucidate the origin and relationships of the various forms of pulmonary lesions produced by the pneumococcus. Rabbits were used for the experiments, and he claimed that a close parallel existed between the lesions obtained and the various forms met with in children. All experiments had been made with a single strain of pneumococcus type I, which had been obtained from a fatal human case. The virulence of the strain was varied at will, and could be controlled and measured with sufficient accuracy by the minimal lethal dose to mice of saline dilutions of the way being expressed as the titre. With low titres no lesions were obtained in the lung, with titres between 3 and 4 either central round the main bronchus or more diffuse. With titres between 4 and 5 the lesions were larger and became lobular in type, with titres between 5 and 6 either lobular consolidation was produced or the lung lesions, though diffuse, were incomplete, and were accompanied by double pleurisy with much purulent effusion, and often also by pericarditis. To produce the lobular lesion the dose must be small. With titres of 6 and over a septicaemic condition was produced, with intense invasion of the blood stream and characteristic sero-haemorrhagic effusion in all lobes, very mild, a positive blood culture could not be obtained from the heart's blood in the first three days. Evidence was given that with the lower titres the condition was a bacteraemia rather than a septicaemia, and the theory was advanced that the organisms present in the blood were always within the leucocytes and not free. Dr Gaskell suggested that the size of the lung was of importance in the production of the lobular lesion, and that the larger

lung of adults gave a longer period for the defensive mechanisms to concentrate, and thus prevent the involvement of the pleura, while in children the periphery of the lung was reached by the spreading infection much more rapidly, and thus empyema was common and lobular pneumonia comparatively rare.

After the meeting a dinner was held in Christ's College, by kind permission of the Master and Fellows.

### TROPICAL MEDICINE

The annual general meeting of the Royal Society of Tropical Medicine and Hygiene was held at 11, Chandos Street, Cavendish Square, on June 18th. The retiring President, Surgeon Rear-Admiral Sir Percy Bassett-Smith, handed over the badge of office to the newly elected President, Dr ANDREW BALFOUR, who, in taking the chair, reviewed the activities and growth of the society during the two years' presidency of Sir Percy Bassett-Smith. The Chalmers Memorial Gold Medal, which is given biennially to persons under 45 years of age for "researches of outstanding merit contributing to our knowledge of tropical medicine and hygiene," was presented by the new President to Professor Warrington Yorke of the Liverpool School of Tropical Medicine, in recognition of his work on trypanosomiasis, malaria, and many other subjects.

#### Observations on Malaria during Treatment of General Paralysis

Professor WARRINGTON YORKE read a paper on "Further observations on malaria made during treatment of general paralysis," a previous communication on the same subject having been made by him in conjunction with Dr J. W. Scott Macfie last year. They had noted that induced malaria, whether as a result of direct inoculation of the blood of an infected patient or the bites of infected mosquitos, was remarkably susceptible to the action of quinine in a dosage of 30 grains on three consecutive days. It was further discovered that quinine has no true prophylactic action, for in the case of patients bitten by infected mosquitos daily doses of 10 grains of quinine, administered for five days before, on the day of, and for seven days after, the infecting bite of the mosquito did not prevent the onset of typical malaria. Similarly, 30 grains given on the day of the bite and on each of the two succeeding days did not prevent malaria. From these results it was evident that quinine, though very efficacious for the primary attack of malaria when parasites appeared in the blood, had no action on the sporozoites injected by the mosquitos. The communication made by Professor Yorke dealt with the subsequent history of the cases reported upon last year. Of the cases, which numbered over a hundred, of malaria induced by the inoculation of virulent blood and treated by the three-day course of quinine from one and a half to two and a half years ago, the number of relapses had remained at 2 per cent. The inoculation of the strain from man to man during three years, involving more than forty passages, had not produced an increase in virulence or any morphological variation in the parasite itself. Turning to the infections induced by the bites of mosquitos and treated like the series just mentioned, the more prolonged observations showed that 21 of the 37 patients relapsed. Of these 2 relapsed in the first month, 2 in the second, 1 in the third, and the rest from the fourth to the eleventh months. The late development of these relapses was in marked contrast to the experience of the war, when the vast majority of relapses occurred within one to one and a half months of cessation of treatment. Of the 21 relapses, in the majority of cases fever disappeared either spontaneously or as a result of a second short course of quinine. These results were very different from those obtained during the war. It did not appear that the amount of quinine or the manner of its administration, the period of the year when infection or treatment occurred, or the strain of parasite, could explain this outstanding difference. The only factor which could reasonably account for it was the individuality of the patient. This factor appeared to be the one which determined whether a relapse would occur and if so when.

On the subject of the mechanism of the action of quinine Professor Yorke could see no reason to alter the opinion expressed in the communication made last year. Quinine destroyed large numbers of the malarial parasite, but had no bodies of which acted as an antigen to stimulate the production of antibodies which, if present in sufficient amount, brought about a sterilization of the infective and the cure of the patient. As to the immediate action of quinine in destroying parasites, some evidence had been obtained that the drug, acted indirectly, certain bodies co-operating with the quinine in producing a substance directly toxic to the parasite. The use of large doses of prolonged courses of quinine was not advocated. On the other hand, the best method of treating malaria was to deal with the attack with a few moderate-sized doses at an early development, if relapses occurred the treatment should be repeated, the general health should be maintained by diet and the avoidance of exhaustion, for relapse was directly related to the reaction of the patient himself and his capacity to develop immune body.

### CHLOROFORM ANAESTHESIA

A meeting of the Anaesthetic Section of the Royal Society of Medicine was held in the University Buildings at Manchester on June 27th.

Dr H. P. FAIRHURST (Glasgow) opened a discussion on chloroform anaesthesia. At a time when chloroform was being subjected to criticism as an anaesthetic, even to the extent of protesting altogether against its use, he thought it proper that its legitimate uses should be discussed since a considerable amount of space in textbooks was devoted to the teaching of its exhibition as an anaesthetic. The fact that people talked of an ideal anaesthetic seemed to indicate that no ideal anaesthetic had as yet been discovered. On the other hand, Professor Hobday considered chloroform the ideal anaesthetic for animals. Ether was the most formidable rival of chloroform, and it certainly had its proper place as an anaesthetic, though it was not supreme. It was productive of fatigue, its stimulative action on the circulation left the patient in a condition of reaction at a moment when stimulation was most needed, and the subsequent fall of blood pressure was the cause of many post-operative fatalities. Dr Fairhurst thought too much emphasis was laid on the condition of the patient during operation, and the after-effects were ignored. Statistics were misleading, as they included many personal factors, such as variations in skill of different anaesthetists and variations in the condition of the patients prior to operation. Chloroform should not be the choice of the occasional anaesthetist, but the expert would not have more fatalities with it than with ether. Desirable surgical conditions were more easily reached with chloroform than with ether, while in the post-anaesthetic stage the blood pressure tended to rise and would respond to stimulation. At the time of operation there was less tendency to bleeding, and afterwards the chances of lung complication were fewer. As offsets to these advantages there was certainly the danger of acidosis and chloroform syncope. It was usual to classify syncope as of two kinds—sudden and gradual. There was, however, no vital distinction between the two. They were of the same nature, differing only in rapidity of onset. In the sudden variety the time available for remedial measures was less. It was rarely necessary to do more than control the circulation by putting the patient in the Trendelenburg position if the condition were recognized at the onset. Lary considered ventricular fibrillation the result of light chloroform anaesthesia rather than overdosage. The suprarenal glands were stimulated, and the result was fibrillation. As the result of clinical experience the speaker did not agree with the overdosage theory, whereas the alternative theory of vagus inhibition appealed to him. He said he practised light dosage with a Veinon-Harcourt apparatus up to 3 or 3½ per cent of vapour strength, the bottle being immersed in hot water to increase the percentage and keep it uniform. Atropine gr. 1/100 was given to adults, and in smaller doses to children. In the later stages of anaesthesia deficient oxygenation was combated by oxygen inhalations, and in deep abdominal cases was given through out. Sepsis in the abdominal cavity ruled out chloroform.

In conclusion, he quoted Willet, who stated that if he had to be operated upon and the anaesthetist was unknown to him he would choose chloroform for the anaesthetic, but if he had a warning, and could choose his anaesthetist he would prefer chloroform.

Dr J. BLOMFIELD (London) said it was difficult to criticize a paper which was so eminently rational, and he only differed from the opener on one point. There were certainly two kinds of chloroform syncope, and from clinical experience he concluded that there were deaths due to overdosage and deaths without overdosage. He had seen a man die in the early stages of chloroform anaesthesia, the administration being conducted by a competent anaesthetist, the corneal reflex still brisk, there being no evidence of overdosage, no high concentration of the drug, no deep anaesthesia, the patient sitting up in his struggles, when he suddenly fell back and died.

Dr S. R. WILSON (Manchester) agreed with the opener on many points, but he disputed Professor Hobday's dictum regarding chloroform as the ideal anaesthetic for animals. It was the regular thing for two out of every ten or twelve dogs anaesthetized with chloroform to die, whereas he himself had not lost a single dog in the past five years when giving ether. Veterinary anaesthesia was in the same position to-day as that of human anaesthesia twenty years ago. He agreed with Dr Blomfield that there were two types of chloroform syncope. If vagus control had any importance, why give atropine as a routine measure?

Dr W. J. McCANN (Birmingham) believed that a C.E. mixture varying in proportions with the type of case was the nearest approach to the ideal anaesthetic. When giving chloroform sufficient was not done to ward off its dangers. The patient should have preliminary preparation with brandy, strychnine, atropine, digitaline, and pituitum. Ether was given for too long at a time, and 17 hours deep ether anaesthesia was enough for anyone. In certain operations a mixture was essential—for example, in operations on children on the eye in brain, mastoid, Gasserian ganglion, and lung operations.

Dr G. R. PHILLIPS (London) called attention to the construction of the Vernon Harcourt inhaler in which a special apparatus was provided to increase concentration up to 41 per cent, without heat. The percentage of chloroform used was uncertain when heat was used. Dr C. P. THOMAS (Birmingham) advocated the routine lowering of the head a few inches as a precaution against heart failure when using chloroform, especially in gynaecological cases.

Dr ALEXANDER WILSON (Manchester) said that he had met with two patients who died on the table before any anaesthetic had been administered. The patients died from circulatory failure precisely similar to that which occurred after severe haemorrhage. The symptoms were pillor and dilatation of the pupil, with convulsions in some cases. Artificial respiration should be commenced at once, and the head of the table lowered. Overdose occurred in two conditions. In one there was violent struggling, with consequent deep inhalations and subsequent overdose. In the other the patient was gradually over-osed, even with small amounts, as the result of respiratory obstruction. In the first, death was due to cardiac paralysis, resulting from over-excitation, and not really to chloroform. Again, from over-excitation, so common in the past, might be a contributory cause.

Dr FETTERSTONE (Birmingham) said that he must have clear reasons for so doing before giving chloroform, for once the drug had been absorbed it was well-nigh impossible to get it out of the system quickly. Light anaesthesia at the beginning of operation was dangerous, and there was also a danger of collapse later, in children, when they had been returned to bed. Moreover, with chloroform there was a fall in the systolic pressure during administration, accompanied by a rise in the diastolic pressure. Thus the weak pulse was hampered, not only by a falling output of the heart, but also by increased peripheral resistance. Nervous patients should never be given chloroform, for fear of collapse.

On the conclusion of the discussion, a demonstration was given in the physiological laboratory by Drs S. R.

WILSON and B. McSWINEY of the effects of adrenalectomy injections during chloroform and ether anaesthesia on a dog. An exhibition was also arranged of physiological methods of investigating acidosis, and a new anaesthetic apparatus was also on view.

## TUBAL PREGNANCY

At the last meeting of the North of England Obstetrical and Gynaecological Society, held at Leeds, with Dr J. L. GYMILL, President, in the chair, Dr E. O. CROFT (Leeds) recorded several cases of tubal pregnancy recently operated on by him presenting somewhat unusual symptoms.

1 The first patient a married woman aged 39 whose only child was born ten years ago had menstruated regularly until June, 1924. This period was prolonged to seven days and on the seventh day she had a sudden violent pain in the left groin passing through to the rectum. Colicky in nature which lasted twelve hours. Two shorter similar attacks of pain followed at intervals of six hours and vaginal bleeding continued for a week. She then had, during the following six months varying slight attacks of pain, with menstrual periods regular though increased in amount. She was admitted to hospital on January 17th 1925 when there was rigidity in the left lower quadrant of the abdomen and on vaginal examination a small swelling in the left tubo-ovarian region was felt. At operation a small dark round mass was discovered in the tube and on handling this the tube broke across just proximal to the side of this lump. Beyond it the tube appeared normal. The entire tube was excised. The points of intratubal bleeding and mole formation remaining for six months with return of menstruation and the small size of the mole contained in a small portion of the tube the rest of which was normal. The length of time the mole had been retained must have accounted for the lack of microscopic evidence of villi on examination of it.

2 The second patient was aged 42 had four children (the youngest born five years previously) and had had left salpingo-oophorectomy for tubo-ovarian abscess fourteen years previously. The points of interest in this case in addition to the previous operation were the absence of amenorrhoea and the large amount of evidence of old inflammatory disease around the tubal mole and there was no history of any acute symptoms.

3 This case was that of a married woman aged 29 who had had one child and one abortion. She was admitted to hospital in June 1924. She had slight loss and slight pain for a day or two and then three days before admission a severe flooding which subsided. On the day of admission she had severe pain and was very blanched and suffering severely from shock. At operation the right tube was much enlarged and there was a large quantity of free blood in the peritoneal cavity. The tube was removed and later after hardening was opened and found to contain a perfect ovum with embryo in its amniotic cavity. The points of interest were the absence of amenorrhoea, no mole formation (ovum intact), and profuse haemorrhage from the open end of the tube.

4 This patient aged 31 was married and had two children the second born six years previously. She began to lose on January 18th 1925 the date her normal period was due but she only had slight aching pain in the abdomen never on acute attack. Vaginal examination revealed the uterus displaced forwards by a tender swelling in the pouch of Douglas. At operation much dark tarry blood was found in the peritoneum with the right tube ruptured and containing much clot. Haemorrhage there was no amenorrhoea but two months continuous loss and an absence of any acute attack of pain in spite of a severe rupture of the tube and intraperitoneal haemorrhage. The interest of this case was that after a series of six abortions none of which went beyond six weeks the patient had a tubal pregnancy and the later history resembled more that described in textbooks seven weeks amenorrhoea with sudden attack of pain and slight loss followed by severe pain and free bleeding.

5 This patient had two years sterility following marriage and then on July 16th 1924 a month after a normal period had severe pain in the left lower abdomen and a week later slight bleeding which continued for three weeks to the date of admission. For three days before admission she had severe pain and at the operation a large amount of intraperitoneal haemorrhage was found with a mole still present in the left tube. The points of interest were two years sterility and pain at the date of the expected period but no show until a week later.

In recording these cases Dr Croft drew attention to the unusual points, indicating how the usually recognized symptoms and signs were only exceptionally present in any one case, and endeavoured to show that early symptoms, if seriously noted, would more often lead to earlier treatment before an acute catastrophe took place.

*Treatment of Incision of the Uterus*  
Mr W. W. KING (Sheffield) read notes of a case of incision of the uterus replaced by a new form of Aveling repositors. The case was of interest because of the slight

trauma which apparently began the process, and the case with which the inverted uterus was replaced by his modification of Aveling's repositor three weeks after the accident.

The patient, aged 27, was delivered spontaneously of her first child on March 1st, 1925. A slightly abnormal amount of haemorrhage during the second stage caused her medical attendant to put his hand into the vagina for the purpose of removing the placenta from the uterus. The placenta was, however, mainly in the vagina and came away without any difficulty. Serious collapse and vomiting followed immediately but no further haemorrhage. Inversion was thought of but the absence of haemorrhage and an external tumour were taken by him to negative the diagnosis. The shock passed off, and the puerperium was afebrile and on the eighteenth day a routine pelvic examination was made. This disclosed a rounded tumour in the vagina which was recognized as an inversion. Mr. King saw her the same day when she looked and felt perfectly well. The inverted uterus was the size of a cricket ball in the vagina. She was admitted to hospital and after a few days' treatment with glycerin the modified Aveling's repositor was inserted and the uterus was completely reinserted in six hours, with very little pain or discomfort. Recovery was uninterrupted.

The instrument, as modified by Mr. King, made it possible to get the point from which traction was made as close to the vulva as possible, and so diminish the liability to lateral displacement, secondly to supply a ready means of adapting the shape to that of the vagina, and thirdly, a gauge is provided by which the process of reinsertion could be noted without removing the apparatus.

The stem was of copper and could be bent to fit the curve of the vagina and so transmit pressure in the correct axis. Before fitting the apparatus a small piece of strapping placed on the stem should indicate the position the plate would occupy when the fundus had been reinserted to a point at or about the cervix. The plate from which traction was made was rectangular measuring 6 by 3 cm. and could be fixed at any position on the stem by means of a set screw. The corners of the plate were drilled to take the ordinary circular elastic bands supplied in stations. When these bands were looped into the holes and attached to a suitable belt and extended by about 2.5 cm. the right amount of pressure was produced. Attached at first half an inch from the vulva and readjusted as reinsertion took place, the prearranged point indicated above would be reached. The cup used was of the ordinary type till the fundus had been replaced to the level of the cervix and then the instrument was withdrawn and the cup replaced by a smaller cylindrical one which could easily pass through the cervix. After reinsertion this cup could be withdrawn with great ease and no pain.

The President congratulated Mr. King on the instrument and its successful use. Dr. Croft thought the original Aveling repositor was conical at the lower end, and so its removal was easy.

#### *Puerperal General Peritonitis*

Dr. CARLTON OLDFIELD (Leeds) read notes of two cases of puerperal general peritonitis. At the outset he referred to a short paper, contributed by himself to the Society two years previously, on twelve cases operated on, with seven recoveries. His main reason for returning to the subject was that the statistics of the recent investigation of puerperal infections proved two things that general peritonitis was very common, and that the treatment of it was by no means successful.

The first patient had a spontaneous delivery on January 30th, 1925, the only interference being rupture of the membranes by the midwife when they were bulging at the vulva. On the sixth day after delivery—sixteen hours after the onset of severe pain—she was admitted into the Leeds Infirmary with temperature 99.8° F., pulse 108 and the abdomen rigid and tender, not moving on respiration. Laparotomy allowed large quantities of yellowish foul-smelling liquid to escape from the peritoneal cavity. The appendix and right tube were normal, the left tube red and inflamed. Left salpingectomy was performed with drainage of the abdomen. Examination of this tube showed it acutely inflamed, no organisms were grown from the fluid removed. The patient made a good recovery.

The second patient was 31 years old and had four children. She had a profuse purulent vaginal discharge during pregnancy, normal labour on December 29th, 1924. One hour after delivery the temperature was 103° F. and pulse 120. Pyrexia persisted with rigors on the second, fourth, fifth and sixth days after delivery. On January 4th, 1925, the temperature was 104° F., pulse 135, she had severe abdominal pains, diarrhoea and occasional vomiting, and the abdomen was distended. She was operated on the next day, and a large quantity of sero-purulent fluid evacuated. The left tube which was swollen and congested was removed and drainage tubes put in the pelvis. She died on January 9th of general peritonitis. Streptococci were grown from the fluid.

Dr. Oldfield thought it desirable that in cases of puerperal infection a sharp lookout should be kept for

evidence of general peritonitis, and the abdomen should be opened as soon as the condition had been diagnosed. His experience of fourteen cases (with eight recoveries) appeared to show that the death rate from puerperal peritonitis could be considerably reduced by operative treatment on the lines adopted by surgeons in treating general peritonitis.

#### *Breech Presentation and Ectopic Pregnancy*

Dr. GORDON FITZGERALD (Manchester) read notes of a case in which a breech presentation was complicated by an extrauterine pregnancy.

The patient, a 4 para, aged 32, was admitted to hospital in labour the breech presenting. Previous labour had been without difficulty and so none was anticipated here. During the second stage there was considerable delay, and on examination a mass was found in front of the breech which resembled a cervical lip, supported by the presenting part. The swelling was soft and bluish and the efforts made to push it up were unsuccessful. After some further delay the mass ruptured and there was much haemorrhage, and then the labour was terminated fairly quickly. The uterus contracted well following a slight further haemorrhage. Two days later, after a recurrence of haemorrhage, Dr. FitzGerald examined her and was surprised to find the examining finger pass more easily through an opening in the posterior fornix than up towards the cervix. Under an anaesthetic a cavity filled with blood clot lying in the left broad ligament was found. From the cavity recent and old blood clot was removed and also a small embryo about an inch in length. The cavity was briefly packed with gauze which was removed in twenty-four hours, and the puerperium was otherwise uneventful.

No indication was obtained from the patient's history as to when the extrauterine pregnancy ruptured through, or was aborted from, the tube. Accepting the view that ovulation ceases during pregnancy, this (two months' embryo) must have remained about eight lunar months unabsorbed.

#### *Uterine and Ovarian Tumours*

Mr. W. GOUGH (Leeds) described two cases of sarcomas of the uterus.

The first patient, aged 66, had her last pregnancy twenty-three years ago, menopause ten years ago. There was a history of three months' vaginal haemorrhage but no pain. Exploration with a curette produced rounded compressed nodules, the colour of milk chocolate, which on examination showed sarcoma of a mixed cell type. Vaginal hysterectomy was done and the uterus examined later had the pedicle of the polypoid growth still present on the posterior wall half an inch from the fundus.

The second patient, aged 59, had one child thirty years ago and ever since the menopause eight years ago had suffered from discharge with occasional bleeding. Examination revealed a hard rounded central tumour extending to two inches above the umbilicus and a large polypus with sloughy surface filled the vagina. At operation the polypus broke into fragments with suspicious ease and a large quantity of greyish stringy growth was removed from the uterine cavity. Microscopical examination showed a rounded cell sarcoma. Abdominal parasthysterectomy was performed. On opening the specimen the fundus was found to contain a fibroid as large as a tangerine orange below this was a large cavity with foul sloughy nodular walls from which the growth had been excavated at the first operation.

The second case might have been one of so-called sarcomatous degeneration of a fibroid, but Mr. Gough held that this did not occur, for he had never seen a section showing definitely this change.

Dr. CARLTON OLDFIELD showed a specimen of a growth about the size of a walnut projecting from the anterior wall of the cervix, removed by Wertheim's operation, which, on pathological examination, showed an adenoma with no definite evidence of malignancy. He had taught for many years that cancer of the cervix could be diagnosed, practically always, by the finger or a Volkman's spoon. He considered it unnecessary, and often harmful, to cut away a piece for microscopic examination before operation, but showed this specimen as an instance in which a mistake in diagnosis would have been prevented by a microscopic examination.

Dr. Croft showed a specimen of fibrocystic tumour of the ovary. The major part of the tumour consisted of dense, fibrous tissue in which a few strands of involuntary muscle fibres appeared. Several cysts were present, one the size of a fist and the others from one half to two inches in diameter. The walls of two small cysts were calcified. This was no doubt a fibromyoma of the ovary, showing the unusual development of cysts.



## Reviews.

### ALLBUTT'S SUMMARY VIEW OF ARTERIO-SCLEROSIS

THE LATE SIR CLIFFORD ALLBUTT'S recently published *Arterio-sclerosis: A Summary View* has its saddening associations. Though to the last mentally as young and progressive as ever, he had been conscious of physical failure, and so was almost feverishly anxious to finish what he felt would be his last utterance. He did, indeed, succeed in completing a work which contains references to papers by others published as recently as January last, but he was never to see any of the proofs of this much expanded lecture to a post-graduate class in Cambridge. It was characteristic that, not content with his classical two volumes on *Diseases of the Livers, including Angina Pectoris* (1915), he continued to work, to collect fresh observations, and keep up with the literature on the subject of hypertension with which his name must long be intimately associated. This essay, divided for convenience into six chapters and provided with an excellent index, is written in the attractive style so characteristic of the scholar-physician whose modesty perhaps somewhat hid his real greatness, so that time will probably even heighten our appreciation of this master mind.

At the outset the reader's critical sense is whetted by the probing of the meanings of the abstract phrases so glibly on our lips, which appear to give more satisfaction than their unaltered interpretation really justifies. "Intestinal toxins" is criticized as a most pernicious catchword, for, as someone said of another writer, "we are guessing in the dark about a guess in the dark." Arguments are later brought forward against the popular view that arterio-sclerosis is due to poisons manufactured in the intestine, on the grounds, among others, that most of these bodies are depressor and asphyxiating rather than pressor, and the production of hypertension is referred to "a wisp of metabolism, possibly in the liver." But later he adds that if he were to suspect intestinal toxins as a cause he would give large doses of charcoal and might try kaolin.

The discussion of morbid anatomy carries the story pleasantly back to the far-off battle, some fifty years ago, when he had the opportunity of comparing the microscopic sections of George Johnson on the one hand, and of Gull and Sutton—or, as his friend Dr. W. H. Dickinson used to call them, "the allies"—on the other hand, the appearance of alleged hypertrophy of the muscular media he regards as one of increased tone only, under the influence of some cigot-like poison. After a generous reference to Dr. H. Batty Shan's monograph on *Hypertension and Hypertension*, the first of these two conditions is defined as a disease independent of the kidneys, with its own characters, of which high arterial pressures, systolic and diastolic, seem to be the chief, while hypertension is a general term for incidental high blood pressures. That some normal individuals have a systolic pressure of 160 to 170 mm. Hg he does not believe, though he cannot deny this statement any more than that in some "normal persons" the bowels act only once or twice a week. Insistence is laid on the instability of abnormal pressures, whether high or low, and on the probable occurrence in the subjects of intermittent phases of indisposition, recurrent headache, "suppressed gout," or "biliousness," of periods of high blood pressure as part of some obscure metabolic perversion or transient toxæmia, investigation of which, though they are perhaps difficult to catch, may throw light on the causes of hypertension.

In the chapter attractively entitled "Clinics" Sir Clifford Allbutt's long experience sounds the warning that, in spite of the general and more optimistic opinion, dyspnoea, however slight, means that the hypertensive patient whether renal or non-renal and even though blissfully unconscious of illness, has entered, not upon the first, but upon the last stage of his malady. He points out that uræmia occurs in cases of hypertension without any renal change, and is emphatic that severe uræmia even with neuro-retinitis may occur in cardiac disease in which the

kidneys show nothing more than congestion. But the outlook is widely different in the renal and the non-renal cases, for when the kidneys are capable of recovery the uræmia may be transient, and in the majority of such instances recovery follows a first or even a second attack. The slight and often transient paralyses or aphasias the "slight strokes" often by "sanguine pathologists" ascribed to passing spasm of the cerebral vessels, are regarded as of the worst urgency and probably due to small haemorrhages. Sir Clifford reiterates his opinion that in the majority of patients with angina pectoris the blood pressure is not raised, and says that in practice the cases with high pressure are more amenable than the ordinary run to treatment or to cure, but there is not any reference to the surgical treatment of angina, on which Professor K. F. Wackbach lectured at the Royal College of Physicians last year when Sir Clifford spoke so finely and impressively (*vide BRITISH MEDICAL JOURNAL*, 1924, 1, p. 828).

The chapter on treatment is valuable, especially for its wise and wide survey. In speaking of the insidious onset and the suggestion that everyone should be examined and have the blood pressure estimated every five years, the comment follows that "this rule would indeed set up an epidemic of sidgets." The doctrine not to treat high blood pressure as such on the ground that it is merely a symptom, and that it is "compensatory," and so would be an unscientific therapeutic procedure, meets with scant sympathy at his hands. The action of vasodilators is transient and gives but momentary relief, too strict a diet is inadvisable, and, like vasodilators, vasectomy is disappointing though useful at times. For iodides, which he usually gives in 1-grain doses twice or thrice daily in atherosclerosis with or without high pressure, no enthusiasm is expressed, but spirit treatment under watchful guidance is admitted to be very helpful though the fish air, change of scene, and attendant freedom from worry are far more important than "the water chemicals." The recent use of diathermy is recorded and the sphere of utility of endocrine preparations philosophically considered.

In conclusion, short as is the "Summary View" it is a welcome and useful record of the mature and wise final expression of the great Regius Professor's long experience, and will therefore appeal to the profession of which he was eminently the recognized leader.

HUMPHRY ROLLSTON

### THE CELL IN DEVELOPMENT AND INHERITANCE

THE title of the first edition (1896) of the work by Professor Wilson of the chair of biology at Columbia University, U.S.A., was *The Cell in Development and Inheritance*, and as such for the next ten years we accounted that work one of the most valuable of the monographs of the Columbia University Biological Series. But much of the water of life has flowed under the morphological bridges within the last thirty years.

The first edition had 377 pages and 142 illustrations, as compared with the 1232 pages and 529 illustrations of the splendid work before us.

In the new edition the old title is slightly altered, but no title of reasonable length could describe the contents of this storehouse of facts and theories, for here are treated in the fullest manner possible all of the following. The general morphology of the cell, cell division, reproduction and cell life, gametes, fertilization and parthenogenesis, meiosis, sexuality in lower organisms, cell chemistry and cell physiology, chromosomes and sex, heredity and the chromosomes, growth and cell development, and development and heredity.

We are left in doubt which is the more worthy of admiration—the complexity, resource and infinite variety of Nature or the vast patience of the author of this treatise. We are particularly glad to find that this book so up to date in every respect, yet opens with a sympathetic recognition of the place of the cell theory of Schleiden and

*The Cell in Development and Heredity* By Edmund B. Wilson. Third edition. New York: The Macmillan Company, 1925. (Med. 8vo, pp. xxxvii + 1232, 529 figures, 36s. net.)

Schwann in biological history. For there has been of late a tendency in certain quarters to belittle the importance of that generalization made under the disadvantageous conditions surrounding the study of life nearly one hundred years ago. So wholly praiseworthy is Professor Wilson's view on this subject that we must quote his opening sentences:

"Among the milestones of modern scientific progress the cell theory of Schleiden and Schwann, enunciated in 1838-39, stands forth as one of the commanding landmarks of the nineteenth century. Its importance is not to be judged by its original form, as first outlined, it was but a rude sketch, in many respects faulty and distorted. Its announcement nevertheless marked a turning point in the advance of biology, opening a new point of view for the study of living organisms and revealing the outlines of a fundamental common plan of organization that underlies their endless external diversity. The cell theory thus became a perennial source of fruitful researches, which, down to our own day, have continued to press forward into always expanding fields of discovery. Long ago it became evident that the key to every biological problem must finally be sought in the cell for every living organism is, or at some time has been, a cell."

Words as true as they are necessary.

It should not be supposed that this book is just a catalogue of facts of microscopic cell morphology, such catalogues and speculative topics is living matter a continuum, the immortality of protoplasm, syngamy, senescence and rejuvenescence, rhythm, rhythm, and many other theories of fundamental interest are discussed. The bibliography alone is extremely valuable, and there is a welcome glossary of terms. There are two indexes—one of authors, the other of subjects. The figures throughout are exceedingly clear.

#### NERVOUS DISEASES

In the preparation of the second edition of his textbook of nervous diseases<sup>1</sup> Professor HANS CURSCHMANN has had the assistance, as co-editor, of Professor FRANZ KRAEHLER of Berlin, during the fifteen years which have elapsed since the first edition appeared three of the original contributors have died—Professors HANS STEINER, MAX ROTHMANN, and MAX LEWANDOWSKY. To the new volume there are twelve contributors, including the two editors, it contains over nine hundred pages and there are some three hundred illustrations, many of them photographs of cases, carefully chosen and exceptionally good, and constituting in themselves a very useful study. After an opening chapter by Professor KraeHLer on the general examination of cases of nervous disease, the book follows in anatomical basis, diseases of the peripheral nerves being first considered by the same writer. Professor F. K. WALTER deals with the diseases of the spinal cord and medulla oblongata, among which is included disseminated sclerosis, before the individual diseases are described full accounts are given of the anatomy and physiology and of the regional diagnosis of cord lesions. The myopathies, including dystrophies, myotonia and myasthenia, are discussed by Professor CURSCHMANN. Professors HUGO LIEPMANN and KRAEHLER contribute a detailed chapter on the general anatomy and physiology of the cerebrum and cerebellum, the methods of examination and localizing features of brain lesions, and an account of the different types of aphasia. Chapters follow on meningitis and hydrocephalus by Professor HUGO STAECK, on brain tumours and brain abscess by Professors LEWANDOWSKY and GEORGE SEITZ, and on cerebral syphilis by Professor R. GRUPP. Professor SEITZ deals with encephalitis and vascular lesions, with diseases of the extrapyramidal system, and with certain types of idiosyncrasy, all the accounts are thoroughly up to date and are well illustrated. An interesting section on the physiology and pathology of the vegetative nervous system, written by Dr R. GIEVING, is followed by a chapter by Dr CURSCHMANN on nervous disorders associated with the endocrine organs (exophthalmic goitre, myxoedema, tetany, acromegaly and Frolich's syndrome, and lipodystrophy). Vasomotor and trophic disorders are considered by Professor CURSCHMANN, and nervous diseases due to intoxications by Professor F. QUENSEL. Lastly, there are accounts of the orthopaedic treatment of nerve lesions by Professor H. v. BAAYER, and

of the surgery of nervous diseases by Professor FEDOR KIANSE.

This book is a comprehensive manual of nervous diseases. It contains sufficiently detailed accounts of rare diseases to be of value both to neurologists and general physicians, and it should prove an excellent book of reference for the practitioner who desires to keep in touch with modern neurology. A textbook of this standard in English, but not a mere translation, seems to be needed.

#### NOTES ON BOOKS

THE editor of the history at home and abroad of *The 21st London Field Ambulance* during the great war is to be congratulated on having produced a most readable book, which can be read with interest by those who had not the good fortune to serve with the unit whose exploits it commemorates. After preliminary training in England the unit left Ipswich at midnight on 1 February 20th-21st, 1916, touched at Southampton, left there for Le Havre on the evening of 1 February 21st, and thence proceeded to the village of Atraines, there it joined the 56th Division, with which it served for the remainder of the war. It received its first real glimpse of heavy fighting in the Somme area, and, after doing duty at the capture of Combles, was moved to the La Bassée-Laentue area, where fighting was of a less exciting nature. Here it stayed until March, 1917, when it moved towards Arras for the first Arras battle. Next it visited St. Omer and shared in the third battle of Ypres, after which it went to Bapume and wintered at Aubigny. In March, 1918, the unit went through the famous German offensive against Cambrai and from that time to the close of hostilities took part round Arras in the many engagements which preceded the German retirement, finishing up at Query le Petit on the eve of the signing of the armistice. After further moves later to Mons and Jemappes the unit was sent home by way of Antwerp and demobilized at the Crystal Palace. Its roll of honour comprised twenty-four names, and its honours and awards numbered forty-two, including four mentions in dispatches. The book is well printed and illustrated with photographs and sketches. A foreword by Lieut. Colonel C. S. BRENNER, D.S.O., who commanded the unit from its foundation until after the armistice, explains the reason for the delay in its appearance. Copies may be obtained from H. L. Chase, "Kingsley," Merstham, Surrey.

Rice is, it has been stated, the staple food of more than half the population of the world. If for that or for any other reason a reader of the *BRITISH MEDICAL JOURNAL* should take it into his head to cultivate rice he will learn to what countries he may go and all about its production from a little book<sup>2</sup> by Mr C. E. DOUGLAS. It appears to be the first work published on the subject, and deals with it in every aspect—historical, ceremonial, botanical, physical, with the details of its cultivation, with its relation to soil, to climate, to its food value, and, finally, with exactly the right way to cook rice and prepare a rice pudding—which is undoubtedly useful knowledge if duly applied. The little book is one of a long and excellent series issued by the same publishers on common commodities and industries.

<sup>1</sup>*The 21st London Field Ambulance*. An outline of the four and a half years' service of a unit of the 56th Division at home and abroad during the great war 1914-19. Foreword by Lieut. Colonel C. S. Brenner, D.S.O. London: Morton, Burt and Sons, Ltd. 1924. (Fcap. 4to pp. 104. 9 plates. Cloth 4s. leather 6s. 3d. postage 3d. extra.)  
<sup>2</sup>*Rice: Its Cultivation and Preparation*. By Charles E. Douglas. M. I. Merch. L. Pittman's Common Commodities and Industries. London: Sir J. P. Palmer and Sons, Ltd. 1925. (Cr. 8vo pp. ix + 143. 25 figures. 3s. net.)

#### PREPARATIONS AND APPLIANCES

##### A Self-retaining Anal Speculum

MR. HAROLD BURROWS, OBE, F.R.C.S. (Southsea) informs us that Messrs Arnold and Sons (John Bell and Croyden, Ltd.) 50-52, Wigmors Street, W.1, have recently made for him a small self-retaining speculum, which is especially useful for the injection treatment of piles. On the end of the speculum is a bulb which renders it self-retaining, so that the operator has both his hands free.

##### Using Testing by Diabetic Patients

DR A. CLARKE BEGG (Swansea), having found the advantage of diabetic patients examining their own urine regularly, has devised, and Messrs Allen and Hanbury, Ltd. 48 Wigmors Street W.1 have made a small outfit for their use. It is packed in a wooden case which contains Fehling's solution No. 1 and 2, the (dilute) solution of non-perchloride a spirit lamp, half a dozen test tubes, a notebook to record daily results, and full directions for the test. Dr. Begg recommends Fehling's instead of Benedict's test as all medical men are familiar with the former and can better assist the patient if he gets into difficulties. Dr. Begg thinks it essential that patients should test occasionally for diacetic acid, and should be instructed to get medical advice at once if any red coloration is shown with the iron perchloride.

<sup>1</sup>*Lehrbuch der Nervenkrankheiten*. Herausgegeben von Dr. Hans Curschmann, Ro. tock und Dr. Franz KraeHLer. Berlin. Zweite Auflage. Berlin Julius Springer. 1925. (Roy. 8vo, pp. x + 952. illustrated. G.M. 36.)

## FIRST INTERNATIONAL CONGRESS OF RADIOLOGY.

## LONDON MEETING

THE International Congress of Radiology, the opening of which was reported in our last issue (p. 32), closed on July 4th, after a very successful four days' meeting at the Central Hall, Westminster, under the general presidency of Mr C THURSTON HOLLAND, C.B.M. The British organizers had described it as a "preliminary meeting," but directly the Congress assembled a meeting of the international delegates resolved to declare it the First International Congress of Radiology, and to elect Mr Thurston Holland as its President. At a later meeting of the delegates it was resolved that the Congress should meet next in Stockholm in 1928 under the presidency of Professor GOSTA FORSSSELL. Some general principles were adopted for the guidance of future Congresses, one of which was that any country having a radiological society or societies should be entitled to send not more than five official delegates, but that only one vote should be exercisable by each country. Professor Forssell was appointed chairman, Mr Thurston Holland vice-chairman, and Dr Stanley McWhille secretary, of the international delegates' committee, pending the next meeting of delegates.

The proceedings of the Congress took place in three sections. The Section of Physics was presided over by Mr C. L. S. PHILLIPS, the Section of Electrophysics and Actinotherapy by Sir HENRY GAYLOR, and the Section of Radiology was divided into two parts—one for the discussion of radio-diagnoses and the other for the discussion of treatment by radium and x-rays. Dr A. E. BARCLAY presided over the first, and Dr N. S. FRANK over the second. These two halves of a section each carried out a very full and well co-ordinated programme, the one beginning with radiological diagnosis of bone conditions, and passing on to the gall bladder, the alimentary tract, the thorax, and the skull, while the other devoted three sessions to radium therapy and three to x-ray therapy. The number of papers read was 150. It is possible only to note some of the outstanding communications.

## RADIOLOGICAL DIAGNOSIS

*The Position and Form of the Stomach*

Dr R. O. MOORE (Oakland, California) brought forward the results of an x-ray study of the living anatomy of the stomach, liver, and colon in 1,000 healthy adults. He showed that in 75 per cent of the male subjects the lowest part of the greater curvature was below the interiliac line, and that this position was most frequently in a zone from 2½ to 5 cm below that line. In the female subjects the lowest part was below the line in 88 per cent of the cases examined, and in 43 per cent was more than 5 cm below the line. In 12 per cent of the males and in 30 per cent of the females the lesser curvature also was below the interiliac line. The pylorus in both sexes was most often found well below the transpyloric plane. All these were thoroughly normal and healthy subjects. He held that the use of the term "gastroptosis," like "coloptosis" also, was seldom justifiable—the form, position, and relations of the abdominal viscera differed so widely among normal individuals.

Dr I. S. HINSCHE (New York) complained that his compatriot had made no mention of the great work on this subject done by Mills of St. Louis, who had shown, after many years of very careful examination, that there was a definite relationship between visceral form and bodily habitus. Dr Moore said that he fully appreciated Mills's work, though he did not think that the position of the stomach could be so exactly guided according to changes in the bodily habitus as Mills had described. With regard to the need of this work, it was enough to point out that both in England and America there were thousands of physicians who regarded a "fallen" stomach or "fallen"

colon as symptomatic of ill health, when actually this was not the case.

Professor GOSTA FORSSSELL (Stockholm) urged the abandonment of the terms "hypertrophic" and "hypotrophic" as applied to the stomach, because these terms indicated an abnormal state, whereas both types were quite normal. One of these states was adapted to certain physiological conditions, and the other to certain different conditions, but equally physiological. Often in textbooks there was mentioned a hypertrophy of the pylorus in children, but as a rule there was no such hypertrophy. The condition did not really relate to the pylorus at all. It was really a case of contraction—perhaps sometimes a real hypertrophy—of the pyloric canal, not of the pylorus.

In discussing a paper by Dr DE BACKER (Ghent), giving the results of a radiological study of the digestive tract in normal children, Dr LE WILD (New York) said that the colon in children needed a great deal more elucidation. The statement that the long colon in the child would necessarily be outgrown was an error, this type of colon might persist throughout life.

*The Art of Palpation*

Dr A. E. BARCLAY (Manchester) said that palpation under the x-ray screen was a complex art, and one which was not acquired without much patient practice. It was not an art learned at the bedside, what it required was not only a delicate sense of touch, but a complex of touch and sight. It was of the greatest possible value in detecting the final changes in the stomach and other organs. The most important palpation of the stomach was that which was done while the first mouthfuls of food were passing down. Here a little pressure would often bring out a filling defect, more especially as to the margins. No matter with what care palpation was done, however, plates also were necessary. Radiologists should always attempt to show on their plates what they detected by palpation, and the success of a screen examination must not leave the radiologist content with faulty radiographic records.

*Diverticula of the Small Intestine*

Dr J. T. CASE (Battle Creek, Michigan) gave an interesting account, illustrated by radiographs, of some 70 cases of diverticula he had observed. One point was that in cases of multiple diverticula it was always found that the larger diverticula were nearest the stomach, and the smaller ones further away. By x-ray findings he had been able to differentiate between true and false diverticula. Of his 70 cases a number were found only at autopsy, some were found at operation for acute trouble apparently not related to the diverticulum. About three-fourths of the patients had no symptoms due to the diverticula, they died or they came to operation from some other cause, only in one-fourth did the need for operation arise or a fatal issue occur owing to pathological changes in the diverticula. In other words, the diverticula were subject to the same changes as the appendix.

*The Mucous Membrane of the Digestive Tract*

Professor FORSSSELL (Stockholm) offered some observations on the motor mechanism of the mucous membrane of the digestive tract, and showed some pictures demonstrating unmistakable variations in the relief of the mucous membrane in one and the same loop of the small intestine. He said that typical dissimilarities in the x-ray picture were not caused by different fillings, but by a real dissimilarity in the folds. He had tried to obtain more knowledge of the nature of the movements of the intestinal mucous membrane by means of direct observation, and he had found what he held to be convincing proof of the active participation of the mucous membrane in the movements which brought about a change in its relief. It seemed probable that the musculature would exhibit the

phenomenon of contraction at the place of the fold, he had made histological preparations of different parts of the alimentary tracts of men and of animals, and these had proved that the overlapping muscular cells in the muscularis mucosae occurred typically in the folds of the mucous membrane, being most marked at the tips of the folds, so that the muscularis mucosae within the area of the folds often attained a thickness several times greater than in the furrows between the folds. This phenomenon of overlapping was most marked in the stomach cavity, but it was quite distinct in the small intestine also.

Dr H. M. INNOMIS (New York) spoke on the observation of intermittent obstruction of the small intestines. This work, he said, depended upon screen examination, he was unable to make a diagnosis from the plate. The screen examination, moreover, had to be very painstaking, if it was to elicit the required information. The writhing and twisting of the duodenum and its marked inability to empty itself were perhaps the most characteristic signs.

#### *Radiology in Thoracic Surgery*

Mr. MORRISTON DAVIES (Ruthin) said that in thoracic surgery, where accurate diagnosis and localization were necessary as a preliminary to treatment, the clinical methods of examination were incomplete and not sufficiently discriminating. Radiology was not a substitute for clinical examination, but both in diagnosis and during the course of treatment it was such a valuable adjunct that treatment should not be carried on without resort to this method for checking the clinical findings. He referred to certain cases in which the diagnosis was possible only by x-rays. One patient was sent to him for bronchitis and emphysema, and clinically there was nothing suggestive of anything beyond those conditions, but on x-ray examination it was possible to diagnose primary broncho-ecarcinoma, for which the patient was operated on later. Another case was that of a girl with curies of the spine and with a little patch of dullness at the back of the right lung. By x-ray examination, and by that alone it was possible to make a diagnosis of hydrath of the lung. A woman who had been treated for thirty years at a general hospital for dyspnoea and palpitation, and was sent to him as a case of basal pneumothorax, proved on x-ray examination to have a diaphragmatic hernia. Another case was sent to him as early tuberculosis, and the x-rays showed a gumma in the upper lung. Another patient who presented only laryngeal symptoms was proved by x-rays to have military tuberculosis. The rays would frequently show greater changes than the hand or the ear could detect. Radiology was of equal importance during and after operative measures.

#### *Detection of Non-opaque Foreign Bodies*

A paper which called forth the special reclamations of the Section was read by Dr W. F. MANGES (Philadelphia) on the detection of non-opaque foreign bodies—usually nutshells and other hard vegetable substances—occasionally bones—in the air passages and food passages. Dr Manges's method was to watch the respiratory movements during inspiration and expiration, taking the x-ray picture at the full extent of both these acts, and by a comparison of the air entry to the lungs and the displacement of the mediastinum and heart he was able to arrive at the exact situation of the non-opaque body. The patients—usually children—were placed with the arms above the head, the face directly forward, the tube 36 inches distant and centred very carefully in the middle line, and the exposures were made as short as possible, the same exposure being given for expiration as for inspiration otherwise the impression of density on the two sides was unequal. The knack of making exposures at inspiration required to be developed—one had to learn to "shoot on the wing." The difficulty at expiration was not so great, because here there was a certain prolongation of the moment of rest.

#### *X-ray Examination of the Male Urethra*

Dr E. H. P. CAYE (Hullow) read a paper on the x-ray examination of the male urethra. The methuoscope although it must have first place as an aid to diagnosis

had certain limitations. With radiography it was possible to penetrate further and to visualize the whole course of the urethra. Cases of prostatic enlargement formed a group to which this method was applicable. The degree of enlargement of one or both lobes was clearly visible in the radiogram, and by repeated examinations the rate of growth could be determined. Similarly, in post-prostatic cases the contraction of the prostatic cavity could be observed by the same means. Radiography, again, could throw new light on the sphincteric action in normal and pathological conditions. He described the technique to be employed in using lipiodol, and the proper way of taking radiograms of the part. The injection was painless and discomfort to the patient was considerably less than that caused by urethroscopy or cystoscopy, and no ill effects, immediate or remote, were experienced.

#### *The Venous System*

Dr M. C. COSMAN (Boston) reported on a comprehensive study of brain tumours by means of x-rays. Certain of these tumours gave signs that furnished a clue, not only to their location, but to their type. In gliomas only 11 per cent might be expected to be seen radiologically, but pituitary tumours were characteristic, and meningiomas showed recognizable changes. In ten cases which came under his observation aneurysm of the intracranial portion of the internal carotid diagnosed radiologically had been confirmed either by operation or autopsy.

Among several other papers dealing with the localization of brain tumours and compressions of the spinal cord was one by Dr Jacques Loursin (Aix les-Bains), in which he described the value of radiologic diagnosis by the lipiodol method for localized compression in the spinal cord as well as for exploration of the bronchial tree. He said that lipiodol was eliminated after a time, and did not act as a irritant.

The papers on radiological diagnosis were so numerous that there was little time for discussion. Moreover, very many of the papers—and those some of the most valuable—were scarcely intelligently reported without the illustrations which accompanied them. Very frequently the illustrations overshadowed the text. This applies to such papers as that by Dr. H. J. P. Poir (Montreal) on normal varieties of bone simulating disease, to the very able paper by Dr. WOODWARD MORISON (Manchester) on diaphragmatic hernia to Professor KILMER's anatomical atlas of the x-ray signs in phthisis, and to the whole group of papers, chiefly by American and German authors, on cholelithography.

#### *Cinematograph Demonstration*

Two or three of the papers were illustrated by the cinematograph. Dr FRANKEL (Berlin) gave by this method a demonstration of a new symptom of ulcer ventriculi within folds. Dr L. G. COLE (New York) showed a long reel of cinematograph film, which had been produced under his direction, to illustrate the anatomy, physiology, pathology, and radiology of the stomach. The gastric cycle and the action of peristalsis were wonderfully well shown. All the ingenious devices of screen production, familiar to the public in the animated cartoon of which the immortal "Felix" is an example were employed to tell either the profession or the public—one was not sure which—everything that could be told about the stomach, and the film ended with some comic "business," in which a surgeon and a physician, supporters of rival theories, were left belabouring one another in true knockabout style! Dr Cole also showed a very elaborate film production illustrating tuberculosis, once again with all the brightness of subtitles and "close-ups," and the movement of inanimate objects—a curious and clever mixture of scientific demonstration and amusing entertainment.

#### *RADIOTHERAPY*

##### *Radiation in Cancer of the Breast*

Dr CASMAN (Antwerp) showed a remarkable cinematograph film illustrating the operation, in an actual case, of burning radium tubes in the breast. In cancer of the breast he favoured a combined method whereby x-rays,

radium, and surgery were all employed. Each of these agents used alone had its limitations. The difficulty with surgery was twofold: the unsuspected extent of the lesion and the anatomical impossibility of the extirpation of the tumour. The percentage of surgical successes left very much to be desired. The difficulty with  $x$  rays was to ensure that a sufficient amount of  $x$ -ray energy was absorbed in the tumour. Radium had a more limited field than  $x$  rays, but its action was more powerful. He began his treatment of a case with the  $x$  rays, making them embrace the whole area of infection as far as possible, thus, as he described it, "rounding up" the cancer. Some four or five weeks after the  $x$ -ray application he made a small "corner-shaped" incision and carefully buried radium tubes surrounded by gauze and fixed at a certain distance from the edges of the area to be treated. By using this method he had been able to employ an intensive radiation without menaces to the adjoining tissues, the radium being buried at some distance from the skin. In estimating the radium dosage the  $x$ -ray irradiation which the tissues had absorbed must not be lost sight of. Dr. Casman contented himself with the film demonstration of his technique and did not enter upon a discussion of comparative results.

Dr. BURTON J. LEE (New York) gave a report on a series of eight primary operable cases of carcinoma of the breast from the Breast Clinic of the Memorial Hospital in his city. All these cases had been treated entirely by irradiation, without surgery at all. A period of four and a half years or longer had elapsed in each of the cases since treatment was begun. The reason for withholding surgery was either the age of the patient or her refusal to submit to operation. He had to confess, however, to a considerable pessimism with regard to the end results of surgery in the treatment of mammary carcinoma. In this group of eight cases the oldest patient was 90 years of age, by the introduction of radium tubes she was made comfortable for three years until her death from intercurrent disease. The average age of the patients was 58, the rate of growth of the disease in six of the patients was slow, and in two moderate. Axillary nodes were palpable in two of the patients. In the three cases in which biopsy was done the result showed carcinoma simplex. Three of the patients were treated entirely by  $x$  rays, of these one was alive, and the other two had died respectively two years and four years following treatment. Radium was used alone in two patients, and radium and  $x$  rays combined in the other three. The radium used was approximately 1 millicurie per cubic centimetre, and the  $x$  rays were from a low-voltage tube, 6 min. exposure, focal skin distance 10 in., filtration 3-4 mm. aluminium. Of the eight cases five were now alive and well, two had died from intercurrent disease, and one of metastases. He held that radiotherapy was the treatment of choice in primary operable carcinoma of the breast in those of advanced age, and was justifiable if surgical intervention was refused, the results in this limited group of cases might be compared with the results obtained in surgery without disadvantage to radiotherapy.

#### *Inoperable Carcinoma of the Cervix Treated by Radium*

Dr. MALCOLM DONALDSON reported on 85 cases of inoperable carcinoma of the cervix treated by radium. His paper embodied the conclusions given in his article in the *BRITISH MEDICAL JOURNAL*, May 9th (p. 876). He added that he was still in doubt as to whether it would be better further to increase radium intensity (either per unit of needle or by inserting more needles) or to increase the duration of application. Although the cases treated by his latest technique were an improvement on the previous ones, yet in those cases which were not doing well the site where growth went ahead was more often in or around the portion of the rectum lying beneath the vagina. It had occurred to him that this was due to the fact that the intensity in that area had been too much diminished in the effort to get the bulk of the radium against the more localized growth in the broad ligaments. In his next series of cases he intended that the time factor should be the same—namely, 144 hours—but that the number of needles should be increased, several being placed around

the lower part of the rectum. He realized that by so doing a great deal of proctitis and even fistulae might be set up, but possibly the fear of this complication had been the cause of this portion of the body being left at the mercy of the cancer cells.

The paper was discussed by Professor DAELS (Ghent), Dr. BURTON LEE (New York), Dr. M. R. J. HARRIS (Dublin), and others. Dr. ZWEIFEL (Munich) said that at his clinic radium had been used in cancer of the cervix, but subsequently a combined method of radium and  $x$  rays was chosen. Among the operable cases there had been 43 per cent. of cures, and among inoperable ones 7 per cent. of definite cures. He hesitated to include the more recent cases, but he believed the proportion of cures would prove to be higher, thanks to the combined method now used. Professor HERMANN WINTZ (Erlangen) said that squamous carcinoma of the cervix was much more sensitive to  $x$  rays than to radium.

#### *The Encirclement Method of Radium Treatment*

Mr. SIMPSON HANDLEY (London) described his encirclement method of radium treatment. He said that every aggregation of cancer cells had a definite life cycle, and after increasing in size for a varying period and at a varying rate tended spontaneously to undergo fibrotic changes. The centre of a mass already degenerating or dying would succumb to a much smaller radiation dose than the actively growing periphery. Attention might almost be concentrated on the periphery and the central portion left to take care of itself. The disappearance of a lump of malignant tissue was not of so much importance as the arrest of its spread. In addition to the spread of a nodule by infiltration, cancer cells spread by permeation of the lymphatics, a process which, when once it started, would outstrip the process of infiltration. Often it was best to ignore altogether for the time being the visible deposit and to direct attention entirely to the zone of infiltration and of permeation surrounding it. The radium tubes should be so arranged as to give a lethal dose to that zone. Afterwards, if the nodule had not disappeared, a second irradiation might be given in a narrower circle, and later still, if a vestige remained, another irradiation on the nodule itself.

#### *Malignant Disease of the Upper Air Passages*

Mr. DOUGLAS HARRIER (London) said that sarcomas of the upper air passages, especially those of the round-celled type, invariably reacted well to radium treatment. He spoke of cases which had been treated in this way five years ago, and were now completely well and apparently cured. In endothelioma there were some equally remarkable results. In this condition radium might be taken as having diagnostic value. If a tumour was a true endothelioma it would almost entirely disappear under radium. Radium was not equally successful in all diseases of the upper air passages, but in carcinoma of the larynx and some other conditions he thought that surgery by itself had seen its day.

Dr. C. REGAUD (Paris Radium Institute) spoke of the treatment of epithelial cancers of the tongue and floor of the mouth. Out of 174 traceable cases in which treatment had taken place from one to five years earlier, 42 were alive and without any symptoms of cancer—50 per cent. of these had been operable cases and 34 per cent. on the border-line—and another 39 showed healing of the localization in the tongue and apparent sterilization, but had died or were expected to die of adenopathy. The principle of treatment had been to distribute numerous weak radio-active foci in and immediately around the cancerous part, to use the gamma rays only, and to give continuous irradiation over a long time.

#### *Radium Therapy in Various Conditions*

Dr. S. A. HEYERDAHL (Oslo) spoke on actinomycosis treated by radium. His first case, before coming for radium treatment, had been operated on twice without permanent result. Radium treatment was tried in 1913, and after ten years there was no relapse. Later he had had the opportunity of treating 17 men and 4 women with



radium, giving usually two or three applications with intervals of six weeks. In all cases there were good results, which had continued up to the present, the treatment dating back for from two to ten years.

Dr F. TOMISIK (Pisguc) gave an account of the treatment of pernicious anemia by radium. He had tried to diminish the activity of the spleen by massive irradiation over long periods, and he had succeeded in twenty cases in which other methods, including blood transfusion, had not succeeded at all. He recommended radium treatment in preference to splenectomy. He also gave an account of the effects of prolonged irradiation in Pisguc during the last few years he had employed a method of protected radium irradiation of the spleen, using 2 mm zinc filters, at a distance of 3 cm. He used 80 to 100 mg of radium, dividing up the tumour area into twenty five small fields and treating each field successively for one or two days. The blood picture greatly improved. Dr R. H. STIVERS (Detroit) said that during the past year he had treated four cases of leukaemia with intravenous injections of radium in order to get the prolonged action of comparatively small doses. Three cases had not been very successful—two, in fact, had died. But in the fourth case the injection of 200 mg was given last October, with marked improvement in November, and the patient had another 200 mg in January. Before the first treatment his blood count was something like 200,000 leucocytes, but since the second injection it had been normal. This patient had previously been irradiated for five or six months, but did not seem to respond, and that was the reason why intravenous injections of radium were given.

Altogether about thirty papers were contributed on the subject of radium, some of them recounting a single observation and others founded on a vast experience. Among the latter was the paper by Professor A. BAYER describing the practice at the Brussels Radium Institute in treating various cancers by a combination of surgery and radium and sometimes a ray also. The total number of cases so treated during two recent years was 742. The results had been particularly satisfactory in cancer of the rectum and cancer of the uterus. He insisted that no one method must be considered as subordinate to any other. He did not approve of the subordination of radium therapy to surgery, as practised in France and in other countries.

#### X-Ray Treatment of Breast Cancer

Professor HERMANN WITZ, of the Erlangen Clinic, described the results in 106 cases of breast cancer treated by x rays which had been observed for a period of three years following treatment. He divided the cases into three groups: (1) those in which the tumour was restricted to the breast and could be moved, and in which there was no infection of axillary or supraclavicular glands, (2) those in which the tumour had already infiltrated the surrounding region, and axillary glands were palpable, (3) those in which the glands in the supraclavicular region were palpable, and in some cases metastases were also apparent. The cases were those in which on careful examination no trace of cancer could be found, "lost" cases those in which the patient had died or was in a dying condition, and those who could not be followed up.

Group (1)	Treated	Cured	Lost	Clinical Cure
Group (2)	21	20	1	95.2%
Group (3)	41	28	13	68.2%
	44	8	36	18.1%

He noted that in groups (2) and (3) the results were better than in surgical statistics. It was essential that the requisite dose for the destruction of the carcinoma cells should be applied to the axillary and supraclavicular regions as well as to the tumour itself, and of equal importance was a carefully planned scheme of after-treatment. Care must be taken to avoid lung fibrosis, and by adjustment had been brought down to 5 per cent. He found the percentage of successes in primary x-ray treatment considerably greater than in prophylactic x-ray treatment after operation, and he had abandoned prophylactic x-ray treatment in the strict sense of the word, preferring to wait until the nodules on the skin or the gland metastases gave pronounced indications for treatment.

Dr DOUGLAS WINSTON brought forward the results of x-ray treatment in 15 cases of operable carcinoma of the breast. At the present stage irradiation should not be advised in preference to operation or operation was made when patients refused to discuss the technique and results of irradiation treatment. Eight of his cases had been treated solely by x rays, two with radium insertion and x rays and five with surface applications of 0.5 gram radium element and additional x-ray applications. The interim results of the cases were too recent for detailed conclusions—suggested that radiation was a suitable alternative to operation in some operable cases, and the other of the disease itself intrinsically, and the other had been discontinued after two years after treatment had abdominal metastases after a patient. One patient had never cases, but one had been acting well locally. Three were new cases, but one had showed no signs of the disease. In the remaining nine cases the general and local condition had taken place or was true that surgical statistics came out very badly by this criterion, but Professor Wintz's figures, on the three year basis would always appear much too good, although, on the other hand, statistics after five, six, or seven years would tell unfairly the other way, because the methods of application had greatly improved since those early days.

#### The Stimulating X-Ray Dose

Dr R. H. ZWERNER (Munich) opened a discussion on "The stimulating dose." He described a number of experiments by various workers which went to prove the existence of such a dose. It had been shown that plant exposed to small doses of x rays grew more quickly than normal controls. Russ and others had found by experiment on mice a positive stimulation effect. In the irradiation of the tissues in fibroid an increased loss of blood had been noticed, especially when the treatment was given shortly before the period of calving after x-ray exposure. Nearly all malignant tumours could be influenced to more or less increase of growth. In a large number of cases of cancer of the uterus treated at the clinic at Munich many cases of commencing cancer, which if untreated would have lived at least a year, died within a shorter time—even as short as six months—after radium and x-ray treatment, and such cases suggested that it was the radiological interference which had led to the quickened growth. The dose applied in the depth had not been sufficient to kill the growth, but, on the contrary, had stimulated it.

Dr I. S. HENSEN (New York) thought that it was necessary to distinguish between the effect on the cell as an individual unit, on the tissue as a cell complex, and on the organ as a tissue complex. There was no question but that the effect on the individual cell was always in the nature of a "stimulus," an "insult," but in the complex structure of the tissue there came into play compensatory powers which might result in stimulation rather than destruction. Dr DOUGLAS WINSTON (London) said that it was clear from the examination of buds and plants under the microscope that there was a stimulation dose. There were also certain clinical cases which appeared to point to a stimulation dose, and it was dangerous to assume that there was no such dose without absolute proof of its non-existence. Professor WITZ (Erlangen) said that it was only a certain dose, measured by biological standards, which was stimulating. It appeared that 40 per cent of the unit skin dose might be considered a stimulating dose for a squamous-celled carcinoma. Professor BECKER (Paris) said that recent French research had shown that there was a stimulating action, but that it was feeble and of short duration. The effects might partly be due to secondary infection of a microbe character.

#### Methods in X-Ray Therapy

Dr G. E. FRAHLER (Philadelphia) described what he called the saturation method in x-ray therapy. The principle of it was to repeat x-ray doses at short intervals in order to maintain the erythema dose—which in the case

of unfiltered rays fell by 50 per cent in value in about three days—it approximately its original level. Thus, malignant cells while still undergoing division, received the prolonged maximum action of the rays. This method, which had advantages over the single massive dose, required careful measurement of the quality of radiation and accurate direction of "cross fire."

Dr ISAC GERBER (Providence) spoke of the usefulness of minute doses of filtered radiations in superficial progneic infections, particularly of the skin. Needle infections of surgeons had been completely aborted or promptly circumscribed by x-ray treatment. Deep phlegmons and cellulitis would localize very quickly, erysipelas also yielded to this treatment. The dose given was never more than 25 per cent of the skin erythema dose, and was as low as 6 per cent in children. This dose was simply applied to the surface, and in a great many cases a single exposure sufficed. Dr W. MICHURILL (Bradford) referred to the need for adequate filtration when attempting to deal with the conditions. Dr SCHNARUS (Düsseldorf) had proved that the excellent effects of x-rays in furunculosis were caused by an immunity to the staphylococcus developing after irradiation.

**Effect of X Rays on Mitosis in Tissue Culture**  
Dr T. S. P. STRANGEWAYS and others who have been working with him gave a demonstration of their researches on the effect of irradiation on living tissue cells *in vitro*. The ultimate object of their work has been to find the optimum dose of radium or x-rays to destroy a cancer. They also exhibited stained specimens which showed the effects of exposing the cells to radium or x-rays. These brought out the effects of the radiations on actively dividing cells at certain distances and for certain times. A further demonstration given by these workers was of the internal structure and movements of the actual living cell, shown by means of dark-ground illumination.

#### ACTINOTHERAPY

SIR HENRI GAUVERIN opened a discussion on actinotherapy. He said that the treatment by light was based on clinical experience and observation. Use should be all means be made of the results of discoveries with regard to the action of light on the body, but these discoveries, sometimes apparently contradictory, must not be allowed to deflect the clinical judgement. The clinical result of the treatment given was the final thing to be considered. He himself was in the habit of describing the action of light as twofold—first, on the mind, and, secondly, on the body. At Alton it had been possible to demonstrate that, with exposure to light, there was a definitely increased response of mental health. With regard to the effect of light on the body, he thought it might be described as twofold. There was first the direct or local action, the effect of light on the skin, which was of various kinds, including inflammatory response and the formation of pigment. Some workers went so far as to urge that pigmentation should be avoided, but he believed that pigmentation should be important therapeutic significance. Patients who had a very marked well so frequently did well in other respects that there must be some association between pigment formation and therapeutic effect. Then there were the remote or indirect effects of light, with regard to which he did not propose to speak. There had been a tendency, especially in this country lately, to use very short-wave ultra-violet rays. These had a rapid and remarkable action, but very little penetrative power. He reminded the Section of the antagonism of rays—some rays appeared to stultify the effect of other rays. In fact, light therapy was in some ways the most intriguing of the therapies because of the unexpectedness (even if occasionally the confusing character) of some of its results.

Dr LEONARD HILL (London) gave what amounted to a lecture in this Section on sunlight and artificial sunlight treatment. He mentioned, among other matters, how entirely the effect of ultra-violet rays was screened off by garments, even by the thinnest zephyr. Artificial silk was the most permeable material, being an acetocellulose, whereas natural silk was a protein. If the patient receiving ultra-violet treatment insisted on being clothed the garment

should be an artificial silk zephyr. He went on to point out how little danger from sunburn existed in the smoke-polluted air of English cities, and gave some figures illustrating the striking differences between various localities, even between places so near together as Hampstead and Kingsway, at this last station the ultra-violet rays were not then minimum. There was no need in England to take all those precautions against sunburn which Rolher had found necessary at Leyden. Dr Leonard Hill described the action of ultra-violet radiation on the tissues, saying that it put up a general resistance, not a specific immunity, to infection.

Professor SEVER (Copenhagen) spoke of the action of ultra-violet and visible rays in therapy, and especially how visible rays, penetrating into the skin, heated up the subcutaneous blood. He also insisted on the advantage of radiant visible heat, such as the open fire or the gas fire. Dr R. G. BANNERMAN (Alton) dealt with some of the biological effects of mercury vapour lamps. It would appear that a massive dose of mercury vapour radiation was followed by a phase of depression of the organism, and therefore, while an erythematous reaction might be desirable or even essential in the local treatment of a local condition, it was to be avoided in the treatment of a general condition.

Dr S. ROTUNDO brought forward the results of some experimental research carried out at Giessen University dermatological clinic. The work had shown that in the case of light baths intensive reaction of the skin must be avoided on account of the danger of focal reaction. By combining light treatment with systematic hydrotherapy, massage, and exercises in the sun or in the artificial light bath, the best results were secured. Natural sun baths were best, with quartz lamps it was more difficult to make the pigmented skin hyperemic. It might be that the visible spectrum had a helpful effect, but without ultra-violet radiation no therapeutic effect was possible, whereas the visible rays could be dispensed with.

Dr A. EMMERSON (London) spoke on the bactericidal effects of ultra-violet rays, these effects could be seen when a very thin film of blood containing bacteria was exposed to an ultra-violet source. When photosensitizers such as eosin were added to the mixture of blood and bacteria the direct bactericidal action could take place upon exposure to visible light. Direct exposure of defibrinated blood to ultra-violet rays destroyed the bactericidal properties of the irradiated and slightly haemolysed after one hour's irradiation, and examined by the spectroscope, the presence of methaemoglobin could be detected.

Dr MORRIS LEVICK referred to the importance of red light as a physiological and curative agent. The red rays were absorbed by muscle and, he believed, by inflammatory exudate. Carbon filaments yielded a light much richer in red and infra-red frequencies than the ordinary metal filament, and the infra-red rays could be cut out by red-stained soda glass screens. To avoid undue heating the lamps should be placed at a distance of two feet, allowing of free circulation in the air around the part. He cited the value of red radiations in cases of musculo-wasting, tuberculous ulcerations, and other conditions.

#### Electrotherapy

One of the three discussions in this Section was devoted to electrotherapy, and was opened by Dr E. P. CUMMERBATCH, who referred particularly to diathermy, and continued by Dr WILLIAM BIERMAN (New York), who described his method of surgical diathermy in the treatment of haemorrhoids, which, he said, was a marked improvement on the cauterization that it caused less injury to the tissues and introduced heat in the most effective way. Dr S. JELLINEK (Vienna) gave an account, illustrated by some remarkable microscopic slides, of the bone changes, immediate and delayed, occurring after electrical shock.

**International Units and Standards**  
The opening of the combined discussion by the Sections of Physics and Radiology on international units and standards for x-ray work was reported last week. A great

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# INTERNATIONAL CONGRESS OF RADIOLOGY

[The President  
of the Congress]

part of the discussion dealt with the technique of physical measurement in a way which does not lend itself to a useful abbreviation. The feeling evident throughout the discussion was in favour of setting up a standard which should be expressed in terms of absolute units. Perhaps the most helpful thing was said by one of the British physicists, who declared that the necessary preliminary to a really universal system of measurement would be to arrive at a constant source of current for the tube. If a standard type of x-ray beam with a constant voltage apparatus were available, that beam could be measured in terms of the international unit, whatever that unit might be. The outcome of the discussion was a resolution to appoint an international committee to study the question of measurement. This committee was not appointed at the Congress, because it will be necessary to communicate with the various scientific bodies throughout the world in order to arrive at a representative membership, but it was agreed that the following gentlemen, who constituted the British X-Ray Unit Committee appointed in 1923, should form a group to nominate the international committee: Sir William Bragg (Chairman), Professor F. L. Hopwood, Dr. E. A. Owen, Mr. C. E. S. Phillips, Professor A. W. Porter, and Professor Sidney Russ.

## Silvanus Thompson Memorial Lecture

In the course of the Congress the eighth lecture in memory of Silvanus Thompson, founder of the Röntgen Society, was delivered by the Duc de Broglie, the well known French physicist, who is a doctor honoris causa of the universities of Oxford and Leeds. His general subject was the absorption of x-rays and gamma rays and the secondary rays which accompany them. The lecture was a review of recent work and a description of the lecturer's own investigations on x-ray absorption spectra. He said that it was now possible to begin to describe a definite wave-length to the gamma rays, the absorption of which resembled closely x-ray absorption, with certain differences, however, which were very curious to observe in the cloud-expansion apparatus, and might perhaps help eventually to explain the difference between the observed effects of the two radiations. In the concluding part of his lecture the Duc de Broglie suggested that there might be a kind of "trigger" effect of radiation on living cells. On these deep problems ignorance had to be confessed, but there was little doubt that the joint efforts of biologists and physicists would sooner or later cause some ordered conceptions to emerge from the present obscurity. A vote of thanks was recorded on the motion of Dr. A. E. Barclay, seconded by Dr. KAYE.

## Protection of X-Ray Workers

Dr. G. W. C. KAYE (National Physical Laboratory) opened a discussion in the Physics Section on protective and manipulative methods. He said that although the radiologist was not likely to tempt Providence by foolhardy exposure, he did not always appreciate the results of scattered radiation. Radiation was given off from the body of a person who was being subjected to x-rays, and the scattering produced by the air in the room in the vicinity of the x-ray tube was something like that of the primary radiation. If the scattering was excessive the operator should be behind a screen or wall. Each outfit should be protected by walls extending from the floor to the ceiling, and floor and ceiling should also be protected. The protecting lead for a strength not exceeding 70,000 volts should be at least 1 1/2 mm. thick and for 100,000 volts 2 mm. thick. There was a danger in using gamma rays to test the protection of materials, as these made the protection appear much better than it actually was. All protective boxes should be tested for leakage. He was surprised that the open bulb was still being used, as in many cases it was often possible to take a radiogram of the hand in any part of the room. Generous ventilation of the x-ray rooms had an importance second only to that of protection, and nausea, floor space should be adequate, and the material should be wood, cork, or rubber. M. PIRON (Paris) spoke on the same subject, and described an oil-immersed tube, of the same size as the

Coolidge universal tube, which could withstand 200,000 volts on the direct current. Every part of the glass wall was cooled and had the same temperature. After the box was earthed the patient ran no risk of receiving an electric shock. Mr. V. I. PIRNIS (director of radiological research, Woolwich), who said that he had to do with x-ray protection in fifteen service hospitals, laid stress on the need for efficient ventilation. He also related an instance in which several patients in a ward above an x-ray room had ulcer on the heel after leaving having reached them through the ceiling.

## The Organization of a Hospital Radium Service

Professor L. L. HOLLOWAY (St. Bartholomew's) described the organization of a hospital radium service. The radium of which he was in charge was distributed among 220 containers. He illustrated the various holders, thermometers, and magnifiers for reading identification marks on the needles—all conceived to avoid handling the radium—also the ingenious drawers, lead encased, in which radium was kept. He submitted a list of the regulations operative in the hospital. Dr. G. FAIRLIE (New York) said that in his hospital colour was largely used for identifying tubes at a distance, and in that way no open wounds resulting from the manipulation of radium had to be dealt with, though the fingers, especially around the nails, became red and scaly.

## Exhibition of Apparatus

During the four days of the meeting an excellent exhibition of apparatus and accessories associated with x-ray work and electrotherapy was held at the Central Hall, to which over thirty firms contributed.

## THE CONGRESS DINNER

The Congress dinner was held at the Hotel Cecil Central on Thursday evening, under the presidency of Mr. C. THURSTON HOLLAND, who was supported by Sir Humphry Rolleston, F.R.C.P., Dr. E. M. Callender, President of the Medical Society of London, Sir Robert Jones, Sir Dawson Williams, and other members of the Committee of the Congress and the officers. Representatives of seventeen countries were present.

The President recalled the early days of Röntgen's epoch-making discovery, less than thirty years ago. Soon after the discovery was announced the speaker became possessed, through the generosity of his great friend, Robert Jones, of a complete x-ray apparatus—cost outfit—coil, tube, tube stand, and electrical supply—less than £30. Nowadays a young radiologist, if he desired to practise all the branches and to the full extent, would require an outlay on instruments of approximately £3,000. The early work on radiology was done by a band of youngish men, all comparatively unknown in medicine and surgery, who had to fight to a large extent against prejudice, and to wait a considerable time before they were able to establish radiology as a means of diagnosis—to say nothing of treatment—in the position it now held. But what would medicine and surgery be at the present day without radiology? Many of that band of youngish men had suffered physically, some had lost their lives. Quite recently radiology had had to mourn some great figures whose lives might have been prolonged had their enthusiasm been less—Leonard of Philadelphia, Albert Schonberg of Hamburg, Bergamo of Bordeaux, and in this country Archibald Reid. To-day it was possible for a young man to start on a career of radiology without taking any of these risks, what was more, he could start with the advantage of the knowledge that the older men could impart. He could take diplomas in radiology at two universities—Cambridge and Liverpool—and soon he would be able to take a diploma at a third—Edinburgh. Nevertheless, the speaker did not envy the young men. It would not be theirs to know the thrill of discovering for the first time a stone in the kidney, or of seeing as a novel thing the outline of the stomach under the opaque meal. Yet, no doubt, there was much still to be done, perhaps only the threshold had been reached, and if such congresses as the present were to be repeated, and such work had a joy which money-making could not give. The President concluded

with a tribute to some of the men behind the Congress—to Dr Robert KNOX, the moving spirit, the Presidents of the three co-operating bodies, Dr Barclay of the Roentgen Society, Dr Melville of the Electro-Therapeutic Section of the Royal Society of Medicine, and Sir Humphry Rolleston of the British Institute of Radiology, the honorary treasurer, Dr James Metcalfe, and the joint secretaries, Dr J. E. A. LANHAM and Dr JOHN MUNN.

Delegates from the different countries then expressed, most of them in one or two sentences, their appreciations.

Professor C. BÉCLÈRE, speaking in French, after an eulogy of the organizers of the Congress, referred to the appropriateness of the portrait of Roentgen on the dinner card. He said that this was an act of justice and of gratitude, a proper homage to the intellect of the scientist and the character of the man. What portraits might accompany that of the great Roentgen at future Congresses? He hoped those of Henri Becquerel and the Curies, whose discoveries had opened a new domain to radiology. Such a group would be an eloquent symbol of the intimate bonds which united great discoverers, and a testimony to the fact that this science of radiology, like other sciences, was a collective piece of work, an achievement to which men of many different countries contributed—here and there a man of genius, but also, not less to be regarded, a multitude of modest workers animated by the same spirit. It was essential that the co-operation in science of men of different nations should become closer, more active, and more powerful. One of the necessary conditions for the progress of radiology was the *entente* between radiologists of all countries.

Professor HANS DIETLEN, speaking for German radiologists, said that internationalism had always been a necessary condition of effective culture, and his countrymen were grateful for the opportunity of participating in this gathering.

Professor M. NEMENOV (Russia), who spoke in German, said that the Russian delegation came from a far country after a political earthquake, and were hardly sure of their reception, but it was enough for them to exchange the first few words to know that they were in hospitable company.

Professor CARL SONNE (Denmark) said that his country was the first to place actinotherapy on a firm scientific basis, and he was glad to find actinotherapy represented by a section in the Congress. Dr L. F. DRIESSEN (Holland) said that he spoke for a small country, but he was glad to point to the disproportionately large attendance of members of the Dutch Roentgenological Society, of which he was president. Professor GÖSTA FORSSELL (Sweden) said that the Congress was a model to all future international meetings, but those who entertained subsequent Congresses would be hard put to it to reach the high level of British hospitality. Dr P. M. HICKEL (United States) presented the felicitations of American radiologists on "pulling off" such a wonderful Congress. If the statesmen and editors of the world would take a lesson in brotherly love from the scientific men the troubles of the world would very soon be straightened out.

Others who responded more briefly were Dr CARLOS HEUSEN (Argentina), Professor A. SCHÜLLER (Austria), Professor DE NOBELE (Belgium), Dr HOWARD PIRIE (Canada), Dr W. ALTSCHUL (Czechoslovakia), Dr M. PONZO (Italy), Mr M. R. J. HAYES (Irish Free State), Dr S. A. HEYERHAEL (Norway), Dr J. DEBICKI (Poland), and Dr R. FEISSLY (Switzerland).

#### MACKENZIE DAVIDSON MEMORIAL LECTURE

The Mackenzie Davidson Memorial Lecture, held under the auspices of the Electro-Therapeutic Section of the Royal Society of Medicine and the Roentgen Society, was delivered by Sir BERKELEY MOYNIHAN on Friday evening before a very large gathering. Among those present was Lady Mackenzie Davidson. Sir Berkeley Moynihan's lecture on "The relationship of radiology and surgery," is printed in full at page 47 this week.

Dr STANLEY MELVILLE proposed, and Dr A. E. BARCLAY seconded, a vote of thanks to Sir Berkeley Moynihan, and Mr THURSTAN HOLLAND, who presided, presented him with the Mackenzie Davidson memorial medal amid much acclamation.

## NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS

### ELEVENTH ANNUAL CONFERENCE

THE eleventh annual conference of the National Association for the Prevention of Tuberculosis was held at the house of the Royal Society of Medicine on July 6th and 7th, under the presidency of Sir ARTHUR STANLEY. The proceedings were opened by Sir KINGSLEY WOOD, M.P. (Parliamentary Secretary to the Ministry of Health), who expressed official appreciation of the work of the association and of its character as a voluntary body.

Visitors were present from the United States, Denmark, Austria, and Russia. The Russian representative, Dr VONEBELFF (Moscow), said that the health of the Russian population was rapidly improving, and the campaign against tuberculosis was now organized on a large scale. The propaganda found successful in England was being followed, and the people were encouraged to active participation in health work. Dr WOODS HUTCHINSON (United States) spoke eloquently on the decline of tuberculosis as a result of sanitary skill and enlightened public opinion.

Sir ARTHUR STANLEY said that the association, responding to a suggestion made at the last conference by the late Minister of Health (Mr John Wheatley), had drawn up a memorandum on the establishment of model workshops for the tuberculous community, but owing to the change of Government and the pressure of public work the matter was in abeyance. The propaganda of the association had gone steadily forward. A vote of thanks to Sir Arthur Stanley for his services as chairman of council was recorded on the motion of Sir ST. CLAIR THOMSON, seconded by Sir HUMPHRY ROLLESTON.

#### Tuberculosis in Childhood

Two subjects were before the conference, one of them "Tuberculosis in childhood," and the other "The treatment of tuberculosis by sanatorium." Professor PIQUET had been announced to open the first of these discussions, but owing to illness in his family he was unable to leave Vienna, and his paper was read by Dr Richard WAGNER, of the children's clinic in that city. Professor PIQUET made use of the statistics of the Registrar-General for England and Wales to show the enormous significance of tuberculosis as a cause of mortality at the most efficacious period of life. It appeared to assert itself as the chief mortal disease from the age of 10 up to the age of 46. Dr WAGNER also read a paper of his own, on the nutritional treatment of tuberculosis in childhood, in which he gave some statistics of the morbidity from this cause in Vienna and Lower Austria. He described also the nutritional classes at the children's clinic, and the results which followed.

Dr A. STANLEY GRIFFITH dealt with the bovine tubercle bacillus as an important source of human tuberculosis. The highest percentage of bovine infections was found in children under 5 years of age. It would be difficult, though not impracticable, to free the whole country from bovine tuberculosis, but until the ideal of tubercle-free herds was attained universally all milk not from such herds or not efficiently pasteurized should be sterilized in the home before being given to infants, children, or sick persons. As to the objection that bovine tubercle bacilli in milk might confer an immunity to the more dangerous human infection, he thought there was no evidence that the absorption from the alimentary tract of small numbers of bovine bacilli had any significant or lasting immunizing effect. Dr C. RIVIERE said that in modern civilized communities repeated infection with the tubercle bacillus was inevitable. This infection led to immunity and protection against the disease. The primary infection was of importance, and probably determined the whole future *qua* tuberculosis. Infection in early infancy was dangerous and postponement was valuable, but could only be temporary. The infection might be with the highly virulent human strain, commonly by the air passages, or with the bovine strain, comparatively innocuous to man, by the alimentary tract. Was it worth while to withhold this latter source of infection knowing that the alternative was the dangerous

human type of the bacillus? Nevertheless, he hoped that some day public opinion would be ripe for a less clumsy procedure of tubercle immunization than the giving of milk.

SIR ROBERT PHILLIP spoke of the lines on which preventive treatment of the child had proceeded of recent years. The Giancher method, by which delicate children were transferred from dubious home environment to presumably healthy surroundings in the country, was subject to the fallacy that most of the children thus taken in hand were already tuberculous, and the excellent results following the system were to be attributed to a progressive detubercularization along natural lines. Another proposal was that prior to "spontaneous" infection the child should undergo artificial inoculation in order to anticipate the effect of exposure, but it had yet to be seen to what extent, in the absence of disease, parents would consent to submit the newly born infant to inoculation with tubercle bacilli, however modified, and however simple the process might be. His own plan of "anticipatory detubercularization" proceeded on the assumption that infection took place practically always during childhood, that the occurrence of the subsequent process of tubercularization might be definitely determined, and that it was possible to limit and counter the process by detubercularization. His method had two aspects—environmental and antigenic. The results had been described by him in the *BRITISH MEDICAL JOURNAL* (March 24th, 1923).

Among other speakers Sir WILLIAM THOMPSON referred to the drop in child mortality from tuberculosis during recent years in the Irish Free State, Dr FRANCIS HEWAT related some experiences from the Edinburgh Royal Infirmary, and Professor LOUIS McLEOD dealt with the provision for infected pregnant women.

On the second day of the conference, with Sir ROBERT PHILLIP in the chair, the discussion was continued, and Sir HERMAN GAVAN gave an address on the prevention, treatment, and after-care of surgical tuberculosis in children. He refused to believe that bovine tuberculosis could not be relegated to the horrors of the past. The argument that drinking slightly infected tuberculous milk would enable one to acquire immunity to infection he described as a dangerous and unnecessary doctrine. Dr GORDON PUGH followed with an illustrated description of the constitutional treatment of early non-pulmonary tuberculosis as carried out at Queen Mary's Hospital for Children at Carshalton, and showed the special spinal and hip frames and carriages designed to facilitate the application of heliotherapy, arc-lamp treatment, and gymnastic exercises, while immobilizing the diseased part. Professor JOHN FRISER referred to the relative incidence of surgical tuberculosis among town and country children. In Scotland the disease was more frequent among dwellers in the country. In the cities the organization of milk inspection was thorough, in the country it was too often a dead letter.

After some general discussion the conference unanimously passed resolutions urging the Government to use every possible means to render effective all the provisions enacted in the Milk and Dairies Acts of 1914 and 1922 and the subsequent regulations, also asking the Ministry of Health and the Board of Education to consider the desirability of including in school education more definite instructions regarding the principles of health conservation, personal and communal, and simple methods for the prevention of tuberculosis.

#### *The Sanoerysin Treatment*

The final session was concerned with the treatment of tuberculosis by sanoerysin, and was almost entirely occupied by lectures, each of an hour's duration. Professor HENRI MOELLGAARD of Copenhagen recapitulated the principles and results of the treatment, as set out in his recent article in these columns.<sup>1</sup> He added that up to the time he wrote his paper he believed that sanoerysin had no influence on surgical tuberculosis, but some evidence had come before him during the last few days that in suitable doses it was effective here also. The results of his

veterinary experiments had been supported by some recent researches made in the Danish State Serum Institute, and reported by Dr MADSEN in May last.

Dr KARL LARSEN (Professor of Clinical Medicine, Copenhagen University) described experiences with sanoerysin treatment during the last seven months in the university clinic. Before coming to the results he dealt with the reactions and dangers of the treatment. The treatment resolved itself into a short series of injections, the effect of which on the patient's temperature diminished with each injection. The greatest risk was the occurrence of the acute stage of shock described by Professor Moellgaard, the shock was most likely to occur when the injection was given while the patient still had fever reaction from a previous injection. The danger of the treatment really consisted in following the injections too rapidly upon one another, with consequent accumulation. He advised a less intensive treatment than the one originally proposed, so that the harmful effects might be reduced and controlled. In grave febrile cases it was necessary to be particularly cautious. Dr LARSEN then showed charts and x-ray photographs relating to a small number of cases of pulmonary tuberculosis in which a decidedly favourable effect of the compound was seen. Apart from improvement in the general condition—the cessation of the febrile or subfebrile state—there were certain objective changes, particularly the disappearance of rales, freedom of the expectoration from bacilli, and improvement in the x-ray picture. The material was as yet too small and heterogeneous for conclusive statistics to be furnished, but an estimate was possible in about 40 cases coming under his own observation in which the treatment was finished or almost finished. Eight of these patients must be regarded as clinically cured, 17 showed very considerable improvement, 9 still showed signs of active phthisis after six months' treatment, and in 6 patients the disease had not been arrested at all, but rather had tended to spread. The best results were obtained in patients who had been suffering for less than a year from the illness. During the last twelve months the treatment had been employed in Danish sanatoriums, and here the statistics, relating to 250 cases in which the treatment might be said to be finished, showed decided improvement in 52 per cent. It was still too early to give a pronounced and final verdict, but it seemed to him that the compound was able to bring about in many patients a pronounced and rapid improvement not obtainable by any other method.

Professor EILE CURRIE said that his experience had been confined to eight selected cases. All the cases had done well, and the improvement had been so much more rapid and dramatic than was to be expected in cases of this type that he was unable to avoid the conclusion that sanoerysin was the favourable factor in each. These eight cases had impressed themselves on his mind more sharply than a far larger number of cases in which other recent methods had been tried. All the cases at first lost weight under treatment, and all experienced severe reactions at the beginning, but, on the other hand, the weight was rapidly regained after the inoculations, the cough diminished or disappeared, the sputum in several of the cases disappeared or showed a great fall in bacterial content, and some improvement was noticed in the x-ray picture. The use of serum was definitely helpful in the control of albuminuria, but it had its own inconveniences. He had found it useful to space the doses rather more widely than was originally advocated by Dr Secher during his visit to London in December last. The speaker believed that the use of sanoerysin should be safeguarded, not so much by reducing the dosage as by selecting patients with tuberculous lesions of relatively small extent. He thought that this treatment should not at present be handed over to general practice, but should be carried out by specialists at special hospitals.

SIR ROBERT PHILLIP said that the Medical Research Council was hard at work to determine whether, on the one hand, the experimental process advanced by Professor Moellgaard was sound, and, on the other, whether and to what extent the results brought forward could be corroborated by further results.

<sup>1</sup> *BRITISH MEDICAL JOURNAL*, April 4th, p. 643. See also preliminary report by the Medical Research Council, *BRITISH MEDICAL JOURNAL*, April 18th, p. 735.



# British Medical Journal.

SATURDAY, JULY 11TH, 1925

## INTERNATIONAL RADIOLOGY

THE Congress of Radiology in London last week may be considered to mark the coming of age of radiology as a special department of medicine. It is true that it is thirty years since Roentgen made his discovery bringing to the point of utility a series of researches which had been prosecuted in a rather desultory way by physicists in this and other countries. But some few years elapsed before it was realized how great were the services the discovery might render to various arts, to none have they been so great as to medicine. The conference was not summoned as an International Congress, but it was attended by representatives of the specialty in many countries, who quickly voted with unanimity that it should be recognized as the first International Congress of Radiology.

If the Congress marked the coming of age of radiology, it was Sir Berkeley Moynihan who made the birthday speech in his Mackenzie Davidson Memorial Lecture which is published in full in the opening pages of this issue. That the lecture should have been delivered during the first International Congress of Radiology was most appropriate, for Davidson, then at Aberdeen, was one of the first to take up the new method seriously, to equip himself with the best apparatus available, and to be satisfied with nothing but the best results then possible to be obtained. Afterwards he removed to London, and, by his ingenuity in devising apparatus, his energy in trying new methods and the enthusiasm with which he preached the new doctrine, did in the early days more, perhaps, than anyone in this country to establish its practice on sound lines. The choice of the orator also was fortunate. Sir Berkeley Moynihan's powers of lucid exposition are unrivalled, and no surgeon of the future will be in quite so good a position to describe the greater accuracy of diagnosis which is owed to radiology, for he has watched its development and himself experienced the steady increase in the value of the information it can afford. Emphasis must be laid on the word 'can,' for, as he insists more than once, the radiologist must be allowed time enough for his study of the case if the full advantage of all that he can do for the surgeon is to be obtained. It will not do merely to direct that an x-ray examination must be made, the surgeon—or, for that matter the physician, whether doomed to be a surgeon or not—should consult with the radiologist. If this were always done it would prevent misunderstandings and would incidentally reduce the activities of the non-medical radiologist, a reform for which there is need. Emergencies apart, what the surgeon ought to say to the radiologist is "Examine this case thoroughly, using all the methods at your disposal, and then tell me and show me the evidence you have collected, giving me your judgement on its significance."

Sir Berkeley Moynihan confined his survey to the alimentary canal, going beyond it only to make a brief reference to the urinary tract. Even so, he had a very wide field from which to gather his harvest, and he brought in many sheaves, for, much as radiology has

done to make diagnosis more accurate in diseases and injuries of the head, the chest, and the limbs, it has done more, with the possible exception of the last named, for the abdomen. He did not stint his praise. Speaking of gastric diseases, with special reference to ulcer, he proclaimed that it was hardly too much to say that we owe almost everything to the radiologist, the accuracy of the radiologist in the diagnosis of gastric ulcer nearly approaches that of the surgeon who, with the abdomen open, inspects and handles the stomach. Of what used to be called idiopathic dilatation of the oesophagus, now known as cardio-sprism, we could, he said, "know nothing accurately apart from the examination made by the radiologist." Again, he observed that the recognition of diaphragmatic hernia "without the aid of radiology is excessively difficult or perhaps impossible." Passing to the diagnosis of diseases of the gall bladder, he said that in cholelithiasis radiology enables a diagnosis to be made which otherwise would be in doubt, it discovers associated lesions in neighbouring viscera, and is an instrument of research into the composition of stones, and may so throw light on their formation.

But, though he was generous in recognition Sir Berkeley Moynihan discussed quite frankly the limitations of radiology, directing attention in particular to gastric ulcer and cholelithiasis. His observations should be read in full, but a not unfair summary would be that a positive report from the radiologist is of far greater value than a negative, and that where a negative report is opposed to the impression produced on the mind of the surgeon by all the clinical evidence taken together it should be disregarded. Perhaps here we have light thrown on dark words he used at the beginning of the lecture when he described himself, not for the first time, as "a physician doomed to the practice of surgery." Others, perhaps, would gladly accept the doom without repining, but the phrase was something more than a jest. It meant, we suspect, that everyone must, before all things, strive for the highest attainable accuracy of diagnosis, and must neglect no means to that end before resorting to the knife—that the day of the "look and see" surgeon has passed. He was careful to insist that once the diagnosis has been made as precise as possible there should be no delay in acting upon it. This is one of the observations that make the lecture of so great value to the general practitioner. Before closing Sir Berkeley Moynihan spoke shortly of therapeutic applications of radiology, and referred to a method he has tried in carcinoma of the stomach—that of opening the abdomen and exposing the organ for forty minutes to x-rays under a single layer of macintosh gauze. In two cases in which this method was used the results proved decidedly encouraging for when the abdomen was opened again seven and nine weeks later the growths were so changed and shrunken that it was possible to remove them with all their attached glands. Reports of future experience with this method will be awaited with particular interest.

The verdict of all who attended it is that this first International Congress of Radiology was a great success. Foreign members praised the way in which it was organized; the credit is in large measure due to Dr Robert Knox, chairman of the Organizing Committee who was described by Mr Thurstan Holland at the dinner as the moving force behind the whole project, Dr Stanley Melville, secretary-general, and the joint secretaries, Dr Lynham and Dr Muir, upon whose shoulders, as secretary of the British Institute

of Radiology—the headquarters of the Congress—a great deal of the preparatory work fell.

The Congress was international, no nation was excluded, and twenty-two, we are told, were represented. It had several set discussions and saw some striking demonstrations, but the number of papers in the three sections was so large that time to debate them could not be found. Following our preliminary notice published last week, the work of the Congress is reported at some length in this issue (p. 67). The full text of all the papers will, we are told, eventually be published in the *Journal of Radiology*.

Before separating, the members decided by a unanimous vote that the next Congress shall be held in Sweden three years hence; it was to be noted at the dinner that no speaker was received with applause so warm as the leading representative of that country, Dr. Forssell, who seemed to personify for his brother radiologists the spirit of international amity the Congress was designed to promote.

### THE CIVIL RESEARCH COMMITTEE.

We gave last week (p. 25) some particulars of the Treasury minute defining the functions of the new Committee on Civil Research and of the Lord President of the Council's speech indicating the objects with which it has been set up. Lord Balfour described the new Committee as "an additional wheel required to complete the mechanism of Cabinet government," and he specified three directions in which the services of this new Committee would at once be available—namely, in co-ordinating the work of different Government departments, in tackling special problems, and in securing the counsel of the Dominions.

Health questions have suffered as much as, if not more than, other questions from our present ill-co-ordinated system of administration. Such problems as hookworm disease, sleeping sickness, yellow fever, plague, and bilharzia are international, and demand co-operation between neighbouring countries. It may be difficult to secure this co-operation if rival Governments must first be consulted, but within the British Empire co-operation should be possible of achievement. Nevertheless, our present system of administration offers insuperable difficulties, as all reformers in imperial hygiene know only too well. Thus, all medical problems in India are handled by the India Office, and those of Ceylon by the Colonial Office. Hence, under existing arrangements the much needed campaign against hookworm disease would be superintended by two separate organizations, each with its own traditions, and each jealous of any infringement of its rights. A traveller returning from a tour of the Empire would find it difficult to discover which Government department, if any, supervised the health questions which seemed to him so pressing in different parts of the Empire. The Foreign Office, the Colonial Office, the War Office, the Air Ministry, the Admiralty have each established areas of authority, the self-governing Dominions are, of course, entirely independent in such matters, so that the means they are taking to tackle their health problems come only unofficially to the notice of the central seat of government. In the face of such a complicated and unco-ordinated system, small wonder that no bold attempt is made to attack problems of imperial health.

Health matters are, we understand, among the first which the new Civil Research Committee proposes to study, and the particular question of co-ordinating

medical services throughout the Empire is worthy of the first claim on its attention. Its elastic nature should enable this Committee to cope with almost any question, for it would appear that the only permanent member of the Committee is the Prime Minister, though the Minister nominated by him to act as chairman will, it may be assumed, act in that capacity continuously for a considerable period, if not for the lifetime of the Ministry. For any particular subject to be discussed the chairman (or the Prime Minister) will call together a committee of experts. It may perhaps be assumed that there will be committees dealing with shipping, trade, foodstuffs, agricultural problems, mining and many other questions which require the co-ordination of different Government departments.

In its working the new Committee will not be hampered by rigid rules. The Treasury minute lays it down that the Civil Research Committee shall be an advisory committee without administrative or executive functions. Lord Balfour, in laying stress on this, said that it would be modelled on the Committee of Imperial Defence, which was established some twenty-five years ago to co-ordinate the work of the army and navy and to consider all questions connected with the defence of the realm. In referring to the advantages which flowed from the work of this body he remarked that a valuable characteristic of the Committee of Imperial Defence was that it could not give orders to anybody, instead of increasing friction between departments and causing jealousy against itself in the minds of departments, it was of inestimable value in making all the departments work as parts of one machine. We imagine, then, that health questions which have been discussed by the Civil Research Committee, often, probably, together with representatives from different Government departments and from the Dominions and Colonies, will be referred back by the Cabinet to the home departments concerned, and, if the Committee's deliberations have pointed to any practical measures, it will bring pressure to bear on each department to see that these are executed, and will satisfy itself that they are executed.

So far we have spoken only of the more efficient working of the machinery of State as already established, but we think we detect in the establishment of this advisory body something more than a touch of lubrication of the wheels of government. We hope we may discern beneath the argument of expediency official recognition of the principle that henceforth human life must be guided by science. Nearly all the necessities of life are brought to this small island from distant lands, and a watchful eye must scan the activities of far away fields. In our peculiarly vulnerable position foresight alone can protect us from dangers threatening ahead, and for this peering into the future we shall need the help of every instrument of science. The Civil Research Committee will, we hope, not only possess the seeing eye, but also the co-ordinating brain. Certainly we need both these faculties in all the big health problems of the Empire.

THE Royal College of Surgeons of England will give a reception at its house in Lincoln's Inn Fields on Monday evening, July 13th, in connexion with the Convention of English-speaking Ophthalmological Societies. Fellows and Members of the College wishing to attend are asked to apply to the Secretary of the College for cards of admission.

## AN EXHIBITION OF SPECIMENS

During the present month a special exhibition of specimens is to be seen in the museum of the Royal College of Surgeons of England, Lincoln's Inn Fields. The specimens shown represent additions and donations made during the past twelve months, and many of them are of exceptional interest. One hundred and seventy of these new specimens are of a pathological nature, and have a direct bearing on problems which are now occupying the attention of medical men. Especially numerous are the preparations which illustrate lesions of bone. The visitor's eye is at once attracted by a series which was presented to the College by the executors of the late Sir William MacEwen, and represent the results obtained by that great surgeon during his experimental inquiry on bone growth. Sir William often visited the museum of the College to study Huxleyan specimens, particularly those which illustrate the manner in which bones grow, and had expressed a wish that his own might be added to the Huxleyan series. A valuable addition to the same series is made by Mr. I. W. Hay Groves. It is evident from the number of specimens of myeloma in the neighbourhood of the knee-joint that this form of tumour is engaging the attention of surgeons. Visitors to the exhibition have an opportunity of satisfying their curiosity as to the nature of the ailment which so disfigured the face of a chimpanzee, known as "Mick," which lived in the ape house of the Zoological Gardens for twenty-seven years. His muzzle became massive, and two horn-like bony excrescences arose at each side of his nose—very similar to the condition seen in the "horned" men of West Africa, a condition now described as frambesial osteitis. The skull of "Jock," who was also in the Zoological Gardens for many years, is also exhibited, and shows a less marked degree of the same disorder, evidently one which results from some form of slow infection. A striking feature is the massive growth of the alveolar bone of the jaws, with an arrest in the eruption of the permanent teeth. The exhibition contains also some delicate dissections which illustrate points in the finer anatomy of the thyroid and other glands of internal secretion of lower vertebrates. For these Mr. R. H. Burne, physiological curator, is responsible. Of especial interest are the preparations which show the peculiar system of lymph vessels which are connected with the thyroid gland of *Lophius*, the angler fish. Many additions have been made to the craniological and other series in the museum. The exhibition is open to all medical men between the hours of 10 and 5, except Saturdays, when the museum closes at 1 o'clock.

## "GOUNDOU" HORNE MEN IN AFRICA

The nature of the osseous tumours involving the infra-orbital ridges of the maxillary bones in a case of the condition, referred to in the preceding paragraph as that presented by the horned men of West Africa, was described to the Royal Irish Academy by the late Professor Alexander Macalister in 1882 and 1883. In 1887 Surgeon J. J. Lempriere, of the Army Medical Staff, described in our columns three other cases of this condition, which is well known on the Gold Coast under the title of "henpige" or "dog's nose," and on the Ivory Coast as "n'goundou," from which its more common designation of "goundou" is derived. Other accounts of this disease were contributed to this JOURNAL by H. Strickland and J. O. Shucrore. Major Botreau-Roussel, of the French Colonial Army, has now published a book on "goundou," based on his observations on the

Ivory Coast between 1912 and 1917, when he collected 130 cases and operated on 113 patients. He claims to have established that this condition is only one symptom of an hypertrophic osteitis affecting several bones and sometimes involving the greater part of the skeleton. He maintains that it is always secondary to tropical frambesiosis. Professor Cornil of Nancy has shown that the lesions are not tumours in the pathological sense of the term, but are due to inflammatory osteogenic hyperplasia comparable with that occurring in syphilis. Dr. J. N. Roy of Montreal, who was associated with Major Botreau-Roussel in 1912, and has himself observed thirty-four cases, contributes an article to the *Revue de Laryngologie, d'Otologie et de Rhinologie*, in which he disagrees with the view that this condition is due to frambesiosis, or to a lesion of the central nervous system, or to syphilis, or to insect bites. Roy has found spheroidal bodies 25 to 30  $\mu$  in diameter in these tumours, and is of the opinion that etiological significance is to be attached to them. While admitting that goundou and yaws are often associated, Roy insists that there is no real connexion between the two diseases. Botreau-Roussel, however, in support of his contention points out that in 103 out of his 130 cases frambesiosis either accompanied or preceded the development of the osteitis. The bone lesions appearing in 98 cases during the eruption or immediately afterwards. He also emphasizes the importance of the fact that the pathological processes in the bones are similar to those in syphilis and frambesiosis. In one case the bone lesions and the skin eruption yielded simultaneously to treatment by novarsenobenzol. The disease is far more widespread than was originally believed, and Roy has collected evidence of its occurrence in the West African littoral, Zanzibar, British East Africa, the Malay Peninsula, the East and West Indies, Southern China, Honduras, Mexico, and Brazil. He mentions an instance of the disease being contracted by a European who had lived on the west coast of Africa for twelve years, and reports the discovery of a skull of a 7-year-old child, found in an Inca grave in Peru, which presented the typical aspects of the condition. The bony growths are usually bilateral, and develop on the nasal bones or on the ascending process of the superior maxilla. These bones may be invaded simultaneously. The disease may become generalized, exostoses forming on nearly all the skeletal bones. The disease occurs usually during early childhood, but is often observed in adults, and is possibly a little more common in males than in females. Botreau-Roussel illustrates his descriptions with a large number of photographs and radiographs, and appends a good bibliography.

## A RESEARCH INSTITUTE FOR KENYA

Not long before his tragic death at Nairobi last February the late Sir Robert Coryndon, Governor of the Colony, had expressed himself strongly as to the need for a museum and library devoted largely to the study of natural history and its allied sciences in Kenya Colony, a proposition that has met with the universal approval it deserves. It has been felt in the colony that the services of Sir Robert Coryndon were of the greatest value to Kenya, and it is proposed to build a memorial to him at Nairobi in the form of a hall or the wing of a building to bear his name and form part of a larger museum or institute for the advancement of the natural sciences on the progress of which the welfare of the colony depends. There is at present in Nairobi a small but admirable Natural History Museum, full of merit so far as its restricted resources have permitted its development and receiving some small measure of support from the public purse. It was Sir Robert Coryndon's idea that this museum should be enlarged and extended in connexion with a library and an institute for the undertaking of research, and he

<sup>1</sup> BRITISH MEDICAL JOURNAL, December 10th 1887 p. 1273

<sup>2</sup> Ibid. 1893 vol. 1 p. 163

<sup>3</sup> Ibid. 1910 vol. 1 p. 503

<sup>4</sup> *Osteites l'antiquité (Goundou)*. Par Botreau-Roussel. M. le Dr. Major de Ire Classe des Troupes Coloniales. Collection de la Société de Pathologie Exotique. Paris. Masson et Cie. 1925 (Roy. 8vo pp. 129 69 figures. Fr. 16)

particularly mentioned veterinary and botanical research as called for at the present time. An appeal was issued from Government House, Nairobi, last March, asking for subscriptions to the Corndon Memorial Fund, and this appeal has met with a considerable amount of support locally. It has now been brought to the attention of a wider public, and it may here and now be recommended to the notice of readers of the *BRITISH MEDICAL JOURNAL* as an appeal for funds for an object that is entirely deserving. Sir Robert Corndon had some five and thirty years of experience as an administrator in South Africa and Kenya Colony. He recognized that vast areas of fertile land in the African continent are closed to human enterprise by disease and by the insect carriers of disease that render them uninhabitable for working man and domestic beast alike. He knew that it is to science—bacteriological, entomological, veterinary, and so forth—that we must look for the key to these areas, if they are to be rendered fit for human habitation, whether black or white. To those interested in the population of tropical countries it has long been, indeed, a platitude that the man of science is even more indispensable to the administrator in the tropics than he is in less torrid climates. The fact is known, and, what is more, is acted upon nowadays by our politicians and our statesmen, and was emphasized only a week or two ago by Mr Oimsby-Gore when addressing the Imperial Entomological Conference. As was perhaps natural in the circumstances, Mr Oimsby-Gore eulogized the horn of the administrator in this partnership of government and science. So, too, does the writer of a leading article on "Science and administration" in the *Times* of June 20th, who describes the modern co-operation between statesman, entomologist, bacteriologist, botanist, veterinary surgeon, and medical man in the enterprise of tropical sanitation adding the words "But the part of the statesman is the greatest, because if he fails complete disaster is assured." It is always an ungrateful task to attempt to assess separately the values of the work performed by the hand and the head acting together, although we cannot help thinking that it has been done by some noted fabulist. At any rate, the teaching of experience shows that the plucking of a sleeper across the rails by a naughty child can assume complete disaster to the best train in the world.

#### THE SANITARY CONDITION OF BARGES

DURING recent years the annual reports of the Registrar-General for England and Wales have provided evidence of the unhealthiness of the occupation of barges and lightermen. Thus in the period covered by the three years 1910, 1911, and 1912 the comparative mortality figure was 1,102, which compares very badly with 790 for all occupied males, of 470 for the open-air occupation of farm labourer, and of 838 for what one might conceive to be the like occupation of fisherman. These facts are commented upon by Dr Dearden in that part of the annual report of the medical officer of health for the Port Sanitary Authority of Manchester which deals with the sanitary condition of ships (pp 39-52). He points out that although amongst bargemen and lightermen there is an excess of liability to fatal accidents, as shown by the mortality rate of 193 against the average one of 49, yet this is insufficient to explain the high mortality figure. Excessive liability to respiratory diseases, particularly pneumonia, is the cause of the high mortality of bargemen. The fisherman whose record shows the effect of a strenuous life equally with that of the bargee, is in a totally different class when respiratory diseases are taken into account. The liability of the bargee to die from phthisis is the same as that for all male workers, as the figures quoted in Dr Dearden's tables show, but these tables, which compare the mortality of bargemen, fishermen, farm labourers, and occupied and retired males, reveal

the fact that the mortality of bargemen from pneumonia is almost twice, and then mortality from bronchitis more than thrice, that of fishermen. The mortality of bargemen from respiratory disease of all sorts is more than twice that of fishermen, and three times that of farm labourers. The occupation of bargee is one that should be favourable to good health, since it is carried out in the open air and involves a considerable amount of muscular exercise, but Dr Dearden's investigations have convinced him that the real reason for this excessive mortality from respiratory disease is to be found in the evil influence of the housing conditions on these boats. On one occasion during the year under review a company was prosecuted by the health authority for a nuisance existing on a barge, the offence being dampness of cabin and bedding owing to rain water and river wash penetrating through the scuttle hatchway. The magistrate decided that no nuisance had been proved and dismissed the summons. This decision must discourage a firm policy of reform.

#### EPIDEMIC HICCUP

DURING recent years the occurrence of epidemics of hiccup have been reported from time to time, and the etiology of this condition has attracted considerable attention. Dr I. T. Cadham of Winnipeg has recently published an account<sup>1</sup> of the three Winnipeg epidemics in 1919, 1922, and 1924. In the first of these epidemics 1,000 cases were reported, the second was on a smaller scale, but in the third a record of 1,400 cases was obtained in a population of a quarter of a million. Each of these epidemics began early in November, reached its height by the beginning of December, and declined rapidly. The great majority of the patients were adults, and more than 90 per cent of the cases occurred in males, no evidence of any racial immunity was forthcoming. In the 1924 epidemic four patients reported that they had had a previous attack in 1919, and two other patients had had a previous attack in 1921. All agreed that the symptoms in the second attack were less severe than in the first, and each patient was cured within thirty-six hours, whereas the previous attacks had lasted more than three days. Cultures from the naso-pharyngeal secretion yielded a streptococcus resembling that isolated by Rosenow, to whose work in this connexion we referred on April 7th, 1923 (p 603). It was considered, however, that no definite etiological factor had been established, though bacteriological investigations are proceeding. Each epidemic was associated with an outbreak of a catarrhal infection of the influenza type, which, however, appeared two weeks later and occurred equally in both sexes. The relation of hiccup epidemics to encephalitis lethargica has been much discussed, in both conditions the difficulty of tracing infection is pronounced. Dr Cadham points out that the first epidemic of hiccup in Winnipeg, in 1919, coincided with the first epidemic of encephalitis in that city, there being 104 cases of encephalitis, with 25 deaths. During the milder epidemic of 1921, 31 cases of encephalitis were reported, and in the winter session of 1922-23 108 cases, though during that time no record was obtained of a single case of hiccup. Three cases of encephalitis during the 1919 epidemic began with hiccup, one patient in 1921 developed hiccup simultaneously with myeloma of the arms, legs, and abdomen, and during the 1924 epidemic one patient suffered from herpes zoster, hiccup, and lethargy, suggesting the existence of a lesion in the central nervous system. Dr W. R. Brain has recorded the case of a patient developing a mild form of encephalitis lethargica after suffering for a month from intermittent brief attacks of hiccup.<sup>2</sup> He suggests that hiccup is probably a myoclonus of the diaphragm, a view supported

<sup>1</sup> *Journ Amer Med Assoc* February 21st 1925 p 580

<sup>2</sup> *BRITISH MEDICAL JOURNAL* November 10th 1923 p 806

by Dr M J Chevis, who attributes to it a rheumatic etiology. Dr Cudham believes that myoclonic spasms of the rectus abdominis occurred more frequently in these cases than is generally recognized. A little light is thrown on the difficult problem of infection by Dr L Archer-Brown,<sup>2</sup> who describes the circumstances attending the onset of the disease in himself during an epidemic in Philadelphia. Other interesting characteristics of this disease are the intermittent character of the spasms, the mild neuritis frequently following hyperaesthesia of the scalp, face, and neck, the slow pulse, and the absence of pyrexia. Various remedies have been suggested, but their value is difficult to estimate. Sedative remedies, including chloroform and morphine preparations, are perhaps most generally used, and protein injections have been recommended, and benzyl benzoate has been found useful.

### THE SPAHLINGER TREATMENT

From Parliamentary reports (p. 89) will be found a very full account of the memorandum presented to the Parliamentary Medical Committee by five of its members who recently went to Switzerland to visit M Spahlinger's laboratory near Geneva. The members of the party acted on their own initiative, and the recommendations with which the memorandum concludes are, by request, omitted. The opinion of the committee appears to be divided upon the question whether any action should be taken by it on the memorandum. M Spahlinger is now in this country, and on July 7th met at the House of Commons the five medical members who had made the journey to Geneva. We are informed that an interview between him and Sir George Newman was then arranged for some day next week, and that the Ministry is likely to maintain the position it has taken up all along—namely, that it is willing to give a thorough test to the method provided an adequate supply of serums and antitoxins can be assured. Another interview is to take place between the five members of Parliament and M Spahlinger on Monday to hear from him whether he can assure supplies for the treatment in London of a considerable number, say 1,000, cases of tuberculosis. As will be seen, the memorandum states that the public can entertain no hope of securing treatment by the method at the present time, and that it will be useless for patients to apply. There is, we are told, again talk of an appeal to the public to contribute to a fund to aid M Spahlinger in the preparation of the materials.

### THE HONG KONG MEDICAL CONFERENCE

At the invitation and with the co-operation of the Hong-Kong and China Branch of the British Medical Association, the China Medical Missionary Association held its seventeenth biennial conference at Hong-Kong last January. Delegates attended from Great Britain, India, and America, and authorities in different branches of medicine and surgery addressed the conference. By a coincidence the two bodies which met in conference—the Branch and the association—took origin in the same year (1886). In the following year the Hong-Kong College of Medicine was founded, with Sir Patrick Manson as its first dean, and out of this college grew the university and its medical school. The latest issue to reach us of the *Caduceus* (the journal of the Hong-Kong University Medical Society) is a special number, containing an account of the proceedings in the various sections. The conference opened with a congregation of the university in the City Hall, at which His Excellency the Governor of Hong-Kong, as Chancellor of the University, presided, and conferred the honorary

degree of LL.D. upon Drs Philip Conslind, Henry Houghton, Edward Hume, and Ernest Mann. The President of the Branch, Dr G E Aubrey, welcomed the delegates on behalf of the British Medical Association, and read messages, including congratulatory scrolls from the Provisional Chief Executive of the Republic of China and the Vice-Minister of Foreign Affairs, Peking. The *Caduceus* prints English renderings of these picturesque Oriental salutations, the Vice-Minister's message ends thus: "At Hong-Kong learned doctors will come together. Without good physicians how can we sustain lives? The modern science is superior to the old as it is more exact. I want to see some wonderful results which will outshine the past and guide the future." So much interest was shown in the proceedings of the Section of Medicine that it was decided to spread the discussions over five sessions, some thirty papers were read and debated, and the bulk of these will appear in full in the *China Medical Journal*. Irregular fighting has been going on in various parts of China for some years past, and for that reason much prominence was given in the Surgical Section to the subject of war wounds. In the Section of Obstetrics and Gynaecology there were good attendances, and the general discussions, we learn, were short and snappy. In view of the importance of the trade exhibition to delegates from districts where they are wholly out of touch with modern appliances and drugs, the Great Hall of the University was set apart for this purpose. The prudence of this decision is shown by the statement that this hall "soon became the most popular rendezvous for those not engaged in sessions and committees." Altogether the conference seems to have been a great success.

### SOUTH AFRICAN MEDICAL CONGRESS

The twentieth South African Medical Congress, Pietermaritzburg, from July 6th to 11th, was opened by Sir John Dove-Wilson. The President (Dr D Campbell Watt) delivered his address on the same day. The work of the congress is divided into five sections. The members are meeting as a whole to hear the opening addresses on the subject for discussion in each section at 9 a.m., and subsequently the sections hold their separate sessions. The sectional discussions and their openers are as follows: Medicine, "Focal infection," Dr R L Gudwood; Surgery, "Treatment of carcinoma of the breast," Dr H A Moffat; Public Health, "The milk supply," Dr S J Clegg; Obstetrics and Gynaecology, "Caesarian and prevention of foetal death," Dr Lance Impey; Special Subjects Section, "The work of the laboratory in relation to the practice of medicine," Sir F Spencer Lister. Two business meetings of the congress are being held and the South African Committee of the British Medical Association meets on two of the mornings. There is a trade exhibition of drugs, instruments, and so forth, and at a public meeting in the Town Hall Dr T Shadick Higgins, M.O.H. Cape Town is giving a lecture on public health in relation to social welfare. During the week social entertainments of various kinds have been arranged, including a civic reception and a banquet. The honorary general secretary is Dr C G Kay Shup.

The next issue of the *BRITISH MEDICAL JOURNAL*, dated July 18th, will be a special commemorative number in connexion with the opening of the Association's New House by H.M. the King accompanied by Queen Mary, on Monday, July 13th, and the dedication and opening by the Archbishop of Canterbury of the Memorial Gates erected by the Association as a tribute to its members who fell in the war. Articles, letters, and information relating to other matters will for the most part be held over

<sup>1</sup>Ibid. April 28th 1925 p. 744  
<sup>2</sup>Ibid. April 21st 1925, p. 704



# NINETY-THIRD ANNUAL MEETING

of the

# British Medical Association,

## BATH, 1925.



BATH ABBEY

June 6th, June 20th, and July 4th, 1925

**T**HE Annual Meeting of the British Medical Association will be held at Bath at the close of this month, under the presidency of Dr F. G. Thomson, physician to the Royal United Hospital, Bath, and consulting physician to the Royal Mineral Water Hospital. The Annual Representative Meeting will open in the Concert Hall of the Pump Room at Bath on Friday, July 17th. The statutory Annual General Meeting will be held on Tuesday afternoon, July 21st, in the Concert Hall and on the evening of the same day the new President will deliver his Address to the Association in the Palace Theatre. The twelve Sections, among which the scientific and clinical work of the meeting is being divided this year, will meet on the three following days, July 22nd, 23rd, and 24th. The list of Sections and sectional officers, together with the programme and time table and other announcements, were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of July 4th. On the last day of the meeting, Saturday July 25th, there will be excursions to places of interest in the neighbouring West Country, some of which are briefly described in the article printed below. Descriptive and historical articles on Bath have appeared in our issues of December 6th, 1924, and of

## PLACES OF INTEREST AROUND BATH.

BY

JOHN HATTON,

DIRECTOR OF THE HOT MINERAL BATHS

Bath lies in the midst of a beautiful district, exceptionally rich in places of varied interest. The combs of Somerset, the Wiltshire Downs, and the Cotswold country of Gloucestershire, with the range of the Mendips running out into the Bristol Channel, provide an unusual variety of scenery. Stonehenge, and Wells Cathedral, the busy port and university city of Bristol, and the tiny artists' village of Castle Combe, give it houses like Longleat and Badminton, and the Cheddar Caves—all the extremes of contrast in human effort in the provision of places for worship or dwelling.

These notes cannot cover all the places selected for excursions during the meeting of the British Medical Association at Bath, but it is hoped that they will give some idea of the wealth of interest and beauty to be found in the West country.

### WELLS

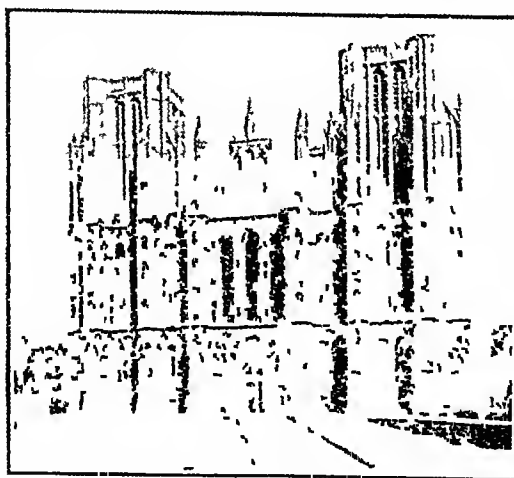
"The Cathedral Church of Wells," wrote Professor Freeman, "is the best example to be found in the whole world of a secular church, with its subordinate buildings. There

is no other place where you can see so many of the ancient buildings still standing, and still put to their own use."

In 909 the diocese of Wells was established by King Edward the Elder, the existing church, probably founded by King Ina of the West Saxons at the instigation of St. Aldhelm near the springs or wells which gave the place its name, served as the first cathedral. The first Norman bishop, Robert of Lewes, built a great new church, but, to an unusual degree, this massive Norman cathedral has dis-

appeared. About 1180 Bishop Reginald built or rebuilt the church and part of the present church may be said to be the work of this prelate.

In 1206 Jocelyn became bishop and it is to this great man that Wells owes its crowning glory, the West Front. Jocelyn and his brother Hugh (afterwards Bishop of Lincoln) were natives of Wells, and they loved their birthplace with an undying devotion. Hugh, who built much in Lincoln Cathedral, gave of his wealth to Wells, and Jocelyn spent all that he had upon the cathedral in which he had been canon during the episcopate of Reginald, whom he was to succeed on the bishop's stool. Old Fuller wrote, "The West Front of Wells is a masterpiece of art indeed. England affordeth not the like," and modern writers have endorsed his praise. At the top is a large niche, where was the figure of Our Lord seated in glory. Below are the twelve Apostles, St. Andrew, the patron of the church in the centre, beneath this is the resurrection course showing naked figures rising



Wells Cathedral West Front

from their graves, then come rows of saints, kings and queens, and curious biblical scenes, and a coronation of Our Lady over the main doorway. The statuary is generally agreed to be the finest collection of mediaeval statuary in England, and many of the individual figures compare favourably with the greatest masterpieces of Italy or France. In 1242, full of years and honour, the great bishop died. "God," says Fuller, "to square his great undertakings giving him a long life to his large heart."

The interest of Wells is by no means confined to the West Front. The North Porch, one of the oldest parts of the church, is a magnificent example of early work still retaining much of the Norman influence, in spite of rich undercut foliage and beautifully carved figures. The most striking feature of the interior is the curious arrangement of inverted arches built to support the great central tower. The beautiful Lady Chapel, like the side chapels, is of the Decorated period, the windows are filled with richly coloured old glass—almost all in fragments. The fourteenth century Jesse window in the choir, however, is perfect. It is a superb piece of work, probably the finest of its kind in England. One of the side chapels has recently been restored; it is the war memorial for the county of Somerset, and here is kept the beautifully illuminated Book of Remembrance containing the names of all the men of the county who gave their lives in the great war.

Before leaving the interior of the cathedral other remarkable features must be mentioned. The clock, with its little figures of knights in armour galloping wildly round at the stroke of the hour, and the unique series of carvings, full of vigour and humour, in the capitals of the piers. The Chapter House, approached by a great twisting stair, is one of the gems of English architecture. The cloisters are largely of Perpendicular work, with the library over the east wall, containing many books of extraordinary interest, including the greater part of Bishop Ken's library and many of the old book chains still hanging on the original bookcases. Near by is the mortared Bishop's Palace, entered by a drawbridge, the building itself an exquisite example of early thirteenth century domestic architecture. A great gateway, usually known as the Bishop's Lye, leads into the Market Place. On the north side of the cathedral is the Denbury, an almost perfect example of the fifteenth century house, overlooking the great Cathedral Green, which forms the ideal foreground for the West Front. Beyond, under the Choir Gate, is the Vicar's Close, a perfect street of fourteenth century houses, at the far end the little chapel of the Vicar's Choral, now used by the students of the Theological College.

#### GLASTONBURY ABBEY

Glastonbury Abbey, around which legend and mystery have gathered more thickly perhaps than around any other sacred spot in Britain, lies in Tennyson's

island valley of Avilion

Deep meadowed happy fair with orchard lawn,  
And bowery hollows crown'd with summer sea

Here at the foot of the Great Tor St. Joseph of Annathier first planted in these islands the Christian faith, and the Chapel of St. Mary, more usually known as St. Joseph's Chapel, is the traditional spot upon which St. Joseph and his little band erected the original wattled church. It has been said that this was not only the first Christian church in England but the first in the world. To this spot, the legends tell us, was brought the Holy Grail. Tennyson not only records the story of the Holy Grail itself and the foundation of the Abbey, but of the famous Glastonbury thorn which still blossoms every year at Christmas tide. The most striking feature of the chapel is the beautiful Norman doorway with its richly ornamented niches adorned with sculptures.

The Abbey Church was cruciform in shape and over 550 feet in length. Still standing are three bays of the south nave aisle, the eastern piers of the central tower, part of the transept wings, one of the chapels of the northern transept, and the south wall with five pointed windows.

The discovery of the foundations of the Edgar Chapel has formed the subject of a book of unusual interest, *The Gate of Remembrance*, by Mr. F. B. Bond, F.R.I.B.A., who carried out the work of excavation. Tradition has it that the bodies of St. Joseph of Annathier, King Arthur, Queen Guinevere, and St. Patrick lie within the sacred ruins of this great Benedictine Abbey. It is curious that the best preserved fragment of this great group of religious

buildings should be the Abbot's Kitchen. This, like the Abbey itself, has now been acquired by the National Council, control being in the hands of a committee of trustees. The fourteenth century Abbot's kitchen is to be used as a museum for the many energetic tiles and numerous relics found in the course of the excavations.

The tower on the summit of Glastonbury Tor is all that remains of the fourteenth century Pilgrim Chapel of St. Michael. The view from the top of the Tor will find amongst the most beautiful and extensive in the county. In the High Street of the little town the fifteenth century Abbot's hostelry, now the George Hotel, will be noticed and a small building known as the Tribunal, which was originally the Abbot's justice room. Near the entrance to the Abbey precincts is the Glastonbury Museum, containing what is probably one of the finest collections of La Vieille objects in this country. The Lake Villages at Glastonbury and Merie have been systematically investigated by Dr. Arthur Bulleid, F.S.A., and Mr. H. St. George Gray of Trunton Castle, and the work, which is being resumed this summer, has yielded much harvest of finds of extraordinary interest.

#### CHEDDAR

The limestone range of the Mendips runs from the neighbourhood of Bath out into the Bristol Channel, where outliers appear as the Steep and Flat Holme islets. The tableland itself is generally bare, but by no means uninteresting, and the slopes and numerous combs are often of great beauty. The most striking scenery is, of course, in Cheddar Gorge, the finest limestone chasm in the county. Cliffs, crowned with pinnacles, rising in some places to a height of over 400 feet, stand sheer above the winding roadway, clothed with ivy and wild flowers, and inhabited by innumerable jackdaws and other birds. It is now generally agreed that the gorge has been formed by the action of water, it was at first a great cave, or perhaps a series of caves, cut by an underground river, the roof eventually falling in, leaving the open gorge. At the foot of the gorge are the famous caves. Gough's, the larger and more impressive, contains massive stalactite formations of wonderful form. Cox's Cave is smaller, but exquisitely fairy-like in its stalactite beauty. In the village is a restored Market Cross and the Perpendicular church of St. Andrew.

#### BRADFORD-ON-AVON

Some nine miles from Bath, at the other end of the beautiful Limpley Stoke Valley through which run the river, the railway, and the road, is Bradford-on-Avon, a picturesque little cloth weaving town disposed in terraces of sixteenth and seventeenth century houses on the steep hillsides. Rubber factories have taken the place of the cloth mills which once produced the famous West of England broadcloth, the successors of the hand looms brought to Bradford by the Dutch weavers in the seventeenth century.

The Saxon Church of St. Lawrence, one of the most perfect and precious of Saxon relics still existing, appears to have been built about the end of the tenth century, replacing the original wooden church built by St. Adhelm in the opening years of the eleventh century. For ages this little stone church, which consists of a chancel, nave, and porch, was lost to view, being almost obscured by various excrescences which had grown about the building in the course of its misuse as a dwelling-place and workshops, and it was not until 1857, when the vicar, Canon Jones, a local antiquary looking down on the town from the hill, was struck with what would appear to be a cruciform roof, which seemed to indicate the presence of something more important than ordinary houses. The bridge is another notable feature of Bradford-on-Avon, with a Mass chapel corbelled out on one of the piers. These bridge chapels are now extremely rare in this country.

Bradford has a notable example of fourteenth century work in the great Tie-Barn, attached to the Barton Farm. This huge barn (shown in Mr. Gerard's wood engraving)

is 167½ feet long by 30 feet wide, with an Early English roof supported by huge trusses carried direct from the ground. The Hall, formerly Kingston House, was built in the seventeenth century by John Hall, a wealthy cloth merchant of the town. The handsome front of the house, rich in decoration of the Jacobean style, is set on a terrace overlooking a particularly beautiful old English garden. The British Pavilion of the Paris Exhibition of 1900 was modelled on this house as being a typical example of an English country house.

This corner of Wiltshire is distinguished for the many fine manor houses it contains. Two of exceptional beauty and interest, Great Chalfield and South Wraxall, lie in the neighbourhood of Bradford.

#### Farleigh Castle

This picturesque castle ruin, lately much preserved by the Office of Works, dates from the reign of Richard II, when Sir Thomas Hungerford started to build. The gatehouse remains and the chapel, and in a ruinous condition two of the minor towers. The chapel contains several Hungerford monuments and much interesting armour.

#### Downside Abbey

The great and growing Benedictine Abbey of Downside is on the way to becoming one of the really important modern Gothic buildings in this country. Of the Abbey Church itself much still remains to be done, but the nave which is to form the memorial of the old Downside boys who were killed in the great war, is to be consecrated on July 25th, a couple of days after the excursion to Downside in connexion with the British Medical Association. In the north transept is the shrine of Blessed Oliver Plunkett, Archbishop of Armagh, who was martyred in 1681. Attached to the community is the well known public school of Downside, which was founded at Douai about the year 1605. It was removed to this country at the time of the French Revolution, and after being carried on for twenty years at Acton Burnell, near Shrewsbury, was established at Downside in 1914.

#### Norton St Philip

At this little village the chief feature of interest is the half timbered George Inn, an unusually well preserved specimen of a fifteenth century hostelry. The galleries overlooking the small courtyard are still in existence, and a winding stair leads to the great room at the top of the house, formerly used as a wool market. The Duke of Monmouth made this his headquarters on the night preceding the engagement of Philip's Norton, a short time before the decisive battle of Sedgemoor.

#### Lacock Abbey

An interesting example of a conventual establishment, Lacock Abbey, still preserves sufficient of the Augustinian nunnery, founded in 1232, to give a very clear idea of the life of a religious house in the Middle Ages. Later work has from time to time been added, much of it extremely beautiful, and the Long Gallery and some of the other rooms contain many interesting pictures.

It was at Lacock that Fox Talbot, an ancestor of the present owner and one of the discoverers of photography, made his early experiments and succeeded in securing photographic reproductions.

#### Corsham Court

Corsham Court, the seat of Field Marshal Lord Metchum, is a handsome Elizabethan mansion built about 1502. The

gallery contains an exceptionally fine collection of Dutch and Flemish painting. Near the entrance to the parlour are some beautiful dishouses founded by Lady Hungerford in 1668.

#### Longleat

Longleat the seat of the Marquess of Bath, K.G., described by Macaulay as 'the most magnificent country house in England, is situated in Wiltshire, but a small portion of the park lies in Somerset. The building was started in 1567 by Sir John Thynne, an ancestor of the present owner, and the design is in the characteristic sixteenth century style in which Italian influence is prominent. The beautiful park of 2,000 acres contains a large herd of deer. The lake is fed by the Longleat from which the place gets its name. The finest viewpoint is justly known as Heaven's Gate. When the saintly Bishop Ken was deprived of his see he was welcomed to Longleat, and there he wrote those well known morning and evening hymns: 'Awake my soul, and with the sun, and glory to Thee, my God, this night.' The Bishop was buried at Frome, where his grave may be seen at the east end of the beautiful St John's Church.



Tithe Barn interior Bradford on Avon (From a wood engraving by Horace Gerrard)

#### Bristol

Eleven miles from Bath, where the Avon is still navigable from the sea by outgoing steamers, is the great port and commercial city of Bristol. The city has a population of 350,000 and an unusual variety of industries, including world famous tobacco and chocolate factories and aeroplane works. The early history of Bristol and its strongly fortified castle is full of interest, but there is only space in these notes to refer to some of the most important features of the city as it is to-day.

As befits a city whence John and Sebastian Cabot sailed to discover the American continent, Bristol is primarily a port, and in the midst of its busy streets, and almost under the cathedral walls, there is still a suggestion of the Merchant Venturers of other days in the sight of a tall ship lying alongside the modern steamers at the city quays.

But the size of modern ships has rendered vast new docks nearer the mouth of the river necessary, and the corporation has spent over seven million pounds in the establishment of Avonmouth, where the largest of the docks has an entrance lock of 875 feet, and a depth of water over the sill of 35 to 45 feet in ordinary tides. Vast cold stores, grain docks, grain elevators, and warehouses and discharging stations enable the ever-increasing trade in grain, meat, timber, and oil to be dealt with expeditiously. The fruit traffic and the passenger traffic, especially to the West Indies, New Zealand, and Canada, are extending every year.

Bristol Cathedral contains much of interest, its most striking feature perhaps being the fine Norman doorway. It was originally the church of an abbey of Augustinian monks. Founded in 1142, there appears to be little doubt that an earlier church stood on the site. The vestibule to the Chapter House is very beautiful, and the graceful Early English Lady Chapel is of particular interest. It has some good examples of Early English, Decorated, and Perpendicular styles of architecture, and underwent extensive restoration in 1860-61.

Bristol also possesses in St Mary Redcliffe Church what is generally admitted to be the finest parish church in England. This exquisite building—

‘This mystery of a human hand,  
The pride of Limestone and the Western land’—

with its graceful spire, claimed by many to be the finest example of Perpendicular architecture in England, was largely built in the fourteenth and fifteenth centuries by the Cringes, two of the most famous of Bristol's Merchant Venturers. It was in the monument room in the tower that the boy poet Chatterton claimed to have discovered the Rowley manuscripts.

Bristol owes much to the munificence of the Wills family, and amongst the monuments of their generosity is a very fine Municipal Art Gallery. Isolated with the gallery is an unusually complete museum, which, by the way, is about to be further extended through the same generous hand. The geological department, the Drane Family Smyth botanical room, the Greville-Smith insect room, and the section illustrating the history of the city, containing much Bristol elf and Nilsen glass, are all of exceptional interest.

Bristol University is rapidly making history. It was only erected by a charter of King Edward VII sixteen years ago, and it already possesses the finest buildings of any modern university in Britain. Last month His Majesty the King opened the magnificent new block, given, at a cost of over half a million pounds, by Sir George Wills and his late brother, Mr H. H. Wills. (A description of the building and the opening ceremony appeared in the *BRITISH MEDICAL JOURNAL* of June 13th, 1925, p. 1098.) The most striking feature of this block is the University Tower, a truly magnificent piece of modern Gothic architecture. Rising to a height of over 200 feet, it is visible from many parts of the city. The belfry contains a great 10-ton bell, which has been christened Great George. The entrance hall beneath the tower contains some fine fan vaulting and a flight of stone steps leading to the Great Hall, of which the hammer-beam roof of English oak is a notable feature. The Faculty of Arts is housed in this building, the buildings erected for the Faculties of Science and Medicine are behind, and the Faculty of Engineering is housed at the Merchant Venturers' College. A new building on St Michael's Hill is now being erected for the Department of Physics. Next at hand are the Victoria Rooms, now the clubrooms and hall for the University of Bristol Union. Research work in fruit-growing is carried on at the University orchards at Long Ashton. The well known public school, Clifton College, is near by.

Bristol has many other features of interest. The Clifton Downs, on which stands the Cabot Tower, whence a superb view is obtained of the city and surrounding country, the magnificent Avon Gorge, spanned by the Suspension Bridge, a well stocked Zoological Garden, the Royal West of England Academy, at which educational work is carried on and an important annual exhibition held, and the Royal Colonial Institute, an active centre for visitors from the distant countries of the Empire.

One of the most notable of the old buildings of Bristol is the Red Lodge, a mansion built by the wealthy merchant Sir John Young in 1590. The Red Lodge has a handsome staircase and a magnificent carved chamber on the first floor. The whole building, full of objects of extreme interest, is in the care of the Bristol Savages, a club of artists and others interested in art generally.

Bristol possesses two large well equipped hospitals—the Royal Infirmary and the General Hospital—as well as a number of special hospitals.



From the  
Official Guide

to the City  
of Bristol

## THE STATE OF THE PUBLIC HEALTH.

SIR GEORGE NEWMAN'S REPORT FOR 1924  
ENGLAND AND WALES

[First Notice]

THE annual report of the Chief Medical Officer of the Ministry of Health for 1924 has been issued. It deals with England and Wales, and the statistics it contains are founded on the returns published by the Registrar General relating to births, deaths, and infectious diseases, and on the various data and records in respect of vital data under the National Health Insurance Acts, supplemented by annual and special reports of medical officers of health, and from the results of investigations by medical officers of the Ministry and other departments interested in the physical, industrial, and social welfare of the people.

The report contains twelve chapters, and follows the general lines of its five predecessors, but in one chapter the administration of the Insurance Medical Service has been dealt with more fully than usual. To this we hope to return later. We may note at once that Sir George Newman again points out that the work is done quietly, without ostentation, with scant public recognition, often without thanks or reward other than the consciousness of work well done. The types of the few become conspicuous, the great volume of valuable work done by the vast majority passes unnoticed.

### Births and Deaths

In 1924 there were 28,198 fewer births and 28,450 more deaths than in 1923. The birth rate was 18.8 per 1,000 of population, a decline of 0.9 on the previous year and of 6.7 as compared with 1920. The death rate was 12.2 per 1,000 persons living, which is 0.6 higher than in the previous year but among the lowest in the history of the country. The decline in the death rate has been accompanied by a steady reduction in the birth rate from an average of 21.8 per 1,000 persons living in the decennium 1911-20 to 18.8 in the year 1924. With the exception of the war years the birth rate in 1924 was the lowest yet recorded. Sir George Newman considers it highly probable that the crude mortality rate is now at or near its lowest point and will hereafter increase, owing to the change in the distribution of age groups of the population. A declining birth rate, he points out, implies an increase of the average age of population, not necessarily any strengthening of the forces of mortality.

The diseases to which the most noteworthy increases in deaths were attributed are set out in the following table.

	Per 1,000 deaths
Bronchitis, pneumonia, and other respiratory diseases	174
Diseases of heart and circulation	168
Cancer and malignant disease	106
Diseases of the nervous system	100
All forms of tuberculosis	87

### Infant Mortality

Ignoring for the present the effect of illegitimacy, the infant mortality shows an increase over 1923 at all periods of the first year of life. It is pointed out that a high infant mortality rate implies (a) the loss of many infants, (b) the maiming of many surviving children, for conditions which kill some injure others, (c) a high death rate in the next four years of child life, and (d) the existence of unhealthy conditions in the mothers or in the home life of the people. The infant mortality was 75 per 1,000 births. Calculated on the average infant mortality of 1901-10, there was in 1924 a saving of 39,000 infant lives. It implies a better physical condition in children from 1 to 5 years of age, and a more enlightened understanding of personal and public hygiene. What is described as the "closely related mortality among women in childbirth" still remains high, and has shown little or no improvement since 1894. The number of women who died in childbirth was 2,703, and 144 died from conditions associated with it. Of the 2,847 as many as 1,018 died from puerperal fever—"a preventable condition."

<sup>1</sup> *The State of the Public Health*. Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1924. H.M. Stationery Office (Med. Soc. pp. 256 3 6d net).

In commenting on the statistics Sir George Newman points out that the relative slightness of the decline of mortality in the first month of life is consistent with the belief that neglect of ante-natal hygiene has had all consequences, but that the fact that some improvement, even in the first month of life, has been achieved is of hopeful augury. The evidence, he states, appears to show that whether or not some biological change is taking place in the reduction of virulence of certain maladies and infectious affecting children under 1 year of age, the predominant factor in the recent improved health of infancy is to be found in better mothering, proper food, and improved domestic conditions immediately concerned with child welfare. He warns us, however, against false confidence. International comparisons and other observations show that the problem is very complicated, and it is vain to argue that any one hygienic measure is sufficient wholly to account for the movement of the rate of mortality. Sir George Newman writes:

'When an historian says that the average citizen of 1925 is more civilized than the average citizen of 1725 he is making a general statement dependent upon a multitude of interrelated particulars and nobody is foolish enough to attribute the change to any one difference to say that man is more civilized now because such and such particular changes have come about. Unfortunately in medical history this particularism is ever and again repeated. We read that in such or such a town infant mortality began to decline when an infant welfare centre was established; therefore the welfare centre caused the decline. We have not long to wait before another particularist publishes the statistics of another town where infant mortality declined without the establishment of a welfare centre, therefore welfare centres are valueless. Both conclusions are worthless in logic yet both are triumphantly paraded by the sectaries to which they appeal. The lessons which other students of social evolution learned long ago—the lesson of the multiplicity of causation, is one that cannot be too often or too strongly impressed upon the student of communal hygiene. The history of infant mortality affords many instances of its truth.'

#### Small-pox

The second section of the report deals with general epidemiology, and special attention is directed to the serious increase in the group of epidemic diseases of the central nervous system—poliomyelitis, poliomyelitis, encephalitis lethargica—to the recrudescence of influenza in the early part of the year, and to the continued increase in the prevalence of small-pox. The net total number of cases of small-pox notified in England (there were none in Wales) during 1924 (after revision of diagnosis) was 3,797, as compared with 2,504 in 1923. Eight cases were notified and verified in port sanitary districts. The number of deaths was 8, including one port case. A table is given showing that from 1911 to 1917 the number of cases diminished, but that from that year onward the number has increased: there were 7 in 1917, and 3,797 in 1924. In the first four months of 1925 the number (as yet unreviewed) was 2,214, with 3 deaths. The regional distribution was irregular. In London there were only 4 cases, in Derbyshire there were 1,351, in the North Riding of Yorkshire 539, in Nottinghamshire 536, in Northumberland 401, in Cumberland 186. Altogether, excluding the port sanitary districts, small-pox occurred in 119 out of a total of 169 sanitary ports in England. The general character of the disease since it began to increase in England has been mild and the mortality low. The occurrence of small-pox of a mild type has been a frequent feature in the history of the disease. Sir George Newman examines the suggestion that the mild type should be distinguished from true small-pox and given a separate name. He does not accept this view, and observes that the sound principle is "that notifiable specific disease should be notified as such, whether the attack be severe or mild," and whether it be scarlet fever, enteric fever, diphtheria, encephalitis lethargica, or small-pox. "or the control of small-pox the chief need is eradication, and, he says, "successful vaccination and re-vaccination constitute the only efficient protection against small-pox whether of the mild or severe form," he states further "that though early diagnosis, prompt isolation of small-pox patients in suitable hospitals, effective disinfection, supervision of 'contacts,' and other such public health methods are invaluable they are no substitute for vaccination."

(To be continued.)

## Scotland.

### EXTENSION OF ANTE-NATAL CLINICS IN EDINBURGH

At a meeting of the directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital on June 26th it was intimated that the great popularity of the welfare clinics for mothers and children organized by the hospital had made it necessary for the directors to require additional accommodation. The pressure on the outpatient department had in recent months been very great and the clinics, which were at first held twice a week, were now open on five days a week. The total number of visits to the clinic had increased from 2,444 in 1920 to 6,073 in 1924. An adjoining house had been bought and was in process of being adapted for the purpose of the clinics, and when this was complete it was hoped that the department would be worthy adjunct to the Royal Maternity Hospital, which had been the pioneer institution in establishing clinics for the expectant mother.

### ROYAL (DIET) VETERINARY COLLEGE, EDINBURGH

Sir Robert Greig, chairman of the Board of Agriculture for Scotland, distributed on July 1st the prizes at the Royal (Diet) Veterinary College, Edinburgh. Professor Hudson Beve, chairman of the board of governors, who presided, said that the college had been for some years in occupation of its present premises, but until recently, owing to lack of money, the fittings had been deficient. All the laboratories, classrooms, and lecture rooms were, however, now being fitted. The board of governors was making arrangements for an official opening in October, and he had no doubt that next session the amenities of the college would be vastly improved. It was hoped that it might in future rely upon the generosity of some of the wealthier citizens of Scotland to endow the college. Research was urgently needed in many directions—for example, in connexion with animal breeding and diseases and for improvement of the livestock. Sir Robert Greig, in his address to the students, said that if they expected to make a fortune out of their profession he feared they would be disappointed, but if they wanted a profession in which they could feel sure that they could put a great deal into their life, then they had been fortunate in their choice. More and more their profession was linking up with the medical profession, more and more preventive medicine involved the veterinary profession, and more and more did comparative pathology and physiology throw light upon human disease. In the last few years several institutions devoted to the study of the physiology and nutrition of animals had arisen in Scotland, and there were now more appointments for first-class investigators than there were first-class investigators to fill them. The public services of the veterinary profession became more extensive every year, and a further important extension would be brought about by the Milk and Dairies Acts which came into operation on September 1st next. He looked forward to still greater development of the status and usefulness of the veterinary profession.

### ROYAL SANITARY INSTITUTE CONGRESS

The thirty-sixth congress and health exhibition at the Royal Sanitary Institute, which is to be held at Edinburgh from July 20th to 25th under the presidency of Sir John Gilmour, the Secretary for Scotland, will be attended by more than 800 delegates from public health bodies, departments of home and Dominion Governments, and representatives from foreign countries, including the United States, France, China, and Japan. The congress is divided into five sections—namely, sanitary science, under the presidency of Sir George Newman, engineering and architecture, maternity and child welfare, personal and domestic hygiene and industrial hygiene, under the presidency of Dr. W. E. Elliot, Parliamentary Under-Secretary of Health for Scotland. During the congress various conferences have been arranged for representatives of sanitary authorities, medical officers of health, engineers and surveyors, veterinary inspectors, and health visitors. The Lord Provost of Edinburgh will hold a reception for the



members and delegates on July 20th, and lectures to the congress will be delivered by Sir Leslie Mackenzie and Dr Charles Porter. In connexion with the congress a health exhibition will be held in the Waverley Market.

#### SCOTTISH OPTICIANS AND MEDICAL BENEFIT

At a meeting of the 1st of Scotland Branch of the British Optical Association on June 23rd the question of optical benefits under national health insurance was discussed. Mr Archibald Young presided, and a resolution was unanimously passed that the association should protest against the recommendations issued by the Insurance Department of the Ministry of Health in taking away the right of insured persons to consult opticians when needing glasses, and requiring instead the production of a medical certificate before a claim for optical treatment could be accepted by an approved society. In support of this resolution it was urged that the recommendations of the Insurance Department of the Ministry of Health were absurd, because of the inability of the general medical practitioner to estimate the refraction of the eye, and that they were extravagant because of the expense to approved societies if, as was suggested, insured persons from all over Scotland should be required to travel to one or other of the few centres where properly qualified ophthalmic medical practitioners or hospitals were to be found.

## Ireland.

#### ROYAL MEDICAL BENEFICENT FUND SOCIETY OF IRELAND

In submitting the eighty-third annual report of the Royal Medical Benevolent Fund Society of Ireland the central committee states the number of grants awarded during the year was 86, an increase of 3 as compared with the preceding year. Of these 5 were made to medical men, 8 to orphans, and 73 to widows. The amount disbursed in grants was £1,755, as compared with £1,540 in 1923-24. The average amount of the grants has thus increased from £18 10s 7d in the former year to £20 8s in that now under review. In presenting the audited balance sheets of the general fund and of the Osborne fund the committee once again wishes to express its thanks to the honorary secretaries of the branches for their work, and to the individual subscribers for their support. The income of the general fund from all sources amounted to £2,097 1s 6d. In this is included the sum of £422 15s 10d, the amount of income tax refunded for two years, the receipts under this heading during the current year will be only about half of that amount. Dividends and interest yielded an increase of income of £48 19s 2d. Subscriptions paid through branches, including those of the Dublin area, show an increase of £21 9s 6d, while those paid through the central treasurer have increased by £20 5s. The British Medical Association is thanked for collecting £26 13s. Donations amounted to £21 10s, being a life-membership payment of £10 10s by the President of the Royal College of Surgeons, Mr R C B Maunsell, and £11, the "Thankoffering of a Widow" who at a time of dire need received a special grant from the fund. The Irish Medical Association sent £20 and the Dublin Clinical Club £5 5s. No legacies were received during the year, nor was any addition made to the invested capital of the fund. At the beginning of the year the Osborne fund stood indebted to the general fund to the amount of £220 18s 5d. On June 18th, 1924, the central committee, having reviewed the position, resolved to suspend charges on the Osborne fund until such time as it showed a credit balance. In accordance with this resolution all grants have been charged to the general fund, and at April 30th, 1925, the indebtedness of the Osborne fund had been reduced to £109 12s 8d. Looking to the future, there are some factors which cause the central committee anxiety. There has been a fall in the capital value of railway stocks, and the matter has been submitted to the trustees for consideration and such action as they deem fit. The country is passing through a period of financial stress, and in common with all classes of the community medical men have suffered, and that the subscription

list has shown some increase is felt to be a matter for congratulation. Those who subscribe do so generously and merit thanks, but the committee asks for the support of the many who have not hitherto helped the fund, to enable it to bring relief to those connected with the profession in Ireland who come to it in their time of need. Only by widening the field of support can the fund be maintained on a sound financial basis.

## England and Wales.

#### ROYAL NATIONAL SANATORIUM, BOURNEMOUTH

VISCOUNT HAMBLETON, who has been elected president of the Royal National Sanatorium, Bournemouth, of which he had for many years been treasurer, presided over the annual meeting, when it was mentioned that the institution had been in existence for seventy years, and that Bournemouth was selected as the place at which it should be established after very full inquiries. The annual report submitted by Dr F G Penrose stated that 97 patients were in the institution on January 1st, 1924, that 350 (164 men and 186 women) were admitted during the year, that 342 (158 men and 184 women) had been discharged during the year, and that there had been 16 deaths. The daily average number of patients under treatment for the year was 94. A considerable number of patients when discharged were fit to resume their occupations with a reasonable expectation of permanent benefit from the treatment received. The financial position was satisfactory—the total ordinary income amounting to £11,555, and the ordinary expenditure to £10,163. A legacy had been bequeathed by Miss Julia Thomas to cover the expenses of the free treatment of poor patients who for a year previously had usually resided in the County of London. At the request of the Ministry of Health the charge for the treatment and maintenance of patients sent by local authorities had been reduced from £2 5s 6d to £2 3s a week, and this would thus reduce proportionately the annual income received from this source. A vote of thanks to the committee was passed on the motion of Mr F G Lefroy, seconded by Dr Hila Greaves, and the chairman then proposed a vote of thanks to the medical, surgical, and dental staffs, which was carried by acclamation. After a vote of thanks had been passed to the chairman those present made an inspection of the institution.

#### THE MIDDLESEX HOSPITAL

Mr T R Feens of Hull has presented £20,000 to the medical school of the Middlesex Hospital to provide an institute of otology, with special facilities for research in connexion with the ear, nose, and throat. It is proposed at first to install the institute on the top floor of the reconstructed buildings in Cleveland Street, where patients are to be housed during the rebuilding of the hospital. A laboratory, museum, and library will be established, and facilities will be given for post-graduate and otological study and research. It is possible that studentships will be endowed subsequently if further financial support is obtained. The institute will enable post-graduate students from America and the Dominions to complete their studies in London, and English students will no longer find it necessary to visit the Continent for such work.

#### TRAINING OF HEALTH VISITORS

We referred on February 21st, 1925 (p. 384), to a memorandum (101/M C W) issued by the Ministry of Health detailing the conditions on which grants for the training of health visitors will be given, and stating that, as a condition of the payment of grant, students who take either of the courses of training specified in the memorandum will be required to enter for an examination to be conducted by a central examining body approved by the Minister for this purpose. The Minister has now approved the Royal Sanitary Institute as the central examining body to conduct the examinations for health visitors in accordance with the conditions prescribed in the memorandum, and to issue health visitor's



then functional position, and at the request of the Commission I give them my opinion (which they adopted) as to the best way of carrying it out.

I had no intention of occupying your columns by a discussion on the merits of this question. The college has always been perfectly ready to discuss them. They were fully before the meeting of the court of governors of the college last month, and not a voice was raised in favour of separation. My only object was to point out certain apparent misconceptions as to the present position of the question—I am, etc.,

Capetulo Penmaenmawr, July 6th

ISAIAH OWEN

### REVERSE PERISTALSIS

SIR,—Cases like that described by Dr R E Lord (BRITISH MEDICAL JOURNAL, July 4th, p 13) are still discredited by many doctors, and even by many Roentgen-ray specialists. What the latter describe as "antiperistalsis" is something very much less in degree than the vomiting of formed faeces which have been passed upwards from the colon—probably from the descending colon—by reversed peristalsis, through the ileo-caecal valve (or what represents it) and the pylorus. I have taken considerable interest in the subject, especially since 1904, when I wrote a paper entitled "Faecal vomiting and reversed peristalsis in a functional nervous case." One of my conclusions then was

"Vomiting of formed faeces in the absence of malingering and gastro-colic fistula, practically only occurs in functional nervous cases. This may partly be accounted for by remembering that antiperistalsis, if it occurs at all, is likely to be more foreboding when the muscular walls of the gut have not been previously weakened by overdistension or gross organic disease."

I now believe that vomiting of formed faeces does not occur in cases of gastro-colic fistula. Malingering (that is, the swallowing of formed faeces and then vomiting them up again) can hardly ever be seriously entertained as an explanation. It appears also that vomiting of formed faeces (actual scybala) never occurs in any case of gross organic intestinal disease, but I would not now like to say that the presence of nervous disease (whether functional or not) is necessary for its occurrence. Surely, all cases of severe constipation in which relief, with vomiting, is obtained by the use of enemata suggest that antiperistalsis is called into play—I am, etc.,

F PARKES WEBER

London, W 1, July 4th.

### RAW PANCREAS BY THE MOUTH IN THE TREATMENT OF DIABETES

SIR,—May I add the following experiment to that published in your issue of June 13th, to show that fresh raw pancreas by the mouth is useless in the treatment of any type of diabetes? Drs Harrison, Graham, and myself proved that raw pancreas is no substitute for insulin, a point which our opponents admit. But then claim that it is beneficial in non-insulin cases is apparently still maintained. The following two cases showed no benefit at all from raw pancreas by the mouth.

Case A, a woman aged 48, is a mild obese diabetic. Case B a woman aged 58, is moderately severe and there is retinitis. Both were suffering from marked glycosuria before admission to King's College Hospital, but a diet of 45 grams carbohydrate, 70 grams protein, and 135 grams fat in Case A and 35 grams carbohydrate, 50 grams protein, and 105 grams fat in Case B, rendered them aglycosuric with normal blood sugar after two weeks in hospital. A diabetic condition was then reproduced by the gradual addition of bread to the above fixed diets ultimately 9 oz a day to Case A and 6 oz to Case B. The total glucose excreted in the urine was estimated daily, and when constant 1 oz of fresh raw pancreas was added to the daily diet in the form of a sandwich which they disliked very much. This pancreas was supplied by the courtesy of the British Drug Houses in the same fresh frozen condition which they find yields the maximum of insulin and was eaten within half an hour of removal from the ice chest. All the conditions of the experiment were kept constant, and the figures are recorded in the following table. One ounce of pancreas was given for a week—these days are indicated by an asterisk. Only two days before and after the administration of pancreas are recorded.

Days	Grams of Glucose Excreted		Days	Grams of Glucose Excreted	
	Case A	Case B		Case A	Case B
1	15.2	70.2	6*	16.75	137.14
2	14.9	137.0	7*	23.4	123.88
3*	22.54	142.88	8*	17.5	130.03
4*	13.31	135.39	9	12.49	119.81
5*	17.75	126.2	10	14.82	133.48

1 oz pancreas given by the mouth

The amount of glucose excreted in both cases is very constant considering that over 100 grams is being lost in one case and the difficulty of collecting complete samples of urine in a busy general ward. The first figure in Case B is much lower than the rest because her preliminary stabilization had to be hurried on account of the retinitis, and because she threatened to leave hospital to attend a wedding. An extra 3 oz of bread had been added to her diet only three days previously, and the full effect of this was not manifested until the second figure recorded.

It seems clear from the figures that the administration of raw pancreas had no effect on the amount of glucose excreted, and did not enable these two diabetics either to store or burn more sugar. I find it difficult to avoid the conclusion that the beneficial effect of raw pancreas which has been recorded in your columns was obtained by concurrent dietetic treatment, and not by the virtue of pancreas by the mouth—I am, etc.,

R D LAWRENCE

King's College Hospital London July 3rd

### BRITISH MEDICAL WOMEN FOR INDIA

SIR,—My experience may be of interest to "Medical Woman" who asked in the BRITISH MEDICAL JOURNAL of June 27th (p 1195) for information about work in India. I worked there for several years, chiefly in the mission field. I returned to England a few years ago, for private reasons, unconnected with health. I was always well while I was abroad, and stood a very hot climate much better than most Europeans (for example, I could walk six miles when the thermometer was 115° in the shade). I learnt two Indian languages well, and a little of others. I learnt languages quickly. I passed the examinations for those two in half the usual time, getting over 90 per cent marks. Recently I have taken up another language, quite different from any I have learnt before, and in a month have learnt enough to read the New Testament fairly easily.

As I am now entirely free, have no dependants, and wish to go somewhere where workers are needed, I have lately applied to several societies to be sent abroad again, anywhere. But so far I have not found any to do this. The reason given is that my age is over 35, and they have so many applicants, while funds are so low that they must stick to age limits. I have good testimonials, medical and otherwise. I am told that Government appointments in India are usually given to Indians. In South Africa a three years' preliminary residence is essential.

Private practice could probably be obtained in some parts by anyone who had capital enough to wait for it, and could learn languages and understand the people. I also should be grateful if those who talk so glibly about the East absorbing surplus medical women would explain clearly how and where—I am, etc.,

July 5th

ANOTHER MEDICAL WOMAN

SIR,—For nine months I have tried to get any sort of medical work abroad, in India or any colony, with the most complete success. I have an honours arts degree and the Diploma in Tropical Medicine, the latter the Colonial Office considers of sufficient value to warrant its paying the fees for the course for many of its men applicants.

An application to the Colonial Office brought a lugubrious reply, kindly letting me know the worst at once. While

<sup>1</sup> Brain London 1904 vol xxvii pp 170 178

<sup>2</sup> Aided by a grant from the Medical Research Council.

my application would be "carefully considered," there were very few posts open to women. An application to the Duffield Fund had no result whatever.

There remain the missionary societies and private practice. The former can be possible for relatively few people. In the first place, several societies put applicants through a theological mill which grinds exceedingly small. Secondly, there is a barrade of intimate religious questions which, to anyone with a quite ordinary amount of reserve, are very objectionable to answer, to a committee of strangers especially. Thirdly, while the problem of keeping body and soul is closely united as possible on £150 a year in a tropical country has quite a lot of intrinsic interest, considered as a puzzle of personal application it is unlikely to have much attraction for the ordinary mind.

In India (the native States excluded, where the native product is preferred) private practice presents the most hopeful prospect, but this is by no means so shining as some, usually non-medical, enthusiasts would have one believe. The intending practitioner must have sufficient capital to live on for a year, she will have to compete with not only an ever-increasing number of native women doctors, but with the many doctors, with the bazaar medicine men, who can tell by feeling a pulse whether it is the tibia or fibula which is fractured—but who have the confidence of the people, and with the missionaries who do private work. She will have to learn a new language or languages, to learn the quite intricate ropes of a strange country, to try to understand a strange and by no means simple type of mentality, and she must be able to carry on in the heat month after month. If one has not friends there, putting up one's plate in an Indian town is a somewhat grim vision.

The melancholy truth is that there are too many doctors, and far too many women doctors. This statement of a very obvious fact is naturally not popular with medical school authorities, but the students know all about it when they qualify and think that their troubles are over.

If I am wrong, perhaps these apparently mythical providers of lucrative or any other kind of jobs will take on flesh and blood, come out of the impenetrable darkness in which they are shrouded, and come down to brass tacks. Most important of all, perhaps they will give us their postal address.

The higher caste, too, who turn up periodically and is good enough to inform us, *ex cathedra*, that the reason why medical women cannot get work abroad is that they are unwilling to undertake the responsibility which the pioneers (*requiescant in pace*) undertook—perhaps she will tell us whether she ever had a job in the tropics, if so, how she managed to get it, if not, the adoption of a less lofty tone on her part would be more suitable.—I am, etc.,

July 4th

A WOMAN G.P.

### BRITISH SOCIAL HYGIENE COUNCIL

SIR,—The real importance of the decision of the National Council for Combating Venereal Diseases to change its name to that of the British Social Hygiene Council lies in the intention to embark on a wider constructive and preventive effort, which will embrace not only venereal disease but all disease and inefficiency, in so far, that is, as voluntary effort in co-operation with Government action can render effective service in such a campaign.

The undertaking of this forward movement indicates some important facts. It illustrates the tardy but growing recognition by voluntary societies and by Government departments of the essential unity which underlies bodily, mental, and moral health. Further, it shows that we are beginning to realize that before we can establish a vigorous and healthy or a happy population in this or in any other country, we must individually and collectively appreciate and understand the intimate association which exists, not only between health and conduct, but also between conduct and health.

In the increasing complexity of our modern civilization, national well-being depends more and more on the conduct of the individual citizen. This fact stands out very clearly in the case of venereal disease in its relation to sexual

promiscuity, hence the urgent necessity for building up a "national health conscience," a real appreciation of the fact that it is "wrong to be ill" if the illness be preventable, just as it is "wrong to be ignorant" now that education is available for every citizen. It is even more important still to arouse in the minds of our people a "racial conscience," a pride of race which will enable an enlightened public opinion to focus attention on the great responsibility which rests on every individual to place the interests and the welfare of the young, and of the next and succeeding generations, in the very forefront of every progressive movement.

These and other considerations surely provide an abundant justification for the decision of the Council to aid to the utmost extent the movement for providing for the adolescent population sound instruction and wise advice in the principles which underlie the right living of the sex life, in short, in sex hygiene in its wider physical, mental, and moral aspects.

The outstanding feature of our present-day social life is the fact that parents are not giving such instruction to their children on any adequate scale. The churches and other religious bodies have so far failed to fill up the gap. Our scheme of national education has not devoted that attention to instruction in personal, sexual, and social hygiene, or to citizenship in the wider sense, which the vital importance to the nation of the subject demands. The causes of this educational failure are complex, but the consequences are apparent in the youthful life in our cities. But if we are to hold our own among the nations of the world this gap must be filled. Instruction and guidance in health and right living in every department of life, individual and communal must be given to the young, and it must be given to boys and girls at the right time and at an age when it can be of real use in building up character. The difficulty is that at present teachers are not available. It will be necessary to start with the training colleges and build up a body of teachers fitted, both by natural inclination and by special training, to instruct and advise the youthful population in sex hygiene, and to help the parents in teaching their children.

The great work which the British Social Hygiene Council under its old name has already done in opening up the field, and in building up a sounder public opinion in the matter of the sex relationships, will be of the greatest help in bringing about further progress.—I am, etc.,

C. J. BARN, CMG, FRCS.

Vice-Chairman, Medical Consultative Council, Ministry of Health.  
Member of the Industrial Fatigue Research Board.  
Vice-President, Leicester Royal Infirmary.

July 4th

### DISEASES DUE TO FASHION IN CLOTHING

SIR,—I do not think that Dr. Parkes Weber and I differ very profoundly as to either of the two diseases under discussion. The erythema I was referring to was exactly the same as that exhibited by his cases. I am familiar with the reticulated mottling due to sitting before the fire seen so often in delicate persons and old people. What I am not sure about is that there are not other factors than mere dry cold determining the incidence of the erythema described by Dr. Parkes Weber. I question whether dry cold alone produces chilblains, and, as I stated, I believe this condition to be practically chilblain modified, in that the area affected is often very extensive, not the usual situation associated with chilblains, and not so much accompanied by itching. Chilblains are more common in some types of circulation, are most commonly seen on the feet, the hands, and the face, especially on the nose and ears, and I think that dampness as well as cold and frost has something to do with their production. Frequent changing of socks, so avoiding the slight dampness that results from the socks when worn any length of time, is a preventive. The dampness results from want of free evaporation of the moisture from the skin, such evaporation being prevented by the leather of the boot. Boots that are lined, and some kinds of leather, are better in this respect than others, because of being more pervious. The worst kind of leather for boots in cold weather is

patent leather Rubber overshoes have this disadvantage, but it is made up for by the fact that they keep moisture from getting into the foot, and they also keep the cold outside moisture or slush further away from the foot. Hands that are not put much in water are also more free from chilblains. When the nose and ears are affected it is often after being exposed to frosty, foggy weather, or sleet and snow. Exposure to heat before the fire after the chillings above referred to undoubtedly aggravates the condition. I believe the same conditions apply to the extremities of the legs.

The cases I have seen have been in girls wearing artificial silk stockings. Perhaps some chemist or physicist can say whether artificial silk is more likely to absorb and retain moisture as in frosty and foggy weather than natural silk or the fibre of wool. Wool certainly does not cling so closely to the skin, and the stockings are thicker than silk. But whether silk may actually retain moisture in damp, frosty, or foggy weather might be a point of interest. Whilst, therefore, cold is the initial cause, as Dr Weber states, dampness and exposure to a fire aggravate it.

As regards chlorosis, I believe Dr Weber is right in showing the important part taken by the tight corset in its causation, but there are some considerations that make it difficult to believe that it is the only cause.

Chlorosis has been known from the earliest times. I believe it was known to Hippocrates. It was described under its present name by Varicoll in 1620, Sydenham has a chapter on it about 1660-70. It was known to Willis, Boerhaave, and Cullen (seventeenth and eighteenth centuries), and was common in the nineteenth century. I am not familiar with the changes that have taken place in ladies' dress fashions, but is it a fact that ladies have worn tight corsets during all those periods? This is not the first time that corsets have been blamed for it.

I agree with Dr Prakes Weber that rest in bed for a short time and administration of iron was the best line of treatment, but as he has seen cases recover under rest and iron in a basement, so I have often seen cases recover under no other form of treatment than rest, plenty of fresh air, and mild laxatives, iron not being necessary if rest was combined with other hygienic conditions. The reason that rest was necessary—at least at the beginning of treatment—was that the oxygen carrying haemoglobin in the blood was often so far reduced that it was too great a strain on the heart, digestion, and other parts of the system for the girl to indulge in any sort of exertion, especially when she was wearing tight corsets.

While the tight corset has been largely discarded in recent years, there has probably been a greater change in the life and habits of civilized girls during the last twenty years than there had been during the previous twenty centuries. As I stated in my previous letter, the cult of fresh air, along with free movements and exercises in the open air, have been welcome changes in the habits of girls. The tight corset, therefore, important as it was as a causative agent, was, I believe, only one cause amongst several—I am, etc.,

Leith, June 28th

WILLIAM ELDER

### ULTRA-VIOLET LIGHT

SIR,—Mr A. Blakston, in your issue of June 20th (p. 1153), states that the cost of a tungsten arc lamp is £300 per 1,000 hours worked. A tungsten arc lamp of the "Dr. Percy Hall" type has been in use in a municipal clinic of this city for the past fifteen months. Careful records of the cost have been kept, and they work out as under:

	£	s	d
Electricity—1 unit per hour at 5d per unit for 1,000 hours	20	16	8
Tungsten electrodes cost 1s 0½d per hour for 1,000 hours	52	1	8
Total	£72	18	4

—I am, etc.,

W ALLEN DALEY M.D.

Health Department Guildhall,  
Hull June 23rd.

### MEDICAL MEN ON THE PIPE ROLLS

SIR,—I think that both your readers and Mr R. R. James (June 27th, p. 1189) will be interested to learn that the earliest Pipe Roll entry referring to a "Medicus" is to be found in the Roll for Notts and Derby of 1129-1130 (31 Henry I). It is as follows:

Gislebertus de Plesni medicus reddit compotum de 45 marcis argenti pro terra et filia Johannis de Monte Calvino. In thesauro £4 et debet £26.

This means that Gilbert paid the King £30 for a licence to marry the heiress of Monte Calvino. He paid £4 on account in 1129-1130, leaving a balance of £26 to be paid during the next financial year. To judge by the amount of the "fine" Johann must have been a wealthy bride—I am, etc.,

Clifton Bristol July 2nd

R S S STATHAM, M.D.

### Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons has this week given a second reading to the Unemployment Insurance Bill and has debated the trade outlook and the difficulties of the coal mining industry. Speaking in the House of Lords, Lord Birkenhead, Secretary for India, said that the position of the civil services in India would be one of the subjects to be investigated by a Royal Commission on Indian Government. Until public servants in India could feel that unfair or capricious criticism would neither be voiced nor tolerated by Indian politicians the reservations made by the Montagu Chelmsford scheme to protect civilians, even in transferred services, would remain necessary.

### M. Spahlinger's Treatment for Tuberculosis

A special meeting of the Parliamentary Medical Committee, on Thursday, July 2nd, received a report from five members of its committee who, though not as representatives of the committee, had visited Geneva between June 19th and 25th to investigate the Spahlinger method of treatment for tuberculosis. The report, which was a full one, was discussed at length by the Medical Committee, and several members who had previously investigated the Spahlinger system compared the party's experiences with their own. The committee had prepared recommendations, but in view of the fact that M. Spahlinger was expected in London at an early date for a conference, these recommendations were not pressed, and it was decided not to publish them at present.

The report to the committee was signed by Dr Watts, Dr Selter, Dr Vernon Davies, Dr Drummond Shiels, and Dr J. H. Williams. They stated that one of their number had special experience in the conduct of a bacteriological laboratory, and several had years of clinical experience with large numbers of tuberculosis cases. They stated that all questions put to M. Spahlinger and his fellow workers had been answered without reserve, and that experimental and clinical records were placed at their disposal. Each of the party examined about fifty patients who had suffered or were suffering from tuberculosis and had been or were being treated by M. Spahlinger's methods. The party found M. Spahlinger to be a highly skilled bacteriologist, with great knowledge of electrical and physico-chemical apparatus. They were satisfied that he was not actuated by personal or selfish motives, and had refused to allow his discoveries to be commercialized. The equipment of the Spahlinger laboratories was as good as the party had seen at any university.

### Description of Method

The report presented by the members of the party which went to Geneva was to the following effect:

M. Spahlinger had produced two types of remedial for tuberculosis: (1) antitoxic serum to give passive immunity and to act as a directly curative agent and (2) vaccines or antigens made from cultures of specially exalted strains of tubercle bacilli and fractionated by a method devised by himself. He had devised methods whereby the tubercle bacillus could be stimulated *in vitro* to produce quantities of virulent and differing acetoxins. He stated that the bacillus did not ordinarily produce toxins of this kind in culture media, and only threw these out when its life was threatened. At certain regular intervals he subjected the cultures to physico-chemical conditions which proved irritative or harassing to the organism. For example, a culture was maintained under ordinary laboratory conditions at 37° C. for twenty-one hours out of the twenty-four, and the temperature was then raised to 38° C. for the next three hours. During these three hours toxin was manufactured. At the end of the three hours period the temperature of the incubator reverted to 37° C., and continued at



that figure for another twenty one hours. Analogous methods also used were lowering the temperature, freezing agitation and exposure to light. Spahlinger believed he had isolated at least 21 or 22 different toxins, obtained either as above (ectotoxins) or derived indirectly from the bacillary bodies (endotoxins). One of these toxins produced erysipelatous nodules when injected into susceptible animals, another had a purely pyrogenic effect, and so on. He used each of these separately to immunize horses and to obtain a corresponding specific antitoxic serum. These serums he described as "partial" serums. A "complete" serum was one which contained a mixture of all the partial antitoxic serums in addition to an antibrucella serum obtained by immunizing a horse with the micro-organisms which caused mixed infections and with massive cultures of tubercle bacilli killed by exposure to light. Spahlinger stated that cultures killed by heat or carbolic acid lost certain of their important specific qualities in the process. At present no complete serum existed, though there were still about eleven horses yielding partial serums. Vaccine or antigen preparations also were not obtainable in bulk, chiefly on account of insufficiency of staff, though a certain quantity could be got ready in six or eight months.

The treatment consisted of injecting antibodies subcutaneously two or three times a week, sometimes every day or even several times a day in very acute and advanced cases. The length of the treatment varied according to the gravity of the case. The particular class of serum used depended upon the type of case. For pulmonary tuberculosis there must be a preponderance of antituberculous. For surgical tuberculosis a preponderance of anti-endotoxins was found best and a mixture of serums prepared by the use of human and bovine strains of the bacillus was employed. Chronic and afebrile cases could be treated with vaccines and without antitoxins from the commencement. A complete clinical recovery could be brought about by the means of serum alone, but a relapse or a remission was probable until passive immunity had been converted into active immunity. In eliciting active immunity various antigenic solutions derived from bacillary protoplasm were injected separately into the patient. The total treatment extended over about six months though advanced cases might require a second course of treatment. Spahlinger stated that he had devised a method whereby repeated doses of serum up to 20 ccm could be given to cases without causing anaphylaxis.

Up to the present about 600 cases were known to have been dealt with by M. Spahlinger and at least 250 could be traced and examined. A number were Russian prisoners of war who were detained in Switzerland and had disappeared.

The party reported that they had examined about 50 patients, some cured and well, some partially cured and in process of recovery and some who were just commencing treatment. Amongst the latter were several of the gravest severity, which by no means of treatment at present known to science could be expected to recover. The clinical records of certain cases showed that persons who now appeared perfectly fit and well were originally suffering from an advanced stage of consumption. When the party saw them the only evidence of their original condition detectable was some patchy dullness indicating where the lungs were healed by fibrosis. There were no moist or adventitious sounds of any kind and the temperature was normal. The sputum examined and reported upon by independent medical observers attached to hospitals etc. was negative. Some of these people were following unhealthily occupations in a very bad environment yet remained well. Scarcely any of the patients had been treated by Spahlinger's remedies under suitable hospital or sanatorium conditions. Many of them remained at work though their temperature was well above normal. Cases of healed surgical tuberculosis were also shown though the pulmonary cases were the more striking. A number of cases had been treated from eight to twelve years ago and had remained well without relapses during that time.

The party came to the conclusion that on the evidence presented a *prima facie* case had been made out for the Spahlinger treatment. They recommended that an exhaustive trial should be made under test conditions as soon as it was possible to obtain a sufficient quantity of the serum and of the vaccines. The report then referred to the financial difficulties of M. Spahlinger which were declared to be acute. Progress in manufacturing serum and the report of the party continued to be plainly understood by the public that there was no hope of securing treatment by Spahlinger's method at the present time and that it would be useless for patients to apply for treatment. The only method of facilitating the development of the treatment was by the immediate provision of funds followed in some months time by the distribution of enough of the remedy for a really satisfactory test to be made under the strictest conditions.

After a discussion, during which some members of the Parliamentary Medical Committee expressed the view that the matter lay outside its province, the following resolution was adopted:

That the Parliamentary Medical Committee has received with much interest the account of the visit to the Spahlinger establishment which the five members of the committee have drawn up not as a delegation from the committee but as private individuals. The committee are of opinion that a *prima facie* case has been made out for further investigation but the committee resolve that they cannot as a corporate body, take any action in the matter.

**Indian Medical Service.**—On July 6th Sir Pichay Luce asked the Under Secretary for India if the Government had yet arrived at

conclusions as to the future of the Indian Medical Service and whether it was its intention to carry out the proposals of the Lee Commission in this respect especially in the matter of establishing provincial medical services the members of which would not be under the control of the Secretary of State for War. Under Secretary for India replied that the Government of India's proposals were now under the consideration of the Secretary of State who hoped to arrive at early decisions and would make no further statement could be made.

**The Harnett Case.**—Lord H. Cavendish Bentinck asked the Minister of Health whether he would advise the Government to pay to Mr. William Smart Harnett an adequate sum in compensation for his detention in various mental hospitals in regard to the fact that Mr. Harnett had been found by a jury to have been sane when detained by Dr. Bond and for the rest of his detention and that this opinion had not been upheld by either the Court of Appeal or the House of Lords by which tribunal Mr. Harnett's case had been heard. Mr. Neville Chamberlain replied that he did not think that any claim for compensation out of public funds could be substantiated. No event of the Crown was involved other than Dr. Bond and as a new trial had been ordered against Dr. Bond the matter was still *sub judice*. The Lord Chancellor in his judgement dismissed Mr. Harnett's appeal expressly pointed out that it was not in fact proved at the trial nor found by the jury that the appellant was of sound mind between the date of his alleged detention by Dr. Bond and his subsequent escape from custody.

**Insurrection in Foul.**—On July 7th Sir Kingsley Wood informed Mr. A. Alexander that the Minister of Health hoped that the Public Health (Insects) Bill in Foul etc. for alterations would be submitted to Parliament before the summer adjournment. Considerable modifications had been made in the original draft and a full discussion between the officers of the Ministry and the interests involved. The coming into force of the regulations would be postponed to enable necessary adjustments to be made by the trades concerned and during that period a decision might be arranged in the House of Commons if there was a general election for it.

**Rock Drilling.**—On July 7th Colonel Lane-Fox (Secretary for Mines) informed Mr. D. Grenfell who asked a question as to the prevalence of phthis among men engaged in rock drilling by the use of compressed air machines that he was not in a position to give any general conclusions. The inquiry that had been made was confined to three mines. Its result was to support the apprehension that in the three mines rock drilling might be dangerous to health. He had arranged for a more extensive inquiry at once. The inspectors were taking up the question of precautionary measures at the three mines.

**Ophthalmic Benefit.**—Mr. Bennett asked the Minister of Health whether as a result of the new model scheme for the provision of ophthalmic benefit by approved societies the charge for ophthalmic examination of the applicant had been raised from 5s. the fee paid to qualified opticians to £1 1s., the fee charged by ophthalmic surgeons. Mr. Chamberlain said he was aware that the cost under the new scheme might in certain cases show the increase stated by Mr. Bennett but there would be no charge for the insurance doctor's recommendation, and the new arrangements had been generally accepted by the approved societies.

**Medical Sanitary and Research Expenditure in Tanganyika.**—Mr. Amery, the Colonial Secretary, on July 6th told Mr. Barclay Harvey who asked the amount spent on medical and sanitary services and research work by the Germans in Tanganyika in 1913 and the corresponding figures in 1923-24 that the amount provided in the German estimates for 1913 was approximately £99,000 converting the mark at 20 to the £. This did not include expenditure by certain local bodies to which grants were made for a variety of purposes including expenses connected with hospitals and sanitation which were not shown separately in the estimates. The amount provided for similar services in the estimates for 1923-24 was approximately £116,700, which included all expenditure on buildings.

#### Notes in Brief

Of fourteen local authorities mentioned by the Chief Medical Officer of the Ministry of Health in his report for 1923 as not providing medical inspection for visual defects in school children all save one are providing or have proposed to provide such treatment.

The Ministry of Health is aware of the pollution of the river Lea with sewage and is making efforts to obtain proper treatment and disposal of the sewage. Two of the local authorities are improving their disposal works and a bill is before Parliament for taking the sewage of two others into the London main drainage system.

It is not the intention of the Government to take any further steps with regard to the proposed International Convention for bidding night baking. Its decision not to ratify has been previously announced. Night baking has been prohibited in fifteen European countries.

The Admiralty has reduced the number of landing sick berth attendants by forty-nine as dental attendants in harbour establishments formerly rated as such are being replaced by civilians.

Sir Kingsley Wood announced that before sanctioning the setting up of institutions by local authorities for the use of artificial light the Minister of Health would satisfy himself that a doctor experienced in this work was available.

## Obituary

T MARK HOVELL, F.R.C.S.D.,

Consulting Aural Surgeon, London Hospital. Consulting Surgeon, Hospital for Diseases of the Throat, Golden Square

THE death of Mr Mark Hovell, on June 30th, severs another of the few remaining links with Morell Mackenzie and the beginnings of laryngology in this country. He was the son of Dr D de Beidt Hovell of Clapton, at one time president of the Hunterian Society, and received his medical education at the London Hospital. He took the diploma of M.R.C.S. Eng. in 1875 and the F.R.C.S. Ed. in 1880, and was appointed surgeon to the Hospital for Diseases of the Throat, Golden Square. He assisted Sir Morell Mackenzie in the preparation of his *Diseases of the Throat and Nose*, and in 1887 Mackenzie invited him to take medical charge of the Crown Prince Frederick. Mr Hovell remained in constant attendance on his illustrious patient after he became emperor, until his death in 1888, and was decorated at his accession with the Order of the Crown. On his return to London he was appointed aural surgeon and lecturer on diseases of the throat at the London Hospital. He was president of the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association in 1901, and president of the Section of Laryngology of the Royal Society of Medicine in 1917. Mr Hovell was the author of a well known book on *Diseases of the Ear and Nasopharynx*, which reached a second edition, and he published many articles on otolaryngological subjects in this and other medical journals. Last year he published an interesting and practical work on *Rats and How to Destroy Them*, founded on experience gained at his country house near Hatfield, this volume received high praise from the scientific and other journals at home and abroad, and is recognized as the standard work on the subject.

Although Mr Hovell's characteristically conservative views on the tonsil gave rise to a good deal of discussion more than once, he was admired by his colleagues as a surgeon of very wide experience and sound judgement, notable for his thoroughness and common sense.

He married in 1905 the Hon Margaret Cecilia Bateman-Hanbury, daughter of the second Lord Bateman, and leaves one son.

CHARLES F HARFORD, M.A., M.D. CANTAB.

WE regret to announce the death of Dr C F Harford on July 4th at his home in Harpenden. He was well known for his practical interest in a variety of subjects—medical missionary work, temperance reform, tropical medicine, ophthalmology, and (during recent years) psychotherapy.

Charles Forbes Harford was born at Keswick in 1864, the youngest son of the Rev Canon Harford-Battersby. From Repton he went to Trinity College, Cambridge, and studied medicine at St Thomas's Hospital. In 1889 he obtained the diplomas of M.R.C.S. and L.R.C.P. Lond., and graduated M.B., B.Ch., proceeding M.D. in 1892. After acting as ophthalmic assistant at St Thomas's and Moorfields, he went out, in 1890, as a medical missionary to Lokoja, West Africa. Three years later he returned to England, and was appointed principal of Livingstone College, Leyton, which he had helped to found in order to supply elementary medical instruction for candidates for the mission field. He held that post until the outbreak of war, when he obtained a temporary commission in the R.A.M.C. From 1914 to 1919 he served in France and England as ophthalmic specialist with the rank of captain, and after demobilization he carried out corresponding duties under the Ministry of Pensions. Since the war he had acted as oculist to school children under the London County Council and the Herts County Council, and as refraction assistant at St Bartholomew's Hospital.

For fifteen years Dr Harford was secretary to the medical committee of the Church Missionary Society, and advisory physician to the society, he had been joint secretary of the Royal Society of Tropical Medicine and

Hygiene, and instructor in health to the Royal Geographical Society, of which he was a Fellow.

Throughout his career he worked for the cause of national sobriety, and in 1919 he was secretary to the Church of England Temperance Society. He was a fluent writer, and many articles and letters from his pen appeared on this subject, as well as on psychotherapy and on psychology in its relation to problems of vision. His book, *Mind as a Force*, appeared last year, and was reviewed in our issue of November 29th, 1924. He served for a time as editor of *Climatic*.

Dr Harford married Adeline, daughter of Mr William Clapton, F.R.C.S., and had one daughter. The funeral took place at East Hyde on July 7th. A memorial service will be held at Livingstone College, Leyton, on Tuesday, July 14th, at 4.30 p.m. The Bishop of Barking will officiate. Friends are invited to attend.

We are indebted to Mr W McADAM ECCLES for the following appreciation. My friendship with the late Dr Charles F Harford, known then as Charles Harford-Battersby, dates back to 1887, when, as a student at St Thomas's Hospital, he was a fine cross-country runner, out-distancing most of us from St Bartholomew's. He qualified in 1889, and in 1890, to the surprise of some, he went out as medical missionary for the Church Missionary Society to Lokoja, West Africa. It was his sojourn in this mission field which gave him his insight into the need of elementary but sound knowledge of health matters for those proceeding to spheres where lurked serious dangers to health, and he spent a large part of the rest of his life in seeking to remedy such a lack of knowledge. In 1893, in association with the late Dr Harry Guinness and myself, he founded Livingstone College and became its first principal. Here hundreds of men and women have received an elementary training in medicine, surgery, hygiene, nursing, and cooking which has stood them in good stead when alone in the outposts of empire, miles upon miles away from qualified medical aid. Later his work as secretary of the medical committee of the Church Missionary Society, and physician to the society, so thoroughly carried out, led to far-reaching improvements in many branches of the society's work abroad. Keenly interested also in social reform, particularly in the question of the abuse of alcohol, he acted for a while as secretary of the Church of England Temperance Society, and of the Native Race and Liquor Traffic United Committee, and was diocesan reader in London, St Albans, and Chelmsford dioceses. Fearless, apt at times to be dictatorial, but always because he felt that the right must be championed, and imbued with great energy, everyone who came in contact with him could not but feel that they had met a true and earnest man, keen to help where his knowledge was useful, ready to draw swords with those from whom he differed, but always as a Christian gentleman. With his work in ophthalmology and tropical medicine others more competent will doubtless deal. Working, writing, speaking, and active to the very day before his death, all his friends will say, "Well done, enter into rest."

R H SCANES SPICER, M.D. LOND.,

Consulting Surgeon for Diseases of the Throat, St Mary's Hospital

WE regret to record the death, in his 69th year, of Dr Robert Henry Scanes Spicer, which took place on June 18th. He was the son of Dr Scanes Spicer of North Molton, Devon, and received his medical education at St Mary's Hospital, where he gained an entrance scholarship in natural science in 1877, and was demonstrator in anatomy in 1879. In 1877 he graduated B.Sc. in the University of London, and he took the diplomas of M.R.C.S. Eng. and L.S.A. in 1882. He took the degree of M.B. Lond., with honours, in 1882, and proceeded M.D. in 1885.

Dr Scanes Spicer held the post of medical superintendent of Fulham Poor Law Infirmary from 1884 to 1888. He studied in the leading throat clinics in Vienna, Berlin, and Paris, and was appointed surgeon for diseases of the

throat at St Mary's Hospital in 1888, an appointment which he held until 1908, when he was made consulting surgeon. He took a leading part in founding the Laryngological Society of London, and was jointly the first secretary, and subsequently vice-president, he was also one of the founders of the Otological Society of Great Britain. In the British Medical Association he was honorary secretary of the Section of Laryngology in 1890, vice-president in 1895, and president in 1900. He was also a Fellow of the Royal Society of Medicine.

He contributed an important original paper on cancer of the throat to this JOURNAL in 1909 and several other papers on the same subject were published in the *Proceedings of the Royal Society of Medicine*. He held interesting and original views on posture and respiration as causative factors, which, however, were not endorsed by his colleagues. Dr Scanes Spicer was an excellent laryngeal and nasal operator, in fact, the widely employed Caldwell-Luc operation for empyema of the antrum of Highmore might equally correctly have been called the Scanes Spicer operation, as he introduced it in London simultaneously with Caldwell in New York and Luc in Paris. He retired from practice in 1913 owing to impaired health, but returned to work under the Ministry of Pensions until a more serious breakdown in 1922. He leaves a son (who was head boy at Eton in 1917, and afterwards took a first class in the Classical Tripos at Cambridge) and two married daughters.

#### ERIC SINCLAIR, M.D.,

Inspector General of Mental Hospitals, New South Wales.

Dr. ERIC SINCLAIR, Inspector-General of Mental Hospitals in New South Wales, who died recently while on a tour of inspection, was born in Greenock in 1860, and received his medical education at Glasgow University, where he graduated M.B., Ch.M. in 1881 and M.D. in 1886. After serving as house surgeon and house-physician to the Western Infirmary, Glasgow, he entered the New South Wales State Public Service in 1882, and two years later assumed control as medical superintendent of the Gladstone institution. In 1898 he succeeded the late Dr. F. N. Manning as Inspector-General of Mental Hospitals, which post he continued to hold up to the time of his death. He took great interest in improvements in the treatment of insanity, and instituted a system of training of nurses and attendants. The establishment of a chair of psychiatry in Sydney University was largely due to Dr. Sinclair's continual advocacy. He further instituted in New South Wales the system of admission of voluntary patients to mental hospitals. He is survived by two sons, both of whom are members of the medical profession.

Dr. H. C. McDONNELL writes:

Eric Sinclair, who passed away so dramatically in the train on May 19th—literally in harness, as he was on his way to inspect the new mental hospital at Orange—was a man of very exceptional character and attainments. He had for some twenty-seven years shouldered alone the whole of the organizing and development work, as well as the administration, of the Lunacy Department of New South Wales, and, in addition to this, during the later period of the great war took on the onerous and anxious work of principal medical officer of No. 2 Military District (New South Wales), with the rank of lieutenant-colonel.

He was a man with great capacity for detail, and he loved to plan out for himself the minutest specifications of the new buildings he was projecting. He was essentially an up-to-date man, and a desire for the amelioration of the lot of those suffering from mental illness with a clear view of possibilities of improvement in their treatment, especially in the direction of removal of restrictions, was an outstanding feature of his administration of an office which is at present constituted, necessitates great self-reliance and responsibility in the holder. Dr. Sinclair reached the compulsory retiring age early in the present year, and had contemplated giving up his office at the end of last year, as he suffered from some cardiac disability, but at the request of the Government he consented to

carry on for another twelve months, and it was while endeavouring to do so that death cut him off before he had even tasted any of the leisure his long and arduous service to his adopted country had earned for him, for he was a man who had never relinquished the reins of office to take a holiday since his appointment to his high position. It can be truthfully said that Eric Sinclair carried on, developed, and extended the great traditions of the Lunacy Department of New South Wales left by his predecessor in the office of Inspector General, the late Frederick Norton Manning.

#### THE LATE DR. W. J. J. STEWART

Dr. WILLIAM BUTLER writes: A kindly person, a humane doctor, unselfish, upright, and straightforward, Stewart was beloved of his friends, endeared to his patients, trusted and respected as an official. A loyal colleague, his sincerity impressed those who had the privilege of working with him, while his modesty, his unobtrusive strength of character and distastefulness of the loud and thrusting manners so much the vogue of seelers after place, singled him as one who came to his own in virtue of his innate fitness for the office. He so fully and satisfactorily filled the medical superintendent of the Wilkesdon Hospital he had scope for abilities naturally fitting for the position which a long experience in hospital administration and a wide knowledge in the diagnosis and treatment of infectious diseases enabled him to fill with exceptional success. In private life he was esteemed and loved no less than he was respected and admired as a public servant. He was a keen and good sportsman with wide and cultured sympathies, fond of outdoor pursuits, deeply interested in what is known as nature, and his varied appeals to those who were happy to be numbered among his friends will be missed by a privileged circle who will ever treasure his friendship. To his widow, left with a loving memory, the deepest sympathies are widely extended.

#### Medico-Legal.

##### ACTION FOR NEGLIGENCE AGAINST MEDICAL OFFICERS

THE jury disagreed in the action brought in the King's Bench Division by Mrs. Mary C. Venn of Thornton Heath, on behalf of herself and her children, against Dr. R. Veitch Clark, former medical officer of health for Croydon, and general medical superintendent of the Croydon Borough Hospital, Dr. J. M. Todesco, resident medical officer of the hospital, and Dr. G. W. Elder, formerly assistant resident medical officer of the hospital, for damages for alleged negligence in the treatment of her late husband, Mr. William E. Venn, a notary public practising in the City of London. The jury, however, unanimously exonerated Dr. Veitch Clark of any negligence.

The claim which was brought under the Poor Persons Rules came before the Lord Chief Justice on June 23rd and the hearing lasted five days. Sir Henry Maddocks, K.C., and Mr. B. M. Goodman appeared for the plaintiff, and Mr. A. Neilson, K.C., and Mr. T. Carthew appeared for the defendants.

The plaintiff alleged that when her husband was recovering from scarlet fever in 1922 he complained of pain in his leg, and his doctor diagnosed a deep-seated abscess. Mr. Venn was removed to the Croydon Borough Hospital on March 18th, where the plaintiff alleged his complaint was improperly diagnosed as scarlatinal rheumatism until April 25th when Dr. Clark ordered an operation. It was alleged that the operation was too late, and the patient died on June 15th.

The defendants denied negligence.

Sir Henry Maddocks, in opening the case, said that Dr. Milson of Thornton Heath diagnosed the complaint as a deep-seated abscess. The day after the patient was admitted to the isolation hospital Mrs. Venn told Dr. Elder this but Dr. Elder replied that in his opinion, Mr. Venn was only suffering from scarlatinal rheumatism. Mrs. Venn also told Dr. Todesco who said he thought it was a case of mind over matter, and that if Mr. Venn ceased to worry he would soon get better. On April 24th Mrs. Venn saw Dr. Clark, who examined her husband and ordered an operation, which was performed at the Croydon General Hospital on April 26th, a deep-seated abscess being found at the place where Dr. Milson had diagnosed it to exist a month previously.

Dr. E. G. D. Milson, in his evidence said there were medical means by which the presence and locality of a deep-seated abscess could be more or less definitely ascertained, and neglect of such an abscess might result in blood poisoning and death. It would take two or three weeks to produce an abscess of the size of that found when Mr. Venn was operated upon. Cross-examined, Dr. Milson said the hospital authorities appeared to have diagnosed

diphtheria in Mr Venn when he was admitted, and a septic throat might have accounted for his high temperature, but that would not relieve the medical attendant from considering the thigh rheumatic pain was very frequent after scarlet fever.

Mr Neilson K.C. in his opening, said Dr Milson had not suggested that an operation was necessary on March 18th. He sent Mr Venn into hospital for observation, and the reports showed that Mr Venn was carefully observed and that he made no complaint about his leg until April 16th. The trouble was then diagnosed as of a rheumatic nature and nobody could have said that the diagnosis was wrong. Later reports disclosed no complaint about pain in the leg, and on April 22nd inflammation first appeared.

Dr Veitch Clark, in his evidence, said he was not in charge of the patients at the hospital but visited them at the request of the resident medical officers. He was now medical officer at Manchester. When he saw Mr Venn on April 25th he found his leg swollen, red, and tender, and coming to the conclusion that there was an abscess he instructed the medical officers to call in a surgeon. He was of opinion that pus had not been present more than two days and that it could not have been discovered earlier than, possibly the evening of April 23th.

Dr Elder, now medical officer of the Manchester Corporation Sanatorium, said the day following Mr Venn's admission to the scarlet fever ward he examined him, and diagnosed diphtheria. He found Mr Venn suffering from a swelling on the right thigh and Mr Venn told him he was a martyr to rheumatism and that the rash over the swelling was caused by a hot water bottle. He was never told that Mr Venn was suffering from a disease of the leg.

Cross-examined he never diagnosed deep-seated inflammation, but the patient had such treatment as would relieve either a burn or deep-seated inflammation.

Dr Todesco, in his evidence, said on Mr Venn's admission he diagnosed scarlet fever and diphtheria. There was some redness on his right thigh but he (the witness) did not make a diagnosis of it. It was consistent with having been caused by a burn. Mrs Venn told him her husband had been treated for rheumatism, rheumatism was a common complication of scarlet fever. Mr Venn's condition on admission was not consistent with his having a deep-seated abscess.

Cross-examined he did not remember telling Mrs Venn that it was a case of mind over matter, and that if Mr Venn ceased to worry about his leg he would get better.

Dr F. L. Adams, of Croxson, said he saw Mr Venn on April 25th and found him suffering from a large fluctuating abscess. In his view, the formation of the abscess had only begun four or five days before.

Nurse Corney, who was in charge of the double infection ward at the Croxson Borough Hospital in March and April 1922, said on April 18th Mr Venn complained of pain in the leg but there was nothing to be seen. She first saw inflammation on April 20th and by April 22nd the leg had become very inflamed. On admission, Mr Venn told her he had had rheumatism, and that he had been burned with a hot water bottle.

Dr William Hunter, C.B., senior physician to the London Fever Hospital from 1880 to 1925, said he had carefully considered the Harris reports, and other documents relating to the case and he was of opinion that on Mr Venn's admission nothing surgical could have been done. He should have marked the case 'Queer, rheumatism or query something else.'

The jury disagreed.

The Lord Chief Justice asked Mr Neilson K.C., if he was willing to take a majority verdict, but Mr Neilson replied that he was for the defendants.

The Lord Chief Justice: Then you are not willing.

### ALLEGED NEGLIGENCE AT CONFINEMENT

In the King's Bench Division, before Mr Justice Sinker, on July 1st, the jury gave a verdict for the defendants Dr J. L. W. Kitching, Dr R. C. P. Whitcombe, and Dr J. Hale, who practise in partnership at Cobham, in an action brought by Mr A. E. Sherlock, an under gardener employed at Cobham on behalf of himself and his three children, for alleged negligence in the treatment of his late wife in childbirth.

Mr B. B. Stenham appeared for the plaintiff and Mr W. A. Jowitt K.C. and Mr T. Cartwright appeared for the defendants.

Mr Stenham in his opening said the deceased woman was strong and healthy and normal in every way. She had a baby 2 years old, and in 1923 she became aware that she was going to have another. The district nurse was communicated with and Dr Kitching was to be the doctor to attend her at the confinement which was expected on March 7th 1924 but actually occurred on March 12th. The plaintiff's employer Mrs de Jonge, a Dutch lady with some years of nursing experience, observed that the deceased had a certain amount of swelling above the ankles for some eight weeks prior to the confinement and she took tests of the deceased's water and found albumin. She told Dr Kitching who replied that he had found no albumin worth mentioning in his tests, and also that, in his opinion, the patient's physical condition was quite satisfactory but her mental condition was something different. Dr Kitching also declared that Mrs de Jonge had been carrying out tests in front of the patient and marking her beliefs she was ill. Later the patient became lethargic, and Dr Kitching caused her removal to Epsom Infirmary where she died on March 24th. Counsel said the deceased died of eclampsia but if her symptoms had been carefully watched at an earlier stage, and if Dr Kitching had not got a preconceived

notion of what was the matter, she would have had a proper diet and in - - - did not have died.

The - - - said he did not allege anything against Dr Whitcombe, but he alleged negligence against the other two partners. Mrs de Jonge did not prescribe diet for his wife but she out-nursed her with his consent.

Mrs de Jonge, cross-examined, admitted that as the result of another case in which she had interested herself she did not think much of Dr Kitching after that. She had put the plaintiff funds for that action, but she denied encouraging him in it. There was a time when he intended dropping it and she left him perfectly free to drop it. When Dr Kitching reprimanded her for interfering in the case she admitted that she cried and ran away.

Dr Robert Maxwell Trotter of London said, in his opinion Dr Kitching ought to have diagnosed eclampsia on March 17th, 1924. Cross-examined, he said, if Dr Kitching found no albumin before the confinement, in his opinion up to the 16th Dr Kitching had done nothing wrong. If no albumin was found on the Tuesday, he did not think it could be said the patient was suffering from eclampsia.

Dr W. G. Donald of Walthamstow said from the evidence he had no doubt whatever that the deceased died from puerperal eclampsia. Mrs de Jonge's tests of albumin appeared to him to have been normal and proper tests. He did not agree that the symptoms were such as were likely to be those of encephalitis.

Dr Guy M. Kendall, assistant medical officer at Epsom Infirmary, said he made a post mortem examination and found death to be due to eclampsia and cerebral.

Mr Jowitt K.C. in his - - - did not guarantee results and he submitted - - - for the jury to say a case of negligence had been made out against defendants.

Mrs de Jonge was interested in medicine and had that little knowledge which was such a dangerous thing. She was, no doubt, one of the most generous unselfish devoted persons one could wish to meet but he hoped the result of this case would be to hold up a finger of warning to persons against interfering in any way with a case in which a doctor was concerned. It was no part of his case to show that the cause of death was encephalitis lethargica but he would call eminent men who would say that in the light of what they now knew it was more likely to be encephalitis lethargica than eclampsia.

Dr Kitching cross-examined said Mrs de Jonge's tests were not of the slightest value. He thought she was a nuisance. She had no standing in the sick room at all. The deceased's symptoms pointed to a cerebral and mental condition. He, however, had not made up his mind to anything. He thought the deceased's condition entirely due to the atmosphere created about the house and that she was being harried into a mental state. One of the things he objected to was that Mrs de Jonge while discussing the patient's condition practically waved her test tube in the patient's face.

Dr Whitcombe in his evidence said the patient seemed upset and worried. There were several persons in the sick room and the noise was so great that one could scarcely hear oneself speak. There was no symptom of eclampsia.

Dr Hale in his evidence said he and Dr Kitching together examined a specimen of the deceased's urine and found no albumin. When the deceased was removed to the infirmary he wrote to the medical officer asking if he thought it was a case of encephalitis lethargica. He at no time agreed with Dr Kendall that death was due to eclampsia.

Mrs Wakefield, certified midwife who attended the deceased during and after the confinement, said she had had experience of eclampsia, but there were no symptoms in this case which led her to suspect the patient had eclampsia.

Dr J. P. Hedley, obstetric physician to St. Thomas's Hospital, London, said the case in no way resembled eclampsia.

The jury found for the defendants and judgement was entered accordingly.

## Universities and Colleges

### ROYAL COLLEGE OF SURGEONS OF ENGLAND

#### ELECTION TO THE COUNCIL

At a meeting of the Fellows on July 2nd for the election of three Fellows into the Council in the vacancies occasioned by the retirement in rotation of Mr V. Warren Low, Mr James Sherren, and Sir John Lynn Thomas, Mr Sherren and Sir John Lynn Thomas were re-elected and Mr Arthur Henry Burgess of Manchester was elected. 964 Fellows voted including 172 Fellows resident out of Great Britain and Ireland, 961 sent ballot papers through the post and 3 voted in person. The result of the poll was as follows:

Candidates	Votes	Plumbers
ARTHUR HENRY BURGESS	462	48
JAMES SHERREN	441	14
SIR JOHN LYNN THOMAS	406	7
Victor Bonney	361	19
Vincent Warren Low	332	12
John Percy Lockhart-Mummery	243	11
Herbert John Paterson	232	18

Three voting papers were found to be invalid, and in addition three voting papers were received too late.

**DEATHS IN THE SERVICES**  
Lieut Colonel George Tucker Thomas Madras Medical Service (ret.) died in London on June 3rd. He was born on September 25th 1851 the son of the late Rev John Thomas of the Church Missionary Society, Tinnelly and after taking the M.R.C.S. and L.R.C.P. Lond in 1873 entered the I.M.S as surgeon on March 31st 1875. He reached the rank of lieutenant colonel after twenty years service and retired in 1905. Almost the whole of his service was spent in civil employment at first in Madras where when resident medical officer of the Madras General Hospital he came into collision with the Provincial Government in a case which created a good deal of stir and interest in India, some forty years ago, and afterwards in Burma.



## Medical News.

THE publication by the Stationery Office of the volume of general tables comprising population, housing, institutions, ages and marital conditions, education, birthplace and nationality, and the Welsh language, completes the series of volumes of tabulated statistics derived from the census of June, 1921. This final volume contains the aggregated figures of the sixty county volumes that have already appeared, and so renders possible the study of the census from a national standpoint. A certain amount of new matter has been added relating to populations of county court circuits and districts, seamen and fishermen not enumerated with the general population on census night are included, also persons in vessels or establishments under naval, military, or air force discipline outside Great Britain. The price of the volume is 13s., and it may be obtained from H. V. Stationery Office.

A FORTNIGHT ago a leading article was published giving an account of the difficulties which had arisen with regard to reciprocity of medical practice with Italy, and stating that an agreement had been signed under which full freedom of practice in Italy was accorded to British practitioners, the country undertaking to admit medical practitioners possessing degrees from Italian universities to the Foreign List of the Medical Register of the United Kingdom. We learn from Mr. Norman C. King, registrar of the General Medical Council, that the Council has been officially informed that the Italian Embassy in London has communicated to all the consular offices under its orders the regulations concerning the admission of British registered practitioners to the privilege of practising medicine in Italy and its dependencies. The new arrangement comes into force from the date of its signature (May 21st, 1925) without need for further ratification or approval.

THE Fellowship of Medicine announces that a course in the diagnosis and treatment of common diseases of the nervous system has been arranged by the West End Hospital from July 27th to August 14th. A vacation course will be held at the Prince of Wales's General Hospital from August 4th to 15th, including lectures and demonstrations in medicine, surgery, and special subjects, including mental diseases and fevers. At the All Saints Hospital there will be a special course in urological diseases throughout the month. From August 24th to September 5th the Queen Mary's Hospital, Stratford, will give an intensive course in medicine, surgery, and the specialties. The following special courses are announced for September: diseases of the chest, infants' diseases, dermatology, electrotherapy, ophthalmology, and an intensive course at the Westminster Hospital. Copies of the syllabus of each course and the programme of the Fellowship of Medicine may be obtained from the Secretary at 1, Wimpole Street, W.1.

AN announcement appears in our advertisement columns inviting applications for the appointment of two assistant medical officers for the Mental Hospitals Department under the New Zealand Government. The commanding salary is £615 per annum. Particulars may be obtained by sending a foolscap envelope to the High Commissioner for New Zealand, 415, Strand, W.C.2.

THE National Baby Week Council has held during the present week an Imperial Baby Week at Wembley Exhibition. On July 6th Dr. Mary Scharrlieb presented prizes and certificates won in various annual competitions, including the Astor challenge shield for the best local baby week campaign in 1924, awarded to infant welfare centres.

The week film displays and lectures

At the Climatological Congress to be held at Davos from August 17th to 22nd the topic for discussion will be the significance of climate in its physical, physiological, and therapeutic aspects. Those desirous of contributing papers on any branch of the subject, or requiring details of the arrangements, should communicate with the Secretary of the Congress, Dr. Vogel, Eysen, Davos Dorf.

THE German Society for the Promotion of Morality, which represents the German Branch of the International Abolitionist Federation, is bringing before the Reichstag a bill for placing under supervision all persons who are insane, mentally deficient, or who, in consequence of mental, physical, and moral defect, are incapable of looking after themselves and are a danger to others. The supervision will be arranged at the public expense by order of the county court in a suitable family, institution, or workmen's colony.

THE annual dinner of past and present students of St. Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W.C., on Monday, October 5th, at 7.30 p.m.

THE St. Bartholomew's old students' dinner will be held on Thursday, October 1st, in the Great Hall of the Hospital, at 7.30 p.m. The chairman will be Mr. John Adams F.R.C.S. The honorary secretaries are Sir C. Gordon Watson and Mr. R. M. Vick.

SUBSCRIPTIONS received at the Mansion House for the Metropolitan Hospital Sunday Fund reached, on July 6th, a total of about £51,000.

A VACATION course of instruction for qualified practitioners will be given again this year at St. Bartholomew's Hospital, beginning on Monday, September 7th, and ending on Friday, September 18th. Inquiries should be addressed to the Dean of the Medical College, St. Bartholomew's Hospital, E.C.1.

DR. GEORGE P. ALDRIDGE of Luton Bolton, has been appointed to the Commission of the Peace for the County Palatine of Lancaster.

DR. MOURIQUAND has been nominated professor of children's diseases in the Lyons Faculty of Medicine in succession to the late Professor Weill. Professor Gott of Munich has succeeded Professor Salge in the chair of children's diseases at Bonn.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **BRITISH MEDICAL JOURNAL** must communicate with the Financial Secretary and Business Manager, **British Medical Association House, Tavistock Square, W.C.1** on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the **JOURNAL** should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are: **VESEUM 9361 9362 9363**, and **9364** (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are:

EDITOR of the **BRITISH MEDICAL JOURNAL**, *Antology Westcott London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.), *Antology Westcott London*

MEDICAL SECRETARY *Medicina Westcott London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumsheugh Gardens, Edinburgh (telegrams *Associata, Edinburgh*, telephone 4361 Central).

## QUERIES AND ANSWERS

### UNCERTIFIED LUNATICS

"P. & D." writes to ask for enlightenment as to a doctor's position with regard to uncertified lunatics. Sometimes (he says) individuals evidently insane walk into one's surgery and sometimes one visits families where insane relatives are kept at home, the relatives refusing to allow certification although the individuals in question are clearly dangerous while at large. What should the doctor do in such cases?

### 'EUPARAL'

DR. A. H. SKINNER (Beckenham) writes: On page 888 of the **JOURNAL** of May 9th in a review of Jordan's *Textbook of Histology* mention is made of a new mounting medium 'euparal'. I find difficulty in obtaining this.

The method of preparation of this mounting medium is described by Shepherd in the *Transactions of the American Microscopical Society* vol. 37 (1918) p. 131. We understand that 'euparal' can be obtained in this country from Messrs. Parry and Tallock, 14, Cross Street, Hatton Garden, E.C.1.

### STREPTOCOCCAL INFECTION OF TONGUE

"G. P." writes to suggest to 'Peppercod' (June 27th p. 1201) that a Wassermann test should be made. In a similar case he has found it positive greatly to the surprise of both the doctor and patient.

### INCOME TAX

L. B. C. has received an inquiry from the local inspector of taxes with regard to the deductions made for domestic servants' wages; he has deducted the estimated cost of food, etc., of one maid at each of the two houses used for the practice.

Our correspondent does not say what staff is employed at each house and a good deal must depend on that—for example, if to take an extreme instance, the staff kept is one resident

maid and one day girl, with occasional assistance it would seem to be unreasonable to charge the whole cost of the maid as incurred in connection with the consulting room, answering the inquiries of callers, and other strictly professional work. A useful working rule is that where two maids, with occasional assistance, are kept, the cost of one maid is probably a reasonable charge but beyond this it is not possible to give general indications. Where it can conveniently be arranged, a personal discussion with the inspector is often the best means of settling this type of question.

#### Expenses Incurred by Locumtenent

"STELLA" did some locumtenent work last year and incurred £6 in travelling to the hospital where the work was done. The inspector refuses to allow this expense as a deduction from the inclusive fee received.

\* \* The difficulty seems to be that "Stella" is not in general practice, and therefore cannot assert that the fees in question were earned and the expenses in connection therewith were incurred as part of his ordinary medical work. The locumtenent work was apparently an isolated matter, and, if treated as such, the expense of going to and from was not earned in the performance of the duty but in order to put our correspondent into a position to perform it. At the same time the expense of travelling from place to place is so natural to the performance of locumtenent work that we should have thought that the inspector would have allowed it, rather than take up what is a very strict and somewhat harsh attitude on the strength of the peculiar features of an unusual case.

### LETTERS, NOTES, ETC.

#### SUMMER TIME

THE secretary of the Early Closing Association writes to say that during the past four years resolutions in favour of the permanent adoption of a six months summer time period have been passed by 1,000 municipalities, trade organizations, chambers of trade or commerce, athletic and other associations. Resolutions have also been unanimously carried at two public meetings at the Mansion House held under the presidency of the Lord Mayor of London, and at large meetings in Birmingham, Bradford, Bristol and Manchester. Deputations have also presented evidence as to the urgency of this matter to the Home Secretary and the second reading of the Summer Time Bill was passed in the House of Commons on March 13th last by 289 votes against 63. Notwithstanding the strong public opinion in favour of this measure and the sympathetic support of the late and present Governments the bill is still in abeyance. Unless public opinion is aroused the summer time period this year will end abruptly in the middle of the holidays—namely, in the middle of September—and at a time when the additional hours daylight from work and business is so much needed.

\* \* The British Medical Association as most of our readers know is strongly in favour of the proposal to make summer time a permanent measure. The Representative Body in 1923 passed a resolution expressing regret that summer time had been curtailed that year as it is of the opinion that summer time is beneficial to the health of the nation and the Council in February 1924 voted 5 guineas to the Early Closing Association towards the costs of its campaign for the extension of summer time and its permanent adoption.

#### URINARY INFECTIONS

DR HAROLD H. SANGUINETTI (London W) writes. In criticizing my paper on urinary infections Dr Irwin (July 4th p. 37) seems to assume a greater ignorance on my part of such infections than I feel is warranted by anything I wrote. The fact that the paper represents a much abridged version of a thesis presented and accepted for the D.M.O. I do not doubt accounts for some misunderstanding but even then it is obvious I did not advocate vesical lavage for definitely descending infections where the seat of the infection remained in the kidney or renal pelvis. What, however, I have suggested is that descending infections are not so frequent as is now usually maintained or alternatively, that in descending infections the focus in the kidney and renal pelvis in many cases clears up some considerable time before the bladder becomes free from infection. The persistent infection of the bladder can be satisfactorily treated with injections of collargol. I am naturally aware that the majority of acute cases clear up rapidly without the use of vesical lavage although in no inconsiderable proportion of these cases the clearing up is confined to the clinical symptoms and organisms persisting in the urine and leading to subsequent relapse. It will be noted that the majority of my cases were chronic cases among whom were at least a few who had undergone in the acute stage just the treatment Dr Irwin advocates. The fact is these cases are patient and medical attendant much trouble and with the treatment usually adopted are difficult to cure. When at a meeting of the Hunterian Society in the discussion of Sir John Thomson Walker's Hunterian Lecture on urinary infections I claimed that with collargol one could get 50 per cent of cures the lecturer—while I think doubtful of my

claim—agreed that a treatment as such it was claimed would give such results as worth careful consideration. My percentage of cures for a certainly small number of cases is considerably higher. We may I think leave it at that. When I have convinced myself that a suitable dilution of silver nitrate is certain, and not only 'probably' just as effective as collargol I shall use it in place of the latter. Meanwhile, I shall, for routine purposes, continue to use collargol.

#### THE JACOMETER

AN ancient Scottish university is said to have invented a Calorimeter for testing its doctors of divinity but in spiritual affairs we have just a man sober who could clearly affirm that "British constitutional prescriptions arbitrarily proposed puzzle the scientific American consulting his barometer, could forecast the next day a flow of liquor over the bar, and from the thermometer give the exact number of its labours." Now as we learn from the British Empire number of one of those publications devoted to the gratuitous postgraduate education of British doctors the American has invented a "jacometer" which shows the "dispositive index" of a suspect and when a "jacometer" attachment has been affixed records accurately the appropriate period of debilitation. The instrument looks like a gas apparatus and a British entomologist thus hums its superiority to our rule of thumb methods.

In epochs of dublety  
Green heral confusion  
We'd test a man's sobriety  
By British Constitution  
We'd stand him perpendicular  
Ask him for truly rural  
Give arbitrarily standard  
In verbiage in the plural  
Dry Yankee scientific men  
Have found a way much subtler  
To tell if chauffeurs or other men  
Have visited the toilet  
Has he had coffee, milk or tea  
Is tested by the jacometer  
For their thanks the meter  
Will clap on the jacometer

Then as his breath comes sighing out  
It disposes a dial  
And should it come to trying out  
The needle stand his trial  
They have a radiant plate beside  
Tells starker from a lamp  
And if one try the blue to hide  
Shows every lit or limp  
The psycho-analyst left behind  
And vitamin an hormone to find  
There's nothing new for man to find  
Outside the land of Mormon  
What need we think the final pains  
What need for someone thicker  
All other folks as give up first  
When the Yankee gives up drinking  
R C B

#### HOLIDAYS

DR W. B. DUNN (Medical Superintendent, Baldovan Institution Dundee) writes. I should be glad to know whether there is any reciprocity between public hospitals institutions etc. with regard to the holidays of members of staff passing from one to another. For example if a nurse who has had six months continuous work in one hospital passes directly to a post in another hospital without a holiday is the latter supposed to grant her the usual full holiday at the end of three months service?

#### COPPER CITRATE IN THE TREATMENT OF LEPROSY

LIEUT. COLONEL F. T. PALMER (Assam) writes to point out an error in our abstract on May 9th (p. 88) of a paper read by him. In one sentence copper sulphate was erroneously substituted for copper citrate. Colonel Palmer adds that copper citrate is used for intravenous injection in doses of 15 grains for an adult and is rendered soluble in small bulk by 4 grains of sodium citrate. The bismuth salt used by him is bismuth sodium tartrate which is generally given in 3 gram doses. Intramuscular injections were only employed in the initial experiments, and would not be suitable in so chronic a disease as leprosy, which requires very prolonged treatment.

#### SLOW HEART

SURGEON COMMANDER W. H. EDGIR R.N. writes. In connection with the question of slow heart action in athletes it may be of interest to state that I have constantly found a subnormal rate in the best Marathon runners in ships on which I have served. Four instances are present in my mind without reference to notes. Three were officers and one a private of marines. All were noted runners and capable of long sustained exertion and in all the pulse rate was between 54 and 64. I have come to regard the normally slowly acting heart as indicating special suitability for such exercises as running and boxing.

#### A DISCUSSION

MIR H. J. PATTERSON (London, W) writes. My attention has been called to a report of my annual hospital tea party in the *Daily News*. Although I was aware that the occasion was to be used for giving publicity to the hospital building fund I had no knowledge that personal allusions were to be made to myself. I much regret that in the report references were made for which I am in no way responsible and which are both unnecessary and undesirable.

#### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 37, 38, 39, 42 and 43 of our advertisement columns and advertisements as to partnerships, assistantships and locumtenencies at pages 40 and 41. A short summary of vacant posts notified in the advertisement column appears in the *Supplement* at page 16.

## THE BRITISH MEDICAL JOURNAL · COMMEMORATIVE NUMBER

## An Address

ON

## THE OVERGROWTH OF SPECIALISM

DELIVERED TO THE ACADEMY OF MEDICINE IN TORONTO

BY

J. BASIL HALL, MCH, F.R.C.S.

PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION, HO ORAP CONSULTING SURGEON, BRADFORD ROYAL INFIRMARY

I APPRECIATE very deeply the honour of being the first representative of the British Medical Association, since the affiliation between the British and the Canadian Medical Associations became an accomplished fact, to bring you our fraternal greeting and good wishes, and to address the members of our honoured profession in the great Dominion of Canada.

As I approached these shores I endeavoured to analyse my feelings. I found it difficult to realize that Ontario alone must be three or four times the size of the British Isles. As schoolboys we looked at our atlas and saw a map of England upon one page, and a map of North America upon another, but failed to grasp that vast difference of area of the two countries. Perhaps this was an early indication of our tendency in the old country to overestimate our own importance. Nevertheless, we do realize when we arrive at years of discretion that we are too self-centred, and we feel the necessity of cultivating a broader outlook, and a contact with the vigorous youth and newer views of our younger brothers.

As an illustration of our insular habit of mind, I would quote a passage from the writings of one of your own countrymen, a writer of whom you may be justly proud—Robert Service. The extract in which he gives us the rebuke we truly deserve is from his book *The Trail of Ninety-Eight*. The scene is laid in Dawson City, Yukon. A tall slim Englishman talking to the hero of the story, says:

How my old dad would stare if I could have him in Dawson City for a day! He would never be able to get things just in focus any more. He would be knocked clean off the pivot on which he has revolved these thirty years! Seems to me everyone is travelling on a pivot in the old country! It's no use trying to hammer it into their heads that there are more points of view than one! If you don't see things just as they see them, you are troubled with astigmatism!

Here is the opportunity, in your vast and wonderful country to readjust our convictions, and I thank you for helping to pull me off my pivot, and giving me the opportunity of seeing things from a new viewpoint.

Just as I was leaving the old country, the Council of the Royal College of Surgeons of England conferred upon me the honour of electing me a Fellow of their College. It is an honour of which I feel very proud, and I am deeply sensible of the distinction which it gives to me. My pleasure, however, has been very especially enhanced by the fact that I am sharing that honour with a Canadian, Professor Prunty of Toronto. I wish to extend to him my very hearty congratulations upon this recognition of his professional career, and to you, also, because he is one of your representatives in the great field of surgical science. I am sure you will forgive my insular prejudice when I say that I believe that it is one of the greatest surgical honours which can fall to the lot of any one of us, and in the years to come I shall always remember with much pride that my name had been associated with his.

## THE NARROW SPHERE

Your President has proposed to me that I should say something to-night about some views which I recently expressed in my Presidential Address at the Annual Meeting of the British Medical Association. On that occasion I suggested that the modern development of specialism is becoming so great and so absorbing that we are in danger of losing sight of the value of that wisdom which can only be obtained by a laborious study extended over much wider fields.

Specialism has become a necessity in our modern scheme of medical practice, but surely it behooves us to be careful lest our profession becomes nothing more than a community

of craftsmen, each in his own water-tight compartment with little or no general knowledge of the problems which lie outside it. There is a growing tendency—I am speaking of England—to think that special practice confines a man's usefulness in life to one narrow sphere. It is said not infrequently, that a specialist is an individual who knows everything about his own particular subject, but nothing about anything else. That definition may be only a cynical gibe, but I cannot help thinking that it might become a sober truth, and I would urge that the attainment of a high degree of any ability can only be reached by those who realize that wide general knowledge must be the foundation upon which all professional eminence can be built. To be content to learn one thing, and one thing only, is surely a poor ambition. It may bring wealth and worldly success, but it very rarely brings real greatness. "Everything of something but something of everything" is such a motto which all of us should adopt.

In military service or in a great hospital, where large numbers of patients have to be looked after, work is essential. The cure of the patients is a matter of mass production. It is the only method by which a great output can be accomplished. We have learned that lesson from the great commercial enterprises in the world. There are thousands of human beings to-day who spend their lives in producing one important particular detail in the mechanism of some machine, or some process of manufacture. I have personal acquaintance with a man who earns a very handsome living in such an occupation. He can merit well his work by a thousandth of an inch, but take him away from his one special employment, and you find him the dullest creature imaginable.

In the great iron and steel works in the city in which I was born there is a small group of men who earn large salaries by controlling the steam hammers which forge the wheels of locomotives and so forth. It is a great specialism, a craft which only a few possess. There appears to be a peculiar genius for this work, and I am told that it sometimes descends from father to son. The craftsmanship which these men display is wonderful, but take them away from their narrow specialism and you will find them very ordinary beings devoid of any interest in the progress of knowledge outside their own sphere.

Not very long ago I met a personal acquaintance who is a great expert in the textile world. His name is known in America, Australia, and many other countries. He had been spending a fortnight away from home, and I asked him how he had enjoyed his holiday. He said it had been very dull. He had just wandered about looking into the shop windows and reckoning up the cost of production of the materials displayed!

Specialism may be a great art, but it may be very soul-destroying. It may bring great wealth and notoriety, but it is a poor thing to live for, itself alone.

## JOHN HUNTER: A CONTRAST

A few months ago I enjoyed the privilege of attending the Hunterian Festival at the Royal College of Surgeons of England, and witnessed the large gathering of nobility, aristocracy and drink in solemn silence to the immortal memory of John Hunter—an annual tribute which has been paid to his name for a hundred years. John Hunter was the very antithesis of modern specialism, a man who never neglected the opportunity to study any single object in nature lest he might miss some fragment of useful knowledge. What a wonderful life his was! He was a great surgeon, but surgery was only a very small item in an existence devoted

to the study of every problem in nature. Hunter began his dissections and preparation of museum specimens when he was 30 years of age. He died when he was 65 years old but during those intervening, thirty-five years he dissected and mounted upwards of five hundred specimens, illustrating the anatomy of innumerable types of invertebrate and vertebrate life, and he wrote manuscript descriptions of most of what he had done. During those thirty-five years he worked unceasingly to solve every problem in the animal and vegetable world, and his classical operation for incision remains to this day as one of the most perfect deductions from scientific observation applied to a practical use.

Stephen Paget, in his *Life of John Hunter*, reproduces one of his letters, written to a friend in Africa a few months before his death:

"There could be no better example than this letter of the vehement energy of Hunter's life. In his old age, full of suffering, overworked, and close to death, he was yet writing, to Africa for swallows, ostrich eggs, a crane, cuckoos, a young lion, everything connected with the bee tribe, chamæleons and any other beast or bird."

While he was thus intensely intrigued with a human desire for general knowledge, he was Surgeon General to the Army, Inspector-General of Hospitals, Surgeon to St. George's Hospital, Surgeon Extraordinary to the King, and busily engaged in a great consulting surgical practice in London.

#### THE WIDER OUTLOOK

At the same festival, when I listened to the speech of the President, Sir John Blund Sutton, a speech full of wit, and a versatility which betokened a lifelong devotion not merely to the specialism of abdominal surgery, but to the study of comparative anatomy and zoology and the whole life history of mankind, I realized that his specialism had only played a very small part in placing him in the proud position he occupies to day. A great surgeon undoubtedly, but something much more than that—a man of wide scientific general knowledge, acquired by an endless study of human and animal life.

Only a few weeks later I was present at the funeral service of Sir Thomas Clifford Allbutt, Regius Professor of Physic in the University of Cambridge who died in his eighty-ninth year, a great scholar, and full of honours. He began his career as a classical scholar at King's College, Cambridge, and subsequently obtained first-class honours in natural science. Throughout his long life he never ceased to interest himself in any subject which might promote general knowledge. He introduced the clinical thermometer, which is used to day throughout the whole world. In 1871 he emphasized the value of the ophthalmoscope in the diagnosis of cerebral and renal disease. In 1873 he read before the Royal Society his paper on the effects of exercise upon bodily temperature. He subsequently edited a *System of Medicine*, which is one of which the medical literature in any language might be justly proud, and his work upon blood pressure, and the effect of over-existence upon the heart, is of great scientific value. It has been truly said of him that he was a charming speaker and a graceful writer. Faults of literary expression and logical arrangement vexed his soul. Truly a great physician, but something much more than that—a great scholar and scientist, and a very perfect English gentleman.

Is there any need for me to recall the life-work of such scientific giants as Pasteur, Lord Lister, or Sir William MacEwen? Do we not remember them as great men, who toiled unceasingly to promote general knowledge? Great men who required profound wisdom in an unlimited field of study, never doubting that every fragment of general knowledge would find its place in our scientific progress. Not so very long before the late Sir William MacEwen's death I was talking to him about the growth and shedding of the antlers of deer, a subject in which we were both interested, and one upon which he wrote a most absorbing book. Long after it has been forgotten that MacEwen introduced osteotomy to cure genu valgum that book will remain as a record of truth scientific research. Do any of us to day know anything about Lord Lister as a surgical "specialist"? His work as an operating surgeon is forgotten in the light of his labours in the wider fields of his researches. As an artist he is already forgotten, but as a scientific worker his name lives for ever.

#### WISDOM OR TECHNIQUE?

Is the modern trend of medical practice likely to produce such men as I have mentioned—men who were not interested in specialism but who were interested in the whole of life, whose mental activities were directed towards a synthesis of observation and research? Is it not possible that we are all specializing too much and reducing individual usefulness to very narrow limits. The human body is a complex structure composed of many organs, but there is a vital interdependence among them, which is essential for the maintenance of the whole. It is really desirable that every man should train himself to combine his knowledge to only one narrow branch of medicine or surgery, and believe that a perfect technique can accomplish everything.

The President of the Medical Society of London recently touched for the accuracy of the following anecdote:

A patient, worried with abdominal pain and obsessed with the popular dread of appendicitis, consulted a specialist who removed the appendix. The pain remained and she applied to a generalist who removed the right ovary. The pain remained and she applied to someone who had a great reputation for gastric surgery and she submitted to a gastro-enterostomy. But the pain remained. Nothing daunted she went to one whom I may describe as a general surgeon. He opened the abdomen but said that he felt so much which wanted rectifying that he closed it again without doing anything. She has now been restored to good health by a little more moral influence, and the sound knowledge of the nature of her doctor.

No man can become a good surgeon unless he is first a good physician. That saying is as true to day as when Sir William MacEwen first spoke it, and special knowledge and technique must always be subservient to the wisdom which can only be acquired by a wide study of human—yes, and animal—life. A man may be a perfect surgical artist, but never a great surgeon, unless he learns that even the most perfect technique is no excuse for bad judgement and lack of wisdom.

#### OPERATIONS OR SUCCESS?

At the risk of becoming unpopular amongst my younger brethren, I am going to say that I am afraid that we are producing a generation of operators, and not surgeons. With the advent of perfect asepsis the respect for operative intervention has almost ceased to exist. Moreover it has become the fashion to advocate the adoption of more and more radical procedures, in place of those which have given excellent results in the past. It is no longer sufficient to remove a patient's gall stones—his gall bladder must be removed as well. Gastro-enterostomy is being condemned as insufficient for simple gastric ulcer. A partial gastrectomy is now the operation of choice. If I remember rightly, this operation was first urged upon the ground that cancer is so often gift upon long standing simple ulcer, and I believe the risk of malignant incidence was placed at something more than 50 per cent. I have been at some pains to try to find a definite reason for this alarming statement, because I know that the occurrence of cancer after gastro-enterostomy for supposed simple ulcer is quite a rare event. Either the ulcers are only rarely malignant, therefore, or else gastro-enterostomy cures cancer. Latterly, however, the advocates of the more radical treatment have shifted their ground, and it is now stated that my lesser procedure than gastrectomy fails to cure. I suppose my experience of gastro-enterostomy may be regarded as small, because I have not to perform my thousands of operations. Nevertheless, I can lay claim to some hundreds. Perhaps I have been especially favoured by fortune, but I do know that gastro-enterostomy for simple ulcer has been very successful in my hands so much so that I could not possibly advocate the removal of half the stomach on account of a hypothetical risk of subsequent development of malignant disease. The same argument applies to cholecystectomy rather than cholecystotomy. I have performed some hundreds of the latter, but I cannot trace any case in which cancer developed subsequently, and I know from long observation that the risk of recurrence of gall stones is practically non-existent, so long as the cholecystotomy has been adequately performed. It has also been urged that total rather than subtotal hysterectomy should be practised for uterine fibroid, in order to prevent the possibility of the subsequent development of cancer in the cervix if it is left

behind. I recently inquired into the after-history of 250 cases of subtotal hysterectomy, but failed to find a single case of this unfortunate development. Incidentally, however, I learnt of a case of cancer in the vagina, which was said to have developed in the scar following a total hysterectomy. I commend that to all ardent advocates of extreme radical measures.

#### THE STRAM-HAMMER AND THE NUT

When I was a very small boy I was taken to a great exhibition in the Old Cloth Hall in Leeds. It was not long after Nasmyth had invented the steam-hammer and I still remember watching a man regulating a model of that wonderful invention. He was cracking Breckon nuts with it! I was too young at that time to appreciate the wonderful scientific accuracy of the machine, but I do remember thinking that I could crack them equally well with my teeth.

What is the real reason for this modern desire to adopt extreme measures? It is the love of something new, the love of a great idea, and—yes, I am afraid that I must also add—the ambition for the notoriety of specialism. Specialism is the lay public conceives it—a marvellous gift which enables a man to do something bigger, and incidentally more expensive, than his neighbour. The aseptic principle is a priceless asset in modern surgery, but I would ask you seriously to consider whether the modern ritual is not being overdone. It is not easy to draw the line between reasonable and extravagant methods, but such there is much in the surgical practice of to-day which is purely theatrical. Moreover, our concentration upon technique is deadening our sense of the supreme importance of cultivating clinical wisdom and judgement, the shrewd estimate of the vital capacity of our patient, and the great principle that we should never forget that the greatest artist is he who does the least possible to secure the desired end.

#### THE ART OF SURGERY

The art of painting and the art of surgery are very similar. There are artists who produce pictures by a few bold strokes of the brush or pencil. Their work captures the imagination and it lives. There is also the artist who produces a picture full of minute detail. It is very beautiful and perfect, but before long it begins to pall, and sooner or later it ceases to attract. So is it with the art of surgery. The surgeon who can grasp essentials, and who is gifted with "vision," because he has viewed Nature from a broad standpoint, lives in the memory of future generations. His work remains because he has studied the great essentials of life. The other obtains a passing notoriety on account of his perfect technique. It is all very pretty, and attracts the eye for the moment, but it lacks that sterling quality which marks real genius. Genius is not a heaven-sent gift. It is the infinite capacity for work—a capacity for using our brains in the study of everything which enters into our existence.

If I may make an appeal to the embryo surgeons of to-day, I would beg them not to be narrow in their ambitions. I would ask them not to be counting up the worldly wealth that specialism may bring, but remember that the passing of an examination, however high its standard may be, and a year or two of special experience will never relieve greatness. Theatrical display of elaborate technique, and the noisy advertisement of the latest methods, will obtain notoriety, but chain them to a life of comparatively joyless work. I would tell them that while it is a great thing to be able to do something better than anyone else, it is a much greater thing to be known as a great scientific worker, who can bring to bear upon his special craft a knowledge of human nature and all those attributes which make men truly great. I would ask them to realize that if they work for the love of working, in the first place, to work for the advancement of knowledge and the universal benefit of mankind they will obtain a great recognition and an ultimate worldly success. I would commend to them the words of Thoreau when he says: "If a man advances confidently in the direction of his dreams, and endeavours to live the life which he has imagined, he will meet with a success unexpected in common hours."

#### A MEMORY OF ST GEORGE'S DAY

As I came to you across the sea, little more than half-way I recollected that it was the eve of St George's Day—St George, the patron saint of England—and my mind went back ten years to that twenty-second day of April in the year 1915, when Falkenhayn, the German commander, launched on the battlefields of France, before Ypres his first poison gas attack—that abomination which violated all moral codes, and to which our enemy resorted in order to break our line by torture when he could not break it by overcoming our courage. Ypres, the gateway to the northern coast of France, was in due danger of falling before the enemy. Great Britain was threatened with starvation, the British Empire with ruin and the whole world with catastrophe. When England was in such desperate straits, when the best French division of seasoned Africans, which formed part of the fighting line, broke and retreated in torture and terror, who was it who stood fast and held the enemy back for nearly two whole days under the most appalling conditions ever experienced by any fighting force? It was the First Division of Canadian Volunteers, consisting of the Second Brigade under Brigadier Currie and the Third Brigade under Brigadier Turner. Can the old country ever forget the debt she owes to those men, or to those under General Alderson? Can we possibly forget such individual heroes as Major Knipfpatrick, who led the Fighting Tenth of Toronto, or Captain Straight, who by his courage and self-sacrifice inspired heroes to still greater efforts? In the story as written by Edward Wright we read:

'For a whole week the Canadians held the line that saved the Empire! When the main British relief came up at last by forced marches and went through the German barrage to take over the Canadian position there were scarcely more than two thousand Canadians remaining out of the old division of twelve thousand strong! The British cheered themselves hoarse as they gripped the hands of those newly made veterans whenever they got in touch with them. Canadians! Canadians! That was the British greeting when the weary, staggering, ragged two thousand went back through the German barrage to their rest billets!'

Another writer says

England has a thousand years of heroes before her eyes and she thinks of them with pride. Canada has made her great tradition suddenly! Canada has become a great nation great in territory, great in the boundless wealth of her cornfields, she only needed one thing—the glow of a great tradition.

Now I quote again from your Canadian poet, Robert Service, some lines from "The Younger Son," written before the war:

If you leave the gloom of London and you seek a distant land  
Where all except the flag is strange and new  
There's a bronzed and stalwart fellow who will grip you by the hand

And greet you with a welcome warm and true  
For he's your younger brother, the one you sent away  
Because there wasn't room for him at home  
And now he's quite contented and he's glad he didn't stay  
And he's building Britain's greatness o'er the foam

You will find him toiling, toiling in the north and in the west  
A child of nature, fearless, frank and free  
And the warmest heart that beats for you is beating in his breast

And he sends you loyal greetings o'er the sea

Then with the voice of the prophet he loses his poem with the lines

You've a brother in the army and another in the Church

One of you is a diplomatic swell

You've had the pick of everything and left him in the lurch

And yet I think he's doing very well

I'm sure his life is happy and he doesn't envy yours

I know he loves the land his pluck has won

And I fancy in the years unborn while England's fame endures

She will come to bless with pride—THE YOUNGER SON!

Gentlemen, we have come to bless with pride the Younger Son. Canada has now a great tradition. The men of Canada, the brave men of Canada, who went out into the great spaces of the earth and made them fruitful, crossed the sea to us in our hour of need and brought with them to Europe that priceless thing which lifts men to the height of heroes, and brings them very near to God. Once, at least in the great war you saved the British Empire and its Allies, and you are bound to us for ever with bonds of gratitude and affection.



## SOME MEDICAL ASPECTS OF HOLIDAYS\*

BY

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*The Need of a Holiday*

THOUGH bank holidays are comparatively modern inventions, dating from Lord Aberg's Act of 1871, holidays and saints' days are very ancient institutions, so that in Plantagenet and Tudor times the routine of labour was probably more interrupted than in the nineteenth century. But the prolonged summer holiday has now become a much more established article of faith than it was fifty or sixty years ago—long after railways made travelling comparatively easy. Many causes for this change of custom have been suggested, such as mere fashion and imitation, the increased rate and stress of living, of which each successive generation rather boastfully grumbles, and, of course, the explanation, beloved of the *laudator temporis acti*, that the present race has become degenerate and less hardy than its predecessors.

In an interesting paper in the second volume (1924) of *Reports of the St Andrews Institute for Clinical Research*, Professor P T Herring explains "the Law of Fluctuation"—namely, that the constituent units of the body tissues are constantly varying between the two conditions of complete activity and complete rest, and that this mechanism prevents undue fatigue and its bad effects—this law being a necessary sequel to that of Keith Lucas's "all or nothing" response of nerve and muscle. Further, the graded response of a muscle as a whole is due to varying numbers of its units taking part in the response. What is true of the part is, *mutatis mutandis*, true of the whole, and the new law of fluctuation expresses in physiological terms the old ideas of rhythm and alternating phases of activity and repose. The momentary systoles and diastoles of the heart, the diurnal periods of wakefulness and sleep, and the annual holiday are illustrations of the same sequence. But just as the "all or nothing" law applies to units, so do the cardiac relaxations and the night's rest concern the shorter periods of man's life. The taking of holidays or relatively prolonged periods of cessation from work is on rather a different plane and is not of universal application, for those who do no work obviously cannot, by definition, have a holiday; work and holidays are the natural complements of each other, and there should not be any workers without their holidays, it has indeed, been said that overwork is no more meritorious than overeating or any other form of excess.

It would be interesting to attempt an estimate of the value of a reasonable yearly holiday in terms of health and longevity, by comparing those who have worked hard and taken an annual holiday with those who have toiled without a real break. General impression would unhesitatingly lead to the conclusion that constant work without a proper respite for repair must favour early senility. But in marshalling the evidence from individual examples of these two classes of workers other factors must be taken into account, long and healthy life depends to a great extent on a wise selection of parents for hereditary may counteract many sins against the laws of physiological righteousness; thus, as regards longevity, the average duration of life in one of a number of persons, both of whose parents reached the age of 80, was twenty years higher than in another series in which the parents died under 60 years of age (vide Raymond Pearl!), a regular holiday may not be adopted until a warning of ill health or a nervous breakdown has made precautions imperative, and a complete life-history, especially the incidence of infectious diseases, must be available. Examples of teachers, colleagues, or others who have ordered their lives on one or other of these lines will no doubt occur to you, so I shall mention two examples only of former leaders of our profession. Sir James Paget

(1814-1899) did without a real holiday for fifteen years (1845-1860) during his hard struggle as a young surgeon-pathologist, this, of course, was long before he "learned the misery of making only £4,000 a year" (eventually he earned £10,000 for some years). He had pneumonia six times between 1851 and 1870, a severe illness from post-mortem infection in 1871, at the close of his long life became, as his philosophically recorded, less and less able to do what he would, and died with "signs of congestion of the lungs." He had the advantage of a long-lived family behind him. Sir Henry Holland (1788-1873), whose span of life was the same, early determined never to allow his income from practice to exceed £5,000 a year, and to spend two months every year in travel, this he did for nearly sixty years (1814-1873), and, like Sir Thomas Browne, died on his birthday, two days after attending the trial of Marshal Bazaine in Paris, being ill for three days in all.

It must sometimes happen that a holiday is unconsciously taken just in time to prevent a breakdown or the onset of an infection such as tuberculosis, and it would be interesting to speculate on the frequency of aborted disease. The lowered resistance which was just about to allow infection to occur is braced up by the good conditions, and infection either does not make a start, or, if it has already taken root, is nipped in the bud or becomes latent.

While fully endorsing the physical and psychical need for a holiday in others, some seniors must admit that they have lost the keen zest of their earlier days to be off for a complete change, and that they no longer count the days before its advent with the same pleasant anticipation as in the past. Age has added inertia, a clinging to the home comforts, and a dislike to face the ills they know not of in unfamiliar surroundings. They no longer have the desire

"To burst all links of habit—there to wander far away  
On from island unto island at the gateways of the day"

Such men may no doubt plead that their lives are not like those of most other medical men, not confined to monotonous routine, but varied by different forms of mental activity and their professional occupations diversified by official and public duties. In fact, like some contributors to *Who's Who*, they would subscribe "Work" as their recreation. There may be much argument in this contention from the mental point of view, but it does not provide for hygienic repair and fortification.

Some people never take a holiday and yet seem to get on well. A medical man told me that for twenty years he had never left London, except for professional reasons, and that by walking five or more miles every day he kept in good health, and I know another member of our profession whose experience is the same after ten years. These are, of course, exceptions, and their example is not without danger for the rank and file. Years ago a physician whom I found ill in town in August quoted Sir James Paget's record as a reason for his own self-denial, it certainly seemed that his early death from pneumonia, a few years later, may have been due to lowered vitality induced by following too closely in the footsteps of the great. Comparison between those who "live" and take holidays, sometimes spent at spas undergoing "cures" on the one hand, and those who take exercise but no holidays, though otherwise obeying the dictates they preach, on the other hand, might show but little difference on the whole, and so account for the apparent success of the medical man who never left London for twenty years.

The holiday requirements at different ages of life deserve some attention, the young especially when rapidly growing, need much more rest and holidays than is perhaps generally recognized, and certainly more than adults, this is a point which the harassed parent of a large family does

not in any gratefully acknowledge. It is, however, hard to find any physiological reason for the discrepancy between the length of the terms at Oxford and Cambridge and those of students in the medical schools of London. As age advances and habits gain a firmer hold, the demand for holidays becomes less obvious or at least less clamorous. But perhaps the best test as to the suitability of a holiday to the various ages is the simple therapeutic one, so to speak, and to conclude that as long as a person really enjoys a holiday, he or she is of the right age for that form of holiday.

The time of year for a holiday is for many of us largely determined by the general lull which accompanies the absence of others during August and September; it is true that the younger generation, who act as substitutes and pickers up of the rather elusive crumbs left by the absentees, go away earlier or later. But otherwise a holiday at unaccustomed times may be considered to favour of mild eccentricity or impaired health, neither of which is a recommendation or advertisement of solid worth. From the hygienic point of view there is much in favour of splitting up the annual holiday allowance into two or three parts, but each of these should be a complete holiday. Some people are slow starters and take about two weeks to get into the holiday frame of mind and body, and therefore need a more generous reaction than others.

There are the two alternatives (1) of returning year after year to the same favourite spot, which has become a second home with well proved sources of pleasure and satisfaction, and (2) of going to a new place every year so as to expand our limited knowledge of the world and to avoid the disappointment from less favourable circumstances than on the previous occasion. On general grounds it would appear that the plan of a fresh place each year is more suitable for the young and energetic, who are more able to find manifold outlets for their bursting vigour, and that those approaching "the sear, the yellow leaf" will be happier in the haven that they know suits them.

The length of a holiday, like its nature, varies with the individual, although six to eight weeks is the ideal; it may be suggested that just as the necessary hours of sleep show considerable variation, so do the holiday requirements of different individuals. Holidays may be divided into several categories, such as the complete, the partial, the educational, the therapeutic, and the failures. The conception of holidays includes two rather different aspects, which, however, overlap—first, that of recreation, and secondly, that of rest and repair.

1 Recreation consists in change, distraction, and activity of a pleasant nature in a direction other than that of ordinary routine life. It is mainly a psychological remedy, as shown by the good effect of switching off from one line of work to another, thus relieving one part of the mind while healthily exercising another, and possibly, though here we are on rather uncertain ground, exerting a beneficial influence on the corresponding areas of the subconscious. As Sir James Paget<sup>1</sup> pointed out, there is a remarkable contrast between man and other animals in the matter of recreation—for except in the case of young animals, man alone refreshes himself by seeking fresh forms of activity.

The methods of recreation are various: it may be intellectual or physical, indoor or outdoor, and must vary with the individual's temperament and tastes. Although recreation essentially produces a mental rather than a physical change, it may be effected by physical means; thus it is perhaps most rapidly attained by fast or active motion—for example, running, riding, motoring, or flying, though the last is a more or less intelligent anticipation of what will probably hold good for the future, walking, which, at any rate in streets, does not exclude the companionship of black cabs, is therefore far inferior to bicycling or lawn tennis. As a complete change from the strain of life, medical men not uncommonly seek a holiday in stinking, shooting, or fishing, while others, tired of percussing the chest, obtain relief in driving golf balls over or even into bunkers. "A doctor's holiday" was the subject of the late Dr. W. M. Ord's oration to the Medical Society of London in 1884, in which, while admitting a

diversity of tastes, he inclined, apparently from his own hobbies, to the distractions provided by natural history or literature. But though it would be attractive to formulate the most suitable forms of distraction for the various professions and vocations, it is probably wiser to be content with the conclusion that it should be so different from ordinary life that the individual forgets his occupation and habits in becoming a natural man. A sedentary worker's recreation should be muscular exercise in which the mental processes, though no longer the sole form of activity, are in quite a different line, exercise is therefore a specially valuable form of recreation, as it influences both the body and the mind. In a rather analogous sense reading or writing as a form of recreation for the manual worker, while altering the mental outlook, also provides bodily rest, but it should be noted that the total physical benefit must vary according as an open air worker rests in clean air or in a contaminated atmosphere, such as that of a cinema or concert hall, or, again, according as a worker in a badly ventilated workshop takes his time off in a garden or in a stuffy room. On the other hand, an intellectual worker who seeks recreation in bridge or the theatre is thus benefiting his mind without any accompanying physical advantage. An important factor in recreation is the faculty of keeping thought-tight compartments in the mind whereby attention can at once and completely be switched off from one subject to another—a faculty said to have been possessed by Gladstone and Kitchener. Recreation is of course fully recognized in the ordinary working life of everyone, and the degree to which it is put into practice no doubt has a bearing on the need for a prolonged holiday; some maniaacs have more will than recreation, and vice versa, and, other things being equal, the need for prolonged holiday will vary directly.

2 The factor of rest and repair is part of the rhythm of life—as shown in the frequent distoles of the heart and the night's sleep, but a holiday differs from these in being at much longer and often irregular intervals, and in being under the control of the individual's discretion or indiscretion. What should be, but is not invariably, a form of holiday occurring at short and regular intervals—one day in seven days holiday—is the weekly Sabbath ordained in the Scriptures which has been expanded into the modern week-end habit, thus enabling the conscientious week-ender to obtain 104 days of freedom during the 365 days or the year. A well arranged week-end habit may thus to some extent obviate a prolonged holiday of six to eight weeks in the year, in the now far-off eighties a friend of mine, who was often chided on account of his rather frequent disappearance from the hospital where he was house surgeon, retorted "It is all very fine for you to laugh at me, but I keep fit, whereas you get knocked up and then have to be away for two or three weeks." But the week-end is more often a diversion or distraction than a rest, and sometimes, though a change, is not devoid of fatigue. It is perhaps only a natural outcome of the cry of "the wear and tear of modern life" that the *Daily Mail* some years ago made the suggestion that if one day a week were spent in bed, the medical profession would have much less to do than is at present necessary. A few people indeed begin the regular summer holiday by going to bed for a week, but usually these are neurosisthenics and are or think that they are, on the verge of a breakdown when the date of their annual holiday comes round.

The rest factor in a holiday, ordinarily so called, nearly always concerns mental rather than physical activity—in fact increased exercise is usually recognized as an essential feature of holidays. An important point is to secure complete change of environment and mental atmosphere, to get away from him- or herself, to pass a sponge over the mental slate and so wash off the dust and irritants of ordinary existence; for this reason a holiday at home has distinct drawbacks. As a first step it may be necessary to have a cessation of activity before passing from one state of life to another however different, but this again had better, because more easily, be taken away from rather than at home.

In order to secure a more complete change of mental atmosphere there is much to be said for a holiday apart

from the family or usual associates, at any rate in the case of some persons. Sir Henry Holland, who probably got the most possible out of his long life, though he was not an epoch-making pioneer in medical science, went abroad alone yearly for two months during fifty years, and depended for social intercourse on chance meetings on his journey. Respite from soul-destroying routine and worry should be continuous and complete during the holiday, but often men who obey the call for fresh air, change of scene, and exercise, keep in touch with their profession or business while staying in this country. Again, men who live most of the year in town for the sake of their work may take a house in the country for the holiday months of August and September, and come to town once or twice a week to keep an eye on their work, they thus slack off but do not leave off their usual routine, while getting more into the fresh air, but they do not get an entirely new mental atmosphere—they change their physical but not their psychical environment, in fact, such a holiday is partial instead of being complete, it is more like a glorified and oft-repeated week-end and approaches the life of a stockbroker who lives at Brighton and comes up to Change so many days a week. The physical health may benefit, but the mental groove is still between the same lines. There is therefore an advantage in taking holidays abroad, where calls, consultations, and certificates are not so likely to reach their intended recipient and as a rule correspondents cease from troubling. Much wisdom lurks in the interesting announcement in the social columns of the press that "Mr. and Mrs. Chamber-Brown have gone abroad, and letters will not be forwarded." Foreign travel also involves a more complete change of scene and of mental attitude, whereby the individual loses sight of self among the innumerable new objects of interest, in spite of Horace's dictum, "Coelum non animus mutant qui trans mare eurrunt." A sea voyage has similar advantages, and further secures more isolation, which, however, is now not quite so complete as in the pre wireless days. In addition it has the virtue of enforcing rest, which may not be an accompaniment of foreign travel and the itch to see as many capitals, pictures, views, and sights in the least possible time. Such a Continental scramble may, indeed, leave the traveller with an indigestion of impressions and ideas, and more fatigued in body than when he started out, so that he really requires a lotus-eater's rest on his home coming. A holiday abroad has, of course, a wide application as an education, and its value may be augmented by careful preparation in acquiring a knowledge of the country, its history and its language, it thus forms what might be classified as the educational holiday.

#### *The Educational and Utilitarian Holiday*

While the health-bringing influence of a holiday depends on fresh air, sun, and change of environment, the good effects on the mind are due to occupation in new directions—such as natural history, science, literature, art, and archaeology. A holiday may therefore promote general culture and broader interests, and thus initiate a hobby, and so prove a valuable asset by providing recreation for the remainder of the year. This, indeed, is particularly true with regard to holidays spent abroad, with a foreign language, scenery, architecture, and manners to stimulate the visitor. Reference may be made to the question whether, as medical men, we should, when passing through great medical centres, be better advised to avoid a return, even for a short space to a professional atmosphere, or whether we should be wise to take an opportunity of widening our knowledge and sympathies by visiting the medical school and seeing the buildings, laboratories, libraries, clinics, hospital facilities, and the prominent professors and teachers. Acquaintance thus made with places, personalities, and ideas will help to correct the all too common tendency to insularity and a narrow outlook which unconsciously grows and gains on us with the passing years. Though to do so is certainly open to the condemnation of its resemblance to a business man's holiday, there is a distinct difference between a flying visit to a medical school while happening to pass through a large town and on the other hand, going abroad to do a definite piece of work.

Does not the benefit obtained from such an incidental visit more than counterbalance any drawbacks due to its shoddy character? Medical congresses abroad may be regarded as in much the same category as the passing visit to a medical centre, for though professional in name the general atmosphere is in reality much of the holiday picnic, they are a means of obtaining a welcome change of surroundings and combining a medium of work with pleasant travel and the opportunity of making fresh friends.

#### *Holiday Failures*

Indian natives who have sailed for but not succeeded in obtaining a B A degree sometimes advertise themselves as "failed B As," and in like manner there are holidays that fail, though they are not correspondingly a matter for boasting. A man may go away to the seaside and uncomfortable lodgings to be cramped up with his family, whose healthy noise and motousness—especially when, as in some Augusts, "the moon is smiling every day"—gets on his nerves the whole time, and from which he has no excuse, such as his work or real diversion, to justify his escape. In this plight a man may count the days to his release from the discomforts and boredom of a so-called holiday. A holiday without his family is sometimes the best for a man of the irritable genius type. As regards physical health, the conditions at home may be superior or inferior to those encountered on a holiday, especially abroad, and the adverse conditions when away may be little more than counteracted by the increased amount of time spent in the open air and healthy exercise.

The most serious failure is that of the perpetual holiday often anticipated vaguely without any thought, much less realization, of its actual contingencies throughout a strenuous career, a successful business man retires or a professional man is placed on the shelf by the age limit, and what does he find? Unless blessed with wide interests or mercifully aimed with some engrossing hobbies, the long-expected fruit of delight may turn to ashes on his lips, and he experiences what Bernard Shaw calls "the horror of the perpetual holiday", he will then itch for real work, and even go so far as to return in a subordinate position in his own business, or, if no deliverance in the form of public work comes to the rescue, proceeds to deteriorate both in body and mind.

An aspect of holidays that should be mentioned with due circumspection is the effect on some members of the family of the holidays of other members. In probably not very rare instances parents suffer from the strain entailed by the holidays and proper entertainment of their children, a quiet, orderly household, with plenty of elbow room for those of mature years, suddenly becomes crowded with exuberant youth, full of restless energy and not unaccompanied by audible signs of exuberant enjoyment or excessive expostulation. The middle-aged, already "set" in their habits and somewhat intolerant of noise, often find it hard, though it is undoubtedly salutary, to become young, and when there are extraneous sources of anxiety may abandon any such attempt and be left with nerves jangled and irritable.

#### *Diseases due to Holidays*

Although a thorough change is an essential part of a complete holiday, there are possible abuses in the method of making this change, and from the practical, not from the cynical, point of view, a few remarks may be devoted to 'the diseases due to holidays'. They may be divided into (1) those occurring during absence from home, and definitely due to the unusual conditions and manner of life, (2) those arising after the holiday, but traceable to its conditions or influence.

1. It is unnecessary to discuss constipation due to interrupted habits caused by the exigencies of travel, food poisoning resulting from experiments in unaccustomed articles of diet, water-borne diseases, such as enteric fever, or other endemic infections, such as malaria and Malta fever, except to intimate that due precautions should be taken with regard to diet and the choice of the foreign resort and to local conditions at the time of the visit, such as the endemic prevalence of influenza, of enteric fever—

which obviously suggests T A B vaccination before leaving home—the presence of mosquitos and of endemic malaria. Just as I was revising this paper I came on an article by V. Y. in the *New Statesman* (1925, vol. 529) entitled "DANGER!" and beginning, "Holidays are for the robust," and humorously exaggerating the risks. Accidents such as sprains do not need any reference, but the risk of cardiovascular strain must not be forgotten. Thus a middle-aged man after ten months or more of sedentary life suddenly, without any training, launches out into active exercise such as he was accustomed to take thirty years ago, for example, he at once starts climbing in the Alps, and may come seriously to grief by dilating his heart. Unwanted sea-bathing and swimming may prove too much for a man whose heart and arteries have insidiously undergone the changes of arteriosclerosis. Some of the bathing fatalities ascribed to cramp may really be angina pectoris.

2. *Diseases arising after the Holiday but traceable to its influence*—A drawback to travelling, especially for long distances abroad, is the risk of picking up infection—flu, influenza, catarrhal, or tonsillar—from railway carriages and sleeping cars. It is disappointing after an invigorating holiday, such as at a Swiss winter resort, to develop a cold or sore throat directly after return, and thus to realize that much of at least the physical benefit of the change has been neutralized. This is therefore an argument for motoring abroad, provided the weather is suitable, in preference to railway trains.

Another occasional sequence to a holiday is that the acquired immunity, due to unconscious intermittent vaccination with the micro-organisms of dirt, catarrhis, lapses in the pure air of a holiday, and that a cold or sore throat asserts its right to afflict the holiday-maker so soon after his return that the sunburn on his face has not as yet vanished, if the explanation of the lapse of acquired immunity is correct, it would be natural to expect that a long holiday would be more likely than a short one to be followed by this mishap. It has been thought that those engaged in *post-nortem* work are more prone after a holiday than at other times to become infected and suffer from boils or sores. Sir James Paget<sup>1</sup> held this view, and in writing on a surgeon's freedom from infection while daily exposed to pus and his susceptibility when no longer thus protected, quotes E. Symes Thompson's<sup>2</sup> experience that while engaged in doing necropsies he escaped infection, but on returning from a holiday to this work a scratch on his finger was followed by severe illness.

#### Advice to Patients

Where, when, and how to take a holiday to the best advantage is a subject on which most people feel that, as on a number of other subjects, they are authorities, and are more inclined to impart than to follow advice. Though medical help is commonly sought as to the best place to undergo a cure for some morbid condition or tendency, and a holiday or rest from their labours is often prescribed by medical practitioners as an essential of treatment, ordinary persons seldom take expert opinion about their holidays, except from travelling agencies. The healthy boy or young man regards a holiday as merely a return to a state of freedom from the toil and the restrictions of civilized and artificial life, and would consider it absurd to dream of taking advice or of making any special preparations for a return to a state of natural and simple existence. But however it may be with them, their elders would often gain by adopting the humble course of asking advice.

National health is attracting ever-increasing attention, and many improved methods have been instituted among the directions in which a useful advance might possibly be made is the more careful choice and arrangements for holiday-making. Those seeking advice should be impressed with the really serious importance of selecting the right kind of holiday and place, and further with the need for self-education in arriving at a proper decision. Just like any other course of action in life, a satisfactory holiday demands some trouble, though it might be urged that some of those who are in the position of advisers in this matter are themselves cranks and should practise in conformity with their preaching. The ordinary healthy person leaves the selection

of the place of his yearly holiday largely to chance, whereas skilled medical advice might effect a good deal in obviating failure in holidays. A sedentary worker often suddenly starts on active exercise at the very beginning of the holiday without any preparation in the way of training the heart and muscles for the increased strain thrown upon them. In the young there is so much reserve power that real harm seldom results from such rapid transition from solely intellectual to mainly physical activity, though not uncommonly after a holiday full of unwonted exertion there is on returning to work a feeling of lowness and fatigue which takes a week or so to wear off. It need hardly be mentioned that after an infection, such as influenza, a young patient must be cautioned against starting active exercise with too much enthusiasm, on account of the risk of myocardial strain. But as the years glide by and middle age becomes established, the margin of reserve narrows, and the holiday-maker is surprised to find himself suddenly pulled up by cardiac pain or distress on returning to the athletic habits of his youth. The risk of such an unpleasant experience should certainly be minimized by advice based on a medical stocktaking directed to consideration of the state of the blood pressure, heart, and arteries. A holiday should not be regarded in the light of an incident, such as an evening party, which can be embarked on without some measures of preparation, some time before setting off for a climbing expedition in Switzerland or stalling in Scotland, a course of walking, hopping, skipping, or training for the muscular and cardiovascular systems should be undertaken. Further, the week-ends might be utilized as trial trips. By such a course of training the risks of sudden strain should be eliminated. Patients with anaemia should be cautioned against taking much exercise, for clinically the importance of rest in bed for patients with grave anaemia is well recognized, and experimentally G. O. Brown found that after a long period of sedentary existence in cages, in which presumably little blood was being destroyed and made, dogs then exercised vigorously for several days showed temporarily a great decrease in the circulating haemoglobin and red blood corpuscles from increased mechanical haemolysis, the compensatory function of the bone marrow being caught napping. In dogs previously exercised, as in human athletes during training, no such anaemia results, and the general experience is that after short periods of exercise the haemoglobin and the red count are raised. In recommending a holiday to another attention must be directed to the physical condition and power, temperament, inclinations, and hobbies, and for successful advice personal knowledge of the individual and of places counts for much, for in unaccustomed holiday would be worse than useless. The worries attendant on a long journey, with the rush of getting off and the care of children and luggage, may be minimized if the anxious mother and the irritable father take a sedative dose of bromide to render them philosophic, cheerful, and less prone to a train headache.

Holidays are often taken at spas, and here the physical benefit which results, or should result, from the "cures" for some bodily disease or disorder, may be impeded or modified by the boredom and dislike of the place chosen by high authority for his victim. Therefore, in considering the course of action, the mental as well as the physical factors should be taken into account. The experienced knowledge of practitioners who, like the late Sir Hermann Weber, specialize in hyrology, climatology, and balneology, is a valuable supplement to the particular knowledge of the individual possessed by his medical attendant. A dance of over-fatigue and of overfeeding, which the stimulating air and interest may excite, should be insisted upon.

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## A Lecture

ON

## THE PSYCHOLOGY OF ANIMALS SWALLOWED ALIVE.

DELIVERED AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND ON JUNE 5TH

BY

SIR JOHN BLAND SUTTON, Bt.,

PRESIDENT

Many discoveries and observations made by naturalists are of little interest to the public but animal psychology and vagaries of the human mind are interesting to all

When sitting in quiet contemplation digesting after dinner, with beneficent microbes hard at work within me, I sometimes wonder if animals who swallow their prey alive are worried by the aerobiotic efforts of victims trying to escape

The same idea must have occurred to many boys after reading the curious experience of Jonah, swallowed alive by a big fish and subsequently vomited upon the shore for his adventure. In Matthew's Gospel the creature that swallowed Jonah is called a whale. Matthew may have

been a good evangelist but not a naturalist. This is not surprising, for he was a customs officer under Herod the Tetrarch. There is a tradition that Jonah was the son of the widow of Zephath, Eliah restored him to life, and delivered him to his mother, saying, See, thy son liveth.

The story of Jonah and the whale has been the source of many quips. There is a misericorde in the stalls of Ripon Cathedral representing the prophet in the act of being swallowed by a whale—the mouth of the beast is well furnished with teeth—and another representing him emerging from the mouth of the whale (Fig 1). The verger supplies this pun. When Jonah felt himself in the power of the whale, he was down in the mouth and felt he was going to blubber!

The open mouth of a big whale may measure 20 ft in length, 15 ft in height, and 9 ft in width. Such a chamber would easily accommodate twenty Jonahs standing upright.

Many believe that the story of Jonah and the whale stands by itself, but the *Boston Post Boy*, October 14th, 1771, reports upon undoubted authority that an Edgartown whaling vessel, after striking a whale, had one of her boats bitten in two by the whale, and Marshall Jenkins, one of the crew, had been taken into the mouth of the whale, which had then smelt with him. On returning to the surface, the whale had ejected him on to the wreckage of the broken boat, much bruised but not seriously injured. The whale concerned in this exploit must have been a big sperm whale.

In old pictures representing the Jonah Miraculous the creature which swallowed the prophet is usually a whale with teeth, but among the beautiful stained glass windows in the Church of St John at Gouda there is one in which Jonah is shown full and immaculately clothed, walking out of the mouth of a huge cod-fish.

Sharks

Sharks are well known as formidable tyrants of the ocean, and their voracity is almost beyond belief, and sometimes ends in their own destruction.

The diodon, a curious fish not uncommon in tropical seas, is furnished with strong teeth which enable it to break off and crunch hundreds of coral on which it feeds, and its skin is beset with sharp spines. This fish has the power of inflating itself until it assumes the shape and size of a big bill, when inflated, the spines stand out like the quills of a porcupine, hence the popular name of the diodon is porcupine fish.

Durbin, in 1832, was on the *Beagle* in the South Atlantic when he became acquainted with this curious fish. On the authority of Dr Allan of Lorient, he states that big sharks swallow the porcupine fish, and has frequently found

it floating alive and distended in the stomach of a shark. On one occasion a porcupine fish swallowed by a shark had eaten its way out not only through the coats of the stomach, but through the walls of the body, and thus destroyed its captor. Darwin asks, Who would ever have imagined that a little soft fish could have destroyed the great and savage shark? The diodon inflates itself with air and water, which it expels with some force when it deflates. The jets of water must cause some curious ticklings to a shark with a lively diodon in its stomach!

No one need be sceptical in regard to a shark's ability to swallow a porcupine fish, or of difficulty in accommodating the fish when it reaches the stomach. Some idea of the gastric capacity of a shark may be gathered from the following evidence. Sir William Turner dissected a Greenland shark (*Lacnæus borealis*) nearly 12 ft long. Its voraciousness was revealed by the contents of the stomach: one cod fish and two salmon averaging 3 ft in length, nine haddock, a small skate, the carcass of a small porpoise without its head, and bits of blubber.

A remarkable example of the voracity of the tiger shark was reported by F. A. Mitchell-Hedges. A party of explorers, engaged in deep sea research in the Caribbean Sea, killed one of these ocean tyrants. This shark measured 17 ft in length, 9 ft in circumference, and weighed nearly 2,000 lb. Its stomach contained eighteen deep sea eel-fishes (21 in length), each weighing between 4 and 5 lb. Every one had been swallowed whole. It seems a vicious taste on the part of the shark to swallow these extraordinary creatures. They resemble animated coal-scuttles. The fish in this case is called a tiger-shark, not on account of fierceness or

rapacity, but for the mottled appearance of its skin. Lockwood, an American naturalist, studied the habits of king eels in 1870. In New Jersey they are used for feeding ponies and hogs, female eels are preferred. A female king eel may contain half a pint of eggs, they are like mustard seed, but of an ash green line. There is a belief that this diet makes poultry lay, fattens

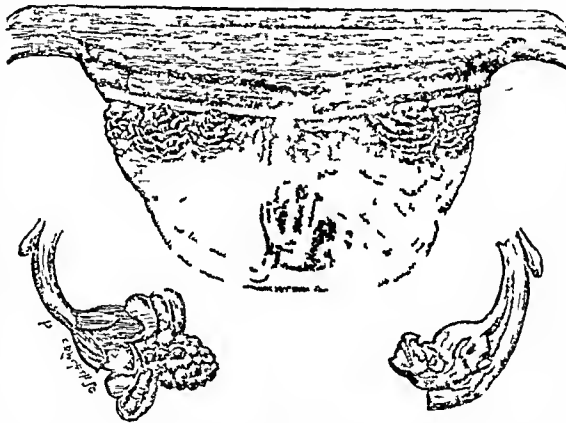


FIG 1—Miserere in the stalls of Ripon Cathedral representing Jonah emerging from the mouth of a whale

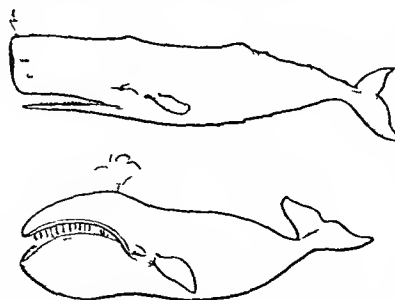


FIG 2—Sperm whale and whalebone whale in outline to show the peculiarities of their heads (F. B. Hart)



fowls and hogs, but gives a shocking flavour to the flesh of both.

Things more curious than fishes are sometimes found in the stomach of a shark. In 1779 Michael Fitton, in charge of the tender of H.M.S. *Iberigenny*, cruising off

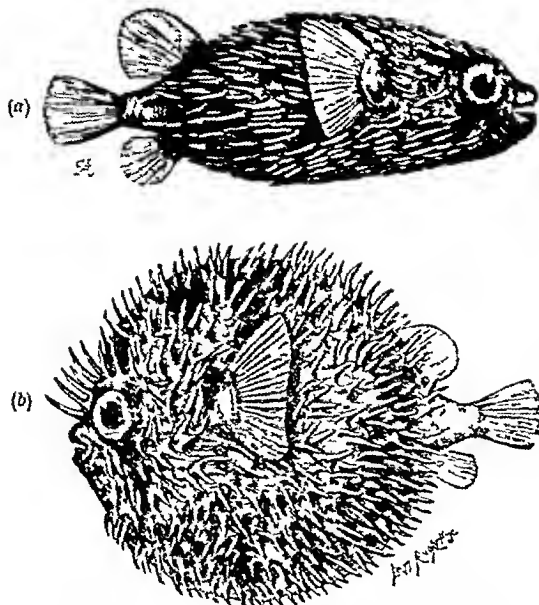


FIG. 3.—Showing porcupine fish (a) deflated and (b) inflated. When inflated it is as big as a coco-nut. (Günther)

St. Domingo, caught a large shark, which was hoisted on board the tender. Some seamen cut the head off the fish and cleaned the jaws, and others opened its maw, it contained "a parcel of papers tied up with string." The letters were of recent date, and Fitton had them dried on deck and read them. One of the letters related to a brig called the *Nancy*, which had been seized as a prize. The captain and the crew of the *Nancy* were tried and convicted with the aid of this letter in the Old Court House, Kingston. How this packet got into such a curious post-box is a matter for conjecture.

Lat and be eaten is the rule among fishes in the sea. Fishes not only eat each other but even their own off-

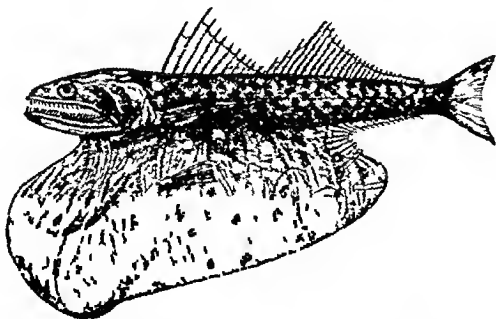


FIG. 4.—The black swallower (*Chasmodon nigrum*) a deep sea fish which swallowed a fish larger than itself. Half natural size. (Natural History Museum)

spring, and a few are so ravenous that they attack and swallow fishes bigger than themselves. The black-swallower (*Chasmodon nigrum*) lives at a great depth in the Atlantic Ocean, below 1,000 fathoms. There is an example in the Natural History Museum which was dredged at 1,500 fathoms, and it contains a dead fish bigger than itself (Fig. 4). The captured fish was clearly discernible through the tightly stretched belly when the fish came to hand. The black-swallower is clearly allied to cod-fishes, which are cannibalous, and is sometimes found floating dead on the surface of the ocean with a fish in its stomach. When a fish has been swallowed in such circumstances decompo-

sition outstrips digestion, and the generated gases cause the fish to rise so rapidly from the depths of the ocean that it is killed and floats on the surface. This may be regarded as a good example of post-mortem revenge.

#### In Ocean Crime

Most of the deep-sea fishes are pale green or blue when caught, but they turn rapidly black. Some are colourless and gelatinous, a few are silvery. In museums they are usually represented by models and these are usually black but their characters are blacker. The example of the

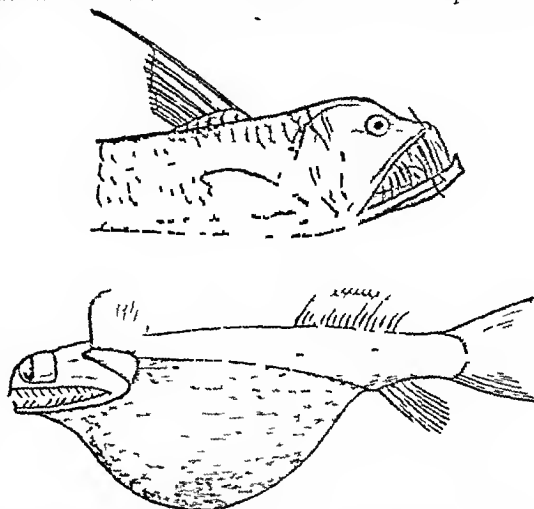


FIG. 5.—*Gigantura rostrata* 80 mm. long with a *Chaulichodus* 1-2 mm. long in its stomach (C. T. Pagan) and the head of *Chaulichodus* to show its teeth.

black-swallower has been in a measure eclipsed by an exploit of a deep-sea fish, *Gigantura* (Fig. 5) obtained in the Atlantic by the Dana Expedition (1920-22), and carefully described by Mr. C. Tate Regan. This fish lives at a depth of 500 metres. Its eyes are telescopic closely packed together, and directed forwards. It has a formidable dental armature—the teeth are slender, sharp, and depressible. In each jaw a pair of anterior canines directed forward are followed by a series of strong spaced teeth, with smaller teeth between them. The fish is precocious, and has a very capricious stomach. It is probably a lurking fish that steals upon its prey, aided by powers of vision beyond the ordinary.

In the "Dana" specimen the fish was 80 mm. long but neatly picked in its stomach there was a deep-sea fish, *Chaulichodus*, 140 mm. in length. *Chaulichodus* has a formidable dentition, and the *Gigantura* must have been desperately hungry to attack a fish twice its length and formidably armed with teeth. After an examination of the body of

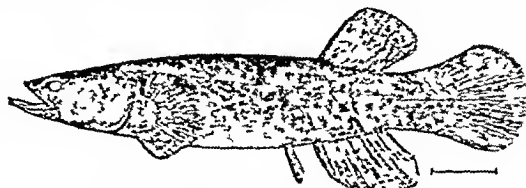


FIG. 6.—The black fish (*Dallia pretorialis*) a fish found in Alaska its vitality is astonishing. (Turner)

the victim, Regan reconstructs the crime in this way. The *Chaulichodus* was seized by the middle, and was swallowed double until it reached the posterior end of the stomach when its head and tail still protruded from the mouth of its captor. These were then taken in and bent back until the whole fish, now doubly folded, was in the stomach of *Gigantura*. Digestion affected the part first swallowed where the fish has quite disappeared, exposing the vertebral column for a length of 18 mm. It seems horrible to be slowly digested alive!

The pike is the most voracious of freshwater fishes and consumes large quantities of food. Big pike will seize

rats, voles, and it is said they attack foxes and small dogs. They gorge each other occasionally with extreme thoughtlessness for their own safety. In 1880 Dr. Burton supplied Buckland with the following story: A boy saw in the Tweed near Kelso what he thought was a fish with a tail at each end of its body. He caught it and was astonished to find two pike, one of which was trying to gorge the other. They were alive, and he put them into a tub of water and parted them. As soon as they were separated the larger pike attempted to gorge the smaller. One weighed 3½ lb., the other 2½ lb. (Fig. 8).

Fishes are sometimes careful in what they attempt to swallow—probably from experience. A John Doiv, living in an aquarium with some fifteen spined sticklebacks, was foolish enough to swallow one. He swam around squirming as if he had gripes. After two minutes he vomited the spiny little fish, which seemed none the worse for its adventure and went back to the weeds apparently as unconcerned as if he had not been disturbed. Kingfishers are fond of the little fishes known as bull-heads, or miller's thumbs, but they are cautious in selecting their prey, for the big pectoral fins of these fishes may stick in their gullets. This is another form of retaliation. In musing on such events I think most will agree with Shakespeare:

The sense of death is most in apprehension,  
And the poor beetle that we tread upon,  
In corporal sufferance feels a pang  
As great as when a giant dies.

A live fish in an animal's stomach must cause some discomfort.

The black-fish (*Dallia pectoralis*, Fig. 6), discovered by L. M. Turner, lives in the sphagnum ponds and swamps of Alaska. These fishes exist in enormous numbers and are the chief food of the natives; they are caught in specially made baskets. Between May and December many tons of these fishes are taken to the villages as they are exposed to severe temperatures and cold wind. The mass of fish in each basket is frozen in a few minutes. When required they are chopped out with an axe. The vitality of these fishes is astonishing. They will remain in the grass baskets for weeks and then brought into the house and thawed out. They are quite lively. Dogs swallow them eagerly. The heat of the dog's stomach thaws the fish, and the movements of the revived fish soon cause the dog

to vomit it alive. The fish seems to be a long-suffering creature. What of the dog? We may say of our friend:

—He got rid of an ill-considered meal in a sagacious manner. Several varieties of our freshwater fishes bury themselves in the mud during the winter months. This is also true of frogs and toads, but they are not frozen.

In tropical countries some fishes bury themselves in the mud during the dry season. This summer aestivation is well illustrated by the mud fish of Uganda. The mud fish (*Protopterus*) abounds in the marshes around the Victoria Nyanza; it is a curious creature, and breathes by lungs and gills. This fish is eel-like in shape, and may attain a length of six feet. It is rapacious on worms, frogs, crustaceans, and its own kind. The cannibalistic instinct is so great that it is difficult to keep mud fishes in an aquarium, for they eat each other. In the hot season the marshes in which these fish live dry up, to meet this change they burrow into the mud, coil up at the bottom of the burrow, and surround themselves with a capsule of mucus secreted by the skin glands (Fig. 7). Sequestered in this way the fish breathe entirely by their lungs, half the year, and remain secluded in the marshes until the return of the rain. When the

mud fish adjusts itself to the cocoon, the flask-like cavity which contains it is closed by a perforated lid, the margin of the hole forms a funnel which leads to the lips of the fish. If a straw be gently passed down the funnel it will if alive utter a cry. The fish is so completely encased that it

may be dug up and transported anywhere. The Baganda call the mud fish, some natives regard it as a delicacy and keep it as a provision in elod. Some years ago a mud fish was brought in a elod to the Zoological Gardens, where it was released, and lived and thrived for three years.

#### Snakes and Frogs

As a rule people dislike snakes, but some snakes are harmless and can be easily tamed and allow themselves to be handled. Some snakes become affectionate in captivity but most are morose. Even a cobra may become a pet as in the case of the albino cobra caught by Mr. J. C. Roberts of Delhi. Albino snakes are rare, and in this instance Mr. Roberts is very

attached to this cobra, carrying it about everywhere with him and allowing it to careen him. The dislike to snakes may be in part due to the influence the

Barrow

Funnel  
Mouth

Tail

Cocoon

Pectoral  
limb

Clod

FIG. 7—Mud fish torpid in its elod. (After Fox Parker.)



FIG. 8—Pike occasionally attempt to gorge each other with extreme thoughtlessness for their own safety.

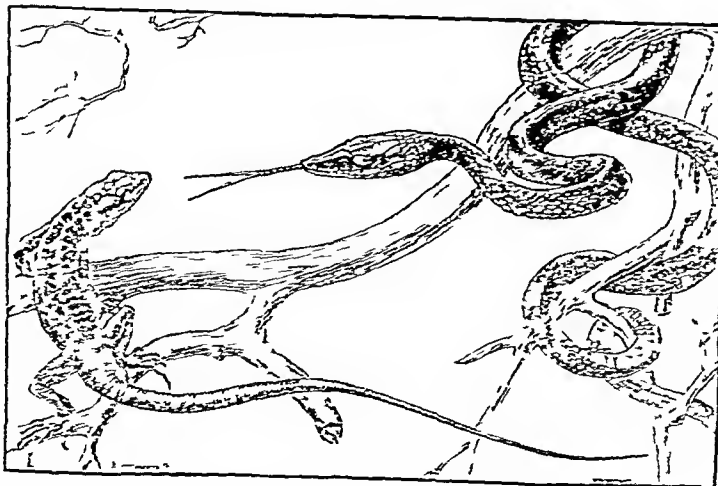


FIG. 9—Silver tree snake swallowing a lizard.

serpent creased over his. The serpent in this instance must have been a tree-snake, because in Milton's description it climbed the apple-tree. It was a snake that

'Led his credulous mother, to the Tree  
Of prohibition root of all our woe'

Snakes, especially cobras, are prominent in the Hindu Pantheon. There are many snake tales in Hindu religious writings, and Lama stories in which a prince accidentally swallows a snake which lives on his vitals.

It is impossible to comprehend reptilian psychology, Joan Procter has described a curious instance of a silver tree-snake fixating a lizard (Fig 9). The tongue of this snake is coloured in the same style as its head when the tongue is protruded through the rostral notch, with the lips closed, it appears to be a continuation of the snake's snout. She has seen a lizard watching the hovering tongue in perplexity, quite engrossed, and the snake staring at close range without stirring the usually swift and cautious prey. Miss Procter describes the effect of this "pulling faces" as really most arresting to witness.

It is easy to prove that the prey of constricting snakes are frequently swallowed alive and survive delivery by human agency.

Rudyard Kipling supplied me with the following incident. At Bateman's, in the county of Sussex, the gardener found a grass snake with a bulge in the belly, and promptly lapped off the snake's head, slit open its belly, and with a little help "a frog slid out head first, but alive." Rain was plentifully lubricated with silver, and on the ramp there were rails of two fangs. Otherwise no damage. The frog emitted a low croak as it was returned to a proper home among the lilies in the pond.

John Roscoe, missionary and ethnologist, while travelling from Uganda to Gondokoro, came across a snake engaged in swallowing a big frog. It was curious to watch the frog struggling to make its way down the snake's gullet, evidently thinking this the way of escape. A native killed the snake. Roscoe opened it and released the frog which sat blinking as though astonished to see the light again, and then jumped among the grass.

Tree-frogs are favourite food of snakes. They have pads on the ends of their fingers and toes. The skin covering the pads contains glands which secrete an adhesive fluid which enables the frog to stick on a slippery surface such as a leaf, they adhere as much by the belly as by their digits. Tree-frogs can jump, when the artist was engaged sketching the frog (Fig 10) he suddenly missed it and began hunting around. In despair he sat down and looked at the drawing. Suddenly he was astonished to hear "Eep, eep, eep," close to his ear, and felt something cold on his neck. To his astonishment the frog was sitting on his shoulder croaking agreeably and—criticizing the drawing!

Gardow, whose interest in amphibians and reptiles leads him to keep and tame frogs and snakes, considers the grass frog "a jolly and intelligent fellow."

We know little, and can only surmise in relation to reptile psychology, but I have heard of a psychologist who made an excellent use of a frog in the following circumstances.

A thin and foolish woman believed she had accidentally swallowed a frog and that her thinness was due to the frog eating the food in her stomach. In order to dispel the illusion the doctor gave the patient an emetic and during the vomiting he slipped a small frog into the basin. When the patient saw the frog her joy was great, but in a few minutes her depression returned. "Oh!" she exclaimed,

"I am sure this frog has left some young creature in my stomach." The doctor looked wise, pulled out his magnifying glass, and after critically examining the frog said unto the patient, "Fear not this frog has not left any froglet inside you. Behold, it is a male!" The patient was quite satisfied, became happy and in a few months was pained again. She was not a naturalist, and therefore ignorant of the fact that it is difficult to tell the sex of frogs by mere inspection except at the breeding season.

Miss Kingsley knew a witch doctor at Kincongo West Africa, who treated bewitched persons, and was successful in removing the witch with rubbings and an emetic. In the vomit he always found several lucky young crocodiles. Magic and mystery worthy of a conjurer!

#### Snake swallowing Snake

Deglutition in snakes is a remarkable process. These reptiles are carnivorous and as a rule take living prey. Many swallow the victim alive, some kill by constriction. Poisonous snakes kill small mammals, birds, and fishes almost instantaneously and swallow the prey at leisure. The progress of deglutition is often slow and laborious, and can be watched in a menagerie. A python twenty feet long can swallow a goat or a pig. In some countries (Congo Territory) when the natives find a python gorged with a pig they kill the python, release the pig, and then eat both the python and the pig.

In reptile houses the fondness of snakes for frogs is cleverly utilized. The king cobra eats snakes and disdains frogs. In England it is difficult to obtain grass snakes in winter; the keeper gives the grass snake a frog and then passes the frog-containing snake to the king cobra, who thus gets the captive frog as well as the snake. Even snakes can be tamed.

Cannibalism signifies the eating of human flesh by human beings; the term "cannibal" is often applied to animals which eat their own species. It is true that snakes swallow snake sometimes accidentally, sometimes intentionally. It occasionally happens in menageries that two snakes fasten on the prey and as neither is willing to let go its hold the stronger will engulf the prey and the snake which clings to it. Thus, in the well known case reported by Brittle, a big box eleven feet in length

fastened on a pigeon, a companion box nine feet in length also fastened on the pigeon. In the course of a night the larger box swallowed the pigeon and the box, and, what is more remarkable, it not only digested them but survived and twenty-eight days later took a pigeon. This was clearly an example of unintentional snake cannibalism.

The king-snakes (*Ophibolus*) common in the United States, Mexico, and Central America, are recognized cannibals. These pretty constricting snakes may attain a length of six feet; they are mild and inoffensive to man, allow themselves to be handled, and learn to recognize their keepers, and feed from their hands.

The king-snake is named from the fact that it is immune to snake poison, this reptile eats birds, lizards, and small mammals but prefers snakes, and even poisonous snakes. It is said that king-snakes will eat eels, probably mistaking them for snakes. They eat their own species. When animals are given them for food they get excited, and when several king-snakes live in the same compartment they are apt to attack and swallow each other. The liability to such accidents is well known, so that when king snakes, living in company, are supplied with frogs and mice, the keeper looks after them, because, if two snakes seize on the same prey,



FIG. 10.—Tree frog (*Hyla blanchetii*, Procter) showing pads on the tips of the fingers and toes. The first finger slightly longer than the second is used as a thumb in life.

## DIFFICULTIES IN THE DIAGNOSIS OF LEUKAEMIA

the stronger snake may, and probably will, engulf his opponent as well as the rat. It has happened that when a boa has engulfed a companion, the keepers have succeeded in withdrawing it by steady traction on their tails. Snakes have not only recovered after such an occurrence, but lived together in amity.

Snake swallowing by snakes was well known to the ancient Egyptians. When Moses and Aaron met the magicians in Pharaoh's court they knew the trick of making serpents become stiff rods, and when cast upon the ground Aaron's rod swallowed up the Egyptians' rods (Exod vii, 12).

Meditations on the psychology of the swallowed suggest that the animal world may be divided into swallows and the swallowed. A whale swallowed Jonah, but it is wiser for a man to swallow a whale than to swallow a hel

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## DIFFICULTIES IN THE DIAGNOSIS OF LEUKAEMIA

BY

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THE nomenclature of the leukemias is still in a fluid state, and the subject has been discussed elsewhere (Gulland and Goodall, *The Blood*, third edition, 1925, p 212). It seems desirable to keep the terminology as simple and yet as precise as possible, so we have adopted the terms "non-granular" and "granular" as the main subdivisions—the former including two acute forms, the myeloblastic and lymphatic, and the chronic lymphatic form, the latter the acute and chronic forms of myelocithaemia. The acute myeloblastic and lymphatic forms are probably the most common, but many of them are certainly not diagnosed, and in any case their duration is short. The chronic forms last for years, and are practically always recognized sooner or later, and bulk therefore more largely in the mind of the practitioner. I shall accordingly deal first with them.

## CHRONIC GRANULAR LEUKAEMIA

In the chronic granular leukemias the disease is so insidious in onset that the first thing to attract attention, if the patient comes under observation before the anaemia is marked, is usually the enlarged spleen. It is surprising how often there seems to be difficulty in determining whether it is the spleen which is enlarged or some neighbouring organ. I remember a febrile leukæmia in a woman, many years ago, which was sent into a surgical ward as a cellulitis of the abdominal wall. The surgeon was clear that this was a wrong diagnosis, but thought the spleen was a tumour of one of the pelvic organs, and transferred the case to a gynaecologist, who was certain that the tumour was not pelvic, but refused to determine its nature. Of course a blood examination settled the matter. Enlarged spleens in leukæmia may and do wander all over the abdomen, and might be taken for any organ in turn, according to their temporary position. Complicated small enlargements are often taken for tumours of the splenic flexure, and several times patients have come to me who had been treated after barium meals and enemas. The true nature of the mass was only suspected when the passage was found normal. It often takes much more than a roentgen examination to settle whether a given enlargement is spleen or kidney. Neither organ, when enlarged, invariably retains its typical shape, and when enlarged, invariably becomes very superficial, and the colon which crosses it may be loaded or empty, and there are many tracts, and not easily made out, and there are many cases of kidney swellings with blocked ureters in which the urine gives no help. Some cases have required air enemata, metrical catheterization, full blood examination, etc., before their nature was definitely determined.

To-day I saw a man whose right kidney was removed some years ago for calculi associated with constant pain and haemorrhage and the formation of a large tumour. At operation the kidney was found to be cystic in addition, and it was suspected that the left kidney was in the

same state. It has steadily enlarged and the diagnosis is undoubtedly correct. Since my last examination the kidney had increased considerably in size, and so altered in shape that it looked at first as if a splenic enlargement was superadded to that of the kidney. The converse of this case was supplied some time ago by a very uræmic woman with great digestive disturbance, who came to me with the diagnosis of cancer of the stomach. Her left kidney had been removed for pyonephrosis many years before, and the spleen, which was only moderately enlarged, lay close forward as usual, but, in the recumbent position, lay well back in the left flank and under the ribs, and had to be looked for. She had advanced granular leukæmia.

The blood in these cases when they first come under observation is almost invariably so typical that no error is possible if the attendant examines it or causes it to be examined. The initial count, however, even with a markedly enlarged spleen, may vary greatly—from 500,000 or more to 42,000, 35,000, and 22,000, which are the lowest I have seen. The blood in these cases with low counts is nevertheless quite typical. The only likelihood of error is the presence of a febrile complication, which is subnormal causes a drop in the white count to normal or remission figures, or the rare possibility of a spontaneous remission. But even then abnormal cells will almost always be present which will give the necessary indication, though they are sometimes few in number.

The effect of irradiation on the blood is by no means uniform and is difficult to forecast. The rule, of course, is a marked diminution in total numbers with a speed of drop in the immature granular cells, but there may be no effect at all. Generally speaking, this refractory state is more common in cases that have previously been irradiated, but it does occur in cases treated thus for the first time as soon as the disease was diagnosed, and, on the other hand, some cases will respond repeatedly to irradiation until the course is cut short by some complication. It is important to remember that the effect of irradiation persists for months sometimes, and that there may be a progressive diminution in the number of the leucocytes. For this reason one usually stops irradiation when the white count has reached 20,000, as there will probably be a further drop when treatment has ceased. The case mentioned above with an initial count of 22,000 was treated by rays to the long bones for special reasons. This was stopped when the count fell to 12,000 three months ago, and the count is now about 5,000 with practically normal proportions. In the last films no immature cells of any kind could be found, the usual excess of basophils had disappeared, and the film looked like an ordinary mild secondary anaemia with a slight leucopenia. After prolonged search one normoblast was found. If this film had been examined by someone unacquainted with the history of the case, diagnosis would have been impossible.

Radiation may apparently, however, sometimes produce

a condition closely resembling myelocysthaemia. Some years ago, in November, I saw a lady whose breast had been removed for cancer a year before. She had been treated by x-rays from that time till August. She was anaemic—small ends of both clavicles, the liver was down to the umbilicus and apparently nodular, and the spleen was palpable. Cancerized encystomatosis was the probable diagnosis, but the examination of the blood introduced a doubt. The white cells were 12,800, there were numerous neutrophil myelocytes and some myeloblasts, and, further, there were nearly 7,000 nucleated red cells to the cubic millimetre, about half of which were normoblasts, the rest megaloblasts. A second count, a week later, gave 9,400 whites with the same picture as before and the same number and proportion of nucleated reds. The blood picture was that of an acute myelocysthaemia, the eosinophil and basophil excess at the chronic type was absent. The alternative diagnosis was widespread metastatic cancer in the bone marrow, which may produce a blood picture resembling leukaemia, and which was obviously more likely in this case. The lady returned to London and died in Westminster Hospital about six weeks later. Dr. Hildred Carhill kindly wrote to me about the subsequent history. A fortnight after I saw her the white count was 8,000—neutrophil polymorphs 59 per cent, lymphocytes of all forms 40 per cent, eosinophils 1 per cent, no myelocytes, and no nucleated reds. The spleen had returned to normal in size. A later count was almost exactly similar. At the post-mortem examination almost all the cells were found in the liver and ovaries, but not in the bones examined, and indeed, in view of the later counts, it was not to be expected. One is almost driven to the conclusion that my findings represented an erythroblastic and leucoblastic crisis resulting from the prolonged anaemia.

#### CHRONIC LYMPHATIC LEUKAEMIA

Chronic non-granular or lymphatic leukaemia is much rarer than the granular form, and less dangerous to life as a whole. I have seen cases, ultimately fatal, in which the first glandular enlargement—which had never disappeared—had been noticed eighteen and twenty years either respectively. Both these patients had been in fair health until a year or two before the end. In such cases the process almost certainly starts in the lymphatic glands and gradually involves one group after another, as these the process almost certainly starts in the lymphatic glands and gradually involves one group after another, becomes completely involved. There is no reason why the process should not start in any bit of lymphatic tissue in the body but a start in such extraglandular lymphatic tissue as the follicles in the bronchi or the intestine would mean an almost immediate spread to glands, and an apparent glandular onset. In cases where the process starts outside the bone marrow, the chronicity or acuteness of the individual case seems to depend entirely on the period when the marrow becomes involved, and on the rate at which the marrow space is filled by lymphocytes. When this occurs the marrow is available for erythroblast proliferation and in anaemia which is practically aplastic in character the results are severe as in the acute myeloblastic and lymphatic forms in which the starting point is in the marrow itself. Nor is the tendency to haemorrhage so great on the whole as in the chronic myelocysthaemias. The chronic lymphatic cases are much more apt to die from the pressure effects of the glands, which are so much more uniformly enlarged in this form than in any other from the tendency to thrombosis of veins, and from the interference with function due to the infiltration of vital organs. As internal glands may sometimes be the first affected, pressure effects may occur early, and may cause puzzling clinical pictures until the blood is examined. An interesting example of this difficulty presented itself about eighteen months ago.

A lady who had complained of shortness of breath for about six weeks developed pleurisy with effusion without rise of temperature, about a fortnight before I saw her. The effusion had to be tapped several times before it ultimately settled down. Her doctor, who had gone over all the usual possible causes without result, examined her blood and found a great excess of lymphocytes. My first count

was red cells 4,700,000, haemoglobin 75 per cent, white cells 55,800. Of the whites 91 per cent were lymphocytes, degenerated lymphocytes and there were no myeloblasts. There was no enlargement of liver or spleen and enlarged gland could be felt above the umbilicus and the right clavicle from elsewhere, but the veins in front of the chest were unduly prominent. The single gland was evidently in offshoot from a nodular mass. During the next six months while she was under observation the white cells fluctuated between 35,000 and 85,000, the proportions remained much as in the original films. The left lung was slightly dull all over, with diminished expansion. This was evidently a pleurisy resulting from the presence of a mass of leucocytes in the mediastinum. The patient is now well symptomatically, except for some weakness and shortness of breath on exertion, no other glands have appeared.

As these cases advance the white count usually rises slowly, and may reach a very high figure. In March of this year a man was seen who had noticed some enlarged glands at the back of the neck in 1918. Other groups were gradually involved, and at his first visit all the external glands were greatly enlarged and the spleen reached the umbilicus. A diagnosis of lymphadenoma had been made but the blood had never been examined until he gave up his work elsewhere and settled in Edinburgh. My first count gave red cells 2,680,000, haemoglobin 50 per cent, and in the counting chamber the white cells were so closely packed together that the ruled lines could not be seen. When I had drawn the blood up to the figure 1 in the pipette it gave the astonishing figure of 2,224,000, which, so far as I have been able to find, is the highest count of white cells recorded in any condition. The films bore out this count: the white cells seemed quite as numerous as the red, and were practically all small lymphocytes. The patient was treated with arsenic. Six weeks later the glands had gone down to about a quarter of their former size—very often a general improvement in health. He had thrombosis of the veins of the left leg and generalized oedema with pleural effusion, he ultimately died suddenly. On this occasion the red count and haemoglobin were rather better than before, the white cells had fallen to 1,132,000, and were again practically all small lymphocytes. One neutrophil polymorph was seen in counting 500 cells. Though he had never been robust he had been able to carry on office work until a few months before his death.

#### ACUTE MYELOBLASTIC AND LYMPHATIC LEUKAEMIAS

Every physician is familiar with the hopelessness and tragic rapidity of the acute myeloblastic and lymphatic leukaemias. It has happened to me to see a patient who was well until a certain Saturday to make the diagnosis on the following Tuesday when he had a count of 10,000 white cells, and to see him die on the Friday with a count of 20,000. Recently the opportunity presented itself of observing throughout a case very nearly as rapid. The first recognizable symptom was epistaxis on the 20th of the month, there was haemorrhage later into the skin and from the kidney and bowel, and the termination was profuse haematemesis on the 29th. The red count was at first 4,800,000, haemoglobin 65 per cent. It showed a steady fall and on the 29th was 2,400,000, haemoglobin 42 per cent. This is typical of these cases. The rate is a gradual drop in red cells with a rising colour index—in this case from 0.6 to 0.87. If the case lasts long enough it is not uncommon to get a colour index above unity, and to find normoblasts as well as normoblasts in the blood. Another point of importance is the progressive diminution in the number of blood plates. The white count ran 9,300, 6,400, 10,400, 15,700. At first the polymorphs were 30 per cent, and at the end 10 per cent, at first also there were some neutrophil myelocytes and some eosinophils and basophils. The percentage of non-granular cells was about 60 in the first films of which 48 were myeloblasts. At the end the non-granular percentage had risen to 88, of which 65 were myeloblasts.

On analysing my cases it is evident that the acuteness of



the disease is nearly proportional to the percentage of myeloblasts and to the rate at which the percentage increases. Cases in which the true lymphocyte proportion remains high last much longer. Most of the cases of acute leukaemia are easy to diagnose, because though the leucocyte increase is small, there is usually an increase, and, except for the foregoing consideration, it matters little whether the excess is lymphocyte, myeloblast, myelocyte, or promyelocyte, or a mixture. The important point is the diminution of polymorphs and the great excess of cells with a round nucleus. With an ordinary Jenner stain all the forms except the myelocytes look very much alike, and special staining methods have to be used to differentiate them. But there is a group of cases which are very doubtful. Two recent examples will illustrate it.

The first was a lady of 52 who had suffered from melancholia for ten months. For a fortnight the temperature had been high. No physical signs of any kind were present to account for this. The white reaction was negative to typhoid and the paratyphoid fevers, and no enteric bacilli were found in the stools. There was no enlargement of external glands, the spleen dullness reached the border of the ribs, but the spleen could not be felt definitely. The white count was only 1,900. Not a single polymorph was seen, about 35 per cent of the whites were myeloblasts, the remainder lymphocytes. She died two days later.

The second was a man of 50 who was first seen because of an irregular pneumonia which had lasted for about a week. The white cells were 16,300 with only 70 per cent of polymorphs and no glycogen reaction. The comparatively low polymorph percentage made me suspicious that there was some condition behind the pneumonia. A week later the lung had cleared up and the white count had fallen to 7,600: polymorphs 54 per cent, lymphocytes 40 per cent, eosinophils 3 per cent, myelocytes 2 per cent, myeloblasts 1 per cent and a few normoblasts fairly numerous blood plates. A week later he was definitely anaemic: red cells 3,250,000, haemoglobin 50 per cent, white cells 6,000—polymorphs 22 per cent, lymphocytes 66 per cent, myeloblasts 8 per cent, myelocytes 2 per cent, eosinophils 2 per cent, a few normoblasts, blood plates few and large. Three weeks later (intermediate counts are omitted) the red cells numbered 1,000,000, haemoglobin 18 per cent, white cells 5,900—polymorphs 18 per cent, lymphocytes 66 per cent, myeloblasts 12 per cent, myelocytes 4 per cent, with numerous normoblasts, there were no megakaryoblasts. There was no enlargement of spleen or glands throughout and no haemorrhages—only progressive weakness as the main symptom.

How are we to class these cases in the absence of post-mortem evidence? In spite of the low white counts I can only regard them as acute leukaemias—the first probably mainly myeloblastic, the second mainly lymphatic. The differential count must be the criterion. The whole question, however, depends on the significance of myeloblasts occurring in the circulating blood—a subject too large for discussion here. It is to be hoped that some better method of differentiating myeloblasts in films than either Jenner-Giemsa or the oxydase reaction will be discovered and that some haematologist will undertake the embryological studies necessary to clear up our views of the phylogenetic relationship of these cells.

In connexion with the type of case just described, it will be realized that difficulty will sometimes arise in the diagnosis from pernicious anaemia, and this for two reasons—first, the not infrequent occurrence of a colour index of unity or above it in myeloblastic leukaemia and secondly, the high non-granular percentage in the differential count of pernicious anaemias. The first difficulty only arises if we are to regard cases of the type quoted as leukaemias, for increase of the white count is the rule in myeloblastic leukaemias, but is very rare in pernicious anaemia, and when it does occur is always a polymorph leucocytosis, and not a non-granular increase. The second difficulty may be illustrated by the following recent case. A man of 65 who showed all the characteristic signs and symptoms of pernicious anaemia had a red count of 1,500,000, haemoglobin 35 per cent, white cells 3,500, of the latter 84 per cent were lymphocytes, the remainder polymorphs. There were no myeloblasts. At first sight such a percentage makes one think of an acute lymphatic leukaemia, especially if the whites have not been counted, but the actual number of lymphocytes in the cubic millimetre is not really greatly increased. If we assume that the normal number of white cells per cubic millimetre is 7,000, of which polymorphs are 70 and lymphocytes 30 per cent, the actual number of polymorphs in the cubic millimetre will be 4,900 and of lymphocytes 2,100, while in the case quoted the lymphocytes are 2,940—not an overwhelming increase.

We are far too apt to use the percentages of the differential count, it would be wiser and would avoid misconceptions if we always quoted the absolute numbers of the different cells in the cubic millimetre. One safeguard in this bit of diagnosis is that myeloblasts are rare in pernicious anaemia, though they do occasionally appear. I have never seen them in sufficient number to cause error.

The difficulty of diagnosis between lymphatic leukaemia and glandular fever may be a very real one. Most cases of the latter disease are of short duration and do not present much difficulty, but in a recent case the temperature lasted for eight weeks and the enlargement of the glands nearly as long. The patient was a woman of 22, the enlarged glands were widely distributed on both sides of the neck but not elsewhere, there was slight enlargement of the spleen. The red side of the blood was a mild chlorosis, the red cells dropped slightly as the disease progressed. The first white count taken by her doctor, about a fortnight after the onset, was 16,000—polymorphs 14 per cent, lymphocytes 86 per cent. My first count, a few days later, was 12,000—polymorphs 26 per cent, lymphocytes 74 per cent, but in addition there were a great many degenerated lymphocytes with smeared nuclei, practically all the lymphocytes were "large." No myeloblasts were seen. Thereafter the count gradually dropped as the temperature fell and the glands diminished in size, and it has now for some weeks run about 3,000, with such proportions: polymorphs 44 per cent, lymphocytes (almost all small) 54 per cent, eosinophils and basophils 1 per cent each—that is to say, the blood picture is now that of a chlorosis with the polymorph leucopenia so common in that condition. Before I saw the patient the doctor had given the diagnosis as lymphatic leukaemia—a very natural conclusion on the evidence. I have heard of glandular fevers lasting a longer time, but have never seen one.

#### "A SARCOMA OF THE LEUCOCYTES"

No more need be said about the essential nature of leukaemia than that I regard it as a sarcoma of the leucocytes. The assumption that the disease is a sarcomatosis, however, only removes the difficulty a stage further back, and the problem is bound up with the question of what influence it is which in health keeps the normal number of leucocytes in the blood within such narrow limits. We know that the action of parasites, using the term in its widest sense to include bacterial and other organisms, can powerfully alter the count in disease in both positive and negative directions, that the proteins of food and probably other proteins and many other substances have definite actions. Does the interference of an infinite variety of substances keep the balance in health, and, if so, does it act directly on the bone marrow and the blood, or through the medium of some other organ? These questions require a definite answer before we shall progress much further in the understanding of leucocyte problems.

It is very striking when one examines the marrow of a myeloblastic leukaemic patient who has died with a count of, say, 20,000, to find all the tissue one can examine packed with myeloblasts to the practical exclusion of every other type of cell. The wonder is, not that the leucocyte count is increased, but that it is not vastly higher. One cannot resist the feeling that the excess of cells in the blood is there rather as an overflow than in response to any active call upon the marrow cells. Obviously the condition is widely present in the marrow before there is any evidence in the blood of its existence. A leucocytosis responding to an organismal infection occurs practically at once, and the marrow gets under way immediately, but never goes beyond the amount of hypertrophy required in each special instance. A leukaemia progresses in the marrow more or less steadily, in the acute cases progressively till death occurs. We do not know whether the spontaneous remissions which sometimes occur in the blood picture of the chronic leukaemias correspond to a real alteration in the condition of the marrow, if they do they are not more frequent than the retrogressive changes that occur in some tumours. It is well to keep an open mind but until further research throws fresh light on the disease the neoplastic theory of its causation is the most logical and satisfying explanation.

## Historical Notes

ON

## THE SITE OF THE ASSOCIATION'S NEW HOUSE

BY

E. MUIRHEAD LITTLE, F.R.C.S.

THE British Medical Association is but following the example of the Dukes of Bedford in moving from the Strand to Bloomsbury, for in 1704 the Russells left their great house near Covent Garden, and occupied their new mansion on the north side of Bloomsbury, or, as it was then called, Southampton Square. At that time there was open country at the back of the new house, and the view of Hampstead and Highgate from the garden was much admired. Compared with the Strand, the northern part of Bloomsbury has but a short history, and even compared with the southern part, which includes Bloomsbury and Bedford Squares, it is modern Bloomsbury Square was inhabited by distinguished persons as long ago as the seventeenth century, whereas Russell Square and the streets and squares to the north and west of it were not built until the beginning of the nineteenth century. In the map of London and Westminster by John Cary, published in 1801, most of them are represented as planned but not yet built, and only a few buildings on the north eastern side of Tavistock Square are represented as already existing.\* Among these was

Tavistock House, the site of which is now covered by the New House of the Association.

In the Crace collection of maps in the British Museum there is a "Plan of the Estate of the Duke of Bedford laid out for Building by James Burton, 1806," in which Tavistock House is indicated as already standing in its own grounds at the back of the Tavistock Square buildings already referred to (see Fig 1). Through the kindness of Lieut.-Colonel Evelyn Gordon, the present agent to the Duke of Bedford, we learn that this house was built by James Burton in the years 1795-96, and it appears in various maps published in the last

century as "Tavistock House." It faced north-west, having a road in front of it, which afterwards became known as Tavistock Place North. This road appears to have been at one time continuous with Crescent Place, which leads to the once notorious Burton Crescent, now called Cartwright Gardens. It was, however, never a thoroughfare, being blocked by railings and a strip of garden at the north eastern end, where Burton Street now is, and by railings and gates a short distance from the Tavistock Square frontage. The topography is shown with some approach to accuracy in Cruchley's New Plan of London (Fig 2). This is said to be "improved to 1833," though it is hardly up to date as regards Tavistock House, which was enlarged and divided in 1825, but it shows the garden ground at the back of the house which was coterminous, as it is to-day, with the garden of a detached house in Tavistock Place. This house (which, like Tavistock House, is given

an erroneous ground plan) was of some celebrity. To this dwelling that remarkable stockbroker and man of science, Francis Baily, four times President of the Royal Astronomical Society, removed when he retired from business, and here, during many years, he carried out numerous scientific experiments, culminating in 1841 in the determination of the density and weight of the earth. His public services in connexion with astronomy and exact mensuration were immense, and Sir John Herschel did not exaggerate when he stated that his revision of the star catalogues alone entitled him to rank amongst the greatest benefactors to astronomy. Baily died in 1844, without any royal recognition of his immense services, despite the fact that he had greatly benefited the navy by his successful efforts to reform the *Nautical Almanac*. The house was afterwards occupied, till 1877, by the well known architect, Sir Matthew Digby Wyatt.

The James Burton above mentioned was a very important and well known personage a hundred years ago, he was a speculative builder and contractor who built nearly all the newer streets and squares which cover the northern part of the Bedford Estate. Dobie quotes a statement to the effect that in forty years Burton had built 2,336 buildings in various parts of London, including Regent Street and the houses of Regent's Park, where he was associated with Nash. He became a very rich man, but in his later years he lost a great deal of his wealth in the development of St Leonards-on-Sea, to which new resort he ran a service of stage coaches. His son, Decimus Burton, is better known to fame as the designer of the arch at Constitution Hill (but not of the Duke of Wellington's statue, which once stood thereon), and of many country houses and villas. Burton's design for the arch included a quidring, perhaps such as that by another hand which has since been substituted for the equestrian statue of the Duke. He was so much chagrined by the erection of the latter that he made provision in his will for the payment of £2,000 to the Government if it would remove that monstrosity.

The original Tavistock House was occupied by various tenants, until in 1812 James Peery acquired and lived in it. He was a well known journalist and reformer, who was born at Aberdeen, and originally wrote his name Peire. Having failed as an actor he became a reporter and regular contributor to the *General Advertiser*. As such he reported the trials of Admirals Keppel and Palliser. He planned and edited the *European Magazine*, and afterwards, as editor of the *Gazetteer*, introduced the system of employing a succession of reporters for the parliamentary debates. In 1789 Peery and a friend bought the *Morning Chronicle*, which soon became the leading organ of the Whig party. Lamb, Hazlitt, Coleridge, and Campbell all contributed to it. Like other Liberal journalists in the days of revolution in France, Peery did not escape prosecutions and imprisonment, but he emerged from them triumphant and they only increased his fame. In 1792, for having printed an advertisement of the address passed at the meeting of the Society for Political Information, held at Derby five months before, he was charged with having printed and published a seditious libel. The proceedings dragged on for a year, but finally Peery was acquitted. Five years later he was in trouble with the House of Lords for sarcastically suggesting that "the dresses of the opera dancers are regulated there." For this awful crime he got three months in

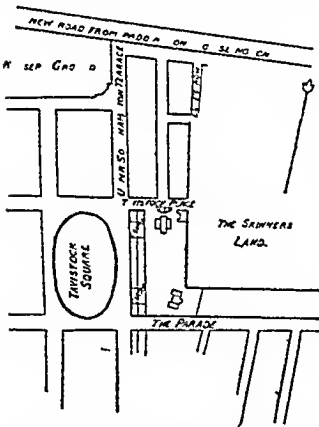


FIG 1—Part of the plan of the estate of the Duke of Bedford laid out for building by James Burton 1806. Baily's house is shown standing back from The Parade (now called Tavistock Place). The Skimmers Land is still held by the City company of that name as trustees for Tonbridge School. Crace Collection Portfolio A.V. No 18.

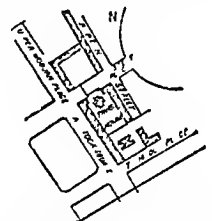


FIG 2—The neighbourhood of Tavistock House from Cruchley's New Plan of London Improved to 1833.

\*Strictly speaking the Association's New House is not in Bloomsbury proper: it is in the Parish and Metropolitan Borough of St Pancras and not in the Borough of Holborn to which Bloomsbury belongs. The northern boundary of the ancient Manor or Burgh of the family of the 1st Lord later known as Bloomsbury and included in the old Parish of St Giles in the Fields lies to the south east of Tavistock Square and Place.

Newgate, where he held levees of his friends, and where presents of game and other luxuries poured in upon him. In 1809 he was once more in the dock charged with the heinous offence of reprinting the malicious suggestion of the Hunts in the *Examiner*, that the successor of George III would have "the finest opportunity of becoming nobly popular." This time he was quickly pronounced not guilty. Perry had a country house at Wimbledon, and his neighbour, Lord Nelson, stood godfather to his daughter George Robins (*vide infra*) drew up the catalogue for the sale of furniture at the Wimbledon house in 1822.

Perry died in December, 1821, and a few years later one Thomas Hill, who had acquired the lease, obtained permission from the Duke of Bedford to convert the main house into three separate residences, it appears from the plans that two wings were added to the original house, one westward and one eastward, at an approximate cost of £5,875. Thus it is seen that the original Tavistock House had become Bedford House, and the name of Tavistock was transferred to an entirely new house adjoining it on the south-west. In 1842 the executors of the late Thomas Hill assigned the remainder of their interest to George Henry Robins. This was the celebrated auctioneer whose name was a household word in the middle of the last century, and whose hyperbolic and flowery descriptions of the properties which he sold became proverbial. In the *Ingoldsby Legend*, "The Babes in the Wood," he who would ill treat children is wined.

Be sure he who does such base things  
Will ne'er stuff Conscience's clown  
His riches will make themselves wings  
And his property come to the humble!  
Then He—and not those he deceives  
Will have no cause for sighings and sobings  
When he finds him self smother'd with leaves  
(Of fat catalogues) heap'd up by Robins!

Robins became very rich and gave much in charity, and thus he has a special interest for us as a supporter of hospitals. On one occasion at Newgate he made a collection for the Royal Sanatorium Infirmary, holding a plate in the street outside the church. For this act of begging he was taken into custody as a rogue and vagabond and this embryo flag dragged ended in his being prosecuted before the magistrates at Dover. But no evidence was offered and at Wandstone Assizes he brought in action against the magistrates and was awarded £50 damages.

His three houses were at this time mentioned in the *Standard* as being for 1857 they appear as Nos 1, 2 and 3 Tavistock Villas. They were also known in the estate lists as 1, 2 and 3 Tavistock Place North, but in 1845 the two end houses were there referred to as Tavistock and Russell House.

#### CHARLES DICKENS

In 1851 Charles Dickens took Tavistock House then and for many years previous to the residence of his friend Frank

Stone, A.R.A. "In 1852 the original lease was surrendered and new leases granted by the Duke, as follows. The most eastern house (afterwards called Russell House) to Frank Stone, the central one (afterwards Bedford House) to John Bate Cudde, and the most western one (afterwards Tavistock House) to Charles Dickens."

Thus the once youthful reporter and contributor to the *Morning Chronicle* had come to live, not in the same house, but in one of the same name and next door to that in which the celebrated proprietor and editor of the paper had lived and entertained the men and women of light and leading

of his day. In the *Chronicle* most of the *Sketches by Boz* had first appeared, and Dickens always spoke in the most affectionate terms of Perry's successor, John Black, under whom he served.

There has been much confusion between the two Tavistock Houses, and it has been repeatedly stated that Dickens lived in the same house as Perry, or in "a moiety" of it. We believe that the mistake is now for the first time corrected.

Dickens was of a restless and nomadic nature, seldom satisfied to remain long in one locality, and the nine years of his tenancy of Tavistock House was a much longer time than that spent without interruption in any other house except Gadshill. Chance or choice seems to have attracted him to the north-west quarter of London. As a child he stayed with his parents in Norfolk Street (now Cleveland Street), near the Middlesex Hospital, and when they moved to London it was to Bayham Street, Camden.

Then his mother put up her brass plate and attempted to run a school in Gower Street North, at "Miss Dickens's Establishment," Little College Street, Camden Town, and Johnson Street, Somers Town, next received them, and at one time another Charles lived with his father in the Polygon and in Bentinck Street, Marylebone. He went to a day school in Mornington Place, Hampstead Road. After his marriage he lived in Doughty Street for two years, returning to the north-west, to Devonshire Terrace at the top of Marylebone High Street. When he went to Lausanne to write *Dombey and Son* he sublet this house, and, returning before the subtenancy expired, he took a house in 1847 in Chester Terrace, Regent's Park. On finally leaving Devonshire Terrace he went for a time to Osnaugh Terrace, and then, in 1851, to Tavistock House. Here he remained till 1860, but after he took the house at Gadshill he spent much of his time in the country. After 1860 he had bachelor quarters at various places in London, one of which, at 5 Hanover Terrace, Regent's Park, should be included in our list. Besides these twelve addresses he had others in other parts of London and if the London County Council were to affix plaques to all his dwellings it would cost it a considerable sum.

Frank Stone, who occupied first Tavistock House and the Russell House was in A.R.A., the father of Marius Stone, R.A. and a great friend of Dickens. The latter, in a letter



Charles Dickens in 1859. After the portrait by W. L. With R.A. in the Victoria and Albert Museum, South Kensington. It was partly painted at Tavistock House. (Reproduced by permission of the Secretary and Director of the Museum.)

## TAVISTOCK HOUSE IN THE TIME OF CHARLES DICKENS

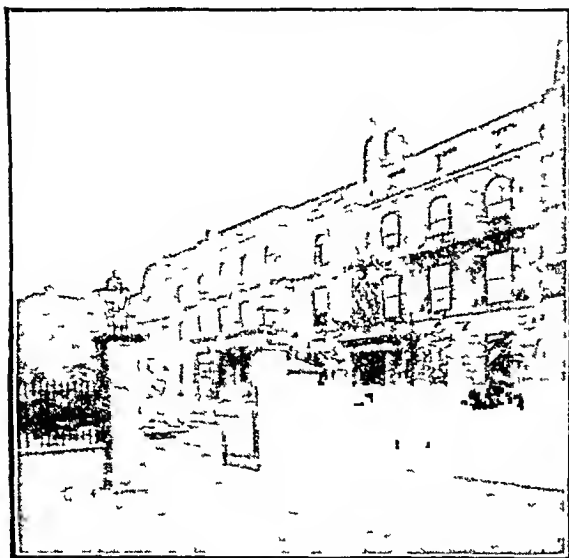


FIG 3—Tavistock Place North, showing Russell House (left), Bedford House (centre) and Tavistock House (right) with the entrance gate.

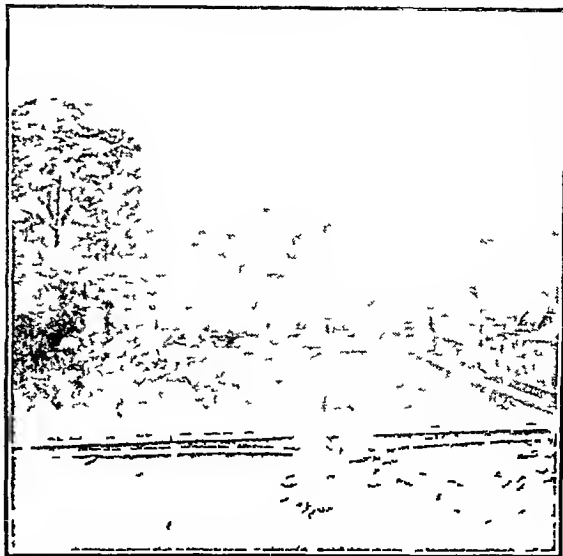


FIG 4—Garden in front of Tavistock, Bedford and Russell House (1900) showing the backs of the houses in Woburn Buildings.

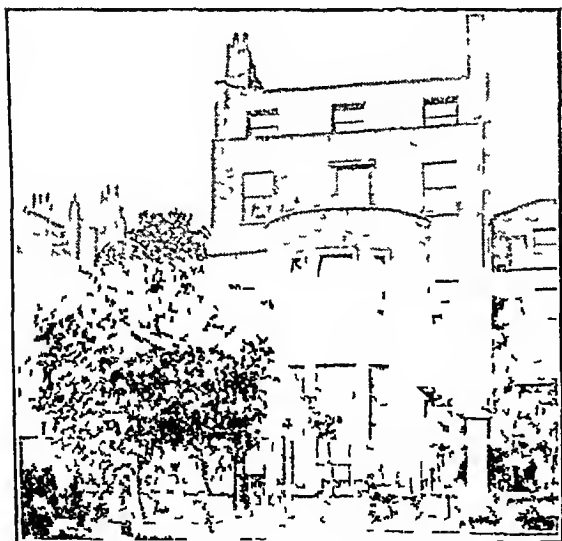


FIG 5—Rear view of Tavistock House. Charles Dickens's mulberry tree is seen on the left. The mulberry tree is still in existence.

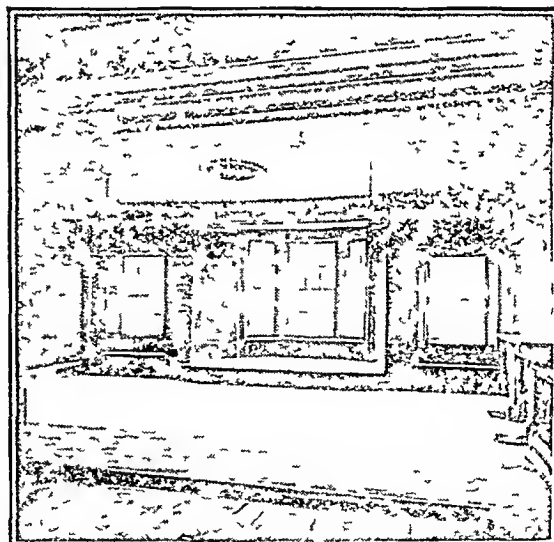


FIG 6—The back room on the first floor of Tavistock House in which Dickens gave his theatrical entertainments.

to his brother-in-law Austin, writes about his plan of turning Stone's painting-room into a drawing-room.<sup>2</sup> According to Mr. Kutton, Stone temporarily occupied Dickens's late dwelling in Devonshire Terrace, while Dickens was making alterations in Tavistock House.

The great Danish writer Hans Christian Andersen was the guest of Dickens, and has thus described the house:

In Tavistock Square stands Tavistock House. This and the strip of garden in front of it are shut out from the thoroughfare by an iron railing. A large garden with a grass plot and high trees stretches behind the house and gives it a comfortable look in the midst of this coal and gas steaming London. In the passage from street to garden hung pictures and engravings. Here stood a marble bust of Dickens so like him so youthful and handsome, and over a bedroom door and a dining room door were inserted the bas-reliefs of Night and Day by Thorvaldsen. On the first floor was a rich library with a fireplace and a writing table looking out

on the garden, and here it was that in winter Dickens and his friends acted plays to the satisfaction of all parties. The kitchen was underground, and at the top of the house were the bedrooms. I had a snug room looking out on the garden, and over the tree-tops I saw the London towers and spires appear and disappear as the weather cleared or thickened.

In his difficulties in trying to find room for the audiences of these performances, Dickens was advised to consult Mr. Cooke of "Astley's," then the most celebrated of circusmen. In *Forster's Life* there is an amusing letter from Dickens which, as it alludes to the drive and gates, may fitly be quoted here:

One of the finest things I have ever seen in my life of that kind was the arrival of my friend Mr. Cooke one morning this week (18th October 1853) in an open phaeton drawn by two white ponies with black spots all over them (evidently stencilled) who came in at the gate with a little jolt and a

rattle exactly as they come into the ring when they draw anything and went round and round the centre bed of the front court apparently looking for the clown. A multi-side of boys who felt them to be no common ponies rushed up in a breath less as they twined themselves like ivy about the railings—and were only deterred from storming the enclosure by the glare of the Inimitable's eye. Some of these boys had evidently followed from Actley's.

After Dickens gave up the house in 1860 it was occupied by more or less distinguished, or at least notorious, people. It is said that it was at one time used as a Jewish college or school. Then it was the dwelling of a lady whom the medical profession has good cause to remember. This was the singer Miss Georgina Welldon, whose actions at law and whose ability in conducting her own cases made a good deal of stir in the late seventies and eighties. The great French musician Gounod lived some months with the Welltons at Tavistock House and gave singing lessons in the drawing-room. Here he composed the music of *The Maid of Athens*, which he presented to Miss Welldon. At some time or other Eliza Cook, a minor poetess now almost forgotten, lived here. She was the authoress of "The Old Arm Chair" and other sentimental and popular poems.

William Collins, R.A., whose pictures were very popular and often engraved in the last century, lived for a short time in Tavistock Square, and there, in 1824, his son William Wilkie Collins the novelist, was born. As well known, he became a close friend and collaborator of Dickens and was a frequent visitor at Tavistock House during the latter's tenancy of it, when it was the meeting place of many distinguished people. The numerous visits of Dickens's tenancy formed the most brilliant period of his career. He was in the prime of life and in the fullest enjoyment of his great gifts. He came to be known to

act drop for this was painted by Clarkson Stanfield, R.A., in two days, and afterwards framed and sold at the Gadehill sale for a thousand guineas.



Buildings in which Carlyle lodged in 1831

The accompanying photographs show that the three houses were very pleasantly situated, shut off from the street by railings and giving a looking across the drive and shrubbery on to an extensive garden or field, and having at the back each its private garden which joined the large garden at the back of the north-western side of Tavistock Place. Tavistock and Bedford Houses were pulled down in 1800, and Russell House in 1901. The photographs which have been received from the Bedford Office, show Fig 3, a view of the entrance gates and the houses from the south west, and Fig 4 the field or garden across the road extending to the backs of the houses in Woburn Buildings, in No 6 of which Thomas Carlyle lodged for two months in 1831 when he was vainly trying to find a publisher on satisfactory terms for *Sartor Resartus* (Fig 7). Of it he wrote:

It is a very beautiful sitting room an inner bedroom above (and John sleeps with George) for which we are to pay 25s weekly. Quiet and airy and among known people.

From the back windows of this lodging Carlyle looked upon Tavistock House, in which in after years he was to be a frequent guest. The houses in Woburn Building which is but a court, are small and do not outwardly offer much prospect of immensity. When Mrs. Carlyle arrived to share the lodgings they were found to contain bugs, and the couple migrated to Ampton Street. In Fig 5 is shown the back of Tavistock House and "Charles Dickens's mill-berry tree", in Fig 6 the back room on the first floor of the house where Dickens gave his theatrical entertainment. These views no doubt represent the houses and gardens much as they were at the time Dickens first took Tavistock House although in the half century which had elapsed when the photographs were taken the shrubs and trees must have grown or been replaced.

I am much indebted to Mr. C. Fitzroy Doll, F.R.I.B.A., the architect and surveyor to the estate, who has very kindly had copies made from plans which he took when the three houses were demolished, and who had the plan (Fig 8) specially drawn to show the relation between Tavistock House and the new building of the British Medical Association. Another plan (not reproduced) of the ground floor of all three houses shows that the second Tavistock House was entirely an addition to the old house, not in lining the western wing of the latter, while the eastern wing formed part of Russell House. Fig 9

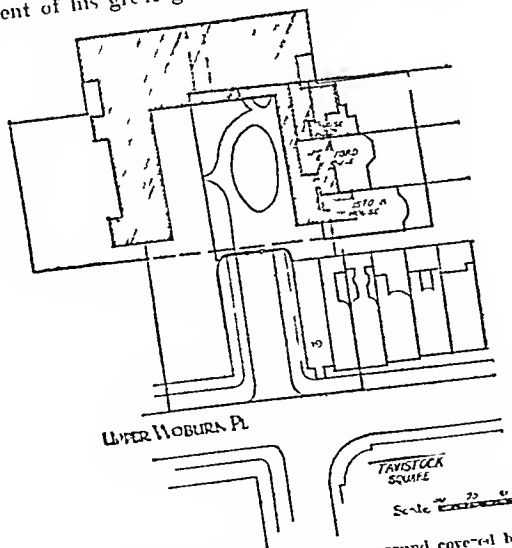


FIG 8—The hatched area shows the ground covered by the new building superimposed on the plan (in outline) of the old Bedford and Tavistock Houses.

the *Medical House*, *Hard Time*, *Little Dorrit*, *A Tale of Two Cities*, and *Great Expectations*. But the works were not enough for his restless energy. Beginning with the children's extracts on Twelfth Night, 1854, with the help of Mark Lemon and others, the smallest theatre in the world became celebrated and at every performance it was crowded with the leaders of literary and artistic London. The children of Dickens and of Mark Lemon seem to have displayed in natural drama powers and the song of Miss Wilkie's introduced (by desire) into Fielding's burlesque of *Tom Thum* so affected Thackeray that he rolled off his sea in a burst of laughter. *The Tighthouses* by Wilkie Collins was the first of the adult plays to be given. The

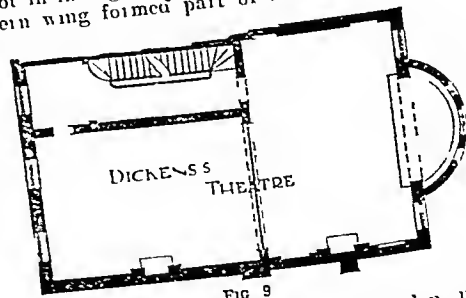


FIG 9

shows the first floor of Tavistock House in plan, including the theatre. In Fig 8 it will be seen that the end of the southern wing of the Association's new building covers part of the front portion of the house, including the staircase and a part of the theatre.

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# THE BRITISH MEDICAL ASSOCIATION: ITS HOMES IN LONDON AND ITS SPREAD THROUGHOUT THE EMPIRE.

## THE OLD HOUSES OF THE ASSOCIATION (1871 TO 1925).

THE new house of the British Medical Association, graciously opened by the King last Monday, is the fifth it has occupied since, in 1871, it established its headquarters in London. The reason for these changes was not restlessness or inconstancy, but steady growth.

The purpose of the Association has not changed in the ninety-three years of its existence though the means it uses to attain its purpose have developed and expanded. There can be no doubt that Charles Hastings and the provincial physicians and surgeons who gathered round him at Worcester in 1832 would have been in full sympathy with the aims and objects of the British Medical Association to-day.

For a period there was a risk that the Association might determine to remain provincial. Had that policy prevailed it could not have attained the position it holds to-day of the great all-embracing medical institution carrying its organization directly or indirectly, but for the most part directly, into every part of the British Empire.

The fortunes of the British Medical Association have been very closely interwoven with those of its journal. In 1844 the Provincial Medical and Surgical Association, as it was then called, took over the *Provincial Medical and Surgical Journal*, which had been established four years earlier by two members of the Association. In 1856, by a unanimous

vote, the names of the Association and of the journal were changed to the British Medical Association and the British Medical Journal respectively.

Though the Association had many strong supporters who believed in its future, and though the results were very encouraging in some respects (and in particular in the interest it was arousing in social questions having a medical aspect), its growth during the third quarter of the nineteenth century was slow, and its position was far from satisfactory from the financial point of view. In 1871 the members numbered 4,403, the

Plymouth) that the management of the Association was in an unsatisfactory state owing chiefly to defective organization and supervision, and recommended that a business man should be appointed secretary, that his office should be in London, that he should collect subscriptions, manage the Journal, and obtain advertisements for it, be responsible for all the preliminary arrangements for the Annual Meeting, and act as clerk to the Council and committees and at general business meetings. These recommendations were accepted, and Mr. Francis Fowke, then house governor and secretary of the General Hospital, Birmingham, was selected for the post. The Association at that time was particularly strong in Birmingham, and its policy was in large measure influenced by a few active members resident there. It required some faith and courage to give up an appointment which if not offering promise of distinction in the future, was capable of expansion and was at least a certainty. But Fowke was imbued with a very real respect for the profession of his father, who had been a well-known surgeon in Wolverhampton, and was fortunately possessed of some private means.

He found the business of the Association and the management of its Journal conducted in two rooms over a shop in Great Queen Street, a small thoroughfare running eastward out of Drury Lane. Hart, who was in practice as an ophthalmic surgeon, edited the Journal from his consulting room, first in Queen Anne Street and afterwards in Wimpole Street. The Metropolitan Counties Branch was at branches then went, large and active, so that Fowke came at once into a friendly atmosphere, and the honorary secretary of the Branch, the late Dr. Alexander Henry, became Assistant Editor. Henry did most of his work in his own small house in the North of London, paying short visits on one or two days in each week to the manager and the printer.

Mr. Fowke brought to the duties of his new office force and tenacity of purpose, and quickly introduced strict business methods into the management of the Association's affairs. With this combination of a Journal conducted with enterprise and constant attention to the needs of professional readers, and of efficient business management the finances of the Association were soon placed on a satisfactory

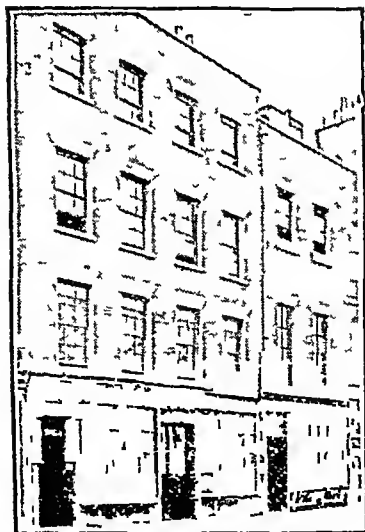


FIG 1—Offices in Great Queen Street. X shows one of the two rooms occupied by the Association from 1871 to 1878. The additional accommodation taken in 1874 was in the next house the ground floor window of which is seen to bear the name of the British Medical Journal.

total income of the Association was £5,261, and the balance of income over expenditure was £38.

The BRITISH MEDICAL JOURNAL had at that time been edited for several years by Mr. Ernest Hart, who had devoted his remarkable energy and abilities to its conduct with so much success that its circulation had risen to over 7,000 copies weekly. The unsatisfactory position of the finances of the Association was, therefore, all the more disappointing.

### The Establishment of a Central Office in London

In 1871 the Committee of Council of which Mr. W. D. Hubbard of York was chairman, Dr. R. W. Falconer of Bath being treasurer, reported to the Annual Meeting (at

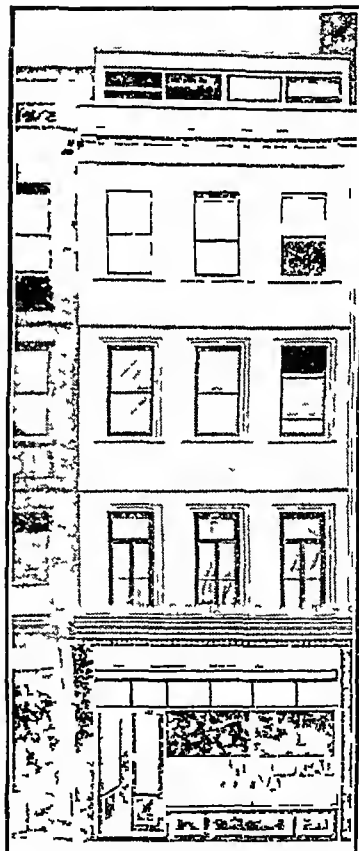


FIG 2—The house 1st Strand occupied by the Association from 1878 to 1885.

basis, and in 1874, when Mr George Southam of Manchester was Chairman of Council and Dr Paleoner still Treasurer, increasing business required, and the financial position justified, the taking of larger premises next door, at a rental of £30 a year. A photograph here reproduced (Fig 1) shows the offices in Great Queen Street at this time. Mr T Richards, whose name appears on the front of the shop, printed the JOURNAL from 1853 to 1878.

#### *The Association's First House in London (1878-1886)*

In that year the Association decided to undertake the printing of its JOURNAL, premises suitable for the purpose and to the then income of the Association were leased at 151, Strand. The Chairman of the Council when this first move was made was Dr Alfred Carpenter of Clowdon, and the Treasurer Mr W D Husband of York, upon whom and on Mr Powke the responsibility rested. The upper part of the new house (Fig 2) was occupied by the printing department, but the Committee of Council had a room for its meetings capable of seating thirty to forty persons, and a small room, stolen from a landing by the erection of a glazed wooden screen, was continued for the use on publishing days of the Assistant Editor, who was soon joined, as Sub-editor, by Mr Alban Doan, F R C S, who happily still lives and is engaged on the work of classifying and cataloguing the collection of instruments in the Royal College of Surgeons of England.

#### *The Second House (1886-1907)*

The membership of the Association the circulation of its JOURNAL and the receipts from advertisements all now began to show rapid expansion, and each year a substantial balance of income over expenditure, varying from £1 500 to £3 500, was shown on the year's working. In 1886 an opportunity occurred of acquiring the lease of the house 429 Strand formerly occupied by an insurance company. A sum of £4 500 was given for the lease and a little over £5 000 was expended on furniture and on the necessary alterations of the building. In 1888 the Association was able to purchase for the sum of £3 200 the lease of the two adjoining houses—Nos 2 and 3 Agar Street while in 1895 it acquired for £750 the lease of Nos 4 and 5 Agar Street. The aspect and extent of the offices occupied by the Association from 1888 to 1907 are indicated in the photograph (Fig 3) here reproduced. In 1894 the Association acquired in £4 640 the freehold of two small houses in a court immediately behind the front building and ultimately by an exchange with the neighbouring leaseholders obtained an L-shaped site upon which the building indicated was erected. Eventually the Association required the freehold of the houses in the Strand and Agar Street, the total amount expended in acquiring the

site and the buildings on it and putting them in order was £85,000.

#### *The Third House (1908-1925)*

The improvement of the accommodation provided in the several houses became an urgent matter in 1904. Various circumstances contributed to bring this about. The reorganization of the Association in 1902, leading to the election of a series of standing committees and the appointment of a Medical Secretary—who took up the full duties of his office in 1903—placed a great strain upon the resources of the old buildings, such provision as was possible was made for the committees and the Medical Secretary and his staff, but it had to be recognized that it was altogether inadequate for the proper conduct of the work. The Library had outgrown its accommodation, and the room in which it was arranged, though finely proportioned and not ill adapted for a reading room, was so completely unsuitable for the meetings of the Council, of conferences, or of large committees, that it was found desirable to accept the hospitality of the Metropolitan Asylums Board, which placed its spacious board room at the disposal of the Council for the quarterly and other meetings. Altogether the premises were found too small and it was realized that some change had become imperative. At first it was thought that it might be possible to

obtain the needed accommodation by remodelling the house in the Strand and rebuilding those in Agar Street, and in its own. The matter was very thoroughly investigated by the Premises and Library Committee appointed by the Council, under the chairmanship of Mr Andrew Clark, with the assistance of statements and estimates prepared by the General Secretary (Mr Elliston) the financial aspects of the questions involved were very fully considered. After several alternative schemes for partial rebuilding, the Council accepted the recommendation of the Committee that the wisest, and in the end the most prudent and economical course, would be to demolish the whole of the houses on the Strand and Agar Street site, and to erect on it a new building specially designed to meet the requirements of the business of the Association.

Preparations of the plans were thrown open to limited competition and on the advice of Mr William Henman, F R I B A, the task was eventually entrusted to Mr Percy Adams, F R I B A, who was instructed to plan the ground floor and basement so as to be suitable for letting for business premises, the Association reserving for its own use the five floors above the ground floor. The work of demolition was commenced at Easter, 1907. The old house was razed to the ground, and for nineteen months, during the rebuilding, the work of the Association was carried on in temporary premises in Catherine Street, Strand. Possession

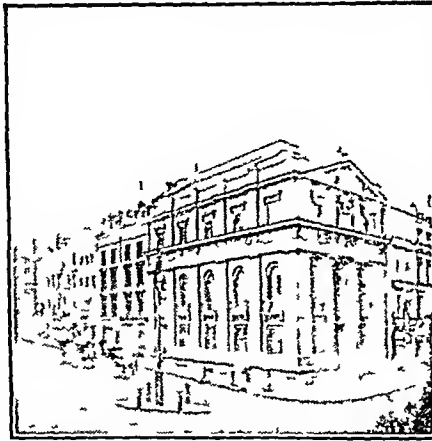


FIG 3—The buildings in the Strand and Agar Street occupied by the Association from 1886 to 1907.

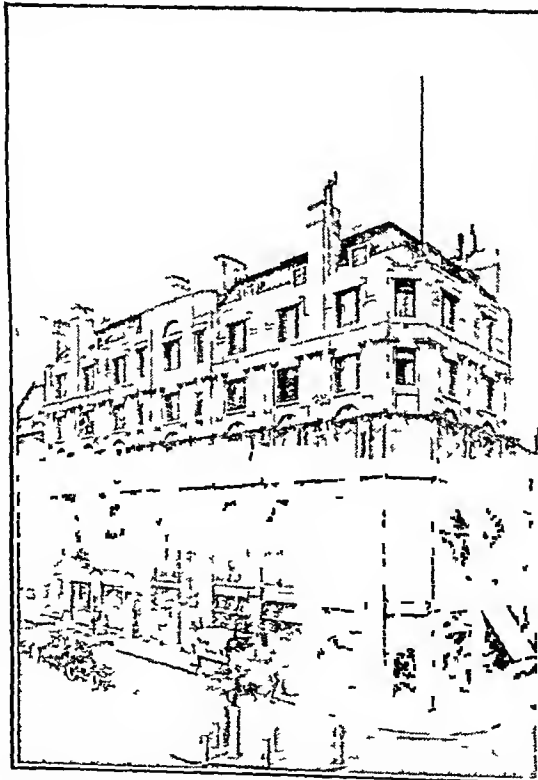


FIG 4—The building erected by the Association on the site at the corner of Agar Street and the Strand (429 Strand) and first occupied at the end of 1907.

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was obtained of the new and enlarged premises in November, 1908, but the work of arranging the Library in the fine room provided for it was not completed until some months later. The General Office was established on the first floor, the Medical Secretary's on the second floor, and the Editorial Office on the fourth floor. The printing department was on the top story (fifth floor). The lofty Library gave an opportunity for a mezzanine between the first and second floors. This was used as an extension of the General Office, and the Medical Secretary's department eventually overflowed into the third floor. In this estimate of the space occupied by the Medical Secretary's department is included committee rooms. As the Association has twelve standing committees meeting in London, and as it is frequently necessary to appoint subcommittees or special committees, the strain upon the accommodation of the Medical Depart-

ment became increasingly great. This was one consideration which led to the search for a new site, another was that the house in the Strand provided no hall for large meetings such as a Representative Meeting, should one be called in London, nor for the conferences of representatives of Local Medical and Panel Committees, of which one at least is held every year, nor for large conferences between the Association and other bodies. Accordingly, the Council some years ago began to make inquiries, and after long search eventually found the site off Tavistock Square upon which there already existed a building, designed by Sir Edwin Lutyens, R.A., well adapted for the purposes of the Association, and including a large hall seating 500 people. The site had the further advantage of providing space for the erection of additional buildings should these become necessary in the future.

## THE AUSTRALIAN BRANCHES AND THEIR HOMES

[Dr R. H. Todd, Honorary Secretary of the Australian Federal Committee, has been good enough to write for us the following account of the Australian Branches and their homes, and of the Federal organization in Australia.]



AUSTRALIA has six Branches of the British Medical Association one in each State of the Commonwealth. They are the New South Wales, the Queensland, the South Australian, the Tasmanian, the Victorian, and the Western Australian Branches. They are co-ordinated in their activities by the Federal Committee of the British Medical Association in Australia and have a medical journal in common—namely, the *Medical Journal of Australia*. The Australian Medical Congress (British Medical Association) is constituted under the Federal Committee to hold sessions every year, every second year, or every third year as may from time to time be determined. The session is arranged for and undertaken by one or other of the several Branches in Australia or by the New Zealand Branch.

From the Australian Branches are the proud possessors of homes of their own, where they have their libraries and offices and hold their meetings, and the other two have their regular meeting places. The Branches are all vigorous institutions, alive to their responsibilities in promoting the medical and allied sciences, in maintaining the honour and interests of the medical profession and in carrying out the other objects of the British Medical Association in their own portions of the Empire. In all the public relations of the medical profession each Branch within its own State is recognized by the Government and the people as the organized body of the profession in the State and is competent to speak for the profession and in Commonwealth matters, the Federal Committee is looked to to act and speak for the whole profession in Australia.

The first three Branches to be formed were all recognized as Branches by the parent Association under its rules in the same year—namely, 1880. They were the Victorian, the New South Wales, and the South Australian Branches,

known respectively for some years after their formation as the Melbourne and Victorian Branch, the Sydney and New South Wales Branch, and the Adelaide and South Australian Branch. At that time the unit of the Association was the individual member, and not, as now, the Division or Division-Branch. There were in all the three Colonies in which the Branches were formed members of the Association who, for one reason or another, held aloof from the Branch. By the year 1902, however, when the Constitution was altered to provide that every member should be a member of the Branch in the area where he resided, not many members were affected by the alteration.

### THE VICTORIAN BRANCH

The first Branch to be established in Australia was the Victorian and the following facts connected with its origin have been supplied by Dr A. L. Kenny. Early in the year 1879 Dr Louis Henry returned to Melbourne from Europe with letters from the President of the British Medical Association empowering him to communicate with the members of the medical profession in the Australian Colonies with a view to the formation of Branches of the Association. The first provisional committee meeting was held at the house of Dr James Edward Nield, 165 Collins Street, Melbourne, on Thursday, September 11th, 1879. There were present Drs J. F. Neild, L. Henry, W. H. Cutts, J. Graham, M. Gillbee, Drs J. Jamieson, A. Morrison, McMillan, Mr J. Rudall and Dr Browning, all of whom are now deceased. On September 25th, 1879, the first general meeting of the Branch was attended by thirty members and a Council was elected as follows: President, Mr Gillbee, Vice-President, Dr W. H. Cutts, Honorary Treasurer, Dr James Graham, Honorary Secretary, Dr Louis Henry, Drs Neild, McMillan, Jamieson, Browning and Morrison, and Mr Rudall. At its first meeting this Council at once put itself in communication with the medical profession in the other Colonies with a view to the formation of Branches of the Association in New South Wales, South Australia, Queensland, Tasmania, and New Zealand. The result was very gratifying so far as the first two of these Colonies were concerned. By the end of the year 1879 the Victorian Branch numbered sixty-two members.

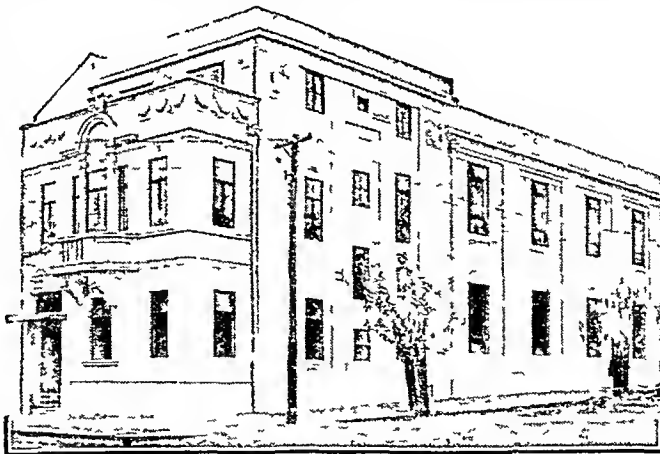


FIG. 1—The House of the Victorian Branch

now deceased. On September 25th, 1879, the first general meeting of the Branch was attended by thirty members and a Council was elected as follows: President, Mr Gillbee, Vice-President, Dr W. H. Cutts, Honorary Treasurer, Dr James Graham, Honorary Secretary, Dr Louis Henry, Drs Neild, McMillan, Jamieson, Browning and Morrison, and Mr Rudall. At its first meeting this Council at once put itself in communication with the medical profession in the other Colonies with a view to the formation of Branches of the Association in New South Wales, South Australia, Queensland, Tasmania, and New Zealand. The result was very gratifying so far as the first two of these Colonies were concerned. By the end of the year 1879 the Victorian Branch numbered sixty-two members.

The first Annual Meeting was held on August 6th, 1820, when the President, in his retiring address, disavowed any feeling of rivalry with the Medical Society of Victoria, members of which had furnished the bulk of the members of the Branch. Eighty-five members were on the roll at the second Annual Meeting on July 15th, 1881. It was pointed out that, without in any way hindering the progress or superseding the purposes of the older society (the Medical Society of Victoria), the Branch would take up subjects which, while strictly of a medical nature, had a more immediate relation to the general interest than those which were commonly discussed in medical societies, and, moreover, being in alliance with the Branches of the Association in the other Colonies, would be able to co-operate with them in the discussion of those broader questions with which purely local associations have less concern. The first Medical Society in Victoria was called the Port Phillip Medical Association. It came into existence in May, 1846, and was dissolved in 1857. The Victorian Medical Association was formed on May 7th, 1852, and the Medical-Chirurgical Society of Victoria on June 6th, 1854. These two bodies were amalgamated on June 18th, 1855, under the name of the Victorian Medical Society. This name was changed in the following year to the Medical Society of Victoria, and by it the society is known at the present day. The Victorian Branch of the British Medical Association and the Medical Society of Victoria, on January 4th, 1907, blended their constitutions in such a way that, to all intents and purposes, they became one body, membership of one implying membership of the other, and their councils and office-bearers being identical. Under this dual organization the Branch has the benefit of a grant of land, at the corner of Albert and Brunswick Streets, Melbourne, made to the Medical Society of Victoria in 1877, for the erection of a building for scientific purposes. A one-storied brick building was erected on the land, and the Medical Society of Victoria met there in its own "Medical Society Hall" for the first time on January 5th, 1878, when it celebrated its twenty-third annual meeting.

After the amalgamation of the two institutions, this building served as library, meeting-hall, and offices for the Victorian Branch of the Association until the present year, when it was demolished, and a handsome three-storied, well equipped modern concrete building has been constructed in its place. It contains on its ground floor a meeting hall capable of seating 350 persons, the library, 61 ft by 30 ft, is above the meeting-hall. A reading and writing room and council chamber and offices are also provided. On the ground floor is a large foyer, in which is placed the bronze memorial in memory of the members of the medical profession in Victoria who fell in the great war. On the third floor is a suite of rooms for the caretaker. The formal opening ceremony of the new home of the Victorian Branch took place on May 20th, 1925, reported in our issue of July 4th. The membership of the Victorian Branch is now approximately 1,200.

#### THE NEW SOUTH WALES BRANCH

The New South Wales Branch was recognized by the parent Association in the year 1880 at a time when there was no other medical society existing in the Colony. For several years previously the Medical Section of the Royal Society had served the purpose of the profession for the promotion of medical and allied sciences. In the first year

of its existence the New South Wales Branch had forty-two financial members. The numbers increased from year to year, and the activities of those members who had previously constituted the Medical Section of the Royal Society were transferred to the Branch. The membership of the Branch is now approximately 1,450. It is the largest Branch of the Association outside the United Kingdom. Of the original members the following still take an interest in its affairs: Dr. A. J. Brady, Dr. W. E. Warren, Sir Charles McKellar, Dr. T. H. Frasca, and Dr. William Clusholm.

For the first thirty years the meetings of the Association were held at the Royal Society's hall in Elizabeth Street, Sydney, and the Council for many years met in the library of the Editor of the *Australian Medical Gazette*, then the journal of the Branch, at 121, Bithurst Street, Sydney. In 1910 the Branch decided to have a building of its own. Land was purchased with a frontage of 64 ft to Elizabeth Street and a depth of 80 ft, and on it was erected the building of six stories which is known as the British Medical Association Building (30-34, Elizabeth Street, Sydney). The Branch went into occupation of its new home in March, 1911. The premises were so constructed that the first floor comprised a meeting-hall and library, together with reading rooms and offices for the Branch; the other floors were offices and business premises, which could be leased to suitable tenants. The purpose of the Branch in so constructing the building was that it should not only be a habitation for the Branch, but, in course of time, a source of revenue to enable it the better to carry out the objects of the Association in New South Wales. The names of Dr. W. H. Crago, now for thirty-six years the Honorary Treasurer of the Branch, and of Dr. G. H. Abbott, President for the year 1910-11 (the first graduate of an Australian university to fill that office), will always be associated with this building. It had its origin in their inspiration and foresight, and its successful completion was due to their enterprise. The management of the building has from its commencement been in the hands of Dr. Crago.

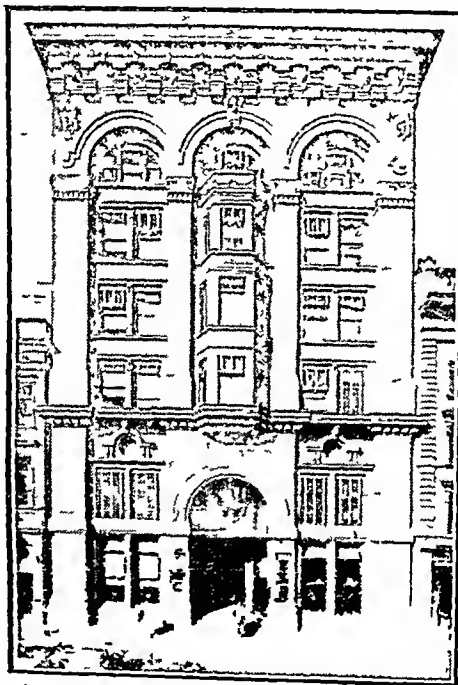


FIG. 2.—The House of the New South Wales Branch

#### THE QUEENSLAND BRANCH

In Queensland it was not until 1894 that success followed efforts made from time to time for the formation of a Branch of the British Medical Association. As in most of the Colonies, attempts had for many years been made to organize the profession by the formation of medical societies. The first society of which anything is known was the Queensland Medical Association, which was founded in 1871. It had eleven members and lasted for nine months. In 1882 the Medical Society of Queensland came into existence. Its activities also were short-lived. It was, however, revived in 1886, and became an energetic and vigorous institution holding regular meetings for scientific purposes for many years. The funds of the old Queensland Medical Association of 1871, which were in the hands of trustees and amounted to £11 11s 3d, were transferred to the Medical Society of Queensland and were utilized by it for the purchase of books which, in course of time, became the nucleus of the present library of the Queensland Branch of the Association.

The Queensland Branch was brought into existence in 1894 on the initiative of Dr. I. Sandford Jellison, who was prompted to take steps for the purpose by Dr. Fletcher Little of London, whose acquaintance he had made when visiting England a few years before. The rules of the

British Medical Association at that time required that twenty-five members of the Association should requisition the Council for the formation of a Branch. As there were only three members of the Association available in Queensland at the time, some organization work was needed to augment their numbers. This was undertaken and resulted in a meeting being convened, the necessary requisition was duly made by twenty-five members, and the Queensland Branch was recognized by the Council in 1894. The inaugural meeting of the Branch took the form of a convocation at which His Excellency the Governor of Queensland, Sir Henry White Norman, G C B, and other distinguished visitors were present. In 1899 most of the members of the Medical Society of Queensland were also members of the British Medical Association, and a fusion of the society with the Queensland Branch of the Association was brought about mainly by the enterprise of Dr A B Brockway, who was for many years the honorary secretary of the Branch.

The Branch at that time numbered 108 members. It soon began to grow too big and to be too active to be without a fixed abode, especially as it had a library which required housing. Being merely a collection of individuals, the Branch was not competent to own land, but the difficulty of procuring a home was overcome by arranging for a number of members to become incorporated as the Queensland Medical Land Investment Company, Limited. This company then purchased the premises which are now known as the British Medical Association Building, Adelaide Street, Brisbane. This building consists of three stories, the lower two of which

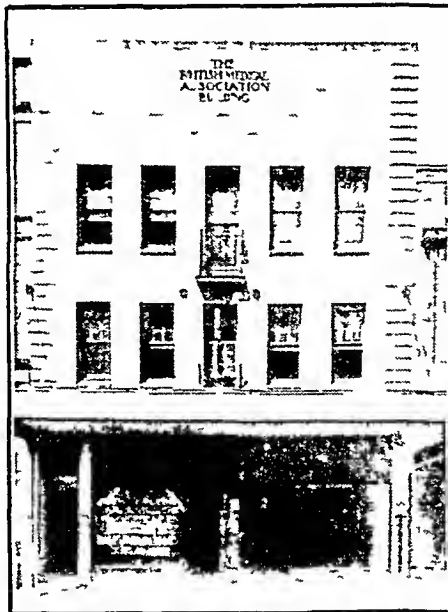


FIG 3—The House of the Queensland Branch

a company, called the B M A Hall Company, Limited, composed of members of the Branch, was formed, and a building, which previously belonged to the Y W C A, was purchased in 1913, situated on the west side of Hindmarsh Square, having a frontage of 40 ft to the square and a depth of 100 ft, and a rear frontage to Hyde Street. The building, which was erected in 1902, is constructed throughout of red brick with grey cement facings. It consists of a basement occupying the whole area and of two floors. On the upper floor are five rooms leased to tenants. The ground floor consists of a large meeting-hall and three rooms, one of which is let to a tenant. The other rooms are the offices and library of the Branch. The hall measures 40½ ft by 30½ ft. It is furnished with blackwood chairs having an extended right arm rest for writing purposes, and handsome blackwood bookcases along the walls. At the entrance of the hall is a large ante-room and at the rear is a gallery and two small sitting-rooms.

In 1913 an appeal had arrived from London for help in erecting memorials in England to the memory of the late Lord Lister, which suggested the desirability of making a local memorial and naming the hall of the new British Medical Association building the "Lister Hall." The new hall was opened on June 28th, 1914, when, at the invitation of the President of the Branch (Dr B Poulton), Sir Harry Allen, the Dean of the Faculty of Medicine of the University of Melbourne, formally dedicated the hall to the memory of Lord Lister on behalf of the members of the Branch, and, at the same time, unveiled a portrait in oils of Lord Lister which had been presented to the Branch by Dr H S Newland. Sir Harry Allen then delivered an address on Lord Lister and his work.

The membership of the South Australian Branch is now approximately 340.

#### THE WESTERN AUSTRALIAN BRANCH

The next Branch to be formed was the Western Australian Branch, it was founded in August, 1898, and was duly recognized as a Branch of the Association in 1899. In that year it had 47 members, ten years later the number had risen to 98. In 1919 the number was 136, it is now 180.

#### THE TASMANIAN BRANCH

The last of the Australian Branches to be formed was the Tasmanian Branch, which was formally recognized by the Council in 1911. It has its headquarters in Hobart, and its regular meetings have always been held at the Royal

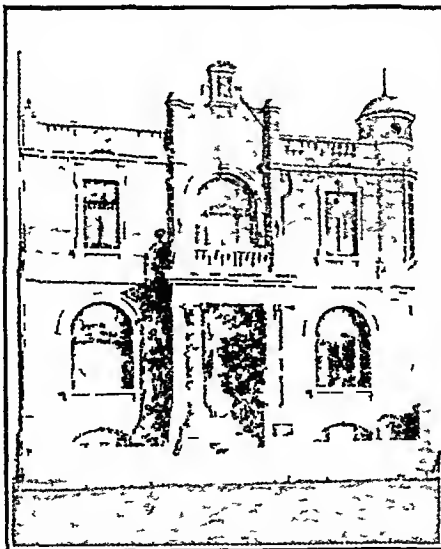


FIG 4—The House of the South Australian Branch

#### THE SOUTH AUSTRALIAN BRANCH

The South Australian Branch was formally recognized by the Council of the British Medical Association in 1880 at a time when there were a large number of medical men in Adelaide, especially those associated with Adelaide University, who were keenly interested in the progress of medical science. During the early years the meetings of the Branch were held first in the board room, and afterwards in the out-patient waiting-room, of the Adelaide Hospital. Later the University generously provided accommodation for the monthly and the annual meetings. In 1911, on the initiative of Dr W T Hayward, C M G, a movement was started to require a home for the Branch. As the result of his efforts and those of Dr H S Newland C B E, D S O, the then honorary secretary of the Branch,

Society's House in Macquarie Street, Hobart, which the members of the Branch regard as their home. Prior to the formation of the Branch, the members of the medical profession in Tasmania belonged to the Medical Section of the Royal Society of Tasmania, which was established in 1897 with the object of allowing members of the Royal Society who devoted their attention to particular branches of medical science fuller opportunities and facilities of



meeting and working together with fewer formal restrictions than were necessary at the general monthly meetings of the society, and also to guard the interests of the medical profession in Tasmania. The pioner of this Medical Section was Sir James Wilson Agnew, the President, Dr R S Bright, the Vice Presidents, Dr G H Butler and Dr L L Crowther, the Honorary Treasurer, Dr A H Clark, and the Honorary Secretary, Dr Gregory Spiatt. Dr Gregory Spiatt's name has been closely associated with the Branch since its inception, and he was its first President. He is the director of the Australasian Medical Publishing Company, Limited, representing the Tasmanian Branch and one of the Representatives of the Branch in the Federal Committee. Tasmania being by far the smallest of the Australian States, the Branch has the smallest number of members—namely, 100, which, however, is two thirds of the total number of medical practitioners resident within its area.

#### THE FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA

With the development of the several Branches in Australia and the growth of their activities, the necessity for their co-ordination became more apparent year by year. Under the constitution of the Association, they had no relation to one another except through the Council and the Representative Body of the Association. On the other hand, they had many interests in common which called for local consideration and community of action. Among their greatest needs was a common journal, but, greater still, was the necessity for a Representative Body of their own. Australia had recently become a Commonwealth in which all the States were federated. There was a strong wish that nothing should be done to weaken the ties with the parent Association. The most obvious and appropriate method of organization of the Branches as between themselves was, therefore, some form of federation. The main difficulty to be considered was the great distance separating the centres of activity of the several States. It was inappropriate also that there should be centralization of the profession in any one State. The principle, therefore, was evolved of having a small committee in which each of the Branches should be equally represented, to consider all questions of common necessity to the Branches, and to act for the Branches in all matters of common concern. The constitution for the Federal Committee of the British Medical Association in Australia was accordingly drafted. It was adopted by each of the Branches in turn in 1912-13. Each Branch elected two of its members to be members of the Committee, and the first meeting of the Committee was held in Melbourne on May 27th, 1912, when Dr W T Hayward, C M G, was appointed Chairman, Dr (now Sir) George A Syme Vice-Chairman, and Dr G H Abbott Honorary Secretary. Dr R H Todd as Assessor was associated with the Committee in its inaugural work. The constitution was approved by the Council of the British Medical Association by letter, dated May 8th, 1914. The Committee, in the ordinary course, meets regularly twice in each year, the meetings being alternately in Sydney and Melbourne. In 1920 a meeting was held in Brisbane during the course of the Australasian Medical Congress (eleventh session).

The first task undertaken by the Federal Committee was the institution of a common medical journal for the Australian Branches. Its action in this direction resulted in the establishment of the *Medical Journal of Australia* as a weekly publication, which made its first appearance on July 4th, 1914.

The value of the Federal Committee to the Branches in Australia and to the Association as a whole has been fully recognized, and advantage was taken of amendment of the Articles of Association at the Annual Representative Meeting in 1923 to provide for a Federal Council of the Branches in Australia as a body within the constitution of the British Medical Association.

Apart from the establishment of a common medical journal for the Branches, the most important develop-

mental work entrusted to the Federal Committee has probably been in connexion with the Australasian Medical Congress. This congress, from the time of its inception in 1886 in Adelaide, has been held at three year intervals in the several capital cities of Australia and New Zealand, without having any definite permanent constitution providing for the continuity of its existence. The fact that it is now controlled and regulated by the Federal Committee and recognized as a British Medical Association Congress gives it both stability and permanence.

Dr W I Hayward retired from the position of Chairman of the Committee in 1922. The present Chairman, Sir George Syme, held the position of President of the first session of the Australasian Medical Congress (British Medical Association) Melbourne, 1923. The present Vice-Chairman, Dr W N Robertson C B J, is now on a visit to England as the Representative of the Federal Committee to attend—the invitation of the Chairman of Council, Dr R A Bolam—the ceremony in connexion with the opening of the Association's New House in Tavistock Square, Bloomsbury.

#### MEDICAL JOURNALS IN AUSTRALIA

Medical journalism in Australia has a long history. It may be said to have commenced sixteen years after the arrival in 1788, of the first fleet under the command of Australia's first Governor, Captain Arthur Phillip, R N, when Dr T Jamison, one of the surgeons of the first fleet wrote for public information an article on small pox which was published in the *Sydney Gazette* on Sunday, October 14th, 1804. The history of medical journalism in Australia is related in an extremely interesting article by Dr J H L Cumpston, the present Director-General of Health for the Commonwealth published in the first issue of the *Medical Journal of Australia* (July 4th, 1914) at page 11. In it Dr Cumpston gives the following tabulated statement of the medical journals published in Australia—namely:

1	<i>Australian Medical Journal</i> N S W	1846-1847
2	<i>Australian Medical Journal</i> Victoria after wards <i>Intercolonial Medical Journal</i> after wards <i>Australian Medical Journal</i>	1855-1914
3	<i>Medical Record of Australia</i> Victoria Afterwards continued as <i>Melbourne Medical Record</i> Victoria	1861 1863 1875 1877
4	<i>Medical and Surgical Review</i> — Australasian Victorian	1863 1864 1873 1875
5	<i>Australian Medical Gazette</i> Victoria	1869 1871
6	<i>New South Wales Medical Gazette</i> N S W	1870 1875
7	<i>Australian Practitioner</i> N S W	1877 1878
8	<i>Australasian Medical Gazette</i> N S W	1881 1914
9	<i>Intercolonial Quarterly Journal of Medicine and Surgery</i> , Victoria	1894 1896
10	<i>Journal of the Sanitary Inspectors Association of Western Australia</i>	1908

Of the ten journals enumerated New South Wales produced four and Victoria five. It was not until 1914 that there was a common journal for all the Branches. That year saw the commencement of the *Medical Journal of Australia*, which is now in its twelfth year. As stated above, the establishment of a common journal was the first task of the Federal Committee of the British Medical Association in Australia. At the time the Committee took the matter in hand there were two medical journals. One was the *Australasian Medical Gazette*, which was owned and conducted by the New South Wales Branch and published in Sydney, and which was accepted by the other Branches (except the Victorian Branch) as their official organ, the other was the *Australian Medical Journal*, conducted by the Victorian Branch and published in Melbourne. The Committee was faced with the constitutional difficulty that, not being a corporate body, it could not itself own a journal. A company, therefore, was formed, called the Australasian Medical Publishing Company, Ltd., with a constitution providing that all the members of the company should be representatives of Branches duly nominated by

the several Branches for the purpose. The members elect the directors of the company in the usual way, and the directors conduct the journal—the *Medical Journal of Australia*. Before the company was formed the Victorian Branch and the New South Wales Branch had generously handed over their respective journals to the Committee with a view to the new common journal being a Federal journal free of competition.

The company was registered in 1913 at Sydney, the first chairman of directors being Dr W H Craig (New South Wales), who had so successfully managed the *Australasian Medical Gazette* for many years in association with the late Dr C I Rennie, its editor. The other directors were Dr W N Robertson (Queensland), Dr F S Hono (South Australia), Dr Gregory Spiott (Tasmania), Dr W Kent Hughes (Victoria), and Dr the Honourable A J H Saw MLC (Western Australia).

The directors decided that an editor and a manager should be appointed who would give their whole time to the services of the *Journal*. Applications for the position of Editor were invited in England and in Australia. The present distinguished editor, Dr H W Aitnt, was selected from the many candidates. He was then associated with the *BRITISH MEDICAL JOURNAL*, and was well known as an organizer and for his work in medical research. At very short notice he gave up his career in England and came with his family to make his home in Australia. Within a few weeks of his arrival he produced the first number of the *Journal*. Shortly afterwards the great war broke out, and all the consequent difficulties affecting journalism had to be contended with. Nevertheless, he succeeded in establishing a paper which has now for many years been recognized among the medical periodicals of the world. The *Journal* had for some years to be set up and printed by contract, but in 1921 so good was its progress that it was able to dispense with the services of contractors so far as the type setting and composing were concerned. Now it has its own printing house, with a complete and up to date equipment and plant, and is not only altogether independent of outside assistance, but is undertaking general printing on its own account, especially of scientific and technical publications. A full and interesting illustrated description of the printing house, which is situated at Glebe, Sydney, is given in the issue of the *Journal* of April 11th, 1925. A copy of the *Medical Journal of Australia* is supplied weekly to every member of the Association in Australia in virtue of his membership, in the same way as the *BRITISH MEDICAL JOURNAL* is supplied.

#### THE AUSTRALASIAN MEDICAL CONGRESS

The institution now known as the Australasian Medical Congress (British Medical Association) was established in the year 1886 under the title of "The Intercolonial Medical Congress," and, as such, organized scientific meetings in the several Colonies or States of Australia and in New Zealand

every third year until 1905, the sessions being held as follows: 1886, Adelaide, 1889, Melbourne, 1892, Sydney, 1896, Dunedin, 1899, Brisbane, 1902, Hobart, 1905, Adelaide. After the federation of the Australian States as a Commonwealth the name of the congress was altered to the Australasian Medical Congress, and sessions were held under the new title as follows: 1908, Melbourne, 1911, Sydney, 1914, Auckland and 1920, Brisbane. At the meeting held in the year 1920, a referendum of the members of the congress was taken on the following question:

Are you in favour of the abolition of the Australasian Medical Congress as at present constituted in order that opportunity may be given of establishing congresses of the Australian Branches of the British Medical Association?

The voting on the question being in the affirmative, the following resolution was passed unanimously:

That the executive of the congress be empowered to wind up the affairs of the eleventh session of the Australasian Medical Congress and hand over to the Federal Committee of the British Medical Association surplus funds (if any) after the expenses of the congress have been met such funds to be passed on for the use of the future congresses of the British Medical Association.

The Federal Committee, at its subsequent meeting in February, 1921, resolved to establish British Medical Association Medical Congresses and to invite the co-operation of the New Zealand Branch. In another resolution it was determined that the objects of the congress should conform generally, *mutatis mutandis*, to those of the Annual Scientific Meeting of the British Medical Association. The first session of the congress under the new auspices was held in Melbourne in November, 1923, the President being Sir George Sime, FRCS, chairman of the Federal Committee. The congress was an unqualified success and, as could be judged from the reports published in the *BRITISH MEDICAL JOURNAL* at the time, set a high standard for future sessions.

The late Sir William Macrae accepted the invitation of the executive to attend this first session, and his distinguished presence as the ambassador of the Association was greatly appreciated by all the members as being further evidence of the feeling of kinship existing between the parent Association and its Overseas Branches.

The second session is being arranged by the New Zealand Branch and will be held at Dunedin in February, 1927.

In regard to membership of congress, whereas, under the previous constitution, every intending member had to apply to the executive on a form provided for the purpose and to be elected, under the present constitution every member of any Branch of the British Medical Association in Australia or of the New Zealand Branch is entitled to be a member without election, and every other member of the profession is entitled to apply for election.

## NEW ZEALAND.

The New Zealand Branch of the British Medical Association was established in 1896, when 104 members were enrolled. Its headquarters were at Christchurch, and the first permanent honorary secretary, Dr C Graham Campbell, held office from 1897 to 1902. By 1907 the membership had trebled and it was resolved to form Divisions within the Branch. In 1915 the number of members was 591 and in 1925 it had risen to 765. The Branch has fourteen Divisions: the Auckland Division has the largest number of members (170), the next in magnitude is the Wellington Division (117 members), the next Canterbury (99), and then Otago with 88. In March, 1924, it was decided to form a medical agency in connexion with the Branch office, to deal with the transfer of practices, the supply of locumtenents and the general safeguarding of the interests of the members of the Branch.

The Branch holds an annual meeting and at that held

in Auckland last year the President, Mr Currie Robertson, surgeon to the Auckland Hospital, said in the course of his address that in New Zealand many doctors had to carry on their practice entirely isolated in sparsely populated districts. Normally the New Zealand doctor worked alone, only occasionally, chiefly in the cities, did partnerships exist. In these circumstances the Divisions of the Branch form a talking point for the scattered workers, and though the membership of some of the Divisions is small they are of great value in affording opportunities for medical men to come together for discussion and to make or renew acquaintance.

As mentioned above, the next session of the Australasian Medical Congress is to be held at Dunedin, New Zealand, in February 1927. The *New Zealand Medical Journal*, the organ of the Branch, is published every two months, and 120 numbers have now appeared.

## THE BRITISH MEDICAL ASSOCIATION IN SOUTH AFRICA.

We are indebted to Dr. D. Campbell Watt of Pietermaritzburg, President of the South African Committee of the British Medical Association, for the following notes on the history and present position and prospects of the Association in South Africa.

In 1888, at a meeting of the South African Medical Association held at Cape Town, it was resolved that the local division of the South African Medical Association should merge itself in the British Medical Association and become a Branch thereof. This resolution was duly carried into effect, and the Branch was called the Western Province Branch (Cape of Good Hope).

Five years later the Eastern Province Division of the South African Medical Association also became a Branch of the British Medical Association. Shortly afterwards the Griqualand West Branch was formed at Kimberley, and in 1896 the Natal Branch followed suit. The Transvaal Branch was next added to the number, while the Border Branch was formed in 1906 as an offshoot from the Eastern Province Branch. The Transvaal Branch by a process of fission later on became the Witwatersrand Branch and the Pretoria Branch and in 1913 the Natal Branch was split into the Natal Coastal and the Natal Inland Branches.

In 1912 the Rhodesian Branch was formed, and the Orange Free State and Basutoland Branch came into being in 1913, at the time of writing a new Branch is being formed in Port Elizabeth and district.

The South African Branches, therefore, are now eleven in number, and in most cases they have been formed from antecedent societies.

## THE SOUTH AFRICAN COMMITTEE

Although the various Branches of the Association in the different Colonies and States exercised a salutary influence within their own spheres, especially on the legislative bodies in matters of public health and other legislation, in addition to the ordinary activities common to medical societies, yet it was felt that it was essential that there should be some combined body representing the entire Association in South Africa, able and willing to voice the views of the profession as a whole.

In 1906 the Western Province Branch therefore moved in the matter, and in 1909 the Central Council approved of the scheme submitted by the Branches for the formation of a South African Committee, subject to certain amendments, and it delegated many of its powers over the South African Branches to the Committee.

The Branches set to work, and by 1912 the Regulations of the South African Committee had been adopted and approved by the Council of the Association and the first office bearers appointed, the late Sir Kendal Friels, C.B., being its first President, Dr. Matthew L. Hewitt Vice-President, and Dr. D. Campbell Watt Honorary Secretary and Treasurer. The Branches represented at the inauguration of the South African Committee were the Western Province Branch, the Eastern Province Branch, the Griqualand West Branch, the Border Branch, all of Cape Colony, the Transvaal Branch, and the Natal Branch.

The existence of the South African Committee has been fully justified. Many subjects of interest to South African practitioners have been taken up, and some success has attended its efforts.

## MEDICAL CONGRESSES

Shortly after the formation of the Committee it was decided that in the future the medical congresses should be held annually in the auspices of the British Medical Association, and in 1913 regulations were adopted governing the congress and appointing the South African Committee of the Congress as a permanent organizing committee of each congress.

The 1924 Annual Congress has been held in Pietermaritzburg, as recorded in our last issue, p. 79.

## MEDICO POLITICAL ACTIVITIES

The Committee was consulted by the Union Minister of Defence regarding the regulations dealing with the Medical Department of the Citizen Defence Force, and many of the alterations proposed by it were adopted. The necessity of appointing school medical officers was urged upon the Government with success. The establishment of a separate Department of Public Health, with a Minister, was advocated, and when the present Public Health Act was before Parliament the then President of the South African Committee gave evidence before the Select Committee, and prior to the bill being drafted he was appointed a delegate to a public health conference dealing with the proposed legislation, and his efforts proved highly successful in moulding the bill on the lines advocated by the South African Committee.

A consolidating Medical, Dental, and Pharmacy Bill has been before Parliament several times, and last year a vigorous attempt was made by Christian Scientists, chiropractors, and other cult practitioners to obtain State recognition under the bill. Evidence was given by them on the one side, and by the President of the South African Committee and other representative medical practitioners on the other side, before a Select Committee. The bill is again before Parliament this session, and as it stands contains no recognition of these cults. The profession is hopeful that the bill will go through as drafted in this regard, although there is a surprisingly large element of sympathy for these cults both in and out of Parliament.

Evidence was given by the President of the Committee before the Government Hospitals Commission, when he advocated the proposals which had from time to time been adopted at various congresses and by the South African Committee. Many of the Branches also sent witnesses to give evidence before that Commission. The Western Province Branch Parliamentary Committee has on several occasions held a watching brief for the Association, and done much to inform members of Parliament with regard to measures affecting the profession.

It was deemed advisable by the Committee to draw up a *Guide to Medical Ethics*, and the guide has received commendation from the medical press, and proved itself useful.

A voluntary benevolent fund has been established by the Committee, and arrangements made with several insurance companies for the issue of medical defence policies to practitioners.

## THE FUTURE

The Association in South Africa had the pleasure of the presence of Dr. J. A. Macdonald, a Vice President of the Association and lately Chairman of Council, at the Congress held in Durban in 1920, and he paid a visit to most of the local Branch headquarters during his stay in the country. His visit was productive of much good.

The career of the British Medical Association in South Africa has not gone unchallenged. Several attempts have been made to establish a South African Association, the latest and greatest being within recent years, but on that occasion, by a small majority of the members, it was resolved to adhere to the British Medical Association, although a large proportion of the entire profession was in favour of a local association, affiliated with the British Medical Association. As a sequel to this position the Council of the Association most generously offered substantial financial aid in the appointment of an Organizing Medical Secretary for South Africa, but as a corresponding sum could not at the time be guaranteed by the Branches the Council has kept the offer open for a year.

Meanwhile the South African Committee and the Branches are making special efforts to increase the membership of the Association by the issue of appeals to non-members and the appointment of Branch organizing secretaries. At the present time the Association embraces about one-half of the practitioners in South Africa.

## CANADA.

The organization of the British Medical Association was extended to Canada a good many years ago. The first Branch—Halifax, in Nova Scotia—was recognized in 1867, in 1891 the Montreal Branch and the Manitoba and North-West of Canada Branch were recognized, and in 1894 the British Columbia Branch. Afterwards Branches were recognized in Toronto, Saskatchewan, and New Brunswick.

Two highly successful Annual Meetings of the Association have been held in Canada—the first in Montreal in 1897 under the presidency of Dr. (afterwards Sir) Thomas Roddick, and the second in 1906 in Toronto, when Dr. R. A. Reeve was President. At the time of the meeting in Montreal the profession was much concerned to obtain from the Canadian Parliament an Act to remove certain legislative anomalies which hindered the free practice of medicine throughout the Dominion and also full reciprocity with this country. Dr. Roddick, as the leader of the Canadian profession in this matter, he visited every province to explain his scheme, and from his place in the Canadian Parliament urged its advantages year after year. The Canadian Medical Act was passed in 1902, but the Provinces which had hitherto had control, each in its own area, were slow to relinquish their privileges, and it was not until 1912 that it was possible to constitute the Medical Council of Canada, of which Dr. Roddick was elected the first President. It is not, we think, too much to claim that the two Annual Meetings of the British Medical Association held in Canada did much to assist the reformers there and to convince others of the possibility and of the advantages of the unification of the profession in the Dominion. Both meetings were attended by a large number of members from this country, and this alone was sufficient to convince our Canadian brethren of the keen interest the home members took in their difficulties—difficulties which had been overcome here—and in their welfare generally. After the Canadian Medical Council was established and legal unification was in existence, there still remained the task of bringing about the voluntary organization of the profession in Canada. The Branches of the Association in the Dominion languished and the Canadian Medical Association formed in 1867, when the Provinces were federated and a Dominion Parliament established, did not flourish.

After the war, in which the Canadian Army and its medical officers took so fine a part, the position of the Canadian Medical Association was taken in hand and it became apparent that that association, extended to the

whole Dominion, was in the opinion of the profession there better adapted to its needs than any reorganization of Branches of the British Medical Association could be. Discussions took place between the Canadian Medical Association and the British Medical Association which ended in the elaboration of a scheme for the affiliation of the Canadian and British Medical Associations. The Council at home was able to induce Sir Jenner Veall and the Medical Secretary (Dr. Cox) to accept a cordial invitation to visit Canada in the spring of 1924, and then the details of affiliation were finally adjusted. That scheme is now in force. Arrangements were made for intercommunication and the exchange of information, and members of the Canadian Medical Association were given the right to attend the Annual Meeting of the British Medical Association in this country and its Sections, to make use of the British Medical Association house and library, and to command the help of the central staff of the Association there. The Canadian Medical Association in addition to giving similar facilities to members of the British Medical Association undertook to nominate persons to act at Annual Meetings of the British Medical Association in the British Isles.

These plans are now working. Information is already being exchanged and more and more members of the Canadian Medical Association are resorting to the headquarters staff in London for help and advice on various matters. The British Medical Association has been able to arrange for some of its prominent members to visit Canada and to take part in the annual meetings of the Canadian Medical Association. Quite recently, as we mentioned a few weeks ago, the President of the British Medical Association Mr. Basil Hall, visited Montreal, Toronto, Winnipeg, Ottawa and other parts of Canada as a representative of the British Medical Association. He received a very warm welcome everywhere, and the address he delivered to the Academy of Medicine in Toronto is published in this issue. Mr. H. W. Carson, by invitation, gave addresses on surgery at the Annual Meeting of the Canadian Medical Association at Regina in June last. Further evidence of the success of the new plans is afforded by the fact that the largest and most representative delegation of Canadian medical men which has ever attended a meeting of the Association in this country has been present this week at the opening of the New Building, and will take part in the Annual Meeting at Bath.

## WEST INDIES

The British Medical Association has been active in the West Indian Islands for nearly half a century. The first Branch, that in Jamaica, was founded in 1877, and the number of its members has increased to 64. The second Branch to be recognized was in British Guiana (1883), it has steadily maintained its membership, and publishes

reports of its work in a volume entitled the *British Guiana Medical Annual*. The Bermuda Branch was founded in 1886, and the Barbados in 1889. In the following year the Leeward Islands Branch was recognized. In 1892 the Trinidad and Tobago Branch was founded. Grenada Branch followed in 1916, and the St. Lucia Branch in 1923.

## INDIAN AND OTHER ASIATIC BRANCHES.

The first Branch of the British Medical Association founded in India, or in the East, was the Bengal Branch organized in 1863 by the late Surgeon-Major Norman Chevers. The Branch was at first well supported and had a numerous membership, both of service men and of private practitioners—European and Indian. In 1867 Dr. Mohendra Lal Sarkar, a leading Indian physician read a paper advocating homoeopathy, to which he had become a convert. The discussion caused by this paper practically broke up the Branch, though it lingered on for a few more years. In 1879 an attempt was made to reconstitute the Branch, but the profession in Calcutta preferred to start an independent society—the Calcutta Medical Society. This body had a

successful career of some fifteen years. It published a monthly fasciculus of proceedings. For over half a century Calcutta, the former capital of India, has been unrepresented in the Association.

In 1882 the late Surgeon-Major C. W. Shirley Deakin, an I.M.S. officer of great ability and energy, started the North-West Provinces and Oudh Branch. Deakin enlisted a large membership, nearly two hundred, chiefly officers of the A.M.D. and I.M.S. but with a fair sprinkling of European private practitioners. Its meetings were held at Allahabad, and Deakin, as editor, published a monthly periodical, at first under the name of *Transactions*, which in 1885 became the *Indian Medical Journal*. This Branch came to grief in

1885 over a paper read by the late Lieut-Colonel (then Surgeon) Andrew Duncan, entitled "The insurmountable tendencies of State sanitation," the language of which was both intemperate and insubordinate, though the views of the causation of cholera advanced by Duncan were opposed to the theories then in official favour, strongly supported by Surgeon General J. M. Cunningham, the then head of the I.M.S., they have been proved by time to be correct. Duncan published Duncan's paper in the *Indian Medical Journal*, and supported it in a strongly worded leader. Both Derkin and Duncan suffered. Derkin went on far longer, and on his return was relegated to military duty in the Punjab. With his departure from Allahabad the North-West Provinces Branch died out. On his return from furlough he resuscitated it as the Punjab Branch. Most of the members of the defunct North West Provinces Branch joined the new one, which lasted for some four years. Derkin died of enteric fever at Jhulam on November 17th, 1889. After his death the Branch came to an end, as also did the *Indian Medical Journal*. Both the North-West Provinces and the Punjab Branches, though named after the provinces which were then headquarters, had members all over India.

The third Indian Branch, in date, was the South Indian and Madras Branch, founded on October 4th, 1883, and recognized in 1884. This is not only the oldest existing, but has been the most successful Indian Branch. It has now lasted over forty years, and in membership stands second only to Bombay. It publishes its *Transactions* monthly. In fairly rapid succession followed the Bombay and the (second) Punjab Branch in 1889, the Burma Branch in 1891, and the Deccan Branch in 1894. The last died out, or was in a state of suspended animation for some years, but has been resuscitated as the Hyderabad Branch. Three other Branches have since been added—Assam in 1908, Baluchistan in 1910, and Northern Bengal in 1922.

In April last the Association mustered eight Branches and over a thousand members in India, as follows:

	Recognized	Members
South Indian and Madras	1884	143
Bombay	1889	193
Punjab	1889	88
Burma	1891	63
Hyderabad (Deccan)	1894	30
Assam	1908	55
Baluchistan	1910	13
Northern Bengal	1922	13
I.M.S. officers not attached to any Branch		288
Other members outside area of any Branch		140
Total		1,026

There are four other Branches in Asia, outside India: the Ceylon Branch, recognized in 1887, with 206 members, Hong Kong and China, 1891, 169 members, Malaya, 1894, 202 members, and Mesopotamia, 1921, 45 members. Though far beyond the geographical boundaries of India, the last might almost be considered an Indian Branch, its membership consisting chiefly of R.A.M.C. and I.M.S. officers of the Indian Army. The Hong Kong and China Branch is increasingly active in spite of its insular position and local transport difficulties. Two meetings were held in 1923, but in 1924 it was decided to hold monthly meetings. At the invitation of the Branch to the Chinese Medical Missionary Association, a very successful joint medical conference was held in Hong Kong in January, 1925. The Ceylon Branch has published a journal for the last twenty-two years. The annual meeting of the Malaya Branch are now held alternately in the Federated Malay States and the Straits Settlements. Dr. J. W. Schriiff, honorary secretary of the Branch, acted as secretary and treasurer of the fifth congress of the Far Eastern Association of Tropical Medicine at Singapore in September, 1923. More than 300 medical practitioners attended from fifteen different countries, and nearly sixty papers were submitted dealing with tropical diseases and the opium evil. The active co-operation of the Branch and the energetic work of Dr. Schriiff contributed very largely to the value and success of the congress.

The Association has always used its influence to press the just claims of the great public medical services, each of which has, in turn, had cause to be grateful for the support given to it by the full weight of the profession in Britain, exercised through the Association. On at least three occasions during the last half century has the I.M.S. been helped by it. The first was over the "unemployed pay" question, in the early eighties, when the service had been over-recruited, till its strength was quite out of proportion to the number of appointments available, and a large number of juniors were drawing what was called "unemployed pay" while on general duty. Some of them had little work to do, as superintendents, assistants to senior officers in regiments, others, on choicest duty or similar work, were really working harder than the men drawing full pay. The second time was when the pay of nearly all ranks was considerably increased, in 1902. And the third was when both pay and pensions were again raised, after the war. On such questions also as command pay, specialist pay, and study leave, help to press the claims of the service has been readily given.



medical service, including nursing, in the Highlands and Islands of Scotland and otherwise providing and improving the means for the prevention, treatment and alleviation of illness and suffering therein." The Board of Health, which is the counterpart in Scotland, as far as regards powers and duties, of the Ministry of Health in England, administers this Act and as a result of its operation conditions of practice in the Highlands have been very greatly improved. Grants are made to individual practitioners, and in some instances a minimum income is guaranteed in return for which practitioners undertake to visit dependents of insured persons and persons of the crofter class at a standard scale of charges. The adjustment of the scale and of the grants is no easy matter, and finality has not been reached, but a fairly satisfactory working arrangement has been come to. A Highlands and Islands Committee of the Scottish Committee has been set up, and through it practitioners serving under the Act can express their views collectively. The Board of Health now recognizes that committee as representing the practitioners and regularly consults with it on all matters pertaining to the conditions of service.

Even apart from the Highlands, Scottish health legislation and administration differ considerably from English. The Public Health Acts are different, as is also the Education Act. The Insurance Act is the same in essentials, but is administered separately from England and differs in detail of administration. In all of these various spheres the Scottish Committee and its subcommittees find scope for activity and useful work for the profession. Testimony to the value of that work was made by the Secretary for Scotland in a recent speech, when he said that he believed the relationship between the Association and the Board of Health in Scotland had been not only of a friendly but essentially of a useful nature.

In a more restricted but still important sphere good organizing work has been done—namely, in connexion with contract practice in colliery areas. The Colliery and Public Works Surgeons' Committee, which, though not a committee of the Association, is organically connected with the Scottish Committee, succeeded some years ago in establishing a national rate of payment in substitution for the various district agreements formerly in force, and has successfully maintained the rights of the profession to reasonable remuneration.

The scientific side of the Association's work is likewise well maintained. The clinical demonstrations arranged by the Edinburgh and the Glasgow and West of Scotland Branches, and the clinical and scientific meetings of the Fife Branch and the South-Eastern Counties Division and other Divisions, are specially noteworthy.

The successful Annual Meeting in Glasgow in 1922 had a markedly stimulating effect, and the Annual Meeting which is projected for Edinburgh in 1927, when the centenary of Lister will be celebrated, is already being looked forward to with pleasurable anticipation.

The new Scottish House of the Association, the auspicious opening of which in Edinburgh was recently reported in

our columns,<sup>1</sup> marks a new era in the development of the Association in Scotland. Providing as it does imple office and other recommendation for the immediate purposes of the Association, it promises also to fulfil the function of a medical centre for Edinburgh and for Scotland. That the Scottish Committee may be trusted to promote and uphold the high ideals of the Association is evidenced by the speech of the chairman, Dr C. C. Douglas at the opening ceremony. Prefacing his remarks with a note of the extension of the membership in Scotland, he went on to say: "Such extension is all to the good. We must expand. It is true that the doctor is essentially a born individualist, he, like the soldier, feels that in the last resort it is his own hand, his own brain, may I add perhaps his own wits, by which he stands or falls. But just as the soldier, brave though he may be, is as nothing without the organization of the modern army behind him, so in our day no man can be at his best living apart from our great organization of the British Medical Association. And we have thus to offer him, that if he will join us, to his fine ideal of individual enterprise and energy there shall be added that other great ideal of devotion to a good cause, the maintenance of the 'honour and respectability' of the profession to which he belongs. It is an interesting thing to note how a great ideal attracts to itself the best men, and we see this in the history of our Association. From Sir Charles Hastings, our founder, who I like to think was a graduate of Edinburgh University in 1818, on to Sir Victor Horsley himself, there were always fine men at the head of its affairs. We should never, in a gathering like this, forget to think of Horsley, the father of this modern, self-governing, democratic Association of ours. Since his time we have always had good men at our head, and even now I am struck with the quality of the men whom one meets in the Council. There are men—I may not name them as some of them are here—who for intelligence, for sagacity, for devotion to our proper interests, might find an honourable place on the directorate of any of the great industrial enterprises. They say that we are a trade union. To that I reply that, while we may act as much like a trade union as may be done by the members of a learned profession, we work under a maxim—the fine old Roman law, *Salus populi suprema lex*—the which, were it acted upon by the great trade unions of this country, many of the evils under which we suffer would disappear. I say—and our records are all open to examination—that never in the history of the Association has anything ever been carried that is opposed to the general good of the community, and I feel certain that it never will. We have other functions. You may have noticed that we have above us the Scottish Meteorological Office of the Air Ministry. It appears to me that we ourselves act as the medical meteorological office—always on the look-out for storms, with this advantage, that we do something about these same storms when they do arise—a useful function not yet attempted by the other office."

<sup>1</sup> BRITISH MEDICAL JOURNAL June 14th 1925 p 1031

## IRELAND

### THE IRISH FREE STATE

THE Dublin Branch of the British Medical Association was established in 1877, its area corresponded approximately with that now included in the Leinster Branch. In 1895 it consisted of 120 attached and 202 unattached members, making a total membership of 322. The majority of these members resided and practised in the city of Dublin and its adjoining townships. The Leinster Branch now includes the counties of Dublin, Kildare, King's, Longford, Louth, Meath, Queen's, West Meath, Wicklow, and Wexford, except a small portion adjoining County Wexford. The south-western portion of Wexford with County Kilkenny and the County, Carlow, although in the Province of Leinster are not included in the Leinster Branch, and form a portion of the

area included in the South-Eastern of Ireland Branch. The Dublin Branch during its existence was prominently identified with Irish medico-political questions, and its leading members took an active part in the promotion of public health legislation and in the improvement of the position of Poor Law medical officers in Ireland. The majority of the members of the Dublin Branch were engaged in private practice, as is the case to day. They became members of the Association in order that they might be in a position to help their colleagues who were less fortunately placed in the public services and to share in the scientific side of the Association, and especially to receive its JOURNAL. In 1905 the Leinster Branch had a membership of 329, which fell in 1915 to 164 as the result of the increased annual subscription and had times generally

for medical practitioners in Ireland rising out of the European war. To day the membership of the Leinster Branch stands at 252. It must be remembered that a very considerable number of the younger members of the Association, especially of the Leinster Branch, leave Ireland each year to practise in Great Britain, the Dominions, and Colonies. The East and South of Ireland Branch was recognized in 1893, and in 1895 it had 41 attached and 104 unattached members. This Branch, with the South-Eastern of Ireland Branch, included all the Munster area and the extreme southern portion of Leinster. The East and South of Ireland Branch is now known as the Munster Branch, and includes the counties of Clare, Cork, Kerry, Limerick, and the North Riding of Tipperary. The medical population in Munster is small and scattered, as the province is almost entirely agricultural. The Munster Branch in 1905 consisted of 99 members, but owing to cruises similar to those which operated in Leinster the number of members declined. It has since increased, and the Branch has at the present time a membership of 102, which is the highest since its formation. The South Eastern of Ireland Branch was also recognized in 1893. In 1895 it had 37 attached members and 24 unattached. In 1905 its membership was 65, in 1915 it was 45, and in 1925 it was also 45. The South Eastern of Ireland Branch includes in its area the counties of Carlow, Kilkenny, Tipperary (South Riding), Waterford, and the south western part of Wexford which it adjoins the County Waterford. The Connaught Branch includes the Province of Connaught, it was recognized in 1903. In 1915 it had 31 members, and in 1925 this had increased to 40. Thus there are in the Free State four complete Branches. The Irish Free State counties of Carlow, Donegal, and Monaghan are included in the Ulster Branch with the six counties under the Northern Parliament. The four entire Branches in the Free State consist of fourteen Divisions. Of these, there are six in the Leinster Branch, three in the Connaught Branch, three in the Munster Branch, and two in the South-Eastern of Ireland Branch. There is also in the Free State the Monaghan and Carrigrohilly Division, which belongs to the Ulster Branch. The County Donegal (Free State) members of the Association are attached to the Derry and County Fermanagh Divisions of the Ulster Branch.

Besides the Branches and the Divisions there is a Standing Committee—the Irish Committee. The President, Chairman of Representative Body, Chairman of Council, and Treasurer are members *ex officio* of this Committee. The additional *ex officio* members are the Secretary of each Irish Branch and the members of Council representing Irish Branches. In addition there is one member appointed by each Irish Branch, but, if the Secretary of the Branch is a member of the Council, two members appointed by each Branch. Any member specially appointed by the Leinster Branch or by the Ulster Branch must be a practitioner not resident in Dublin or Belfast. Three to eight members selected by the Irish Committee at its first meeting each year complete the full list of members of the Irish Committee. The Irish Committee considers all matters specially concerning Ireland. It has its own Medical Secretary (Dr. T. Hennessy) and its own Irish Offices (16, South Frederick Street, Dublin), where it attends to all Irish medical questions.

### THE ULSTER BRANCH

In 1877 a number of medical men met in Belfast and resolved to form a Branch of the British Medical Association. It was decided to call it the North of Ireland Branch. Dr. James Cuning was elected first president, and Dr. John Moore honorary secretary and treasurer. Three general meetings besides the annual meeting are held usually in Belfast, but occasionally in other towns, and the average attendance is about 35. The Branch has grown steadily, and at the annual meeting this year, with Professor McIlwaine as president, the honorary secretary, Mr. H. P. Mulholland, M.C., reported a membership of 440. The agenda contained a list of a score of members who showed patients and demonstrated specimens. The clinical side of the Belfast Medical School holds a position almost of the time, and recognizes with gratitude the ever ready help of the Association and Journals. The representatives of the Branch on the Council and central committees are diligent in attendance, despite the distance, and offer their contributions to the discussions of the business of the Association at the same time they take back to Northern Ireland much useful information. Many clinical papers of scientific interest have been published from time to time in the *Journal* and have served to ventilate the views and discoveries of medical practitioners in Ulster and of the teachers in the medical faculty of the Queen's University of Belfast.

In 1884 the Annual Meeting of the Association was held for the first time in Belfast, under the presidency of the late Dr. James Cuning, professor of medicine in the then Queen's College. This meeting, at which a large amount of professional work was done, served to widen the outlook of the medical men of the Province, and acted as a stimulus to the scientific work of the school. In 1901-2, when the constitution of the Association was being reorganized, and Dr. J. S. Darling (Lurgan) was president of the Branch, and Dr. W. Caldwell (Belfast) honorary secretary, one of the tasks that had to be undertaken was the adjustment of the boundaries of the Divisions. Some difficulties were encountered, but they were eventually overcome, and the arrangements then made have continued in force with a few minor alterations until the present time. The Ulster Branch is practically co-terminous with the geographical area of Northern Ireland, and is very active, especially in Belfast. The Association met again in Belfast in 1909. Sir William Whittham, M.D., was President, and over 1,500 members attended. The late Sir John Biers gave the address in Obstetrics, and much useful work was accomplished in the scientific sections. This meeting served again to bring the unity of the profession home to those in Ulster who did not attend the annual meetings in other towns, or indeed rarely the branch meetings, and acted as a stimulus to the scientific work of the school.

The Ulster Medical Society is an old local society, serving the clinical wants of Belfast itself, and many country Fellows are assiduous in attendance at its meetings, it is in a flourishing condition, and publishes annual *Transactions* of much clinical value. The society and the Branch are complementary to each other, the friendliest relations existing between them, most Belfast practitioners are members of both, and in any general question of moment a committee formed from the councils of both is appointed to voice the views of the profession.

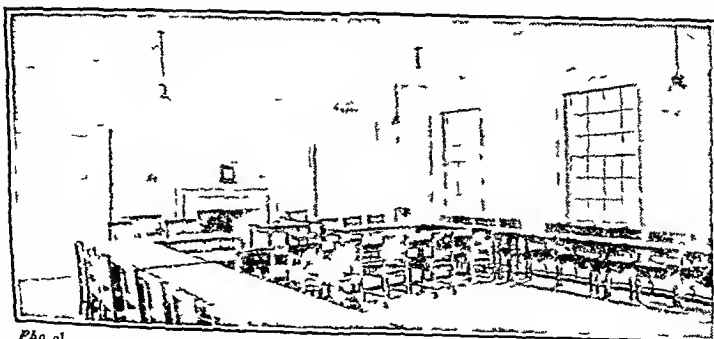


Photo of

COMMITTEE ROOM A IN SOUTH WING

Country Life

## THE NEW HEADQUARTERS OF THE BRITISH MEDICAL ASSOCIATION

### DESCRIPTION OF THE BUILDING



THE GREAT HALL FROM ONE OF THE AISLES

on its side Bloomsbury is a region rapidly coming into its own once more after many years of comparative neglect, and the direct route from Kingsway to King's Cross is one which will presently be of the first importance. It is towards the northern end of this route that the House stands.

The New Building had been completed up to a certain point when it was taken over by the Government during the war. It was acquired by the British Medical Association two years ago from the Disposals Board on advantageous terms, the lease from the trustees of the Duke of Bedford's estate is for 200 years. The outside had to be completed and a great deal of work was necessary to the interior before it could be fitted, under the direction of Sir Edwin Lutyens, R.A., to the purposes of the Association.

The building has as many qualities as the site. Its broad façades were drawn by Sir Edwin Lutyens in sober

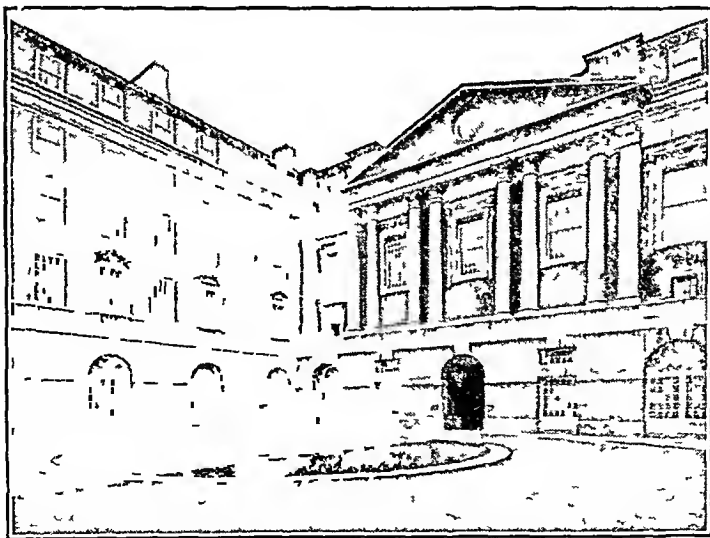
and austere mood, they were originally designed to house a religious organization, which may have had something to do with it. The plan is of that delightful enclosing U-shape which is the principal charm of so many of our collegiate and other buildings in which a great many people live and work together. The open space of the U is, however, approached through a broad passage which separates the central Court of Honour from Tavistock Square.

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#### THE MEMORIAL GATES

Entering through this roadway (flanked on each side by buildings which will one day yield place to extended wings of the new edifice), the first objects that strike the eye are the beautiful Memorial Gates opening into the Court of Honour, and beyond the Gates the façade of the main block with its stately windows. The Gates or Remembrance are of wrought iron, and their design is founded on the choicest examples of eighteenth century work. They are surmounted by a bronze shield bearing on either side a legend lettered in gold: in front "Memoria

and praise," behind "Faithful hath been your warfare." They have been made by the Birmingham Guild to the design of the architect leafwork and scroll form the main feature. The total width of the gate and railings is 60 feet, the height at the centre is 24 feet. They have been erected by the Association as a tribute to the 574 of its members who fell in the war and whose names are inscribed in the Boole of Honour.



(Photo)

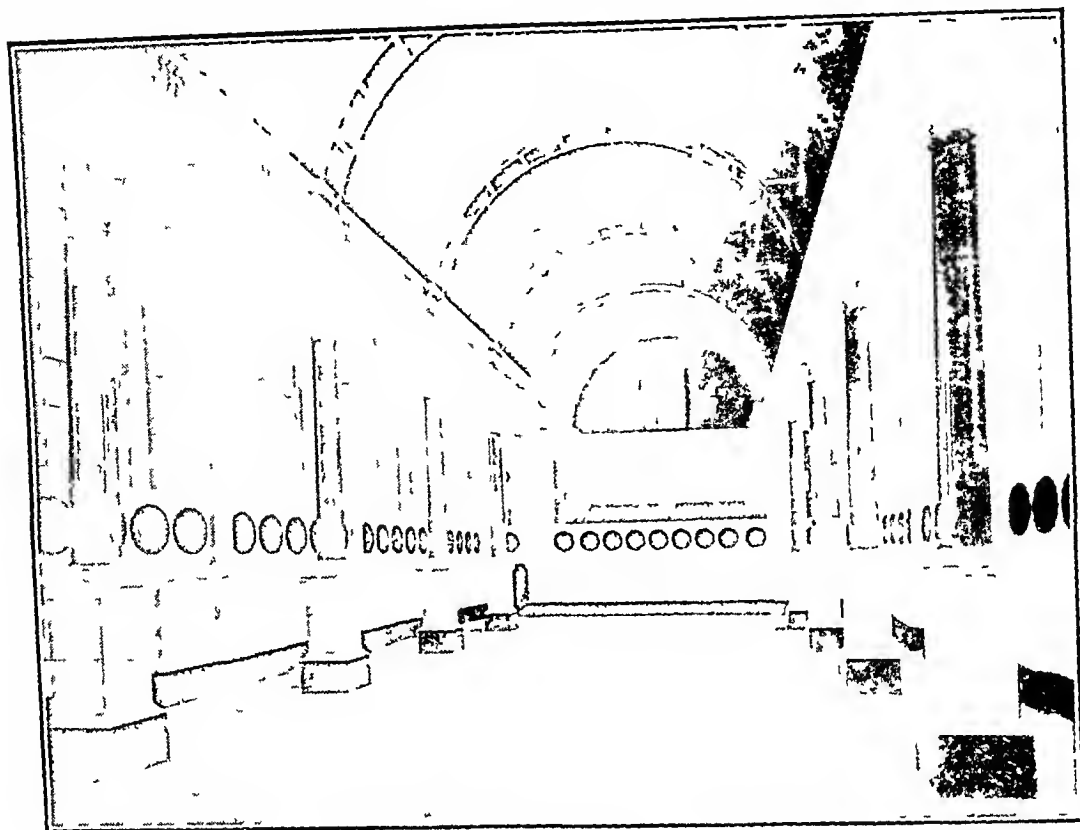
COURT OF HONOUR, FROM SOUTH WEST ANGLE

[Country Life]

the main block, which are the most conspicuous feature of the building itself, naturally suggest the existence of some apartment of great consequence, and in accepting their evidence we shall not be disappointed. The Great Hall into which they admit an abundance of light is an

#### THE GREAT HALL

The lofty windows of



Photo]

THE GREAT HALL

[Contd. 1 p.]

imposing room approximately a double cube one hundred and thirty feet long. The simplicity of the whole building is here very logically maintained. The roof above this hall is supported on semicircular ribs of light steel framing, which remains unadorned except at each end where one bay is surmounted by a painted vault moulded to the shape of the ribs behind it. Modern conditions demand that beauty should be continued directly out of the useful and inexpensive, and in his treatment of the roof and vault of the Great Hall Sir Edwin Lutyens has complied with this demand in an extremely skilful way. The inside of the roof itself together with the many subsidiary members of the framing that support it are painted a nocturnal green, if such a colour exists (which we doubt), and against this shadowy background the semicircular ribs appear in narrow ribs of gold. The whole is supported upon a row of Corinthian columns whose shafts appear as though turned out of some brilliant peacock blue marble. This remarkable effect appears, upon close inspection, to have been achieved by means of paint. At the north end of the hall is a door, and at the south a gallery, running from end to end at the lower level of the roof is an ambulatory connecting the third floors of the north and south wings of the building.

#### *Library and Common Room*

Centrally below the Great Hall there runs a vestibule which connects the Court of Honour entrance with that in Burton Street. Entering this vestibule from the courtyard, there will be found on the left the Library, panelled in fine Spanish mahogany turned from the old house of the Association. On the right is the Members' Common Room, a spacious apartment with long French windows overlooking the Court; its walls are finished in white and a delicate pearl grey—the lightest and most ethereal grey

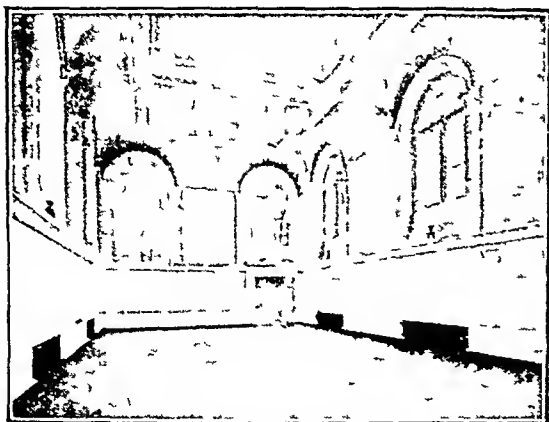
imaginable. A narrow black slitting helps to punctuate the subtle gradations of the walls. Below the rooms are large basement offices, containing the staff dining room and additional printing machine rooms, beside storage accommodation for the library.

#### *Hastings Hall and Council Room*

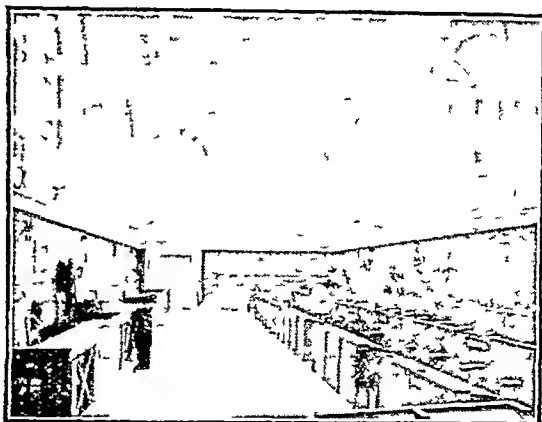
The windows of the Common Room and Library are repeated in the façade of the north and south wings, but the apartments lighted by them are several feet below ground floor, and are approached by flights of stairs and passenger lifts placed at each end of the wing. There are in the north wing, the Hastings Hall, capable of seating one hundred and fifty persons, and in the south wing the huge Council Chamber. Both halls are similar in shape and design, the ceiling springing from the walls in an ample cove entrenched by the rich ceilings over the window openings. The colour scheme in each hall is a combination of white with a pale ochreous yellow. Artificial illumination is provided by means of inverted bowls resting on little gilt pedestals of very interesting design. The floor of the Council room rises in tiers, and on these tiers are rows of comfortable seats upholstered in green leather. The walls are lined with oak panelling bearing the names of past Presidents, Chairmen, Gold Medalists, Editors, and other dignitaries and officials of the Association.

#### *Court of Honour*

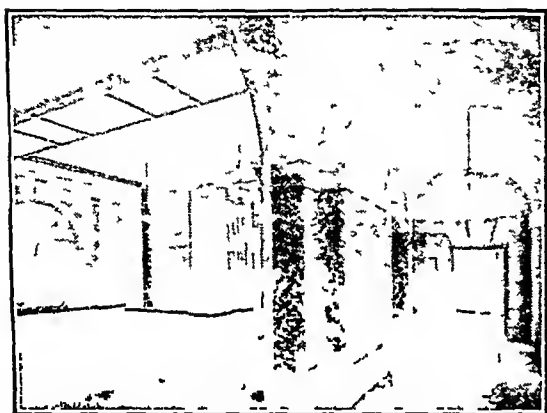
The building covers eighteen thousand square feet, and has a total floor space of fifty thousand square feet. On its north it is flanked by a modern utilitarian garage, on its south by the Council's garden, whose pleasing sweep all springs from the old foundations of Tavistock House, where Charles Dickens lived and worked. Within the main courtyard the corners of the quadrangle are paved with



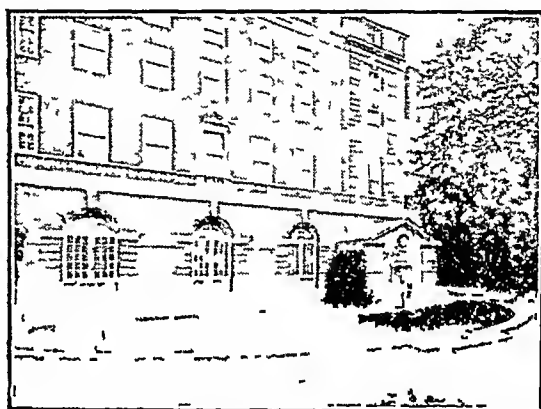
HASTINGS CONFERENCE HALL



COUNCIL CHAMBER

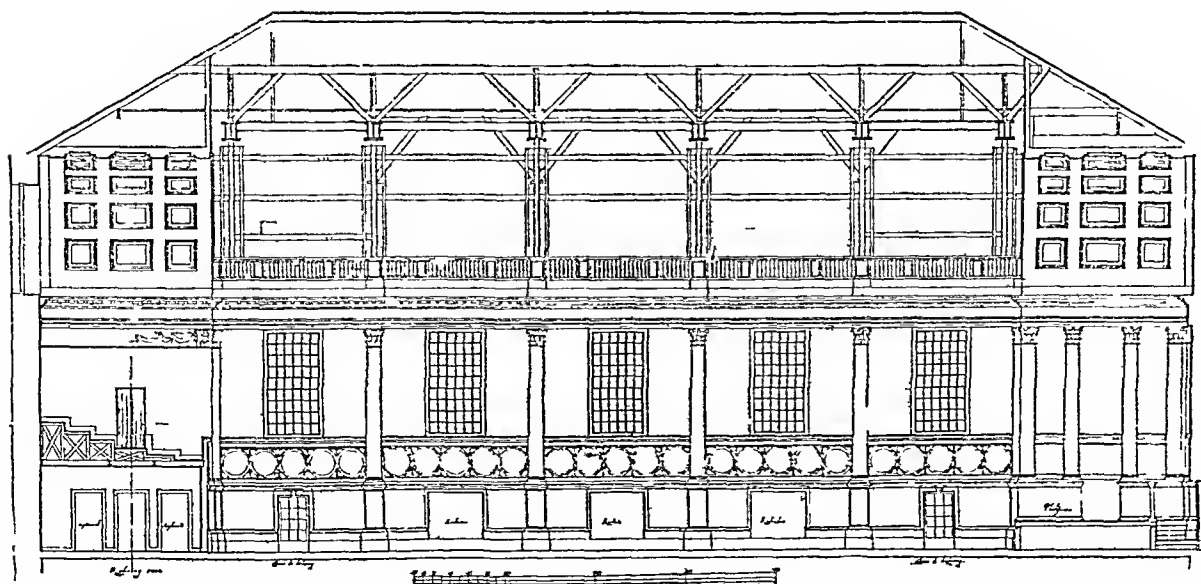


MEDICAL CONVOCATION ROOM



SOUTH WING FROM COUNCIL GARDEN

*Photographs by Country Life*



ELEVATION OF GREAT HALL (INTERIOR).



flagstones in a graceful curve, and the roadway leading from the Memorial Gates to the archway under the Great Hall surrounds a large circular grass plot with a wide kerb of white stone. A harmony in red, white, green, and grey is the result, with the delicate black tracery of the Gates in the foreground.

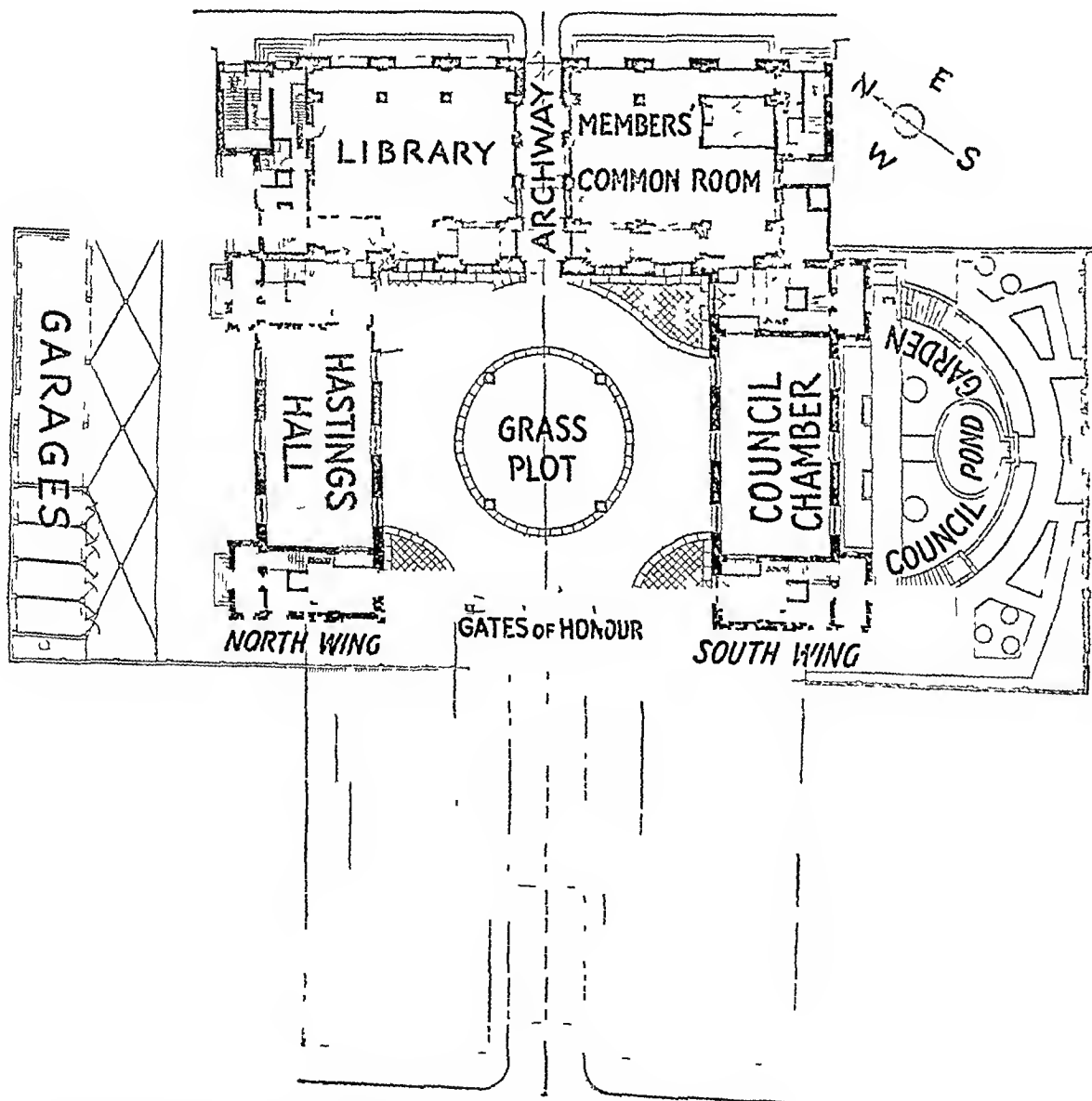
We may close this brief description of the new building with a note on the way in which the interior of the two wings has been laid out to take the various departments among which the central work of the Association is distributed.

#### Departmental Accommodation

On the first floor of the north wing, over the Hastings Conference Hall, are the general offices concerned with the business of publishing, subscriptions, and advertisements, on the second floor is further accommodation for the Finance Department, with rooms for the staff of the

Medical Insurance Agency. On the third floor is the Editorial Department, with rooms for the Editor, Assistant Editor, Sub-editor, and clerical staff. Above this, on the fourth floor, is the printing office, with type-setting machines, compositors' cases, and rooms for proof-readers.

The first floor of the south wing, over the Council Chamber, contains several fine committee rooms, and houses also the Intelligence Officer and her staff. The two floors above are allocated to the Medical Department. On the second floor are the rooms of the Medical Secretary, Deputy Medical Secretary, and Assistant Medical Secretaries, and the third floor accommodates the four committee clerks, the staff in charge of the card index and files, and the remainder of the clerical staff of this department. The fourth floor, arranged as a residential flat, is leased to the Financial Secretary, accommodation is also provided in the building for a resident medical officer.



GROUND PLAN OF SITE OF THE ASSOCIATION'S NEW HOUSE

The building as it stands is indicated by stippled shading; the sites of the proposed future extensions, on each side of the roadway from Tavistock Square, are shaded in vertical lines.

# British Medical Journal.

SATURDAY, JULY 18TH, 1925

## THE OPENING OF THE NEW HOUSE

ANOTHER chapter in the history of the British Medical Association began last Monday when the King, its Patron, visited the new site and formally opened the House in Bloomsbury which it has required and equipped. The members of the Association are deeply sensible of the honour paid to them, and to the profession they stand for, by this visit of their King and Queen. The close interest taken by Their Majesties in the progress of medical science and art, and their unflinching sympathy with the work of our profession for the relief of sickness and suffering, are matters of common knowledge. But this Royal Opening of the new House is so signal a compliment to our organization, its aims, and its work, that we make bold to describe it as a landmark in medical history. Physicians throughout the ages, and surgeons in later times, have had acknowledgement of their worth from State and Crown, but for the great body of general practitioners, who bear the heat and burden of the day, there has hitherto been little recognition. The British Medical Association, however, represents the profession as a whole, and in honouring this society our Sovereign honours us all.

Ever since it was founded in 1832 the British Medical Association has aimed at the integration of medicine for the common good, and this ideal is expressed in the Address presented to Their Majesties in the name of the Association on July 13th. During the past ninety three years specialization has spread far and wide and the conflict of material interests has threatened it times to split our ranks, but under the wise guidance of men of broad outlook the Association has continued to promote the advance of medical and allied sciences, and has gone far towards achieving its ideal of professional unity within these Islands and throughout the Empire. That its membership, now approaching 30,000, is world wide has been shown this week by the presence in our midst of leading medical representatives from Canada, Australia, New Zealand, South Africa, and India, and from distant Colonies and Dependencies, all bearing messages of loyalty and goodwill to the parent body. Moreover, hundred societies at home and abroad have sent delegates to join with us in celebrating this notable event in our annals. The position held by the British Medical Association in the public and professional life of this country is indicated by the fact that the Minister of Health accompanied Their Majesties as Minister in attendance, and that among those who awaited the Royal visitors, standing beside the principal officers of the Association, were the President of the General Medical Council, the Presidents of the two English Royal Colleges, Lord Dawson who represents medicine

at Court and in the House of Lords, and the Chief Medical Officer of the Ministry of Health and the Board of Education.

It was most fitting that these outward signs of the solidarity of our profession in this country and throughout the British Empire should have included the dedication and opening, by the Archbishop of Canterbury, of the beautiful Memorial Gates set up by the Association as a tribute to the 574 of its number who fell in the great war. In the minds of all who enter the new House for work or study or pleasure, the gates they pass through will "wake remembrance of these valiant dead."

The brilliant success of the ceremonies on July 13th was the reward of infinite care and attention to detail. Nothing that foresight could provide for was overlooked, and the gracious message of congratulation from the King and Queen, received on the following morning and printed at page 145, will be endorsed by all whose good fortune it was to witness the day's proceedings. The letter from Buckingham Palace expressing Their Majesties' admiration for this splendid building, their pleasure in opening it, and their appreciation of the excellence of all the arrangements, is one of those kindly and discriminating acts that round off a high compliment.

## A PAGE OF HISTORY

THE account given elsewhere of the offices the Association has occupied since, in 1871, it established its headquarters in London is proof that the growth of its varied activities has been so rapid that the prudent anticipations of one generation have been found inadequate in the next. It has now a house amply providing for the administrative needs of to-day, and the control of a site which affords room for a great deal of expansion. The house now taken into use contains, in addition to offices for the three departments, a spacious Library, a members' conversation room, a fine Council Chamber, committee rooms, and a Hall capable of seating five hundred people, upon the design and decoration of which the architect, Sir Edwin Lutyens, has lavished his great powers.

Probably the most important decision the Association ever took was when in 1856, it resolved to take the name 'British Medical Association'. With its old name of 'Provincial Medical and Surgical Association' it could never have become the Empire wide institution it is. It had done a great deal of valuable work for the advancement of clinical medicine and the ancillary sciences, and also for the betterment of sanitary conditions, for the amendment of laws and regulations which in the new industrial era had become obsolete, and it had persistently sought for a reform of the Poor Law. This was work for the whole of Great Britain but without perhaps fully appreciating what it was about it had embarked on a still wider field. It had long been asking Parliament to establish a 'Medical Register' to which should be admitted only those who fulfilled certain conditions, the chief of which was that the applicant should produce evidence of having attained a certain standard of education by passing through a curriculum prescribed by the universities and medical colleges. This Register, during the transition period when the Dominions and Colonies were growing to nationhood, was Empire wide.

Later on the Association accomplished much for the public health and for social medicine generally, chiefly through the Parliamentary Bills Committee, which though it had a rather anomalous constitution was in effective body. But as the number of members grew the constitution of the Association itself got out of date. Its government was originally established on the representative principle by way of a large Council elected through the Branches, this Council met once a year and delegated its duties in the intervals to a Committee of Council. As the membership increased the constituents grew too big and a large proportion of members belonged to none. They were called 'unattached', they belonged to the Association in order to receive the *BRITISH MEDICAL JOURNAL* and to have the right to attend the Annual Meetings. In this way the organization came nearly to resemble that of a public company with an annual general business meeting open to every member, and a Council which, though not elected by the business meeting had functions very similar to those of a board of directors. This plan never worked well, and as the number of members grew it worked less well. The unattached members did not feel that they were responsible for the policy followed by the Association in medico-political matters and its influence with Parliament, with the Government, with the public, and with the profession itself, was thereby seriously impaired.

The main object of the alterations in the organization of the Association which were under discussion at the beginning of this century, and were embodied in the constitution which came into force in 1902, was to consolidate and extend the social and medico-political work the Association was doing and to establish its right to speak in the name of the whole profession. To attain the second purpose it was decided that every member of the Association should be a member of the Division within whose area he resided. In order that the work under the first head should be effectively done, a number of standing committees were set up, and a whole time Medical Secretary appointed to act as secretary of these committees, to prepare the business for them, and to carry out the instructions they might give. The work under this head very quickly increased, and the staff of the Medical Secretary's department had to be enlarged. There is now a Medical Secretary, a Deputy Medical Secretary, and two Assistant Medical Secretaries, besides a Secretary for Scotland and another for Ireland, with offices in Edinburgh and in Dublin respectively. At the present time there are fifteen standing committees concerned either with internal administration or with matters affecting the relation of the medical profession to public affairs. The standing committees work in consultation with the Council which meets seven times a year and is the executive of the Association. The Council reports its recommendations to the Representative Body, this body which contains representatives of all the Divisions both at home and overseas meets at least once a year and in it is vested the general control and direction of the policy and affairs of the Association. In this way the constitution of the Association has become strictly representative.

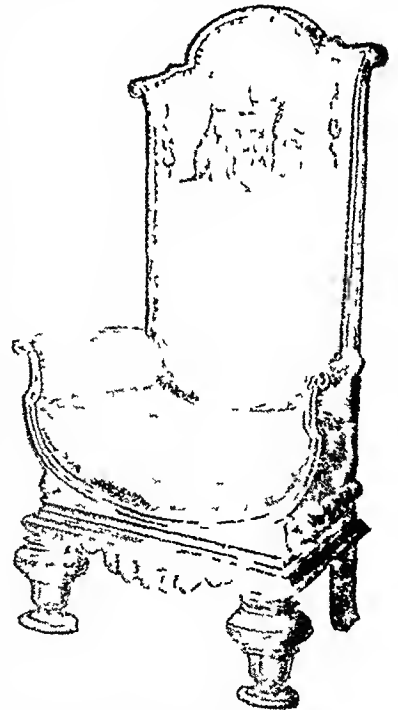
The attainment of this object was the second decision of supreme importance reached by the Association the first as has been said was that it should be an organization bounded in area only by the limits of the British Empire. In Australia it has six Branches one for each State they hold joint congresses periodically and are co-ordinated by a

Federal Committee, on which all the Branches are represented. In South Africa there are eleven Branches, and here is a committee (the South African) existence and joint congresses for scientific discussion are held. It is the great growth of the work of the Association in medico-political directions that has rendered imperative larger accommodation than was foreseen by those who were responsible for the erection of the house in the Strand which has just been vacated. The need was found for more committee rooms—the standing committees, of course, are empowered to appoint subcommittees, and sometimes the Council appoints special committees—and for larger rooms. The common room, originally provided for the use of members, was eaten up by the growth of the clerical staff and there was no large hall for meetings of the Representative Body, for conferences of representatives of Local Medical and Panel Committees, and for other largely attended conferences with other bodies—such, for example, as those that were held to discuss the policy the profession should follow with regard to voluntary hospitals. The new house in Tavistock Square provides for all these things, and the prudent course has been followed of acquiring the control of the sites at present occupied by the houses which lie between the building opened by the King last Monday and the main thoroughfare.

#### PRESIDENTIAL CHAIR GIFT FROM AUSTRALIA

At the Council meeting on January 18th last the Chairman stated that a letter had been received from Dr. R. H. Todd, Honorary Secretary of the Federal Committee of the British Medical Association in Australia, with regard to a proposal from the Australian Branches to present the parent Association with some gift for the New House, such as a chair, which should be made of Australian timber. On receipt of this letter a cablegram was sent to Australia saying that a President's Chair for the Great Hall would be most acceptable. The Federal Committee thereupon cabled £100, with a request that the chair be made in this country, and that the High

Commissioner for Australia, Sir Joseph Cook, and also Mr. Joseph Davis, formerly Director of Public Works in New South Wales, should be consulted with regard to material and emblems. Dr. Bolam added that the High Commissioner and Mr. Davis had very willingly responded and made suggestions. The Council authorized a letter



to be sent to Austria conveying thanks for this welcome gift. The Presidential Chair has been carved and upholstered according to a sketch furnished by Sir Edwin Lutyens, the architect of the building. It is constructed of the Austrian wood known technically as black beech, and upholstered in red leather. The back of the chair bears, in front the Austrian coat of arms, and behind, stamped in gold lettering on a leather panel, the following inscription, in accordance with a suggestion by the Austrian Federal Committee:

#### BRITISH MEDICAL ASSOCIATION

##### PRESIDENT'S CHAIR

Presented by the Branches of the British Medical Association in Austria

to

the Parent Association in England

in token of

friendship, loyalty and goodwill,

to celebrate the Entry of the Association into its New House,

Travistock Square, London,

July, 1925

"... the which, though light as air, are as strong as links of iron"

The quotation at the end of the inscription is taken from the famous speech of Edmund Burke in the House of Commons in 1775 on conciliation with America. At the reception in the Great Hall held on the evening of July 13th the chair was formally presented to the Association by Dr W. N. Robertson, C.B.E., as delegate from the Austrian Federal Committee, of which he is vice-chairman. The speeches at the presentation are reported in our account of Monday evening's ceremony (p. 146).

#### CONVENTION OF ENGLISH SPEAKING OPHTHALMOLOGICAL SOCIETIES

A CONVENTION of English speaking Ophthalmological Societies was held in London this week under the auspices of the Ophthalmological Society of the United Kingdom and its affiliated societies in the provinces, in Scotland, and in Ireland. A large and very representative number of members attended. On the eve of the opening of the convention some 700 names had been registered, the list included visitors from all parts of the Empire, from France, Holland, Switzerland, Austria, and China, and from the United States of America, which was represented by about 230 delegates, among whom were some of the best known in ophthalmic literature. On Monday evening, before the official opening of the convention, a reception was given by the President and Council of the Royal College of Surgeons of England. The guests, who included many ladies, were received by Sir John and Lady Bland Sutton. The whole of the museum of the College was thrown open, those sections bearing on ophthalmology, especially in the fine war collection, being particularly prominent. Members and their friends were entertained by a programme of music, and refreshments were provided in the library. The function, which was very well attended, provided a happy opportunity for introductions prior to the official opening of the convention. From mornings, three afternoons, and an evening were devoted to the scientific work of the convention, whose meetings were held in the University College buildings. During this time a heavy programme was gone through, which included two discussions, the Bowman Lecture by Sir John Parsons, and thirty-nine original papers, to which members from overseas contributed largely. The social aspect also of the meeting was well catered for: its items included a reception by the President of the convention, Mr. Tiercher Collins, a reception at the Royal Institution by its President and Council, a garden party given by Sir William and Lady Lister,

and excursions to institutions of ophthalmic interest in London, to Oxford, and to Cambridge. At University College an interesting and comprehensive museum had been prepared of drawings, instruments, and pathological and anatomical specimens, a feature of which was the number of sections illustrating much of the recent original work that has been done both in this country and in America. The official banquet which terminates the proceedings is being held in the Guildhall on Friday evening, July 17th, H.R.H. the Duke of Connaught is the guest of honour. One of the primary aims of the convention was the re-establishment of international congresses of ophthalmology on a pre-war footing. In taking the initiative in this the Ophthalmological Society of the United Kingdom is to be congratulated. The success and value of these meetings in the past, and the enthusiasm of the present convention, provide the strongest argument in favour of their continuance on the broadest possible basis.

#### SIR JOHN ROBERTSON MOH BIRMINGHAM

To celebrate the honours of knighthood recently conferred upon Sir John Robertson (M.O.H. Birmingham), he and Lady Robertson were entertained at dinner on July 16th by the Midland Branch of the Society of Medical Officers of Health. There was a large attendance, and the President, Dr. R. Wolsey Stools, who was in the chair read letters of congratulation and apologies for absence from many others, including the Minister of Health (Mr. Neville Chamberlain), Sir George Newman, Professor Kenwood, Dr. Bolam (who conveyed the compliments of the Council of the British Medical Association), Professor Bostock Hill, and Professor Hope. In proposing the health of Sir John and Lady Robertson, Dr. G. F. Buchan, president-elect of the Society of Medical Officers of Health, professed congratulations on behalf of the society. He recalled Sir John's long service to Birmingham, and the singular value of his association with the university. Dr. Buchan said that he had first come under the influence of Sir John Robertson's energy and enthusiasm sixteen years ago. Research was the keynote of his policy—research for its own sake—and its practical application, this should be made the slogan of every medical officer of health, so lifting his work above politics and contemporary outside influence. Sir John had always been a great worker, and certain changes in the sphere of public health would always be intimately associated with his name: housing in relation to health, a pure food supply, especially milk, the campaign against tuberculosis, which he might be said to have initiated in Birmingham, maternal mortality, cancer research. Dr. Buchan expressed his pleasure that Sir John had been recognized and honoured during his lifetime. He had established an ideal of public health administration, and, great as he was to-day, he would appear still greater to posterity. Councillor Miss Bartlett (chairman of the Birmingham Health Committee) made a short and happy speech, paying tribute to Sir John's helpfulness and personal attributes. The toast was received with acclamation and musical honours. Sir John Robertson, in replying, spoke feelingly of the honour done to him by those gathered together that evening. His knighthood, he said, was a recognition of the public health service and of the work of medical officers of health generally, and he would carry it in their name. Public health work was happy work, though results were not immediate and could only be secured by pegging away. He had been consistently lucky all his life in being country bred, and thus early acquiring a knowledge of nature, in his masters at school, in his father, who sent him to Edinburgh, where he gained an intimate knowledge of natural history. Fiddles and music also played their part in his education, but in spite of these distractions he qualified. He was fortunate in

becoming associated with a good general practice, and regarded such experience as of the greatest value to a medical officer of health. His first appointment was at St. Helens, where he was lucky in his health committee, whose members helped in every possible way. Again at Sheffield he was no less happy, and looking back on his service in Birmingham he had no regrets. He recalled the names of Sir William Cooke, Mr. John Nettlefold (of town planning fame), Sir Ernest Hiley, and Mr. Neville Chamberlain as among those who had been greatly helpful. He closed with words of deep appreciation of the honour done to him. Mr. J. Furner Jordan, President of the Birmingham Branch of the British Medical Association, who proposed the toast of the Society of Medical Officers of Health, said that the profession as a whole was proud of the distinction conferred on Sir John Robertson. He looked upon the medical officer of health as something of a superman, for to the knowledge of the ordinary doctor he added that specialized knowledge that made him what he was. Mr. Jordan referred to the great reduction in the general mortality rate, and expressed the hope that with the more complete instruction now insisted on or in contemplation by the General Medical Council and the Central Midwives Board the perinatal mortality rate would show an equal diminution. The problem of cancer could only be solved by Sir John's method of "pegging away." Dr. R. A. Lister, President of the Society of Medical Officers of Health, responding, expressed the appreciation of the society at the honour done to Sir John Robertson, and said that it reflected on the whole public health service. The society endeavoured to secure the best and most brilliant men for preventive medicine.

#### ACTION OF LIVER EXTRACTS IN HIGH TENSION

The Canadian Medical Association Journal for July contains two articles relative to the action of liver extracts upon arterial hypertension. An editorial in the same issue states: "One of the papers is purely an experimental laboratory study, the other might be termed an experimental clinical study. The authors of both were associated for a period and exchanged ideas although at the time working from different hypotheses. What the ultimate benefit will be is a problem for the future, but it is gratifying to note in members of the Canadian profession not only the investigating mind but the generous co-operation with fellow workers." The shorter paper, that by A. A. James and V. B. Lughton of the University of Western Ontario Medical School describes experimental work upon rabbits, using intravenous injections of liver extracts after injection of such pressor substances as epinephrine (1 ccm of a 1 in 10,000 solution). The exact method of preparing these extracts is not stated. The authors conclude that: (1) Extracts of liver used in experimental animals effectually reduce the hypertension induced by certain pressor substances. (2) These extracts will reduce normal blood pressure to a low level (about 5 mm Hg) where it is maintained over long periods of time. (3) Large doses reduce the blood pressure to its lowest level and death ensues. (4) Preliminary work suggests strongly that the active substance is not choline or histamine. The other paper, by W. J. McDonald of St. Catharines, Ontario, accounts the results he and others who helped him obtained by injecting a solution of liver extracts into the veins of persons suffering from "essential hypertension." These results are illustrated by charts, and curves of changes induced in the normal blood pressure of rabbits are also given. The exact method of preparing the extracts is not stated. Dr. McDonald began his work by investigating the effect of liver extracts from the liver of mice acid in the blood of those suffering from carcinoma, for it had previously been shown that in such

patients there is generally a definite increase in the acid content of the blood. Later he found in one of his carcinomatous patients that injections of liver extract reduced the blood pressure so that he determined to test these extracts in a series of patients with essential hypertension. Shortly afterwards a change was made in the method of obtaining the liver extracts and Mr. W. M. McDonald, a biochemist of Hamilton, Ontario, succeeded in recovering from the extract what appeared to be the active principle in two fractions which were termed chemicals "A" and "B." Thirty-three clinical cases were studied in all, and extracts of varying dosage were injected intravenously. The usual dose seems to have been 2 ccm up to 4 ccm every two or three days. In twenty-five patients no disagreeable symptoms whatever were caused, but in another eight patients reactions followed which in varying degree resembled protein shock. In these eight cases the two chemicals "A" and "B" were combined in one injection. The age of the patients ranged from 42 to 67 years (average 61), the average duration of hypertension was six years, the average systolic blood pressure before injection 204 mm Hg, afterwards it was 142, the average diastolic pressure before treatment was 114, and this fell on the average to 86 mm Hg. Dr. McDonald states that the exact chemical nature of the liver extracts has not been ascertained, but this is being investigated in the University of Toronto. Dr. McDonald presents his results "without conclusions or deductions."

#### INDUSTRIAL FATIGUE

The fifth annual report of the Industrial Fatigue Research Board, which was published last month chronicles the progress of investigations covering a wide field, and includes some short papers by members of the research staff. Among subjects of inquiry having particular medical interest we note that at the request of a departmental committee appointed by the Home Secretary to consider and report upon the statutory regulations governing the use of artificial humidity in cotton factories, the Board has undertaken an inquiry into the relative incidence of sickness upon weavers in wet and dry sheds. The investigation will be carried out under the supervision of a special committee, of which Dr. Myron Greenwood is chairman and Professor I. E. Collis a member. Another research committee, of which Mr. C. J. Bond is chairman and Dr. Greenwood, Hield, Pembrey, and Pirnau members, is investigating telegraphists' cramp, and a committee, of which Dr. Leonard Hill is chairman and a majority of the members medical men, is studying the physiology of ventilation. In the last named field extensive use is being made of Dr. Hill's kymograph, a new method of measuring oscillations in air temperature by means of a delicate thermopile, invented by Mr. J. J. Manley and Dr. Vernon, is noted. It is remarkable that an increase in the oscillations of air movement has been found to cause a distinct increase of the subjective sensations of freshness, and that a simple method of increasing these oscillations, depending on intermittency in the running of the ventilating fan, has been tried. These observations may prove of much practical importance. Miss E. M. Newbold contributes an excellent paper on the pitfalls waiting the interpreter of industrial sickness statistics. She repeats the old but frequently forgotten caution that correlation does not necessarily imply causation, and calls the following excellent instances of high correlation—between the secular course of expenditure on the navy and the consumption of bananas, between ability to speak Dutch and a low rate of mortality from cancer of the breast, and between the amount of calcium in one's bone and



the number of nephews and nieces and his Miss May Smith writes on the psychological factors of industrial efficiency "It is not uncommon," she remarks, "to be told by a girl that she has nothing much wrong except that she suffers from nerves. Some employers, however, are seriously perturbed about the loss of efficiency involved in the form not only of sick leave but of inadequate work and of irritability affecting fellow workers as well. People of robust type scornfully dismiss the problem with the magic word 'hysteria,' but a label is neither soothing nor practical when the alternatives of dismissing the worker or of enduring the 'nerves' are confronted." Mr. L. L. Limer contributes a very cautious note on methods of detecting liability to accidents. The report does not record any one arresting discovery but contains ample evidence of careful, routine work which is what is needed in this field.

#### BRITISH EMPIRE CANCER CAMPAIGN

The annual report of the Grand Council of the British Empire Cancer Campaign for the year ended May 31st, 1925, was presented at the meeting held at the House of Lords on Monday, July 13th. In his introduction the chairman, Viscount Cave, announced the receipt of subscriptions to the amount of just over £100,000. He pointed out that it has been the principal aim of the Grand Council to co-ordinate and encourage all deserving institutions and individuals engaged in cancer research work. Thanks to grants from this society, several laboratories which would otherwise have been restricted by lack of funds have been able to continue research work, and in some cases to open up new lines of investigation. Work is being carried out with radium and 2 rays under a committee appointed jointly with the Medical Research Council, £5,000 worth of radium was purchased in the early part of the year and put at the disposal of this joint committee. In addition a radon centre for the production of radium emanations was founded at the Middlesex Hospital and financed by the Campaign. The report contains a summary of the work of the various committees during the past year. The Scientific Advisory Committee meets each month to consider matters referred to it by the Preliminary Inquiry Committee and the Grand Council, together with various reports on investigations carried out at its instigation. The body of the report is taken up with statements from institutions in receipt of grants. The Cancer Research Department of the Middlesex Hospital has received £6,900, the Cancer Hospital Research Institute £5,000, the Medical Research Council (on behalf of the radon centre at Middlesex Hospital) £3,725, St. Bartholomew's Hospital £1,695, Christie Hospital, Manchester, £1,000, Tropical Disease Prevention Association £1,500, Cancer Research Laboratories of St. Mark's Hospital £600 and the Coombe Lying in Hospital, Dublin, £200. The statement submitted by the Middlesex Hospital refers to general pathological investigations, experimental researches, diagnostic serological methods, and radiological researches. The report from the Cancer Hospital Research Institute goes very fully into the experiments Dr. Leitch and his co-workers have been carrying out on the experimental production of cancer by carcinogenic substances, as reported by Dr. Knapp in our columns a fortnight ago. Reports are submitted also on researches in clinical and surgical pathology, immunity experiments, experiments in chemotherapy, and statistical inquiries. Promising work is reported from the cancer research laboratories at St. Mark's Hospital, where a detailed investigation has been begun into the relation of simple and malignant tumours of the large intestine. Among the inquiries that are being carried out by individuals to whom grants have been made may be mentioned those of Dr. Thomas Lumsden at the Lister Institute. He is at present investigating the effects

of antisera in cancer and sarcoma, and results already obtained *in vivo* suggest that important knowledge may be gained by these researches.

#### THE AUTOMOBILE ASSOCIATION AND THE OFF SIDE RULE

At the twentieth annual meeting of the Automobile Association on July 8th it was announced that the membership now exceeds a quarter of a million. The annual report dealt with the activities of the association, in its parliamentary, legal, touring, and engineering departments. A paragraph of the report of interest to members of the British Medical Association is headed "Road safety—off-side rule." It is stated that the committee, after full consideration, has unanimously decided to recommend all members of the Automobile Association to adopt the "off-side rule." At present there is no standard rule for deciding at cross- and side-roads which vehicle should proceed and which should give way to other traffic. The report continues "The underlying principle of the 'off-side rule' is that every user of the street is made responsible primarily for avoiding collisions with any vehicle or person on his *right hand*. Applying this principle to cross-roads, a driver would wait for, and pass behind, any vehicle approaching from his right, and when a driver cuts in from his near side the onus would be upon him (presumably the near-side driver) to explain his reasons for so doing should an accident occur. Briefly stated, the rule means 'Watch for, and, other things being equal, give way to, traffic approaching from the right.'" The wording of the paragraph is not, perhaps, as clear as it might be, but this proposal was made many years ago by a medical motorist, Dr. Charles Buttai, whose argument was published in the *BRITISH MEDICAL JOURNAL* of February 21st, 1925 (p. 380). Later on the matter was raised at a meeting of the Metropolitan Counties Branch Council by Mr. Bishop Hayman, and again the proposal was approved unanimously. At that meeting it was suggested that the metropolitan police should be approached for the purpose of disengaging the rule in connexion with traffic regulation. It was decided to postpone acting on this suggestion and to communicate with the Automobile Association and other motoring organizations. But a joint discussion between the Automobile Association and the British Medical Association on the one hand, and the traffic authorities on the other, might well be of value, if only for the purpose of revealing any weak points in the argument. The proposed rule seems to be of sufficient value to merit such discussion.

#### THE ASSOCIATION'S INTELLIGENCE OFFICER

Miss A. L. LAWRENCE, who was appointed Intelligence Officer by the Council of the British Medical Association in 1919—after serving for four years on the staff of the Central Medical War Committee, for which she was awarded the M.B.E.—has lately qualified for the diploma conferring the title of LL.B. of the University of Cambridge. Miss Lawrence was Clothworkers' Scholar at Gt. St. Mary's College, 1910-14, and took honours in Part I of the Historical Tripos, 1912. In 1914 she gained first class honours in Part II, thus obtaining the Tripos Certificate which now entitles a woman to be styled B.A. Cantab. In the recent Law Tripos examination, Part II, she attained the standard for honours, this distinction, coupled with the honours previously gained in the Historical Tripos Part I, qualifies for the title of Bachelor of Laws. Miss Lawrence's colleagues, who have learnt by experience to respect her great abilities and wide acquaintance with social conditions, are glad to know that she has received these academic distinctions and feel sure that all members of the Association will join with them in congratulating her.

## THE ARCHITECT OF THE ASSOCIATION'S NEW HOUSE.

SIR EDWIN LUTYENS, R.A.

SIR EDWIN LUTYENS, who designed the Association's New House, is one of the most distinguished of living architects. His works are to be found in almost every part of the British Empire. He was called in to advise the Government of India as to the laying out of the site of New Delhi; he is the architect of Government House and other buildings there, and of the great archway by which they are approached.

His name became a household word when he designed the Cenotaph in Whitehall, and he is one of the principal architects for the Imperial War Graves Commission. He has designed many war memorials both at home and overseas. At home we have from him the memorials at Leicester, Rochdale, York, Southend-on-Sea, Hove, Bury, Reading and Cuddah. He designed also the memorial of the Royal Naval Division in St. James's Park. Among the memorials overseas are those in Ceylon, Hong Kong, Bermuda, and Madras as well as British war memorials in France at St. Quentin, Itaples and Arras. He has built churches also, and as a domestic architect has been supremely successful both with exteriors and interiors. He is one of those who regard a garden, not as an excrescence but as part of the cantilage of the house and has given evidence of this

in the small but very perfect garden he has laid out at the south side of the South Wing of the Association's house. A very good example of his domestic style is to be seen in the small building of the Midland Bank in Piccadilly at the west corner of the courtyard of St. James's Church. To show his versatility it may be added that he has designed other business offices and also the house of the British School of Art at Rome and the picture gallery and South African war memorial at Johannesburg.

The Association's house was built before the war, but the internal decorations were never even begun; they have now been completed under his supervision, and it has been an education to watch the development of the

architect's conception through stages of apparent chaos to the final perfection. The Architectural Correspondent of the *Times* has described the exterior as "at once homely and dignified, scholarly and un-messy," and the whole building is suited to its purpose and becoming to its locality. In style, this writer continues, "it may be described as in the tradition of Wien, and slightly reminiscent of Hampton Court."

Another writer (in *Country Life*) has said of Sir Edwin Lutyens that "while the forms he uses are old he succeeds in combining them into highly original patterns. The advantage Sir Edwin Lutyens has over many of his architectural confidants is that he is content to say something new in an old language while they strain after a new language as well, this medium of expression, however, must consist of broken phrases, so their achievement has all the characteristics of immaturity." That his genius is appreciated by the members of his own profession is proved by the fact that he has received the gold medal of the Royal Institute of British Architects, and that only the other day he voyaged to America to receive the gold medal of the American Institute of Architects. He was born in 1869, was elected A.R.A. in 1913, and R.A. in 1920.



I finally, let us most gratefully say that he has shown the keenest interest in the work he has done for the Association, entering thoroughly into the special needs of its headquarters, that he gave attention to every room, conceived the bold scheme of decoration of the Great Hall, and designed the fine wrought iron screen of three gates which has been made by the Birmingham Guild and through which the King and Queen passed into the Courtyard on Monday. We will conclude by again quoting the Architectural Correspondent of the *Times*, who wrote "The best tribute to the building is to say that it is so well proportioned and so discreet in character that it gives the impression of always having been there."

# Royal Opening of the New House.

## HIS MAJESTY'S TRIBUTE TO THE MEDICAL PROFESSION.

### THE CEREMONIES ON JULY 13TH.



WAS THE FIRST TO  
HIS MAJESTY

THE New House of the British Medical Association in Tavistock Square was opened by His Majesty the King, who was accompanied by Her Majesty the Queen, on Monday afternoon, July 13th.

The opening took place with appropriate ceremonial and in the presence of perhaps the most representative gathering ever brought together in the name of British medicine. No circumstance which could give honour to the occasion was lacking. Even the one uncontrollable element, the weather, smiled upon the function, thereby relieving the minds of the organizers of their principal anxiety, for had the weather been wet the event would have been shorn of much of its spectacular effect and of a certain amount of its significance. The procession through the Court and would not have been possible, and the preliminary receptions, instead of being made at the end of the private roadway in front of the newly dedicated Gates of Honour, would have taken place in the Members' Common Room. It proved, however, to be a perfect July day, bright, but not oppressively hot—the temperature was 73° in the shade at three o'clock in the afternoon—and the red brick and white stone fittings of the New House looked then best under the blue sky, and the Gates of Honour had a particular delicacy and beauty as seen in the sunlight. The building which, with the Court, presented a scene of chaos only a few weeks or days ago, now stood finished—or at least whatever was unfinished was hidden from view—and the workmen had disappeared save for one of them who, elected for that honour by his fellows, was presented to Their Majesties. Very many of those who were present saw the New House for the first time, and expressions of admiration for one of the finest modern structures of London were heard on every hand.

The short avenue leading from Tavistock Square to the Memorial Gates was lined on each side by four Corinthian columns crowned with flowers, which gave a gay appearance to the approach. Members of the 28th London Regiment (the Artists' Rifles) formed a guard of honour under the command of Captain W. Campbell Smith, M.C. Behind them were parties of boys and girls from the Foundling Hospital for whom places had been reserved, and who greeted the Royal visitors with shrill cheers. To the south, just outside the Gates, stands had been erected for the accommodation of relatives of the members fallen in the war whose names are inscribed in the *Roll of Honour*. Some two hundred of these altogether were present at the dedication of the Memorial. In the Court and chairs were provided for about 100 members of the Association, and for representative students from every medical school in the country. By this arrangement the Court was not overcrowded, and everyone saw and heard in comfort. On the central grass plot in the centre the band of His Majesty's Grenadier Guards, by permission of Colonel B. N. Seigison Brooke, C.M.G., D.S.O., rendered a programme of music under the direction of Lieutenant G. N. Miller, L.R.A.M., and in the western ambulatory of the Great Hall a string orchestra composed of musicians from the same band also gave selections. The music, like the other proceedings, was transmitted by means of microphone and loud speakers from the Court to the Great Hall, while loud speakers outside the Great Hall enabled everybody within a big radius to hear what was going on within.

From one o'clock onwards a constant succession of motor cars entered from Tavistock Square bringing members and guests. Some of these came in academic dress or uniform, and others robed in the building on arrival. The interior of the Great Hall as it gradually filled presented a remarkable appearance. Almost every occupant of the seats in the body of the Hall wore academic costume, and the massing of the colours, scarlet predominating, toned well with Sir Edwin Lutyens's colour effects of the walls and the roof. The banners representing the cities in which Annual Meetings have been held, and above these the flags of the Dominions, added to the brilliancy of the scene under the gilt steel arches. The dais, in the foreground of which two thrones had been placed, was decorated with hydangeas.

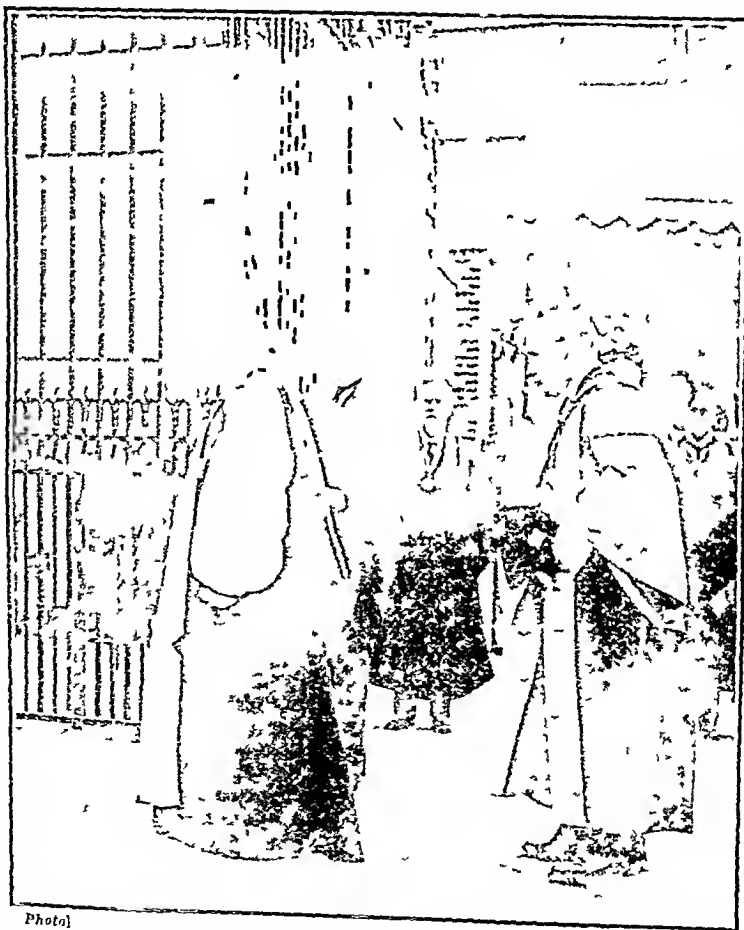
In sending out the invitations to the ceremony in the Great Hall the object had been to illustrate the solidarity of the medical profession and to bring together a representative gathering of members of the Association. Several veterans in the service and membership of the Association were present. One octogenarian was Dr. Michael Bevelley, who was secretary of the Annual Meeting of the Association at Norwich in 1874, and a member of Council for many years; another was Dr. James Stewart of Lambeth, a third who was presented to Their Majesties was Dr. G. W. Crowe of Worcester, secretary of the Jubilee Meeting held in that city (the birthplace of the Association) in 1882. Places were found for those who have held the highest offices in the Association in former years—secretaries of Annual Meetings, and former central officials of the Association. Others were present as members of the General Medical Council and the Dental Board, medical members of Parliament, representatives of universities, colleges, and medical corporations, representatives of medical and allied societies in the British Isles, the Dominions,

and foreign countries, also the heads of the Medical Departments of the Army Services. The non-medical persons present included representatives of Government departments with which the Association is frequently in contact, the High Commissioners for the Dominions, members of certain local authorities, including the City Corporation, the London County Council, the Bath City Council, and the Borough Council of St. Pancras, the borough in which the New House is situated. Certain ladies to whom the Association owes special consideration, such as Lady Horder, Mrs. Lord Trevelyan, and Mrs. G. F. Halsey, also had places assigned to them in the body of the Hall. The morning seats—some 260 in number—were filled by official representatives of Divisions and Branches in the United Kingdom, and by members of the Association who had been fortunate enough to secure places by ballot. The gallery at the south end was allotted to ladies—wives of members of the Reception Committee, of Chairmen of Standing Committees, and of other members of Council.

#### DEDICATION OF THE GATES

At five minutes to three the Most Reverend His Grace the Archbishop of Canterbury (Dr. Randall Davidson), who was wearing his Convocation robes and was accompanied by his chaplain, proceeded to the outer side of the Gates of Honour which were locked and a solemn but brief Service of Dedication was held.

Humphry Rolleston, Bt.) the President of the Royal College of Surgeons (Sir John Blund Sutton, Bt.), Lord Dawson of Penn, G.C.V.O., M.D., Sir George Newman, K.C.B., Sir Edwin Lutwens (the Architect of the building) and Mr. J. J. Wilton (the contractor). On the other side of the Gates other members of the Council were grouped. The embroidered gowns of the



[Photo]

[Central Press]

#### DEDICATION OF GATES OF MEMORANCE BY THE ARCHBISHOP OF CANTERBURY

Behind the Archbishop are standing the Architect Sir Edwin Lutwens, the Chairman of the Representative Body, Dr. H. B. Brackenbury, the Chairman of Council, Dr. R. A. Bolam, and the President of the Royal College of Physicians, Sir Humphry Rolleston.

Those standing with the Archbishop were the President of the Association (Mr. J. Basil Hall, M.Chir., F.R.C.S.), the Chairman of Council (Dr. R. A. Bolam, M.D.), the Chairman of the Representative Body (Dr. H. B. Brackenbury), the Treasurer (Mr. A. Bishop, M.Chir., F.R.C.S.), the President of the General Medical Council (Sir Donald MacAlister, Bt.), the President of the Royal College of Physicians and Regius Professor of Physic at Cambridge (Sir

Presidents of the two Royal Colleges in particular gave a vivid touch to the scene.

The service began with the hymn, 'O God, our help in ages past,' led by the band of the Grenadier Guards.

The CHAIRMAN OF COUNCIL then, addressing the Archbishop, said:

In the name of the British Medical Association I ask Your Grace to dedicate these Gates, which have been

made and placed here in memory of the Members of our Association who laid down their lives in the Great War



Photo]

OPENING OF THE GATES

[The Times

The Archbishop, before dedicating the Gates, offered the following prayer

O God and Father of us all, Who didst send Thy Son Jesus Christ to be the Great Physician of our souls and bodies, we praise and magnify Thy Holy Name for the work of the surgeons and doctors who in the Great War saved their fellows even unto death. As in thankfulness we dedicate to thee, to Thy glory and their memory, these Gates, so we pray that all who pass through them, both coming in and going out, may also remember that it is thine not to be ministered unto but to minister. Through the same Jesus Christ our Lord. Amen

The Archbishop, advancing to the Gates, said

To the glory of God and in memory of those Members of the British Medical Association who gave their lives in the Great War, we dedicate these Gates. In the name of the Father, and of the Son, and of the Holy Ghost. Amen

Sir Edwin Lutyens, the Architect, presented the key of the Gates to His Grace, who unlocked and opened them amid an impressive silence. The Gates being open, the Archbishop said

In gratitude and hope we open the Gates. *Dominus custodiat exitum et introitum*

The ceremony concluded with the singing of "Abide with me"

## ARRIVAL OF THEIR MAJESTIES

After an interval of about five minutes cheers were heard in the distance, and punctually at ten minutes past three Their Majesties drove up in semi-state in an open landau drawn by four horses and preceded by outriders. Accompanying them was the Right Hon. Neville Chamberlain M.P. (Minister of Health). A second landau contained the Dowager Countess of Minto, lady in waiting to Her Majesty, the Lord Somers, gentleman in waiting, Major the Hon. Richard Molyneux, groom in waiting, and Captain the Hon. Alexander Hardinge, equerry and assistant private secretary. The King pleased everyone by his appearance of health and vigour. The Queen was most becomingly dressed in pale mauve, with a lace scarf, and carried a sun shade the exact colour of her dress.

Immediately on Their Majesties' arrival the Royal Standard was broken at the mast above the main entrance, and the National Anthem was played by the band of the Artists' Rifles. The Minister of Health presented to Their Majesties the President of the Association and the Chairman of Council. The King then inspected the Guard of Honour of the Artists' Rifles, and while His Majesty was so engaged the Queen occupied the President and Dr. Bolam in conversation, obviously expressing her admiration for the external appearance of the building. Dr. Bolam indicated to Her Majesty, and also to the King, who had by this time returned from the inspection of the guard of honour, the structural developments which will take place in the course of time and the extensions which will be possible. Their Majesties then came to the centre of the roadway and spent some moments regarding the newly opened Memorial gates.

The Chairman of Council then presented to the King and Queen the Chairman of the Representative Body, the Treasurer of the Association, Sir Donald



Photo]

PRESENTATION OF THEIR MAJESTIES AT THE MEMORIAL GATES

[Typical Press

Left to right: The Queen, the President of the Central Medical Council, The King, the President of the Royal College of Physicians, the Chairman of Council, the President of the Royal College of Surgeons, the Archbishop of Canterbury.

MacAlister, Sir Humphry Rolleston, Sir John Bland Sutton, Lord Dawson, Sir George Newman,





Photo) PRESENTATION OF BOUQUET TO HER MAJESTY. [The Times.  
Left to right: Chairman of Council Mrs. Loris Scott, the Archbishop, The Queen, The  
King, the Minister of Health, the Dowager Countess of Mountbatten, the President, the Hon. A. H. L.  
Bridgman, Lord Dawson of Penn.



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## ENTRY OF THEIR MAJESTIES

Left to right: Chairman of Council, The King, The Queen, the President (Mr. Basil Hall)

[Central Press

Sir Edwin Lutens, and Mr. F. J. Walton, Miss  
C. M. Loris Scott, the little daughter of the Finan-  
cial Secretary, betraying no more than a becoming  
mount of nervousness, presented a beautiful bouquet  
of Malmaison carnations and lilies to Her Majesty,  
who graciously received it, and shook hands with the  
young giver.

A procession then formed in the following order,

proceeding through the Court and to the vaulted  
passage underneath the Great Hall.

The King, escorted by the Chairman of Council.

The Queen, escorted by the President of the Association.  
The Minister of Health and Ladies and Gentlemen in  
attendance.

The Archbishop of Canterbury.

The Chairman of the Representative Body and the other  
gentlemen who had just been presented.



[1106]

ROYAL PROCESSION THROUGH THE COURT OF HONOUR

[Topical 1108]

The procession entered the Members Common Room on the right of the passage. Here the members of the Reception Committee were assembled, and the Chairman of Council made a number of other presentations to Their Majesties. It had been intended that the first of these should be Dr F G Thomson of Bath, the President Elect, but, to the great regret of all, Dr Thomson was unable to be present owing to a severe attack of pleurisy. The following presentations were made:

- Mr C P CHILDF, F R C S, Past President (Portsmouth)
- Dame LOUISA ALDRICH BLAKE, M S, M D, Dean of the London School of Medicine for Women
- Miss FRANCIS IVENS, M S, President of the Federation of Medical Women (Liverpool)
- Dr R WALLACE HENRY, Past Chairman of the Representative Body (Leicester)
- Dr C O HAWTHORNE, Deputy Chairman of the Representative Body (London)
- Dr J A MACDONALD, LL D, Chairman of the Journal Committee (Taunton)
- Mr JENNER VERRALL, LL D, Chairman of the Dominions Committee (Leatherhead)
- Dr R LONDON DOWNS, Chairman of the Central Ethical Committee (Teddington)
- Mr H S SOUTAR, F R C S, Chairman of the Hospitals Committee (London)
- Dr H G DAIN, Chairman of the Insurance Acts Committee (Birmingham)
- Mr J B TURNER, F R C S, Chairman of the Medical-Political Committee (London)
- Mr RICHARD LUTHER KCMG MP, Chairman of the Naval and Military Committee (Derby)
- Dr S MORTON MACKENZIE, Chairman of the Organization Committee (Dorling)

- Dr T RIDLEY BAILEY, Chairman of the Public Health Committee (Bilston)
- Dr JOHN STEVENS, Chairman of the Non Panel Committee (Edinburgh)
- Dr E K LE FLEMING, Chairman of the Conference of Local Medical and Panel Committees (Wimborne)
- Mr THOMAS HORDER, Bt M D, Chairman of the Post-Graduate Committee (London)
- Mr LEWIS J MACLEAN, M D, Chairman of the Puerperal Morbidity and Mortality Committee (Cardiff)
- Dr CHARLES BUTTAR, Member of the Reception Committee (Felstead)
- Mr COMINS BERKELEY, M Ch, President of the Metropolitan Counties Branch, the largest Branch of the Association (London)
- Mr G E STAPLES, General Foreman of the Building Operations
- Mr W REYNOLDS, Elected Representative of the Workmen
- Mr DAWSON WILLIAMS, LL D, Editor of the *British Medical Journal*
- Dr ALFRED COX, Medical Secretary of the Association
- Mr L FERRIS SCOTT, F C A, Financial Secretary and Business Manager of the Association
- Mr W E HEMPSON, Solicitor of the Association

The presentations over, Their Majesties ascended the stairs to the Great Hall, which they entered from the southern end, and walked the length of the central aisle to their places on the dais. Most of those who had been already presented took their places behind them.

The company being seated, the CHAIRMAN OF COUNCIL read the following loyal Address of the British Medical Association to Their Majesties, and the KING then read the Reply, also printed in full, the whole of those present standing.

## Address of the Association

MAY IT PLEASE YOUR MAJESTIES —

On behalf of the members of the British Medical Association we offer our grateful thank to Your Majesties for graciously consenting to perform the opening ceremony of the new House of the Association. We recall with pride and pleasure that His Majesty King Edward the Seventh in 1900, when Prince of Wales, graciously accepted the Honorary Membership of the Association, that on succeeding to the Throne he further honoured us by becoming Patron of the Association, and that Your Majesty did graciously consent to occupy that office on your accession to the Throne.

The British Medical Association was founded at Worcester in 1832 by Sir Charles Hastings, an eminent and public spirited physician, whose memory we desire proudly to honour on this auspicious day. The Association from its beginning has had for its objects the promotion of the medical and allied sciences and the maintenance of the honour and interests of the medical profession. In pursuance of these aims the Association has striven to maintain the great traditions of the medical profession and to interest every one of its members in the advance of the science and art of medicine, having always in mind that the members of our profession are not only guardians of the interests of the individual patients committed to their charge, but, collectively, have a duty to the community in the promotion and protection of the public health.

In its work for the advancement of medical science the Association has for many years spent about £1,000 a year on scholarships and scientific grants which have been the means of encouraging many young doctors to pursue medical research. Our Annual Meetings, at which the progress of the various branches of medicine is reviewed, give opportunities to those who have made new discoveries or evolved new ideas to place them before their colleagues for discussion, and throughout the year in the length and breadth of the land, local units of the Association carry on the education of our members and provide for them, in some measure, that post-graduate study which is so essential for progress and which we regretfully recognize has not yet been organized and developed in this country as it ought to be. In addition, the Association publishes the *BRITISH MEDICAL JOURNAL*, which is recognized as among the leading medical journals of the world, has the widest circulation of any in the British Empire, and is one of the main instruments of the Association in the instruction of its members.

Not least among the activities of the Association are those which concern the relationships of the practitioner to his fellows and to the community, and the standard of ethics rightly to be observed in a liberal profession.

From the representative character of the gathering before Your Majesties to-day it may be seen how far the Association has succeeded in its efforts to enlist the support of all sections of the profession. Among its members, anxious to serve its great objects, there have always been, from its inception to the present day, the most eminent men and women in the profession. It is all embracing in its ranks are the general practitioner—the mainstay of the Association, as he is the first line of defence on which the public relies in accident and disease—the physician, the surgeon, the specialist, the teacher, the public health officer, the laboratory worker, and in all ranks the Association has no more loyal supporters than its women members, now numbering some 2,250. May we say on their behalf how greatly we appreciate the presence to-day of Her Majesty the Queen, who has shown in so many ways her interest in the education and special work of medical women.

We would point with pride to the fact that the Association's membership is world wide, that many of our most successful Branches are in Your Majesty's Dominions over the sea, and that we are favoured on this great day in the Association's history with the presence of eminent medical representatives of Canada, Australia, New Zealand, South Africa, and India, together with many from the Colonies and Dependencies. In recent years distinguished members of the Association have officially visited South Africa, Australia, and Canada and we are assured that these delegations have played an important part in cementing the bonds of union of the profession throughout the Empire. Our relations with kindred societies in this and other countries are cordial and mutually helpful, as is shown by the presence on this occasion of representatives of almost every medical organization in this country, of representatives of several great medical associations of European countries, and of an important delegation from the American Medical Association.

Your Majesties have seen at the entrance to this House the Gates we have erected to the glorious memory of the 574 members of the Association who gave their lives for their King and Country in the Great War, and it is hoped that you will graciously inspect the *Book of Honour* in which their names have been engrossed with loving care and artistic beauty by Mr. F. G. Hallett, O.B.E. The Association records with pride that by means of its organization in local units throughout the United Kingdom it was able during the Great War to serve the State in many ways, but chiefly by ensuring the supply of doctors for the Services, having due regard to the interests of the civil population at home.

The House which we now ask Your Majesty graciously to declare open is the work of Sir Edwin Lutyens, R.A., who designed it and after its use by the military authorities during the War, has adapted it to the use of our Association. In it we shall have greatly extended opportunities for usefulness to our members to the profession of medicine and to the community at large. It will be our endeavour so to use this House and these opportunities as to be worthy of the intentions of our Founder, of the past history of the Association, and of the encouragement which Your Majesties have given us by your presence here to-day.

In asking Your Majesty to declare this House open we desire to express the loyalty of our members to Your Majesties, and to utter the fervent hope that Your Majesty may long be spared in health and strength to preside over the destinies of our great Empire.



Photo]

VIEW OF GREAT HALL DURING HIS MAJESTY'S REPLY TO THE LOYAL ADDRESS OF THE ASSOCIATION

[Topical Press

### His Majesty's Reply

I AM pleased to come here to-day, accompanied by the Queen, to open the new and admirably designed House of the British Medical Association. We have always taken a sincere interest in the science and practice of medicine and surgery, and I am proud to have succeeded my Father, King Edward, as Patron of your Association.

Since its foundation, nearly a century ago, by Sir Charles Hastings, your Association has shown a remarkable increase both in membership and usefulness, and the well informed and constructive criticism that it brings to bear upon the evolution of your profession is of great value. The British Medical Acts wisely restrict admission to the *Medical Register* to those who have been trained in accordance with prescribed regulations and have passed the necessary qualifying examinations. At the same time vigilance must always be exercised in order that your profession may keep abreast with the advance of science, and also preserve a high standard of professional practice and ethics. The noble purpose, the character and the skill of those engaged in the art of healing, are your most precious traditions, and you do well jealously to watch over such attributes.

I am glad to notice your recognition of the advantages of post graduate study, in which my brother in law, Lord Athlone, a former Chairman of the Middlesex Hospital, has taken such a deep interest.

The reference in your Address to the ever widening scope of the medical practitioner in relation to the general health of the people is most satisfactory, and I have followed with sympathy the negotiations for securing smooth and effective co-operation between him and the public medical services. The welfare of my people at home and throughout the Empire largely depends upon an efficient and well organized health administration. The protection of maternity, the care of the child, a sanitary home and workshop, the safeguarding of the food supply, properly designed defences against infection and prevalent disease are all matters of vital importance. There is also an opportunity for the medical practitioner in his everyday practice to be a missionary and teacher of public hygiene and of personal health.

On behalf of the Queen, I thank you for your allusion to her interest in the education and work of medical women, and on this occasion we are both glad to express our appreciation of their activities in all branches of medicine.

I am especially pleased to learn of the close and friendly relations maintained between members of your profession in all parts of the Empire, and I heartily welcome here to-day representatives from the Dominions beyond the Seas and also from European countries and from the American Medical Association.

At this point the King was handed by the Architect a Master Key in gold, and he concluded his reply with the words:

I have much pleasure in declaring open this House of the British Medical Association, and I congratulate its members upon the possession of their new and dignified home.

## FURTHER PRESENTATIONS

The whole of the Address was heard by those in the grounds outside. The King's voice as transmitted by the loud speakers, was heard with astonishing clearness, and every syllable sounded out not only in the Court-yard but in the street beyond. Those outside the building joined with those within in the long-continued applause with which the Royal declaration that the building was open was greeted.



[Phot.]

HIS MAJESTY DECLARING THE NEW BUILDING OPEN

[Topical Press]

On the left behind the Chairman of Council is the Minister of Health. On the right behind the Queen are Sir Donald MacAlister, President of the General Medical Council, and the Chairman of the Representative Body.

Subsequently to these addresses some further presentations were made as follows:

- Dr G. W. CROWE of Worcester, one of the oldest Members of the Association who lives in the house formerly the residence of the Founder, Sir Charles Hastings
- Dr C. E. DOUGLAS, Chairman of the Scottish Committee
- Dr J. S. DAPLING, Acting Chairman of the Irish Committee
- Dr W. E. THOMAS, Chairman of the Welsh Committee.
- Dr W. A. ROBERTSON, Representative of the Australian Federal Committee
- Dr J. BANCROFT ANDERSON, Representative of the South African Committee
- Dr C. F. MACGRIPE, Representative of New Zealand
- Lieut.-Colonel L. W. C. BRADFIELD, I.M.S. Representative of the Indian Branches
- adapted to the use of the Chairman of Council of the Canadian Association
- endeavour so to use the Representative and Past President of the past history of the Medical Association
- your presence here to day
- In asking Your Majesty to represent France
- to Your Majesties and to u
- strength to preside over the
- Representative of Sweden
- Representative of Norway
- Representative of Denmark

## INSPECTION OF THE ROLL OF HONOUR

Their Majesties, accompanied by the Archbishop of Canterbury, the Minister of Health, and the members of the Reception Committee then descended to the Library, where they inspected the Association's Roll of Honour. Mr I. G. Hallett, Secretary of the Examination Board of the Conjoint Royal Colleges, who has illuminated the Roll, was presented.

Their Majesties asked Mr Hallett how many hours he had spent on the task and were informed about 430. The King especially admired the gold work, and Mr Hallett explained that his talented assistant, Miss M. Baker, was responsible for that part of the decoration. Dr J. A. Macdonald, Chairman of the Journal Committee, then presented to Their Majesties a handsome copy of the Roll of Honour bound in purple levant morocco, and padded. The size of the pages was the same as that of the present Supplement, and every page was most carefully and beautifully reproduced by photo-mechanical means. The volume was graciously accepted and delivered into the charge of the Treasurer of the Association who undertook to convey it to the Palace.

## THE LIBRARY

Mr Walter G. Spencer, M.S., F.R.C.S., the Honorary Librarian, and Mr Honcman Librarian, were also presented, and Mr Spencer pointed out to Their Majesties some of the more valuable books in the Library. The Queen showed great interest in the shelving arrangements.

In one corner of the Library Sir John Bland-Sutton, P.R.C.S., had arranged some interesting specimens which he had brought from the Museum of the Royal College of Surgeons.

The exhibits which took the King's attention most, and which Sir John Bland-Sutton explained, were the artificially shrivelled heads of three Indians from the dense forest region of the Amazon. The curious heads, contracted to perhaps one-fourth of the natural size, still had attached to them the masses of long black hair. Among other objects which caught the King's eye were the skull of a Bengalese child with a second imperfect skull attached to the anterior fontanelle, a portion of a tusk (presumably an elephant's) with a spear embedded in the pulp cavity and a layer of secondary dentine around the weapon, formed so as to wall it off from the remainder of the pulp, a human heart showing extensive laceration and loss of substance of walls of both ventricles about the apex, produced by an armour-piercing bullet used against aeroplanes, also the missile which did the mischief, a stuffed Japanese pheasant, a hen, twelve years of age, with partly assumed plumage of the male, the heart of a calf pierced by pins, thorns and twigs of witch-hazel, an example of sympathetic magic, two portions of the small intestine (probably of Napoleon I), with growth-projecting above the mucous membrane, the long blade of a bayonet which was removed from the erector spinae muscle some days after its introduction, and after the wound of entry had healed, and a complete cast of the stomach successfully removed by operation from a woman who was in the habit of eating the fibre of coco nut shells. When



he was shown a further exhibit of this kind—an immense human bill taken after death from the stomach of an alligator—the King remarked that he was familiar with the formation of these human bills. The King and Queen spent quite ten minutes over these specimens, and the King smiled at some of the zoological curiosities.

Before leaving the Library the King and Queen, using a quill pen, wrote their autographs on vellum in the Visitors Book, the signatures immediately following being those of the Minister of Health and Sir Donald MacAlister, and the Presidents of the two Royal Colleges.

### VISIT TO GARDEN AND ADJOINING SCHOOL

An event which was not on the programme then took place, the King and Queen making their way through the South Wing of the building, where the Council Chamber is situated, and out into the pleasant Council Garden at the rear, with its semi-circular terrace and oval pool. In the grounds adjoining, some 120 boys and girls of the Mary Ward (Miss Humphry Ward) School in Tavistock Place, better known as the Passmore Edwards Settlement, were assembled. These are children whose physical (not mental) defects make it impossible for them to go to an ordinary elementary school, and they are brought from various parts of London in ambulances each day to receive instruction in these pleasant surroundings. Their Majesties asked many questions of the head teacher, Miss King, and spent five or ten minutes among the delighted children. Returning to the building, Their Majesties were reminded of the Dickensian associations of this particular part of the site, of which an interesting account is given elsewhere in this issue by Mr. Munhead Little.

### DEPARTURE OF THEIR MAJESTIES

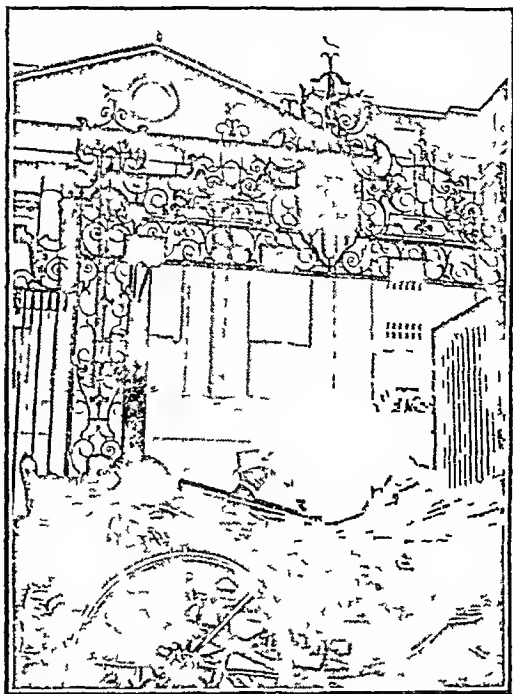
The King and Queen emerged from the South Wing at the western door and made their way to their carriage, which was drawn up in the Courtyard. The members of the Reception Committee and the various distinguished persons who had greeted Their Majesties on arrival assembled to give them a fitting send-off. Three hearty cheers were raised for the King, and three more for the Queen, and the National Anthem was again struck up as the procession made its way through the Gates of Honour.

Their Majesties left at five minutes past four, after a stay of fifty-five minutes.

The company in the Great Hall did not leave their places until after Their Majesties' departure. Afterwards there was a general inspection of the building and tea was taken in the Members' Common Room, while music was continued in the Courtyard and in the Great Hall for a further hour and a half.

A word should be said in praise of the police arrangements, which, under Inspector Cole, worked to perfection. Nowhere was there any crowding or jostling and the two ceremonies were carried through with entire success, thanks to the forethought of the committee in charge of the arrangements and to various officers and officials of the Association.

Acknowledgement should be made to Major E. W. Paget, C.B.E., Liaison Officer of the Home Ambulance Committee of the Order of St. John and the British Red Cross Society, for his courtesy in arranging for the provision of a detachment of nurses, who attended during the afternoon ceremonies.



Photo] [Central News  
DEPARTURE OF THEIR MAJESTIES WITH THE MINISTER OF HEALTH

The following gracious message from Their Majesties was received by the Chairman of Council on the morning after the Opening Ceremony:

### BUCKINGHAM PALACE

July 13th, 1925

DEAR DR. BOYD,

The King and Queen desire me to let you know what pleasure it gave Their Majesties to open the new home of the British Medical Association to-day, and to have an opportunity of inspecting this splendid building.

Their Majesties congratulate you on the excellence of all your arrangements, and thank you and all who co-operated with you for the trouble which you took to make the visit a success.

Yours sincerely,  
A. H. L. HARDINGE

R. A. BOYD, Esq.,  
M.D., F.R.C.P., O.B.E.

### EVENING ENTERTAINMENT

#### PRESENTATION OF GIFTS

At night, from 8.30 to 12.30 a brilliant entertainment took place, for which invitations had been issued to one thousand guests. The grounds both the courtyard and the terraced garden behind the South Wing were illuminated with fairy electric lamps, and the House was open for inspection. Once again by means of loud speakers the whole neighbourhood shared to some extent in the festivities.

The guests were received at the top of the staircase of the South Wing leading to the Great Hall by the President and Mrs. Basil Hall. Invitations were sent to all who were present in the afternoon together with their ladies, and almost every notable person in the medical world appeared to be present. A bouquet was presented to Mrs. Basil Hall early in the proceedings. Musicians from the band of His Majesty's Grenadier Guards again gave selections, Mr. Hubert Eisdell and Mr. Harold Williams contributed songs,

and after the presentations Miss Maudie Scott was permitted to sing.

Opportunity, which was not possible in the afternoon was taken for the conveyance of messages and gifts to the Association from Overseas Branches and other medical bodies.

#### MESSAGE TO PRESIDENT-ELECT

The PRESIDENT, before calling up the three delegates and ladies and gentlemen, I have some official duties to perform this evening, but before I enter upon them I ask you to allow me to move a vote of sympathy to Dr F. C. Thomson of Bath, who, as you know, is the President-elect, and who would have entered upon his duties as President next week. Dr Thomson, unfortunately, is suffering from pleurisy, and has telegraphed to us that it will be quite impossible for him to undertake the duties of incoming President at our Bath Meeting. I suggest therefore, that we send a vote of sympathy to him, saying how much we share his disappointment, and wishing him a speedy recovery. (Applause)

Dr BRICKENBURY: I second the motion proposed by the President. It is, of course, a great disappointment that Dr Thomson has not been able to be with us to-day, and that he will not be with us at Bath. It must be a great disappointment to him also, but if I know anything of him I think the greatest disappointment to him will be that he has disappointed us. In these circumstances it will be a nice thing from us and a thing grateful to him if we send him a vote of sympathy, coupled with our highest hope that he will very soon recover his usual health.

The vote of sympathy was carried, and the PRESIDENT said that he would send it personally.

#### PRESENTATION OF DELEGATES

The PRESIDENT: My next duty is to welcome the many representatives who have come from across the seas—those from our Branches and from kindred societies throughout the civilized world. Although certain representatives of the Overseas Branches had the honour of being presented to Their Majesties this afternoon, those bring no news complete the total list of members of our great fraternity who have come across the seas to rejoice in this occasion. There are at the present moment in this room representatives of the great Dominions and of India of Ceylon, Egypt, British Guiana, the West Indies, Sierra Leone, Hong Kong and China, Mesopotamia, Natal, and Uganda. (Applause) Besides representatives of the Overseas Branches, we have with us Professor Primrose, of the Canadian Medical Association. (Applause) I have mentioned him separately, but I regard him as one of us, not only on account of our affiliation but also on account of the very kind hospitality our Canadian brethren have exhibited towards your President. (Applause) We have also representatives of the great American Medical Association. I am not sure whether Dr W. Haggard, the President has yet arrived, but we have with us Dr de Schweinitz who was President of that association in 1922-23 and Dr Howard Fox. (Applause) I can assure them that we thank them most sincerely for coming. We have also the privilege of welcoming representatives from France, Holland, Denmark, Norway, and Sweden. Norway sent to us two very welcome guests, Dr Petersen and Dr Koppang who represent the great Norwegian professional society. To each and all our guests I extend a most cordial and sincere welcome on behalf of the British Medical Association. We rejoice to have them with us and we hope that on their return they will convey to their brethren our very hearty good wishes. (Loud applause)

I will now read out a list of those Divisions which have already sent or are in course of sending a Divisional flag for the Great Hall. Some of these flags as you see have already been hung. Others are due to arrive very shortly. The Divisions are Worcester, Birmingham, Oxford, Manchester, Liverpool, York, Sheffield, Peterborough, Nottingham, Edinburgh, London, Newcastle-on-Tyne, Cardiff, Bournemouth, Carlisle, Montreal, Leicester, Toronto, Aberdeen, Glasgow and Bradford. (Applause)

The MEDICAL SECRETARY then referred to a number of messages of congratulation which had been received. One was from the Linnæan Medical Society offering sincerest

good wishes. The Académie de Médecine of Paris was unable to send a representative but added that its good wishes might be conveyed. That morning two cablegrams had come from Australia, one from the Australian Federal Committee offering congratulations and congratulations, and the other from the Medical Journal of Australia.

#### CHIT OF PRESIDENT'S CHAIR FROM AUSTRALIAN BRANCHES

Dr W. N. ROBERTSON, C.B.E., Vice-Chairman of the Australian Federal Committee, said: I am very proud to have come 13,000 miles to carry the message of goodwill and affection from the Branches of the British Medical Association in Australia to the present Association at Bath. (Applause) When the Federal Committee, of which I have the privilege of being a member found that this important function was to take place they said, 'We must do something to commemorate this occasion and put up an established memorial.' We decided eventually to give the President's chair, which you now see on the platform and we wish it well and think sit upon at every meeting of the great Association here. (Loud applause) When the powers that be were good enough to cable over and invite some of us to be present to-day it unfortunately happened that Sir George Syme, who is President of our Federal Committee, was unable to come. He is presiding over a Royal Commission from which we expect great things in the way of the improvement of the health of the people of Australia. Therefore it fell to my happy lot to come over in his place. I feel very diffident about making a speech. Many and many a night I have more or less in dreams, made the most brilliant speeches for this present occasion. But as I stand here I have forgotten all those beautiful speeches. I can only express in my poor way the wonderful loyalty of the Branches of Australia. (Loud applause) We are far from you geographically, but very near you in spirit. (Applause) I come from the most distant State of all—Queensland—the most distant Branch of the British Medical Association in the world barring New Zealand. On my way here my ship called at every Australian port, and as we touched the various State capitals which are the headquarters of Branches I was made aware how strong and deep is the loyalty of Australia. They treated me like a royal envoy, not for my own sake, but because I was their messenger to you. All that wonderful kindness was then meant for me to convey to the Association at home. At Melbourne I asked Sir George Syme what I should say, and he said, "Stress the Imperial idea." That is exactly the spirit in which, in the hour of need, our boys rose up as one man to come to the help of the King and the Empire. That is the feeling which is manifest in the British Medical Association in Australia. The members of the Association out there, if I may due to say so, are as loyal or even more loyal, to the Association than the men here at home. We are for ever loyal to this dear old parent Association which has set such glorious ideals before us. I am very proud to be here to-night, and I beg you to accept this gift from the Branches of Australia as a token of their goodwill, their affection, and their loyalty to the British Medical Association. (Loud applause)

Dr Robertson then handed over the chair, and read the inscription on the back, which is printed, together with a sketch of the chair, at pages 132-3.

The PRESIDENT, after taking his seat in the chair, said: We have yet another gift to receive from Australia, and I will reply for them both at once.

#### A GIFT FROM TASMANIA

Dr STODART BURN, representing Tasmania said: I have very great pleasure indeed, on behalf of the Tasmanian Branch, in offering to the President the gift of a chairman's mallet. It is a very small gift from a very small Branch, 12,000 miles away. I am privileged to be the first person to present anything to the President after he is seated in his chair. (Loud applause)

The PRESIDENT: Dr Robertson and Dr Barr, I will address you simultaneously, because there is one feature in common in both your gifts. We value them, not merely on account of their intrinsic worth, but on account of the spirit in which both have been given. It is just that sort

occurred it has invariably been after the dissection operation, it has seldom happened, to my knowledge after the ordinary guillotine operation. The chance of infection through the Pasteur-Chamberlain tube is much greater in the dissection operation.

I say that it should not be performed as a routine, and never where the child is sent out of hospital the same day or even within the next day or two—I am, etc.,

ARTHUR M. BIRROD,

Aural Surgeon, Paul W. St. Joseph's Hospital  
and to the L. E. O. H. at South  
Comm. for L. E. O. H. at South

Chief, or Jerech

## ROYAL NAVAL VOLUNTEER RESERVE MEDICAL SERVICE

SIR—The letter of "R.N.V.R.," published in your issue of July 9th (p. 80), calls attention to the very marked lack of official appreciation of the war service of the medical branch. One might almost suppose that the policy of the "frozen mitt" had been deliberately adopted by the Admiralty towards these officers. I can quote my own case as an example. After being ten years in the Reserve, five of which were spent on active service, I retired. A vacancy occurred in my district, and I submitted my name for appointment as Admiralty surgeon and agent more for sentimental reasons than any other, as the financial return would have been "nothing. Through there were no other applicants who had served, my submission was abruptly turned down. This sort of treatment is scarcely an encouragement to the service of one's country, which is the service in the Reserve. There was not even an official note of thanks for our services when we were demobilised—I am, etc.,

July 1, 1927

EX P. N. V. R.

## Medical Notes in Parliament. [FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has just passed the Finance Bill through Report and Third Reading, and discussed Scottish Estimates.

### Landlord and Tenant (No. 2) Bill

Standing Committee B of the House of Commons devoted considerable time on July 12th to consideration of the Landlord and Tenant (No. 2) Bill. An amendment to include in the bill premises used for carrying on a profession was debated and was ultimately withdrawn in favour of a new proviso restricting compensation to improvements in such premises.

Sir Richard Lee moved to insert in Section 1 of Chapter 12 after the words "business, the word or profession. He said that he understood that the Government did not intend to oppose this amendment if there was a definite expression of opinion on the part of a considerable number of persons that the provisions of the bill should extend to professional premises. He desired to speak especially of the medical profession. There was a body of opinion in that profession in favour of it, and included The British Medical Association had passed a resolution to that effect. There was also a considerable demand from dentists to be included and he was glad that the Government through the Home Secretary had promised that this matter should be left to the free vote of the Committee. The relation of a doctor or a dentist to the premises where he did his work was important and if he was turned out it was just as important to him as to a housekeeper. A doctor might have to improve his premises for professional purposes. In some instances he had to build premises under the direction of the Insurance Act Committee to provide suitable accommodation for his patients and he often had to build a garage solely for the purpose of his practice. Such improvements must be of value to the landlord in letting it to a doctor or on another occasion. There was therefore no reason why professional premises of this kind should not be added to the bill on the same footing as shops and houses. He moved that the bill on the same footing as shops and houses.

Mr. MacLaren and he was sure that the Home Secretary would agree that there were certain people who might be termed professional men who would suffer severely under the strict lines of the original bill. He therefore wished to support the amendment.

Sir P. Pilditch hoped that both the Home Secretary and the Committee would be careful in giving support to this amendment because it meant a very large extension of the bill. The people made in its favour had referred mainly to doctors, but what he intended to say applied much more largely to other classes of professional men. He did not know whether the amendment would open the door to professional men getting compensation for physical improvements made and to the whole question of compensation for goodwill. There was something to be said in the matter of improvements but nothing with regard to goodwill. The theory that it was possible for a professional man to have

acquired the class of goodwill which this bill was going to cover was absurd. The goodwill to be compensated or was goodwill which remained appurtenant to the premises. Could anyone imagine that any doctor or other professional man could have left the premises? The great extension in the amendment would bring about was not justified because it would do away with the real intention of the bill which was to extend to extend to private residences. In Harley Street and other similar streets there were four doctors might come on the premises in the same house. Even if the bill would do this amendment would have a claim for compensation not only for improvements but also for goodwill and they would get a set of circumstances which would make the work of the tribunal almost unworkable.

Major Crawford said that Sir P. Pilditch seemed to have advocated a very dangerous principle. The Committee was not sitting to help particular classes of people but to establish certain principles of law and it more than one class came under the same principle it should be extended to them all. What was the difference between the position of the professional man such as the doctor and the retail shopkeeper in respect to this principle?

Mr. G. Jones said that it was right that a man who put more on improvement should be compensated and that a man who built up a good will should also be compensated. He could not see why that principle could not be extended to the professional man. The amendment was an attempt to help doctors and other professional men and to prevent a man from being victimised in the way that tradesmen had been victimised in the past.

Mr. Womersley said that he invariably experienced that when a man required a return premium or a return for the premises the owner asked for more than he would have asked for if the premises had been a private residence. He had handled many cases of this kind. There had been a row of houses and when a doctor came along looking for premises to carry on his profession he had to put up with a lot of trouble and the owner would not be compensated to the extent that the tribunal might decide.

Sir M. Manninghull Butler said that no distinction had to be given of a profession. The profession of a doctor was one in which the return was a very strong case for compensation for improvement. In regard to the question of goodwill in connection with the medical profession an entirely new view was put forward to what was a doctor's goodwill. Was the principle which was put forward to be looked upon as goodwill? If the doctor was unable to get a fresh lease was he to get compensation for what he had paid for his practice? He thought that that was a view that some doctors were inclined to take. It was in a country district a landlord knew that if he let premises to a doctor he might be rendered liable to pay the doctor the whole of the amount that he paid for the practice. The doctor would find it difficult to get a house. If the whole of the premises was going to be embraced in the bill could the landlord be asked to be given to the many different and conflicting views as to what the goodwill not only of a doctor but an auctioneer or a barrister? It would be. If the amendment were made to allow the payment of compensation for improvement made by doctors and dentists it would have the support of the law. It opened up the question of compensation for all the various trades and forms of goodwill throughout all the various professions which were not even yet defined. The bill might be overruled and made unworkable. It was therefore to be the result of the improvement the amendment he should vote against it.

The Home Secretary said that he would read the Committee to decide one way or the other on the terms of the amendment but he would put his view before the Committee. He thought that the amendment clearly brought all professional men both for improvements and for compensation within the scope of the bill. That was carrying the bill considerably further than in the original bill. Having been a professional man himself for a good many years he thought that the type of goodwill in a professional man's business was not the same as in a tradesman's business. He had more from one part of London to another and it had made no difference to the value of his goodwill. The bill did not deal with the goodwill of the tenant but with the pecuniary advantage which the landlord got at the end of the tenancy by the fact that a particular trade or business had been carried on in the house in question. He did not think that the fact that he had carried on the trade of a lawyer or a doctor in the trade of a doctor in a particular house was really going to bring in any more payment or reward during legal action to that house after the law was over another doctor or lawyer took it. Therefore the landlord would not get very much advantage from the fact that the business of a lawyer or doctor or a sculptor had been carried on in the premises in question. To go into all the question as to what the landlord had received in return on the fact that a lawyer doctor or sculptor had carried on his profession in the particular premises would complicate the bill very much and would make it very much more difficult. There was more to be said for the proposition in the amendment with regard to improvement. A doctor or a dentist in the East End might want to put up a garage or a paved driveway in the East End of London might think it necessary to enlarge his surgery. Either would be just as much an improvement as a tradesman's desired to enlarge his shop front and so on. A representative of the Government he did not propose to take part in the discussion on the amendment but he would say whether Sir P. Lee would accept a suggestion from him or think out perhaps to give a suggestion to give professional men the same part in the discussion as all that the bill would do for the amendment was to be pressed there was help to be a strong opinion of opinion in the Committee and the matter might ultimately have to go to the House to be

fought over again. The Committee might get out of the difficulty by confining the idea underlying the amendment to the earlier part of the bill and by adding, at the end of Subsection (2b) these words:

"Provided that so far as this part of this Act relates to improvements, premises used for carrying on a profession shall be deemed to be premises used for carrying on a trade or business."

That would go a long way to meet the views of the doctor, or even the sculptor, and would be a reasonable amendment. If it were generally accepted by members who opposed altogether any extension of the bill, and by those who wanted to extend it further, he thought it would certainly be accepted by the medical profession, and that the House of Commons would say that the Committee had come to a wise and sensible decision in the matter.

Sir G. Hohlir said that the amendment was inconsistent with the language of clauses of the bill which had already been passed. The language of Clause 4 in regard to the goodwill of a trade or business was quite inapplicable to the profession of a doctor or surgeon, or solicitor or barrister. The amendment sought to extend the bill to every private residence. If the amendment were accepted the gravest difficulties would arise. A landlord would be called on to pay goodwill to a doctor, but what would be the value of that goodwill to him? The landlord would never know what he had to pay.

Sir R. Luce said that he could not admit that there was no goodwill in the case of the professional man. In certain circumstances there was goodwill arising out of the place itself, and quite apart from the goodwill of the doctor, which had been built up by his professional ability. A doctor might settle in a town and convert a house into a place which became well known as a doctor's house. In many cases those houses went on from generation to generation. After what the Home Secretary had said, he was prepared to leave the matter in his hands entirely. On the understanding that the Home Secretary would move the amendment he had indicated, he (Sir R. Luce) would withdraw his amendment.

Sir R. Luce's amendment was accordingly withdrawn. Sir W. Joynson-Hicks then moved the amendment which he had already outlined in his speech. He said that the wording might be a little awkward, and it might be necessary later to pull the clause together a little. At any rate the amendment brought to the surface a question within the scope of the bill. He regarded it as a fair compromise. He too felt that the Committee would be prepared to accept it as a whole, though he did not want to force it in any way. The Home Secretary's amendment was agreed to.

#### Home Office Vote.

The House of Commons discussed, on July 14th, the estimate of £57,647 for the Home Department in 1927-28. Mr. Rhys Davies, opening the debate for the Labour party, said that among 6,000,000 workpeople engaged in factories and workshops there were each year 1,000 fatal accidents and about 170,000 non-fatal accidents. These numbers were not declining. The public was apathetic although the "Safety First" propaganda had in some factories brought very good results. Factories were more numerous and diversified than ever, but this country had fewer factory inspectors than before the war. About 207 inspectors in Great Britain had to visit 290,000 factories, Germany had 642 inspectors for 335,000 establishments. Enlightened employers already had medical staffs in their factories, and the safeguards should be brought up to the position of the best. Mr. Davies asked what methods were adopted to enforce the new regulations as to the use of white lead paint and to what extent wet rubbing down was now used. He declared that miners' myasthenia was increasing, and asked whether the arrangement made in 1924 for employing affected miners above ground was being observed. He desired to know whether there were means of applying the Workmen's Compensation Act to cases of steel smelters' catarrh which developed after men left the steelworks for other employment.

Mr. Tinker drew attention to the new Order under the Workmen's Compensation Act regarding "miners' bent knee" and "miners' bent elbow." He complained that by introducing the word "acute" a miner was compelled to carry on till totally incapacitated before a surgeon could grant a certificate.

Mr. Hilton contested Mr. Rhys Davies's suggestion that every large mill should have a medical staff. Every large town had an up-to-date medical staff in the local infirmary in the centre of the industrial area. Medical men in these infirmaries took great interest in mechanical accidents and had a localized knowledge.

Mr. Robinson asked what was being done by the Committee inquiring into dangers to health caused by dust and fibres, and suggested that next winter inspectors should pay more attention to cold rooms in factories.

Dr. Vernon Davies said that many thought a retrograde step had been taken when, to save £7,000 a year, the inspection of accidents was taken away from the certifying surgeons who previously had to go to the mill and see the machine where the accident happened. Now all that the certifying surgeon had to do was to go to the office and certify, and he practically never went into the mill, where under the old system he could draw attention to defects. The medical man's knowledge in co-operation with that of the medical inspector could be a great help, and he asked the Home Secretary to consider continuing again the inspection of accidents to the certifying surgeon.

Mr. Compton asked why cattle ringworm had not been scheduled under the Workmen's Compensation Act. Dermatitis among French polishers and lithographic workers also required the consideration of the Home Secretary.

Mr. Paling hoped the Home Secretary would make inquiries

into the possibility of scheduling silicosis in coal mines, a step which the Miners' Federation had requested for years. Stone drilling machines, which had lately been introduced in coal mines, gave off fine dust, and in the opinion of doctors men working with them were as liable to contract silicosis as were men in silica mines. He suggested that boys should be examined to see whether a tendency existed to myasthenia and excluded from the pits if it did. Did not the Home Secretary think sufficient evidence had accumulated to justify another committee of inquiry into myasthenia?

Sir William Joynson-Hicks, replying to points raised, said that compensation claims for such diseases as steel smelters' catarrh must at present be made within a year of termination of the employment which produced the disease. To extend this period would require an Act of Parliament. Although the number of factory inspectors had been reduced since 1913 from 222 to 205, the number of visits to factories had gone up. There had been fewer visits to workshops, and he admitted there was a case for more factory inspectors. Undoubtedly many thousands of works were not inspected each year, but the Home Office was limited by the Government's strenuous effort for economy. He was asking the present staff of factory inspectors to work harder, and they were responding gallantly. No evidence had been put before him that cattle ringworm in mankind would normally prevent a man carrying out his work. Whether he would be endangering the health of others by working was an entirely different point. The Ministry of Health was undertaking a special investigation into this disease, and he must wait the result before saying whether the disease would be scheduled. Miners' myasthenia caused the Home Office anxiety. In 1908 there were 386 new cases and 74 old cases, in 1924 3,445 new and 7,890 old. The Medical Research Council in 1923 made recommendations, including one for altering the terms under which the disease had been scheduled. A scheme had been drawn up by the Home Office giving effect to these recommendations, but the Miners' Federation had not yet stated its views on it. With regard to miners' bent knee and bent elbow, the point he had to consider was how far bursitis without inflammation incapacitated a man. The Medical Research Council had found that chronic enlargement of the bursa in front of the knee or elbow did not cause incapacity. If members, or the Miners' Federation, would bring medical evidence that a bursitis not associated with acute inflammation disabled the worker he would reconsider the decision.

Dr. Vernon Davies, intervening, asked for a definition of "acute" in bursitis. Sir William Joynson-Hicks quoted the Medical Research Council's declaration that "The certifying surgeon must always satisfy himself that the condition is an acute inflammation arising out of the workman's employment and of sufficient severity to cause loss of earning power."

Dr. Davies said that under that definition a man would have to be incapacitated from work for many days before the certifying surgeon could give a certificate. The Home Secretary offered to consider any medical evidence which Dr. Davies could give and to make any further inquiry necessary to satisfy the Miners' Federation. Though silicosis was not scheduled, compensation could be provided for it under the Workmen's Compensation (Silicosis) Acts if in any industry or group of industries there should be a scheme for provision of compensation. He had made a scheme for the refractories industries (granite musing, and gamster and silica brickworks, and quaries), and another scheme for the metal grinding industry (the grinding of cutlery and edged tools, machinery, etc.). The former scheme was working satisfactorily, the latter had just come into force and was not altogether popular, though employers had entered wholeheartedly into the working of the schemes. The Home Office and the Mines Department had conducted a medical inquiry into silicosis in coal mines and had examined men by x-rays. Tests and information had shown distinct evidence of silicosis in the lungs of these men. Thirteen men were found affected in one mine or group of mines, and in two or three cases very serious fibroid conditions were found by radiographic examination. Yet the owners of the coal mine, with whom he had conferred on the previous day, had denied that there was any silica in the mine. He was satisfied that the disease existed, and he had arranged that the Mining Association representatives should interview the medical advisers of the Mines Department, who had arranged for the examination of the affected men by doctors of the highest eminence. If the Mining Association was not convinced he must set up an inquiry, and, if then satisfied, would make an Order for the mining industry. He had had a large number of mines examined by an independent medical expert from South Africa. He declined to discuss lead paint again, there had not been time to find out how far the wet process was really being carried on.

The Vote was agreed to as was a subsequent vote of £503,901 for prisons in England and Wales.

#### Bills Advanced

On July 15th the House of Commons read the Poor Law Bill and the Diseases of Animals Bill a third time, and the Destructive Insects and Pests Bill a second time. The first is a consolidating bill. The second deals with the testing of imported cattle for disease with the destruction of infected cattle in this country, and with compensation for such destruction. The third provides for the destruction of infected crops. On the Diseases of Animals Bill Mr. A. V. Alexander said that milk tests showed a real danger from tuberculosis in our herds. Dr. Nathan Raw had said that he had over 2,200 patients whose tuberculosis was caused by infected milk and that 15 per cent of all milk supplied contained living tubercle germs. The Chairman said that this was irrelevant to the bill. Mr. Guinness said that between September 1st, 1925 and March 31st, 1927 owing to notification of tuberculosis on farmers' premises or to the tracing back of

tuberculosis milk premises were inspected housing 1,051,000 cattle. A seventh or an eighth of the cattle in the country. Of these 792,000 were cows and heifers, among whom 21,871 or 2.7 per cent were suffering from the forms of tuberculosis which brought them within the Tuberculosis Order—tuberculosis emaciation, chronic cough, and tuberculosis of the udder. The last by far the most serious danger only occurred in 0.5 per cent. The figures quoted by Mr. Alexander were terrifying but unfordoned.

In the House of Lords on July 18th the Widowers and Maternity Homes Bill (Scotland), and the Medical and Dentists Act Amendment Bill were read a second time. The last is a measure which is to confirm and give effect to certain agreements between representatives of Great Britain, the Irish Free State, and Northern Ireland as to the registration and control of medical practitioners and dentists and to valid to certain acts done by the Dental Board.

#### Pensions Vote

On July 16th Colonel Stanley introduced estimates of £33,242,852 for the Ministry of Pensions in 1927-28. He said nearly every item was subject to uncontrollable factors. The Ministry could not tell how many pensioners or dependants were likely to die during the year. A bad winter might cause more sickness among pensioners and send them to hospital. The administrative cost of the medical services of the Ministry was estimated at £298,700. The Ministry was a king £2,507,500 for the benefit side—a decrease of 8 per cent. Nearly half the cost of medical treatment was due to mental cases, the number of which remained fairly constant. The need for hospital treatment was diminishing but in a number of cases the ailments were liable to recur and for this reason hospital accommodation must be retained for some years. It was calculated that this year there would be an average of 1,000 in patients, medical as well as surgical, against 15,000 last year. This year 60,000 child dependants ceased to be eligible for allowances. Last year 4,500 widows remarried. In round figures there were now 1,000,000 pensioners and £50,000 dependants.

Major Cohen argued for the removal of the seven year limit on claims for pensions. The British Legion put this claim forward particularly for tuberculous cases and for troubles arising from gas poisoning. The limit had been fixed when no data were available.

Dr. Drummond Shiels said that Circular 20, on which the doctors had to work at present involved a difficult procedure and was not known to the ex-service man though doctors in hospitals sometimes told the men of their right to claim revision. Where men during the war suffered from malaria, bronchitis, or other diseases, ordinary ailments subsequently tended to take a more serious form and the men ran much greater risk of death. Why should there be discrimination when death was not wholly due to war disability? Some of the finest men in the army who carried on in spite of physical disabilities were penalized by a narrow hook keeping outlook. Other members also cited cases in which tuberculosis claimed to arise from war service, had not been pensioned. Mr. Naylor suggested that the Minister should advise doctors in hospitals when they had to certify the death of pensioners who had been under panel doctors, to consult first with those doctors. Sir Walter Greaves Lord said medical men were constantly finding that the origins of disease were much further back than they had thought. This was so in regard to neurasthenia. When that malady came on after a long period it was worse from the point of view of disablement. There were grounds for reopening a great number of these cases.

Major Tryon said Dr. Shiels was wrong in suggesting that changes made from time to time in warrants had been to the disadvantage of the pensioners.

The debate was adjourned.

#### Pollution of Rivers

In the House of Lords on July 18th Lord Biddam of Fleet opened a debate on pollution of rivers. He said that last February a deputation waited on the Lord President of the Council and urged that a central authority should be established to control inland water, and that local river boards should be created in support of that central authority. It urged also the necessity for scientific research to solve the innumerable problems attendant on the abatement of pollution. Something more was required than research. The Government ought to take action. The Earl of Balfour said the Government had appointed an Advisory Committee representing the Ministry of Health and the Fishery Board. The chairman would be Sir Horace Munro. The Committee would advise on new legislation on the setting up of new river boards and on inducing local bodies to co-operate with each other. A Committee now at work composed of men of science would carry on research into the pollution of rivers.

#### Research in East Africa

During the discussion of the Colonial Office Vote in the House of Commons Captain P. R. Henderson called attention to the research into leprosy in Uganda. It did not involve a large sum of money owing to the advance of medical knowledge and medical research which had made it possible to attack the disease effectively. He hoped that the special commission which had been set up to inquire into the federation of East Africa would be asked to direct its attention to the possible co-operation of East and West Africa in all the forms of research relating to the leprosy fly.

Mr. Amery in reply said that perhaps the greatest problem of all in East Africa was that of research. The problem of the leprosy fly was being coped with in conjunction with the League of Nations and it was hoped to carry the matter further in co-operation

with the Governments concerned. These problems including that of research into leprosy in Uganda concerned the whole of East Africa and that was one of the reasons why administrative unity was desirable.

#### Lead Paint (Protection Against Poisoning) Act 1926

In the House of Commons on July 13th Mr. Harnett asked leave to introduce a bill to remove the prohibition contained in the Lead Paint (Protection Against Poisoning) Act 1926 against the employment of women in painting buildings with lead paint. He said the bill would place women on exactly the same footing as men by allowing them to engage in the industry under the regulations laid down in the Act of 1926. Mr. S. Balfour opposed the bill. He said that the regulations were not satisfactory but it was preferred to go on being poisoned that was no reason why women should not be allowed to be poisoned. Leave to introduce the bill was refused without a division.

**Medical Adviser to the Mines Department**—On July 19th Colonel Lane Fox informed Mr. Lunn that the latest date for receiving applications for the appointment of the new medical adviser to the Mines Department was July 31st. After that the qualifications of the applicants must be carefully considered. The appointment could not be made for some time but would be announced as soon as possible.

**Lunacy Administration in the Sudan**—Mr. G. Locker Lampson told Mr. Pellicci Lawrence on July 19th that there were no regular lunatic asylums in the Sudan. Mild cases of insanity in Europeans were dealt with in the hospital. Violent or dangerous cases were sent to Cairo as soon as possible being directed to an institution on arrival. Cases of insanity among the Sudanese were always when possible sent to their homes, recourse being had to hospitals only on special accommodation was available locally, only in violent or dangerous cases.

#### Notes in Brief

No cases were now outstanding in which approved societies had failed to submit the books for audit.

Earl Winterton on July 18th stated that the Government of India had decided that an inquiry into the opium traffic in India was unnecessary.

Sir Kingsley Wood stated in reply to a question on July 18th that plague infected rats had been found in the *Flutard* which brought a cargo of grain to the Victoria Dock, London. Measures taken by the port sanitary authority included the mooring of the vessel in the middle of the dock and its fumigation for the destruction of the rat. The unloading of the vessel was later completed under the supervision of the officers of the port sanitary authority.

## Obituary

### SIR EDMOND SINCLAIR STEVENSON, M.D., F.R.C.S. ED.

Late President of the Medical Council, Cape Colony, and Honorary Vice-President, British Medical Association.

We have already recorded with deep regret the death of Sir Edmond Sinclair Stevenson at the age of 76, at his residence in Rondebosch, near Cape Town.

Sir Edmond Stevenson received his early education in Geneva, where he was born. He later studied medicine at the Sorbonne in Paris, but on the outbreak of the Franco-Prussian war he joined the French ambulance. He then resumed his medical studies and worked in Edinburgh, St. Thomas's Hospital, and King's College, London, obtaining in 1873 the diplomas M.P.C.S. Eng. and L.R.C.P. Ed. In the following year he became F.R.C.S. Ed. and in 1894 he graduated M.D. Brux. with honours. He went out to South Africa in 1873 and commenced practice at Philadelphia, in the Malmesbury district, but soon afterwards removed to Pondebosc. In 1892 he was nominated a member of the Colonial Medical Council, of which he was elected president in 1897, from 1900 to 1909. He represented the medical profession on the Council in spite of impaired health he volunteered for military service at the outbreak of the late war and was placed in charge of a hospital in South Africa, with the rank of lieutenant-colonel. In 1916 he was gazetted lieutenant-colonel, S.A.M.C., and was attached to the Alexandra Hospital.

He took a prominent part in the foundation of the Cape Branch of the British Medical Association in 1893, and was its president in that year and also in 1901. He presided over the South African Medical Congresses of 1894 and 1900.

In addition to conducting a large general practice, his patients including such well-known men as Cecil Rhodes, Sir Gordon Sprigg, and Sir William Cameron, he took special interest in surgery and gynaecology.



Museum

It was decided that the Museum should be closed during August as well as during September, and for such part of July as may be found necessary for the purpose of redecorating. The President

reported that steps were being taken to transfer the Strangewaters collection of specimens illustrating osteoarthritis from Cambridge to the College.

### Paying Patients in Hospitals

Mr. McAdam Peckles was appointed to give evidence before a special committee appointed by the Prince of Wales "to inquire and report to King Edward a Hospital Unit for London upon the question of hospital accommodation in London for persons prepared to pay more than ordinary voluntary hospital patients, and to report the conclusions at which they may arrive."

### Endowment for Annual Dinner

An offer from Mr Backston Browne to present to the College a sum of £500 to provide an annual dinner to be given on the College premises to Members Fellows and others, was accepted with cordial thanks.

## Le tiers

Professors and lecturers were elected for the coming year. The following is a list with the subjects in parenthesis:

**Hunterian Preceptors**—F M Atkinson (The pathology, diagnosis and treatment of abscess of the brain) Sir Arthur Keith (Six lectures on directed growth) J S Huxley (The surgery of the posterior fossa of the skull and the conus) S H Sheldon (An endo-cranial craniotomy) H S Montar (Recent advances in cerebral surgery) G Grey Turner (The treatment of congenital defects of the bladder and urethra by implantation of the ureters into the bowel) W E W Wardill (Cleft palate with observations on the causes of defective speech and their remedy)

Observations on the causes of defective speech and their remedy; A. Abrams (The physiology of violent exertion in relation to overstrain); A. Fleming (Lysozyme a bacteriolytic ferment normally present in tissues and secretions); L. O. Mann (The comparative embryology of the vertebrate eye).

periteneurization and carcinoma of the stomach) C E Shattock (Pathological specimens in the Museum) C P Wakeler (Surgical diseases of the salivary glands)

*Arno t Demonstratorship*—Six Arthur Keith (Six demonstrations on the contents of the M. eum)

## ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, July 12th, the President, Dr G M Robertson in the chair.

### *Fellowship*

Dr Alfred Irving Shepherd Watson (Carlisle) and Dr Walter Duncanson Chambers (Perth) were introduced and took their seats as Fellows of the College. Dr Robert Victor Morrison (Rangoon), Dr William Macrae Taylor (Edinburgh), Dr Douglas James Ackworth Kerr (Edinburgh), Dr William Alister Alexander (Edinburgh) and Dr Thomas Robert Fushiton Todd (Edinburgh) were elected Fellows of the College.

### Congratulations

On behalf of the College Sir Norman Walker congratulated Dr George M Robertson and Sir Robert Philip on receiving the honorary fellowship of the Royal College of Surgeons of Edinburgh which had recently been conferred upon them.

## Oil &amp; Business

On the motion by Sir Robert Philip the annual report as Curator of the Laboratory was approved.

It was intimated that Dr George M Robertson had been appointed a Trustee of the College

## Medical News.

THE combined meeting of the Section of Neurology of the Royal Society of Medicine and the American Neurological Association, of which we gave full particulars on June 25th (p. 1155) will be opened on the evening of Monday next, July 25th by a reception at the Royal Society of Medicine and the guests will be received by Sir James Berry, president of the society, and Lady Berry. At 9.30 p.m. Sir James Purves Stewart, president of the section will give an address on "Mount Athos, a survival of the Middle Ages." Tuesday will be given up to the reading of short papers, and on Wednesday morning there will be a discussion on the cerebellum. On Thursday there is to be a discussion on sensory disorders in organic disease of the nervous system and at 5 p.m. the Huxtings Jackson lecture will be delivered by Dr Charles L. Dana. During the afternoon demonstrations on pathological subjects will be given, and there will be a dinner in the evening.

CIVIL list pensions of £75 have been awarded to Dr. George Alexander Pirie, in recognition of his self sacrificing and devoted services to the application of radiology to medicine and to the widow of Dr. G. Inman, in recognition of his contributions to the pathology of tuberculous. Mr G. W. Williams, F.R.C.S., has received a pension of £50 in recognition of his self sacrificing and devoted services in the routine application of x rays to the treatment of disease.

In view of the incidence of dermatitis among persons handling flour and sugar the Home Secretary, after consultation with the National Association of Biscuit Manufacturers,

facturers, has issued a draft order. The main reason for this is the provision and maintenance of suitable washing facilities, but in addition the occupier is required to arrange for a systematic inspection of the hands and forearms of all persons employed in the processes in order to detect early signs of dermatitis. The inspection is to be carried out by a responsible person and to be made once a week. If a person who is in contact with sugar or a mixture of sugar and other ingredients shows a tendency to develop, or is known to be susceptible to dermatitis, he is, if practicable to be transferred to other work. An official cautionary notice for posting in places where such work is carried on has also been prepared. Objections may be lodged with the Home Secretary within thirty days.

THE Fellowship of Medicine announces that Mr A. Caddy will give a lecture demonstration on glaucoma at the Royal Westminster Ophthalmic Hospital on July 26th at 5 p.m. free to medical practitioners. There will be an afternoon course in diseases of infants at the Infants Hospital under the direction of Dr Eric Pritchard from August 6th to 21st, with special visits to the Model Pasteurizing Plant Willesden, the Home for Blind Babies, Chorley Wood and the V.D. Centre, Charles Inn. A course in medicine surgery and the specialties will be held at Queen Mary's Hospital, Stratford, from August 29th to September 10th during both mornings and afternoons. The Fellowship of Medicine provides a general course of instruction at the associated hospitals for which a comprehensive ticket is issued for any period from one week to one year, the holder is free to make up his own time table from headings in the programme supplied. Copies of all syllabuses are obtainable from the Secretary of the Fellowship, 1, Wimpole Street, W. 1.

THE St Bartholomew's school students' dinner will be held on Monday, October 3rd, at 7.30 p.m., in the great hall of the hospital, with Dr H Morley Fletcher in the chair. The honorary secretaries are Sir C Gordon Watson and Mr P M Vicl.

DR P G GAPPEIT on leaving Earl Shilton Loocestershr, for Henfield, Sussex, was presented with a hall clock an illuminated address, and a book containing the names of subscribers.

THE Hanbury Memorial Medal for original re-search in the chemistry and natural history of drugs has been awarded to F. A. Henrv, D Sc, direct-r of the Wellcome Chemical Research Laboratories

BY an Order in Council the powers of the University of London Commissioners have been continued to the end of 1928

THE King has been pleased to appoint Sir James Crawford Maxwell, M D, K B E, C M G, to be Governor and Commander in Chief of Northern Rhodesia.

FIELD MARSHAL THE DUKE OF CONNAUGHT has appointed Colonel Sir John Atlin, KCMG, MB, and Vairans Antonius Johnston, D. Laris, Triffin Esq., O.B.E., M.D. to be Physicians in Ordinary to His Royal Highness in the room of Colonel Sir Edward Scot Worthington, K.C.V.O., C.B., CMG, C.I.E., M.D. resigned.

THE Exchange Secretary of the National Union of Students (3, Eadsleigh Gardens London W C 1) is prepared to recommend young university men or women from France or Germany who would be suitable guests of English families during the summer vacation.

At the recent examination for the diploma in librarianship of the University of London thirty passed but 0000 of them will be eligible to receive the diploma until they have furnished the necessary certificate of employment in an approved library

DR R KAGBOWN, medical officer of health, Bermuda, where artificial light therapy has been extensively carried out under the public health department has been appointed medical editor of the *British Journal of Actinotherapy*.

The fifty second annual report of the Mission to Lepers contains a short summary by Dr. R. G. Cochrane of the improvement in the therapeutic outlook in leprosy which has followed the introduction of the ethyl esters of chaulmoogra oil. The number of lepers now being treated directly or indirectly by the Mission exceeds 9,000. Additions were made during 1925 to its institutions in Bihar, Bengal, the Punjab, the Central Provinces, Madras and China; the civil disturbances in the last named country have not, it is stated, interfered seriously with the work of the Mission. New buildings of various kinds have also been constructed in Korea and Formosa, and similar extension is contemplated in Kenya and Uganda. The report, which is freely illustrated and contains details of the work in several places, is published at £d and together with the quarterly magazine of the Mission, *Without the Camp*, for which the subscription is a year may be obtained from the secretary of the Mission, 33, Henrietta Street, W.C.2.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **BRITISH MEDICAL JOURNAL** must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are **MUSLUM 9561, 9562, 9563, and 9564** (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are  
LDITOR of the BRITISH MEDICAL JOURNAL, *Atiology Westcent, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER  
(Advertisements, etc.), *Articulate Westcent London*

MEDICAL SECRETARY *Mediscera Westcent, London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus, Dublin*), telephone 4737 (Dublin), and of the Scottish Office, 6, Drumshigh Gardens Edinburgh (telegrams *Associate, Edinburgh*), telephone 4361 (Central).

### QUERIES AND ANSWERS

#### TREATMENT OF THIRADWORMS

DR J FINCH HAINES (West Hampstead) writes in reply to "India": I have found the following treatment for threadworms invariably successful, if regularly persevered in—5 grains of sulphur three times a day, and a teaspoonful of liquid paraffin nightly.

#### OMENTAL TRAPS

"M B, CH B" writes: I have a mind under my care who received an abdominal injury several months ago and still has pain of a character difficult to explain taking the present findings into consideration. I should be grateful for references to cases of a similar kind and then after symptoms. The history is briefly as follows: The man was working, along with his colleague in the pit. The latter was swinging a 16 lb hammer, in the act of hoving coal when the head flew off. My patient was struck in the abdomen, in the gall bladder region, and became unconscious for a time. His symptoms now are occasional pain on movement exactly over the place of injury and there is slight rigidity of the rectus muscle in that region. X-ray photographs show no abnormality, stomach and duodenum are absolutely normal and the pain is not of muscular origin.

#### INCOME TAX

##### Assistant's Remuneration

"HUMBRE" is in partnership with his brother, and they have employed an assistant as from March 3rd who will probably become a partner as from September 1st. The firm's liability for 1927-28 is based on their earnings for the year in April 5th, 1927, which were reduced by the assistant's salary etc. for one month, whereas that cost will affect five months of 1927-28.

\* \* The firm have no remedy. It is a fact that their income tax liability for 1927-28 is likely to exceed their earnings for that year, on the other hand, in 1928-29 their three sevenths shares of the partnership earnings of that year (including those of the new partner) are likely to exceed their liability, based, as it will be, on the earnings of 1927-28, after deducting the assistant's cost up to the date as from which he becomes a partner. In the long run there should be no appreciable injustice.

#### Allowable Expenses

"H F B" inquires whether he can deduct as professional expenses (1) salary and cost of board of maid, (2) also of housekeeper, (3) fitting of electric light and power in surgery, (4) subscriptions to British Medical Association and Medical Defence Union, and (5) contributions to fund for accommodating special cases at Annual Meeting of British Medical Association, and subscriptions to Epsom College and medical benefit etc.

\* \* (1) and (2) Yes, to the extent or in the proportion to which these employees devote their time to looking after the professional, as distinct from the domestic side of the establishment—presumably very small as regards the housekeeper. (3) No, this represents capital outlay, though some allowance may be due if the old (? gas) fittings required replacement. (4) Yes. (5) On the whole, we think these deductions would be inadmissible, as representing private or semi-charitable expenditure.

#### Three Years' Average

"W B K" was employed by the Ministry of Pensions but that work practically ceased in 1924, and in the year 1924-25 his professional work resulted in a loss. He has now claimed to retain the advantage of the three years' average for 1927-28, and the local inspector refuses to admit that claim.

\* \* The earnings from the Ministry of Pensions were assessable as those of an employment, and must be severed from consideration of the proper basis of assessment of the general professional earnings, which appear to have commenced in 1924-25. Section 29 of the Finance Act, 1925, which deals with the modification of the change to the previous year's basis of assessment, applies to persons assessable "for the year 1925-27 upon an average of a period of three years or more." If

"W B K" was not in general practice in 1923-24 to an appreciable extent, then his general assessment for 1925-27 would be on the average of 1924-25 and 1925-26—that is, of two years only, and he is not within the Section. He might find out from the inspector whether this is in substance the ground of refusal, and if it is, then apply for a revision of the assessments for each of the three years 1924-25, 1925-26, and 1926-27, to the amount of the actual profits of the year under the provisions of the 1842 Income Tax Act—if that course is worth pursuing, having regard to the amounts of the respective years' earnings and the averages applied.

#### Motor Car Expenses

"L M" bought a car in 1924 for £141. He sold it in 1926 for £50, buying another car for £269. He applied for depreciation allowance last year, but did not receive it until he explained the above transaction when he was allowed 15 per cent on £229=£34.

\* \* Seeing that the car was not purchased until 1926, depreciation on that car was not claimable in the normal course until 1927-28, and in our opinion the 15 per cent should have been applied to the full value of £269. As regards the old car, the net cost of replacement, excluding improvement, was apparently £141-£50=£91, and an obsolescence allowance should in fairness be given, though certain technical objections can be raised. That allowance would take the form of including £91 as a professional expense of the year 1926.

### LETTERS, NOTES, ETC.

#### A DISCLAIMER

DR EUGEN STEINACH, the University of Vienna, asks us to state that he has no connexion with the Dr. Frederick Heyman Institute. He has been informed that such a connexion is implied in an advertisement which appeared in several London newspapers, and Professor Steinach wishes to protest against the use of his name in this connexion.

#### THE TESTING OF DISINFECTANTS

MR J F AINSLIE WILKINSON, F.R.C.S. (London, E C 4), writes with reference to the letter under this heading in our issue of July 9th (p. 79) as follows:

"The original note which supplied material for the test was published by me in the *Practitioner* (vol. LXIX, No. 413, 1902). The suggestions put forward in that note were elaborated by Dr. Samuel Rideal and myself in the form of a paper which we read at the Bradford Congress of the Royal Sanitary Institute in 1903. For a number of years the method as described in that paper was adopted officially by Government departments here and in the Colonies with slight modifications (such as the substitution of a standard sterilized saline solution for distilled water in the preparation of all dilutions of the postulant, while the disinfectant under test was required for use at sea—or sterilized urine when employed in latrine work—but the actual technique remained the same). After the experience of a number of years Dr. Rideal and I decided to embody in the test various improvements which had been suggested by us from time to time, and thus we did in the brochure published in our joint names by H. K. Lewis and Co. in 1921."

#### THE LATE MR STANFORD MORTON

In last week's issue of the **JOURNAL** (p. 117) occurred a regrettable slip on the part of the printer. In the sentence introducing Lieut.-Colonel A. E. J. Lister's interesting note on the operative skill of the late Mr. Stanford Morton the name appears twice as "Mr. Stanmore Morton." The name was given correctly later on, and it is hoped that his many friends and admirers will excuse the lapse.

#### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments in hospitals will be found at pages 35, 38 and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 56.

## Remarks

ON

## FRACTURES OF THE FIRST CERVICAL VERTEBRA \*

BY

C. OTFRIJ JEFFERSON, M.S. F.P.C.S.,

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In a previous paper I described at some length the pathological anatomy, mechanism, and symptomatology of fracture of the atlas vertebra. Having now three more recent examples of this injury to add to the four published then I may take this opportunity of bringing the history of the subject up to date, and of making such amplifications or amendment as further experience seems to demand. The whole question of atlas fracture is in reality undeniably bound up with the matter of injuries to the occipital-atlanto-axial component of the vertebral column, both bones and ligaments. I shall be compelled by the necessary limits of space to confine my observations strictly to the atlas, and will have to reserve for another occasion the many fields through which a fascinating subject might well tempt us to wander. So much that is dramatic but untrue so much that is interesting yet founded on legend obscures the facts in this corner of surgery that it is impossible to take up the thread of the narrative in modern times. A complete survey of the history of the various lesions is required before we can go forward along a sure path. As regards atlantal injury I have previously sketched in the necessary background, but will once more outline the chief features after describing the new cases.

## MATERIAL

In 1920 I described four examples of atlas fracture—two clinical examples and two museum specimens—and collected forty-two other cases from the literature. I have omitted cases of gunshot injury in the present communication. The total material personal and otherwise now amounts to sixty-five cases. I am indebted to Dr. Arnison and Dr. Forbes for two of them (see Tables I and II).

## CASE I—Fracture of the Posterior Arch of the Atlas

A man aged 57 was sent to see me in 1920 some five months after an accident which had left his neck very painful and stiff. He was unable to describe the exact facts, but was drawing water in a slightly stooping position when a telegraph pole blown over by the wind struck him on the back of the head. The scalp was not cut, there was no bleeding from the nose, mouth, or ears. He was stunned for a short time and when he became conscious



FIG 1—Case I. Fracture of the posterior arch of the atlas in two places.

he had great pain in the neck in the shoulders and in the arms as far as his elbows. He had been in bed for eight weeks. His arms had not been till weak so that he could not raise them high above his head or get his hands easily into his trousers pocket. He had had no difficulty in walking. The outstanding feature of the case had been the pain in the occipital region of the scalp and although this was improving it was still very troublesome—so much so indeed that he was in the habit of placing a wet handkerchief on his head to allay the burning pain. On examination I found that the head was very stiffly held and that movements of rotation and of nodding were practically abolished. There was an area of calp analgesia on both sides in the distribution of the great occipital nerves greater in extent on the right than on the left. He could abduct the arms fairly well but the right deltoid, biceps and triceps were flabby without being definitely palsied. There was a small patch of anaesthesia corresponding to the skin areas of root C5 on both arms. There was no sign of interruption of the pyramidal pathway to the legs on either side. A radiogram disclosed fracture of the posterior arch of the atlas. Seen again a month later he was making low progress but the occipital neuralgia was still severe.

In this case the atlas fracture appears to have been complicated by a slight cord hemorrhage at the level of C5 but it must have been extremely minute. Alternatively a peripheral injury to the issuing roots of this segment may have been occasioned in some manner.

## CASE II—Fracture of the Posterior Arch of the Atlas and of the Anterior Arch of the Axis

A woman 67 years of age was admitted to the Salford Police Hospital on February 22nd 1925 with a history that the previous day he had fallen down stairs in her home and she thought twisted her neck with a very painful injury. It was almost impossible for her to find any comfort in any position in bed. There was no tenderness or abnormality in any arm or leg. I found on questioning her that the fall had taken place in her kitchen and ran across the hall. That the dividing wall was only a few feet from the foot of the stairs. In falling she had struck the top of her head against the wall or on the passage. There was a small cut one inch inside the hairy scalp about the site of the coronal suture near the midline so that the force striking the top of the head might also have extended it. Flexion and extension of the head were impossible and her power of rotation was abolished. An x-ray photograph revealed a bilateral fracture of the posterior arch of the atlas and a fracture of the dens process and posterior arch of the axis. The occipital-atlanto-axial component of the vertebral column was reduced to a state of complete immobilization and she had neck pain and could not move her head. She remained in hospital for a month and was discharged to her home. After six months she began to have the pain removed. This was done and she was promptly discharged. I have recently re-examined the patient. Movement of the neck are a little restricted in most directions but she declares herself to be perfectly well. A radiogram of the atlas and axis showed in perfect form.

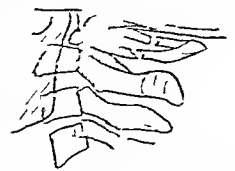


FIG 2—Case II. Fracture of the posterior arch of the atlas in two places and of the dens process of the axis.

## CASE III—Fracture of the Posterior Arch of the Atlas

A man 34 years of age was admitted to the Salford Police Hospital on October 20th 1925 under the care of my colleague Mr. Ollerenshaw who was knowing my interest in the case. Later kindly transferred to the case of mine. It appeared that a bag of starch weighing 100 lb had slipped from a shelf at a dock warehouse and had fallen from a height of five to six feet on to the upper and back part of the patient's head, knocking him down and temporarily stunning him. He had the usual severe pain in the neck with neuralgic pain streaming up on to the back part of the scalp. There were no signs of cord or root injury. The neck seemed rather swollen and was extremely tender to touch behind. I revealed a fracture of the posterior arch of the atlas on the left side with a negligible fracture of the spinous process of C5. The odontoid process was intact there was no luxation of the head. The neck was immobilized between sandbags and after five weeks in hospital he was discharged with a leather collar. I have seen him from time to time during his recovery and he has done well. His neck is still a little stiff but this is probably partly due to apprehension as he knows he has had a broken neck. He has complained of tingling along the inner sides of the arms into the inner two fingers on both sides as if he had known of his tumb bones. He had a similar tingling in his calves especially when he turned his head far to the right or left. There is an area of hypoaesthesia needled over a part of the calp area supplied by the great occipital nerve. In a telegram taken on May 1927 the atlas still shows a discrepancy of the left arch but there was unusual separation of the fragment in this case.

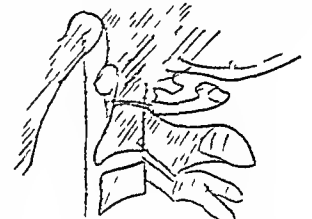


FIG 3—Fracture of the posterior arch of the atlas and of the spinous process of C5.

## SOME GENERAL CONSIDERATIONS

If we turn to the standard work we shall strengthen the impression which was probably implanted in our dissecting room days that injuries of the first cervical vertebra are on the one hand exceedingly rare, and on the other extremely fatal. Both of these ideas are wrong, although a degree of rarity cannot be denied to a condition of which only a few or very few cases appear to exist in the world's literature. The figures are probably misleading for it is strange that I should have seen so relatively high a percentage involved. The fact is that a number of cases are undiagnosed not because the injury is any especially difficult to discover, the true nature of the case, but because the belief in the fatal nature of the condition is so strong that the practitioner does not suspect such a lesion in his patient lives. The stiff and painful neck or atlantal injury is put down to a "sprained neck," and it is only when

the condition fails to resolve itself—and some cases get well fairly quickly—that the more wary send their patients for early examination.

It is easy to understand how this belief in the almost uniform fatality of atlantal injury has come about. There are in currency apocryphal tales of slight accident and of pranks leading to sudden death. Many such cases have undoubtedly occurred. The reader may turn to Greene Gracigno's case, for example, but he will find that, as a rule, in these cases the violence has been considerable, more considerable perhaps than the participants would willingly admit. The classical example of minimal violence leading to death is that of the child lifted up by the head and set down dead. As this refers to rupture of ligaments, and not to atlas injury, I shall not at present make a detailed reference to this case, of which many variations in folklore exist. The origin of this story goes back to France 150 years ago, and is not founded, so far as I can learn, on definite pathological observation. Much more convincing, however, than any fanciful tales were the older, well documented records of atlantal, odontoid, and arch fracture, which are chiefly concerned with fatalities. How else could the clinician of last century and earlier times confirm a diagnosis of fracture of the upper cervical vertebra except by necropsy? If there was cord damage, and often there is none, he was on sure ground, but even then there was no certainty as to the precise nature or even the exact site of the bony injury. Thus we find the earlier history of atlas fracture in essence a record of death, up to the introduction of radiography, since when a change has come over the picture. I find that of thirty-two cases reported since 1900, only six have died, so that one's impression at present is that atlas fracture, though fraught with the possibility of danger, is by no means always fatal. Indeed, when the posterior arch alone is broken—and this is the commonest type—there should be no particular anxiety. The real danger lies in the nature of the force which is required to bring about the lesion, for this may not stop at fracture of the atlas, but may go on to cause other injuries. In order that I may make this clear it will be necessary to speak of the mechanism of fracture, when we shall see that an injury of much the same type may produce now a fracture of the skull, now a fracture of the atlas, whilst a slight difference in the direction of the trauma causes the injury to fall into the cervical spine at a lower level. For the vast majority of cervical injuries are produced by forces applied to the head and not directly to the neck. This is a fundamental point, and it is essential that the fact should be realized in all its implications.

#### SITE OF INJURY WHEN FORCE IS APPLIED TO THE HEAD

If the wounding body is a hard unresilient material a fracture of the skull is naturally the most probable result, the skull being compressed between the spine at the occipital condyles and the injuring agent. Even so, a fracture of the spine may occur as well, and I suspect that these double injuries are more frequent than we think. I have seen one such only. Clinically the head injury quite overshadows all else, whilst at necropsy the pathologist is satisfied when he finds cranial lesions. In the monograph on fractures of the skull by Briquay and Laubie (Experience XIV) experiments are recorded in which the posterior arch of the atlas, as well as the skull, was broken by longitudinal compression of the head on the spine. If the injuring body is more elastic and yet heavy (as when a bale of cotton or sugar or starch falls on to the head, or as when a person falls from a height on to sand) the skull will escape and then the lesion may fall into the vertebral column at some point. Where? If the neck is violently flexed the injury will probably be found in the lower cervical vertebrae, at the point where the change in the mobility of the spine takes place (C5 or thereabouts). If, on the other hand, the head is erect and the force is transmitted along the spine vertically an injury to the relatively weak atlas may result, and thus for a special but simple reason. I have described in my previous paper the widening of the atlas ring which occurs by the resolution of the forces acting upon it, but a few words of

recapitulation are needed. The lateral masses of the atlas are triangular in coronal section with the wide bases outwards. The upper and lower articular facets look inwards and upwards and downwards, respectively. When the head is pressed down on to the vertebral column the atlas is squeezed between the occipital condyles above and the axis below, and, owing to the obliquity of its articular surfaces, the wedge-like lateral masses tend to slide outwards. (I have illustrated this diagrammatically elsewhere.) This tendency is resisted by the anterior and posterior arches which bind the lateral masses together, and also by the transverse ligament, which not only holds the odontoid in place, but acts as well as an internal brace for the lateral atlantal masses. This ligament is, contrary to general belief, exceedingly strong, and its rupture is one of the rarest of all accidents in healthy people. If the limits of bony cohesion are passed a tension fracture occurs, the atlas ring gives way.

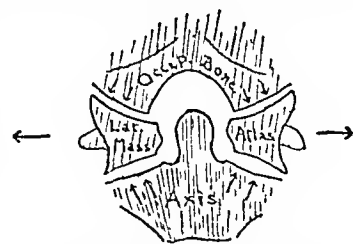


FIG. 4.—Diagram made from a normal shrinkage. To illustrate the theory of atlantal squeeze.

It is usually the posterior arch, where it is weakened by the grooves for the vertebral arteries, that breaks. It is because the force is centrifugal, from the centre outwards, that paralysis is rare in simple atlas fracture, the fragments move in the safe direction, away from the cord. The force which has driven the head and the atlas down on to the axis may stop there, but should it go on further injuries may arise, especially if violent flexion is added. If the neck remains rigidly erect, with articulations locked, and the head alone be violently flexed, the odontoid process will probably be pulled off by the check ligaments (an "abaissement"). Alternatively, should the head and neck be flexed forwards as a whole the additional injury will fall on the spine in the lower cervical region. Examples of both of these happenings will be found in the literature (see Table II). Now what of direct injury? Can the atlas be broken by direct violence?

#### Direct Injury

Direct injury applied to the back of the neck may on rare occasions break the atlas. The bone is so deeply situated, and lies guarded by the overhanging of the occiput above and by the strong and longer spine of the axis below, that it needs a very accurately localized blow with a narrow heavy implement to miss these and strike exactly over the atlas. Fracture has been caused by this means, but not in any cases I have myself seen. In Hugues's case a woman was struck on the back of the neck with a stick and instantly killed. At necropsy the posterior atlantal arch was driven forwards and jammed inside the lateral masses. In Armstrong's case a man hit by a baseball bat in a somewhat similar fashion died of dislocation of the head from extensive ligamentous rupture. The atlas injury here was of minor importance. In Ridley's case the mechanism is not so clear, and, from the brief account of the case, it seems that the coincident fracture of the base of the skull was a more essential cause of death than the atlas injury. In the whole literature these together with the cases reported by Sierd and Roger, by Blanc, and by Scott—in all—represent the sum total of atlantal fracture by this direct mechanism. Gunshot wounds have been ruled out of the present series as they are of no particular interest.

On the whole the theory of transmitted force, of atlantal squeeze, is the one which fits the facts in the majority of the cases. The possibility that the anterior arch might be broken by the pressure of the odontoid process presents itself, and it may well be an accessory mechanism, if not the primary cause. Too much space would be required to discuss the matter in detail here.

#### Pathological Anatomy

An analysis of the cases in which the description of the fracture is sufficiently clear shows that fracture of the posterior arch is the most frequent type, sometimes on one



side only, sometimes on both so that the arch is mobilized. In spite of this little harm ensues as there is generally little or no displacement and the posterior arch may not be ruptured.

Anterior arch alone	8 cases
Posterior arch alone	23
Both arches	12
Isolated arch	7
Transverse process	3

The posterior arch is more often broken because it is weakened by the groove for the vertebral arteries. But in addition the long axis of the facet for the occipital condyles being placed diagonally may assist in tending to split the arch behind opening it like a tin.

#### Concomitant Injury

(a) In the recent literature is fracture of the odontoid process which has occurred at least sixteen times. Authors mention anterior and posterior luxation of the teeth in their reports but coming to realize that this cannot occur unless the odontoid process has happened—fracture of the odontoid or rupture of the transverse ligament. The former is more probable. This is a fracture rather than the atlantal fracture which has often been the result of death (see Table II).

(b) The vertebral artery may be ruptured. The region of the groove for this vessel on the posterior arch seems to be a favourite site for fracture and here the artery is bound down in close contact with the bone by a ligamentous slip passing over it. It is not uncommon to find this ligament ossified and it then shows clearly in x-ray films. If the ligament is only partly ossified it appears in x-ray films as a spicule and may be mistaken by the unwary for the relic of an old fracture. The elasticity of the vessel wall and the usual lack of displacement of the fragments accounts for the relative rarity of injury to this vessel.

(c) The great occipital nerve. As was first pointed out by Sicard and Poger this nerve may be injured, indeed ruptured in atlantal injury. Several examples will be found amongst the tabulated cases, including some of my own. Occipital neuralgia after injuries to the upper two cervical vertebrae is certainly very common and is a useful clinical help in drawing attention to the possibility of fracture having occurred in otherwise doubtful cases.

(d) Injury to the spinal cord or lower end of the medulla. For the reasons already detailed this complication does not happen often in pure atlantal injury. We have seen that the bone fragments tend to move away from the cord in the average case and that there is often little or no displacement or bone fragments. Thus in the whole series of uncomplicated atlas fracture twenty-one in number, the medulla was found injured by a bone fragment in only two (Betz and Bouillard). Myelitis probably traumatic accounted for two or three more. The presence of suppuration in Marshall's case is not commented on by the author. In the complicated cases the injury to the atlas often sinks into a subluxation position, and the cord injury is inflicted at the site of the complicating fracture. For example, when the odontoid is broken off there is a great tendency for the occipito-odontoid-atlantal component to be dislocated forward more or less backward and the cord is then much more likely to suffer. A normal external appearance of the cord may have misled some observers, as this is not inconsistent with the presence of a central hemorrhage and central pulsing sufficient to cause death.

#### SYMPTOM OF FRACTURE OF THE ATLAS

Pain and rigidity of the neck so that movements of the head are slowly and hardly performed, are the outstanding features. The patient in the first few days has the greatest difficulty in finding a comfortable position in bed and is constantly demanding a change in the arrange-

TABLE I.—Isolated Fractures of the Atlas (20 Cases)

Author	Nature of Accident	Clinical Signs of Cord or Nerve Injury	Anatomical Diagnosis	Result
1. Astley Cooper (Cline's case) 182	Severe fall injuring neck (5-year-old boy)	None	Boharcus of a broken arch	Died 12 months later (in current disease presumed) No mention of condition of cord at autopsy
2. Bouillard 189	Daske heavy with moisture fell from a height on upper and back part of head	Pain in neck. No paralysis at first but cramp developed. Complete paralysis before death.	Fracture of posterior arch of atlas right. Comminuted anterior arch fracture on to inferior articular face lateral mass left.	Lived 33 days
3. Marshall J 1875	Fell from second story window	Monoplegia right arm progressive to paraplegia both arms and right leg	Fracture right lateral mass on atlas	Died 9 days later infection of fracture with abscess of cord
4. Betz 1883	Fell on neck and shoulder	Progressive paralysis of arms and leg	Isolated fracture of posterior arch of atlas	Died 3 months later. Half-cm. piece of bone driven against medulla local hemorrhage in medulla
5. Hugue 1897	Healthy woman 'rueled' on back of neck with a stick	Instant death	Fracture posterior arch of atlas right and left through groove for vertebral artery. Arch driven in and impacted. Vertebral artery torn. Fracture left lateral mass on atlas	Instant death
6. Lindloff 1895	No available	No available	Fracture left lateral mass on atlas	Recovered
7. Holdin 190	Fell down stairs on to back of head	No cord signs. Severe occipital neuralgia	Isolated fracture of atlas	Recovered
8. Quercioni 1905	Fell from tree	No limb palsy. Dysphagia	Atlas broken into four pieces by mechanical fracture of both arches	Died 15 days later from pneumonia. No cord found in a hard at autopsy
9. Corner 1909	Poked on of chair with head flexed	No cord signs. Severe neuralgia great occipital nerve	Fracture of atlas	Recovered
10. Schneider 1911	Fell down stairs	Monoplegia right arm recovered	Fracture anterior arch of atlas	Recovered
11. Park 1913	No available	No available	Fracture anterior arch of atlas	Recovered. Care of atlas examined by Cline
12. Sicard and Roger 1915	Plate of paper dropped on to head from a height	No cord signs. Anashe is left great occipital nerve	Fracture posterior arch of atlas	Dislocated laterally. Pneumonia. No injury to cord. No occipital nerve involvement. Recovered
13. Sicard and Poger 1915	Fell 6 ft on to head	No cord signs. Anashe is left great occipital nerve	Fracture posterior arch of atlas left side	Recovered
14. Sicard and Roger 1916	Struck by a beam on left side of back of head and neck	No cord signs. Anashe is left great occipital nerve	Fracture posterior arch of atlas left side	Recovered
15. George 1919	No available	No clinical details	Fracture posterior arch of atlas two places	Presumed recovered
16. George (Butler's case) 1919	No available	No clinical details	Fracture posterior arch of atlas one place	Presumed recovered
17. Jefferson 1920	Aeroplane crash fall on to head	None	Fracture posterior arch of atlas two places	Recovered
18. Jefferson (Lang staff's case) 1920	Thrown from horse	Laceration brain stem	Fracture posterior arch of atlas two places	Delimbed. Recovered
19. Arnison (private communication) 1920	Man thrown from horse on to head	Pain rigidity of neck. No signs of cord injury and compression	Fracture posterior arch of atlas	Recovered. Still rigid to

TABLE II—Complicated Fractures of the Atlas (45 Cases)

Author	Nature of Accident	Clinical Signs of Cord or Nerve Injury	Anatomical Diagnosis	Result
1. Iell Charles 1824	Fell fifty feet on to shoulders	—	Fracture (2 posterior) arch and portion of body of atlas Odontoid process broken off	Instantaneous death presumably from medullary injury. Autopsy but no mention of condition of brain stem
2. Phillips 1837	Fell off hayrick on to occiput	None	Fracture posterior arch of atlas in two places Dislocation of remaining part forwards Odontoid process broken off	Died 47 weeks later of anasarca (nephritis) Fracture had done well
3. Spangenberg 1845	Fell off horse on to head	None	Fracture posterior arch of atlas Odontoid broken off	Died 15 months later Osteomyelitis of atlas and axis Cold normal
4. South 1847	Fell down stairs	Tetraplegia with hyperaesthesia in right half of the body	Atlas broken in two places Odontoid broken off Fracture 5th cervical vertebra	Died 5 days later Haematomyelia level of 5th cervical vertebra
5. Melcher 1848	Woman fell backwards down a ladder 7 ft	Violent pains in neck and occiput Weakness of lower limbs progressing slowly to total paralysis	Fracture anterior arch of atlas Odontoid process broken off	Died 4 days later
6. Melcher 1850	Fell off ladder	—	Posterior arch of atlas broken in two places Odontoid broken off Dislocation atlas on axis	Died instantaneously Brain stem compressed
7. Speyer 1851	Fell on head	Monoplegia right arm progressing in 2 to other limbs	Fracture both arches of atlas Odontoid broken off	Died 10 days later No loss injury to cord Blood extravasation over medulla
8. Gascoigne 1856	Hat jammed down on to head and pulled from side to side (in a horse play)	Head fell forwards, chin on breast Paralyzed	Fracture posterior arch of atlas and arches of 2 3 4 cervical vertebrae Partial luxation C 3 on 4	Died in 40 minutes
9. Uhde 1855	Man fell from tree on to occiput and back	Pain in the neck Palsy lower extremities later of upper also	Fracture posterior arch of atlas also of neural arch of axis Fracture C 6 7	Died 13 days later
10. Birkett 1859	Man fell down stairs intoxicated	Completely paralyzed below neck	Fracture posterior arch of atlas C 3 dislocated forwards on C 4	Died in 36 hours
11. Ridley 1859	Man knelt down by blow back of head came against curb stone	Pain in neck bleeding from ears General headache Deep furrow between atlas and occiput	Fracture posterior arch of atlas Dislocation of atlas forwards Fracture of occipital parietal and temporal bones	Died 3 days later in convulsions
12. Gayet 1870	Slipped on stairs and lost fall with a fall	Severe pain in neck Support of head with hand Palsy appeared four weeks later	Fracture lateral mass of atlas and of axis Fracture odontoid process	Died 5 to 6 weeks later
13. Hamilton 1872	Fell 140 ft on to vertex	Paraplegia below the nuchal level Arms normal	Fractures of both arches and right transverse process of atlas Odontoid unimpaired Fracture 6th cervical vertebra	Died 48 hours later Cord compressed at level of 6th cervical vertebra
14. Milnor 1874	Fell off roof neck probably flexed	—	Posterior arch of atlas fractured in two places Complete dislocation of occiput from atlas	Died instantaneously Medulla found divided at autopsy
15. McCarthy 1874	Fell head foremost down hold	Tetraplegia arms and legs	Atlas broken into 4 fragments Odontoid broken off	Died 3 1/2 days later Cold contracted no compression
16. May 1876	Fell 15 ft on to back of head	No definite cord signs fully recovered later	Fracture of posterior arch of atlas Odontoid broken off Rotary dislocation atlas on axis Fracture transverse processes 5th and 6th cervical vertebrae	Died 3 1/2 years later man dead, suffocated with piece of wire t Glove for first cervical nerve found absorbed at a top Cold normal
17. Eberman 1879	Fell from steps struck occiput against ground	Walked to his room supporting neck with hands	Fracture transverse process of atlas Fracture through body of C 3	Died in 30 minutes
18. Armstrong 1885	Man hit on back of neck or head by baseball bat	Died almost immediately	Fracture transverse process of atlas Rupture of azygos ligaments	Died in few minutes
19. Francis 1886	Man fell 20 ft striking upper and back part of head against a plank	Rigid neck paralysis left lower limb and both upper limbs	Fracture posterior arch of atlas Vertical fracture of axis through pedicles	Died 37 days after injury
20. Lannelongue 1883	Fell backwards off seat struck head on ground	Severe pain rigidity of neck Seventeen days later limbs paralysis began and he died in a few hours	Fracture anterior and posterior arches of atlas Odontoid process broken off at its base Transverse ligament intact	Died 18 days later
21. Boindt 1893	Fell forwards down steps	Diplegia right arm and leg, anaesthesia of left side (Brown Sequard palsy)	Transverse fracture anterior arch of atlas Odontoid broken off Rotary dislocation of atlas on axis	Died one month later Compression of right half of cord no loss lesion of brain stem recovered
22. Koehler 1895	Fell 10 ft on to head	None	Probable fracture of atlas and of odontoid	Recovered
23. Smith and Cleary 1893	Child fell off box seat head struck flexed under body	Kept alive for 3 hours by artificial respiration Tetraplegia	Fracture anterior and posterior arches of atlas Odontoid process broken off Transverse ligament intact	Died 3 hours later
24. Piquet (Billet case) 1920	Fell 11 ft	Difficulty in swallowing no limb palsies	Fracture of anterior arch of atlas Rotary dislocation atlas on axis	Recovered
25. Scott 1924	Hit on back of neck with heavy stick	None Walked about	Fracture of both arches of atlas in middle Odontoid broken off	Died 10 days later of tetanus Cold normal
26. Corner 1905	Museum specimen History unknown	—	Atlas missing in 1st healed fracture (1) comminuted fracture right lateral mass (2) fracture posterior arch in centre Atlas unaltered to occiput Fracture body of axis	Survived some time
27. Corner 1907	Fell off horse on forehead	Dysphagia and thick speech No affection of limbs	Fracture of anterior arch of atlas Rotary dislocation of atlas on axis Condition of odontoid doubtful	Recovered
28. Van Assen 1908	Fell 13 ft head foremost	No cord signs Occipital neuralgia	Fracture both arches of atlas Fracture of odontoid Rotary dislocation of atlas on axis	Recovered
29. Blackwood 1903	Fell 4 ft on to right side of head	Total paralysis below level of larynx Kept alive for 34 hours and 40 minutes by artificial respiration	Atlas fracture in three places both arches Odontoid broken off Dislocation of occiput on axis	Died 35 hours later Hemorrhage into cord from level of fourth magnum to third cervical vertebra
30. Lane 1908	Hit on back of neck with heavy timber head flexed	Concussion Diplegia both arms	Fracture of atlas Fracture of axis Forward luxation of atlas on axis	Recovered Palsies improved when seen 6 years later
31. Myster and O'ood 1910	Fell down 13 stairs	Severe occipital neuralgia No cord signs	Fracture of anterior arch of atlas Rotary dislocation of atlas on axis	Recovered
32. Myster and O'ood 1910	Railway accident	All four limbs became spastic 24 months after accident	Fracture posterior arch of atlas Complete dislocation of atlas on axis	Died suddenly 1 month after laminectomy and 5 months after injury No autopsy
33. Myster and O'ood 1910	Fell from a height on to right side of head and neck	Right occipital neuralgia Monoplegia right arm	Fracture posterior arch of atlas right side Rotary dislocation of atlas on axis	Recovered
34. Ischeb 1910	Fell 15 ft on to forehead	Diplegia right arm and leg, improved by laminectomy Palsy developed 24 months after accident Occipital neuralgia	Fracture lateral mass of atlas body of axis compressed Rotary dislocation of atlas on axis with which it is ankylosed	Recovered Seen 9 years later right hand weak leg recovered



ANASTOMOSIS OF RECURRENT LARYNGEAL TO  
PHRENIC NERVES

## SOME RECOVERY OF FUNCTION

BY

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The following case of complete traumatic division of both recurrent laryngeal nerves was treated by anastomosis of each nerve to the phrenic nerve of the same side. Some recovery of function was, as will be seen, observed.

The patient, a woman 52 years of age, was seen by one of us in May, 1926. She was suffering from aphonia and attacks of dyspnoea. The vocal cords were completely paralysed, the patient was breathing through a very narrow chink, and there was constant stidor. The inner borders of the cords were slightly concave; tension was absent, and a slight flapping movement was observed during respiration. She was having frequent attacks of severe dyspnoea, during which she became cyanotic. She spoke in a voiceless whisper.

The history was that in October, 1925, she had been operated on in a hospital in another city for adenoma of the thyroid gland. Since that operation she had suffered from dyspnoea and cyanosis as above described. She was admitted to the Northampton General Hospital. As long as she remained quite quietly in bed on her back without attempting to speak no attack of dyspnoea occurred, but she was not able to take sufficient nourishment. The question of tracheotomy was considered, but it was determined to attempt treatment by nerve anastomosis.

*First Operation*

On June 5th, 1926, a general anaesthetic was administered by Dr J. P. Iraylen of Northampton. An incision was made along the anterior border of the sternomastoid muscle on the right side. It was seen then that a mass of scar tissue extended from the cricoid cartilage to the sternum. The recurrent laryngeal nerve was identified in the region of the inferior cornu of the thyroid cartilage and followed downwards in the scar tissue for 1½ inches. Beyond this point no nerve could be found. The portion of recurrent laryngeal nerve was then freed from the scar tissue and stimulated with the faradic current, but no movement of the right vocal cord was detected.

The sternomastoid muscle was now retracted backwards and the search for the phrenic nerve commenced. It also was embedded in scar tissue, but as the phrenic is a larger nerve than the recurrent laryngeal the difficulty of identifying it was not so great. It was then found that it was not possible to bring the end of the recurrent laryngeal nerve to the side of the phrenic so as to perform a recurrent laryngeal phrenic end-to-side anastomosis. A search was then made in the scar

for the descending nerve, for if this nerve could

31	Lane	1938	Hit on back could be divided and the following with heavy ent laryngeal phrenic anastomosis head fixed on phrenic anastomosis end to
31	Mixter and		Fell down 13 stairs nerve could not be followed in
32	O'good	1910	falling accident only piece of this nerve seen
32	Mixter and		anastomosis, extending down
32	O'good	1910	hypoglossal nerve
33	Mixter and		Fell from a height of 10 ft. to right side of head and neck
33	O'good	1910	of necessity had to be
34	Pfleger	1910	fell 15 ft. on to forehead and this smaller portion of the larger portion

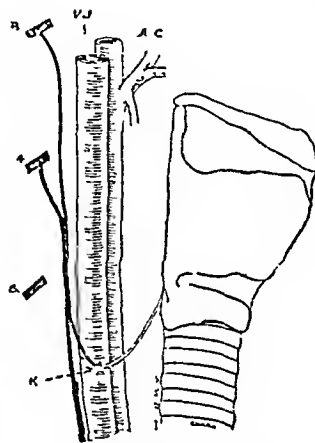


FIG 1—Right side

for five eighths of an inch. It was then found that it was possible to bring this portion of the phrenic nerve across the cricoid sheath and unite it end to end to the recurrent laryngeal nerve without tension (See Fig 1). On stimulating with the faradic current the phrenic nerve distal to the region from which a portion of the nerve had been separated in order to unite it to the recurrent laryngeal the right half of the diaphragm contracted. There was no difficulty in maintaining a sufficient airway during anaesthesia, though there was a good deal of noise during induction and some stidor for one week subsequently. After the operation the left side of the epigastrium moved much more than the right side, indicating partial or complete paralysis of the right half of the diaphragm.

*Second Operation*

On July 3rd, 1926, a general anaesthetic was again given by Dr Iraylen. A similar operation was performed on the left side as had one month previously been carried out on the right side. The scar tissue was more extensive on the left side of the neck than on the right, and the operation was, if anything, more difficult. The identified portion of the recurrent laryngeal nerve was not more than 1 inch in length. The phrenic nerve was isolated and freed for some little distance. It was then drawn under the cricoid sheath and a recurrent laryngeal phrenic anastomosis effected, end to side by means of a very fine suture (see Fig 2). The tension on the incision in the phrenic caused it to gape, so a second suture was employed to close the gap.

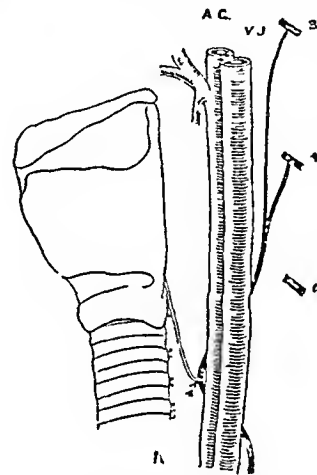


FIG 2—Left side

The right half of the diaphragm still appeared to be paralysed, and the second operation paralysed the left half of the diaphragm.

*Prognosis*

By July 24th there was appreciable improvement in tone of the right cord. During August and September, 1926, the patient was gaining weight at the rate of about 1 lb a week. She had occasional slight attacks of dyspnoea until the end of July, but since then she has not had any difficulty with respiration except that she is still "short of breath" on exertion, such as climbing stairs rapidly. There had not been any laryngeal stidor since the end of July, 1926.

In August the patient left Northampton and went to live in Newcastle. On September 18th Mr W. F. Wilson reported "some definite movement and adduction of the right cord on attempting phonation, which is husky but distinctly audible, the left cord is motionless and apparently fixed in the mid position." At the end of September regular daily electrical stimulation, galvanic and faradic, across the larynx was begun. On November 8th Mr Wilson reported "there was definite movement on both sides of the diaphragm, which was well domed, and showed good muscular tone. The right cord moved better than the left, which had very little action though its arytenoid (left) showed a marked pivotal movement to the extent of crossing the mid line and pushing the right arytenoid away therefrom."

At the end of November the patient returned to Northampton and was seen by one of us. There was then definite movement in the right cord, strong adduction, and abduction amounting to about one quarter of the normal range. The tone in the left cord was obviously improved—in fact, good—but there was no convincing movement. The voice was a husky whisper, rather wasteful but with definite tone. One month later the right cord had not changed. The left showed definite adduction, but no definite abduction beyond the rebound.

In January 1927, the patient was admitted to Northampton Hospital for more frequent electrical treatment, galvanic and faradic, across the neck. She then had strong adduction in both cords and spoke in a loud husky whisper. The right cord had not changed since December but there was appreciable abduction of the left. She was instructed to stop breathing in expiration as long as possible five times thrice during the day, with the object of obtaining forced inspirations.

Movement of the left cord continued to increase, and by March 3rd 1927, the movement on the two sides was equal, about one third abduction on each side, adduction was strong

and phonation fairly good, though her voice was very uncertain in quality and pitch and changed with disconcerting suddenness. It was observed that if annoyed she spoke with a strong gruff voice, but under examination began to whisper again. On this date the patient was given a general anaesthetic and Killian's laryngoscope was used. The direct view of the cord confirmed the above findings. An attempt was then made by means of a curved and insulated electrode which was pressed into the pharynx, to cause contraction of the crico-arytenoid, posterior muscles, but no abduction of the cords occurred. The only movement observed was a very vigorous adduction of the cords. The adduction movement is the stronger movement, and may have overwhelmed the weaker contractions of the abductors, if this occurred.

Under deep anaesthesia a paradoxical movement of the vocal cord (inspiration adduction) was observed. This also has been seen in monkeys after this anastomosis has been done. The abductor muscles are very sensitive to deep anaesthesia. A second attempt, a month later (April 9th) to cause contraction of the abductor muscles by direct faradic stimulation was made but the result was as before. Strong adduction of the cords was alone seen.

On May 21st 1927, the right cord was as before with about one-third of the normal abduction but the left cord was obviously retrogressing adduction was still strong but there was no evidence of abduction beyond the rebound.

On June 8th 1927 the right cord was as before, the left cord was almost motionless in mid position, a slight adduction movement alone remained. For the first time since she was seen in May 1926 the patient spoke continuously in a fairly strong voice, not in a whisper while under examination. Her general condition is continuing to improve.

#### Remarks

The presence of an extensive area of scar tissue on both sides of the neck not only made the operations of great difficulty, but made us doubtful of a satisfactory result.

The patient had definite improvement in the tone of the right cord seven weeks after the operation. The inner border of the cord was straight and tense. She had no further attacks of dyspnoea. Subsequently (four months after the first operation) she had definite laryngeal tone in the voice and definite movement of the right cord.

Nine months after operation she sometimes spoke in a strong voice (we are of the opinion that there is a functional element in her aphonia) and had abduction of both vocal cords giving rather less than one-third of a normal glottis opening. Adduction was strong. Her general health was definitely improved though still far from good.

Nearly one year after the operation the left cord could no longer be seen to abduct. We are of opinion that the condition of the right cord is permanent. It has strong adduction and crosses the mid line, and abduction to one-third of the normal.

It may be asked, what has the patient gained by these anastomoses? The answer is that she has been saved from imminent suffocation, and even now go about the world without fear of sudden death, and that though the result is far from perfect, owing to the peculiar circumstances of the case, we think it is better than if the woman had been permanently sentenced to the wearing of a tracheotomy tube. She has also gained a fairly good voice.

The period of time required for the recovery of tone in the cord and the commencement of movement in the cord in this patient coincides with what has been observed in corresponding experiments in the monkey. In man when an end to side recurrent laryngeal phrenic anastomosis is done we recommend that the nerves should be placed behind and not in front of the carotid sheath.

It is to be noted that both halves of the diaphragm recovered their complete motility. The paralysis of the diaphragm did not appear to inconvenience the patient. Part of the right half of the diaphragm was probably recovering before the second operation was done.

The splitting of the phrenic nerve on the right side appeared to us an unsatisfactory method of anastomosis and one likely to be specially sensitive to pressure by scar tissue but it has given a better result than the end to side anastomosis on the left side. On the left side however tension at the anastomosis could not be avoided and tension at the site of nerve anastomosis may spoil the result of any such operation.

## THE EXPERIMENTAL PREVENTION OF STONE IN THE BLADDER IN RATS

BY

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In a paper in the JOURNAL of April 16th, 1927 (p. 717) the experimental production of stone in the bladder in rat was recorded. The composition of the calculus-producing diet was

Tinned Scotch oatmeal or <i>atta</i>	53 parts
Linseed meal	20
Tinned cornflour	25
Sodium chloride	1
Calcium phosphate	1
Distilled water	<i>ad libitum</i>

*Atta* is whole-wheat flour

The present report deals with the prevention of stone in the bladder in rats fed on an "oatmeal diet" of the above composition.

#### THE EXPERIMENT

Two groups of young rats 18 in each were selected, their aggregate body weight was the same—910 grams. There were 9 males and 9 females in each group. The body weight of the males ranged from 50 to 53 grams of the females from 46 to 52 grams, all were of approximately the same age. The 36 animals were confined in twelve precisely similar cages, 3 males or 3 females being placed in each. All were fed on the oatmeal diet and water, and were allowed to eat as much as they liked. One group received fresh whole milk in addition to the oatmeal diet, the other did not. A ration of 2 ounces of milk was provided for the three rats in each cage, but some secured more than their share.

The experiment was continued until the death of all animals receiving the oatmeal diet without milk, the last two animals died on the 150th day. The experiment was protracted for a further seventeen days in the case of the animals receiving milk in addition to the oatmeal diet. The survivors (15) on this regimen were killed by drowning on the 167th day. All animals were subjected to *post-mortem* examination.

#### RESULTS

The results of the experiment may be summarized as follows:

The animals fed on the oatmeal diet without milk grew badly, all died within periods ranging from 65 to 150 days. Nine (50 per cent) were found at *post-mortem* examination to have stones or gravel or both in the bladder—usually with, but in one case without, cystitis. Cystitis was present in one case without associated stone or gravel. The stones ranged in weight from 2.4 to 99 mg. The sequelae of calculus (dilated ureter, hydronephrosis, and pyonephrosis) were not present in any case in this series nor was stone found in the ureter or kidney. In one animal a large grey-white pear-shaped fibrous mass was present in the bladder, the thin end being drawn out into a fine thread which extended into the urethra. This condition was associated with haematuria. Bloody urine was passed by two other animals in one of which cystitis was present in association with a number of minute stones (gravel). The three animals in which haematuria was observed prior to death were found at *post-mortem* examination to have suffered from severe anaemia associated with a lemon yellow tinting of the skin and cutaneous tissues. Three of the 18 rats in the group died of pneumonia, in 5 others no cause of death could be found except asthenia.

The animals fed on the oatmeal diet with milk grew well as a rule though one better than others. There was no doubt due to the fact that some of them secured more of the milk ration. Two died of pneumonia and one of an unknown cause. The other 15 remained in good health.

This abstract is published by permission of the Director-General Indian Medical Service. The full paper will appear in the Indian Journal of Medical Research.



Neither stone in the bladder nor gravel, or cystitis, or any abnormality of the urinary tract was found at post-mortem examination in any of these 18 animals

#### CONCLUSION

The addition of whole milk, in the proportion of two-thirds of an ounce per rat daily, to a diet capable of causing urolithiasis in 50 per cent of young rats, completely prevented the development of phosphatic calculi

## THE BACTERICIDAL ACTION OF LIGHT ON TUBERCLE BACILLI

BY

ALBERT EIDINOW, M.B., B.S. LOND

(From the National Institute for Medical Research, Mount Vernon, Hampstead)

THE value of ultra-violet rays in the treatment of lupus vulgaris is well established, but the mechanism of their mode of action is still a matter of controversy. Some maintain that the local application of light produces direct bactericidal action in the depths of the lupus nodule. If there is no direct bactericidal action of these rays, some general effect on the whole body or the local effects of irradiation must be responsible for the results and cures which have been obtained.

While bacteria can be readily destroyed by exposure to light, the culture medium, the depth of layer of fluid, the age of the culture, the intensity of light, and temperature are all important factors. Coliform bacilli suspended in Ringer's solution are readily destroyed by long ultra-violet rays, staphylococci by short rays, while, according to Weisner,<sup>1</sup> the Friedländer pneumo-bacillus is resistant to light owing to the mucous envelope surrounding the organism. Robert Koch<sup>2</sup> found that cultures of tubercle bacilli were destroyed by prolonged exposure to sunlight which passed through the window glass of his laboratory. J. Bang showed the bactericidal action of the concentrated Finsen light on the tubercle bacillus, and the *Staphylococcus pyogenus aureus*. Mmo V. Henri<sup>3</sup> and Brioni investigated the effects of irradiation of tubercle bacilli with the mercury quartz arc, and found that the bacilli lost their acid-fast staining reaction after three to four minutes' exposure, and were destroyed after ten minutes. Kattenbinder found that tubercle bacilli were readily killed after five to sixty seconds' exposure to the iron arc. Such experiments have definitely proved the bactericidal action of ultra-violet rays on the tubercle bacillus, but in the case of sunlight the effect of ultra-violet rays has not been clearly separated from heat effects. Thus, results obtained from the experiments of Mitchell and Crogh,<sup>4</sup> von Beigen, Trishnokaja, and Fr. Kiusus show variations in the lethal time from half an hour to six hours.

While concentrated solutions of tuberculin are resistant to light,<sup>5</sup> solutions of 1 in 1,000 concentration can be weakened by exposure to rays shorter than 3,250 Å. Recently W. Hausmann,<sup>6</sup> W. Neumann, and K. Schuberth have shown that inoculations of irradiated tuberculin do not give rise to any local reaction, but the usual general reaction is obtained.

As the review of the literature indicated that the tubercle bacillus can be destroyed by ultra-violet rays, but failed to demonstrate the selective region, further investigations were carried out. Surface scrapings of a fourteen-day culture of tubercle bacilli (a virulent bovine strain obtained from Captain S. R. Douglas) were placed in a sterile test tube, 250 mg. of this culture were mixed with 250 ccm. of sterile saline, and quantities of 50 ccm. of the mixture were placed into sterile vaccine bottles and sealed off.

#### EXPERIMENT 1—Control

Four guinea pigs were inoculated subcutaneously into the right thigh with 1 ccm. of the suspension of tubercle bacilli in saline (dose=1 mg. of tubercle bacilli). The animals were kept under observation and the time of the appearance of a hard swollen inguinal gland was recorded. Forty-one days after inoculation all the animals were killed and post-mortem examinations were performed. All these animals had generalized tuberculosis.

#### EXPERIMENT 2—Exposure of Tubercle Bacilli to Mercury Vapour Lamp (7,620-2,300 Å U)

Of the emulsion of tubercle bacilli in saline 15 ccm. were placed in a sterile quartz flask. The flask was attached to an electric motor and was exposed to two mercury vapour lamps (H.B.B. type, 25 amperes, 210 volts, D.C.) eight inches distant. The flask was slowly rotated during the exposure, so that a thin fresh film of fluid was constantly exposed to the lamp. The flask was kept cool during rotation by a trough filled with cold water. At intervals of 5, 10, 15, 30, and 60 minutes samples of the suspension of the irradiated bacilli were removed from the flask and 1 ccm. of each specimen inoculated into a guinea pig. The experiment began on December 20th, 1926, and ended on January 31st, 1927, when the animals were killed.

Time of Exposure to Lamps	Weight	Weight when Killed	Result when killed
	Grams	Grams	
5 minutes	5.0	—	Died December 24th 1926 ? cause pneumonia
10	330	520	No evidence of tuberculosis
10	330	603+	Small caseous gland 2 by 0.5 by 0.5 cm.
15	370	590	Healthy when killed
15	450	590	No histological evidence of tuberculosis
30	310	420	
30	510	600+	
60	390	430	Healthy
60	410	510	

**Conclusion**—The tubercle bacilli suspended in saline are destroyed after 10 minutes' exposure to the irradiations (7,620-2,300 Å U) of the mercury vapour lamp.

#### EXPERIMENT 3—Exposure of Bacilli to Mercury Vapour Lamp (Filtered)

Tubercle bacilli were exposed as in experiment No. 2 to radiations of a quartz mercury vapour lamp, but filtered through a screen of vitreous glass (radiations=5,720-2,800 Å U). The experiment began on December 12th, 1926, and ended on January 31st, 1927, when the animals were killed.

Time of Exposure to Rays	Weight	Weight when Killed	Result when killed
	Grams	Grams	
5 minutes	350	450	Two small caseous glands 1 by 0.5 by 0.7 cm. and 1.5 by 0.5 by 0.7, otherwise nil
5	360	360	Big caseous glands nodule in spleen
10	375	560	Small caseous inguinal gland
10	330	540	Small caseous inguinal gland 1 by 0.5 by 0.5 cm.
15	420	570	Nil
15	390	390	Small caseous inguinal gland 1 by 0.75 by 0.5 cm.
30	350	603+ (pregnant)	Nil
30	325	470	Nil
60	380	510	Nil
60	360	570	Nil

**Conclusions**—The tubercle bacilli in saline are destroyed or attenuated after 30 minutes' exposure to the rays (5,720-2,800 Å U) of the mercury vapour lamp filtered through a sheet of vitreous glass, which allows the passage of rays from 5,700 to 2,800 Å. There was evidence of a local lesion at the site of inoculation in the right groin, in the animals injected with the tubercle bacilli exposed for 5, 10, and 15 minutes. When the animals were killed on January 31st, 1927, only one guinea-pig (No. 15) showed a microscopic tuberculous nodule in the spleen. No macroscopic or microscopic evidence of the disease was found in the remaining animals, which were injected with suspension of bacilli exposed for 30 and 60 minutes.

#### EXPERIMENT 4—Exposure of Bacilli to Mercury Vapour Lamp Through Window Glass

The suspension of tubercle bacilli in saline was exposed to the rays of the mercury vapour lamp as in Experiment 2 but through a screen of window glass (radiations=5,720-3,300 Å U). At intervals after 5, 10, 15, 30, and 60 minutes' exposure samples

were removed from the flasks and inoculated subcutaneously into guinea pigs. The experiment began on December 20, 1926 and ended on January 31, 1927 when the animals were killed.

Time of Exposure to 3300 Å	Weight in Grams	Weight when Killed	Culture and Bacteriological Post mortem Examination
5 minutes	315	370	Generalized tuberculous nodules in spleen liver lung, and glands
5	310	470	" "
10	510	530	" "
10	253	370	" "
15	350	570	" "
15	325	470	" "
20	700	570	" "
20	200	370	" "
30	370	470	" "
60	375	510	" "

**Conclusions**—These rays (5,720-3,300 Å) have no lethal action on tubercle bacilli in saline after 5 to 60 minutes' exposure.

**Experiment 5**—A second control experiment on four guinea pigs showed the virulence of the tubercle bacillus suspended in saline and kept in the cold room at 5° C for twenty-four hours.

**Experiment 6**—Another control experiment showed the virulence of the tubercle bacillus suspension mixed with an equal quantity of rabbit's defibrinated blood.

**Experiment 7**—A third control experiment showed the virulence of the tubercle bacillus suspension mixed with an equal quantity of rabbit's serum.

**Experiment 8**—A suspension of tubercle bacilli in saline mixed with defibrinated blood was exposed to ultra-violet rays as in Experiment 2. All the animals showed tuberculous lesions.

**Experiment 9**—A similar experiment was carried out with the irradiated mixture of suspension of bacilli and rabbit's serum and with like result.

#### Conclusions

Tubercle bacilli mixed with blood or serum exposed in a very thin film are not killed.

Similar experiments carried out with mixtures of defibrinated rabbit's blood and staphylococci have shown that bactericidal action is noticeable after half an hour's irradiation of the thin blood film, and complete destruction of the cocci after one hour's exposure.

These experiments afford evidence that rays shorter than 3,300 Å are the most bactericidal on the tubercle bacillus. The long ultra-violet rays from 4,000 to 3,300 Å were without effect. Since the penetration of shorter rays is small it is doubtful whether local bactericidal action occurs in vivo with either the local Finsen lamp or the Kromayer types of local treatment lamps. The fact that the whole range of rays from 5,760 to 2,300 emitted from the mercury vapour lamp cannot destroy tubercle bacilli in a thin blood film even after one hour's exposure strongly supports this view. Nagelschmidt inoculated guinea pigs with extracts of tuberculous tissue which had been irradiated with the local Finsen lamp. He claimed that the animals inoculated with the irradiated tuberculous tissue survived, while control animals inoculated with unirradiated tissue died. Klingmüller and Halberstädter irradiated lupus nodules for seventy minutes with a Finsen concentration lamp and injected ground extracts of the irradiated lesions into the peritoneum of guinea pigs. Some of these animals died later from tuberculosis. Similar experiments were carried out with virulent tubercle bacilli injected subcutaneously and intraperitoneally, and the site of inoculation was immediately irradiated, but later all the animals were found to be suffering from generalized tuberculous disease. They concluded from their experiments that the local Finsen light treatment had no local bactericidal action even when the tubercle bacilli were situated comparatively near the surface. H. Jansen has found that the rays from the Finsen lamp can completely destroy tubercle bacilli in a lupus lesion to a depth of 0.15 mm, but the lupus nodules are usually situated 2 to 4 mm below the skin surface. Karl Sonne and Axel Rehn both state that the increased skin temperature which is produced with local irradiation sup-

ports the increases of Thiele and Wolf, that at higher temperatures longer wave length rays can exercise bactericidal action. Seeing that tubercle bacilli mixed with blood or serum are not destroyed in vitro it seems very improbable that any irradiation with the mercury vapour lamp of tubercle bacilli in vivo can result in a direct bactericidal action. With many of the lupus lesions the extensive scar tissue ulcerates and degeneration under a lethal action still is probable. The local Finsen light is overheating the part, may therefore have some bactericidal action.

The cure of lupus vulgaris by means of local irradiation must be due chiefly to its reaction. The histological changes following the irradiation of lupus lesions have been studied by R. Grunl and indicate an inflammatory reaction in the early stages and, later, necrosis of the chronic granulomatous tissue with the formation of connective tissue. Many theories have been advanced to explain the results which have been obtained, but no definite experimental proof has been yet described which can explain the reaction of the tissues following the general irradiation of the skin of the body or the local application of the rays to the site of a tuberculous lesion. While the chronic tuberculous diseases of the skin and mucous surfaces respond admirably to ultra-violet radiation, the tubercle bacillus is an organism which is more resistant to the rays of the mercury vapour lamp than the staphylococcus and apparently is only sensitive to the shorter ultra-violet rays and from these in vitro it is protected by the tissues.

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## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL.

#### TUBAL ABORTION AND RUPTURE

AFTER reading Dr. Connell's most interesting paper on tubal abortion and rupture (June 4th, p. 1004) I felt that the following case might be of interest as it differs so completely from other cases which have fallen to my lot.

Early on August 22nd 1926 I was called to see a married woman aged 32 with one child aged 2 years. She gave a history of several similar attacks. On this occasion he had awoken at 5 a.m. with severe abdominal pain. Her husband gave her some brandy which failed to ease her. A period had started two days previously it was a week overdue. She had always been quite regular until this occasion. The loss was much the same as usual. Her colour was good and there was certainly no pallor. The temperature was normal and the pulse 82. There was pain and tenderness in the right iliac fossa. I persuaded her to come into hospital for observation. Internal examination added nothing to my knowledge. She was given an enema. The result was good and she felt much better. I assumed that the appendix had emptied itself and settled down. This evening I found her lying up in bed chatting quite happily to the matron and feeling almost well. The next day she felt quite well. The second day after admission—at the end of four days—the period appeared which he considered normal. She had no further to say and I removed the appendix as she had had no more of the attacks. Stipulating that I should remove it even if it looked normal. I told her that I expected it would look normal after such a short attack and promised to remove it. She kept perfectly well until the operation on September 4th. When I reached the peritoneum I saw free blood on the other side of it. I opened the peritoneum, removed the appendix which was fairly normal, had a laceration of the wound and started afresh in the middle line. There was plenty of free blood around it. When I started to close it I found to my surprise that it was the left tube which had ruptured. I removed it and a very small incision. The patient made a very good recovery.

The points which seemed most striking were that the onset of bleeding and pain did not synchronize more closely and that when I saw her between three and four hours from the onset of the pain there was no pallor or collapse. It is true that she had some brandy. Her highest temperature was 98.8° F. on the evening of her admission to hospital and I should have expected more from peritoneal irritation by the free blood. The signs and symptoms pointed to the right side, and the ruptured tube was the left.

W. B. B.

PETER BUTTERWORTH

## SHRAPNEL FRAGMENT IN TONSIL

The following case seems to be worthy of record

A man, aged 30, consulted me for a sore throat. Both tonsils were enlarged and injected, the right more than the left. His temperature was  $101^{\circ}\text{F}$ . I sent him home to bed, and prescribed the usual remedies, but although the temperature dropped to normal in two days the right tonsil still remained swollen and painful. On examination of the throat I saw a black speck, about the size of a pin's head in the right tonsil which seemed hard and resistant to a probe. I cut down on this, and removed a jagged piece of shrapnel about the size of a small bean.

Upon questioning the man, he told me that he had a shrapnel wound in his face in 1918, the point of entry being just above and in front of the right angle of the jaw.

Ardleigh, Essex

F. GUIVER

## LARYNGEAL SPASM ASSOCIATED WITH PERITONSILLAR ABSCESS

The following notes of an alarming and seemingly rare complication, occurring during the course of quinsy, appear worthy of record.

A youth of 18 years, who had suffered from quinsy on two or three previous occasions, developed an inflammatory swelling of the left peritonsillar tissues which went on to abscess formation. On the afternoon of the second day of this inflammatory process he awoke suddenly from sleep and experienced great difficulty in breathing, it was most marked during inspiration, which was long drawn out and accompanied with a high pitched wheezing noise. Expiration was prolonged, but was not so difficult as inspiration. The facial expression showed alarm and distress, eyes staring, face pale and covered with perspiration. This attack lasted from five to ten minutes and passed off as suddenly as it came, leaving respiration easy and natural. Two similar attacks of lesser severity and shorter duration occurred on the following day. The attacks ceased after the evacuation of pus on the fourth day.

The facial swelling was typical of peritonsillar abscess, with the usual displacement of the adjacent soft palate and uvula, but at no time did the swelling or displaced palate or uvula threaten to occlude the opening of the oral pharynx. There was no appreciable oedema of the palate or fauces.

These attacks would appear to have been due to paroxysmal constriction of the larynx, oedema of the glottis would scarcely be so sudden and transient.

The patient stated that his mother, owing to a throat affection, had to have "an opening in the neck" to enable her to breathe. It is possible that this recollection, together with the associated dread of imaginary suffocation, may have been instrumental in producing spasm of the larynx.

D. GLASS, M.B.,  
Surgeon Lieutenant R.N.

## BLOOD TRANSFUSION IN HAEMORRHAGIC DISEASE OF THE NEWBORN

The memorandum in the JOURNAL of June 18th on blood transfusion in haemorrhagic disease of the newborn impresses the fact that authorities are so much agreed on the usually fatal termination of this condition, in the absence of such treatment, that a case of spontaneous recovery is worth recording.

On Christmas Day, 1926, I was called to the wife of a seaman, in labour with her third child who was delivered of a healthy female infant weighing  $7\frac{1}{2}$  lb. The next morning I was informed by the nurse in attendance that the child had passed a considerable quantity of blood in the morning evacuation, but unfortunately the stool had not been preserved. At 10 a.m., however, I was able to examine a further stool, which contained a large quantity of rusty fluid, accompanied by a few small black clots and a little bright red stained mucus. There was no vomiting or any other abnormal symptom, and as no other cause for the bleeding could be found a diagnosis of melena neonatorum was made. I immediately prescribed a mixture of 1 minim of the tincture of ferric chloride in water to be repeated hourly, and no other treatment was given. The child passed several more motions the same day, all containing similar matter to the one described, but was perfectly normal in every other respect. The next morning the quantity of blood in the stools was considerably diminished, and the third motion was entirely free from such matter. As there is no recurrence of the haemorrhage and the child continued to gain weight, the treatment was discontinued on the evening of the third day and the infant made an uninterrupted recovery. Seen six months later the child was perfectly healthy in every respect.

I am indebted for permission to publish this case to Dr M. G. Lucas of Hull.

Leeds.

I. CARRER, M.B., Ch.B. Leeds

## NINETY-FIFTH ANNUAL MEETING

OF THE

## British Medical Association.

Held at Edinburgh, July, 1927.

## THE SECTIONS.

## BRIEF SUMMARY OF PROCEEDINGS

ARRANGEMENTS have been made to publish, during the next few months, full reports of the discussions in the Sections of the Annual Meeting at Edinburgh. Meanwhile, the notes printed below and those which will appear next week will enable members who were not present to gain a general view of the proceedings. Any errors to which attention may be drawn will be corrected in the full reports.

## SECTION OF MEDICINE

Wednesday, July 20th

RESULTS OF INSULIN THERAPY IN DIABETES MELLITUS. PROFESSOR HUGH MACLEOD (London), opening the first discussion in this Section, emphasized the fact that in discussing the effect of insulin treatment it was essential to eliminate those cases of so-called diabetes in elderly people with glycosuria but no ketosis, such cases were not really true diabetes, and the patients often responded quite satisfactorily to dietetic treatment without insulin. Analysing his cases before the introduction of insulin treatment Professor Macleod found that on the average no patient with true diabetes was likely to survive for more than five or six years on dietetic treatment alone, whilst in severe cases two or three years was the most that could be expected. Taking a series of 291 cases of typical diabetes treated in the Medical Unit of St. Thomas's Hospital in the four years since 1923, when insulin became available, the records showed that up to date only twelve patients had died. Several were admitted in coma, all of those living were now doing well, including two with tubercle bacilli in the sputum. Of the twelve fatal cases, one patient developed coma and died outside the hospital, one died in coma in the hospital, having failed to respond to insulin, three recovered from coma but died of cardiac failure, the others died of various complications. These results gave a death rate of only 4 per cent, whilst, judging from the older figures, it seemed probable that without insulin not more than one-third of these 291 patients would still be alive. Speaking of the difficulties encountered, Professor Macleod said that if acute infection supervened the insulin dosage must be greatly increased. In young children great care must be used, but the outlook was very hopeful, although he had as yet seen no cases in which improvement had been sufficient to enable him to discard insulin, if intercurrent disease, to which children were so prone, was accompanied by an aggravation of the diabetic symptoms, the insulin must be increased at once. Insulin had revolutionized diabetic surgery, if properly handled the diabetic had now about as good a chance as the normal patient undergoing an operation. Professor Petten (Sweden) discussed the cause of the rising mortality rate in spite of insulin treatment, and said that the figures for Holland showed that the rate was actually falling in cases up to the age of 50, and that the whole rise occurred above the age of 65. He kept his patients on the diet used by Joslin with low protein content, and only permitted a daily ration of 50 grams of carbohydrate. He did not give glucose in coma. Dr R. D. Lawrence (London) dealt with failures under insulin treatment, some patients either would not or could not carry out their instructions, in some a severe complication developed, such as carcinoma of the pancreas, but he had been less successful than the previous speakers in cases of coma. In circulatory failure intravenous saline with small doses of adrenaline had proved very helpful.

Dr P. J. Crumbridge (London) classified cases of glycosuria into three groups: (1) "achiatric," with defective utilization of sugar, (2) "anapothetic," with defective

storage and (3) "epithymic," with low renal threshold. In the second class insulin was rarely needed, and in the third it was contraindicated. Dr O Ixton (London) also dealt with the failures of insulin. Tuberculous patients did well until secondarily infected, then went rapidly downhill. His experience suggested that some cases of true diabetes certainly did recover with careful treatment—his own percentage of recoveries was 2—and further, that diabetes under insulin treatment was not a progressive disease. Professor Murray Lyon (Edinburgh) gave as his indications of the administration of insulin (1) clinical acidosis (2) severe emaciation (3) limit of sugar tolerance insufficient to maintain a useful life (4) inability to clear sugar after careful diet. He thought it essential to free the urine from sugar in all cases, and did not object to three daily injections for this purpose.

Professor Blum (Stasbourg) laid stress on the importance of searching for latent tuberculous before treatment. In coma he gave large doses of insulin 40 to 50 units intravenously half-hourly if blood-sugar examinations were impracticable the condition was controlled by urine examinations and by noting with extreme care the clinical reaction. Alkali in small doses was necessary, as there was a diminished Na content in the organs in coma. Dr G. Graham (London) showed by statistics that the increased mortality rate was entirely due to a rise in cases between the ages of 60 and 70. He disagreed with Professor Maclean in separating the elderly glycosuric patient as not a true diabetic. Dr C. G. Lane suggested that in some cases there was a difficulty in the diffusion of glucose into the cells, and he considered that it was the glycosuria that must be controlled rather than the hyperglycaemia. Dr F. B. Smith (Harrogate) warned against too hopeful prognosis in the treatment of diabetes in cases of psychoneurosis.

#### SECTION OF SURGERY

Wednesday, July 26th

##### TUBERCULOSIS OF THE KIDNEY

SIR JOHN THOMSON WALKER, opening the first discussion in this Section, said that the mortality of nephrectomy in renal tuberculosis had fallen from 25 per cent in 1900 to 3 per cent at the present day. He gave an account of his own methods of diagnosis and how the extreme difficulties in advanced cases could be overcome. After dealing with spontaneous healing and its significance he passed to treatment, advocating nephrectomy except when the disease was bilateral or pulmonary tuberculosis was present. Co-existent bone or joint disease or genital tuberculosis did not negative operation. He did not think removal of the whole ureter was necessary; he advocated suture of the wound without drainage. He employed tuberculin for two years after nephrectomy. Dr Polher (Levin) advocated heliotherapy but only as an adjunct to surgery. The outlook was rendered better by pre-operative preparation in this way and by subsequent exposure to sunshine, particularly in those cases where the wound itself subsequently became infected with the tubercle bacillus. Mr A. Fullerton (Belfast) reported 158 cases of the disease; he believed in nephrectomy and had had no deaths among his last 38 operations. He gave particularly interesting account of those cases which were not cured by nephrectomy and of a series of patients treated by non-surgical measures alone. He also demonstrated his method of catheterization of the ureters by iliac exposure of them. Mr H. Wade (Edinburgh) pleaded for the use of x-rays and pycelography in diagnosis; he did not consider it necessary to search for the bacillus in the urine. Post-operative frequency of micturition could be abolished sometimes by excision of a single callous ulcer of the bladder. Mr J. F. Dobson (Leeds) found it possible by exposure of the ureters in cases where cystoscopy did not give information to tell by simple inspection the condition of the corresponding kidney. It was neither necessary nor desirable to open the ureter to insert a catheter. Mr B. J. Ward (Birmingham) laid stress upon the presence of pus in the ureteric specimen. He considered the indigo-carmine test unreliable. Dr E. Ward (Paignton) mentioned that post-mortem evidence of the healing of tuberculous disease of

the kidney could be found if looked for. Mr H. Temple Murrell (Johannesburg) emphasized the desirability of treatment in early stages. He was convinced of the value of lithium salts. Mr P. Gordon Craig (Sydney) reported two cases of spontaneous cure of the disease and recommended epidural anaesthesia to facilitate cystoscopy.

##### DIAPHRYCTOMY FOR ACUTE OSTEOMYELITIS

Mr W. Pankin (Glasgow) gave an interesting lantern demonstration of the treatment of acute osteomyelitis by primary diaphryctomy and exhibited patients to show what good and speedy results could be obtained by removing the shaft in acute osteomyelitis in children under the age of 12. He emphasized the extreme importance of the after-treatment. Mr R. Kennon (Liverpool) thought that the radiograms showed evidence of new bone formation before the operation was performed and therefore from a surgical point of view the case had been allowed to go on too long. Mr M. Mahmoudian (Ashton-under-Lyne) thought diaphryctomy unsuitable for early cases of humeral and femoral shafts, which inhibited bone formation after treatment was of vital importance. He advocated early bone grafting. Mr R. Ollerton (Manchester) performed the operation for the fibula or ulna but not for the femur, because he had obtained bad results.

#### SECTION OF OBSTETRICS AND GYNAECOLOGY

Wednesday, July 26th

##### RELATION OF PREGNANCY TO GENITAL DISEASE

The first discussion in this Section was opened by Professor Munro Kerr (Glasgow), his paper being devoted to cardiac disease. He said that some of the functional disturbances which might occur were undoubtedly mechanical from pressure of the enlarging uterus; others were caused by disturbed innervation, alterations in metabolism or secretory activity of the endocrine gland. In organic disease opinion was unanimous that it was the condition of the heart muscle which determined the gravity of the lesion. In the most recent discussion on the subject there was a general consensus of opinion about such questions as the gravity of the condition, the distressing signals manifested and the treatment to be employed. Their experience in Glasgow was that cardiac disease exacted a heavy toll of its victims; the figure generally agreed upon being somewhere between 15 and 25 per cent. Disturbances of the free chest increased respiration rate, crepitations at the bases of the lungs, breathlessness on slight exertion were often more important signs than occasional irregularity that a heart was finding the strain too great. Should no improvement result after a week of medical treatment then the pregnant should be terminated. With aortic lesion the condition was generally very serious; so operative treatment should not be too long delayed. In mitral regurgitation it was seldom difficult to decide when a patient might be safe to continue her pregnancy. He regarded cases of mitral stenosis as the most difficult to gauge but he always agreed with grave concern in a case which displayed marked cardiac irregularity, crepitation and breathlessness which could not be relieved by simple measures. Obstetric treatment should on no account be delayed so long. In many cases shortening of the second stage by forceps delivery was all that was required but in others artificial termination of the pregnancy was urgently necessary. When it was necessary to deliver the patient in the early months he was convinced that vaginal Caesarean section was the operation of choice. In the late months, however, could often be safely and promptly employed in multiple cases but in primiparae and in case of prolonged second stage he favoured abdominal Caesarean section. Dr I. P. (Preston) dealt with the question of tuberculous. He hoped that a very necessary separation of the disease in early stages of pregnancy might coincide with the termination of infection. He did not think that the ill effect of pregnancy upon a tuberculous subject could now days be derived. When statistics were based on reliable diagnosis they invariably showed that symptoms were aggravated and that quietest lesions flared up. For obvious reasons in the majority of cases tuberculous was not suspected before pregnancy had occurred. He was not in favour of inducing

abortion, since this might influence tuberculosis as unfavourably as confinement. He was strongly in favour of artificial pneumothorax, the results of which were so good that on no single occasion had he regretted performing it. Dr J. Brown (London) reviewed the influence of venereal disease on pregnancy. He estimated the frequency of syphilis at about 7 per cent. He described the signs most commonly met with in the mother and the foetus, and urged that treatment should be begun as early as possible, that the patient should be treated with arsenical preparations in every subsequent pregnancy, and that treatment might be safely continued up to the time of confinement. Even then there could be no guarantee that the child would not be a congenital syphilitic. He condemned the practice of vaginal douching in cases of gonorrhoea, preferring thorough swabbing of the vagina and cervix with a silver preparation or picric acid in spirit. He spoke favourably of detoxicated vaccines. Professor Gibbon FitzGibbon (Dublin) related his experiences with curative cases. Professor Sir Ewen Maclean (Cardiff) disagreed with Dr Rist's pessimistic views regarding tuberculosis in pregnancy. Professor Mellroy (London) thought that Professor Leitch's conclusions as to the gravity of curative lesions were rather exaggerated. She did not approve of Caesarean section and sterilization of the patient. Dr Mary Macneil (Edinburgh) thought that the outlook in syphilis was good, whereas in gonorrhoea the reverse was the case. Dr Mackenzie (Tain) described his experiences as a rural practitioner. Dr Paramore (Rugby) advocated hysterectomy in cases where Caesarean section was necessary. Professor McKerron (Aberdeen), Dr Lees (Edinburgh), and the President also took part in the discussion.

## SECTION OF PATHOLOGY AND BACTERIOLOGY

Wednesday, July 20th

### GROWTH IN ITS PATHOLOGICAL RELATIONS

DR ARCHIBALD LEITCH (London) discussed the reproductive powers of cells shown in physiological replacement, in repair, and in neoplasia, and maintained that the growth property in all was an inherent attribute differing only according to the restraint imposed on this power. He was inclined to regard this growth substance as some factor that could be transuded occasionally from the cells to act as a stimulant on other cells, and it was maintained at the expense of the other cell functions. The more specialized the cell the less growth power it could exhibit, and the more malignant the process of growth the less differentiated in function the cells became. Cells incapable of regeneration in adult life were incapable of neoplastic growth. The exceptional tumours that went against this general law were due to developmental defects, and he suggested that such growths actually started as tumours in embryonic life. Although the virus theory of cancer offered an easy solution of many puzzles, yet critical experiments undertaken by himself and others give no support to the theories of Gye or of other upholders of the parasitic hypothesis. Professor Robert Muir (Glasgow) said that although in tissue cultures the growth of cells could be stimulated by chemical substances present in embryonic extract, it was doubtful if analogous cell stimulants occurred in nature, even these tissue culture stimulants were more in the nature of food substances than anything else. It was difficult to believe that in the ordinary processes of repair the regeneration was started by cell stimulants or arrested by their exhaustion. He held that any growth-promoting substance came from within the involved cells themselves, and it was peculiar that proliferation started in cells at some distance from the area of wound resection. With regard to tumours he was prepared to accept the possibility of a special class of neoplasms due to a filterable agent, and believed that this class would be enlarged in the future. Two other groups must be admitted: (a) a class of tumours due to chronic irritation which required a long period for their development, and (b) tumours due to developmental defects characterized by early and rapid growth and by an extraordinary complexity of structure. Professor Shaw Dunn (Manchester) considered that though neoplasms might differ considerably from each other yet they had more in common than any

of the processes of a reactive type. The striking units of neoplastic diseases suggested, if not a single cause, a similarity of causal factors. The great mass of tumours arose without any apparent cause, but knowledge of causative factors in others was increasing. The experimental production of cancer by special irritants suggested that processes of chronic irritation, not yet clearly defined, might be responsible for many tumours. The development of cancer in cirrhotic livers and in scars led to the belief that such tissue derangements rendered cells liable to neoplastic formation. Though some tumours might be rare, as Dr Leitch had shown, yet they could not lightly be discarded on that account in considering the question of origination. The liability of simple tumours to become malignant was much greater than published cases would suggest, and the supervision of malignancy was not an entirely new phenomenon but an extension of the process in existence. He emphasized the factor of hereditary liability which entailed the admission of some extraneous agent in addition to a congenital innate property of cells. He could not accept the idea of anything in the nature of a micro-organism as playing a part in the production of neoplasia. Professor M. J. Stewart (Leeds) discussed the relation between cysts and tumours, and held that such segregations were no more liable to neoplasia than normal tissues. Epithelial heterotopias of the intestinal tract betrayed no tendency to the development of cancer. He was prepared, however, to believe that segregations of cells within organs, not displaced organs, might possess a dormant power, and, passing through a resting stage, might later blossom out into malignancy. Professor J. H. Kettle (Cardiff) thought that the increasing knowledge of growth processes deepened the mystery and prevented a broad general view being taken of the whole question. He could not agree that hyperplasia, benign, and malignant tumours merged into one another. Growth and cell proliferation were not interchangeable terms, nor in tumour formations were we justified in regarding all tumours as due to the same etiological factors. Professor Miller (Kingston, Ontario) called attention to the frequent presence of multiple foci of new growth independent of each other. He emphasized the possible production of malignancy by hormones, acting in particular the development of chorion epithelioma. Professor Lorrain Smith (Edinburgh), President of the Section, remarked that in the process of growth in the skin a cell divided into two in the basal layer, one remaining there and the other developing and differentiating in other layers finally to result in scales. How was this determined, so that one was left and the other taken for differentiation? Was this already determined in the process of division? Similarly in the development of blood corpuscles from haematoblasts. The arrest of this was related to cancer growth, as, for example, in basal cell cancer.

## SECTION OF THERAPEUTICS AND PHARMACOLOGY

Wednesday, July 20th

### ADMINISTRATION AND USES OF OXYGEN

PROFESSOR J. A. GUNN (Oxford), President of the Section, opened the first session of this Section with a few remarks, after which Dr H. Whitridge Davies (Leeds) read a paper on oxygen therapy, using Barcroft's classification of the "anoxic," the "anemic," and the "stagnant" types. In the anoxic type deficiency of the blood in oxygen was usually associated with some pulmonary lesion. The lack of oxygen in the anemic type was due to shortage of haemoglobin in the blood, whereas in the stagnant type too little blood reached the tissues, interfering with their oxygen supply. Oxygen administration was chiefly of value in pneumonia, pulmonary oedema, acute bronchitis, and emphysema. Dr Davies thought that the oxygen chamber method when properly used was valuable, though not altogether free from risk, such as fire. It was particularly useful when patients could not tolerate the usual mask, and when continuous inhalation was required. He critically reviewed some of the usual methods of administering oxygen, condemning the ordinary funnel method, approving the use of the nasal catheter, but preferring the procedure introduced by Haldane, which resulted in the saving of about 50 per



cent of oxygen. He described in detail a form of apparatus devised by himself, and enumerated three criteria of successful oxygen administration—namely, the abolition of cyanosis, the relief of dyspnoea, the fall of the pulse rate. In the absence of Dr W. T. Ritchie (Edinburgh) his paper was read by Dr C. G. Lambie (Edinburgh). Dr Ritchie thought that the chief value of oxygen administration was the relief of dyspnoea, too little oxygen was generally used in view of its rapid absorption. He emphasized the importance of continuous administration and of giving at least two litres of the gas each minute. He defined the conditions in which it was of no value, and added that in circulatory failure oxygen played only a small part, except in the later stages when pulmonary oedema was in evidence. Dr R. Hilton (London) confined his remarks to the uses of oxygen in congestive heart failure and pneumothorax. He illustrated the uselessness of the ordinary funnel method, but approved the employment of the nasal catheter in some cases.

Professor J. A. Gunn (Oxford) in a paper on expectorants deplored the very small advance in this subject during the last fifty years. Hardly any experimental work had been performed, and present-day practice was mostly based on tradition. This was due to the difficulty of making exact measurements of the bronchial secretion. He compared the two varieties of classification of stimulants according to (1) their physiological effects and (2) their sedative or stimulant action. The second, although extensively used even in modern textbooks was in his opinion bad. The physiological classification was more scientific, it included the groups (1) reflex stimulation through gastric irritation, (2) central stimulation (3) action on the secretory vagal ends, (4) stimulation of the gland during exertion.

## SECTION OF DISEASES OF CHILDREN

Wednesday, July 20th

### ACUTE PNEUMONIA IN EARLY CHILDHOOD

THE President, Professor John Fraser, in his opening remarks, made sympathetic reference to the late Dr John Thomson. Dr Charles McNeil (Edinburgh) introduced the discussion by giving an analysis of 558 hospital cases of pneumonia observed personally by him during the past seven years. Half were in children under the age of 2, and in these the mortality was 30 per cent. In the age period 2 to 12 years the percentage of deaths was 5.7. The explanation of the disparity in mortality lay in the frequency of bronchopneumonia in infants. The difficulty of distinguishing clinically between the two types was admitted, and stress was laid on two signs—duration of fever and rapidity of resolution. In seeking for an explanation of the frequency of bronchopneumonia in early childhood—it was desirable to recognize the importance of natural age constitution and the effects of bad environment and hygiene. Further bacteriological research was necessary. It was suggested that the nature of the pathological process would be emphasized by the substitution of the terms "alveolar" for "lobar" and "interstitial" for "broncho" pneumonia. Dr Agnes Macgregor (Edinburgh) referred to the incidence of the two types in 100 consecutive fatal cases. Of these, 81 were in children under 2 years of age and 89 were examples of bronchopneumonia. In bronchopneumonia there was a progressive invasion of the lymphatic system and interstitial framework of the lung by the infective agent, which accounted for the slow resolution. Further effects of the lymphangitis were suppuration within the lungs, bronchiectasis, and fibrosis. Predisposing factors were of great significance. Diminution of the incidence of bronchopneumonia might follow an attack upon them. Dr L. Findlay (Glasgow) inclined to the view that all primary pneumonias in children under the age of 3 should be regarded as bronchopneumonia in type. In a recent pathological investigation of 65 of his fatal cases there was only one example—and that in a child of 5—of typical lobar pneumonia. Variation in the host rather than in the type of infecting agent was the more important from the etiological standpoint. Dr J. H. Thursfield (London) reviewed the attempt to find a specific method of treatment and gave details of a series

of severe cases of primary pneumonia treated by means of a sensitized pneumococcal vaccine. The results were encouraging. Lieut.-Colonel W. Glen Leitch (Edinburgh) referred to an investigation into the bacteriology of bronchopneumonia in children. Using a special medium, he obtained a growth of Pfeiffer's bacillus from the lungs and blood of the great majority of the cases. He held that this bacillus played a primary part in the breakdown of the defensive force. Dr A. Carmichael (Edinburgh) suggested that the bronchopneumonia of early life was the expression of the lobar pneumonia of later years. He referred to cerebral and abdominal types. Dr C. P. Lapage (Manchester) pleaded for a clinical investigation in which the help of the general practitioner might be enlisted. Dr Armand-Dehillo (Paris) spoke of the assistance to be obtained from fluoroscopic examination. Dr H. C. Cameron (London) deprecated any tendency to regard the attempt to distinguish between the two great types of pneumonia in infancy as unprofitable. The presence of delirium was characteristic of the lobar form as was the finding of dullness at an early stage. Dr A. G. Newell (Harrington) strongly advocated vaccine therapy. Dr C. W. Yining (Leeds) commended open air treatment, continuous oxygen inhalation, and judicious feeding during the acute phase. Dr F. M. Cardner Medwin (St. Asaph) suggested sodium nucleate intramuscularly as a routine procedure. Dr S. P. Huggins (High Wycombe) gave his experience of vaccine treatment. Dr Wilkie Scott (Nottingham) thought that a classification based upon either mortality or morbid anatomy gave a false impression of the incidence of the two types of pneumonia. Dr Helen Mackay (London) discussed the preventive aspect. The President considered that immuno-transfusion had a distinct future.

## SECTION OF MENTAL DISEASES

Wednesday, July 20th

### CHRONIC SEPSIS AS A CAUSE OF MENTAL DISORDER

AT the request of the President of the Section (Professor G. M. Robertson) Dr Hamilton Marr took the chair. At the first meeting of the Section Dr William Hunter (London) opened the discussion on chronic sepsis as a cause of mental disorder. He admitted that septic conditions were not the cause of all mental disturbance, but considered that there were clinical grounds for recognizing a definite "septic psychosis" and he described an illustrative case in which no improvement occurred over a period of two years until septic teeth were removed. He referred to the remarkable increase in the recovery rate which followed the treatment of the discoverable infective focus in Cotton's cases, and advocated the provision of adequate facilities in mental hospitals for treatment along the lines suggested by these results. Sir Berkeley Moynihan (Leeds) emphasized the influence of chronic sepsis on the production of lesions of the abdominal viscera citing as an example "no cholelithiasis without antecedent infection." He had often removed foci of infection such as the gall bladder in "functional psychosis" with the happiest results. Dr Chalmers Watson (Edinburgh) believed that much could be learned from the study of the oral cavity and gastro-intestinal tract generally by bacteriological methods. Dr Groves described a case of recurrent mental illness in a girl after a very extensive campaign of detoxication including non-specific protein therapy. She recovered mental health and became physically stronger than she had ever been previously. Dr D. K. Henderson said that chronic sepsis had not been neglected in mental hospitals but it was not permissible to speak of a septic psychosis. The work of Kopeloff, Kirby, and Clancy was the best controlled and did not support Cotton's contention that the majority of psychoses were largely the result of chronic sepsis. Dr W. F. Menzies (Cheddleton) stated that most bacteria had two strains—a hemolytic and a neurotoxic. Dr Watson-Williams quoted cases which showed a relation between focal infection and mental illness. Dr W. A. Potts (Birmingham) believed that there was a definite "septic psychosis." Dr Hurter, in reply, said he considered that Kopeloff had not proved his point.

Friday, July 22nd

## REPORT OF THE LUNACY COMMISSION (ENGLAND)

Under the chairmanship of Dr. Hamilton Main, Professor G. M. Robertson (Edinburgh) opened the discussion with a tribute to the thoroughness and efficiency with which the Royal Commission had done its work. It was a striking reply to newspaper propaganda that the Commission had not found a single case of improper detention. Nevertheless, the fear of improper detention had obsessed the laymen of the Lunacy Act of 1890. Of the two questions, of medical treatment and legal detention, the latter in the past had occupied the foremost place and had hindered treatment. In Scotland it had been conclusively demonstrated that personal intervention by laymen in the process of commitment to a mental hospital was unnecessary. Patients had been divided into two classes for the purposes of the Commission: the voluntary and the involuntary. The measures advocated by the Commission for the second group were of debatable value. That the recommendation of only one doctor should be required in the provisional treatment order was a mistake. It was also creating a difficulty to make the application of the provisional treatment order depend upon prognosis—upon whether the patient would recover within a certain time. It would injure the patient's prospects of recovery to place him at once under a reception order, for that would be equivalent to giving a gloomy prognosis. The Scottish Schedule G was cast in much better shape than the formula suggested by the Commission. It was profoundly to be regretted that the Commission should advocate the personal intervention of a justice in the proceedings for a provisional treatment order. Direct judicial intervention was unnecessary, whether from the point of view of improper detention or from the necessity for conforming to the canon of English law that the liberty of the subject may not be infringed without the intervention of some judicial authority. Scottish experience confirmed this. The sheriff never saw the patient, but simply inspected the application and the medical certification. There had been no case of improper detention under these rules within the last seventy years. This happy state of affairs had been helped by the fact that provision was made in Scotland for appeal to two independent medical men: a similar provision would have avoided many of the Commission's difficulties. Finally, the justice should be replaced by the Board of Control.

Dr. E. Mapother (London) denied that there was any clear-cut distinction between the voluntary and the involuntary case. Where a voluntary case passed into a condition in which solution was impossible the recommendation of the Commission would place him under a provisional order at the end of a month. A provisional order and full certification were virtually identical. The fact that under the provisional order a magistrate had to see the case within seven days would drive practitioners to the use of an urgency order. Dr. T. B. Haslop (London) said that certification often led to the labelling as insanity what was fundamentally an endocrine or metabolic anomaly. It was well known that magistrates were often very unwilling to perform the duties imposed on them by the Lunacy Acts. He remembered one magistrate who, when asked to see a patient with a view to signing an order, said, "This is awful. I know nothing about it." (To the patient) "Madam have you any delusions?" Dr. W. F. Menzies (Cheddleton) stated that the provisional order would involve three successive personal examinations of the patient by the judicial authority. The management committee of each mental hospital should be appointed *ad hoc* as the judicial authority. Dr. Risien Russell (London) said that two distinct issues were involved—doctors could get protection against action for damages only if they were prepared to accept the interposition of a legal authority, and if they were prepared to give evidence on oath. The intervention of the law did not necessitate publicity. To have someone trained both in medicine and law as the judicial authority would make the matter too medical. There were three prime desiderata: there should always be two doctors concerned, the judicial authority should always see and examine the patient and also the

doctors, the doctors should give their evidence on oath and be subjected to cross-examination like any other witnesses. Dr. Ross (Lochgilpherd) referred to the simplicity of the procedure in parts of Switzerland: "Chaque loi pour les aliénés devient un loi contre les aliénés."

Lord Russell said that a great difficulty was constituted by the public suspicion of doctors regarding certification—a fact which legislators had to bear carefully in mind. To appoint the committee of a hospital as the judicial authority would simply fan this suspicion. While a formal court "case" must be avoided, the Commission had the strongest evidence of the desire of patients to state their views in an inquiry. To make a general practice of retaining as an involuntary patient a man admitted on a voluntary basis who had lost solution might prejudice the whole voluntary principle. Sir David Drummond said that Lord Russell had admirably expressed his (Sir David's) own views. Sir Frederick Willis said that the Government were very anxious to bring in new lunacy legislation. It was very pernicious that intended patients could not at present obtain treatment till after they were certified. In Sir Frederick's opinion adequate safeguards were possible without a justice, but the public demanded his intervention. At present the justice was sometimes no safeguard at all. Further protection was necessary for doctors. It was a pity that doctors should give evidence against one another. No case of the wrongful detention of a proper patient had come before the Commission, although only one certificate was required. Sir Arthur Rose (Chairman of the Board of Control in Scotland) hoped that progressive legislation would soon be enacted in England as that would facilitate the passage of still more progressive legislation for Scotland. Dr. C. O. Hawthorne declared that the stigma lay in the certificate. Doctors must be protected. At present partnership agreements were being drawn up in which a provision was made that neither partner should ever sign a lunacy certificate. This represented a sentiment which must be respected in legislation. Doctors alone were competent to judge when there was a disorder and how it should be dealt with. When the State assumed authority it must also assume responsibility. The doctor should have the immunity conferred upon other witnesses. Dr. Hubert Bond recalled that when a committee was appointed in 1884 to inquire into the workings of the Lunacy Acts, the Earl of Shaftesbury felt this to be an attack on his administration of these Acts, and resigned the chairmanship of the Commissioners. To the Earl of Shaftesbury the intervention of a justice was anathema. It was doubtful whether, if Lord Shaftesbury had lived, such intervention would ever have been permitted to be incorporated in the Act of 1890. Dr. Briggs said that in Massachusetts over 95 per cent of the patients committed were never seen by a magistrate, and in only one case had a physician been sued (unsuccessfully). The appearance of medical men on opposite sides of a case was now virtually avoided by referring the patient to two expert alienists, whose reports became available to both sides. Dr. Main then declared the discussion closed owing to limitation of time.

## SECTION OF NEUROLOGY

Wednesday, July 26th

## THE TICS AND ALIEN CONDITIONS

During the first discussion, Dr. S. A. Kinnier Wilson (London) referred to the confusion that still existed in regards "involuntary movements." A host of ill-differentiated expressions bewildered the student, and the first duty of the clinician was to separate such classes of movement as appeared to have distinctive characters. Dr. Wilson dealt in turn with the different definitions of a tic that had from time to time been advanced, such as Cruchet's, and Meige and Reindel's. Passing to the symptomatology, he especially stressed the abnormal mental state characterized by volitional instability, and in not a few instances by a degree of mental infantilism. The localization and varieties of tics were only limited by the number of functional acts of which they might be the counterpart and that number was legion. Various facial tics were perhaps the commonest. In tic phenomena there

was a psychical predisposition. In some, possibly the majority of cases, the tic made its appearance as the expression of an unconscious desire, or of a desire that was often but half hidden from consciousness. Tics rarely accompanied hysteria, nor were they manifestations of that psychoneurosis. Movements of defence against some source of irritation sufficed in some instances to set in motion the processes leading to a tic. Prognosis depended upon the degree of volitional impairment of the patient. The older the patient and his tics, the less favourable were the chances of relief. Treatment lay in adopting general hygienic measures and a disciplinary regime, in some cases certain sedative drugs and hypnotic or other form of suggestion were of value. Probably the best form of treatment was that known to the French school for the better part of a century—re-education or muscular drill. Professor Guillemin (Paris), after paying a graceful compliment to British neurology, discussed the etiology and pathology of spasmodic torticollis. Dr A. F. Hurst (Aberdeen) dealt with the visceral tics, including acrophagia, certain types of cough, particularly those met with in association with asthma—sniffing etc. Professor Guichet (Bordeaux) spoke on certain symptoms in connexion with 'tic' and associated mental states. He also gave an admirable exposition of the different forms of treatment. Dr B. Sachs (Boston), while agreeing that tics had a manifold etiology, regarded the majority as of psychogenic origin. They were invariably associated with a peculiar mental instability of which the tic might be the only symptom. Rigorous discipline was necessary in treatment. Dr A. Stanley Barnes (Birmingham) thought tics were commoner in childhood and adolescence. The temperament of the individual was the main determining factor, but mental stress might act as an exciting cause. Dr Grainger Stewart (London) doubted if acrophagia was really a tic. He was inclined to regard it as an hysterical state. Benefit to some tics sometimes resulted from reviving a forgotten memory under hypnosis, in other cases co-ordinating exercises were of value. Dr R. G. Gordon (Bath) considered that many tics might have a physical basis, such as muscular rheumatism of the trapezius causing torticollis; it was necessary, therefore, to exclude all physical factors by careful examination. Dr P. Cloake (Birmingham) raised the question of the different physiological levels of the nervous system at which tics and other involuntary movements might occur. Dr Poyle referred to cervical arthritis as a cause of tic of the head, and Dr Brock also spoke

of difficulty of ophthalmoscopic differentiation. He reviewed generally the three clinical types: papillary oedema, neuritis optica, and retrobulbar neuritis, and described in detail the pathological anatomy of retrobulbar neuritis, the most striking features of which were an irregular plaque formation in the substance of the nerve and the destruction of the medullary sheaths before the axis cylinders. He gave an account of the condition of choked disc with sudden initial blindness and the affections of the optic nerve in myelitis, etc. entering into the pathology and the changes in the fields of vision. Dr A. J. Ballantyne (Glasgow) dealt with cases in which the oculist could give help in diagnosis, to the general physician or surgeon. In this connexion optic neuritis presented itself mainly under two aspects: (1) as the papilloedema associated with such conditions as intracranial tumour and meningitis, and (2) in renal disease. He described a case of unilateral choked disc due to tumour; the optic neuritis in cerebro-spinal meningitis (he had found 5 instances in 61 cases in the epidemic of 1907), and cases due to injury, loss of blood, and the toxæmia of pregnancy. He also discussed the relation of retrobulbar neuritis to renal disease. He was inclined to be conservative as regards operation. The discussion was continued by Professor J. van der Hoeve (Leiden), Drs H. M. Traquair (Edinburgh), Young, and de Schweinitz (Philadelphia), Professor W. H. Wilmer (Baltimore), Dr Wilder, Sir William Lister, Sir J. H. Parsons, and Sir George Berry.

#### DEVELOPMENT AND DISEASES OF THE RETINA

The second day was occupied by short papers. In a communication on the comparative development of the retina Dr Ida Mann (London) discussed the differentiation of the retinal layers and stated that there was a definite sequence of events which held good in all vertebrates so far examined. She described the formation of the amacrine cells and showed drawings and slides of the development of the retina in cyclostomes, fish, amphibians, reptiles, birds and mammals. Her paper was discussed by Dr H. Pönné (Copenhagen) and Professor J. van der Hoeve (Leiden). Sir William Lister (London) in a paper on the treatment of detachment of the retina concluded that in retinitis striata, diffuse fibrous degeneration of the vitreous and in cases with a hole treatment was practically useless. Fibrous bands might be divided and the associated retinitis or choroiditis might be treated. All cases in which the mechanism of the detachment was not determinable should be treated by rest measures, calculated to promote absorption of the interretinal fluid, such as subconjunctival injections and hot-air bath, and if no improvement occurred, by scleral puncture. Dr W. Clark Souter (Aberdeen) discussed spontaneous reattachment of the retina and described six cases in three of which choroidal atrophic changes had followed and in two retinitis striata, while one showed an apparently normal fundus. He considered the pathological findings in published cases which had come to the microscope. These papers were discussed by Drs Kerry Pönné, Pönné, Tudor Thomas, Sir Arnold Lawson, and Mr Inglis Pollok.

#### MISCELLANEOUS PAPERS

Sir Arnold Lawson (London) spoke on the value of anti-septics, describing in detail his pre-operative and theatre technique. He considered it impossible to sterilize the conjunctiva. The most reliable danger sign was the presence or secretion. He valued farviscinity as a prophylactic but did not find it of value when infection had developed. His paper was discussed by Mr Bluff Harman. Mr Holt Dugdale (Manchester) described an investigation into the nasal or lacrimal obstruction and its treatment by intranasal means. He found the presence of nasal abnormalities and discharges. The rectification of nasal lesions, with the exception of suppurative ethmoiditis, did not relieve the obstruction and patients rarely gave a history of nasal trouble. There was certainly a nasal cause for lacrimal obstruction but the pathology and incidence needed further investigation. In a paper on 'obscure amblyopia' in Edinburgh and Glasgow Dr H. M. Traquair (Edinburgh) gave figures showing that in the last thirteen years the average percentage of

#### SECTION OF OPHTHALMOLOGY

Wednesday, July 26th

##### OPTIC NEURITIS

The proceedings of the first day were occupied by a discussion on optic neuritis, which was opened by Dr J. V. Paterson (Edinburgh), the President, Dr A. H. H. Sinclair, being in the chair. After a reference to the confused nomenclature, Dr Paterson stated that classification should rest on the investigation of causes as a whole and not merely on disc appearances. Cases due to raised intracranial pressure were recognizable by the amount of swelling of the disc and the absence of visual disturbance in the early stages. In their diagnosis he considered the use of the Gullstrand ophthalmoscope, study of the rays of the skull and the visual fields and the co-operation of a neurologist essential. Palliative trephining should be performed early and by a specially trained surgeon. The second group of cases was due to inflammation in the nerve or sheath. Disc changes might be present but considerable failure of vision was almost invariable and recovery the rule. Some of these cases were due to disseminated sclerosis, but in many no cause was ascertainable. Cases of nasal origin did occur but he did not believe that it had yet been proved that the ordinary case of retrobulbar neuritis was due to spread of infection from the nose. He mentioned optic neuritis following head injuries, myelitis and the rare sudden acute cases with extreme loss of vision. Dr H. Ronne (Copenhagen) in a long paper, discussed the confusion with regard to the nomenclature of the various types of neuritis and the

those attending the eye departments of the Royal Infirmary was 1. The monthly incidence showed a peak in spring and early summer with a pronounced fall in winter. Graphs from these figures were compared with graphs from statistics of arrests for drunkenness due to alcohol and methylated spirit. Then dissimilarity indicated the inference that the rubbishy must be regarded as entirely due to tobacco. The paper was discussed by Mr. Bishop Horman, Dr. Young and Dr. Schwenitz (Philadelphia). Time did not permit the reading of the President's paper on intracapsular extraction of cataract, but he demonstrated his method of operating in the theatre on four cases.

## SECTION OF LARYNGOLOGY AND OTOTOLOGY

Wednesday, July 20th

### IMMOBILITY OF THE VOCAL CORDS

DR. BROWN KELLY (Glasgow) illustrated the anatomical factors underlying paralysis of the vocal cords with lantern slides showing the various situations in which the laryngeal nerves might be pressed upon or suffer from trauma, especially in the base of the brain, and in the neck and chest. He referred to the various syndromes of Tumor, Vernet, and Hughlings Jackson, showing by means of diagrams and sections how the various associated lesions were brought about. He referred to the lesions of the laryngeal nerves due to endocrine affections, mentioning a curious case of injury to the nerve by traction over the ligamentum arteriosum. Mr. H. Tilley (London) described the clinical and mechanical aspects of paralysis of the vocal cords, based on the investigation of 23 cases. In past times a diagnosis of aneurysm or other fatal disease might have been made in such cases, but many of these patients had been known to recover. In one case seen twenty years previously the cords were paralysed, requiring urgent tracheotomy, and the patient was still alive and well. Mr. Tilley defined some of the causes of paralysis of the vocal cords, drawing attention to inflammatory factors in the fixation of the crico-arytenoid joint, and asked for an expression of opinion from the meeting as to the occurrence of this in the left cord. Sir St. Clair Thomson (London) said that there were many stages of impaired mobility before complete immobility was reached, he cited cases which he had seen in Midhurst Sanatorium over a period of ten years. Out of 500 cases 10 showed no tubercle, but one or other cord was immobile, these might have been due to thickened pleura or to gland pressure. Six out of 10 patients recovered, but the other 4 had still a fixed cord. Professor F. R. Nager (Zurich) referred to cases of paralysis of the cords due to goitre, and said that a benign goitre did not affect the cords. If in goitre the cords were affected malignancy was present, except when benign goitre suddenly enlarged with exercise, the involvement was then temporary only. As regards the surgery of goitre, 7 per cent of cases had paralysis of the cord, but this paralysis did not always recover. Professor Nager drew attention to cases of paralysis due to aneurysm of the innominate artery. Sir James Dundas-Graham related a case of bilateral abductor paralysis which remained unexplained until chronic rheumatoid arthritis developed. He also described a case which cleared up after bronchoscopy. Dr. J. S. Fraser (Edinburgh) contributed a statistical analysis, made by Dr. Lambert of Manchester, of 181 cases of paralysis of the vocal cords, and gave an interesting account of the various causations of the paralysis.

## SECTION OF PREVENTIVE MEDICINE

Wednesday, July 20th

### UNIFICATION OF PUBLIC HEALTH ADMINISTRATION

PROFESSOR P. S. LELAND, President of the Section, took the chair at the first meeting, and Dr. A. S. M. Macgregor (Glasgow) opened a discussion on the question whether all public health administration, municipal, school, factory, etc., should be concentrated under a single department and

the immediate control in each executive area be vested in a single individual. The administration of the public health services of the country was, he said, admittedly defective, and the confusion was added to by the mass of increased responsibility thrown upon local authorities by recent legislation. In the larger districts the new measures necessary had been taken, but in smaller areas this had been impossible. Efficiency was proportional to the size of the unit. Professor E. L. Collis (Cardiff) dealt with the question from the point of view of the factory medical service, the administration of which by the municipalities he considered quite impracticable. Hitherto the medical service had been imposed upon industry by the State, and there had not been the development there might have been under better conditions. Improvements must originate from the owners with the assistance of the State, factories must provide their own medical service, as they did their engineering service. Professor F. E. Wynne (Sheffield) thought factory medical service and the port sanitary service might be excluded from a scheme of unification which was otherwise most desirable. The proposal was only a revision to the recommendation of the Royal Commission of 1869. It would lead to a reduction in the number of inspectors, and accordingly to economy of effort and money. It would make records of individuals continuous, and therefore of some value. It was most important that junior members of the public health service should have an opportunity of engaging in every branch of the work. A memorandum sent by Professor D. W. Hope (Liverpool) was read in his absence by the secretary, Dr. W. T. Benson. Emphasis was laid on the necessity of uniting the health activities of the various Government departments, and on remembering the clamor of the Poor Law authorities, who had done so much in the provision of hospitals, and were still charged with the administration of vaccination. It seemed obvious that administrative control should be vested in a single committee with its own expert advisers. There had already been amalgamation of authorities in several cases in the London area. Dr. J. H. Meikle (Edinburgh) thought that united action would be secured only by compromise. In promoting big schemes as much might be lost as was gained. In Edinburgh co-operation and exchange of information between the public health authority and the school medical service had hitherto solved all difficulties. Dr. F. Dittmar (Scottish Board of Health) said the time had come when all medical work, both in connexion with infectious disease and general disease, should be undertaken by the local authority. This had recently been effected in Aberdeen, where the City Council had taken over the Poor Law hospital service. Dr. Kay Menzies (London County Council) described the organization of public services in the London area, which worked well as far as results were concerned, though it involved overlapping, friction, undue correspondence, and extravagance. The difficulty was to find the ideal unit, and conditions varied so much that each area should be left to work out its own scheme. Dr. W. F. Deardon (Manchester) said factory administration concerned the factory population, not the whole community, and could not be satisfactorily dealt with by the municipality. Dr. J. Middleton Munton mentioned several instances of the confusion which arose as between counties and county boroughs. He believed in the fundamental necessity of having one authority for all health purposes. Dr. Kinloch (M.O.H., Aberdeen) explained that in that city the Poor Law hospitals had been voluntarily handed over, without charge, by the parish councils to the city council. He did not agree that the factories should be excluded from any schemes of amalgamation. The sanitary inspector should be responsible for factory hygiene, and experts in environmental hygiene might be appointed. Dr. H. Semfield (Sheffield) gave instances of partial co-ordination in Gloucester, Essex, Cardiff, and Eccles. Dr. Bardsley, speaking as a member of the Poor Law Committee of the Association, pointed out that unification was already the policy of the Association, but such unification must start at the centre. Dr. Latham (London) urged the necessity of giving junior members of the service a training that would qualify them to take the position of head of a combined department.

## SECTION OF PHYSIOLOGY AND BIOCHEMISTRY

Thursday, July 21st

## STRUCTURE AND FUNCTION OF THE SPLEEN

THE morning discussion of this Section was opened by Professor Tut, who said that the circulatory system was everywhere lined with endothelium, except in the spleen, liver and the bone marrow, in which it was defective or absent. When foreign particles or micro-organisms were introduced into the blood stream they rapidly disappeared from the circulation, finding a resting place in these three localities, their disappearance was due to their ingestion in the spleen, liver, and bone marrow by the special phagocytic cells which here lined the blood channels. The curious circulatory arrangements of the spleen and its steady persistence throughout the vertebrate group indicated some special function. The splenic arteries ramified into fine non anastomosing penicillar vessels, each of which terminated in a small cluster of ellipsoids, which were phagocytic organs capturing foreign particles and effete blood corpuscles, and here the arterial endothelium came to an end. This region of the spleen was active in altering the corpuscular content of the blood. Blood in contact with the splenic reticulum was not induced to coagulate. The only other tissue in which this obtained was endothelium. As contact of the blood with ordinary connective tissue induced rapid coagulation, Professor Tut termed reticulum and endothelium haemostatic implying that these tissues might freely touch blood, whereas the other tissues of the body were haemostatic and might not touch blood. Examination of the splenic architecture showed that all its haemostatic tissues—namely, its capsule and trabeculae, veins, arteries, and Malpighian corpuscles—were screened from contact with the blood by means of a casing of reticulum. These last facts could be well demonstrated by injecting Indian ink backwards through the splenic vein. The ink painted all the reticulum of the parenchyma, leaving the haemostatic structures unpainted. Professor J Barcroft (Cambridge) reviewed the relation between the nervous system and the vascular function of the spleen, and demonstrated the effects of various stimuli upon the form and size of the organ. Professor P T Herring (St Andrews) pointed out the relation of the spleen to the lymph and haemolymph glands, and suggested the importance of the lymphoid tissue present in the spleen. Sir Humphry Rolleston (Cambridge) asked for information about the factors controlling the blood supply of the organ, and mentioned the rarity of tumour formation. Dr H C Hou (Peking) reported experiments in which the spleen was divided into two sections—(a) normal, and (b) denervated. He agreed that exercise diminished the size of the spleen even in the denervated portion, and suggested that the effect was due to adrenaline. Sir Edward Sharpey-Schafer (Edinburgh) drew attention to experiments which proved that the spleen was the most sensitive organ to adrenaline. Sir Berkeley Moynihan (Leeds) dealt with some effects of the removal of the spleen, and asked for greater co-operation of the physiologist with the clinician. Sir Albroth Wright, Dr Hackett, Dr Duncan Scott, and Professor Murray Lyon also spoke.

Following this discussion Professor P T Herring (St Andrews) read a paper on the comparative histology of the pineal gland. This was followed by a joint paper by Professor J A MacWilliam (Aberdeen) and Professor G Spencer Melvin (Cambridge) on optimal rhythm in the mammalian heart and the action of the cardiac nerves. A paper by Dr C Reid (Aberdeen) on the mechanism of voluntary muscle fatigue was read. Experiments were described, and it was suggested that the fatigue had a central origin due to impulses passing up the afferent nerve. Professor D Murray Lyon and Dr W Robson (Edinburgh) contributed a joint paper on exsanguina-

## INTERNAL SECRETIONS AND SEX CHARACTERS

Dr F A E Crew (Edinburgh), opening the afternoon discussion emphasized the physiological activity of the gonads as a condition of the normal development and maintenance of such of the sex dimorphic characters as are

secondary gonads. He said that the criterion of a secondary gonadic character was that it reacted to the physiological activity of the gonad in a particular definite way. It was established that the gonadic influence punctuated the growth of the long bone thereby affecting the general proportions of the body that it influenced the development and functioning of the central nervous system, affected the processes of general metabolism and exercised a strong and definite influence on certain structures and functions which constituted the commonly recognized sex-dimorphic characters. The development and maintenance of many morphological, epiological and physical characters were dependent upon the integrity and functional activity of the gonads. He said that it was possible to feminize a male by castration, and subsequent implantation of ovarian tissue. The latent homologous sex characters, such as the mammary glands, were stimulated into activity, and the heterologous—for example, the penis, prostate, and seminal vesicles—remained undeveloped or became diminished in size and complexity. Similarly it was possible to masculinize a female by ovariectomy and subsequent implantation of testis. He thought it clear that the ovarian and testicular hormones were sex specific, acting only on those structures with which each was normally associated. In artificial hermaphrodites could be produced by combining in the same body both kinds of gonadic tissue. He thus concluded that in the mammal the most distinctive sex dimorphic characters were the secondary gonadic, and that for the development and maintenance of these the presence or functional gonadic tissue was necessary. Professor E E Glynn (Liverpool) considered the influence of suprarenal cortical tumours on the ovary (inhibiting menstruation) and on the secondary sex characters (producing virilism). He said that hypernephroma did not produce sexual precocity in either boys or girls; the precocity involved only secondary sex characters. There was no evidence that suprarenal hypernephroma in males produced feminization. Dr A S Parkes (London), Professor P T Herring (St Andrews), Dr W P Kennedy (Edinburgh) and Dr L C Dunn (Storrs, Connecticut) also took part in the discussion.

## SECTIONS OF PATHOLOGY AND BACTERIOLOGY AND COMPARATIVE MEDICINE

Thursday, July 21st

## IMMUNITY

At a joint meeting of the Sections of Pathology and Bacteriology and of Comparative Medicine presided over by Professor T J Mackie (Edinburgh) a discussion on immunity was opened by Dr R A O'Brien who reviewed the recent advances in immunity from the point of view of practice. He was followed by Professor C H Browning (Glasgow), who considered the advances in the theoretical conceptions of immunity with special reference to antigen-antibody reaction, the part played by immunity phenomena in chemotherapeutic action and Lürlich's reception hypothesis. Professor Robert Muir (Glasgow) expressed the opinion that the specific relation of an antigen to antibody was the essential point and that it seemed to be more a chemical than a physical phenomenon. The names of varieties of antistances should not be considered as of 'definite' kinds—they were rather 'non uniform' bodies. Antigen function seemed to depend on extremely minute peripheral differences and the distinction of antigen and antibody was extremely important. This latter consideration might account for the greater effect of a haemolytic antibody on red blood cells in vivo than in vitro. Professor Ogilvie (Philadelphia) discussed the relation of sensitization to immunity and said that both anaphylactic and local reactions seemed to be important whether antigen or antibody was injected. Colonel W F Harvey presented a report on the work in India, showing that single doses of a vaccine produced less immunity than several that some immunity was apparent within a week, that full immunity was reached within three weeks, that its duration was longer than was generally believed, and that the reinoculation dose was smaller than even the smallest required originally might be. He suggested that future research might show that an animal



once immunized was in a sense always immunized. Professor Mathieson discussed the salient points of immunology as applied to veterinary practice. Dr H. D. Wright (London) said that the classical view of antibody activity—direct or indirect—was generally acceptable in toxin-producing organisms, but in other cases, such as pneumococcal infection, immunity might well be cellular. An important question was how highly immunized animals became infected. Many of the septiciemias might be largely accidental and due to the breakdown of a focal infection. Dr W. H. Andrews said that veterinary pathology differed from human in having an essential economic outlook. Professor T. J. Mackie (Edinburgh) said that antibodies were only the manifestations of the reaction to foreign proteins, and "natural immunity" could seldom be attributed to their presence. Antibody research had drawn immunology into the domain of colloidal and physical chemistry, and until this line was stripped of its importance no great advances would be made into "resistance." Immunity might well depend on sessile rather than on humoral agents, and the further study of tissue antagonism to bacterial agents and their products should prove fruitful.

#### SECTION OF DERMATOLOGY

Thursday, July 21st

##### ULTRA-VIOLET RADIATION IN DERMATOLOGY

Dr S. B. Dore (London), opening a discussion on the uses and limitations of ultra-violet radiation in dermatology, doubted whether many cases of lupus were cured by light treatment alone, surgical measures and selective caustics were still necessary. It was, no doubt, a valuable stimulant of the growth of hair in alopecia areata but by no means a specific. In psoriasis the results were irregular, benefit often resulted, but by no means invariable, and relapses were frequent. In acne suppuration could be controlled to some extent, but better results were obtained by x-rays. Cases of impetigo and staphylococcal infections, also of chronic septic and tuberculous ulcers resistant to ordinary measures, were benefited by light. The combined local and general use of light therapy gave much better results than local treatment by light alone. Factors in its action might be activation of cholesterol in the skin and increase of haemoglobin, leucocytes, and of the bactericidal power of the blood. The psychological effect of the treatment should not be forgotten. He did not expect any benefit from the provision of ultra-violet-passing glass for dwellings in smoke-laden cities, as the quantity of ultra-violet radiations which penetrated the atmosphere was extremely small. The cooling power of the air, obvious in Edinburgh, was also a factor of importance in using the rate of basal metabolism. Dr F. Guddner (Edinburgh) said that too much stress could not be laid on the psychological side of the treatment. They had treated at the Royal Infirmary 171 cases of tuberculosis of the skin in the light department since 1924, of which 27 had been declared provisionally cured, and 65 improved, the remainder were still under treatment. Tuberculous ulcers all did well, so did lupus erythematosus and those diseases of the skin associated with anaemia and debility. He was disappointed with the results in psoriasis and varicose ulcers. The radiations acted partly on the general system, partly as a stimulant to certain ulcers, and partly by reduction of pus-tension. Dr O'Donovan (London) described the origin of the light department at the London Hospital, where since May 1st, 1900, 2,800 cases of lupus had been treated. He laid great stress on the necessity of continual and continuous treatment and strict supervision of the patient's life. He thought that every type of lupus was curable except where there was lymphatic obstruction of the part affected. Up to the present there was no evidence that carcinoma ever developed on the supple skin left after light treatment. Psoriasis was very seldom benefited, but prurigo, multiple subcutaneous abscesses in children, and septic complications of wounds and fractures did well.

Dr J. G. Tomkinson (Glasgow) testified to the value of ultra-violet radiations in lupus and cutaneous tuberculosis.

Dr Gilchrist (Baltimore) mentioned the measurement of the dosage of ultra-violet light by means of lithopline, and

attempts to desensitize to light by means of small doses. Diathermy was the best treatment of lupus. Sir Norman Walker (Edinburgh) had cured psoriasis in many cases. Dr H. MacCormac (London) welcomed Dr Dore's moderate claims for light therapy. Dr W. Mitchell (Bradford) preferred diathermy to any other treatment for lupus. Dr A. C. Roxburgh (London) reminded the Section of the use of ultra-violet light with Wood's glass as a method of diagnosing ringworm of the scalp by causing fluorescence of infected hairs.

The discussion was continued by Dr R. Aitken (Edinburgh), Dr Haldim-Davis (London), Dr F. D. Hewitt (London), Dr W. K. Russell (Newcastle), Dr W. H. Brown (Glasgow), Sir R. Bolam (Newcastle), Dr Christina Brownman (Newcastle), and the President.

##### MISCELLANEOUS PAPERS

Dr H. C. Semon (London) then read a paper on the value of kryosol in the treatment of lupus erythematosus. In a short series of cases he had obtained 22 per cent cures. The paper was discussed by Drs Gilchrist, O'Donovan, Haldim-Davis, Roxburgh, Russell, and the President. Several speakers thought the drug was of value.

Dr Dowling (London) concluded the morning with a paper on the thallium acetate treatment of ringworm of the scalp. He had had ninety cases, of which seventy-three had been successful. Drs Roxburgh and Tomkinson also spoke on the subject.

#### SECTION OF TROPICAL DISEASES

Wednesday, July 20th

##### AMOEBIc DYSENTERY

Dr ANTHONY BALFOUR, President of the Section, recalled that on the last occasion on which the Association met in Edinburgh Sir Patrick Manson announced Sir Ronald Ross's discovery of the mosquito-borne cycle of malarial transmission. Dr P. H. Manson-Bahr (London) opened the discussion on amoebic dysentery by outlining methods of treatment in the past and reviewing modern methods. In his hands a combination of emetine bismuth iodide by the mouth and yodin by the rectum had proved the most satisfactory treatment of the disease. By means of the epidiascope he demonstrated a series of water-colour paintings illustrating the sigmoidoscopic appearances of this disease. Dr J. Gordon Thomson (London) indicated how, by means of samples obtained by sigmoidoscopy, the laboratory worker and clinician could assist one another. Professor C. A. Kofoid (California) described an amoeba parasite in man, which he believed to be distinct from *Entamoeba histolytica*. He showed lantern slides illustrating the distinctive features. Dr Winters (Calcutta) referred to the treatment of dysentery by stovaine, and Dr Manson-Bahr briefly replied.

##### PROBLEMS OF MALARIA PROPHELYSIS

The discussion on the prophylaxis of malaria was opened by Lieut-Colonel S. P. Jones (London), who based his remarks on the recommendations of the Malaria Commission of the League of Nations, which were specially directed towards malaria control in Europe, in places where only limited expenditure was possible. Colonel L. D. W. Greg (Edinburgh) described his experience with eighteen cases of intentionally induced malaria, and showed lantern slides illustrating the results of infection. Dr L. W. Hackett (Rome) gave an account of the mosquito destruction work of the International Health Board in Italy, where Paris green had entirely displaced oil as a larvicidal agent. He described the way in which it was applied. Dr E. Martin (Hamburg) referred to his study of malaria in South Russia and Angola, and emphasized his belief that attacks of "spring malaria" were really relapses of infection contracted the autumn before. Dr P. H. Manson-Bahr described the mode of employment of plasmodium in treatment and referred to its possibilities as a preventive. Dr D. Bohm (Prague) gave an account of the conditions under which malaria prevailed in Czechoslovakia, laying stress on its association with bad

housing, and a low standard of life. Colonel S. P. James replied that his experimental work confirmed Dr. Martini's view of the significance of "spring malarial."

### SECTION OF FORENSIC MEDICINE

Thursday, July 21st

#### ALCOHOL AND THE MOTORIST

A discussion on alcohol and the motorist which has been very generally reported in the newspaper was opened by Dr. Coaffrey Carter (Sheffield), who said that the word "drunk" was unfortunate, and gave rise to much legal wrangling. The association of congested conjunctivae with quickness of the pulse and smell of alcohol in the breath was very suggestive. In his opinion any person with demonstrable signs of alcoholic indulgence was unfit to drive a car, and therefore "drunk" without the meaning of the Act. He outlined recent work in Sheffield on the estimation of alcohol in the urine, as described in this *Journal* last year (vol. 1, p. 463). Thirty drops of urine was a sufficient amount to enable the quantity present to be estimated. Dr. F. Bogen (U.S.A.) said that the amount of alcohol in the breath could be ascertained, and bore a constant relation to the amount of alcohol in the blood. Dr. Morrison (Birmingham) said that renal disease might prove a fallacy in urino examinations, in his opinion the important factor in estimating the degree of drunkenness was the general appearance of the accused. Dr. Wilson (Glasgow) thought the accused should always be warned as to the object of the examination. Lord Russell discussed the question from the legal point of view. Professor MacFall (Liverpool) laid stress on inco-ordination of muscular movement as a test.

#### TEACHING OF FORENSIC MEDICINE

A discussion on the teaching of forensic medicine was opened by Professor Glaxter, who defined the lines on which the student should be taught. Any medical practitioner might find himself called to give skilled evidence in a court of law to assist the court in arriving at a decision. Much of the teaching of forensic medicine depended on the practical experience of the teacher, students derived much benefit from attending a court of law during a trial, as it enabled them to appreciate the surroundings and the conduct of witnesses. Professor MacFall (Liverpool) thought the course should come as late as possible in the curriculum, and that there should be provision for post-graduate teaching. Professor Sidney Smith (Cairo) described the procedure in Egypt and expressed the opinion that great economy would result from a State medico-legal service.

### SECTION OF TUBERCULOSIS

Friday, July 22nd

#### RADIOLOGICAL DIAGNOSIS OF INTRA-THORACIC TUBERCULOSIS

OPENING A discussion on radiology and the diagnosis of intra-thoracic tuberculosis from the point of view of the specialist and the practitioner, Mr. H. Morrison Davies (N. Wales) emphasized the importance of radiology as an adjunct to diagnosis in its differential aspects and its relation to the true position and anatomical extent of the lesion. He pleaded for the greater employment of x-rays in the early and doubtful case and in the following up of the so-called "hilum case." Dr. F. Rist (Paris) said that the real function of radiology was to check, correct and control. He hoped that in the near future radiological examination would not be considered as outside the term "clinical examination." Dr. J. Logan Stewart (Manchester) said he had found x-rays most valuable in the investigation of contacts. Dr. J. M. Woodburn Morrison (Edinburgh) drew attention to the danger of too much reliance on pictures and pleaded for a combination of radiologist and clinician. The discussion was continued by Dr. C. P. Lapage (Manchester) and Dr. Parsons (Ceylon).

#### PATHOLOGY OF THE TUBERCULOSIS OF CHILDHOOD

Professor E. L. Opie (Washington) who opened this discussion, said that just as examinations of persons dead

of cases other than tuberculous often gave important information about tubercles, excised lung examined by film and compared with post-mortem findings and the radiograms taken while the patient was alive were not giving the clue to the best use of x-rays as an aid in diagnosis of the disease in early life. He showed the relation of hilar glands and peripheral primary lesion and pleaded for the use in contacts of the tuberculin test and efficient radiography. Dr. R. G. Cant (London) followed, and showed many interesting diagrams of the relation of glandular infection to primary foci. Dr. Aimard-Dehille (Paris) said that the best method of interpretation of x-rays was to compare lung section from the organ, hardened in a position as near as possible to that assumed in life during the radiological examination with the plates taken at intervals during the patient's illness. He showed many sections and the corresponding x-ray findings.

#### NON-PULMONARY TUBERCULOSIS

The interrelation of the physician and surgeon in regard to non-pulmonary tuberculosis was considered by Dr. D. A. Powell (Cardiff), who said that true co-operation lay in each taking his own responsibility—the physician the diagnosis and the choice of the surgeon—the latter determining the technique. The physician could still learn more from the surgeon on the methods of immobilization. True co-operation would mean that diagnosis would be followed by action, to the more immediate and lasting benefit of the patient. Professor J. Fraser (Edinburgh) thought that the present-day treatment of tuberculosis might be summed up in excision, rest, and increased general resistance, but that hope for the future lay in obtaining the assistance of the public by education and co-operation in after treatment rather than in the combination in one of the physician and surgeon—the expert in each branch ought to come together. Dr. G. H. Girdlestone (Oxford) supported this view and said that, while a combination might be possible, it was very difficult in adult cases where highly trained specialists was a necessity. He believed it almost impossible to develop a surgical hospital in a sanatorium.

Demonstrations of sections and x-rays were given in the afternoon, and were followed by an excursion to Southfields Sanatorium.

### SECTION OF VENEREAL DISEASES

Friday, July 22nd

#### THE CEREBRO-SPINAL FLUID IN SYPHILIS

Mr. C. H. Mills (London) opening this discussion, emphasized the importance of routine examination of the cerebro-spinal fluid both before during and after treatment. Examination of the cerebro-spinal fluid about six weeks after the cessation of the initial course of treatment should prevent entirely the subsequent development of meningeal relapses and their sequelae. In every case tested at the end of the first, second, third and fifth years. All patients with a persistent positive blood Wassermann reaction should have the cerebro-spinal fluid examined no matter at what stage of the infection the patient first came under observation. If the cerebro-spinal fluid was found to be affected in a syphilitic case the patient must have treatment and periodic re-examination for the rest of life. No patient with a history of syphilis should be allowed to marry without an examination of the cerebro-spinal fluid. Dr. G. Riddoch (London) said a value could be placed upon a positive result obtained only after the initial six weeks course. Did it mean that the patient was a praetor? In any case such a patient should be treated for life. He did not think that with a praetor in whom the cerebro-spinal fluid became subsequently negative was safe even after five years. It was possible he developed without any change in the cerebro-spinal fluid. Lumbar puncture might be followed by a more distressing headache which would deter the patient from a second examination, hence all possible precautions should be used to keep the operation painless and to avoid unpleasant sequelae. Dr. D. K. Henderson (Glasgow) said that the early diagnosis of parenchymatous neuro-syphilis was

impossible, since the pathological changes were always far more advanced than the clinical signs. No patient who had had general paresis, even if apparently cured, should be allowed to take a position of responsibility. Dr J G Greenfield (London) described various tests for the cerebro-spinal fluid. He said that a patient in whom a positive Wassermann reaction persisted in the cerebro-spinal fluid after three months' treatment was almost certainly a general paralytic. Colonel L W Harrison (London) recommended that in the treatment of syphilis arsenic should be combined with other metals such as mercury or bismuth. There were many more relapses and crises of neuro-syphilis in patients treated with arsenic alone than when combined with mercury. Mr Vogo (Edinburgh) described a test which he had worked out in conjunction with Dr Keimack in which hypochlorite was used and which depended on the presence of protamine in the cerebro-spinal fluid. Dr Fremont Smith (Boston, U.S.A.) said that lumbar puncture could be made painless. The President took a more optimistic view of the treatment of neuro-syphilis than some speakers, and showed a series of cases illustrating the results of treatment, principally with trypanamide. The discussion was continued by Dr Sandeman (Aberdeen) and Dr Margaret Roiko (London).

#### TREATMENT OF GONORRHOEA

Major E C Lambkin, R.A.M.C., read a paper in which Major Lyn Dimond, R.A.M.C., had collaborated, on a gonococcal vaccine which was exclusively composed of polar (or Babes's) bodies. The existence of these had been previously known, but Major Dimond had now found that when the gonococcus was grown on a medium rich in animal nucleo-protein they were produced in large numbers, and could be separated from the gonococci to which they were only loosely attached by washing off the culture with preferably human serum, or 2 per cent saline, and centrifuging the emulsion; the polar bodies were then found in the supernatant fluid. The technical difficulties were considerable. The vaccine so obtained was employed by injecting intramuscularly, and also subcutaneously under the skin of the penis, the preliminary results had been extremely encouraging. Some cases of gonorrhoea had been cured by a single injection within three days, even when subjected to the strongest provocative tests employed to wake up a possibly latent infection, in other cases general all-round improvement had been obtained, and the relapse rate in cases discharged as cured was lower than it had ever been. In addition to the gonococcus, it had been found that all other organisms so far examined were capable of producing polar bodies when suitably cultivated, and it appeared probable that vaccines containing these polar bodies were far more efficacious than others. Colonel L W Harrison (London) said that he had been able to confirm the clinical results of using this vaccine in gonorrhoea.

#### BISMUTH IN THE TREATMENT OF SYPHILIS

The President, opening a discussion on the value of bismuth in the treatment of syphilis, said that the time had not yet arrived to assess its end-results, though arsenic was undoubtedly much more deadly for the spirochaete than bismuth. It was almost impossible to find spirochaetes in lesions after a single dose of arsenobenzol, while active organisms capable of infecting could be found in excised glands after repeated doses of bismuth. Nevertheless, the clinical results of bismuth in late cases were amazing, and very nearly as rapid as arsenic, but it was not so potent in early cases. It was most valuable in cases which had been treated with novarsenobenzol and had relapsed, it was also extremely useful in cases hypersensitive to arsenic, which, fortunately, were never also hypersensitive to bismuth. Bismuth occasionally caused dermatitis, and he had seen it in one case cause a recrudescence of dermatitis originally due to arsenic. It was a remarkable thing that, although bismuth was a strong cardio-vascular poison to animals, it caused no ill effects to the liver or kidneys in man, and could be used in nephritic patients. Whether the combination of arsenic and bismuth was preferable to arsenic and mercury was somewhat doubtful, personally he thought the bismuth combination slightly superior, and it had the advantage

that it could be given for long periods with less disturbance than mercury, even if the technique of mercurial administration was good. But it was not to be regarded as a substitute for arsenic, and it was not justifiable to give bismuth alone to early cases. Dr J C Buckley (Nottingham) considered bismuth second only to arsenic in importance in the treatment of syphilis, and a long way in front of mercury. He thought that the combined treatment, properly administered, ought to be followed by nearly 100 per cent of cures in reasonably early cases. In only one type of case had he found mercury more effective than bismuth—namely, in interstitial keratitis. He gave 0.2 gram only, a very small dose according to some authorities. He asked whether the blue line which so often appeared on the gums called for the cessation of bismuth treatment. Dr Mary Menicoll (Edinburgh) said she realized more and more the value of bismuth as an adjunct to arsenic in treatment. She had found it useful both in acquired and congenital cases in reducing a persistent positive Wassermann reaction. Dr E T Burke (Manchester) agreed that bismuth was nearly as potent as arsenic, and far more so than mercury. He had discarded mercury in his clinic for the last two years except for cases resistant to bismuth. He used it, not instead of, but alternately, with arsenic. But in cardio-vascular syphilis he thought it safer to use bismuth only, and he preferred metallic bismuth suspended in glucose. Dr W R Snodgrass (Glasgow) said that bismuth was most helpful in cardio-vascular syphilis, neuro-syphilis, and debilitated individuals generally. Colonel L W Harrison (London) referred to the work of Collard and Evers, who formed a deposit of bismuth in the ear of rabbits which, so long as it was intact, prevented the development of a chancre, as soon as it was excised the chancre appeared. Bismuth was particularly useful in myocarditis, often in combination with small doses of sulfarsenol. Certain toxic effects, such as rheumatic pains and occasional dermatitis, might follow its use. Dr Stopford Trylor (Liverpool) and Dr William Brown (Glasgow) also spoke.

#### SECTION OF RADIOLOGY

Wednesday, July 20th

#### DIAGNOSIS OF INTRA-THORACIC GROWTH

At the Section of Radiology, under the presidency of Dr J M Woodburn Morrison (Edinburgh), a discussion on x-rays in the diagnosis of intra-thoracic growth was opened by Dr Stanley Melville, who pleaded for early diagnosis in view of the fact that certain benign tumours tended to produce pressure effects and to become malignant. He urged the importance of inducing an artificial pneumothorax for diagnosis and, as a preliminary to surgical measures, in reducing pleural shock to a minimum. Mr C Thurstan Holland (Liverpool) said that, while it was easy to demonstrate by radiography various growths in the chest, then differential diagnosis was often extremely difficult and sometimes impossible. Very many intra-thoracic cases were not diagnosable by x-rays only, and the co-operation of the clinician and the pathologist was necessary. Dr A E Barclay (Manchester), Lord Dawson of Penn, and Sir Humphry Rolleston emphasized the importance of the clinician and the pathologist working together, and were followed by Dr Campbell Suttie (Glasgow) and Dr L A Rowden (Leeds).

#### TREATMENT OF CARCINOMA OF THE BREAST

Dr N S Finzi (London), opening the second discussion, said that treatment by radium needles was most effective in cases of breast carcinoma which were not too advanced. Palliation and prolongation of life were the rule, cure the exception. Radium seemed to give better results than x-rays, but delay in commencing treatment was regrettably common. Dr J H Douglas Webster (London) said that it was no longer true that the only chance for a patient with cancer of the breast was early operation. By radiological methods alone results in cancer of the breast were now being obtained by some radiologists similar to those already attained by radiation in uterine cancer—namely, a certain percentage of inoperable cases cured, while in the

operable group the results were rather better than those of surgical treatment. Professor M. J. P. Hives (Dublin) showed tables illustrating in 53 unselected cases the time and sites of recurrence. He also emphasized the necessity of knowing the histology of the cases treated. Dr A. T. Bruch (Manchester) had found the immediate results of radiation treatment good, but the ultimate results less satisfactory. If x-ray applications were started within three weeks after operation there seemed to be a far smaller number of recurrences than when treatment was delayed longer. Dr W. M. Levitt (London) gave an account of some histological examinations in cases which had received intensive irradiation. Dr R. E. Roberts (Liverpool) had found that patients who had received lead injections responded better to x-ray treatment perhaps because of an intense secondary radiation. The President thought it desirable from the point of view of duration of life to comprise not only cases which had been submitted to different methods of treatment but those which had received no treatment at all.

## SECTION OF HISTORY OF MEDICINE

Friday July 22nd

### EVOLUTION OF DISEASE

The President Dr J. D. Comrie, called attention to the fact that this was the first occasion on which a Section of the History of Medicine had been held at a British Medical Association Meeting. Sir Humphry Rolleston Bt. opened a discussion on 'The historic evolution of disease.' Beginning with clinical variations in disease from the historical point of view, he said that the surest, though a much limited means of getting reliable knowledge as to the nature of disease in the past was through morbid anatomy which had been cultivated under the name of palæo-pathology. Thus showed, for example that arterio-sclerosis, tuberculous disease of bone, mastoid disease, rheumatoid arthritis, gout, talipes, prostrhea, appendicular adhesions and rhondrophasia, among other diseases, had been well known in ancient Egypt several thousand years ago. Information was also to be obtained from the available pictures of antiquity. From pictures in Egyptian tombs rhondriophasia was known 5000 years ago. Rickets was shown in the pictures of Pompeii and Herculaneum the adenoid faces could be seen in a portrait in the Uffizi Gallery at Florence and the dancing mania of the fourteenth and fifteenth centuries had been drawn by Pierie Breughel, so that it could be identified with major hysteria. Paintings showing the buboes of the plague, leprosy, hydrophobia, and many other diseases were also available. The written records of acute diseases were more numerous but at the same time more difficult to utilize than representations by the plastic artist. Alterations in the methods of description and in nomenclature interfered with the identification of bygone epidemics. The question of change of type in disease was one of great importance in medical history. Alteration of clinical manifestation might depend upon secondary infections as in the case of the severe epidemics of influenza and in the case of bird attacks of small pox, which apparently depended for their virulence upon recombining streptococcal infections. New diseases also crystallized out from old description. Thus typhoid, paratyphoid, and typhus fevers had all been separated in the course of time from the old "continued fever" and the same applied to the various forms of remittent. War and its attendant circumstances might so alter conditions as to lead to the appearance of new forms of disease such as trench fever, trench nephritis and epidemic jaundice. The clinical recognition of diseases now distinct was often difficult in a historical sense. Tuberculosis had been identified in the Egyptian mummies. From written records there was evidence that pulmonary tuberculosis was very prevalent in ancient Greece. Whooping cough was accurately isolated in ancient Greece and bubonic plague was a disease of established antiquity. On the other hand the nature of the plague of Athens was disputed and had been thought by various authorities to be malignant scarlet fever, small pox or typhus. The pestilence in Persia noted by Cullen was supposed by Crivell to be more

than one disease throughout the fifteen years of its duration. Malaria had been prevalent in Greece from the fourth century B.C. but the history of diphtheria exemplified the difficulty of distinguishing between acute infections of the throat and identifying them with the now recognized as quite distinct. It had been contended, indeed by Adams that diphtheria arose as the result of a transformation under special circumstances of a harmless diphtheroid organism into a virulent pathogenic bacillus. In conclusion the opener of the discussion drew attention to well known changes which had taken place in the incidence of appendicitis and of neuritis.

The discussion was continued by Dr G. Mathie on Cullen (Edinburgh) in a paper entitled 'World epidemics and their relationship in cause and effect to social conditions.' He traced particularly the wide reaching effects on the destinies of the human race that had been produced by the three great epidemics of plague. Mrs M. C. Burr (Reading) contributed a paper on 'The effect of early industrialism upon the health of the community.' She showed that the conversion of the population of Great Britain from an agricultural to an industrial one about the middle of the eighteenth century had been followed by a diminution in the death rate and a considerable decrease in sickness. Diseases like rickets and scurvy had previously been rare on account of the fact that vegetables and root crops were insufficient to supply the needs of the population and that animals were slaughtered in great numbers every autumn to provide salted food during the winter. With the collection of people in the towns vegetables had been produced for market instead of merely for immediate consumption. Changes in sanitation and in the comfort of living had occurred at the same time, and work in the newly established factories of the late eighteenth century was much more healthy, however bad the factories than work in small private dwellings which were used at the same time as living place, sleeping place, and workroom. Professor van Leeuwen (Amsterdam), Dr Ritchie (Birmingham), Dr Stephenson (Edinburgh), Dr Warden (Cannes), Sir St. Clair Thom (London) and Dr Wright (London) also took part in the discussion.

Independent papers were read on 'The historical aspect of quackery' by Professor A. J. Clark (Edinburgh) and on 'The methods of introduction of drugs' by Professor W. J. Dilling (Liverpool).

## SECTION OF MEDICAL SOCIOLOGY

Friday July 22nd

### VOLUNTARY HOSPITALS AND MUNICIPALITIES

The President Dr F. N. Kay-Menzies alluded to the lamented death of Dr Cruickshank, one of the vice-presidents of the Section. Mr Herbert L. Laing then read a paper on the future relation of municipalities to the voluntary hospitals of the country. Emphasizing the fundamental importance of medical education in every respect of treatment for the community, Mr Laing made the striking proposal that in any extension of State or municipal hospital service the voluntary teaching hospital should have the predominant share in the hospital administration. If and when the Poor Law infirmaries became municipal hospitals they should be managed by the teaching hospital of the area as a mother hospital on lines similar to those on which venereal disease clinics were administered. The mother hospital would supply the medical and surgical staffs; the hospital would be subject to inspection by officials of the municipality; there might be representation of the municipality on the hospital board; and the municipality would foot the bill. In this way a great deal of disorder would be avoided and an attractive opportunity for research and freedom of thought would be maintained. Mr M. A. Parnard, chief executive officer of a County Parish Council, approached the matter from the point of view of the treatment of the patient and without reference to medical education. He described four Poor Law hospitals and said that each had a rich efficient staff, a large municipal and voluntary hospital could work hand in hand. But he envisaged the creation of a hospital service for the whole country under which though much charity

would die up, the cost would fall more equitably on those able to pay. He remarked that where institutional accommodation was provided it invariably brought with it an increased demand. Sir Henry Keith advocated small hospitals with the use of motor transport, and desired that voluntary hospitals should be left unimpeded by the restrictions of public authorities. Dr Kinloch (Aberdeen) thought that the method of management of hospitals was not important to the medical profession. Dr Brackenbury urged the claims of the general practitioner for the proper treatment of his patients. Sir Norman Walker thought that co-operation—for which he would like another word—would solve all difficulties. Dr Drummond Shells believed that all medical services would ultimately be included under State or municipal administration. Dr Macgregor felt that Mr. Erson's governing body would be unable to visualize the whole needs of the city. Dr Stella Churchill considered that the difficulties raised about municipal control were illusory, and Dr Marquell protested against chronic or menial patients being sent back to their homes too soon by Poor Law hospitals which posed as municipal general hospitals.

## Reviews.

### THE GENETICS OF SEXUALITY

THE Cambridge University Press has recently started a series of works on comparative physiology. The first and second volumes have been issued simultaneously, and we are here concerned with the second. It is entitled *The Genetics of Sexuality in Animals*,<sup>1</sup> and is by Dr F. A. E. Crew. It provides a very clear and not too lengthy account of the mechanism of sex-determination and sex-differentiation, and of the physiological processes involved. Genetics has, he considers, been too long engaged in discussing the ratios between classes of related individuals which appear in successive generations of an experiment starting with two types differing in respect of one or more heritable characters. Important as the collection and interpretation of ratios undoubtedly is, it must be confessed that to the reader who is not deeply versed in the science of genetics a shifting of the standpoint towards the physiological aspect of the subject imparts an interest that was lacking before, and we are conscious of this increased interest in reading Dr Crew's book.

The explanation of the process by which sex is determined is a problem of more than general interest, its study has led scientists into an analysis of the structure of the cell which, in its wonderful results, is in some degree comparable to the analysis of the atom in physics. Not only have the chromosomes concerned in the determination of sex been identified, but some progress has been made in unravelling their minute structure and the functions of their constituent units. It is now known that the impress of sex is discernible not only in the ova and spermatozoa, but also in every cell of the body, and that that inequality of the sexes which is so distasteful to a certain type of political theorist, is prefigured in the unfertilized germinal elements even before the individual can be said to have started on his or her career. It appears that both kinds of germinal cell, male and female, contain an equal amount of chromosome-substance, but that whereas in the female cell the substance is, in normal circumstances, of one kind only, namely X, part of this is in the male replaced by a different substance, Y, if the amount of X is above a certain limit the cell is female, if below, it is male, and observations have proved that if to a cell of male constitution an additional quantity of X is added, femaleness will result. Development however, cannot take place without fertilization, and in this process it is imperative that the sex-difference shall remain intact and also desirable, under a monogamous dispensation, that the sexes shall be numerically equal. This is effected in the following way. The chromosomes concerned in sex are

arranged in pairs, XX in the female, XY in the male, during fertilization the unfertilized ovum exchanges one of its X-chromosomes for a chromosome from the sperm—the assumption of an X producing in XX fertilized ovum or female, of a Y in XY fertilized ovum or male, and as the chances are even, males and females will be numerically equal in the long run. It is obvious, therefore that sex is determined at the moment of fertilization, and that attempts to modify the sex of the foetus by such measures as feeding the mother on various chemical substances can be expected to lead at best to the production of pseudo-haemaphroditic monsters. A good deal of this is explained, with diagrams which help to make it clear, in Dr Crew's British Medical Association lecture, which was published in our issue of August 14th 1926, p. 285.

The problem of sex-differentiation differs from that of sex-determination. At a certain stage of development there exists no gross distinction in the conformation of the male and female, but subsequently a transformation occurs and the respective external genitalia, genital glands, accessory passages, and secondary sexual characters make their appearance in orderly succession. This differentiation is, according to Dr Crew, dependent on the sex-impress inherent in every cell of the body, reinforced by a sex-hormone elaborated by the sexual glands.

The truth of the above theories of the physiology of sex is put to the test in explaining the nature of the numerous sexual anomalies which are met with in the animal kingdom, and this forms a large part of Dr Crew's very interesting book.

### MEDICAL PRACTICE ITS OPPORTUNITIES AND RESPONSIBILITIES

Certain recent experiences in the courts and relating to the administration of the Lunacy Acts have, in a somewhat startling fashion, impressed on members of the medical profession some of the acute responsibilities which the law may require at their hands. From the particular instance attention may well pass to the general situation, and hence a volume on *The Conduct of Medical Practice*,<sup>2</sup> by the Editor of the *Lancet*, is far from unhappy in the moment of its arrival. As director of an important medical journal he has many opportunities both of judging policy and of affording advice to individuals. He is therefore equipped by experience alike in the discussion of principles and in the application of these to actual events. Yet though the book is happy in its hour, we are not sure that its title is quite so fortunate. Its real theme is the conduct of the practitioner as this is or may be affected by legal or other claims, whereas the chosen phrase suggests rather a pathway to mundane success. Possibly the point is unimportant, and in any event the author and his colleagues have certainly produced a book which cannot fail to be of service to many members of the profession and to prevent, if carefully studied, many anxieties and embarrassments.

That counsel of the order provided in this volume is needed is evident when the special position of the medical practitioner is considered. Like his fellow citizens, he has his general civic responsibilities, and comes under the legal doctrine that ignorance of the law is no excuse for a breach of the law. This burden is increased by a number of special statutes which prescribe for the practitioner duties and responsibilities in relation to the courts of justice, to various public bodies, to administrative records, and to other specific obligations, as well as to the individual patients immediately under his care. Even here, however, the list is not exhausted. In addition, there is the internal or domestic discipline of the profession as this is determined in part by the General Medical Council, in part by the rules of the various licensing bodies, and in part by established custom, order, and habit. Thus the claims are numerous and varied, and many of them are not wanting in complexity, and the opportunities for blunders and mistakes are correspondingly abundant. Mere goodwill and excellent intentions are not enough. He who

<sup>1</sup> *The Genetics of Sexuality in Animals*. By F. A. E. Crew, M.D., D.Sc. 110 Cambridge Comparative Physiology. London: Cambridge University Press, 1927. (Demy 8vo pp. x + 183, 37 figs., 10s. 6d. net.)

<sup>2</sup> *The Conduct of Medical Practice*. By the Editor of the *Lancet* and expert collaborators. London: The *Lancet*, 1927. (Demy 8vo pp. xv + 332, 10s. 6d. net.)



would travel safely must know the risks and dangers of the road.

The book is certainly comprehensive, and indeed may be described as complete. Practical business and high doctrine are both fairly presented. Thus severe details of methodical bookkeeping and the demands of the tax collector are here, as are also the delicate questions which arise in connexion with the secrecy of professional confidences, the arrangements of partnerships and the responsibilities due to colleagues. Chapters on the Dangerous Drugs Act and the National Insurance Act illustrate the increasing pressure of law upon medical practice, and there is no finality, for even during the present month a new Births and Deaths Registration Act has altered the practitioner's duties in certain important respects. Even our senior readers therefore cannot afford to indulge a little folding of the hands to sleep, and the fortunate juniors, whether they realize it or not, need particularly to mark and to learn the counsels and information which the book before us supplies. For any member of the profession entering on practice whether as an assistant or a locum tenens or a partner or a principal, here are lessons and guidance which may save him many mistakes and anxieties and prove a very present help in time of trouble. We may suggest one criticism—namely, that our brethren north of the Tweed will be likely to consider that the positions created by the special characters of Scots law receive inadequate recognition.

There are still two features of the book that particularly attract our sympathy. One is the reiterated advice to every medical man and woman to become a member of one or other of the medical defence societies. Again and again, and in spite of warnings and exhortations, practitioners are to be found entangled in perplexities and responsible for heavy legal charges when under the expert guidance open to members of a defence organization their troubles would either never have happened or would have been easily and peacefully resolved. Members of the profession are not ungenerous to colleagues who by misadventure fall under legal and financial penalties, but appeals of this order are hard to justify when, by prudence and a small annual subscription, every practitioner can secure his own position.

A further welcome note in the book is a fairly sustained effort to show throughout that the customs and claims of medicine are founded, not on a narrow professional prejudice or selfishness, but on the broad basis of public interest. The community generally, and apparently in increasing measure, cultivates a critical attitude towards medicine and medical practitioners and it is well that not editors alone but the individual doctor should be prepared to show that both the domestic rules of the profession and its external policies are framed in the interests alike of the common health and of the individual patient. The editor and his colleagues have kept this sound doctrine well in view, and for this we owe them thanks.

#### THE AIR FORCE MEDICAL MANUAL

An official publication that is of more than usual interest is the *Manual for Medical Officers of the Royal Air Force*, the first edition of which was issued recently. It consists of two parts. The first contains administrative instructions regarding general organization and duties of the medical service, medical examinations and records and returns and medical stores, and a detailed account of the measures required for the control of communicable diseases. The medical examinations entail precise records of facts and assessment of the disabilities attributable to air service. Injuries contracted during games and physical recreations organized by, or with the approval of, the Air Force authority are regarded as directly attributable to conditions of service and are assessed as such. The section on communicable diseases is full. It is, however, open to criticism of the extent to which measures of control by prophylactic and therapeutic inoculations are carried, especially in such diseases as scarlet fever, measles, and whooping-cough the same thing may be said also of

the section on dysentery as the measures recommended are still in an experimental and tentative stage. Practically every channel of communicable disease is detailed. There are tables showing the periods of incubation and segregation, and in separate columns the medium by which a disease is spread the specific disease is communicated through each medium, the measures for detecting carriers, for dealing with each case as it occurs and for the protection of attendants on the sick. This exhaustive section includes also instructions on vaccination and inoculations, and on collecting and dispatching material for chemical and bacteriological examination. Each individual member of the Royal Air Force would appear to be liable to thorough bacteriological examination, not only when he is actually suffering from an illness but also when he has been in contact with a sick person or is suspected of being a carrier. Among other provisions for dealing with carriers a nominal roll of persons employed must be hung up on the door of a cookhouse or canteen and each individual certified to be free from dysentery, typhoid, cholera and undulant fever germs. A re-examination must be made every three months, and a fresh certificate signed. It is further required that carriers shall be segregated, and in the case of suspected syphilitic sores, bacteriological and Wassermann tests are to be repeated, even though on two or three successive occasions the result has been negative. Points such as these indicate the thoroughness of the instructions for the prevention of disease in the Air Force. Some twenty diseases not notified under the Public Health Acts, must be notified by its medical officers. Prophylactic inoculations for several of them must be made annually or before the season when disease such as cholera or plague is approaching. Contacts and carriers are under control, and it is laid down that men with herpes zoster are to be regarded as carriers of chicken pox, here the compilers of the manual lay themselves open to criticism.

Part II is of more special interest, as it deals with the measures for examining and assessing the physical and psychological condition of airmen, and especially the tests for the organs of special sense and for muscle balance and power of co-ordinated movement. Efficiency is determined by marks given in connexion with the various tests. One of the tests very fully detailed, is that for heterophoria with the Bishop Harman diaphragm instrument by means of it the pilot's power of landing safely is determined. In flying each pilot is rightly regarded as an individual requiring special study. The medical officer is therefore told that his best work can be done in the mess, on the aerodrome, or at games. There is an excellent chapter on high altitude flying and administration of oxygen.

On the whole this is a manual which imparts to the reader who is not in the Air Force with the extent and variety of the special attainments and qualifications required by medical officers of that branch or the service, and by the amount of laboratory investigations which they are called upon to undertake.

#### SEGREGATION AND AUTOGAMY IN BACTERIA

In *Segregation and Autogamy in Bacteria* Steward brings forward evidence which he considers shows that the lower bacteria pass through a life-cycle with alternating phases of asexual and sexual (autogamic) reproduction. After a short summary of the previous literature on variation in bacteria the writer's numerous experiments on coliform and allied bacteria are described. Briefly his view of the life-history of such a bacterium is as follows: "It is placed in new surroundings with sufficient food it multiplies quickly by simple fission (colony formation). This vegetative phase is stopped by an intrinsic force, but it can be either lengthened or shortened by external conditions (amount of food available, moisture, crowding) and it can be continued indefinitely by frequent change of surroundings."

Shortly before vegetative growth stops the second phase of the life-cycle begins, in which a few out of the great number of bacteria in a colony (either on solid or in liquid

nidus) go through segregation, autogamic conjugation, and, in certain circumstances, variation. In spore-bearing races the zygote forms the spore. Segregation in bacteria is the same as in higher forms; in it allelomorphic couples of the organism divide. We know little about the mechanism of autogamy, but it seems not unlikely that before segregation takes place each allelomorphic couple is represented in the 'anterior' and 'posterior' halves of the bacterium (Schindium and Dobell's pre-sporing division), and that, after segregation, and if nothing disturbs them, the 'right-hand' allelomorphs of one half of the body unite with the 'left-hand' allelomorphs of the other. At least this is as good a mental picture as any other. But, if a definite external stimulus is at the moment being on a heterozygous bacterium, then in the one pair (anterior and posterior) of allelomorphic couples which is concerned with the stimulus, the dominant allelomorphs are dissipated (as primitive polar bodies) the recessives come together, and the bacterium divides.

"The recessive so formed may also vary in simple fission if one of its recessive allelomorphs is not pure but is loaded with a fragment of the dominant factor. It may then vary in two directions—by increasing, or decreasing, this fragment."

### GUY'S HOSPITAL REPORTS

THE second quarterly number of this year's volume of the *Guy's Hospital Reports* contains eleven articles dealing with medical, surgical, and pathological subjects of great interest. In his full paper, recently read in abstract before the Odontological Section of the Royal Society of Medicine, on the relationship of oral infection to diseases of the skin, Dr H. W. Buber considers the diseases directly or indirectly caused by oral sepsis under seven heads, and, after insisting on the importance of studying the metabolism, diet, and environment of patients with chronic infections and of discovering the factors which reduce the resistance to the infecting organism, points out that a dramatic and complete recovery is unfortunately rare after removal of an obvious focus, is secondary and inaccessible foci are often present. Mr C. R. E. Freezer describes extensive cutaneous metastases in a case of latent carcinoma of the caudal end of the stomach, in which a remarkable power of producing scar tissue round the metastases was shown, so that a biopsy of a cutaneous nodule presented the microscopic appearances of a keloid. The extremely rare occurrence of acute suppurative gastritis is shown by the absence of this condition in the post-mortem records of Guy's Hospital during the last thirty years, and fully justifies the record of an example by Mr D. C. M. Ffles, who summarizes the literature. Dr B. G. Scholefield, Commonwealth Fund Fellow, describes experiments tending to show that the symptoms of acute intestinal obstruction are due to a soluble toxin absorbed through the portal system; he gives a critical review of the various methods of treatment. A case of subacute yellow atrophy of the liver after excessive doses of atrophin is recorded by Dr G. W. Rike, who also contributes an interesting paper on the pathology of rechaux of the cardia. Dr J. M. H. Campbell gives a detailed account of observations on the pulse rate after exercise in health and in heart disease. The clinical syndrome of intracranial meningism, described four years ago in these Reports by Dr C. P. Symonds, is illustrated by the report of a case of a probably congenital intracranial meningism in a boy, aged 18 years, associated with spontaneous subarachnoid haemorrhage; the patient was still alive at the time Dr Maurice Shaw wrote this article. Peritoneal sympathetomy is discussed by Mr J. G. Schlesinger, and Mr Philip Turner records with skilful analysis a case of fracture of the patella wired by the late Sir Henry Howe thirty-eight years ago. Dr W. I. Watt and Mr J. F. Custer Braine of the deep-sea department analyse the cases of leukaemia admitted to the hospital during the last twenty-six years with the object of assessing the value of the various methods of treatment.

*Guy's Hospital Reports*, vol. 77 (vol. 7 Fourth series) No. 2, April, 1927. Edited by Arthur F. Hurst, M.D., and W. H. Ogilvie, M.Ch. London: The Lancet Limited (Med. 8vo pp. 127-252, 27 figures. Annual subscription £2 2s; single numbers 12s. 6d. net.)

### NOTES ON BOOKS

STRUMPFEL's popular textbook of pathology and therapeutics, in two volumes, reached its twenty-fifth edition last year. It was soon exhausted, and a new edition of the first volume has again been revised by Professor CARL SEIFARTH. The opportunity has been taken to add some further details and illustrations, including a short reference to the Schick test. The absence of an index in this volume is regrettable.

A second edition of *Examination of Children*, by Dr A. LEVINSON, first published in 1924, has now appeared. While certain of the methods of examination have been expanded, the criticism previously made in our columns of the brevity of some of the descriptions and tests still holds good as an index of various kinds of clinical procedures the book is however of definite value.

Mr ROY CALVERT's book betrays its bias, first in Lord Buckmaster's introduction and secondly, in the very beginning of Chapter I. This is not a serious attempt to assess the value of capital punishment as a deterrent by a calm and reasoned consideration of the evidence, but, assuming from the beginning that capital punishment is wise, it is useless as a deterrent, it seeks to support this thesis by all available means. Most thinking persons are agreed that the present law, which makes no difference between the deliberate secret poisoner for gun who watches day by day the sufferings of his or her victim unmoved and pitiless on the one hand, and on the other the man who, goaded by provocation to fury, strikes down his enemy in a sudden rage, is unjust. Few will deny that there should be degrees of the crime of murder, and that there should be a punishment fitting to each degree. But not a few cultured and candid persons will admit that the reasonable certainty of the death penalty would not be the determining consideration to men's minds in deciding between committing and non-committing of a deliberate homicide. There seems to be a grotesque disproportion in the minds of certain persons between the value of the lives of cruel murderers and of those who go down to the sea in ships up into the air, or on roads and railways for the use and comfort of those gentlemen who sit at home at ease and shudder at the thought of the assassin perishing by the sword or noose or electric chair.

In a little volume entitled *ABC of Jung's Psychology*, Miss JOAN CORRIE aims to place before the educated layman the principal psychological views of Dr Jung of Zurich in simple and untechnical language, his own published works being, for the most part, as the writer observes in her preface, too abstruse for the general reader who is not a psychologist. The book contains four chapters: the first concerns "mind and its structure", the second, "mind and its functions", the third, "mind and its disturbances", and the fourth, "the significance of dreams". The second chapter includes a brief but clear account of Jung's 'psychological types'. The writer set herself a difficult task and has carried it out well.

"A Layman and his Wife" seem to have spent much of their time in constructing new or transforming old houses. They record their judgements on comfort, convenience and the saving of labour, in construction and fittings in their little book *Planning a Home*. They give floorplans for a 'well-end nest', a 'sunshine cottage', a 'house with angle bay', and a 'two mind house'. The subject is treated under the headings: aspect and site, roofs, walls, floors, windows and doors, with chapters on lighting, heating and plumbing. The authors are both forcible and witty. They think that the man who converts most of his small garden into a "ducky little fenced garden" will throw bricks at it in a year's time. They would reject a site where the water is contaminated by sewage, because through carelessness, ignorance, or haste unboiled water would probably be used sooner or later. They are very partial to flat roofs, but whether these are really suitable for the English climate, and how far they can be made to fit in appropriately with local scenery is perhaps doubtful.

*Lehrbuch der Speziellen Pathologie und Therapie der inneren Krankheiten* von Prof. Dr. med. Adolf Strumpf. Sechszehnte Auflage von Prof. Dr. med. Carl Seifarth. Ff. 1. Band Leipzig 1927. No. 11 1927 (Sup. 8vo pp. xi + 870, 160 figures, 10 plates. M. 45).

*Examination of Children* by Abraham Levinson, I.S.M.D. Second edition. London: H. Kimpston, 1927. (6 1/2 x 7 1/2 pp. 192, 8 figures. 15s. net.)

*Capital Punishment in the Twentieth Century* by R. Roy Calvert. With a preface by the Right Honourable Lord Buckmaster, P.C. London and New York: C. P. Putnam's Sons, 1927. (Cr. 8vo pp. xii + 201, 5s. net.)

*ABC of Jung's Psychology* by Joan Corrie. London: Hogarth Press, 1927. (Cr. 8vo pp. x + 85, 4 figures. 3s. 6d. net.)

*Planning a Home* by a Layman and his Wife. London: J. W. Arrowsmith Ltd, 1927. (Cr. 8vo, pp. 175, illustrated. 5s.)

# British Medical Journal.

SATURDAY, JULY 30TH, 1927

## THE EDINBURGH MEETING

THE ninety-fifth Annual Meeting of the British Medical Association ended on Saturday last, and all who visited Edinburgh for it can congratulate themselves upon having taken part in a great event in the history of our Association. Many circumstances combined to make it a brilliant success. The proceedings began auspiciously at a time when our Patron the King, and Her Majesty the Queen were on a State visit to Holyrood and the wonderful Scottish National War Memorial in the Castle was being opened by the Prince of Wales. The meeting coincided also with the celebration in Edinburgh of the centenary of Lister's birth, under the presidency of the Earl of Balfour, Chancellor of the University. But without such happy concomitants this medical congress in the Scottish capital was bound to be a memorable occasion. Edinburgh is the home of one of the world's great schools of medicine; for centuries it has bred a line of teachers and workers whose names are part of medical history, and it is regarded with loyal affection by all members of our profession, at home and abroad who have been trained within its walls. Moreover, the office of President is now held, at the unanimous wish of his colleagues in the city and district, by one of Edinburgh's most distinguished sons who, when the British Medical Association last met there twenty-nine years ago undertook the exacting duties of local general secretary. The high organizing ability, the kindly tact and discretion displayed by Dr R. W. Philip in 1898 have ripened if that were possible, in the intervening years, and this splendid gathering in 1927 will always be associated with Sir Robert Philip as its central figure and leading spirit. One thing further must be said of the Edinburgh Annual Meeting in general. To the beauty of its setting was added a most generous welcome from the Edinburgh Branch of the Association and its President, Dr John Stevens, from the University and from the city authorities, and no praise can be too high for the staff work of the indefatigable honorary local secretary, Dr Fergus Hewat, the local treasurer, Mr Alexander Miles, the deputy local secretary Mr Frank Jardine and the Scottish Medical Secretary, Dr J. R. Drever—to name only a few among the many who have earned our gratitude.

As had been foretold, the meeting was a very large one, the numbers far surpassing those of any year except 1910 when the Association last met in London. During the week 2,375 members registered but this figure takes no account of the many wives and daughters who also enjoyed Edinburgh's hospitality. Notwithstanding the large number of Sections, and all the temptations to play truant in and around the city, the attendance at the scientific and clinical proceedings was very good indeed, and, so far as an onlooker could judge from brief visits paid here and there, every speaker had an attentive audience, the debates went with a swing, and even the highest lecture theatres of the new University building could scarcely hold all who wanted to join in the work of the leading Sections. Credit for this success must be given to those who picked the subjects and opening

speakers and kept in hand the business of debate. We cannot attempt to sum up now the value of the work done in the twenty-one Sections but as will be gathered from the preliminary notes appearing this week and next in the Journal, and as the full reports will presently reveal much useful interchange of experience and opinion took place on matters of great importance to doctor and patient and to the public as well. The Pathological Museum was admirably planned and set out, and of the many interesting demonstrations arranged by the Museum Committee one at least must be noted here—the cinematograph film of living tissue growth shown and explained to full houses by Dr P. G. Canti.

Among those who took part in the scientific work were many distinguished colleagues from Canada, the United States, and the Continent, and their contributions lent an international air to the proceedings. Combined discussions such as proved so popular at Bath and Nottingham, were held again last week, each aspect of a topic common to two Sections being opened by some prominent worker. These joint debates not only help the expert to keep up with recent advances in neighbouring fields but attract the general practitioner who at one time long ago was inclined, so it has been said, to look upon the Annual Meeting as little more than an occasion for squabbles and oratory with a picnic at the end. A new Section, fittingly inaugurated this year was that of the History of Medicine a subject in which its President Dr John D. Comrie has interested large numbers of Edinburgh medical students during the past eighteen years. Now that the meeting is over he may perhaps forgive us for disclosing his authorship of the series of articles on Edinburgh which have lately appeared in these columns.

Before the scientific work began four days had, as usual, been spent by the Representative Body of the Association in shaping medical policy and reviewing finance, organization, and administration. A full account of the first two days' discussions appeared in the last issue of the Supplement and our report is concluded this week. From this full and detailed record—to which the informal commentary printed in the Journal under the heading 'Annual Meeting Notes' may serve as a key—it will be seen that a long agenda of medical political business was carried through and that several matters of much importance to the profession were advanced a stage. If on the whole the temperature of the Representative Body tends to be subnormal nowadays there are still a few subjects—such as the Memorandum on Lunacy Law and the report on the work and status of public school doctors—which seem able to cause mild pyrexia. There are moments, too, when a more general warmth comes over its proceedings. Dr Brackenbury ended on July 19th his third and last year as its accomplished Chairman and the personal ties between him and his fellow workers were very evident when illness kept him out of the chair for a day and again when it became known that the Council had elected him as its Chairman. The seven years spent in that office by Sir Robert Bolam have been time of growing prosperity for the Association and in all the progress made he can truly say. His resignation never gave Sir Robert Bolam's gifts been better applied than on July 15th when he put before the Representative Body the Council's plan for future building development at headquarters.

Upon the social side of the Annual Meeting of 1927 we will not dwell at length. Everyone knows enough of the tradition of Scottish hospitality, and that the great

capit it takes pride in doing these things as they should be done. The bigger the occasion the more certain one may be that Edinburgh will do it justice. It would therefore be impertinent to praise Edinburgh for the skill and grace with which she has entertained the British Medical Association at an exceptionally busy time, with the tourist season at its height and the King and Queen in residence. We will merely say that the ceremonies, receptions, dances, excursions, and parties, both public and private, were all and more than all we expected and, in the name of every one of the thousands who enjoyed these entertainments, we offer thanks to our colleagues and their fellow citizens.

### MEDICAL CONFIDENCES

We published last week the full text of the ruling by Mr. Justice McCauley, in a divorce case at the Birmingham Assizes on July 18th, with reference to the confidential nature of information given to the medical officer by a patient at a venereal clinic. The point had been obscured by the way in which the case was reported in the daily newspapers, and in order to make the matter clear we quoted a paragraph of the second Article of the Venereal Disease Regulations, which lays it down that "all information obtained with regard to any person treated" at a venereal disease clinic "shall be regarded as confidential," and to show the intention with which the Regulation was made we quoted also the explanation given in a circular issued with the Regulations. "It is," the circular said, "essential for the success of any measures designed to deal with venereal diseases that patients should be fully assured as to the secrecy of the arrangements." Mr. Justice McCauley referred to the Regulations, and said that doctors were not in a specially privileged position because they were acting in a department under the control of the Ministry of Health through the local health committee. He held that there was nothing in the Regulations which saved a doctor from the obligation of disclosing, if ordered to do so by the court, all the information he might have of the facts he had gained while acting under the Regulations. The information was therefore produced by the surgeon in charge.

In this ruling Mr. Justice McCauley followed that of Mr. Justice Horridge in a case heard in the Divorce Court in 1921. The late Dr. John Elliott of Chester was summoned as a witness, and called on to give evidence as to a disease for which he had treated the wife of the plaintiff. Dr. Elliott attended accompanied by counsel, but the judge refused to hear counsel. Dr. Elliott, on entering the box, asked the judge to exempt him, pointing out that he and other medical men had undertaken duties at the clinic on the distinct understanding that professional secrecy as to what happened there would be observed. He quoted the paragraph in Article II of the Public Health (Venereal Disease) Regulations which we quoted last week (and again in the opening paragraph of this article). The judge, however, said that the Ministry of Health had no power affecting the jurisdiction of the courts. When Dr. Elliott said that he was thus placed in a painful position, the judge made a distinction, which Mr. Justice McCauley clearly had in mind, and said: "You are bound to observe the regulations not to disclose voluntarily the information you have obtained, but it is your duty to give information to assist the administration of justice." Dr.

Elliott observed that the medical officers of the venereal disease clinics did not undertake not to disclose voluntarily, but undertook not to disclose it all, to this the judge replied that it was not an unfair obligation on doctors to assist in the administration of justice. Dr. Elliott then gave his evidence.

As we then observed, and as we repeated last week, it would appear that until Parliament interferes the undertaking given by the Ministry of Health in the Public Health (Venereal Disease) Regulations has become of no effect. The only remedy seems to be fresh legislation, and in 1921 the Council of the British Medical Association drew the attention of the Minister of Health to the subject, and urged that the necessary legislative steps should be taken. Nothing, however, has been done, at any rate, no public step has been taken, and the public, which it nearly concerns, as well as the medical profession, have regretfully to realize that the supposed protection afforded by the Regulations is illusory. A very similar condition may arise in connexion with other administrative procedures sanctioned by the Ministry of Health under the Public Health Acts. One such case came before Lord Mersey in the Divorce Court in 1921. A firm of solicitors had approached a medical officer of health to supply particulars with regard to the notification of a stillbirth. When he declined they applied to the local council, but its public health committee refused to give any information, stating that it viewed with apprehension any departure from the usual practice of treating such notifications as confidential, and considered such a course would be against public policy. The medical officer of health was subpoenaed. Before giving evidence he stated that he was instructed by his committee to ask for the judge's ruling, pointing out that hitherto notifications under the Public Health Acts and the Births Act had been treated as confidential. Lord Mersey said there was no reason why the notification card should not be produced, that there was no instruction in the Acts to the effect that the information was confidential, and that he did not consider the production of the card would be against public policy.

Before this, we understand, the Ministry of Health had submitted the general question as to the position in law of medical secrecy to the then Lord Chancellor in connexion with the confidential entries on medical history cards under the National Insurance Act. The then Minister of Health said that the Ministry recognized that important issues were raised, but that he was advised that a person might be compelled, by means of a subpoena duces tecum, to bring any document, private or otherwise, to the court. The document itself—in this case the record card—was not evidence of the facts stated in it, if it was desired to prove them this must be done in the ordinary way—namely, by the oral evidence of the doctor himself.

In connexion with the recent Birmingham case, Dr. Vernon Davies, M.P., raised the point as it affects venereal clinics by a question to the Home Secretary in the House of Commons on July 25th (see p. 194). The Parliamentary Secretary to the Ministry said that the matter was difficult, and that the Minister proposed to give careful consideration to it. It will be a pity if it is allowed to lapse again on the ground that it is merely a question affecting professional secrecy, for it affects the good faith of the Ministry to the public. The principle by which the members of the medical profession are guided is as old as Hippocrates: one clause of the Hippocratic Oath has been translated thus: "Whatever, in connexion with

my professional practice or not in connexion with it, I see or hear, in the life of men, which ought not to be spoken of abroad I will not divulge. I am reckoning that all such should be kept secret. The principle embodied in this has been accepted by the medical profession in all countries. Mr Justice McCardie distinctly recognized it for he said that the medical profession normally was under the duty of keeping inviolate the secret knowledge that they might gain from treating their patients, and indeed might become liable to a civil action for damages if without lawful excuse the duty of confidence was broken. But the Hippocratic words do not cover all cases uncertainty being introduced by the phrase which ought not to be spoken of abroad. The legal ruling is that as the law now stands certain information must be spoken of abroad if a judge sitting in a court of law so requires. But the matter as is very obvious concerns the public, who have accepted the undertaking of the Ministry of Health that statements made to the medical officers of a venereal clinic will not be disclosed. We are advised that the only remedy the Ministry of Health has is by way of special legislation which we venture to think should deal not only with venereal clinics but with other regulations under which the same or similar questions arise. We feel confident that in Mr Neville Chamberlain's hands the matter will not be allowed again to be forgotten.

## ANNUAL MEETING NOTES

### THE REPRESENTATIVE MEETING

#### Medico-Political Business

WE conclude in the SUPPLEMENT this week our full report of the Annual Representative Meeting of the British Medical Association held in Edinburgh on July 15th, 16th, 18th and 19th. On Saturday afternoon July 16th the representatives began consideration of the Medico-political report—by far the heaviest single section of its agenda. It is worthy of remark that when on Monday evening the Chairman of the Representative Body congratulated Dr Bone upon the completion of what was in his experience a "record" period in charge of the business before the meeting, no single recommendation of the Council on this section of its Annual Report had been rejected or withdrawn, none had been substantially modified, and one point only had been referred back (by a very narrow majority) for consideration. Apart from those recommendations the motions and amendments accepted by the meeting whether from Divisions or from individual representatives, served in the main to emphasize supplement, or elucidate rather than to limit the policy laid down in the report while the discussion on those which were rejected or not submitted to a division showed the wisdom of the Medico-Political Committee in refraining from putting forward definite proposals upon those points at present. Fees and salaries were perhaps less prominent this year than has sometimes been the case though the meeting received with great satisfaction the report from the Chairman of Council of the settlement of the difficult question of adjusting the scale for medical officers of health to meet Scottish conditions. Point of importance were settled by the meeting in connexion with the responsibility of local authorities for midwifery and ante-natal work and the conditions of consultation under the puerperal privacy regulations. The suggested application of the principles governing the accepted policy of the Association as to maternity and child welfare services and the treatment of school children to the general provision of orthopaedic treatment was accepted. The policy of the Association

was adjusted to the existing conditions of administration of general anaesthetics by dentists for dental purposes, and a scale of fees laid down for anaesthetics given by medical practitioners in connexion with dental benefit under the Insurance Acts. The tone of the general discussion on these and certain minor matters made it very clear that the Representative Body no less than the Medico-Political Committee of the Association is deeply concerned so to direct the increasing volume of communal effort in the provision of health services as to safeguard and extend the scope of the basic activities of the general practitioner, and to ensure a just measure of co-operation between the family doctor the specialist, the whole-time health officer, and the general public. More particularly it emphasized the growing preoccupation of the profession with the position of the general practitioner in the development of ante-natal and midwifery services. The general debate upon the motions by Brighton on the State and medical practice, by Turbridge Wells on whole-time officers and medical practice, and by Dr Renton and Dr Paven instructing the Council to consider the Midwives Act 1913, in the interests of all concerned with ante-natal work, served to allow free expression of the general feeling on these points. The last mentioned motion leaves the Council with a mandate to constructive work of the first importance during the coming session. Apart from these propositions the attention of the meeting was chiefly engaged by the papers proposed for the development of the medical service of public schools and the standardization of the conditions of service for public school medical officers. The difficulty raised by Dr Peter Macdonald in connexion with the determination and publication of a binding policy before consultation with the governing bodies of schools was met by discussing the whole subject in committee—a procedure that calls to mind the trouble done by the National Insurance Bill. Only one point in the dental policy set out in the Council's report proved a source of any keen controversy—the question of the benefit of periodical medical inspection of the school medical officer from resident to day pupils. In committee the meeting favoured restriction of this service both in the case of the whole-time medical officer (as proposed by the Council) and in that of the part-time medical officer. On report Dr Middleton Martin secured its reference for reconsideration by the narrow majority of 24 to 23 on a recount. The Council now in a position to discuss the whole matter with the governing bodies of public schools and with the headmasters and headmistresses.

On the Supplementary Report of Council the Chairman of the Committee and Sir Richard Luce explained the results of the Association's efforts to secure the modification of the Trade Disputes Bill and the Lordlord and Tenant Bill in the interests of the profession and the point still at issue in connexion with the Registration of Nursing Homes Bill. After the lunch interval Dr Brackenbury, who had been warmly welcomed on his return to the chair that morning, suspended consideration of the Medico-Political Report to allow the Overseas Branches to be taken at the agreed time and the meeting had an opportunity of hearing the representatives of the Overseas Branches. It was natural in view of the happening of the previous year that the speakers were mainly drawn from the ranks of the South African Branch. Tribute to the value of the Association work and especially to the results of Dr Cass mission to South Africa was much appreciated. The meeting also heard with interest explanation of local conditions from representatives of Ceylon and Burma.

#### Conclusion of the Meeting

The approval of the Medico-Political Report was followed by a prolonged discussion on the Memorandum from the



Lunacy Law Committee under conditions briefly explained in this column last week. The discussion, which is fully reported in the SUPPLEMENT this week, was continued on the resumption of business at the unusually early hour of 8.30 on Tuesday morning, and left the meeting with a considerable volume of work to be completed between the opening of the Annual Exhibition in the morning and the service at St Giles's Cathedral in the afternoon. The remainder of the agenda, however, proceeded singularly little discussion, although it included several matters of importance, notably the Council's proposals in connexion with the development of Ophthalmic Benefit. It may be hoped that the decision to accept the contribution offered by the trustees of the National Insurance Defence Trust to the Medical Representation in Parliament Fund, together with the proposed concentration upon securing the election of medical representatives for University constituencies, will mark a definite advance towards the attainment of adequate representation of professional opinion in Parliament. But if so, the passive acquiescence recorded by the Representative Body to Dr Le Fleming's plea for an increase in individual contributions must be supplemented by a fuller measure of material support than it would in itself seem to foreshadow. On the Public Health and Poor Law Report, Dr Lenys-Lloyd explained the part which should, in the opinion of the Council, be taken by the Association, both centrally and within the Divisions and Branches, in the education of the public in health matters, and suggested that, to avoid the overburdening of local societies, the new work should be carried out by *ad hoc* committees with special societies. The discussor showed that the ideas underlying the resolution of the Nottingham meeting and the proposals formulated by the special sub-committee to which the matter was referred are gaining ground definitely, if slowly, within the Association. On the report on Poor Law reform Dr Brackenbury explained the way in which the new proposals, published by the Minister of Health since the completion of the Annual Report of Council, exclude that unification of local health administration which is a cardinal point in the Association's policy. He emphasized the need for securing some modification in these proposals before they are embodied in the projected bill.

The National Health Insurance and Hospitals Reports gave rise to a certain amount of discussion, but elicited little real opposition to the policy outlined by the Council. It was clear that the need of a clinic system in the development of ophthalmic benefit was fully recognized, alike by ophthalmic surgeons and by the Representative Body at large, and that the meeting was content to leave to the Council the elaboration of a scheme embodying the requisite safeguards. The discussion on hospital policy showed that the period of general education in the policy of the Association is bearing fruit. On the one hand, there was no opposition to the proposal to impress upon visiting staffs the importance of securing satisfactory recognition of their services in accordance with the Association's policy, on the other the Chairman of the Hospitals Committee was glad to accept, on a motion from Sainsbury, the instruction to consider the formulation of a middle-class hospital policy, and the reference to consider the detailed proposals put forward by Brighton for the application of the hospital policy in the better regulation of the contributory schemes which are permeating the whole hospital system of the country. The points made by Dr Fothergill in his presentation of the motion commanded general support. For the rest, the amendment of the Council's recommendation as to the staffing of clinics and hospitals for the early treatment of mental disorders, proposed by Mr Masterman and Dr Gillespie of Belfast, was accepted by Mr South as a better expression of the real intention of the Council than the original motion. The object was not to exclude

any group of medical men from their proper sphere of work, but rather to prevent the exclusion of specially qualified private practitioners from a field of service in which their work is of value. On the Naval and Military Report Sir Richard Luce emphasized the advantages offered to entrants to the R.A.M.C. at the present time. In presenting the report on medical benevolence Dr Walker had once again to appeal for more effective support of medical charities, but on this occasion he was able to refer to signs of real progress made under the Association's scheme. The proposed reconstitution of the Charities Committee was approved. No discussion arose on the reports from Scotland, Wales, and Ireland. Dr Hugh Miller called attention specially to the development of the social side of the Association's work, made possible by the possession of its new House in Edinburgh. Sir Ewen Maclean for Wales (in the absence of Dr W. E. Thomas, Chairman of the Welsh Committee) and Dr J. Mills for Ireland both emphasized the great value of the help received from Dr Cox in all local difficulties. The meeting closed with the usual votes of thanks.

#### THE PATHOLOGICAL MUSEUM

The organizers, no less than the exhibitors, are to be congratulated on the arrangement of the demonstrations in the Pathological Museum. The grouping of the exhibits according to particular departments in medicine, and the appointment of one authority responsible for each, contributed greatly to the success, and the large hall of the Anatomy Department, in which the demonstrations were assembled, was ideal for the purpose. It would be impossible in a short notice to detail all the interesting exhibits, and invidious to select for special mention any one, seeing that the level was so uniformly high and so varied in its appeal that one would have to be an expert in many departments of medicine to appreciate everything thoroughly. The writer of this note, therefore, can only state what appealed to him most, pleading his ignorance of the other groups so beautifully illustrated. Quite interesting, though not emphasized in the official programme, were the large-scale histological illustrations of pathological conditions—the work, it is presumed, of Mr Richard Munro—which gave one the clue to the success of the Edinburgh methods in the teaching of students, and the beautiful wax models of skin diseases and syphilitic conditions from two separate departments of the University confirmed that impression. Of special interest was the excellent series of specimens of gall bladders removed at operation, showing single cholesterol stones causing mucocele or empyema, mixed gall stones with various pathological conditions, and chronic cholecystitis of different grades, all shown by Professor D. P. D. Wilkie. A very instructive exhibit, arranged by Mr J. N. Hentley, demonstrated many pathological conditions of the thyroid gland. Some rare inflammatory states—such as tuberculosis, syphilis, and Riedel's thyroiditis—which present great difficulties in diagnosis, were illustrated. Simple goitres, parenchymatous, colloid, cystic, and nodular goitres, together with lingual and mediastinal tumours, formed an interesting group. The two types of toxic goitre—the exophthalmic and the toxic adenoma—and the various simple and malignant neoplasms, were also included. Professor John Fraser demonstrated large sections of the mammary gland in various normal conditions, in the resting stage and as affected by the menstrual function, as well as studies of the gland in malignant disease, showing the routes of lymphatic dissemination within the organ, and several uncommon varieties. One of these, showing cancerous formations in the wall of a large cyst which had existed for forty years, was of peculiar interest, in that it suggested that the irritation of the contents had produced the neoplastic response. It is almost ungracious to point out that this

excellent demonstration was missed by the inclusion of a diffuse eucnemoma of the breast which was wrongly labelled as a hyperplasia in a virgin breast due to menstruation and by the prominence given to a very common histological type which was said to be a rare comedone variety. In the histological section, under the charge of Professor T. J. Mackie, there was an interesting exhibit showing the whole range of spirochetal infection. The demonstration of the renal circulation in the human subject, in the foetus, and in childhood, and in various animals, given by Mr. D. M. Morrison attracted much attention. To obtain these specimens the torts had been injected with coloured celluloid dissolved in acetone, and when this material had set the soft tissues were macerated away by means of hydrochloric acid leaving the beautiful rhorescent vessels. Dr. James Davison showed a series of specimens illustrating different types of diseases of the liver, especially atrophic cirrhosis and acute and subacute yellow atrophy. Along with these were specimens of liver necrosis and cirrhosis produced experimentally in rabbits by means of coal tar. Very striking too, were the paraffin sections of whole lungs in children, illustrating the processes of lobar pneumonia, bronchopneumonia, emphysema gangrene, pyemia and tuberculosis. Altogether the Pathological Museum was one of the best and most complete exhibitions of recent years.

#### A NEUROLOGICAL CONFERENCE

SOMETHING like an international conference of English-speaking neurologists is taking place in London this week. It is composed of members of the American Neurological Association and the Section of Neurology of the Royal Society of Medicine. It was opened on the evening of Monday, July 25th when the members attending the conference were received by Sir James Berry (President of the Society) and Lady Berry. During the evening Sir James Purves-Stewart, President of the Section of Neurology, gave a lantern lecture describing a visit which he had paid to the holy mountain of Athos, situated on one of the three prongs of the Chalcidice Peninsula projecting into the Aegean Sea. The district is famous for its monasteries and hermitages, founded and maintained by various nations belonging to the Eastern Church, some of them of great antiquity. From this monastic republic women are banished and the ban even extends to animals of the female sex so that there are no cows for milk or hens for eggs, but from his own experience Sir James Purves-Stewart unguined that female insects were exempted! He gave a nice account of five days spent on the peninsula, during which, travelling along lonely mountain tracks or through dense forest, he contrived to visit thirteen out of the twenty monasteries. He found them rich in objects of devotion but extremely primitive in hygienic and refectory arrangements as did Curzon, who visited some of them in 1837, bought as many illuminated manuscript as he could, and related his travels in a most fascinating book, *Travels to the Monasteries in the Icarus*. The largest of the monasteries Sir James Purves-Stewart reached was founded in 661 in its palm days it had 500 monks but has now only 140. Each monastery lives its own independent existence, not fraternizing with the others, though to some extent in competition with them, especially over the possession of sacred relics. At one monastery was the mummified left forearm of St. John Chrysostom, while at other monasteries were his sacrum, his tibia, and one of his tarsal bones. The mummified right forearm of St. Andrew the Apostle, his tibia, his humerus and the lower end of one femur were all under different guardianship. Then there was the ulnar bone of the woman of the well in Samaria, the right hand of the mother of the Virgin Mary, the lower jaw of John the

Baptist, the lower jaw of St. Luke, the tibia of Zarlana and the skull of St. Basil. Other relics, some of them reputed to be wonder-working, were the wood of the true cross, fragments of the red robe of Pontius Pilate, and various icons, said to have been painted by supernatural hand. Of the real artistic treasures on the peninsula the most noteworthy was a thirteenth century paten cut from a single plate. The rank and file of the monks appeared to be of subnormal intelligence, they belonged mainly to the peasant class, most of them were illiterate, their dull eyes flashed no religious fire, their waking hours were mostly occupied in the recital of prayers or in rest and contemplation in their cell. They had no intellectual or social life, and their only labour was to tend a few olive trees. They looked flabby and pale-faced as in an occasional day's work would do them good. In the sick compounds the principal trouble was senile decay in their old age, and some were also suffering from dyspepsia and malaria, or from pulmonary or joint tuberculosis unrecognized or untreated. The impression he took away from the whole peninsula was of oppressive silence and mental stagnation. Some of the monks said and thought the great majority of monks sat! After the lecture the company adjourned to the library for music and refreshments. The serious business of the conference began on the following day, the morning and afternoon of which were occupied in the reading and discussion of short papers. On Wednesday there was a debate on the cerebellum and on Thursday on encephaloid disorders in organic disease of the nervous system. These we hope to report, along with the Hughlings Jackson Lecture by Dr. Charles L. Dana in our next issue.

#### WEST LONDON POST GRADUATE COLLEGE.

THE statement recently made in the House of Commons by the Minister of Health describing a plan for making the West London the hospital of a post-graduate medical school lends special interest to the arrangements now and for a good many years existing at the West London Post-Graduate College. The hospital was founded in the year 1856 and incorporated by Royal Charter in 1894. It is situated on an island site 3½ acres in extent, the present front of the hospital is at one end of the area which extends backwards from the main road for a considerable distance. During the last fifteen years the hospital has acquired the freeholds of all the houses on this site. The present hospital contains 226 beds but its extension to provide between 400 and 500 beds is in contemplation. The calls made by the population surrounding district on the limited accommodation of the present hospital are very numerous, and beyond its present resources. With the exception of St. Mary's Hospital, which lies to the north, it is the only general hospital west of the district served by St. George's Hospital and there is now nearly a mile of London to the west of Hyde Park Corner as there is east of that point, the town has been growing westward at a great rate. The West London Hospital is easily accessible there are a tube station and two Metropolitan stations within half a minute's walk and omnibuses to all parts of London pass the door. Post-graduate instruction has been carried on continuously at the West London Hospital since 1895 and many thousands of medical men from all parts of the world have attended the classes and demonstrations there. The West London was the first hospital in London where the practice of the hospital was reserved strictly for qualified practitioners—men at first, but now women also. It is claimed that the Post-Graduate College was the earliest institution of the kind to be attached to a general hospital. The first dead and moving spirit at its inception was the late Mr. L. A. Bidwell. Under existing arrangements any qualified practitioner can attend the hospital practice for a week, a

month, three months, or a year, commencing at any time, but the teaching is divided into three sessions—October to Christmas, January to Easter, May to the end of July. At other times practitioners attend the ordinary hospital practice, but no special classes or demonstrations are given. Medical men in practice in the district can take out annual tickets at a reduced rate. Post-graduates are appointed to clinical assistantships in the various departments for periods of three or six months. These appointments are made by the house committee of the hospital on the recommendation of the college committee. There are four clinical assistants in the department of anaesthetics, who administer anaesthetics personally under the supervision of the honorary anaesthetists. It has always been the aim of the Post Graduate College to give continuous instruction for graduates according to a definite weekly syllabus rather than to arrange intensive fortnightly courses, special courses can, however, always be obtained provided not less than six graduates intimate to the dean that it is their wish for such special instruction. A reading room and smoking room are provided.

### CONTROL OF SCARLET FEVER

A REPORT recently issued by the Ministry of Health on some administrative aspects of scarlet fever consists, as its subtitle sets out, of a report on current English public health practice in the control and treatment of scarlet fever. It has been prepared by Dr Allan C Parsons with the assistance of a committee of medical officers of the Ministry of Health, from material mainly furnished by medical officers of health and superintendents of isolation hospitals. While the main object of the inquiry was to collect facts and figures relating to certain administrative methods employed by various local authorities for the control of scarlet fever, the personal opinions of the various medical officers of health and superintendents were invited on particular points. The facts, figures, and opinions are first set forth at length and summarized, and the conclusions of the officers of the Ministry of Health are given subsequently. The customary length of detention of scarlet fever patients in hospital and the effect of a longer or shorter retention on the occurrence of return cases or complications was one of the subjects discussed. The conclusion was that there is no good reason for prescribing a routine period of detention of more than four weeks in uncomplicated cases, while in others the period should be based upon the patient's general clinical condition. Although the number of scarlet fever patients who require the benefit of hospital treatment is held to form a very small part of those attacked, a very large proportion of the cases, especially in London and the larger cities, are at the present time removed to isolation hospitals. On this point the view expressed is that the right of admission should be restricted to severe cases and to those occurring in houses where other members of the family are engaged in milk-selling, clothes-making, and so on, or where there are several susceptible children. It is considered that, generally speaking, a close investigation of home conditions would probably show that more patients could be treated at home without harm to the public, their families, or themselves than is at present the practice. As to the question of terminal disinfection, Sir George Newman, in his preface, states that a large amount of popular "disinfection" is not only entirely inefficient, but wasteful and absurd. A comparison of the results as indicated by the percentage of secondary cases in towns and districts where traditional methods of disinfection are in vogue with those of towns and districts where they have been dropped or materially modified shows that there is not much difference. Other

questions discussed in this interesting report are the circumstances which govern the policy of removal of scarlet fever patients to hospital, the employment of otologists on the staff of fever hospitals, the value of the Milne treatment, and the bacteriology of scarlet fever.

### GIFT OF AN INSTITUTE OF BIOCHEMISTRY TO THE MIDDLESEX HOSPITAL

A WIDE vision and wise judgement, in conjunction with generous philanthropy, were shown by Mr S A Courtauld when he gave £40,000 to the Middlesex Hospital for an Institute of Biochemistry, which is to be named after him. By this gift Mr Courtauld has shown his keen appreciation of the great part science plays in practical medicine. Although it is only in quite recent years that the term "biochemistry" has become familiar, yet it is not a new science. The end of the eighteenth century was marked by Lavoisier's researches on the chemistry of respiration. Even earlier than this Willis made the illuminating discovery, by chemical examination, that sugar was present in the urine of the diabetic patient. The discovery of the microscope allowed the gap between plants and animals to be bridged. Minute organisms were found to be the causes of fermentation, putrefaction, suppuration, and many infective diseases. In the nineteenth century the famous researches of Dr Richard Bright showed the relation between the blood and the urine in kidney complaints. Sir Alfred Garrod proved by biochemical study that gout is associated with excess of uric acid in the blood. In more recent years chemical methods have been applied to many physiological problems, and some of the great discoveries biochemistry has given us have already passed into the routine of medical practice. Nevertheless, it was not until 1912 that analysis of the blood was made use of in clinical medicine, but since then the chemical pathologist has rendered valuable help to the clinician. Professor E C Dodds has informed us that in the year 1921 87 specimens were sent to the biochemistry department from the hospital for a report, in 1925 the number was 12,457. This great increase in the work of the department has been handicapped by lack of space. The new Institute of Biochemistry now founded will therefore be heartily welcomed by all officers of the hospital, and also by scientific investigators everywhere. The institute will work in conjunction with the hospital on the one hand, and with the Bland-Sutton Institute of Pathology on the other. The proceedings at the ceremony at the Middlesex Hospital on July 26th, when Mr Courtauld laid the foundation stone, were opened by H R H Prince Arthur of Connaught, chairman of the board of governors, who, after welcoming the visitors, expressed the gratitude of all concerned to Mr Courtauld for his wise and liberal gift. Sir John Bland-Sutton then gave an address on biochemistry in relation to medicine, in which he outlined the meaning and growth of this department of science, and concluded by expressing the hope that a discovery might one day be made within the walls of that laboratory which would make the world gape with astonishment. Mr Courtauld then inserted in the cavity prepared in the foundation stone a glass vessel containing, among other things, certain preparations of internal secretions made by processes devised in the Department of Biochemistry of the Bland Sutton Institute of Pathology. Mr Courtauld then proceeded to lay the stone, having first been presented with a replica of an ancient Greek Roman spatula by the architect, Mr Albert W Hall, and with a fifteenth century Italian bronze pestle and mortar by a representative of the builders, Messrs Holland and Hannen and Cubitts. A vote of thanks to Mr Courtauld, proposed by Mr S G Asher, chairman of the council of the Medical School, and seconded by Mr A E Webb-Johnson, the honorary

treasurer, was enthusiastically earned. The Institute of Biochemistry is to be a five-floored building containing laboratories fully equipped with all requirements.

### THE GOLD COAST

THE Gold Coast owes its name to the joy with which early explorers detected grains of gold mixed with the sand of the rivers. Its prosperity is now due to the trade in cocoa. In 1925 it furnished nearly half the world's supply of cocoa, and if the adjacent territory of Nigeria is included fully half. The next large exporters are Brazil, Ecuador, and San Thome. The name "Gold Coast" is now generally understood to mean the British Colony, which includes a vast territory in tropic Africa much larger than was indicated by the fringe of red marked on the maps of the last century, for it embraces the Gold Coast proper, Ashanti, the Northern Territories, and the British Mandated Territory of Togoland. The Governor, Sir F. G. Guggisberg, has recently issued a review of the events on the Gold Coast from 1920 to 1926, together with a forecast for the years 1927 and 1928. It gives a picture of an active administration, in close touch with the natives, the planters, and traders. The political organization of the country is described, as is the manner in which the native chiefs are supported in their authority, and serve to inform the colonial administration of the course of events. The chiefs are the popular representatives in a country where there is no place for plebeians. Large expenditure has been incurred to encourage trade, two fine harbours have been built, railways laid, and roads cut and their surfaces treated with tar. Water supplies have been established, with water rates in towns and tickets for water in the country. There are telephones and telegraphs, the former being the more used in a country where many of the minor officials are illiterate. But of most interest to us is the growth of measures for the public health. The old makeshift hospital barn with its leaking roof is gone, and there is now a really efficient headquarters of medicine and surgery, and one that has been so planned as to be capable of "indefinite expansion." Sufficient land has been obtained for the construction of the future medical school, with all the necessary accommodation for students, not omitting recreation grounds. In reckoning the accommodation needed the authorities have looked far ahead and proposed that this medical school shall serve all the British West African colonies. A scheme has been drafted and is now under the consideration of the Secretary of State. It is hoped to secure a full medical training for African medical students, besides continuing to furnish junior African medical officers, and also to train nurses and midwives. Some indication of the need is shown by the death rate of infants in the colony, which in some places is over 400 per 1,000 births. Note is made of a difficulty that arose out of the appointment of a fully qualified native doctor to the charge of a township where lived some twenty Europeans. The desired that the local doctor should be a European, and a question was asked in the British Parliament. The position has not been changed and the Governor defends it on the ground that there is a white doctor in the next town thirty miles away on the railway. The medical staff of the colony numbers sixty even, and three of them are natives. The number of cases of tuberculosis which come to light is increasing annually, but steps are being taken which it is hoped may prevent further spread. A start has been made in the treatment of leprosy by the formation of a lepers' camp on a small scale. The death rate of the European officials has fallen from 20.6 per 1,000 in 1903 to 12.8 in 1924, while during the same

period the invaliding rate has fallen from 65.1 to 21.7 per 1,000. The colony produces, not gold, but cocoa. The Governor declares the first aim of the Government's agricultural policy to be "the protection, improvement, and development of our staple product—cocoa."

### GRENFELL OF LABRADOR

THE KING has conferred the K.C.M.G. upon Dr. William Thomson Grenfell in recognition of his medical missionary work for thirty-five years in Newfoundland and on the Labrador coast. The announcement of this was made by the Governor of Newfoundland on July 25th, at the ceremonial opening of the new Grenfell Hospital at St. Anthony, Northern Newfoundland, which has recently been erected at a cost of £30,000. Sir William Grenfell, who was born in 1865, received his medical education at Oxford and the London Hospital, where he was house-surgeon to Sir Frederick Tierce. Since the commencement of his work in connexion with the Mission to Deep Sea Fishermen in Labrador in 1892, he has brought about the building of four large hospitals, seven cottage hospitals, two orphanages, four public schools, and numerous other institutions. He has also raised an endowment fund of £200,000 for the maintenance of the work. During the war he came to Europe and served with the Harvard Surgical Unit. While in this country it occurred to him that his experience gained in Labrador and North Newfoundland as to clothing in hard weather would be of value to the British army, and he wrote for this JOURNAL a paper, illustrated by drawings on clothing against cold, which was published in our issue of January 15th 1916 (p. 26). Sir William Grenfell has already received many distinctions. He was made C.M.G. in 1906, has received honorary degrees from Harvard and Toronto, and was awarded the Murchison bequest of the Royal Geographical Society in 1911. He is a Fellow of the College of Surgeons of America, as well as of the Royal College of Surgeons of England.

### THE DISPOSAL OF THE BODIES OF STILLBORN CHILDREN

WITH the coming into force of the Birth and Death Registration Act 1926 several questions have arisen with regard to the disposal of the bodies of stillborn children in particular circumstances. These circumstances are probably not of common occurrence, but when the questions do arise they are of considerable importance. It is necessary therefore to have a clear idea of what the law now requires, and to remember that not the recent Act alone, but also the Cremation Act and Regulations determine this matter. Requirements arising out of the new Act have been fully set out in an article in the JOURNAL of June 18th last (p. 1118) and in a note in the SUPPLEMENT of July 2nd. These need not be repeated in detail. It may be said, however, that every stillbirth must now be registered and that no body of a stillborn child may be buried in a burial ground "without the prior production of a registrar's certificate, or, if an inquest has been held of a coroner's order. There is no legal necessity for the production of such a certificate or order if the body be buried elsewhere than in a burial ground, and there are no restrictions on such disposal of the remains of stillborn children. It would obviously be a wise and proper precaution, however, on the part of any person so disposing of the remains, with regard to the disposal of the body of a stillborn child by cremation, the position is as follows: Section 8 (1) of the Cremation Act, 1902, and Regulation 3 of the Cremation Regulations, 1920, provide that no cremation of human remains shall take place except in a crematorium, of the opening of which notice has been given to the Home

<sup>1</sup> The Gold Coast. A Review of the Events of 1926 and the Prospects of 1927. By His Excellency the Brigadier General Sir Frederick Gordon Guggisberg, K.C.M.G. Governor etc. Accra, 1927. (Pp. 8vo pp. 347.)

Secretary and in accordance with the regulations made by him. The expression "human remains" here includes stillbirths, and such remains therefore cannot lawfully be disposed of by cremation except at places and in the manner indicated. In this case also the production of a certificate, in pursuance of Section 7 (4) of the Births and Deaths Registration Act, 1926, that the stillbirth has been duly registered is necessary before the cremation of the remains of a stillborn child can be permitted.

### THE TRAFFIC IN OPIUM AND OTHER DANGEROUS DRUGS

WE have received from the Home Office a copy of the report to the League of Nations by the British Government on the traffic in opium and other dangerous drugs for the year 1926. The report is one of a series furnished annually to the League of Nations, in accordance with a scheme of the Opium Advisory Committee of the League, which, under Article XVIII of the Treaty of Versailles, concerns itself with the traffic in dangerous drugs. This is the first occasion on which such a report has been communicated to the press. It deals mainly with the system of control of importation, exportation, manufacture, and sale of opium (raw, "prepared," and medicinal), morphine, heroin, cocaine, etc., which was instituted, at the suggestion of the British Government, under the International Opium Convention concluded at The Hague in 1912. As explained in the *BRITISH MEDICAL JOURNAL* (March 12th, p. 481, and July 16th, p. 107), the later Opium Convention concluded in February, 1925, is as yet inoperative, owing to insufficient ratification, and the Hague Convention remains the only international instrument for the control of traffic in these drugs of addiction. Reference is made in the report before us to the better control of internal traffic in these drugs in accordance with new regulations, framed in 1926 under the Dangerous Drugs Acts, whereby medical tribunals have been instituted to which the Home Secretary may refer cases of suspected illicit use, more strict measures have been taken to prevent addicts obtaining supplies from more than one doctor, and records are required to be kept by all doctors, dentists, and veterinary surgeons of purchases of dangerous drugs. Statistics are given which show that the amount of morphine and its salts manufactured in, and exported from, Great Britain was less in 1926 than it was a few years ago. Only two firms in Great Britain—both in Edinburgh—are licensed to manufacture morphine, while seven firms were, in 1926, licensed to manufacture medicinal opium. Interesting figures are given of the estimated consumption of opium, morphine, heroin (diacetyl-morphine), and cocaine in hospitals in Great Britain in 1925. They are as follows: opium 750 lb., morphine 1,149 ounces, heroin 403 ounces, and cocaine 1,669 ounces. It appears that in 1926 95,173 lb. of raw opium were imported into Great Britain from India, as against 40,885 lb. from Turkey, and that Indian opium is now the chief source from which morphine, its salts, and derivatives, are manufactured in this country, some 3,040 lb. of Indian opium were last year exported from Great Britain to the United States. The report states that "information received by His Majesty's Government during the year (1926) shows that the illicit traffic in drugs continues on a large scale." Two seizures of British-made morphine dispatched through Czechoslovakia on import certificates issued by its Government, were made in Shanghai by the Chinese postal authorities. Another seizure was made of the huge amount of 8,200 ounces of heroin at Hong-Kong in the luggage of a passenger on a steamer from Europe, dispatched from Switzerland via Marseilles. There is good ground for believing in the existence of powerful syndicates operating in Hong-Kong, Amoy, Tonkin, Shanghai, etc., in this illicit commerce. In

March, 1926, in Englishman was arrested in London in unlawful possession of twelve 1-lb. tins of cocaine, smuggled into this country from Germany. Likewise at Kingston, Jamaica, a case of opium, consigned, it was alleged, under certificate to Bluefields, Nicaragua, was confiscated. The Government of Nicaragua pronounced such importation illegal, and vouchsafed the information that the amount of opium consigned was so great that even in fifteen years it could not have been consumed for legitimate medical purposes. These extensive smuggling operations which are exposed, to say nothing of those which escape detection, serve to emphasize the urgent need there is to restrict the production of these dangerous drugs—at their source—to medical and scientific requirements only.

### PUBLICITY

SIR THOMAS HORDER has had occasion to protest in the columns of an evening paper against what he describes as a garbled account of some remarks he made during the MacAlister Lecture delivered to the newly founded London Clinical Society on July 7th. The publication drew a letter from a correspondent of the evening paper, which showed that this reader, at any rate, had misapprehended at least one opinion expressed by Sir Thomas Horder, and this seems to have led him to make his protest. We are given to understand that the officers of the society had originally invited the wives and friends of doctors to the lecture, and that a notice to this effect appeared in the lay press, though not as the result of any action of the society. At Sir Thomas Horder's request the society afterwards sent out a notice to the newspapers stating that the lecture was not open to laymen. The president of the society informs us that he is confident no lay reporter was present. His inference is that the report published in the evening paper must have been supplied by a medical man. If this conclusion be correct, we can only agree with Sir Thomas Horder in thinking this action regrettable, we must assume that the chairman took care to explain to the meeting that the lecture was not to be reported, but would be published in full in the *Lancet*, where it appeared on July 16th. Any medical man present at the lecture ought to have respected the wish of the society and of the lecturer. It would then have been open to the newspapers to quote what Sir Thomas Horder actually said, or, had they preferred a shortened version, they would have found it in our issue of July 16th (p. 107). We also think that it would have been only courteous for the evening paper to wait until it had an authorized report or abstract. It is very easy in technical matters to fall into an error of interpretation, and it could not really matter very much to the lay reader whether his newspaper gave him Sir Thomas Horder's opinion on a technical matter in one week or in the next.

WE regret to announce the death, on July 26th, of Sir H. Bryan Donkin, at the age of 82. We hope to publish a notice of his life in an early issue.

THE University of Edinburgh is about to lose two of its most distinguished professors. Professor G. Lovell Gulland has, under the age limit, retired from the office of physician to the Royal Infirmary, to which he was appointed in 1911, and has also resigned the chair of medicine, to which he was appointed in 1915. Professor James Cosser I Watt, M.D., F.R.S., who has been professor of natural history since 1882, has retired also. His numerous researches have been concerned chiefly with fish and fisheries, and with the history of the development of horses, a subject which at one time led him to investigate telegraphy.



## LISTER CENTENARY CELEBRATION AT EDINBURGH

It was held to be fitting that in the centenary year of Lord Lister's birth the meeting of the British Medical Association in Edinburgh should include the celebration of the centenary. Lister was house-surgeon at the Royal Infirmary, Edinburgh, 1854-55, lecturer on surgery, Edinburgh School of Medicine, 1855-60, assistant surgeon, Royal Infirmary, 1856-60 and Regius Professor of Clinical Surgery, University of Edinburgh, 1869-77.

The meeting was held in the McLellan Hall of the University on the evening of July 20th. The vast building up to the dim recesses of the upper gallery, was filled and it may be wondered how many heard the speeches, in spite of microphone and amplifiers. The Chairman was the Chancellor of the University, the Earl of Balfour, and the procession to the platform, headed by the university and city forces, included the most prominent figures in the academic and public life of Edinburgh as well as the President of the British Medical Association, the Chairmen of Council and of the Representative Body, and other principal officers, and distinguished guests of the Association from foreign countries and the dominions. A very large number of those present wore academic robes and the white with the bright dresses of the ladies made the spectacle one of great brilliance. A programme of organ music preceded the celebration.

### Lord Balfour's Tribute

The EARL OF BALFOUR said that it was unthinkable that the British Medical Association should meet in Edinburgh in the Lister centenary year without calling together an assembly such as this to do honour to the great surgeon. Though Lister was not born north of the Tweed, yet it was in Scotland that he matured his great discoveries, it was in two Scottish universities (Glasgow and Edinburgh) that he laid the solid foundations of his immortal fame, and to Edinburgh, both in the earlier and later part of his Scottish career, he always turned with affectionate regard. Lister was a very great man, but, like every other great man, he owed part of his greatness to the fact that at the moment at which his career began his peculiar and special gifts found their peculiar and special opportunity. That he would have been a great surgeon at any period of the world's history, that he would have added lustre to the pursuit of medicine in whatever age and land he had been born, the speaker did not doubt. But he was enabled to write his name in indelible characters upon the history of medicine in no small degree because he was a contemporary of two other great men—Simpson and Pasteur. Of his debt to Pasteur little need be said. Pasteur's position in the history of civilization was fixed and immortal. But it was impossible also to estimate the position of Lister in surgery without noting the relation of his work to Simpson's discovery of chloroform. Without the discovery of chloroform it would have been impossible to perform, even under the most perfect aseptic conditions, the operations which had added so greatly to the knowledge of disease and diminished so greatly the sufferings of mankind. On the other hand the very discovery of chloroform, the very impetus it gave to attempting operations which before that time no surgeon had dared to attempt, augmented the appalling mortality which in pre-Listerian days inevitably haunted the operation room. The two discoveries—Simpson's and Lister's—mutually assisted one another. Without anaesthetics the operations could not have been carried on, without the Listerian method the operations, though carried on, would have had with terrible frequency a fatal result. It was necessary that the dreams both of Simpson and of Lister should be fulfilled before the benefits which either of these two great ornaments of the Edinburgh school of medicine brought to mankind could be fully reaped. They had heard from high authorities lately how greatly surgical operations had increased the knowledge of the nature and the course of disease, and the method by which certain diseases could be dealt with, but surgery without anaesthetics was not the surgery which afforded such knowledge, and surgery without

aseptic treatment was too often the harbinger of death rather than the cause of health and recovery. To these great men a double debt was due. It was not merely the debt of individual patients to the skill of physician, it was the debt which all men owed for that steady accumulation of knowledge and steady growth in the art and practice of healing which had made the generation to which the speaker belonged so remarkable in the history of medicine. And it was not merely a new mode of dressing wounds for which they had to be grateful nor the discovery of an anaesthetic it was for the combination of the two. Without both the great men who co-operated in this result, the result could hardly have come about at all, each was in a sense dependent on the other.

It was a terrible page in the history of medicine, agonizing to the eyes of the helpless surgeons themselves in the era before Lister's work was established. It made one's blood run cold to learn what was happening even in the best hospitals of the capitals of Europe and America. In those days a feeling of dread took possession of every surgeon and the patient suffered from terrors based on lack of knowledge but just as vivid. In the Centenary Volume just published there was one terrible narrative which, he confessed, he could not read without emotion—namely, the description of a hospital, he thought in Vienna, where one would had so awful a reputation that women used to implore with tears that to that death trap they might not be sent. The conditions of those days were such as to make one feel that of all the benefactors of sick mankind the greatest benefactor of all must be Lister himself, who wrought deliverance. Lord Balfour confessed to some surprise that Lister's discoveries were not immediately hailed by the whole profession with the approval which was now universal. It was very easy to be wise after the event and nobody need boast the possession of such facile wisdom. But he was profoundly puzzled at the first reception of Lister's work by his colleagues. The progress of his ideas gained ground at different rates in different countries and centres of medical education, but in no place, not even Glasgow and Edinburgh, was it as quick as one would have expected in view of the general admission that the existing state of things was a scandal to the medical profession. After all, these experiments of Lister were not laboratory experiments, they were not carried on in some scarcely known centre of learning, they were not couched in unknown language, they were not taught in obscure schools. The very surgeons who refused to accept this new thing had full opportunity of seeing the effects of it and yet for some reason which to him was quite unintelligible they remained unconvinced. After all, putrefaction was a very obvious phenomenon, and if it was possible to see by walking across a passage or a courtyard putrefaction with all its horrors in one ward, while another was free, one would have supposed that such an appeal to experience would have been disregarded. But this was not the case, and he hesitated to censure any vehement condemnation of that frame of mind when he remembered that Sir James Simpson was himself one of the doubters. Of that great man he would never speak except with profound reverence. As a youngster he (Lord Balfour) had known him. Simpson did countless acts of kindness to him and to his family. He was one of the most lovable as well as one of the ablest of men. But it was strange that he who had been one of those to point out most eloquently the horrors which attended the surgery of his day should have died in 1870—certainly in the early days of the Lister regime—unconverted. He would that Simpson had survived a few years more or that to desire the impossible he could have lived until that present hour, to see how Lister's discovery along with his own would carry their names forward in a common fame to the remotest posterity.

These commemorations of great men (Lord Balfour concluded) were becoming frequent and he thought them useful. He had himself been personally concerned in at least six during the last few months—Baron, Newton, Faraday, Beethoven, Richard Bright and now Lister, a catalogue of great names. The services which these men rendered to man and could not be weighed or even compared. Yet even in that splendid catalogue the name of

Lister stood out supreme in this respect—that, by his forethought, his determination to reach a certain goal, the inspiration and genius which enabled him to grasp at once the full significance of Pasteur's discovery, he of all those famous ones had the inestimable blessing of having by his efforts immediately and directly diminished to an extent quite incommensurable the preventable sufferings of mankind. That was surely the most glorious tribute which could be paid to any man, and he rejoiced to think that Lister lived long enough to see the full value of his own work and to enjoy the grateful appreciation of his fellows.

Four short addresses followed.

DR W. WATSON CHEYNE, Bt, F.R.C.S., speaking as an old house-surgeon and assistant of Lister, perforce recapitulated to some considerable extent the tribute he paid to Lister at the memorial meeting at King's College Hospital last April. He gave a description, for the benefit of those many lay people in the audience, of the conditions which brought about putrefaction in wounds, and contrasted the picture of the pre-Listerian hospital with the hospital of to-day. He told how Pasteur's work opened the way to Lister for the solution of the mystery as to the cause of putrefaction, and sketched something of the laborious development of technique which followed. He concluded with some remarks on Lister himself and the great influence which he exercised upon his students. He always treated them with great kindness and consideration, and was ever ready to help anybody in need.

Professor TURPIN, K.B.F. (Paris), expressed his gratitude to the British Medical Association for enabling him to be present on that occasion. He was one of those who could speak from personal experience of the pre-Listerian era and afterwards, but his most cherished recollection of Lister dated back to Pasteur's jubilee celebration in the theatre of the Sorbonne, where there were assembled the leaders of science from every quarter of the globe. Never before had such a collection of great men been gathered into one group, but Lister and Pasteur stood there in the midst, the cynosure of all eyes. Everyone knew their record of achievement, and everyone saw them in wonderment and awe. He confessed that he was unable to restrain his emotion at that spectacle. Lister brought about a revolution in surgery all over the world. His discovery could be said to have affected the destiny of the human race. Before Lister he himself knew of a series of cases in which there were as many deaths as there had been amputations. It was impossible to estimate the number of lives which had been saved in consequence of this discovery. Lister in his search after truth and his service to mankind represented the highest ideals which any profession could uphold, and in making this acknowledgement and in presenting greetings and homage to the University of Edinburgh, Professor Turpin said that he spoke not only for himself but for all French surgeons.

Professor HARVEY CUSHING said that it had been given to few so to identify themselves with great benefactions to human kind that the mere mention of their names would for ever recall, not only the man, but his legacy. On a May morning a few weeks previously he had stood at the portal of the Lincoln Memorial in Washington and gazed upon the figure of the emancipator. As he read again the familiar phrases of Gettysburg there came to his mind how comparable were Lincoln and Lister. Lister freed man from the shackles of sepsis, Lincoln from those of slavery. How different were the men, their medium of service, and the manner in which the seemingly inevitable was thrust upon them. Who had made the greatest gifts to mankind, those who had left an inheritance that had supplied, like the utterances of Christ, what minds had yearned for, those who had added to man's comforts and found ways to lessen hunger and want, those like Lincoln who had freed men from bondage, or like Lister from the horrors of suppuration? One answer certainly could be made, that only when the gift required great self-denial, and only if the giver were one that walked uprightly and worked righteousness and spoke the truth in his heart, would he, like St. Francis, come to be canonized and for ever blest. When issues were critical circumstances often so combined

as to bring the right man at the right time to the right place. An individual was caught up in the vortex of a revolution in thought, and was placed unquestionably at its very centre. It was idle to speculate whether the opportunity made the man, as was perhaps true of Lincoln, or the man the opportunity, as was more apparently the case with Lister. What really mattered was that the conjunction should take place. The opportunity to do something of lasting benefit to one's fellow men doubtless lay before all, yet even if they had the imagination to realize it, they lacked the courage to grapple with it, the tenacity to hold it, and the persuasiveness and unselfishness to secure converts and disciples. Lister, horrified at the condition in which he found surgery, deliberately elected to crusade against the most evident obstacle in the way of its advance. Were he and Lincoln accidental or inevitable? Suppose they had been born fifty years earlier or later, would they have remained unknown, or was their form of genius bound to find an outlet for its expression at any time and in any place? Was it chance alone that focused the anti-slavery movement on Lincoln, or on Lister the movement to banish sepsis? Or were they both swept along as part of a greater all-embracing Will, each in his different sphere singled out by the finger of destiny for the significant role? What preparation had either of them? The one was in obscure backwoods Iowa, the very product of the soil, the other had a different background, to be sure, but he was a sensitive man, to whom strife was hateful, and yet he was surrounded by opposition and misrepresentation and compelled to make a fight for truth. Why? Simply because he had set out innocently to answer certain questions. Why does the pupil dilate? Why does the blood coagulate? Why do wounds fester? He found the answer, and felt that all others to whom human lives were entrusted must be made to believe. It was doubtful whether blind fortune could have lifted from the crowd any more practical, humane, and earnest men equally far removed from any motive of self-interest who could have filled, as Lincoln and Lister did, their difficult and lonely places. What each of them had to do had to be done largely single-handed. Faith they had, soon conviction, ere long experience, and with the sharp mordant of experience both of them faced situations without precedent, and by the aid of instruments found or devised by themselves arrived at their goal over untrodden ways. Each of them had the common sense and the flexibility of purpose not to let the real issue be submerged in the public mind through fruitless discussions about its consequences, but each was his own most severe critic, and each had the honesty to admit what there might be of truth in diverse opinion. An awkward civilian during times of great military achievement, Lincoln had left behind him the memory of grace higher than that of mere breeding. Lister was to the manner born, and survived to see a grateful world at his feet. One of these men for an ideal, the other for an idea, one by proclamation, the other by demonstration, wrought their different achievements. In beginning his peroration Professor Harvey Cushing quoted the extract from Lincoln's speech inscribed on the monument at Washington, which, he said, "put into words for a people what Lister for a profession might have said with a little change."

With malice toward none, with charity for all, with firmness in the truth as God gives us to see the truth, let us strive on to finish the work we are in to bind up the nation's wounds, to care for him who shall have borne the battle, and for his widow and his orphan—to do all which may achieve and cherish a just and lasting peace among ourselves and with all nations.

"So may our profession" (Professor Cushing continued) "reap from Lister's life something far more precious than pride in his accomplishment and the satisfaction of claiming him as our own—namely, that spiritual harvest which comes from the example of an unblemished character—for kindness, meekness, and comfort were in his tongue. Though lives die the life is not dead, and the memory of lives such as these will be reverently and forever shared not by a profession alone, not by a nation alone, but by the universal brotherhood of man."

Professor JOHN STEWART (Halifax, Nova Scotia) said that simplicity was the keynote of Lister's life and work. He was simple in his tastes, simple in his methods, simple and clear in his thinking. He loved music, especially

Scottish songs he loved children, and, what was perhaps not generally known he had a keen sense of humour. It was a delight to hear him tell a humorous story with the appropriate manner and gesture. What some thought a certain aloofness was really the shyness of a child. Many of his associates felt that there was a certain atmosphere about Lister which distinguished him. He was anything but cold. He was fond of having his students, clerks and dressers to dine with him and many of them remembered the hospitality of the host and his charming conversation. Professor Stewart recalled the occasion when he dined last with Lister. At this time the boyish heartiness had gone, a grave sweetness had taken its place. His sister-in-law—he was already a widower—was his housekeeper and the speaker was the only guest. After Miss Syme had left the table, Lister drew up his chair and they talked for nearly two hours, among other things about the then recent development of the diphtheria antitoxin, and the failure of tuberculin to fulfil what was expected of it. To the suggestion that he should write a book on the beginning and development of antiseptic surgery, Lister shook his head saying that he did not now feel equal to much work. He said, "I can say with the apostle that I desire to depart and I feel this very deeply when I think of my dear wife." While the main cause of his depression was loneliness due to the death of Lady Lister, another cause was his regret at the elaborate ritual which was replacing his own simple routine, and yet another was the want of recognition of the value of his early researches in histology, the action of the nervous system, and the nature of inflammation. Nothing in his memories of Lister impressed him more than his confidence in the continuity of life. "It is our proud office," he said once, "to tend the fleshly tabernacle of the immortal spirit," and in a letter he wrote on the death of Lady Lister he said "May you and I so live during the rest of our earthly life that we may rejoice her!"

LORD BALFOUR, in closing the meeting, announced that the prize for the best essay on the influence of Lister had been awarded to Mr. George W. Gale of Edinburgh and a second prize to Mr. Russell Love of Melbourne. He also stated that the University and the Royal Colleges had conceived the idea of erecting an institute in memory of Lister, to contain pathological and other departments, and any assistance which could be given to this great project would be gratefully acknowledged by those authorities.

### ACUTE RHEUMATISM IN CHILDREN ITS RELATION TO HEART DISEASE

THE Ministry of Health has issued this week a report on acute rheumatism in children in its relation to heart disease.<sup>1</sup> Several inquiries have recently been made into this subject, and the report should be read in connexion with that of the Medical Research Council on "Social conditions and acute rheumatism," the two reports of the special subcommittee of the Science Committee of the British Medical Association published in our SUPPLEMENTS for July 3rd, 1926 and April 16th, 1927 and Dr. Reginald Miller's notes on the several reports, which appeared in our issue of May 28th last (p. 952).

The object of the present inquiry is stated to be "to examine the advisability of further organization for the supervision treatment, and after care of children of the poorer classes, suffering or convalescent from the various manifestations of acute rheumatic infection and especially the provision for them of special institutional accommodation." The report, therefore, deals primarily with existing disease, and with preventive measures only in so far as they are directed against the sequelae of the disease, and especially the cardiac sequelae. Although our knowledge of the etiology of rheumatism is extremely vague at present, as the discussion of the bacteriology contributed to the report by Dr. Eastwood shows, several facts of fundamental

importance bearing on the policy to be adopted in dealing with the disease have been long recognized or have been brought to light by the inquiries mentioned. Thus it is known that the disease may be so insidious in the early stages as to be readily overlooked unless carefully searched for, hence the necessity for adequate routine examination, that the grave sequelae of rheumatism may in almost every case, be avoided if proper after-treatment is not neglected. Hence we are permitted to conclude that the prevention of its disastrous cardiac sequelae is a question of ways and means that rheumatism cannot be satisfactorily treated in poor homes and so, if treatment is to be successful, the children must be received into suitable institutions. Poor homes, but not the poorest, seem to be in some way generators of rheumatism, as appears to be clearly revealed in a comparison of different types of school, for it is in the public elementary schools that rheumatism abounds, whereas the private preparatory and public schools are exempt from the disease. The reform of the poor home probably involves questions of general culture, education, the standard of living, and kindred subjects, and its consideration would afford useful employment for our politicians.

#### Statistics of Heart Disease

The main inquiry embraced in the report falls under three headings: (1) the census of existing rheumatic disease, (2) the present machinery for dealing with the cases, and (3) the additional machinery required. With regard to the census, there are approximately 5,000,000 children in average attendance in public elementary schools in England and Wales. Somewhat more than one-third of these were subjected to routine medical examination in 1925, the actual total being 1,798,397 and a further 820,953 were inspected as "special cases"—that is, selected by teachers as specially needing examination. Information as to the incidence of organic heart disease in all these children is not available but in 1924 an analysis was made of the defects revealed in a large sample (598,167) examined in London and in twenty-four large districts representative of the whole of England and Wales during the course of routine examination. Of these, 4,285 (0.7 per cent) were considered to have organic heart disease, 3,251 (0.5 per cent) of them being referred for observation only, whilst 1,054 (0.2 per cent) required treatment. In addition, 1.1 per cent of the whole number examined were considered to have functional heart disease which in 0.1 per cent was severe enough to require treatment. In Scotland the corresponding percentage of organic heart disease is reckoned at 0.52, and in New York at 1 per cent. We may therefore take it that an incidence of 0.5 per cent of heart defect for which only supervision is required and 0.2 per cent of heart defect sufficiently severe to require treatment are conservative figures for the incidence of organic heart disease in children actually in attendance in ordinary elementary schools in England and Wales. The figures do not tell us what percentage of the cases are due to rheumatic infection, and it is difficult to obtain definite information on this point. Some authorities place the proportion of deaths due to heart disease which are ultimately traceable to rheumatism as high as 50 per cent of the total deaths from heart disease, a figure which Dr. Glover, who deals with this part of the subject in the report, considers to be too high. He suggests that 40 per cent is probably a safer figure in which case we must ascribe some 25,000 deaths annually to heart disease of rheumatic origin in England and Wales. In one American series of statistics rheumatism was ascertained to be the cause of the heart disease in 449 out of 1,052 cases, in another 39.8 per cent were of rheumatic origin. The statistics are in fact so affording some idea of the amount of heart disease which is, as before said, considered possible to prevent almost entirely or arrest before attaining a serious degree of severity.

#### Treatment and After-Treatment

With regard to the existing machinery for the treatment of cases of rheumatism and their after-treatment, the report takes the metropolitan district as an example, and

<sup>1</sup> Ministry of Health Reports on Public Health and Medical Subjects No. 41. London: H.M. Stationery Office or through any bookseller. 1927. Price 1/6 net.

quotes Dr Pugh's report to the Metropolitan Asylums Board for 1925:

"There are six London children's hospitals, in these the total accommodation (in 1924) was 706 beds, which received 10,096 in-patients, of whom 371, or 3.7 per cent, suffered from rheumatism or its effects. The pressure on the accommodation of voluntary hospitals is for a somewhat rapid passage of patients, and the average stay varied from 20 to 30 days. The stay of rheumatic cases is generally longer, at the Hospital for Sick Children, Great Ormond Street, it averaged 60 days in 1919-20. Some children's hospitals have their own convalescent homes and are able to transfer a small number of their rheumatic cases to them, a few cases are transferred to special country homes of limited accommodation; sometimes it is necessary to send these patients home to await vacancies. Physicians have long lamented the necessity for the premature return of rheumatic cases to their homes."

Then there are the general hospitals and the Poor Law infirmaries, which, with the six children's hospitals, are estimated to receive a total of 2,938 such in-patients annually. The children who are admitted as in-patients to these institutions are appropriately treated during the acute stages of their diseases, most of the children, however, who attend the hospitals are not ill enough, or not fortunate enough, to secure admission as in-patients, and must perforce attend as out-patients. It is this class of out-patient child which gives rise to the main part of the practical problem calling for solution, and in them, probably, is produced the main bulk of preventable rheumatic heart disease. The following statement of the Almoner of Guy's Hospital bears on this aspect of the question:

"The number of children with subacute rheumatism attending as out-patients at intervals would be difficult to ascertain. It must, however, be very large, and it would appear that these early cases should be given as much consideration as the acute cases. The children who are seriously ill are usually referred to me by the physicians with a request to provide immediate nursing treatment under skilled supervision, followed by prolonged convalescent treatment under skilled medical supervision. Few of these children can be admitted to such a hospital as this owing to the pressure on beds here, which precludes the possibility of blocking many beds with these very prolonged cases. Immediate admission to the infirmary for treatment during the acute stage, with a view to transfer when fit to a Metropolitan Asylums Board hospital such as Queen Mary's or The Downs, has seemed to us to be the best solution of the problem at present, but unfortunately experience shows that the children do not always go to the Metropolitan Asylums Board institution, and we have record of cases in which children have returned to this hospital, for perhaps the third time within a few months, with symptoms of acute rheumatism, having been nursed for short periods and then discharged to their homes. The few that are admitted to the wards here also present a problem as, being the more severe cases, transfer to a suitable institution is especially desirable as soon as the acute symptoms have subsided. Unfortunately the voluntary societies have neither the accommodation nor the funds for many such long and difficult cases."

This aspect of the problem has been investigated by Miss Horst Smith, who contributes a report on the conditions obtaining at St Thomas's Hospital during the year 1926. In the out-patient department during the year 508 children under 12 years of age attended, 22 per cent of these already had cardiac damage and in an additional 21 per cent had symptoms of threatened cardiac involvement. 34 acute cases were admitted to the wards and 14 to infirmaries or other hospitals, 68 with more chronic conditions were sent (often after considerable delay owing to long waiting lists) to special institutions or convalescent homes but no fewer than 392, or 77 per cent, many of whom would have been recommended for admission had there been any accommodation available, were treated at home. This is a favourable instance, great efforts having been made at St Thomas's to make every possible provision for these rheumatic cases. Mackenzie in 1908 laid down that the rheumatic patient should be kept strictly in bed until there is assurance that the condition is quite abated, even though six months may elapse before this result is brought about. A year before, C. A. Sutherland had recommended six months' rest in bed, or longer if necessary, followed by sanatorium treatment for one or two years. Recent opinion is in favour of substituting "graduated rest" for complete rest and so gradually allowing the child to resume carefully graduated and supervised minor activities.

The chief medical officer, in his annual report for 1913 to the Board of Education stated that "perhaps the best method of dealing with children with heart disease is to send them to a residential school for a period of prolonged treatment." Several schools of this type have been estab-

lished in recent years—namely, the Edgari Lee Home at Willesden, the Kinnaird Home in Sussex, St Mary's Home, Biondstans, and the Baskerville Residential School, Birmingham. These have to be reckoned among the existing machinery already referred to, and supply a total of 188 beds. In addition, the Metropolitan Asylums Board reserves 16 convalescent beds at Crishlinton and has recently allotted 56 beds at Highwood Hospital, Brentwood, at Downs Hospital the Board has, on an average, some 80 beds always filled with rheumatic cases.

#### Recommendations

With regard to the provision of further machinery, the best example of a scheme for the treatment of rheumatism is considered to be that in operation in Birmingham. All rheumatic children discovered in the course of routine medical inspection in the schools in that city are reported to the rheumatism bureau at the Children's Hospital as cases needing supervision or the advice of a consultant. If recently ill they are admitted to the Children's Hospital for a period which may include treatment at the Moseley Hall Convalescent Hospital for Children. When convalescence is established they are sent to the Baskerville Residential School, which has 94 beds. The subacute and chronic cases are placed on a waiting list for the Baskerville School or are referred for periodic examination by the consultant. The cases needing supervision are visited by nurses or examined by medical officers of the education authority. After discharge from Baskerville the case is reported to the school medical officer of Birmingham, and its after-care and supervision are undertaken by the nurses and medical officers of the education authority working in close touch with the "rheumatism bureau," or in special cases by the consultant himself. Supervision is continued until school-leaving age, when the medical history and disability, if any, are reported to the juvenile employment bureau.

Here is, in fact, an almost complete scheme which is linked in close and effective liaison, nominally by the rheumatism bureau, but actually by the willing and close co-operation of many persons and committees. The whole work is co-ordinated and controlled by a specialist, who is consultant to the Children's Hospital and Baskerville School and also a medical officer of the Education Committee.

## England and Wales.

### ELISOM COLLEGE

PRINCE ARTHUR OF CONNAUGHT attended the celebrations in connexion with the seventy-fourth anniversary of Founder's Day at Ipsom College on July 23rd, and opened the new sports pavilion, which has been erected at a cost of £3,000. Previous royal visits to the College were paid in 1855, when it was formally opened by the Prince Consort, in 1895, when the then Prince of Wales laid the foundation stone of the Tower School, and in 1903 by King George, who was then Prince of Wales. The new pavilion contains separate changing rooms for the home and visiting cricket and football teams, very good washing facilities, including shower baths, ample accommodation for spectators, and a well placed scoring box. Part of the building is in use as the school tuckshop. Prince Arthur was received by a guard of honour of the Officers' Training Corps, and, after members of the council had been presented to him in the library, he distributed the prizes in the Big School, which has now been remodelled in oil. The head master, Mr A. C. Powell, in his report, stated that the school now contained 350 boys, and is soon as accommodation was available the number would be increased to 400 boarders in eight houses, without a preparatory school. This contrasted sharply with the position a year ago, when only about 250 boys of public school age were in residence. Commenting upon the exceptionally good scholastic successes of the previous year, he mentioned in particular the fine achievement of E. A. Marsh in winning the senior open science scholarship at Jesus College, Cambridge, and in passing the examination for the B.Sc. Lond.

while at school at the age of 18. The award during the year of 45 school certificates would be a worthy record for an institution twice the size of Ipswich. The Officers' Training Corps had distinguished itself by winning the Surrey Schools' Shooting Cup, the College had also been placed eighteenth out of 71 public schools in the competition for the Ashington Shield. Two new entrance scholarships, one of £120 and the other of £105, had been made available by special bequest. Plans for the future included the building of a new sanatorium at an estimated cost of £50,000, and an additional five court. Prince Arthur emphasized the value of public school training in the preparation for life in the world, the combination of study and athletics enabled English boys to face hopefully the demands of all spheres of life, and especially those of the medical profession. Though medicine promised financial fortune to only a few, it provided opportunities for great and useful work. He then passed to the consideration of the possibilities opening up for successful emigration particularly to South Africa, a boy required about £1,500 to cover fully all the liabilities including his fare to that country, his special training there in agriculture, and the ultimate purchase of land, but no parent could find a better way of investing that amount of money.

#### WELSH NATIONAL SCHOOL OF MEDICINE

On July 16th (p. 112) we reported that the suggestion had been put forward that a compromise might be effected, on the lines of the system in force at University College London between those who desire to see the School of Medicine for Wales a separate college of the University and those who wish it to be a department of University College of South Wales and Monmouthshire, Cardiff. Further negotiations and discussions have taken place, and it seems to be thought probable that an arrangement may be come to. At a meeting of the Court of the University last week the matter was again discussed and was referred to the University Council to continue the negotiations.

#### THE HUMANE KILLER

It seems a pity that the Animal Defence and Antivivisection Society has not, in the past, devoted more of its energies to the introduction of humane slaughter of animals for food instead of making unprovoked attacks on medicine. Through the courtesy of the Duchess of Hamilton and Miss Lind af-Hageby, a representative attended the inauguration on July 14th of a model abattoir at Letchworth. A large number of visitors were present. The institution appears to have been built by voluntary subscription, it is proposed to turn it into a company. The Animal Defence Society will retain supervision of the methods employed, and hopes to open in London an establishment for the sale of the products of the abattoir. The inauguration began with a brief speech by the Duchess of Hamilton, followed by addresses, of which the first was by the Right Hon. Noel Buxton, formerly Minister of Agriculture, who said that there were 20,000 slaughtering places, mostly remote and obscure, in the country. The only method of advance in humane killing was to press the question on Parliament using the public health as an argument. Dr. Heiss, director of the public abattoir at Straubing, Germany, said that in Germany uncertified meat which did not come from public abattoirs was not approved for public sale. Professor Dahlstrom, of the Royal Veterinary College, Stockholm, stated that in Sweden the humane killer was always used except in the case of pigs for the English market. He did not consider that the Jewish method of slaughter could be compared with the use of the humane killer. Before the meeting the visitors inspected the premises which are very well arranged and equipped. In addition to the slaughterhouses there are cold storage accommodation, rooms for scalding and chilling, a lard room and a sausage room. It is intended to add a building for dealing with by-products. As one of the objects of the institution is to raise the mental and moral standard of the butcher, there is a lecture hall for his instruction, a neatly panelled dining room, and accommodation for change of clothes and baths.

At the close of the address the audience was given the alternative of taking tea or viewing a demonstration of the use of the humane killer. A large majority of those present, including numerous ladies, accepted the latter alternative. It happened that a party of London butchers who had come to the meeting were the first to reach the small pig slaughtering chamber. The lad organizers, however, were intent on exhibiting their methods to the foreign delegates. An altercation arose but the butchers stood their ground and ultimately proposed a truce under which they were to witness the death of the first of the three pigs. This was agreed to but the crowd seeking admission was so great that the butchers had some difficulty in extricating them else. The organization of the meeting was not good, and the employees were perhaps unaccustomed to perform their work in the presence of so large a company. But the whole installation seemed to be a praiseworthy attempt to set an example in humane slaughtering and, under the supervision of a properly qualified veterinary expert, should be a success.

#### A PENDING NURSING SCHEME

The Reading Council for Nursing Services a promoters a scheme under which societies with State insured or voluntary members can ensure nursing attendance for the sick. The report of the council for the year ending March 31st shows that nursing services were then available for 36,620 members of various societies a number which has increased since that date to 45,800. The expenses of the council are met by an annual contribution from the societies at the rate of fourpence a member. The number of visits paid by the nurses during the year was 4,851, the average cost for each visit was something less than one shilling and the total cost to each society was one and two-thirds pence a member. In the case of insured persons even this small cost was reduced by a State grant. Consequently at the end of the year's working there was a considerable balance returnable to the subscribing societies. The cost of administration was very small, being under five per cent of the total income. There is no restriction as to the area in which the nursing services can be obtained and last year one of the members received nursing services as far away as Yorkshire. The council endeavours to carry out its work through local nursing associations though it does not restrict it to these associations where such associations are not available it may make payments to hospitals or to recognized nurses called in by patients. The council also acts as the local "clearing house" for the collection of vouchers and the payment of accounts in connection with the Queen Victoria Jubilee Institute (London) scheme. The council urges the contributory societies to make the fullest possible use of its services and there seems to be no doubt that it is carrying on most valuable work with the strictest economy in administration.

#### PORT OF MANCHESTER

The medical officer of health of the port of Manchester, in his annual report for 1926 states that 177 cases of sickness came under notice during the year. There was no outbreak of cholera, plague or yellow fever either in the port or in Manchester bound ships but two cases of smallpox occurred one of which was removed to hospital at Hong-Kong and the other isolated on board. The cases of malaria numbered eight of pulmonary tuberculosis seven, of pneumonia five of enteric fever two, and of other specified infectious diseases one each. The number of rats destroyed on shipboard was 254 and on dock premises 2,655. Except in twenty ships fumigated with sulphur dioxide, the methods of destruction were trapping and poisoning. Hydrocyanic acid was not employed. Of 139 classified rats 712 were grey 57 black and 270 brown. No plague-infected rats were discovered. Of several consignments of frozen fish coming from New Zealand in January the first two had been carried in boxes on deck and ten and a half tons were condemned. Later consignments, stowed in refrigerator, arrived in good condition. Early in the year the *ss. Manchester Indica*, running into bad weather in the Atlantic and sustaining



damage to her rudder, took fifty-one days in crossing. Her full cargo of apples, of 600 tons weight became unsaleable and was condemned, being removed by rail to the sludge tip near Thelwall for disposal. Of 428 Canadian cattle which she was bringing over 176 had to be disposed of at sea.

## Ireland.

### PURE MILK SUPPLY

PROFESSOR R. J. JOHNSTON, F.R.C.S. M.P. (Queen's University, Belfast), speaking at the Unionist School at Portlough on public health, with special reference to milk supplies, described milk as a perfect food, containing everything that was necessary for human life. It was also a perfect food for bacteria and microbes, which multiplied at an appalling rate, especially when the milk was warm. The milk as sold for human consumption was full of microbes which had been introduced after the milk came from the cow. The problem, therefore, was how to preserve the milk as far as possible in the state in which it came from the cow. After mentioning various ways in which milk became infected, Professor Johnstone described several methods which the Government should adopt to secure a clean milk supply. The first thing was to take samples of the milk as supplied to the consumer. The second was to inspect the places where the milk was produced to see that the cowsheds were well ventilated. But even when the authorities had taken samples, inspected cowsheds, and tested cows, reliance had, after all, to be placed on the goodwill of the milk vendor. Apart from regulations there was a need to create in the producer a desire to keep his cowshed clean and his cows under hygienic conditions. The way in which they could create that desire was by showing him that there was money in it. Another important factor was the education of public opinion in favour of having clean and pure milk.

### TRANSFER OF MEDICAL OFFICER IN ATHLONE

By a majority of one vote the Westmeath County Health Board transferred Dr W. H. Coen from the position of medical officer of Monte dispensary district to the combined office of medical officer of Athlone No. 1 dispensary and district hospital. Under Section 5 of the Local Authorities Officers and Employment Act the local bodies, whilst they have no power to make new appointments, may transfer existing medical officers to a vacant position subject to the sanction of the Minister of Local Government and Public Health. In connexion with Dr Coen's appointment and recent sanction, Sir James Craig, M.D., questioned in the Dail the policy of the Minister. The Athlone County Board of Health, he said, had appointed a medical man who had had but two years' service to a large hospital and dispensary over the head of another candidate, who had had twelve years' experience and a distinguished university course. The late Minister had refused to sanction the appointment, but immediately the new Minister came into power sanction was given. The whole matter had caused the greatest possible dissatisfaction and anxiety amongst the medical profession in sanctioning the appointment the Minister was not carrying out the intention of the Act.

## Scotland.

### MEDICAL REFEREES

THE Scottish Board of Health has appointed Dr Alexander James Muirhead and Dr Hugh Miller to be district medical officers (medical referees) in their department. Dr Muirhead is an M.D. of Edinburgh. He has held several appointments as medical officer to local authorities and other bodies and was local medical referee for a large assurance company. During the war he served as surgeon on a number of H.M. ships, and also in naval

hospitals. He has been for several years in private and panel practice, and has had experience of statutory committees in connexion with the Insurance Acts. Dr Miller is an M.B., Ch.B. of Glasgow, and a Fellow of the Royal Society of Tropical Medicine and Hygiene. He was for a number of years deputy medical officer of the fever hospital and Poorhouse Hospital, Hamilton. During the war he was medical officer in various hospitals at home and abroad, and subsequently acted as medical referee under the Ministry of Pensions. He has also done a considerable amount of referee and medico-legal work, and is a member of various medical committees. He has been for a number of years engaged in private and panel practice, and has been a valued member of the Council of the British Medical Association, chairman of the Scottish Committee, and member of other Association committees.

### EDINBURGH SICK CHILDREN'S HOSPITAL

At the annual meeting of the Royal Edinburgh Hospital for Sick Children Sir John R. Findlay, who presided, remarked that for the first time for many years the total expenditure during the year had exceeded the total income, both from subscriptions and from legacies, and in consequence the amount of invested funds was smaller than it had been a year ago. He considered that the amount contributed by the charitable public in Edinburgh constituted unfavourably with the support received from county districts. The ordinary income for the year had been £11,677, and the ordinary expenditure £17,188. He referred to the scheme for the institution of an orthopaedic centre in Edinburgh, and said that the directors of the Children's Hospital were watching developments with interest and with every desire to assist in the movement. The report by the directors of the hospital showed that the number of cases treated in the wards last year was 2,956, as compared with 2,968 in 1925. Of these, 1,593 were medical and 1,248 surgical. The average daily number of patients in hospital during 1926 had been 115, and the average duration of treatment seventeen days. The total attendances at the out-patient department had been 25,604. A large number of patients had been treated in the sunlight department, and this had involved the provision of further accommodation, but many patients had derived striking benefit from it.

### EDINBURGH VETERINARY COLLEGE

At the annual distribution of prizes of the Royal (Dick) Veterinary College, Edinburgh, Bailie Dr T. G. Nasmyth presided and the Lord Provost distributed the prizes. The chairman remarked that the veterinary surgeon had, to a certain extent, been displaced by the advent of the motor car, and the consequent diminution of veterinary work among heavy draught horses and carriage horses, but a new sphere had been opened up by the association of the veterinary practitioner with public health administration in safeguarding meat and milk supplies, and the appointment of county veterinary inspectors afforded a new and wide field of work. The college had gradually developed a post-graduate side to its work, with a view to preparing men for specialist appointments. The college, however, was fully alive to the fact that the specialist formed only the smaller part of the profession, and that the general practitioner must remain its backbone.

## South Africa.

[FROM OUR CORRESPONDENT IN CAPE TOWN]

### THE HEALTH OF CAPE TOWN

THE annual report of the medical officer of health of the city of Cape Town (Dr T. Shaduck Huggins) for the year ended June 30th, 1926, states that "Until the year 1924-25 births and deaths were recorded on two bases—namely (1) 'crude,' including all births and deaths which occurred in Cape Town, and (2) 'corrected for visitors,' obtained from the 'crude' figures by deducting births and

deaths of non-residents which occurred in Capetown (outward transfers). There was not available complete information about births and deaths of Capetown residents which took place outside Capetown (inward transfers), and it was therefore not possible to obtain figures fully corrected for inward as well as outward transfers. The director of census recently brought into operation a system whereby, in regard to Europeans, only he furnishes to medical officers of health lists of outward and inward transfers (births and deaths) and 1924-25 was the first year in which this information was available for the Capetown statistic. In making the corrections for those transfers, the figure of the director of census and statistics are accepted for inward transfers, but for outward transfers the figures obtained by the medical officer of health from the local registration returns are taken in preference to the lists supplied by the director of census and statistics."

The information from the director of census and statistics in regard to inward transfers applies only to European, and therefore does not enable the statistics as to non-Europeans or the total population to be corrected for inward transfers. It is considered to be desirable that the system should be applied to the non-European population also.

The census of population which was taken at midnight between May 4th and 5th, 1926, considered in conjunction with the census of May 3rd and 4th, 1921, has enabled more satisfactory estimates of the population of the municipality and of its constituent wards to be made for the year under review than was the case in the immediately preceding years. This is especially so in regard to the non-European population, the estimate of which was previously not on a satisfactory basis. In the country generally the intermediate census of 1926 was confined to Europeans, but arrangements were made to include non-Europeans also in Capetown and certain other municipalities. The decennial census of 1921 included both Europeans and non-Europeans.

The provisional results of the census of 1926 show the population of the municipality of Greater Capetown to be as follows: Europeans 112,548; non-Europeans, 99,652—total 211,600. The latter named figure includes 16 Europeans and 4,042 non-European representing the occupants of the native location at Vredenburg included in the municipal area in 1921. The municipal area amounts to 37,847 acres and the length of the main road passing from one boundary of the municipality to the other is about twenty-five miles.

The births registered during the year 1925-26 numbered 7,106 (2,524 European + 580 non-European and 2 of unknown race). The birth rate per 1,000 population is therefore as follows: European 22.65 (uncorrected) 20.93 (corrected for outward transfers) 22.01 (corrected for outward and inward transfers). Non-European 49.55 (uncorrected) 48.55 (corrected for outward transfers). All classes 34.82 (uncorrected) 33.47 (corrected for outward transfers). The difference between the number of births and deaths is the natural increase in population. This for all classes amounted to 3,323 (uncorrected) and 3,368 (corrected for outward transfers) for Europeans 1,242 (uncorrected) 1,256 (corrected for outward transfers) and 1,339 (corrected for outward and inward transfers) and for non-Europeans 2,083 (uncorrected) and 2,133 (corrected for outward transfers). It will be seen from these figures that in spite of their higher death rate the natural increase of the non-European section of the population exceeded that of the European section by 760.

The number of male births per 100 female births (excluding births in Capetown which did not belong thereto) was 98.96 amongst Europeans and 99.56 amongst non-Europeans. In 1924-25 the corresponding figures were 104.1 and 106.3. In 1923-24 114.2 and 106.5 and in 1922-23, 98.8 and 107.7. The percentage of illegitimate births to total births (corrected for outward transfers) was 4.67 amongst Europeans and 24.20 amongst non-Europeans. The number of stillbirths registered during the year was 458 of which 89 were European, 368 non-European and 1 of unknown race.

The deaths registered during the year 1925-26 as having taken place in Capetown numbered 3,777 (1,222 European 2,492 non-European and 3 of unknown race). The death rate per 1,000 of population is therefore as follows—European 11.50 (uncorrected) 9.66 (corrected for outward transfers) 10.00 (corrected for outward and inward transfers). Non-European 26.91 (uncorrected) 25.52 (corrected for outward transfers). All classes 18.51 (uncorrected), 16.87 (corrected for outward transfers). Both the European and non-European death rates for the year under review are the lowest recorded since notification in 1915.

It will be observed that 1925-26 was a favourable year in regard to mortality from measles and whooping-cough and also from apoplectic and respiratory diseases. The decline in deaths from enteric fever which had shown itself in recent years has continued the mortality from that disease in 1925-26 being the lowest on record. From diphtheria however the mortality continued somewhat high. The mortality from tuberculosis was less

than in the previous year but still especially amongst the non-European failed to show the diminution compared with the previous ten years that might be hoped for from diarrhoeal diseases the mortality rate being high amongst non-Europeans but amongst Europeans rather low compared with previous years. The deaths from heart disease, rheumatic fever and influenza were above the average and the recorded death rate from cancer continued to increase.

The deaths of children under the age of 1 year registered during the year 1925-26 numbered 657 (161 European 493 non-European and 3 of unknown race). The infant mortality rate per 1,000 births there was as follows—European 65.8 (corrected for outward transfers) 62.37 (corrected for outward and inward transfers). Non-European 175.9 (corrected for outward transfers). All classes 133.21 (corrected for outward transfers). The European rate for the year under review is the lowest on record but the non-European rate was lower in the years 1921-22 and 1924-25.

## Correspondence.

### BRITISH MEDICINE

SIR,—Sir Robert Philip's admirable address and the excellent paper by Professor Hey Groves in your issue of July 23rd suggest to me the desirability of putting forward two considerations impressed upon me by a recent survey of the history of medicine, namely:

1. There is no intellectual calling in this country which has rendered more conspicuous service to the Empire, in the last hundred years, than British medicine.

2. Is it not time that British medicine as much as any other responsible intellectual calling in this country, made herself mistress in her own house?—I am, etc.,

Exeter July 2 h.

W. GORDON.

### MINERS' NYSTAGMUS

SIR.—The contributions from Drs Fergus and Potson in your issue of June 18th (pp 1092, 1094) on miners' nystagmus are very interesting and open up a vast field for speculation. Yet two facts seem to stand out: (1) The class of miner generally affected is the actual collier. (2) The suggestion of retinal exhaustion as the actual cause—that is, fatigue on action and recovery after rest.

The fact of the incidence of the disease prior to the strike and the great lessening of the number of cases following the industrial upheaval is too potent an argument to be neglected. People who so strongly resented the action of these men during and since the strike might find in this some reason to pause and reconsider their position. It would be interesting to know whether observers had noted the condition of the pupil in these cases. They quote other evidence of disturbance of the sympathetic system.—I am, etc.,

O. W. T. BALDWIN, MRCS, L.P.C.P.

London S.W.8 June 28 h.

SIR,—I can assure Drs Haldane and Llewellyn that I have read the reports very carefully, but I do not find in them any statement about the candle-power deemed to be necessary for the prevention of nystagmus. I have not committed myself to any view as to the cause of nystagmus, but think there is no evidence that it is due to defective illumination and I have found as a matter of experience that the brighter the light the worse the nystagmus. Up till now, so far as the area in which I work is concerned, the electrifying of the pits has not been successful in eliminating nystagmus.

Professor Collie I think, has made a slight error, in so far as he did not take account of the fact that there was no nystagmus in the American pits prior to the introduction of the electric cap lights approved by Dr Haldane.

Dr Gordon Wilson's letter is an interesting one. The question, perhaps, that he would bring before his own mind is this: Why should occupational deafness occur in some mines and not in others? There are six safety lamp pits in the Tanarashire district in which there is no nystagmus.

been a case of nystagmus. The disease is rife in some pits, in others it occurs but only very occasionally—I am, etc.,

Chesham, July 18th

FREDLAND FERGUS

\* We referred this letter to Dr J S Hildane, who has made the following reply. With its publication we must bring this correspondence to an end.

Sir,—If Dr Fredland Fergus will look again at our paper under the subheading "Illumination," he will see that we estimated that in order to prevent miners' nystagmus the illuminating power of a hand safety lamp would need to be increased to about three candles, as compared with only about 0.7 given by the present electric lamps. An improved flame safety lamp without a mantle, giving three candles, was shown at the meeting where our paper was read, and another, with a mantle, giving nine candles. It is true that the surface of the filament of an electric lamp is far more brilliant than that of a flame lamp, but the extent of surface in the flame lamp is so immensely greater that a good flame lamp gives much more light than an ordinary electric lamp of the present type.

As regards American pits, it is only in recent years that the use of safety lamps has become widespread, and the safety lamp used is the electric cap lamp, which, for the reasons explained in our paper, gives a far better illumination than the hand electric lamps used in this country.

It does not seem to me that there is even a semblance of real evidence for the statement that "the brighter the light the worse the nystagmus"—I am, etc.,

Oxford, July 22nd

J S HILDANE

#### ADRENALIN EFFECTS AT THE MENOPAUSE

Sir,—Dr Wise, in the *BRITISH MEDICAL JOURNAL* for July 16th (p. 115), raises some interesting objections to my conclusions concerning the causation of "flushing" at the menopause, which were published as a preliminary communication in the *BRITISH MEDICAL JOURNAL* for July 2nd (p. 14).

He suggests that since the "flushings" pass off within a few years, at a time when the ovaries are secreting less than while the flushings were complained of, my theory that the flushings are caused by an unrestrained action of the suprarenals, the internal secretion of the ovaries being deficient or absent, is open to objection. Our knowledge of the endocrine system at the present time shows that there exists not only an organic harmony between the glands, but a compensatory interaction also. My experimental work has shown that the hyperactivity of suprarenals in women at the menopause is increased in intensity if the removal of the internal secretion of the ovaries is abrupt, for example, in those women in whom the ovaries have been removed by operation.

I maintain, therefore, that the disturbance of the suprarenals at the menopause is a temporary phenomenon which passes off when the endocrine system in general exercises its compensatory activity, and makes up for the sudden disturbance caused by the loss of the internal secretion of the ovaries—I am, etc.,

JOHN H. HANNA, M.D. Cantab

London W 1 July 16th

#### DIGITALIS IN INFLUENZA

Sir,—The address by Mr L B Turner in your issue of July 16th (p. 93) on influenza emboldens me to call attention to the immense value of digitalis in epidemics where signs of myocardial trouble usually appeared as was the case in 1889 and the following three or four years. Acute cardiac dilatation was common on assuming the erect position, usually on the third day. I have had three cases in a morning. I treated every case of influenza for several years with digitalis, and with other remedies, and attributed the entire absence of deaths—in very fatal epidemics—to this drug.

The rapid pulse observed in the last two epidemics has been noticed to coincide with enlargement or tenderness of the thyroid, and this has been more or less successfully treated by tincture of iodine, with or without tincture of digitalis. I found a tendency to relapse, however, and the iodine had to be administered for several weeks—I am, etc.,

Winchester, July 16th

F R HUMPHRIS

#### DRUGS FOR SLEEPLESSNESS

Sir,—The following case may be of interest in support of the view that tolerance to veronal does not become established.

I was called to see a man of 57, at 5.30 on a Tuesday morning as his wife was anxious about his very stertorous breathing, and she was unable to rouse him. She told me he was in the habit of taking veronal, and thought he was so used to it that he could take large doses. She was afraid he had taken some the night before but was not certain. I was unable to rouse him to consciousness, but could stimulate him to movements of his limbs. Reflexes were normal.

I treated him for veronal poisoning, washing out the stomach and colon, and giving strychnine, digitalis, and caffeine hypodermically every four hours. At midday he was much more conscious, and movements could no longer be stimulated. At 6 p.m. his breathing became impaired by oedema of the lungs. This yielded during the night to atropine injections, but pulse and respiration became very poor at times.

By the morning his condition had somewhat improved, but he showed no signs of consciousness. I was able to feed him three times during the day by the stomach tube with milk, coffee, and brandy. He was also having saline and glucose by rectum. He had no return of oedema of the lungs. During the night his condition remained much the same, the pulse fluctuating in character. The next morning (Thursday) he was obviously not so well, and in spite of stimulants, camphor, caffeine, and strychnine, his respiration and pulse failed, and he died at midday.

During the first day I was able to have analysed the remains of a powder in a tumbler, which proved to be veronal, and 5½ ounces of urine which I drew off was found to contain 6 grains of veronal. It was estimated that he had taken about 50 grains.

This patient was of a cheerful disposition and had no worries. He had been to the theatre the night before, but went to bed with a headache, and expressed the hope that he would have a good sleep, as he frequently did not sleep well. It appeared that he had obtained a little store of veronal in France, of which he had not taken all. He had told his friends how well it suited him, and that he could take more than most people as he was used to it.

There was no question of suicide, but apparently he had been determined to have a good night's sleep, and had put too much faith in his tolerance to veronal—I am, etc.,

Lastbourne, July 6th

A DEAR

#### AN AUSTRALIAN DIPLOMA IN TROPICAL MEDICINE

Sir,—I was much gratified at the mention on page 485 of the *JOURNAL* dated March 12th, 1927, that one of the medical officers (Dr R L Bellamy) of the Papuan Medical Service had been the first to obtain the Diploma of Tropical Medicine at the University of Sydney, Australia. However, I was sorry that the Territory of Papua was not referred to. Australia is responsible for the administration of two tropical territories: (a) the Territory of Papua, which, until 1907, was named British New Guinea, and (b) the Territory of New Guinea, which, until the war, was known as German New Guinea. The first territory, that of Papua, is governed simply as a territory of Australia, and is not under mandate. It was from this territory that Dr Bellamy came. The territory of New Guinea is held by Australia under mandate. There is a certain amount of friendly rivalry between the two territories, and some here regret that your article on page 485 rather implies that Dr Bellamy, the first Australian D.T.M. and H., came from the mandated Territory of New Guinea (that is, late German New Guinea)—I am, etc.,

W M STILES, M.D., B.C.,  
D.T.M. and H. Camb.

May 25th

Chief Medical Officer, Territory of Papua

## Obituary

DR VINCENT JOHN MAGPANE, who died on June 17th, at his residence in Darlaston, was born in 1858, and received his medical education in Dublin, where he obtained the diplomas of L.R.C.P.I., L.R.C.P.S.I., and L.M. in 1881. In the following year he commenced private practice in Darlaston, and in 1894 became a member of the local district council, of which he was chairman in 1897 and 1910. He was appointed medical officer of health for Darlaston in 1910 and held this position at the time of his death. He took an active interest in the local Volunteers, which he joined in 1884, five years later he received a commission as lieutenant, was promoted captain in 1893, and major in 1906. He commanded a company in South Africa in 1902 and held the Queen's South African medal with two clasps, the Volunteer Long Service medal, and the Volunteer Officers' Decoration. He was a member of the British Medical Association.

DR CHARLES GASKELL HIGGINSON, who died on June 26th, aged 68, received his medical education at Manchester and Newcastle, he took the degree of M.A. Lond. in 1881, obtained the diplomas M.R.C.S., L.R.C.P. in 1886, the L.M.S.S.A. Lond. in 1907, and graduated M.D. Durh. in 1912. About 1900 he became specially interested in the sanatorium treatment of pulmonary tuberculosis, and held a post for some time on the staff of Crooksbury Sanatorium. He published a life of Bodington and short practical contributions on sapraemic glycosuria and other medical subjects. He was a member of the British Medical Association. A colleague writes: Dr Higginson was a relative of the inventor of the Higginson's syringe, and also of James and Harriet Martineau. He was a man of brilliant literary gifts and was much in request at literary gatherings. He never forgot a friend or an old patient, and often went out of his way to do a service to an old comrade, he contributed freely to movements of public utility. Those intimate with him were impressed by his generosity, modesty, courage, sound common sense, and thoughtfulness for others.

THE LATE ARTHUR BOLLES LEE—Some extra copies of the portrait of the author of *The Microtome*, the *Index-Mecum* which was issued with the last number of the *Journal of Pathology and Bacteriology* are available, and may be had by anyone interested on application to the editor at 17, Loom Lane, Radlett, Herts.

## Universities and Colleges.

### UNIVERSITY OF OXFORD

At a congregation held on July 23rd the following medical degrees were conferred:

B.M.—W. N. Dickenson O. Hooper P. C. Probyn Williams J. W. Pugh  
H. W. Allen C. Charleson J. L. Glover P. F. Clover Irene M. Titcomb

### UNIVERSITY OF CAMBRIDGE

At a congregation held on July 14th the following medical degrees were conferred:

M.Chir.—R. S. Corbett  
M.B.—B. Chubb E. L. Alexander G. M. Tanner H. F. Griffiths  
H. P. Nelson E. S. Page  
B.Chir.—Y. C. J. Harris (by proxy) H. S. Allen C. F. Watt. H. M. Elliot  
C. E. Kellett D. N. R. Jones R. Watson

### UNIVERSITY OF LONDON

A MEETING of the Senate was held on July 20th the Vice-Chancellor (Sir William Beveridge) being in the chair.

#### London School of Hygiene and Tropical Medicine

The London School of Hygiene and Tropical Medicine (Department of Bacteriology and Immunology and of Epidemiology and Vital Statistics) was admitted as a school of the University. The date of the appointment of Professor W. W. C. Topley and Mr. Major Greenwood to the respective University Chairs of Bacteriology and Immunology and of Epidemiology and Vital Statistics teachable at the school was changed from August 1st 1923 to October 1st 1927.

#### External Students

The Senate have placed on a permanent basis the advisory Service for External Students, which has been working experimentally

for the past three years. Under this scheme external students may consult the External Examiners on any matters relating to their studies for external degrees.

#### Diploma in Biology

It was resolved to institute an Academic Diploma in Biology.

#### Appointment

Professor E. H. Kettle M.D. B.S. Lond. M.P.C.P. was appointed as from October 1st 1927 to the University Chair of Pathology, teachable at St. Bartholomew's Hospital Medical College. He is also at St. Mary's Hospital Medical School and obtained the M.B. B.S. Lond. in 1907 and the M.D. in Pathology in 1910. In 1910 he was appointed a pathologist and Lecturer in Pathology at St. Mary's Hospital and later Director of the Department of General and Special Pathology to the newly formed Institute of Pathology and Medical Research. Since 1924 he has been Professor of Pathology and Bacteriology in the Welsh National School of Medicine, Cardiff.

Dr. Bronislav Malinowski D.Sc. Lond. Ph.D. Cracow was appointed to the University Chair of Anthropology teachable at the London School of Economics.

Miss D. L. Mackinnon D.Sc. Aberd. was appointed to the University Chair of Zoology, teachable at King's College.

Mr. W. H. Lunnell Ph.D. M.Sc. Durh. was appointed to the University Readership in Pharmaceutical Chemistry teachable at the School of Pharmacy.

Sir Holburt Wynn M.S. F.P.C.S. was appointed representative at the nineteenth French Congress of Medicine to be held in Paris in October 1927.

#### Doctorate in Physiology

The following Doctorate was conferred—D.Sc. in Physiology. Mr. A. S. Lanks University College, for a thesis entitled: On the occurrence of the oestrous cycle after x-ray sterilization.

#### Results of Examinations

The following candidates have been approved at the examinations indicated:

M.D.—Branch I: Medicine. W. L. Ackerman Doris M. Baker J. Bevan Jones T. B. Blackledge F. T. Brain Grace D. Chambers J. C. M. Elmes G. J. A. James A. T. Jones G. Khoshk Marjorie Low H. V. Morlock Jean L. Smith Hilda N. Stoessiger H. C. C. Taylor J. Whitty Caroline I. Wright B.Sc. Ross Doris M. Stone Branch III: B.Sc. May K. Ruddy Branch IV: Women F. C. Alton H. Burr White (University medal) Dorothy N. L. Leverton Branch I: Sale Medicine L. A. Macdonald M.S.—Branch I: Surgery D. H. Patey

#### UNIVERSITY COLLEGE

The following awards have been made in the Faculty of Medical Sciences at University College—Entrance Scholarship I. P. Bettleby (first Memorial Prize) Margaret D. Wright Anatomy Gold medal (senior class) Flora Hargreaves Silver medal (junior class) D. Davidson Histology and Embryology Prize equivalent to silver medal Albertine L. Winner and D. Davidson (equal) Organic and Applied Chemistry Silver medal L. G. Norman Physiology Sharper Scholarship L. E. Bayliss gold medal (senior class) Flora Hargreaves Pharmacology Silver medal, Flora Hargreaves

#### LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

The Council has awarded the following scholarships and bursaries for sessions 1927-28 to the value of £1400—St. Dunstan's Medical Exhibition Miss S. C. B. Waller Isabel Florence Scholarship Miss C. L. Taylor Miss F. D. Wainwright Mrs. George M. Smith Scholarship Miss J. G. Gould Mabel Sharman Crawford Scholarship Miss L. Reder Dr. Margaret Told Scholarship Miss D. H. Courtney Sarah Holborn Scholarship Miss C. S. Beer and Miss H. C. Tester Lady Butler Scholarship Miss M. C. Goodchild Alfred Lauzon Bursary Miss C. A. Coover Ellen Walker Bursary Miss V. H. Rieu Flora Murray Bursary Miss M. E. Roberts Dr. Edith Peckey Philip on Pos-Graduate Scholarship Miss G. H. Newell M.B. B.S. Lond. and Miss D. M. Scott M.B. Ch.B. Edin.

#### SOCIETY OF APOTHECARIES OF LONDON

##### Proposed New Diploma

THE EXAMINATIONS Committee of the Society of Apothecaries of London has drawn up a report which will shortly be presented to the Court of Assistants of the Society. The report recommends the institution at an early date of a diploma indicating specialized knowledge of the subjects of ante-natal care and infant welfare. It would be granted to registered medical practitioners who had been engaged in post-graduate study of the subjects both in practice and theory and a high standard of professional knowledge would be guaranteed by a stringent examination. The diploma would be specially adapted to the needs of the general practitioner who wishes to show that he possesses a knowledge and experience in the subjects of a higher grade than that demanded for legal qualification.

##### Results of Examinations

The following candidates have passed in the subjects indicated—SURGERY—L. Ashkenazy E. Clay Jones J. Miller J. D. D. E. A. S. round MEDICINE—Y. F. Engelen E. Clay on Jones W. H. Coles P. E. 10th F.P.C.S. MEDICINE—S. A. Carr L. C. L. or one S. Colman S. B. Smith MIDWIFE—L. Clayton-Jones P. F. Fennell J. D. P. The diploma of the Society of L. L. has been awarded to E. A. Stroud and L. Clayton-Jones.

## Medical Notes in Parliament.

(FROM OUR PARLIAMENTARY CORRESPONDENT.)

THE House of Commons this week completed its financial business for the Session, passing Estimates for many departments, of which only those for the Board of Trade, Board of Education, and Ministry of Labour were debated. The Trade Disputes and Trade Unions Bill and other measures passed through their final stages in both Houses and received the Royal Assent, after which Parliament adjourned till November 8th.

### Medical Confidences

On July 25th Dr Vernon Davies asked whether the attention of the Minister of Health had been drawn to the decision of one of His Majesty's judges at the Birmingham Assizes on July 18th, 1927, that there was no privilege for medical men to refuse information to the court obtained confidentially in the treatment of a patient suffering from a particular complaint, in spite of definite assurances in the past by the Ministry of Health that such information would be inviolate and, as this decision by the learned judge must exercise a deleterious effect upon the detection and treatment of this complaint by preventing sufferers from it seeking competent medical advice and treatment, what steps he proposed to take to implement the assurance given to such sufferers in the past that the information obtained by submitting themselves to treatment would be kept inviolate, and whether in view of the importance of removing any obstacle to complete confidence between a patient and his medical adviser in the early stages of this disease, he would inquire into the desirability of introducing legislation to give a doctor the right at least in the case of this disease, to refuse to give evidence about confidential information obtained from a patient. Sir K. Wood said the Minister's attention had been drawn to this case, and he proposed to give careful consideration to the points raised by it.

Dr Davies asked if the Minister would bear in mind when considering this question, that it is a matter affecting pinned patients, and that it might have deleterious effects on the treatment of disease and lead to a feeling of insecurity both by medical men and patients. Sir K. Wood replied that these were difficult questions to which the Minister of Health proposed to give careful consideration.

### Bills

In the House of Lords on July 25th a Commons amendment to the Diseases of Animals Bill was accepted. On the same day the Midwives and Maternity Homes (Scotland) Bill and the Medical and Dentists Acts Amendment Bill passed through Committee, and on the following day were read the third time and passed. The latter bill is to be considered by the Commons during the autumn.

### Nursing Homes (Registration) Bill

On July 26th a Standing Committee of the House of Commons considered the Nursing Homes (Registration) Bill. Amendments were made in a subsection which provides that registration may be refused to a maternity home which was not in existence at the commencement of the Act and where any person attending any woman in the home in childbirth or nursing such woman after childbirth is not a certified midwife, pupil midwife, or qualified nurse. On the motion of Dr V. Davies an amendment was made limiting the application of the words "woman after childbirth" to patients in the home. On the motion of Sir Richard Luce the Committee added a duly qualified medical practitioner to "certified midwife" and the rest of the list. Viscountess Astor moved that a nursing home (other than a maternity home) in which treatment by medical methods was not administered should not be refused registration on account only of the fact that it was not under the supervision of a qualified medical nurse or that there was not a proper proportion of qualified nurses. She proposed this in order to exempt Christian Science Homes which objected to being under medical men or medical nurses. Mr Chamberlain resisted the amendment. He pointed out that it made no reference to Christian Science, would permit all forms of untrained and irregular practice to claim exemption from the bill and would drive a coach and four through it. Dr Davies said that Christian Scientists recognized that medical men were necessary for broken legs or infections at all. Christian Science homes were common in all propositions charging the fees of the best nursing homes of the district and whose Christian Science practitioners charged the fees of medical practitioners. If they had competed with nursing homes they must be amenable to the law. Lady Astor renewed her appeal to the Minister to accept the amendment but Mrs Lawrence said that no people were more proved upon than the sick poor and the amendment would let through every quack in the world. Mrs Philip said that the amendment was far too wide. It was negatived without a division.

Mr Gerald Hirst moved an amendment to impose a time limit on the less stringent conditions which the bill provided for nursing homes in existence at the time of the bill's coming into operation. The limit proposed was that when the individual or corporation

not carrying on the home ceased to do so, the stricter conditions of the bill should apply to the new management, including the statutory obligation to maintain a proportion of qualified nurses. Sir Kingsley Wood advised the Committee to insert the amendment. He suggested that the amendment should be altered so that it would apply when the home ceased to be solely under the control of the original individual. Thus altered the amendment was accepted. Clauses 1 and 2 were added to the bill. Clause 3, dealing with notice of refusal or cancellation of registration was accepted with slight amendments moved by Dr Davies. On Clause 4 which provides that the local authority may make by laws among other matters, for a record being kept of children born in the home, Dr Davies moved to add also "any miscarriages occurring in the home." There was, he said, in undue proportion of miscarriage in certain nursing homes. The amendment was accepted. Sir Richard Luce moved to omit the proviso that along with the notification of death in a nursing home there should be given a statement of its cause. It said this would infringe the conditions of the Births and Deaths Registration Act 1926. Mrs Lawrence said that the bill was concerned with the deaths of women and children in maternity homes, and that there were certain types of homes which could not be watched too closely. Sir Kingsley Wood said he had consulted the Registrar General who in any case of suspicion would cause the information to be sent direct to the local supervising authority. This would keep the bill within the spirit of the Registration Act and action would be taken through an official of the State instead of on the initiative of a private informant. Dr Lemanth did not feel satisfied with Sir Kingsley Wood's explanation. He thought that a second line of inquiry was advisable. Sir Kingsley said he contemplated an arrangement whereby the Registrar General would inform the local supervising authority of the number of deaths in a particular home, and if that number seemed abnormal the officer of the authority would make inquiries. Sir Richard Luce wished to secure that unauthorized persons did not give the cause of death. Under the bill the midwife might have to give the cause of death. Dr Davies suggested that if the local authority applied to the Registrar General it should be permitted to inspect any certificate from any nursing home. Sir Kingsley Wood said he would see the Registrar General again and explain that the Committee desired the local supervising authority to be able to learn the cause of death. Whatever action was taken would be by instruction and not in the Act of Parliament. He suggested that Sir Richard Luce's amendment should in the meantime be carried. The amendment was carried and the clause added to the bill.

On Clause 5 (inspection of nursing homes) Sir Richard Luce moved an amendment to indicate that the medical officer of health was normally the proper person to inspect nursing homes. His amendment would make the clause begin "The medical officer of health of the local supervising authority or some other officer duly authorized by them may at all reasonable times enter and inspect." Sir Kingsley Wood approved the amendment. Mr Hirst thought that the bill should be further amended so that other inspectors, such as sanitary or architectural inspectors should act on the instruction of the medical officer. Mr Hirst's amendment was carried. Clauses 5 and 6 were then added to the bill. Debate arose on Clause 8, which defines the local supervising authority. Sir Douglas Newton moved an amendment to ensure that the larger non-county boroughs should be supervising authorities for nursing homes, non-county boroughs were already the principal public health authorities in their areas and had highly skilled medical officers. Dr Lemanth suggested that the Committee should also discuss a subsequent amendment in his name, which provided that a borough or urban district council might delegate its powers to the county council. Under the Midwives Act every midwife was registered and supervised by a county council or county borough council and these were the inspecting authorities under the Maternity Homes Act. Why should the Committee now multiply the inspecting authorities? The Select Committee on Nursing Homes had pointed out that interest or prejudice might affect inspection by the minor local authorities. The County Councils Association thought that to accept Sir Douglas Newton's amendment would be a retrograde step. If it was necessary to have a compromise on Sir Douglas Newton's amendment he suggested that the Committee should provide that where the council of any borough or urban district of which the medical officer of health is precluded from engaging in private practice shall resolve that the powers of a local supervising authority under this Act would be more efficiently administered by them without detriment to the administration of the Midwives Act, the county council may by resolution delegate such powers to that council and that council shall thereby become the local supervising authority under this Act.

Sir Kingsley Wood said he had endeavored to get the parties to come to an arrangement. He thought the most reasonable compromise was to allow the local authorities to become supervising authorities only when they had full-time medical officers of health. It would be undesirable for a small local authority to be the supervising authority when its medical officer was in private practice. Sir Richard Luce objected to supervision being committed to rural districts which only shared in a medical officer of health. Sir Kingsley Wood said the question would be reconsidered later. The Committee then divided on a consequential amendment proposed by Sir Douglas Newton which was carried by 14 to 6. This provides that the inspecting authority shall be (a) as respects a county borough the council of the borough (b) as respects an urban or rural district the medical officer of health of which is precluded either by the terms of his appointment as such medical officer or by the terms of any appointment when he may hold as medical officer of an other local or public authority from engaging in private practice the council of the district (c) as respects any other rural district the council of the county. Dr Lemanth's amendment was not put.



Clause 8 and subsequent clauses were added to the bill. On Clause 9 Sir Richard Luce moved that in any premises used or intended to be used for the reception of and the provision for a class of patients in whom the requisite nursing can be suitably and adequately provided by nurses of a class whose names are contained in some part of the register of nurses required to be kept under the Nurses Registration Act 1919, other than the general part of that register, references in the definition of "qualified nurse" contained in Subsection (1) of this section to the general part of the register shall be construed as including references to that other part of the register. Sir Kingsley Wood said this referred to children's nurses in homes exclusively for children and to male nurses in infirmaries. The clause was accepted. Mr. Hurrell moved a new clause to provide that in the County of London the supervising authorities should be the London County Council and the City of London Council with power to delegate to borough authorities and with uniform by-laws throughout the area. This amendment was carried and the bill reported to the House. The concluding stages of the bill will be taken during the autumn sittings of Parliament.

#### Nique

A number of questions were addressed to the Minister of Health about a grain ship which arrived recently in the Port of London and had been certified by the port sanitary authority to be suspected of containing vermin (rats) infected with bubonic plague. So far as he was aware no other vessel so suspected had arrived. All vessels from South American ports bound for the Port of London were boarded at Graysend. The port sanitary authority was taking all necessary precautions to prevent the spread of infection.

**Medical Benefit**—The Minister of Health stated on July 26 that the proposal of the Royal Insurance that the scope of the Act should be extended to include a consultant and a second medical officer when it decided to give the communicating its final views.

**Persons Drunk while in Charge of a Vehicle**—The Home Secretary on July 26th said in reply to a question that the general practice was that a person arrested for being drunk while in charge of a vehicle who demanded to be examined by his own doctor was not allowed to be examined in private the police insisting on being present. He did not see how the interests of the prisoner could be prejudiced by the presence of a police officer who might have to give evidence in court with regard to the examination. Interviews with solicitors were obviously on quite a different footing.

**Mule spinners' Cancer**—On July 25th Sir Frank Sarder asked the Home Secretary if his attention had been called to the report of the departmental committee on the occurrence of epitheliomatous ulceration among mule-spinners (mule-spinners' cancer) which attributed the absence of evidence of a similar incidence among cotton mule-spinners in France, Germany, Russia, Poland and America to the comparatively small number of mule-spinners employed abroad and in view of the fact that the more probable explanation for the absence of the disease in mule-spinners in foreign countries mentioned was the fact that in those countries braces were not worn but a belt only. He would consider the desirability of making a regulation that all spinners should wear belts instead of braces and of directing a further exhaustive inquiry into the fact as to whether or not there was at the present time a spray of oil which could reach the spinner's neck. Sir W. J. Wood said that alterations in the machinery containing the mule-spinners' cancer. Sir W. J. Wood said that the suggestion in the question as to the cause of this disease was not so far as he was aware supported by any evidence. The experiments of the Committee had proved that the oil thrown off from the bobbins could reach the spinner and no further inquiry on this point was necessary. No question arose however at present of requiring any expensive alterations to the existing mules. The Committee recommended that the employers and operatives a committee should endeavour by experiments to devise some form of simple and inexpensive guard which could be easily added to any existing mule and he was looking to the industry to give effect to this recommendation.

**Birth Rates**—Sir K. Wood on July 19th told Sir V. Durrant that the birth rate per 1,000 of the population in Great Britain in 1925 was 18.6 and in 1926 18.1. In France in 1925 it was provisionally 18.8, in Finland in 1925 it was 22.5 and in Germany 21.3. In the Netherlands in 1926 it was provisionally 23.8, in Spain in 1925 it was provisionally 29.4 and in Hungary in 1926 it was provisionally 26.7. In Italy in 1925 it was provisionally 27.5. In the only parts of Russia in Europe for which figures were available there were Soviet Republic of Russia 1924 43.6 (provisional) Ukraine 1923 35.4.

#### Notes in Brief

Mr. Churchill does not propose to introduce legislation to increase the Civil List pension to provide State recognition of self-sacrificing and devoted services to medicine and science.

Dr. Shields M.F. has been appointed a member of the Commission which is to go to Leyton to report on the revision of the constitution of that colony.

Commodore King in reply to Mr. T. Kennedy on July 26th said there had been twelve deaths this year in China among the British troops and two among the Indian troops not forming part of the permanent establishment there. Eight of the cases were due to illness and the rest to accidents or wounds.

Dr. Orr by Gore stated on July 25th that the local hygiene in the Straits Settlements was receiving the constant and careful attention of the local Government. The reconstitution of a Colonial Office advisory committee on methods of dealing with prostitution in Hong Kong, the Federated Malay States, Malta and Cyprus was under consideration.

In the year ended June 30th the police instituted proceedings in 180 cases for the emission of miasmatic or noxious vapours by vehicles in Blackwall and Potherhithe tunnel. Owing to legal difficulties no proceedings were taken for similar offences in the street of London.

## Medical News.

**DR A. NAVE KINGSBURY, M.B. B.S. B.Sc. Lond.** Colonial Medical Services, Institute of Medical Research, Federated Malay States has been awarded the North Borneo Forces Memorial Medal for the year 1926 for his paper "Some investigations of malarial fever," published in the *Transactions of the Royal Society of Tropical Medicine and Hygiene* (vol. xix No. 8). This medal is awarded annually for the best paper on tropical medicine or hygiene published in any journal during the preceding twelve months by any medical officer of under twelve years' service of the Royal Navy, Royal Army Medical Corps, Royal Air Force, Indian Medical Service or of the Colonial Medical Services.

**THE thirty-sixth French Congress of Surgery** will be held in Paris under the presidency of M. Paul Béhari, professor of choical surgery at Bordeaux, from October 3rd to the 8th when the following subjects will be discussed: (1) Drainage in abdominal surgery introduced by M. Cadeval of Paris and Pate of Lyons; (2) Chronic pericystitis and epiploitis introduced by M. Lardinois of Paris and Silhol of Marseilles; (3) Indications and results of peritoneal sympathectomy in surgery of the limbs introduced by M. Leriche of Strasbourg and Robineau of Paris.

**THE Fellowship of Medicine** announces that a special afternoon course in diseases of infants will be held at the Infants Hospital from August 8th to 21st with special visits to the Model Pasternizing Plant, Willesden, the Home for Blind Babies, Chorley Wood and the V.D. Central Babies Inn from August 23rd to September 10th. An all day course at the Queen Mary's Hospital, Stratford will include demonstrations of surgical, medical orthopaedic and ophthalmic cases operations and lectures. In September there will be courses in medicine, surgery and the specialties at the Westminster Hospital, diseases of children at the Queen's Hospital, psychological medicine at the Bethlem Royal Hospital, ophthalmology at the Royal Westminster Ophthalmic Hospital and orthopaedics at the Royal National Orthopaedic Hospital. The Fellowship also arranges a general course of instruction at the associated hospitals. Copies of all syllabuses may be obtained from the Secretary of the Fellowship, 1 Wimpole Street W.1.

**THE annual dinner of past and present students of St. Mary's Hospital Medical School** will be held at the Cunningham Rooms, Great Queen Street on Saturday, October 1st, at 7 p.m.

**THE house of the Royal Society of Medicine** will be closed during August for cleaning and repairs. The library will be open on weekdays (excluding Monday August 1st) from 11 a.m. to 6 p.m. except on Saturdays when it will close at 1 p.m.

**THE late Professor E. H. Starling** we learn from the *Artist's Pictorial Journal* joined that corps in 1909 when he was holding the Jodrell Chair of Physiology at University College. He took with him a number of his students.

**DR PERHANS** professor of obstetrics at Vienna has been elected rector of the university.

**THE Medical Society of the Mediterranean Coast** has arranged a tour from December 30th 1927 to January 7th 1928 open to all medical practitioners and their families starting from Toulon and visiting Hyeres, St. Raphael, Valence, Cannes, Le Cannet, Grasse, Vence, Nice, Villefranche, Beaulieu, Monaco, Monte Carlo and Mentone. The cost as at present arranged will be 1500 francs including hotels and motor car excursions apart from the cost of the railway journey for which it is hoped facilities will be granted by the railways. Further information may be obtained from the French National Touring Office 55, Haymarket London S.W.1.

**A CONGRESS of Alimentary and Metabolic Diseases** will be held at Vienna from October 4th to 7th when papers will be read on the regulation of metabolism, peculiar formation of calcium and diabetes by Drs. Hober, Porges, V. Koranyi, Tandler, Herxheimer, Schurz, Faltz and others. Further information can be obtained from the general secretary, Professor von der Velden, Bambergstrasse 47, Berlin, W. 30.

The twelfth International Congress of Hydrology, Climatology, and Geology will be held at Lyons from October 8th to 11th, with Professor Gilbert of Paris as president of honour and Professor Pic of Lyons as president. The subjects to be discussed include acid base equilibrium and treatment by mineral waters, atmospheric radio activity, and the geological origin of radioactive mineral waters. The secretary is Professor Pic of Lyons.

The nineteenth French Congress of Medicine will open in Paris on October 11th, under the presidency of Professor Pierre Leissier, and will continue to the 15th, it will be followed immediately by the celebration of the centenary of Villermé. The programme includes discussions of the symptomatology of the medical septicaemias, the pathology of the occlusas, and the medical indications and therapeutic value of splenectomy. It is proposed to arrange an excursion to the battlefield of the Aisne. Detailed information may be obtained from the general secretary, Dr M. Chiray, 14, Rue Pétiarque, Paris, XVIe.

A POST GRADUATE course in the pathology of the digestive system will be held in Barcelona from October 5th until Christmas. Further information may be obtained from Professor Gallart, at the Hospital de la Santa Cruz, Barcelona.

There are at present 5,000 medical students in Paris and 8,800 in the whole of France.

NINETY EIGHT cases of encephalitis lethargica, with 37 deaths occurred in Germany in 1926, as compared with 217 cases in 1925. Notification is compulsory only in Baden, Brunswick, Lüneburg, Prussia (since May, 1926), Anhalt (since July, 1926), and Schaumburg Lippe (since June, 1926).

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are **MUSEUM 9861, 9862, 9863, and 9864** (internal exchange, four lines).

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**MEDICAL SECRETARY** **Mediscia Westcent London**.

The address of the Irish Office of the British Medical Association is 16 South Circular Street, Dublin (telegrams **Bacillus Dublin**), telephone 4737 Dublin, and of the Scottish Office, 6 Drumshengill Gardens Edinburgh (telegrams **Associate, Edinburgh**), telephone 4361 Central.

## QUERIES AND ANSWERS

### TREATMENT OF ONYCHIA

"W.S.M." asks for advice in the treatment of a typist, aged 39, who has onychia of the index finger of both hands, the right being the worst. She is otherwise healthy, but the forefinger being the pettenion finger, the lesion is serious for her.

### GRAFTING FOR CORNEAL SCARS

Dr C. F. SHILL (Hendon) writes with reference to an inquiry published on July 16th (p. 121). There seems to be no justification for attempting so hazardous an operation as grafting for dealing with corneal opacities. The more so since it was shown a few years ago that corneal scars, whatever their size and density, are speedily and painlessly resolved by a few short applications of a mild "violet ray" current, the glass applicator being in contact with the closed lids.

### LEASING TAX

#### Motor Car Pent Average

"I.H.T." replaced his car in January, 1925. On what figure should his depreciation allowance be based? He has bought his premises, should he not be allowed to deduct a proportion of his former rent? Can he not claim the three years average seeing that he took over the practice at April, 1924, and that his earnings have been increasing?

\*. (1) The depreciation allowance is based on the written down value of the car at the end of the last account prior to the year of assessment. That principle has been approved by the courts. If the obsolescence allowance is claimed in respect of the car replaced there should be no effective difference in this case. (2) As from the date of purchase of the premises the rental value to be taken as the basis of the deduction for Schedule D is the amount on which tax has been paid under Schedule A, it should be borne in mind that an appropriate portion of the expenditure on repairs and decorations should also be claimed. (3) In the circumstances stated "I.H.T." can elect to take the three years' average for 1927-28 and 1928-29 (both years, not one only), if the earnings for the year 1923-24 were greater than either of the years 1924-25 or 1925-26, but not otherwise. The election should be notified to the inspector of taxes by October 5th, as made under Section 29 of the Finance Act, 1926-27.

### Motor Car Taxation

"D.I.A." sold his former practice in March, 1925 and bought another three months later. He has claimed obsolescence in respect of a car sold in 1926, and the local inspector claims to deduct the sum of £102 as being the wear and tear attributable to the period before "D.I.A." took over his present practice.

\*. We advise "D.I.A." to accept the inspector's objection as regards the £11 attributable to the three months during which he was not in practice, but as regards the remaining £91 the contention is clearly inequitable. In substance the inspector is treating the claim as if the car had been sold by the old practice to the new one, but we presume that he would not regard the facts as justifying the present proprietor of the old practice in claiming a deduction of £91. If so it is clear that unless that allowance is made to "D.I.A." the plain intention of the Statute is defeated. There is some technical ground in the suggestion that the old loss by a car and taxi did not affect the earnings of the practice for which "D.I.A." is now assessed, but, on the other hand, no allowance has been "made" for that wear and tear, and our correspondent did item the whole of the expense in 1926. If the inspector continues to refuse the claim perhaps a ruling could be obtained from the Secretary, Inland Revenue, Somerset House, in that event we should be glad to learn the result, as it is a matter of some general interest to the profession.

### Motor Car Transaction

"M.I." sold a car (which he had purchased second hand for £35) for £30 and bought a new car for £275. The inspector will allow £275-£30=£245 but not £335-£30=£305. The second car has since been replaced.

\*. We advise "M.I." to accept the £245 deduction. Where a second hand car is replaced by a new one the question of improvement and consequent adjustment for capital outlay raises peculiar difficulties.

## LETTERS, NOTES, ETC.

### THE EFFECT OF BATHING ON THE EARS

Mr F. FRANK STURM M.Ch. (Leigh, Lancs.) writes: In reply to overword of Mr C. Hamblen Thomas timely communication on "The effect of bathing on the ears" (**BRITISH MEDICAL JOURNAL**, July 9th, p. 78) with the single exception of the word "meati" used as the plural of "meatus" which it is not "meati" is as obvious to the mental ear as contaminated sea water to the physical organ.

### INTRATUMORIAL AMPUTATIONS

Dr JON TROTTER (Grimsby) writes: I was called at 4.30 a.m. to a woman who was expecting her second child. She was in labour. The presentation was a breech, left sacroanterior. The os was dilated to two fingers. It was called again at 9.30 a.m. and found the cervix fully dilated, the breech well down on the perineum, and the membranes unruptured. After rupturing the membranes which were very tough, a stillborn male child weighing 5 lb. was easily delivered. Both legs were abraded below the knee and the right arm ended at the elbow. The stump of the left leg presented an appearance like that of an old amputation through the knee joint, the patella being removed. The right presented a similar appearance but the medial condyle of the femur was absent. The child otherwise appeared normal. The mother aged 35 years gave birth six years ago to her first child, a girl, who presents no structural abnormality. There have been no miscarriages. The parents are healthy well married, and do not know of any birth deformities in their family histories.

### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 31, 32, 33, 36 and 37 of our advertisement columns and advertisements as to particulars, assistantships, and locum tenencies at pages 34 and 35.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 89.

## A Discussion

ON

THE REPORT OF THE LUNACY COMMISSION  
(ENGLAND)THE PROVISIONAL TREATMENT ORDER OF  
THE ROYAL COMMISSION

BY

GEORGE M. ROBERTSON, M.D.

President of the Royal College of Physicians of Edinburgh,  
and Professor of Psychiatry in the University  
President of the Section

The lunacy laws of England and of Scotland are in urgent need of amendment. The parent Act for Scotland dates back to 1857, since when great changes affecting its serviceableness have taken place in the social life of the country as well as in the scientific world. It however, definitely recognizes the paramount position of the medical profession in the treatment of mental diseases, for under its provisions no layman or magistrate is called upon to interview the patient before he is placed in a mental hospital and no layman or committee is held to be responsible for his removal when recovered. Medical men discharge these and all similar duties and to this feature must be ascribed the success of the Scottish system. It has gained the confidence of the people and in place of misgivings and suspicion, there is pride in our mental hospitals and in their management. No case of improper detention has ever been recorded in the law courts. The 1857 Act has served its day and generation well, and its principle of medical responsibility is in Scotland established for ever.

The principal Act for England was passed in 1890 and from the legal and administrative points of view it is a complete, logical, and accurately drafted instrument. Its very perfection in these respects has been a calamity to the person sick in mind. That the treatment of insanity is primarily a medical question, that insanity being a disease like other diseases must be treated and treated early if its cure is to be effected, were minor considerations in the framing of this Act. They were overshadowed by problems connected with the liberty of the subject and with the haunting fear of improper detention, which loomed so ominously in the minds of law makers. Thus, as has happened so often, an Act designed for the welfare of the insane person has turned out in practice to be to his detriment and has enacted with the object of reducing the sum of human misery have, in fact, increased it.

*The Recommendations of the Royal Commission*

The present is an opportune time to discuss the problems of lunacy legislation. A thorough and impartial inquiry by a Royal Commission has just been concluded and an exceptionally able report has been presented, pointing out existing defects and making valuable suggestions for the future. One gratifying and immediate result of the investigations made has been to allay all anxiety in the minds of reasonable people as to the improper detention of sane persons in mental hospitals in England. Such cases have not been found and in future legislation should not be dominated, as it has been in the past by suspicion and misgiving, which have done so much harm to the person chiefly interested—namely, the patient.

The following are some findings of the Commission:

- 1 The Commission did not find a single case in which improper detention had been suffered.
- 2 Five years previously a Select Committee of the House of Commons had also reported the same absence of improper detention.
- 3 The stigma of certification is acutely felt both by patient and his relative.
- 4 Certification should be the last resort and not a preliminary to treatment.

- 5 The present system of treatment is based on a very limited scale and needs radical reform.
- 6 The problem of insanity is primarily a medical problem to be dealt with on modern principles.
- 7 The keynote of the proposed new system is that the future should be prevention and treatment.

The problem before us is summed up by the Commission in the following paragraph:

The lunacy code should be replaced with a view to securing the treatment of mental disorder on a basis of medical responsibility to the treatment of physical ailments, a basis consistent with the special safeguard which are indispensable when the liberty of the subject is intruded.

According to the Commission the basic classification of cases requiring mental treatment should be—voluntary and the involuntary.

The arrangements suggested for voluntary treatment are on the whole satisfactory. The form of treatment will ultimately become by far the most popular and already in the Scottish royal hospitals the admission of voluntary patients paying the higher rates of board amounts to two-thirds of the total number. As the principle of voluntary treatment meets with universal approbation and differences of opinion exist only on matters of detail details on this subject would serve no useful end at present and therefore excluded.

With regard to involuntary patients three procedures are recommended by the Commission:

The simplest of the three is the Emergency Order signed by relative or friend or public official or one medical recommendation, which, as it is noted in not a certificate of insanity. This order remains in force for seven days. Nothing need be said regarding the emergency order which is altogether satisfactory.

We now come to the two remaining procedures recommended by the Commission: the Provisional Treatment Order and the Reception Order. The two orders are obtained through the personal intervention of a layman. They differ in three respects:

To obtain the provision 1 treatment order on day or only is called in to advise, instead of two as in the reception order, secondly the single doctor makes a recommendation in the provisional treatment order while the two doctors give certificates of insanity in the reception order and thirdly the authority of the provisional treatment order lasts from one to six months, while that of the reception order is indefinite in duration.

The Commission is to be congratulated on adopting the principle in the provisional treatment order that an insane patient whose recovery is expected may be detained and treated on the recommendation of a doctor without being certified to be insane, thus relieving the patient and his relatives of the stigma of certification which is felt by them so acutely.

The provisional treatment order is supported by the recommendation of one doctor only, this is a matter of no in so important a matter which is the most difficult, delicate and indefinite in the whole range of medical practice, according to Mr. Justice Macdonald, who said it should without doubt be considered. In every great profession there may be a first or second opinion, but the doctor, like other human beings, is liable to mistakes and may make mistakes or be deceived but the provision of two doctors falling into similar categories or of three in collaboration is a very rare contingency. As a safeguard against error or observer merely to remove the value of a first opinion, the employment of a second doctor is not in the opinion of the Commission a high standard, but with the approval of two doctors by the Commission the failure to recommend two doctors by the Commission.

Do you think a second certificate of insanity is of importance as a safeguard against error or deception? Two medical certificates have been employed in all pauper cases in Scotland for many years and for event years and should be employed in all cases in such case a well. Moreover the provision of a second certificate to private cases is vital as to proper medical economy where the liberty of the subject is concerned is indefensible but it is particularly objectionable to the medical profession when the failure to employ a second

\* A paper read in opening a discussion in the Section of Mental Diseases at the Annual Meeting of the British Medical Association in Edinburgh (Friday, July 22nd). Dr. H. C. Munn, a Commissioner of the Board of Control in Scotland, was in the chair.

doctor is, as we believe, partly responsible for the repeated visitations of a sick person by laymen, and these will certainly not make for economy.

Another very debatable point is the basis upon which the two classes of patient—namely those to be placed under the provisional order, and those to be placed under the reception order respectively—are to be selected. This involves the question of prognosis, notoriously the most difficult and uncertain problem in psychiatry. It has to be solved in the first place by the general practitioner, who can scarcely be expected to have the necessary experience, and secondly, by the justice, who has had no medical training at all. The provisional treatment order applies to those cases only in which "there is a prognosis of early recovery", and the reception order applies to those patients only who are not likely to recover within six months. Those who have already been under provisional treatment for six months naturally come under the second category.

The difficulty regarding prognosis may be illustrated by a recent experience. A very eminent surgeon treating a melancholic patient regarded the prognosis of the mental condition as hopeless, because the patient was intensely suicidal. A suicidal tendency is the most anxious symptom a patient can exhibit, but as regards prognosis it is of no more significance than an ingrowing toe-nail. The surgeon was astonished when he was told this truth, but he now knows better, for he saw the patient make a rapid recovery.

A justice under similar circumstances might very naturally make the same blunder and refuse to sign the provisional treatment order. It is obvious that prognostication and forecasting the date of recovery is not one of the easiest tasks in psychiatry, and should not have been selected in sorting out provisional treatment cases from reception order cases, even though it is desired, and very properly desired, that all patients who make early recoveries should receive the benefit of the provisional treatment order.

The happiest laws regulating practical affairs are not the fine product of a learning that flourishes in studies and in libraries, they are slowly fashioned by the friction of circumstance and the shock of facts in the rude school of experience. Were the recommendations of the Commission regarding involuntary patients passed into law every doctor would place every patient not hopelessly and memorably insane under the provisional treatment order. What experienced doctor will give a grave prognosis at the beginning of an obscure illness? If thirty-five years ago Sir Thomas Clouston objected to the name of "dementia praecox," simply because of the malign influence of a pessimistic nomenclature on the endeavours of the physician, what are we to think of the evil consequences of a serious prognosis given solemnly on oath as a preliminary to treatment? When remedies are forthcoming for incurable and fatal diseases like general paralysis of the insane what doctor, in the early stage of any illness, in cold blood, is, in vulgar language, going "to throw up the sponge"? Every successful doctor is an optimist, to be anything else is fatal to the prospects of his patients and to his own success. Gloomy deans may have a vogue, but not gloomy doctors. A gloomy outlook injures the patient directly, and it also does so indirectly by depressing the relatives and by creating an atmosphere of anxiety. It may be safely assumed, if the recommendations of the Commission be passed into law, that every patient not a chronic or absolutely hopeless case will receive the benefit of the doubt and will be treated under the provisional treatment order. In other words, all recent and recoverable cases of mental disorder will be given the chance of recovering within six months without being certified and registered as lunatics—"an excellent thing." No harm is done if incurable cases by mistake also enjoy this privilege, for it is clearly better to err on the side of granting it to too many than to too few. The intolerable self-reproaches and the awkwardness of the situation of a family doctor who, under the reception order, certified as insane a patient who made a perfect recovery in the course of three or four months, may be left to the imagination.

There is no doubt the Commission had the Scottish Schedule G in mind when it designed the provisional treatment order, for the powers granted for six months under this schedule can be applied to the treatment of a patient when "the malady is not confirmed" and "with a view to his recovery." This condition is better expressed in Schedule G than in the recommendation of the Commission, for the intention can always be honestly remedied, however faintly hopeful the outlook, and there need be no strain placed on the conscience by a declaration on oath that recovery is likely to take place within six months when the outlook is quite uncertain and when a definite diagnosis has not been made. Seeing that similar results can be obtained in a simpler, surer, and more honest way than by speculative prognosis and hazardous assessment of the date of recovery, it would be better to drop the dubious procedure of prognostication altogether and give every patient, not a chronic and absolutely hopeless case, the benefit of the provisional treatment order for six months, provided he be treated "with a view to recovery."

#### *The Provisional Treatment Order*

After a patient has been treated under a provisional treatment order for six months and is not likely to recover soon, and in obviously incurable and chronic cases, full certification of insanity and a reception order is a procedure to which no objection can be taken, seeing that custodial and not remedial treatment is its main object. If a patient under a provisional order has not recovered within six months, but is expected to recover soon, it should be possible, with the approval of the Board of Control or other competent authority, to extend the duration of the provisional order to a year, or even longer.

We note, with profound regret, that the justice, a layman, must intervene personally in order that temporary medical treatment may be obtained under the provisional treatment order. Quasi-medical duties and responsibilities are also imposed upon him. Such a recommendation is astonishing in a report that records no case of improper detention and that breathes medical aspirations and professes therapeutic and preventive ideals on almost every page. It is clear from the evidence submitted to the Commission that unmedical legal procedures have in the past been the chief impediment to early treatment and have prohibited preventive measures altogether. The treatment to be given under the provisional treatment order is only temporary and is essentially remedial, it is quite different from that given under the reception order, which is unlimited and is predominantly custodial. There is therefore less reason for judicial intervention in the provisional treatment order than in the reception order, and this intervention would be still less necessary if two medical men were consulted instead of one.

The judicial authority, we are told, is employed for two reasons. First, as a safeguard against improper detention, and secondly, because it is a principle of English law that the liberty of the subject may not be infringed without the intervention of some judicial authority.

With regard to the first reason—namely, as a safeguard against improper detention—if improper detention ever happens it is never the result of malicious intention. So long as human nature remains as it is, and circumstances seem to conspire, mistakes may occur, but when we recall that miscarriages of justice, such as the Adolph Beck and the Ldalg cases, have occurred even in our courts of law, and that no cases comparable to them have occurred in our mental hospitals, then it must be admitted that the record of the medical profession is beyond all praise and one to be proud of. Further, when we consider that in Scotland for seventy years thousands of insane persons have been placed in mental hospitals without being seen by any magistrate, and that no case of improper detention has ever been found in our courts, it is clear that the honour and vigilance of the medical profession are no mean safeguards.

There is another safeguard not judicial, the value of which the Royal Commission does not appear to have realized—the medical appeal. The subject is in Scotland safeguarded against improper detention in an asylum,

and his liberty made almost impregnable, by the right of appeal to two independent doctors for examination. The judicial authority is the sheriff, whose strictly legal functions will be described later. He considers in private the written medical evidence only and makes no quasi medical investigations himself, nor does he invade the privacy of the sick room. His reception order is given wholly on the written opinions expressed by the two medical men first called in, but complete and speedy protection is afforded the patient should these two have made a mistake, by the right of appeal to two independent doctors for examination. This right is enjoyed by the patient, by any relative by any friend by the sheriff and by the General Board of Control, so the machinery can be easily set in motion and in minor ways. A patient is detained in a mental hospital on the certificates of two doctors, and what two medical men have done two others can undo if wrong has been done or a mistake has been made. If the first opinions are confirmed by thus independent and unbiased testimony the opposition of all it is usable persons is silenced. No human or judge or committee not even the General Board of Control itself can act independently of the opinions of the two independent medical men who form the supreme and, for the time being, the final court of appeal. We thus have in Scotland a purely medical system that affords complete protection, that has stood the test of time and that satisfies public opinion. The personal intervention of a justice is therefore not necessary as a safeguard against improper detention if this tribunal exists. An appeal is not made often and obviously frivolous appeals are discouraged by the authorities. In Scotland a sum of £30 a year apparently suffices for the payment of those cases in which no other funds are available.

In the second place, it is stated that it is a principle of English law that the liberty of the subject may not be infringed without the intervention of some judicial authority.

#### *The Judicial Authority*

The object of the lunacy law is to authorize violations of personal freedom for the benefit of the patient and others under certain circumstances and formalities. Between 1845 and 1890 we were informed, on the authority of Dr J C Bucknill Lord Chancellor's Visitor that

any one of the Queen's subjects may be deprived of his liberty captured, confined and detained by the proprietor of a licensed house or his servants, upon the order of any person whatsoever either a British subject or an alien either an adult or an infant either a relative or a stranger either an equal in social rank or a mental substitute the only condition being that he has been the alleged lunatic within one month of making the Order and is supported by the certificates of two men qualified to practice and practising the medical profession.

In spite of this abundance of any judicial authority the Select Committee appointed in 1877 to inquire into the subject of improper detention under the law of 1845 reports. Assuming that the strongest cases against the present system were brought before them, allegations of mala fides or of serious abuses were not substantiated. "It would therefore seem that the infringement of the liberty of the subject without the intervention of a judicial authority is not without ample and striking precedent in the domain of mental disease, and that it was freely practised in England for forty five years without the occurrence of serious abuses. It is still practised in Ireland without abuses arising."

Judicial intervention is not desired by the sick patient nor by his distressed relatives. It is quite alien to medical feeling. It creates difficulties, it adds complications and it causes delay at a time of great trouble and unhappiness. If there must be some form of judicial intervention, then the Scottish procedure has much to recommend it. It preserves the integrity of the medical ideal it respects the sanctity of the home, and it introduces the judicial element in a purely legal capacity. The sheriff, who signs the reception order, is an experienced barrister and a salaried judge. He never sees the patient, he does not make any quasi medical examination. The application and medical certificates are presented to him, and if these be in order and if the facts observed by the doctors indicating insanity

satisfy him, he invariably signs the order. No one could discharge these duties better than this highly trained official; no legal intervention could be less objectionable than the one he follows. Yet the question arises: Is judicial intervention necessary?

Judicial intervention in Scotland is quite superfluous. The inspection of the application to see that everything is in order and the examination of the medical certificates to discover if they truly indicate insanity, which is all that the sheriff does, are in every case as carefully performed by the General Board of Control as by the sheriff. If an order must be signed by a fourth party there is no reason why it should not be signed by the General Board of Control and the sheriff allowed to drop out altogether. The sheriff is only a fifth wheel to the coach. It is more appropriate that a permanent body that has medical as well as legal member on its staff, that is competent to examine patients as well as to scrutinize legal documents and weigh written evidence, should perform the duty of signing the order. This was the view held at one time by the General Board of Lunacy of Scotland, and the Royal Commission contemplates that ultimately it may be that the participation of a magistrate will no longer be considered necessary.

Let us now dramatize the procedure which has been recommended by the Royal Commission before a sick man can obtain medical treatment for his illness. The proceedings are not medical, for a layman is the presiding authority. The stage on which they are enacted is a distracted household for nothing upsets a family so much not even excepting death as the occurrence of insanity in one of its members. Their only consolation is the comforting and encouraging words of the family doctor. The application is signed, not without perturbation the recommendation filled in and now word is hurriedly sent to the justice. Within seven days this strange official, who is not a doctor, comes to interview the sick patient. He is recommended to visit the patient in the patient's own home, and this in the country, involves an expedition. His medical examination is to be no perfunctory performance as was so often the case in the past. As the justices who have a natural or acquired gift for this delicate duty are so selected it may be assumed without offence that all do not possess the necessary accomplishments. Then the relatives are to be interviewed and if this be judicially done both those 'for' and those 'against.' The kinsmen of patients are often trying and some are to be met who refuse ever to see any sign of insanity because if they do there has never been any in their family. If they go he is in doubt he is to confer with the doctor so he is well as the relatives have to put their time at the disposal of the justice however inconvenient this may be to all of them. More than one visit may be considered necessary.

The justice is now to exercise what has been described as a directed discretion. For example, if delusions have been alleged he may deem it necessary to investigate these further, and how much further affidavits may take him no one can tell. All sorts of inquiries may have to be set on foot and many witnesses interviewed. Then he has to decide whether the patient is to be informed of the allegations. To experts this is perhaps not a difficult decision to make—but how often has one been asked by perplexed layman "Doctor, should I agree with everything he says and if I contradict him will he get excited?" This layman has in addition, two medical problems placed upon him which he must solve by a personal examination and by his own discretion. He has to decide first: Is the patient insane or not? And secondly, Is insane as he going to recover within months or not? How a layman without any medical training or experience can answer the latter question is impossible to conceive. If he has to rely on the doctor's opinions and is guided by him, why bring him on to the stage at all? We will here drop the curtain on the first act of this drama.

The second act opens after an interval of six months. The patient has not recovered and the question of placing him under a reception order has to be considered. Two doctors are now called in to assist and give certificates of insanity. The justice may now have the assistance of a



clerk to the justices. The patient may now appoint someone to represent his interests, and there is nothing to prevent him employing a solicitor whom he has found amenable to his instructions. The court is thus carefully and fully prepared for a formal hearing of the case, but the adoption of a forensic procedure is deprecated by the Commission. Apparently those who conduct these medico-legal proceedings are advised to drop, so far as they possibly can, judicial ceremonial ways and adopt the less alarming methods of the medical man in their place. The justice requires to see and examine the patient again, but no instructions are given as to whether the patient is to be present at this "trial" or not. If the solicitor, to earn his fee honourably, defends his client the patient can hardly with justice be excluded from the proceedings during all the time. Nor can the solicitor be denied such access and such facilities of getting up his client's case as he considers necessary, and thus almost certainly would involve the evidence of other patients. Lively scenes, it may be surmised, will sometimes occur. Responsible allegations will at times be flung about, and the Commissioners have very wisely recommended that all parties must be sworn to secrecy. But there is one tongue over which they have no control, and possibly not even its owner can curb it—the tongue of the patient. We know how fond manic patients are of revelling in scandalous and intimate disclosures, and how they love to pose before an audience.

It may be said that the picture here presented is overdrawn, but the more nearly judicial intervention is judicial in character the truer will the picture be to what will occur. The perfunctory way in which these duties were sometimes performed in the past, as by one-minute interviews in lavatories, may possibly have been a saving grace. It is a pity that such disclosures did not lead logically to the abolition of judicial intervention, instead of to its reinforcement and rehabilitation.

Whether non-existent, as between 1845 and 1890, whether performed perfunctorily, as was so often the case in England, or whether performed in the purely legal way without seeing the patient, as in Scotland, judicial intervention or non-intervention seems to have made little difference one way or another, and neither Select Committee or Royal Commission has found any person improperly detained in our mental hospitals. It is clear that adequate protection exists and is afforded by other means. To us in Scotland, who have never had any experience of the personal intervention of a layman, this form of amateur medicine seems a monstrous and intolerable invasion of the sphere of the physician, and nothing less than a caricature and a mockery of medical science and practice. The reason why the medical profession in England has acquiesced in it has been the hope that the personal intervention of the justice would relieve medical men of some responsibility and reduce or abolish the risk of legal actions. That hope has not been fulfilled, although, according to Mr Justice McCordie, the medical certificate was no more than a mere opinion, devoid in itself of operative force, and the reception order was the effective authority.

#### Some Conclusions

The provisional treatment order forms the most striking departure from precedent of all the recommendations contained in the Report of the Royal Commission. Voluntary treatment has existed for a long time, and no facilities are offered that are not already enjoyed in Scotland, where certifiable as well as rate-aided patients can be treated voluntarily. The emergency or urgency order has always existed, but it has been greatly improved by not requiring a statement to the effect that the patient is insane. The provisional treatment order is the offspring of Schedule G of Scotland, but it is a much greater concession, for Schedule G applies only to private patients. The Mental Treatment Bill associated together in one clause somewhat incongruously, voluntary patients and patients without volition but non-resistant, and it was, of course, very desirable that special provisions should be made for the latter class. The provisional treatment order has done much more, for it has conferred the privileges it contains

not only on patients of the class referred to, but also on volitional but resistant patients, provided they are deemed recoverable in six months' time. In effect, these privileges will apply to practically all cases of recoverable insanity. A greater boon cannot be expected of the legislature, and for it we have reason to be grateful to the Royal Commission. Its benefits will be much diminished, however, by the conditions under which they are to be conferred, and as we desire to see these faults removed, the five following recommendations are made.

1 In the first place, we consider that two doctors should be required to give recommendations instead of one only. If the safeguarding of the liberty of the subject be so important a matter, the employment of two doctors instead of one should be acceptable. The power conferred by the provisional treatment order, although of limited duration, is great, and we think it should not be put into the hands of one medical man, even though a justice also sees the patient.

2 Secondly, as a further safeguard to the liberty of the subject, we recommend the right of appeal to be examined by two independent doctors. We believe this privilege will render improper detention almost impossible, as it has done in Scotland.

3 Thirdly, the employment of a second medical man and the right of appeal to two independent doctors, we believe, make it unnecessary for the judicial authority to visit and see the patient. In support of this we point to the results of seventy years' experience of this procedure in Scotland and think it conclusive. The visitation by the justice perpetuates those legal formalities that have in the past delayed treatment, blighted attempts at prevention, and differentiated mental disorders from other illnesses—all grave faults to overcome which were among the chief aims of the Commission.

4 Fourthly, we recommend that the justice be replaced by the Board of Control. It is a strong medico-legal body accustomed to visit patients, familiar with the requirements of the law, and continually engaged already as a part of its duties, in scrutinizing applications and medical certificates. Its task would be analogous to that performed at present by the sheriff in Scotland, which has proved very satisfactory, although he never sees the patient.

5 Finally, as prognosis and forecasting the date of recovery is difficult and uncertain, the conditions required for coming under the provisional treatment order should be altered to those of Schedule G—namely, that the malady is not confirmed and that the treatment to be given is with a view to recovery. This change would make no difference to the patients who would benefit, but it would confer a grateful relief to the physician.

When the remedial stage of the treatment of an insane person passes into the custodial, and the liberty of the subject, as distinct from his curative treatment, becomes the main question, no medical man can object to the adoption of such legal procedures as are considered necessary. It is again affirmed, in conclusion, that the right of appeal to be examined by two independent medical men is a more logical and perfect protection against improper detention than any form of personal intervention by a layman. It has proved a medico-legal panacea in Scotland for all problems dealing with the liberty of the subject in the treatment of mental disease.

#### DISCUSSION

Dr E. MUDSLEY (Maudsley Hospital, London) considered that the Report of the Royal Commission was disappointing. It was to a large extent devoted to the prevention of non-existent abuses, and that in a rather inconsistent way. A great many of the recommendations were matters within the ordinary province of the Board of Control. He could not accept Professor Robertson's clear-cut distinction between the voluntary and involuntary cases, and added that there was a third class of great importance, which included most of the recoverable cases. At the Maudsley Hospital, where voluntary cases were treated, it was assumed that if a patient had voluntarily placed himself under control and subsequently passed into a state in which he was not unwilling, but incapable of expressing his opinion, the consent to treatment which he gave

originally still hold good, the Royal Commission, however, recommended that such a patient should be put under a provisional order. What was a provisional order under the new regulations except a certificate? Some method of dealing with the unwilling case other than by certification was needed—some method of treating such a case outside the asylum temporarily, and some order which was distinguishable from a certificate and did not involve the intervention of a magistrate. One of the many points of detail in which the provisional order or certificate seemed open to criticism was that a patient must be seen by a magistrate within seven days. A doctor might have to wait seven days before getting his patient seen by a magistrate and that would tend to drive him in most cases to the use of the urgency order. The doctor's responsibility when he signed an urgency order was rather different from that involved in signing one of the certificates in support of a provisional order. He was in favour of having special certifying medical men for the giving of a certificate in connexion with a provisional order. In the Commissioners' report this was mentioned as an optional proposal, it was not made a definite recommendation. At the termination of validity of the provisional order, and when the order was to be followed by a definite reception order, the Commission stated that the patient should have the right to claim the attendance of any one person chosen by himself, and that the justice could be assisted by his clerk, elsewhere it was stated that the justice might call upon the medical man to justify his certificate. Dr Mapother objected to the institution of a sort of trial before the patient was committed to a mental hospital in this procedure the patient, but not the medical man, might be represented by counsel.

Dr T B HAYES (London), whilst most heartily approving the Report of the Royal Commission and Professor Robertson's paper, doubted whether the new proposals would get to the bedrock of the troubles existing in England. The first duty of the medical man was towards his patient the second towards the community and the third to himself. To certify that a person was of unsound mind not only deprived him of his liberty and his social, economic, and civil rights but branded him with a label which was borne by his relatives and descendants as well as by himself. The insanity might have been due to bodily causes, such as defects in the internal secretions, in metabolism, in exertions or to toxins and it behoved all medical men to consider whether they were to label their patients as coming within the mental or the physical category. Intervention of the judicial authority had not been entirely successful, either from the point of view of the liberty of the subject or the safety of the certifying practitioner. Both the patient and the medical man should be afforded a sporting chance of the former's recovery without deprivation of liberty. In his opinion the whole question was of such urgency and importance that he hoped there would not be unnecessary delay in bringing into effect the recommendations of the Royal Commission. In the meantime the community must suffer from the inadequate provisions for its welfare.

Dr W I MENZIES (medical superintendent Staffordshire Mental Hospital) deplored the decision of the Royal Commission to decline to recognize the non volitional class of case. The suggested procedure involved three successive personal examinations of the patient by the judicial authority this was impossible in practice. Justices could not give up one day a week to lunacy matters, certainly in any country district in England nor could a dozen or more private medical practitioners leave their work and travel ten or twenty miles to the institution where the patient was placed, and wait about for a half-day until the case came on. Two medical certificates one by the family doctor, the other by a medical officer of the institution, should be placed before the management committee at its monthly or weekly meeting and it should be given *ad hoc* the powers of a judicial authority specially appointed under the Act. The vast bulk of the population were not apprehensive of improper detention, the whole agitation was fomented by a noisy minority, many of them unrecovered patients.

Dr PIERRE PIERRE (London) said that if England enjoyed the privileges available in Scotland for the treatment of mental disorder it would be content. The law for England and Wales ought to be altered to allow patients so affected being treated for at least a year without interference by the law, and certificates ought to be the last resort. As the law now stood in England and Wales treatment was constantly hampered by the ever present fear of conflict with the law and the general practitioner was even more perplexed. Two distinct issues were engaging the attention of the profession and the public at the present time (1) whether the doctor should have the whole 'say' in the matter of certification of a person supposed to be of unsound mind without legal intervention, (2) whether the doctor who certified a person as of unsound mind should be made immune against the possibility of a civil action for damages in a court of law for alleged wrongful certification. When the question was merely one relating to the treatment of a patient the profession was well within its rights in claiming to be the proper judges of what was required. When, however, it became a question of depriving an individual of his civil rights, the matter passed out of the sole province of medicine and became a legal one. The profession was fully justified in claiming protection against civil actions for damages in respect of alleged wrongful certification, but it could only reasonably hope to secure this protection if it was prepared to accept the interposition of a legal authority on whom the whole responsibility must fall. Moreover, if medical men were to expect the protection they claimed, it would seem to be reasonable that they must be prepared in conformity with all other instances in which they were called upon to give evidence, to do so on oath. Even in so comparatively unimportant a matter as whether a man was drunk or sober, a doctor's certificate was not enough but had to be supported in the witness-box. How much more should evidence on oath be required where the decision carried with it such grave consequences to the individual concerned and his family? A lasting damage was inflicted which might have far reaching consequences on other members of the family in respect to marriage life insurance and other matters. The suggestion that there should be the intervention of a representative of the law who must in all instances personally see and examine the person supposed to be of unsound mind did not carry with it the need for publicity, for the person in question need not appear in open court. It had been suggested that the legal representative should be a man trained both in medicine and law and that there were probably a sufficient number of barristers with medical training to fill these posts. This seemed reasonable, but it might leave the matter too "medical" and the question should be viewed from different standpoints hence the importance of having as justice a man with no medical training. The welfare of a patient might be a purely medical question but his safety or that of the public was also a matter for lawyers. Important recommendations by the Royal Commission in regard to such inquiries were that the judicial authority should always see the patient that the person whose case was being investigated should be at liberty to have a friend present and that the justice should be called upon further to exercise what was termed a "directed discretion" which meant that he must consider and state his decision on the issue of his order and whether the allegation with regard to insanity were proved, whether it had been the doctor or and whether the patient should be told of the allegation. The most important recommendation of the Commission in the interest of the patient was that which would allow of treatment without certification for at least a month and possibly six months. How the urgency order was abused in many instances and made use of as a convenience in cases of being strictly reserved for cases of real urgency had been so strongly brought out by evidence before the Commission that the provision for the interposition of a magistrate before the person was sent to an asylum was justified even in the case of an urgency order. The profession should welcome anything that would offer the public a sense of security in these matters so long as that was guaranteed did not conflict with what was necessary for the good of

the patient. That one of the two medical certificates should be supplied by a doctor who possessed special knowledge of mental diseases was reasonable in the highest degree, if found practicable, he saw no objection to having doctors specially appointed under the Act to fulfil this function. In suggesting a way out of the present difficulties a threefold object should be kept in view—namely, to do what was best for the patient, what was acceptable to the public in conformity with the law, and what would give full protection to the doctor. The medical profession should try to find a reasonable solution that would fulfil these three objects. Dr Russell, in conclusion, made a few suggestions as to how these three requirements would be best met: (1) that there should always be two doctors supplying the evidence, except in the very rare event of a case being of such urgency as to make this impracticable, and that one of these medical men should have special knowledge of mental diseases, (2) that the judicial authority should, in every case, see and examine the person supposed to be of unsound mind, and see also the doctors, (3) that in order to secure protection against civil actions, the doctors should give their evidence on oath, and be subjected to cross-examination like any other witness. What was of paramount importance was that medical men should be allowed to treat their patients who were mentally afflicted, without certification, away from asylums for six months at least, and, if possible, twelve

Dr DONALD ROSS (medical superintendent, Argyll and Bute Asylum) described the simple way in which some of the problems so pressing in this country were dealt with in the Canton du Valais, in Switzerland. In that canton there was a most admirable mental hospital, the Maison de Sante de Maleroz. Dr Repond, the physician-superintendent, had said to him, "Thanks be to Heaven, we have no lunacy laws, no inspectors, no boards of control." This last was, of course, their loss, for in Scotland, at least, the General Board of Control was the ever-helpful comforter and friend of the profession. In Valais there was a very simple and workable code of rules for the guidance of the superintendent, drawn up by a former superintendent in collaboration with one of the members of the Cantonal Legislative Council. The admission and discharge of a patient was governed by the superintendent's opinion of the stability of the case. If a patient, though not recovered, was sufficiently improved to go home, but the relatives were unwilling to take him out, the relatives were asked to pay a much higher rate of board, and this was usually quite effective. Dr Risien Russell had spoken of the desirability of having specially trained physicians appointed as certifying physicians in lunacy. One of the speaker's recovered patients, from whom he had learnt much wisdom, always maintained that two medical certificates were desirable, and that while one should be, if possible, by the family physician—as all would agree—the second should be signed by a medical officer in a mental hospital, because, broadly speaking, he alone had the proper experience for the task.

EARL RUSSELL (a member of the Royal Commission) said that the Commission had the advantage of hearing evidence from Dr Robertson, by which it was much impressed, and it had also much admired the system he was able to administer. The Section must not think he undervalued the medical point of view, but when dealing with legislation and amendments to the law it was useless to discuss the matter purely from that aspect. Account must be taken of the attitude of the public—a thing a little overlooked in Professor Robertson's paper, but the Royal Commission had to bear it in mind. There were members on the Commission who held to some extent what he must call the antimedical view, and, whether it was still the effect of Charles Reade's book or not, there did exist in England, among the great mass of the population, a certain amount of suspicion of doctors, particularly of doctors in connexion with cases of insanity. The attitude of the House of Commons had to be remembered. That assembly, represented, not only the intelligence, but the stupidity and the prejudices of the people. The duty of the Royal Commission, among other things, was not to consider merely the

procedure for certification, important as that was, but also the happiness and well-being of that large body of patients who spent years under institutional treatment, regard had to be paid both to their comfort and their feelings—for example, in such matters as the sending out of letters to their friends under conditions of comparative privacy. Certification, of course, was an extraordinarily difficult question. He thought that many of them (presumably he was speaking of members of the Commission) would have been perfectly satisfied with the opinion, certainly of two medical men, if not in many cases of one medical man, but they had to consider the prejudices of the public, and the public's point of view was that the medical man was a poison who was only too ready to certify, and without reason. The fact that the one object of the doctor was the treatment and benefit of his patient was not recognized in that simple form by the general public, which desired the intervention of a magistrate or some other judicial authority, who represented what they called the liberty of the subject. If the judicial authority could be dispensed with things would, no doubt, go on perfectly well, the real safeguard for patients in England was the Board of Control, which consisted of well informed people with ample powers and opportunities of inspection and control, who could perfectly well put an end to any improper detention. They were really of very much more use than any judicial authority. He regarded the suggestion made by Dr Menzies that members of the mental hospital committee should be appointed the judicial authority as absolutely fatal. It would add to the suspicion already entertained that they were "all in the same gang." What was wanted was to satisfy someone from outside who was independent. He thought it undesirable also that the justice should be a poison with medical knowledge. It was not the business of the justice to form a medical opinion, and it ought not to be his business. He had to consider the medical opinions which had been formed by competent people, and it was not for the justice to say from an entirely imperfect and incompetent medical diagnosis of his own whether a patient was sane or not. All he had to ensure was that care had been taken and the thing was in order. When the Commission referred to the "directed discretion" of the justice it rather meant that there were certain matters to which the justice ought to direct his attention as a matter of course in every examination he made and every certificate he gave—that is to say, he should not be left at large to perform his duties in a slovenly manner. The objections to anything like a public trial had been pointed out. There were the gravest objections to a public or a private trial in the ordinary forensic sense of the word. But the Commission received the strongest representations from those who claimed to speak on behalf of patients and ex-patients that they did desire, at some stage or other, to state their case. It was well known, of course, that the prisoner would state his case with great volubility, and it would not further matters, but it was felt that the less the proceedings took the form of anything like a forensic contest the better. It had been suggested that the voluntary patient should continue to be treated as a man who had no volition at all. That might be a lawyer's point of view, but when it was said that a man was doing a thing voluntarily it carried a certain obvious meaning, and a man was not doing a thing voluntarily if he did not know that he was doing it. If voluntary treatment was to be made really successful the public must not be frightened into it. It was true that a voluntary patient would have moments of rebellion, in which he would say he was not going to stand it any longer, and it was to meet those moments that a delay of seventy-two hours was suggested. If voluntary patients were to continue to be treated as such when they became non-voluntary the advantages of the voluntary system would be destroyed. He would be very glad if public opinion in England would allow much greater freedom in the treatment of the insane, certainly that would be to the advantage of the insane, but the prejudice of which he had spoken had to be remembered. If any contribution were to be made to legislation, when it came—and he agreed that there was no chance of it this year, and he feared no chance of it next year—this

prejudice would have to be reckoned with and improvements would have to be sought in a way which would not leave the medical man with complete control. With regard to the urgency order, it had been suggested that justices should always intervene before the patient was removed to an asylum. It was obvious that it was not always possible to wait for the justice to intervene before the patient was restrained. The patient in some cases had to be restrained instantly. The liberty of the subject was maintained by the provision that a doctor or justice must see the patient within three days, but instant restraint might have to be applied. He was rather of opinion that the urgency order was employed where it often was not necessary, and it was very important that the urgency order should not be abused, otherwise it might not be available for cases where it was properly wanted.

SIR DAVID DREMMOND (also a member of the Commission) said that Lord Russell had fully and admirably expressed his own view. It had been a great pleasure to him that the Report of the Royal Commission had been on the whole so well received by bodies of professional opinion, but he was sorry the Commission had found itself unable to safeguard the position of the medical practitioner more than it had done in that report.

SIR FREDERICK WILLIS (Chairman, Board of Control, England and Wales) said that some scepticism had been expressed as to whether legislation was really in view, but he happened to know that the Government was quite seriously considering the matter, and the Minister of Health was anxious, during his term of office, to pass a new lunacy law. In view of this, he particularly welcomed the present discussion, which would be of assistance in formulating proposals or a memorandum for the Ministry. Politicians were necessarily governed by public opinion in these matters, and a Minister might well hesitate to put forward what seemed to him and his advisers the best course if he knew that owing to the attitude of the public it would be rendered impracticable to carry out. The public were still very superstitious, and to some extent had not got away from the view of lunacy which was held a hundred years ago. He was anxious to avoid all formalities in the treatment of the insane so far as this could be done, but though these legal formalities deterred people from getting treatment, this was not the whole deterrent. They were deterred also by the fear lest, should they once consult someone for mental illness, they might be locked up for the rest of their lives. The Royal Commission divided patients into two classes—the voluntary and involuntary. As to the voluntary there was nothing to be said. The Commission had recommended what a good many had urged for years—complete freedom. The Board of Control felt that patients ought to be divided into three classes—the voluntary, the involuntary, and the unwilling. The ground for this was the well known fact that people did not come sufficiently early for treatment. Indeed, under the lunacy law, the rate aided case could not get treatment at all at the public expense until after certification. One of the proposals in the new Lunacy Bill would be to give lunacy authorities perfect liberty to arrange for early treatment, and, if the case was voluntary, without any justice coming in at all. He thought the Royal Commission might have gone even further in this direction, and so have done much to educate public opinion in regard to the early case. In his view adequate safeguards were forthcoming without the justice, the only reason for bringing in the justice was because the public believed that it was a measure of protection. The Board of Control recommended that involuntary patients in need of early treatment should be received in institutions or homes which the Board had previously approved as suitable places for giving such treatment, and that the Board should be immediately informed of the reception of such cases and should have a right to visit the institution from time to time wherever it was thought necessary. Such safeguards, he thought would be quite adequate. Under the present arrangement, he spoke as one who had seen a good deal of the work of the justices in connexion with this matter—

he could not help thinking that there were no safeguards at all in a very large number of cases. If the safeguards were adequate to the treatment of the cases he did not see why the treatment need necessarily be hurried to six months as the Royal Commission recommended. Many of these cases ran for eighteen months or two years. Why, if they were under proper treatment with proper safeguards, should they not be allowed to remain on for that period? He did not quite see why any limit of time was needed. Another point which was exercising the minds of the Board was, What further protection should be given to the doctors? He had been very much distressed over some of the cases that had come recently into the courts. He could not help thinking that the jury, in England at least, was an absolutely unsuitable tribunal to test cases of this character. There was a notorious case in which, after a lapse of about twelve years, a trial took place lasting three weeks. Right through the trial it was obvious that the jury were in great sympathy with the patient—they were always against the doctor—and they decided that, twelve years ago, when the patient was certified, he was not insane. It seemed to the speaker rather absurd, and he hoped that some really constructive suggestions might be forthcoming with regard to that. His own feeling was that that sort of question should be taken out of the province of juries. If it were left to the judges of the High Court much greater justice would be done. In these cases it was usual for "experts" to come in and it had been rather distressing to see the sort of evidence given by one doctor against another doctor. He wished the British Medical Association or the Royal Medico-Psychological Association would make some suggestions on this matter. On the question whether there should be two certificates, or one, there was a financial consideration—namely, that in England it would cost £20,000 a year more to have two certificates for the rate-aided cases instead of one certificate. This was not an indifferent sum, it would be another matter if the safeguard was proved to be necessary, but no case was brought before the Royal Commission in which wrongful detention was established. The only purpose of the two certificates was to satisfy public sentiment. In conclusion, he felt that it was extremely important that all should do what they could to break down the superstition which existed in regard to mental illness. That was the rock on which the ship foundered every time.

SIR ARTHUR ROSE (Chairman, Board of Control, Scotland) confessed himself a wholehearted admirer of the findings of the Royal Commission. He looked upon the report as a very valuable strategical contribution to this great subject. When he and Dr. Marr gave evidence before the Commission he gathered, from the questions asked, that there might easily be a very marked divergence of opinion among the Commissioners and he was immensely relieved and somewhat surprised to find that the report of the Commission was unanimous. The reason for that unanimity was probably that the Commission went only so far as it was believed the public was likely to accept. If a more progressive view had been advanced there would have been a risk of a minority report, and possibly a somewhat strong report, which would have done much to retard any progressive legislation. He urged that any legislation which was proposed should be considered sympathetically by medical bodies, and he did so to a certain extent with a selfish object in view. In Scotland certain amending legislation was required and while he saw no possible chance of Scotland going forward with an amending Act of its own, he was very hopeful that if a reasonably progressive measure were passed in England Scotland would be able to follow, not necessarily adopting the same measure, but perhaps going a stage further than England would have gone.

Dr. C. O. HAWTHORNE said that he had no title to speak on this matter as an expert in lunacy administration, but he happened to have been a member of the committee appointed by the British Medical Association to prepare the Memorandum of Evidence submitted to the Royal Commission and subsequently to examine the Commission's report. What he had to say was without prejudice to

hoped, as well as without intimate personal experience of the carrying out in actual practice of the provisions of the lunacy law. It was therefore with considerable sympathy as well as pleasure that he had heard the speech of Lord Russell, who had brought the discussion down from a somewhat academic level to the actual and practical situation. He had learned, in studying this subject under such conditions as he had defined, that certain broad views had to be considered in dealing with the situation. The first which impressed itself upon him was the severe interpretation attached in the public mind to the certification of a patient. This was an aspect of the subject which had to be most carefully considered. It had been suggested that the Board of Control was sufficient, but that Board arrived upon the scene too late. The stigma had already been inflicted by the certificate, even though the certificate was reported in a few days to have been unnecessary. Even looking at it from that narrow and practical point of view, the very serious nature of the step taken in granting a certificate could not but be admitted. A second impression made upon his mind by the studies and inquiries which were incumbent upon him as a member of the Association's committee was the great importance which was attached, at least in England, to the protection of the liberty of the subject. The propositions put by Lord Russell commanded the whole situation so far as legislation was concerned. The third consideration which he had to bear prominently in his mind was the position of doctors throughout the length and breadth of the land in respect to lunacy certification. There was a reluctance to sign certificates, even, in a considerable number of cases, a determination not to sign them. Deeds of partnership between doctors were being drafted one of the conditions in which was that neither partner should sign a lunacy certificate. It might be that this was a stupid view, but when it was said that sentiments widely spread must be respected in practical legislation he claimed that here was a body of sentiment which must be so respected. There were two positions, and only two, which could be logically defended when considering lunacy from the point of view of the doctor's relation thereto on the one hand, and on the other from that of legislation. It was quite a defensible position for doctors to make the claim that mental disorder, like physical disorder, was a medical matter, and that doctors alone were competent judges. That was a position which could be argued, but it involved a process of education of the public which, as had been generally admitted during the discussion, was very far from accomplished. The other position, which was a sound one, was that the State came in and said, "This is a form of medical diagnosis and treatment which invades the liberty of the subject, and we will not allow medical treatment of that kind to be imposed until we are satisfied that such treatment is necessary." When the State had once said that, it was for the State to say what was the legal machinery by which the State itself could be satisfied that this treatment was essential. The State might ask the advice of the profession, but it was for the State to accept the responsibility necessarily imposed upon it when it declared that this was a matter in which medical treatment should not take its normal course until the State was satisfied that it was necessary. His claim was that when the State had once stepped in and assumed authority, the State must at the same time recognize that it assumed responsibility. The doctors might be asked for advice, for their opinion upon the whole situation, or upon the particular case but that was simply a contribution in the shape of evidence towards the solution of what had now been made a legal issue. If that was the true position, then manifestly the doctor ought to have in this issue the immunities which were enjoyed by other witnesses. Dr. Risien Russell had urged that the doctor ought to give not merely a certificate but an opinion under the sanction of an oath. But why did he not do so now? Simply because the representative of the law did not call upon him to do so. Under the existing lunacy law it was competent for the justices to require that everything should be on oath. There was a choice, then, between these two alternatives. Was the medical profession to go to the public with the high academic doctrine that this whole matter was a matter for doctors, or was it going to say,

"No we recognize the intervention of the State for determining whether this treatment ought or ought not to be applied, but the State must accept the responsibility, and must not allow that responsibility, which carries penal consequences, to be imposed upon the shoulders of the medical practitioners who have given you an opinion in the case?"

Dr. C. HUBERT BOND (Commissioner, Board of Control, England and Wales), after remarking how pleasant it was to find that all his colleague Sir Frederick Willis had said appeared to commend itself to the meeting and that in 1884 the Earl of Shaftesbury was still chairman of the Lunacy Commission in England. Mentally he was as alert as ever, and devoting nearly the whole of his energies to the welfare of the insane, but he was in failing bodily health and feeling the weight of fourscore and five years. At that time a section of the public was suffering from what might be called an anxiety neurosis in mass form, manifested by a few of wrongful detention for alleged mental disorder, just in the same way as when the recent Royal Commission was appointed. As a result of the feeling which was so much in evidence a motion was carried in the House of Lords for the institution of a committee of inquiry into the administration of the Lunacy Acts. It was not intended as an attack on the Lunacy Commissioners any more than was the institution of the recent Royal Commission, but the great-hearted Earl was hurt to the quick. He knew and felt the complete integrity of his own department, and he felt also that, to use his own words, "God had manifestly blessed the efforts of the Commission." He wrote also that he had "everything on his side except self-confidence in his own power to meet" what he felt to be a charge, and that "the defence would be perfect in any other hands." He saw in the drift of such an inquiry and in the legislation proposed to follow it, especially in the proposed intervention of a justice (again to use his own words), "the labour, the toils, the anxieties, and the prayers of more than fifty years being in one moment brought to nought." So far as Dr. Bond knew the history of those days, Lord Shaftesbury had the support of each of his colleague Commissioners, legal as well as medical, and of all the leading medical men practising psychological medicine. The depth to which Lord Shaftesbury's emotions were stirred had its echo in the prayer he was not ashamed to record in his diary. "Cist me not off in the time of old age, forsake me not, O Lord, when my strength faileth." No one could read or listen to the recital of that prayer without reverence and respect. To Shaftesbury, though a layman, the proposals, especially the intervention of the justice, were in themselves, and he took the strong step of resigning the chairmanship of the Board of Commissioners. This was in May, 1884, but in June, upon a hitch arising in the setting up of the committee of inquiry, he was induced to withdraw his resignation. Death, however, withdrew him from the fight shortly afterwards. It was at least permissible to speculate whether, had he been spared, and with sufficient bodily powers to play his part in the fight when it did come, the intervention of the justice would ever have been carried. At any rate, injured to the justice, as in a sense were those who worked in England, they could not listen to Professor Robertson's magnificent and noble appeal to their medical instincts without desiring to pause and ask whether it was not too late to relieve the justice of a task for which the majority of justices had no love or even taste. It might be that if the uninformed part of the electorate, whose importance Lord Russell had emphasized, really knew these and other cogent historic facts, knew of the abuses, as found by the Royal Commission and other inquiries, of cases of improper detention, and could hear or would read Professor Robertson's presentation of the medical and medico-legal aspects, they themselves would give a swing to the pendulum in the direction of *Reformatio medicinae*.

Dr. VERNON BRIGGS (Boston, Mass.) said that his excuse for speaking in the discussion was that he had served in Massachusetts as a member of three different boards concerned with mental disease and under three



different political administrations. He was now on the advisory committee of the State Commission of Mental Diseases. He had followed the discussion of this subject in the medical journals of this country, and he was hoping that England would go far beyond what it had been possible to accomplish in the States. He thought that the experience in the States might offer some suggestions towards the solution of the problem here. In the States the medical societies set themselves to educate the public, and had invited the magistrates to give addresses which were followed by discussion in which the medical men represented their side of the question. This had been of great value to the magistrates and indirectly to the public. Another point in the education of the public had been to endeavour to set in its proper and less alarming perspective the hereditary factor in insanity, with the consequence that the people were not so much alarmed or depressed by the notion of hereditary taint as was the case ten years ago. An investigation had been made of 28,000 certified cases in mental hospitals extending over forty-two years, and the hospital records of these cases showed that in only 54 per cent was there an hereditary factor. In other words, a man who had mental disorder was as likely not to have had a tainted ancestry as to have had it. These were facts beyond dispute, and the education of the public along these lines helped to bring about a better state of feeling. With regard to certification, the plan was for two physicians to certify cases which were considered dangerous to the public or to themselves or to need medical treatment. There was such a thing as voluntary commitment, whereby the patient could go into hospital for any length of time, so long as he did not become irresponsible. A system of six months' parole which could be renewed for a further period, was in force for patients who had recovered up to a certain point, and such patients could be, if necessary, returned to the hospital without any further legal procedures. The patients had not to be brought before a magistrate, it was true that the magistrates had a right to send for the patient, or to go and see the patient, but they hardly ever exercised it. Probably 95 per cent of the patients committed were never seen by any magistrate. He could recall only one legal action by a patient against a physician—it was in New York—and though the jury awarded a certain amount of damages, the verdict was afterwards set aside on the ground that certain of the evidence was inadmissible in law. The opposed tactics of medical men relating to the same case in criminal actions had caused some perplexity, and an effort had been made to eliminate such occurrences by discussions. One result had been that in the case of criminals who had been to gaol before and criminals arraigned on a capital charge there was, before trial, an examination by the State Commission of Mental Disease. A law to this effect had now been in force for five years in the State of Massachusetts. The clerk of the criminal court was bound to report the case to the Commissioners of Mental Disease, and the Commission appointed two alienists of standing to examine the alleged criminal. Their report was filed by the clerk of the court, and was open to both sides—the prosecution and the defence. In the five years during which this plan had been in operation there had been no case for trial before the courts in which medical men had appeared against each other in the witness-box, previously it was a constant occurrence. The result had been to raise the position of the profession. He hoped to learn something from this country as to the treatment of the early case. In his own State a sum of £20,000 a year was now being appropriated for clinics to which early cases could be sent. The Legislature felt that the money was well spent because cases might so be prevented from becoming a burden for many years upon the State.

The CHAIRMAN (Dr Marr) said that owing to the lateness of the hour he was now compelled to close the discussion although there were several others who had intimated their desire to speak. Dr MORRIS-BROWN protested against the closing of the discussion, to which, she thought, a whole day might well have been allocated, the voice of the general practitioner had scarcely been heard and the woman's point of view had not been put

forward. The CHAIRMAN said that he regretted very much having to close the discussion, but he pointed to the lateness of the hour and to the fact that the audience was rapidly thinning. He had selected the names of speakers in the order in which they had intimated their desire to speak, except that he had called upon two or three others who, because of their position or work, he thought everyone would wish to hear.

## SECTION OF THE HISTORY OF MEDICINE

JOHN D. COMPTON, B.Sc., M.D., F.R.C.P.E.I., President

### A VINDICATION OF THE SECTION

THE PRESIDENT remarked that this was the first occasion on which a Section of the History of Medicine had been held at an Annual Meeting of the British Medical Association. He had had many letters from persons in this country, on the Continent, and in America, expressing their approval. At the present time no medical school in Great Britain required its students to learn the history of the subject, and there were only a few at which it was possible for the student who desired it to obtain such instruction. This was remarkable in view of the fact that a knowledge of ancient law was necessary for the training of a lawyer, while Church history was considered essential to the theologian. Even in practical sciences like chemistry, physics, and engineering a knowledge of when and by whom the various laws and facts of their sciences had been discovered was regarded as a necessary part of the study of the chemist, the physicist, and the engineer. He would go so far as to say that in connexion with even so common a disease as pneumonia the doctor would be likely to treat his patients more successfully if he knew something about the history of this disease, and if he had some inkling as to why some measures of treatment had been abandoned while others had persisted. The officers of the Section had decided at this first experimental meeting to regard the subject from a practical rather than from what might be called the antiquarian standpoint, and they had accordingly arranged for a discussion on 'The historic evolution of disease.'

### CLINICAL VARIATIONS IN DISEASE FROM THE HISTORICAL POINT OF VIEW

SIR HUMPHRY POLLARD, Bt. K.C.B., M.D. (Fellow Professor of Physics in the University of Cambridge), opened a discussion on this subject by reading the following paper:

This is the first time that a section has been devoted to the History of Medicine and the exertions of our President, who is Lecturer on the History of Medicine in the University, to bring this about in a city with such long traditions in medicine have most appropriately been crowned with success.

A discussion on 'Clinical variations in disease from the historical point of view' is also singularly appropriate in the Northern Athenaeum where it was the subject of much high debate some twenty years ago. W. P. Alison and Robert Christian were convinced that a change in the clinical manifestations of disease had gradually taken place during the first thirty years of the nineteenth century, whereas John Hughes Bennett—who in 1823 succeeded to the Professorship of the Institute of Medicine, and who Alison had held from 1822 to 1823, Allan Thomson intervening, was emphatic in the opposite direction. On January 21st 1857 Hughes Bennett read a paper before the Medico-Chirurgical Society of Edinburgh on 'Observations on the result of an advanced dysentery and pathogenesis applied to the management of intestinal inflammation, compared with the effects of a former antipneumonic treatment, and especially of blood-letting' which aroused much criticism from Alison, T. Watson, and W. T. Gardner, to which Hughes Bennett promptly replied. He concluded that the supposed change from a splenic to a hepatic

type of disease was invented as an afterthought by way of justification for the undoubted change from the more vigorous antiphlogistic measures and venesection to a more supporting and stimulating treatment, and that the change had been in the treatment, not in the disease. Markham adopted the same doctrine, and Hughes Bennett followed this up by a treatise on *The Restorative Treatment of Pneumonia* (1865) which, according to our President, was most effective in banishing excessive venesection as a routine treatment. In 1865 William Stokes strongly supported the change of type in disease, but later Murchison wrote

"A careful study of the history of epidemics shows that each of the continued fevers and of the other acute specific diseases has maintained its identity in all ages and countries. The statements which have been made in reference to fevers having undergone a change of type or nature are mainly to be attributed to a non-recognition of different species, together with changes in the prevailing fashion of treatment."

He instance as an example of this confusion typhus, a fatal disease, with relapsing fever which rarely has a lethal termination. When these two diseases occur together the distinction between them might easily go no further than the view that the type of the prevailing epidemic had altered, in certain circumstances, especially towards the close of an epidemic, when the mortality rate is falling, it may be difficult to decide more particularly from the records, whether there was merely this change or whether a new disease had come on the scene. The comparatively frequent coexistence of two diseases—namely, typhus and bubonic plague—in epidemic form during the sixteenth, seventeenth, and eighteenth centuries, though the nature of typhus was not recognized, is pointed out by Crawford.

#### Sources of Information

The surest, though much limited means of getting reliable knowledge as to the nature of disease in the past is morbid anatomy, which under the name of palaeopathology, defined by M. A. Ruffer (1913) as the "science of diseases which can be demonstrated in human and animal remains of ancient times," has been recently employed, especially in Egypt by Pouquet (1889), M. A. Ruffer, Elliot Smith, and Wood Jones, and in America by R. L. Mordue, who has done much work in the investigation of bone disease in fossil animals in the prehuman ages of 500,000 years ago. Though the diseases that can thus be recognized are mainly those of bone, examination of mummies has shown the existence of osteo-sclerosis, tuberculous disease of bone, mastoid disease, hydrocephalus, rheumatoid arthritis (2000 B.C.), gout, tilipes, dental caries, prothuber, pneumonia and anthracosis of the lungs, hepatic cirrhosis, biliary and urinary calculi, bilharzia, renal abscesses, peritendinitis, and achondroplasia, but not of rickets or syphilis, the appearances ascribed to syphilitic osteitis being really due to the activities of beetles after death (Elliot Smith), thus has a bearing on the much debated origin of syphilis in the old or in the new world.

The account in the *Times* of April 7th, 1927, of the tomb of Senb in the sixth dynasty (2900 B.C.) seems to show that he was an achondroplastic. Professor Elliot Smith, who considers this is much the earliest certain proof of this condition, has put me in touch with Mr. Warren R. Dawson, and I have thus had the advantage of seeing a paper that he is publishing on "Pygmies, dwarfs, and hunchbacks in ancient Egypt," from which the following information may be taken. Pygmies were members of a small-sized race from the interior of Africa, and not as Pierre Marie suggested, achondroplastics, on the other hand, the dwarfs, whom the ancient Egyptians were accustomed to attach to their establishments, were usually people of stunted development, often achondroplastics, drawn from their own population, and of these many examples mainly males, are extant in mural paintings and sculptures. In a Roman cemetery (A.D. 200) at Chester evidence of achondroplasia was found (Elliot). Of acute disease in ancient Egypt there was evidence of an eruption resembling small-pox in a mummy of the twentieth dynasty (1200-1100 B.C.) (Ruffer and Ferguson).

Sculptures and models provide valuable evidence of diseases in the past especially abnormalities of growth,

Egyptian and Greco-Roman sculptures and statuettes definitely show the existence of achondroplasia—for example, the gods Ptah and Bes—and at a much later date pictorial representations of Court attendants by Velasquez and others tell the same tale. Mr. Warren Dawson reproduces ancient Egyptian statuettes showing stertopgia, and Pott's disease of the spine is shown in a bronze statuette of ancient Egypt. Sir Berkeley Moynihan recognized the manifestations of cerebro-spinal fever in a bust done of Alexander the Great in his fatal illness. Votive offerings, although studied by Hollander, Sombon, Regnault, and others, are disappointing as accurate representations of the patients' lesions.

There is not so much information to be obtained from the available pictures of antiquity, but mural paintings in Egyptian tombs of various periods show achondroplastic dwarfs 5,000 years ago (Ruffer), and those from Pompeii and Herculaneum, now in the museum at Naples, represent some pathological conditions, such as achondroplasia and rickets (Meige). The portrait in the Uffizi Gallery, Florence, of Ferdinand I, Emperor of Germany, painted in 1521 by Lucas van Leyden and reproduced by Semon, shows the adenoid face, though it was not till 1868 that Wilhelm Meyer of Copenhagen made adenoids known to the profession. The famous epidemic dancing mania, variously called *le dance de Saint-Guy*, dance of St. John or of St. Anthony, and by Paracelsus *Chorea Sancti Viti* (as pilgrimages were made for cure to the Chapel of St. Vitus at Zibern), so prevalent in the Rhine provinces during the fourteenth and fifteenth centuries and lasting into the sixteenth, was drawn by Pierre Bienghel (1567-1625) and engraved by Hondius in 1642, and thus identified with major hysteria and hystero-epilepsy by Charcot and Richet, who also recognized hystero-epilepsy in Raphael's pictures. In their *Les difformités et les maladies* (1889) these authors reproduced a number of pictures showing plague victims with buboes, and among them Saint Roch (born A.D. 1295), the patron saint of that disease. Paintings may show that at the time they were painted certain diseases were more severe than they are now, and they may represent morbid conditions, such as leprosy, which have now become rare, and of diseases which have now disappeared—such as hydrophobia, described by Aristotle and Galen, the subject of many papers in the medical records of the eighteenth century, and familiar to some of us now present, which has become extinct in this country as the result of the administrative action of the Muzzling Order (1897). As showing the importance of such precautions it may be mentioned that in Moscow six hundred people were recently reported to have been bitten by mad dogs, and to be therefore attending the Pasteur Institute.

The written records of acute diseases, though far more numerous than the pictures and the representations by the plastic artist, are more difficult to utilize in the recognition of disease. Alterations in methods of description and nomenclature interfere with the identification of the nature of bygone epidemics, and the probable existence of more than one disease raging at the same time, as in the Antonine plague in Rome, adds to the difficulty. An example of the difficulty of translating ancient into modern terms is the designation "*lepra*," which covered lupus, syphilis, pellagra, and many skin diseases, as well as leprosy. It is, however, extremely tempting to read into an ancient description of disease that of one more recently recognized.

#### Evolution of Disease

As disease is not a fixed entity but a reaction of the complex organism to varying degrees of injurious influences, it is reasonable to anticipate that with altered conditions in the soil or the host, such as more rapidly and most obviously produced by famine and war, the reactions would vary accordingly, even if the morbid agent remained the same. In addition, changes, extremely slow though they may have been, from the cave to the club man, would suggest that their diseases, like their virtues, would present a somewhat different aspect. Changes in the body organisms responsible for infective disease occur with far greater rapidity and ease than in the higher animals, and hence it is obvious that corresponding modifications in the reactions they set up must be anticipated, even in the soil

remained unaltered. Chapin considers that changes in the virus are much more important than those in the host, and argues that alterations in the type of small-pox and scarlet fever are not due to changes in the immunity of the host. Changes in the type of disease, like epidemics, are readily determined by wars and famines, which lower the bodily resistance, and, by the accompanying overcrowding, increase the opportunities for the transmission and the virulence of infections. These clinical changes would be more likely to occur in acute epidemic diseases than in some chronic and constitutional conditions, but unfortunately it is in the acute epidemic diseases that it is most difficult to judge whether or not real changes have taken place.

Alteration of the clinical manifestations may depend on secondary infections. Influenza in 1918-19, when complicated by *Lactococcus streptococcus* invasion of the respiratory tract, became widely fatal, and its aspect altered so much—as indeed, has been so often seen in its history, as shown by its numerous names—that it was actually hinted in the lay press to be plague. The present mild small pox, or alastrim, has been thought to be due to the specific virus alone and the ordinary more severe small pox to be caused by a secondary streptococcal invasion favoured by the insanitary conditions so prevalent in the past. The influenza virus, whether filter-passing or Pfeiffer's bacillus favours invasion by or sensitizes the tissues to the action of other viruses. The influence of measles in leading to tuberculosis is familiar, and it is possible that carriers of the viruses of encephalitis lethargica and of acute poliomyelitis and the meningococcus, may become infected as the result of influenza infection, or, to express the same result in other words, that the influenza virus may activate latent viruses of encephalitis lethargica, acute poliomyelitis, and cerebrospinal fever.

The problems frequently arise whether changes in the clinical characters of disease are real, such as that universally acknowledged to have occurred in scarlet fever, which was serious and often malignant forty or fifty years ago and now is mild, whether apparent alterations are due to modification in description rather than in fact—in other words whether the change has been in opinion only, and whether more accurate observation has led to subdivision of what were previously regarded as "clinical entities" and so to the crystallization of new diseases, such as typhoid, paratyphoid, and typhus, out of "continued fever" and the various forms of anaemia. It is natural, but futile to speculate how far the evolution of the streptococci can be correlated with the appearance of the numerous diseases now known to be associated with their presence. The tendency of pathologists, bacteriologists, and clinicians has been to separate out specific diseases, whereas that of some epidemiologists, notably Hamer and Crookshank in this country, has been in the opposite direction, and to regard as modifications of a basal disease what are by others regarded as etiologically distinct.

It is natural to assume that with alterations in the seed and the soil the resulting changes in the clinical picture may become so definite as to constitute new diseases, for of course disease must have undergone a gradual process of evolution and may be expected to appear, wax, and wane. The separation of the various exanthematous fevers is a more modern achievement than perhaps many realize, and it is not unlikely, as Chapin suggests that some of them are of comparatively recent development. An eruption like small pox was identified in an Egyptian mummy (1100 B.C.) though, in spite of Rhazes (A.D. 1000) it was not really distinguished from measles until 1675 by Sydenham, measles and scarlet fever, which were not differentiated until twenty years later, now seem distinct enough but there were many acute observers before their differentiation much more recently—in 1881—came German measles (rubella, rotheln) and now there are the much discussed, if not still doubtful, fourth and fifth (erythema infectiosum) diseases. Typhus was probably a famine fever in ancient Greece, but it is impossible to make any statement about the occurrence of typhoid fever in ancient Greece (W. H. S. Jones 1909), and of course typhus and typhoid were not differentiated until the nineteenth century. Chicken pox was not definitely recognized as a distinct disease until the middle of the eighteenth century, by William Heberden

the elder in 1767, and may reasonably be regarded as vaccinia is known to be, as of the same stock as small pox. At the present time the dualists believe that alastrim, or para-small-pox, is distinct from ordinary small-pox, and not merely a mild form of the disease, analogous to the present scarlet fever. It might be urged that in para-small pox the evolution of a new form of disease is occurring, just as in the past German measles (rotheln) has been distinguished from measles and scarlet fever. But the evidence both immunological and clinical, is in favour of the view that it is a mild form of small pox, not a distinct disease and that with vaccinia these two conditions are due to variants of the same virus. Further, history shows that in the past extremely mild epidemics of small pox have occurred (vide Newman).

War and its attendant circumstances may so alter the conditions as to lead to the appearance of new forms of disease, such as trench fever and trench nephritis (also seen seventy years before in North America, but not in the interval), or of diseases rare in ordinary time, such as spirochaetosis icterohaemorrhagica and, from the associated starvation of non-combatants and prisoners, famine oedema and deficiency diseases. In his recent paper on the

"Influenza constitution" Hamer includes typhus in this category, and ascribes its peculiar features and the rash to the influences of famine, remarking that epidemiologically typhus cannot be regarded as a clinical or pathological entity, and correlates the decline in typhus and relapsing fever with the apparent increase in the mortality from influenza and pneumonia. The epidemics and now or unusual types of diseases produced by war and famine tend to disappear or to become rare with the advent of peace and better conditions.

#### The Clinical Recognition of Diseases now Distinct

Though difficult, there is much interest in attempting to determine when present-day diseases were first known, and, what is by no means the same proposition, when they first appeared, for the revelations of palaeopathology may go further back than written records. For if their morbid lesions can be certainly recognized the clinical aspects must have been on much the same lines as at the present time. Tuberculosis has been identified in the Egyptian mummies, and from written records, there is evidence that the pulmonary form was very prevalent in ancient Greece, in spite of the open air life and the supposed antagonism of malaria. Mumps appears to be one of the very few acute infectious diseases accurately isolated in ancient Greece, and with its orebitic complication was described by Hippocrates, bubonic plague is undoubtedly a disease of established antiquity. The pestilence which attacked the Philistines after their capture of the Ark of the Covenant has been conjecturally thought to have been plague, as those who did not die developed tumours and were advised to make offerings of five golden representations or their tumours and of five golden mice. Otherwise the earliest account of the plague, with the diagnostic references to the buboes, have enabled its appearance to be recognized in the third century B.C. in Egypt, Libya, and Syria. Aretaeus (A.D. 70) mentioned pestilential buboes. Its history can be most certainly traced from the great plague of Justinian, which came from Egypt in A.D. 542 and overran Europe. The nature of the plague of Athens (430 B.C.) described by Thucydides and Diodorus Siculus has been thought to be malignant scarlet fever, or small-pox, but typhus has also been confidently suggested by Murchison. The pestilence in Rome in A.D. 165 the Antonine or long plague which was noted by Galen, has been variously identified as dysentery, small pox, and, like the plague of Athens as typhus. There is, as Crawford points out, reason to believe that it was not one and the same disease throughout the fifteen years or its duration.

Malaria has been conclusively shown from contemporary literature of the time which proves the clinical combination of the disease then to its present form, to have been prevalent in Greece from the fourth century B.C. and in Italy from about 200 B.C. W. H. S. Jones (1907) who has most thoroughly correlated the classical references to malaria, shows that there is good reason to believe that one factor in bringing about the decadence of these two

cut powers was the deterioration of national health by malarial infection. His work shows the value of medical history in explaining that of the world.

Although a clinical distinction between *gout* and *rheumatoid arthritis* dates only from the sixteenth century, evidence of chronic arthritis is forthcoming in Neolithic skeletons and in ancient Egypt. Professor Elliot Smith had intended to be here and to have shown that it existed in 4000-3500 B.C. It is interesting to find that from his special study of gout in Byzantium, Jean-Marie has come to the conclusion that of the twenty-four Sultans in the period 1299-1695 six, or one in four, were victims of this disease.

The history of *diphtheria* exemplifies the difficulty of distinguishing between acute infections involving the throat as ordered and identifying them with those now recognized as quite distinct. So much so, indeed, that Adam signified that diphtheria arose as the result of the transformation in special circumstances of a harmless diphtheroid organism into a virulent pathogenic bacillus about the time that P. P. Bretonneau of Tours drew his sharp-cut classical picture of the clinical characters of the disease. Putrid or malignant sore throat had often been described—by Aetius the Cappadocian in the second century A.D., and Aetius of Amida in the sixth century—and it has been thought that the morbus suffocans or garotillo in Spain in 1583-1618, 1630, 1645, and 1660 were epidemics of severe diphtheria. John Fothergill's *Account of the Putrid Sore Throat* (1748) probably dealt with diphtheria as well as scarlet fever, and, as Norman Moore pointed out, John Huxham, in his description of malignant ulcerous sore throat in 1767, mentioned paralysis of the soft palate, and so was dealing with diphtheria, although he did not distinguish it from *scarletina anginosa*. Francis Home's description in 1763 of croup (a word employed by Patrick Blair in 1713) may have been of diphtheria, and certainly gave rise to much confusion, which even now is not unknown in connexion with diphtheria certification. Cullen's *cynanche maligna* may also have been diphtheria. In spite of P. P. Bretonneau's descriptions in 1821 and subsequent years diphtheria was not separated from scarlet fever in this country until the official returns of the Registrar-General for 1855 (published in 1857) when it became a world-wide disease.

#### Influenzal Diseases

The epidemic occurrences of influenza with its attendants in allies or modified phases is a subject of great interest, and has been attractively signed by Hamer, Crookshank, and J. F. C. Nash from the epidemiologist's nearest point of view as against the specializing bacteriological standpoint.

The *swarting sickness*, or sudor anglicus of the sixteenth century is an example of a disease which has been thought to have had its day, though perhaps not to have entirely ceased to be for it has been reported in a modified, certainly milder, form in the Picardy sweat, or *la sueur militaire*, which occurred in 1886 in the Canton of Lucerne-Chateau and proved fatal in 130 out of 1,200 cases (Pierment). And in 1906 in the Charentes when 6,000 persons were attacked with a mortality of about 2 per cent (Henry). The more modern epidemics differed from the early ones in the longer duration of the illness and the outbreak of a military rash on the third and fourth days. Many outbreaks of this curious disease have been recorded, Hirsch collected 194 epidemics in France alone between 1714 and 1874. Its history is of some interest, though called the sudor anglicus it appears highly probable that, whatever its nature, it was brought to England in 1485 from Normandy by Henry VII's mercenaries, who may have been carriers. Pirnie suggested that when introduced into this country it found a virgin soil and so ran like wildfire, just as picasies did in the Feroe Islands (1781 and 1846) and Japan (1875 and 1907). In this country five epidemics

were recorded—in 1485, 1508, 1517, 1523, and the last in 1551. The onset was described as dramatically sudden, sometimes fatal after a few hours or even instantaneously. Crues, who had the opportunity of seeing it in 1551, wrote two brochures on it, one for popular consumption, *Le Role ou Conseil contre le Sueur ou Sweating Sickness* (1552), the first monograph on a single disease in English, and a professional expansion in Latin *De Ephemera Britannica* (1556), and stated that it was "a fever of one natural day." Much able argument has been brought by Hamer to prove that the sweating sickness was really influenza, and Nash and Crookshank have followed his lead, on the other hand, Chantemesse, President of the Commission appointed to investigate the Charentes epidemic, was emphatic that there was not any resemblance between them (M. Foster), and the Commission suggested that it was transmitted by the fleas of field mice.

*Cerebro-spinal fever*, which Hamer regards as one of the influenzal or enteric diseases and "manifestations of one and the same influence," was first formally recognized in 1805.

*Denque*, spread by mosquitos and now regarded as probably due to a filterable virus, has been recognized since 1779. It is a pandemic disease of the tropics, and in some epidemiological respects resembles influenza, in fact, Hamer has persuasively signed that it, like the sweating sickness, is influenza, and in all three claims to "discern the operation of a single disease entity."

*Encephalitis lethargica* when described in 1917 by von Economo of Vienna and seen in the following year in this country appeared to be a new disease. This view was vigorously contested by F. G. Crookshank, who signed that it was the same as acute polio-encephalo-myelitis and one of the influenzal manifestations which could be identified in medical history for at least 400 years, its occurrence being so irregular and at such intervals that it was frequently regarded as "a new disease." Arthur Hall, while inclined to admit that probably the Tubingen *Schlafsucht* of 1712-13, the "noria" in Italy in 1889-90, and some small groups of cases may well be so regarded, points out the danger of leading into the often vague records of past epidemics a description of a disease not named until much later. He, however, recognizes that Dubini's diencephalic cholera in Italy during 1846 and the following years corresponds to what is now known as the myoclonic form of epidemic encephalitis. It may be noted that in 1413 an outbreak of epidemic hiccup, which also appears to be a manifestation of the myoclonic form, occurred in Fontenay (Tillot-Royer).

Some other changes in the incidence of disease may be briefly mentioned. *Appendicitis* has undoubtedly become much commoner since 1889 when influenza broke upon us after an absence of forty-one years, and it might be excusable to connect it in some way with the gastrointestinal form of the epidemic disease but there does not appear to be any historical evidence in favour of this association. That appendicitis existed before Reginald Fitz of Boston baptized it in 1886 is clear from the accounts of James Parkinson (1812), John Burne (1836), Addison (1839) and even earlier isolated cases, such as those described by Vesalius (1759) and Musgraves (1684). For its widespread and frequent incidence in recent times there have been many attempts at explanation, mainly dietetic in character, it does not appear probable that its greater frequency now is apparent rather than real and due to more accurate diagnosis in modern times, for this has taken place under the eyes of those who have watched the declension of chlorosis all over the civilized world, which has also been ascribed to changes in fashions of food or of clothing. Permeiosis (Addisonian) among the other anemias, and the leukemias have almost certainly become more numerous or at least more commonly recognized as a result of intensive microscopic examination of the blood and haemopoietic tissues, thus Niemann's or Pick's disease has been separated from Cushing's splenomegaly.

Environmental factors necessarily have an important influence on the incidence of diseases—for example in parasitic diseases conveyed by animal or insect carriers, such as hydatid (dogs) and malarial (mosquitos) infections.

The history of the word *diphtheria* forms an interesting story in the *Medical Dictionary* and in the *Medical History of Diphtheria* at *Leicester University and London* (1925). Bretonneau originally called it *diphtheria* (from *επιφθέρω*—a membrana) and *επιφθέρω* with its comment on *επιφθέρω* (diphtheria) and *επιφθέρω* (diphtheria) that it is a word of Greek origin and the word *diphtheria* in a letter to Bretonneau as early as 1825 (Tillot).





knowledge. The work to which he wished to refer was a scientific compendium or a popular educator, and its radical interest lay in the fact that after the description of each mineral, plant, or animal an account was given of its medical properties. The medical use of every well known animal was defined, and small animals were administered whole for reduction of stones in the bladder. As regards the historic evolution of disease, what comparisons could be made? Could any conclusions be framed as to which diseases were commonest? It was only possible to say which were most frequently mentioned, and quinine fever occurred most often, probably it was not so common now. Diphtheria, though not now common in tropical countries, was mentioned frequently in this work, and gout was distinguished from acute rheumatism. Hemiplegia was fairly frequently mentioned, as was to be expected, the other common diseases were catarract, stone in the bladder, leprosy, ringworm of the scalp, and tuberculous glands. Here there had probably not been any change

Dr A. A. WARDEN (Cannes, France), after referring to the question whether appendicitis was now more frequent or whether all appendices removed had really been the subject of acute inflammation, asked when appendicitis was first diagnosed and named. He thought the earliest report was that of the case of the French statesman Gambetta in Professor Lannelongue's detailed paper. Gambetta died in what were thought to be very suspicious circumstances. He had been either accidentally or intentionally shot, and in the course of the next few weeks he developed an illness which proved fatal. Professor Lannelongue stated that he diagnosed an appendicular abscess and desired to operate, and all the other consultants refused. The drawings made by Lannelongue at the time were published in the paper, and a photograph was also given of Gambetta's hand, showing that the wound caused by the bullet was completely healed and had not caused his death. This was probably the first definite record of the diagnosis of appendicitis confirmed by *post-mortem* examination, the year being 1881.

Sir STUART THOMSON (London), after praising the inauguration of the Section, quoted Napoleon's remark, "The only guide to the future is the past," and that of Goethe, "The man who looks forward only sees one road of advance, but the man who also looks backwards sees two roads."

Dr WRIGHT (London) said that an understanding of the evolution of disease was very much assisted by the study of the conception of disease through the ages. The present view of the causation of disease was that it was bacterial in its origin. Although the ancients and the medievalists had no knowledge of bacteria, they did attribute disease to putrid or miasmatic morbi, and he thought no stronger evidence could be produced of the fact that disease was attributed to these causes than was to be found in the writings of Lucretius, who summed up the scientific philosophy of his period. In classical and medieval times disease was very closely associated with miasmas, and there, of course, instinct was correct. All sensations were attributed to particulate matters which came from the various effluvia, and it was natural to seek the prevention of disease by counteracting the effect of these miasmas through the introduction of more pleasing odours in the form of aromatics. Sweating sickness had given rise to a great deal of controversy in the past, and the classical and medieval writers largely attributed it to particulate matter. Referring to appendicitis, he said that of course perityphlitis, typhlitis, and appendicitis were all the same disease, it was a very old disease, and was referred to in the earliest medical literature. The English name for it was "the passion," and it was referred to by Sydenham, whose treatment was the application of the warm body of a living puppy to the right iliac fossa. Dr Wright quoted from Heister a description of a dissection, which he thought was probably the first authenticated case of appendicitis as distinct from perityphlitis.

Sir HUMPHRY ROBERTSON, in replying, said that there had been descriptions of appendicitis in England in the seventeenth and eighteenth centuries, and still earlier ones

in Egyptian mummies. Parkinson described it in 1812, Houskirk also described it, and so did Bunce, and these probably inspired Addison's description in 1839 in the first and only volume ever published of Addison and Bright's *Treatise on Medicine*.

## The Sections.

### BRIEF SUMMARY OF PROCEEDINGS

(Concluded from page 174)

#### SECTION OF MEDICINE.

Thursday, July 21st

##### TREATMENT OF ACUTE LOBAR PNEUMONIA

PROFESSOR J. HILL ABRAHAM (Liverpool), Vice-President of the Section, presided over the discussion, which was opened by Professor John Hay (Liverpool), who commented on the lack of unanimity as to the actual nature of acute lobar pneumonia, the drift of opinion now seemed towards the view that it was essentially a local disease striving to become general. The outlook in a particular case depended on the violence and type of the infection and the resistance of the patient. It was, however, a self-limiting disease tending to recover, 75 per cent of cases surviving if allowed to do so. With regard to prophylaxis, much more care should be given to the prevention of contagion than was generally the case, there was no longer any uncertainty as to the value of prophylactic vaccination, as the beneficial results of inoculation had been proved conclusively. The common cause of death was emulsion failure, the important factors being (1) toxæmia, (2) myocarditis, (3) stasis on the right heart, and the essentials in treatment were fresh air and complete physical and mental rest. Professor Hay gave detailed suggestions as to how these were best ensured. Specific treatment consisted of treatment by vaccine or serum or both. Dealing with vaccine treatment, he quoted the opinions of rival schools of thought, and confessed that hitherto his own attitude had been frankly critical, the position was, however, altered if one regarded the disease as essentially a local one in the lungs, and he had been much impressed by the successful results reported by Captain Malone. All advocates agreed that vaccine, to be of any use, must be given within the first three days. With regard to serum treatment, Type 1 serum had made good. Turning to symptomatic treatment, Professor Hay discussed the methods of relieving pain and insomnia, which must be overcome if rest was to be assured, and the need for opiates was emphasized. In the prevention and treatment of cardiac failure the efficiency of the myocardium must be maintained, and oxygen must be administered in an efficient way at the first indication of cyanosis. As a heart stimulant alcohol was not only useless, but detrimental. The routine administration of digitaline he believed to be of definite value and caffeine was a good cardiac stimulant. Strichnine, however, was much overrated, and there was no evidence that it was a direct cardiac stimulant. Professor W. H. Wynn (Birmingham) spoke in favour of the vaccine treatment of acute lobar pneumonia. Many medical men were afraid of giving vaccine for fear of getting a reaction in the negative phase, but a reaction only occurred in sensitized individuals, and the sensitizing antibodies were only present in acute infection after an interval, in this interval vaccines could be given without reaction, and by giving an adequate dose it was possible to control the infection to a large extent. His vaccines were made from young primary cultures, 100 million being the smallest dose for an adult. Charts were shown demonstrating the immediate fall in the temperature if the vaccine was given during the first two or three days. If given later the result was more difficult to obtain and repeated injections might be necessary. Dr H. Moxley Fletcher (London) agreed that once the diagnosis was made the patient must be disturbed as little as possible. He was also in general agreement with regard to alcohol but he thought the pendulum was swinging perhaps too far, and that there was danger in the absolute prohibition of alcohol in pneumonia, as in

certain circumstances it was helpful. Deathermer was worthy of further consideration. In his view oxygen given early, adequately and systematically was the most important therapeutic agent. He had used sodium nucleinate but had seen no good results. Professor P. I. S. McDowall (London) dealt with cardiac failure from the physiological aspect and recommended bleeding as the best physiological method for the relief of the heart. Alcohol reduced venous pressure and thus explained its beneficial action in pneumonia. The rapid shallow respiration that caused the deficient action of the blood was believed to be due to an exaggeration of the Hering-Breuer reflex and experimental work had shown that this reflex could be abolished by adrenaline. Dr S. Davidson (Edinburgh) put in a strong plea for serum therapy. There was overwhelming indirect experimental evidence and also the direct evidence from the clinical results at the Rockefeller Institute. Much help with regard to prognosis could be given by the bacteriologist experienced in pneumococcal work. Sir James Barr spoke of the need for prophylactic measures and the use of common sense. Dr Hewat (Edinburgh) strongly recommended the use of alcohol. Dr Gardner-Medwin (St. Asaph) gave the results of his experience with intranasal injections of sodium nucleinate coupled with the oral administration of sodium bicarbonate and glucose. At whatever period the injection was made the crisis was precipitated in forty-eight hours. The cases on which the original work was done were severe cases with "heliotrope cyanosis" in the 1918-19 epidemic and the results were equally good in the pure pneumococcal pneumonias and in those following influenza.

Dr D. H. Billon (Montreal) gave a demonstration of the value of lipiodol in the investigation of intrathoracic disease illustrated by a series of most excellent lantern slides.

*Friday, July 22nd*

#### PATHOLOGY AND TREATMENT OF PERNICIOUS ANAEMIA

Professor Lovell Gulland (Edinburgh) opened the discussion with a short description of the general aspect of pernicious anaemia, giving as the principal criteria in diagnosis a high colour index, the presence of megalocytes, and leucopenia. The high colour index was due to the fact that red cell formation was megaloblastic rather than normoblastic. The disease was essentially a toxæmia, and the problem was—What is the toxin? It was generally regarded as haemolytic, but there was little real evidence of this in the sense of actual dissolution of corpuscles. The toxin probably inhibited the normoblastic function of the marrow, the development of neutrophils, and platelet formation, it produced sclerosis in the spinal cord, and indeed widespread changes in all the organs concerned with the elimination of poisons. No known organism could as yet be identified as the cause of the disease, the latest organism suggested was the *B. velvelli*. It had been surmised that with a low blood cholesterol the unsaturated fatty acids present in the blood in excess had a haemolytic action but in any case this could only be a secondary effect of some primary metabolic disturbance. Achylia also he considered to be a secondary factor. In contradistinction to the cryptogenetic form, there were several groups in which the cause was known, as, for example, biliary cirrhosis, some cases of sprue of syphilis and malaria, and of pregnancy. Turning to treatment, Professor Gulland said that, although from the point of view the treatment was unsatisfactory, it was possible to do a good deal, and 100 per cent should recover from a first attack. Rest, sunlight, and fresh air were important, and diet must be regulated by the alimentary condition. His experience of the high protein diet recommended by Minot and Murphy was limited; some patients had done well but others had not been able to take it and others had rebelled. Arsenic was our standby; it was best given as the hydrochloric solution by mouth in increasing doses and continuing with the largest dose compatible with freedom from arsenical symptoms until the colour index dropped below unity, it should then be stopped and iron given. Professor W. K. Hunter (Glasgow) said that discussion on the pathology of pernicious anaemia must centre round the two most notable features in its morbid

anatomy—namely, the evidence of increased destruction of red cells in liver and other organs and the changes in the bone marrow. He considered that there must be some definite haemolytic agent present and thought that it acted by stimulating phagocytosis of red cells. It was improbable that the megaloblastic marrow was entirely due to the increased haemolysis and in his view the megaloblastic change was the initial one produced by the toxin which determined the increased haemolysis. Dr G. P. Minot (Boston, U.S.A.) whose paper was read by the Honorary Secretary, described his results with a Liga protein liver diet. Statistics were given showing that of 125 cases treated practically all had recovered, the red cell count reaching to from 41 to 6 million in nearly all cases. The cases had been observed for periods of from four months up to three and a half years. The effect of the diet on the alteration in size and number and nature of the red cells was described. Recently Cohen had isolated a liver fraction precipitated by alcohol which apparently had all the properties of the whole liver in its effect on the marrow. Details as to various methods of giving the liver were described. Professor van den Bergh (L'recht) agreed with what the speaker had said but emphasized the importance of achlorhydria which was much more common in pernicious anaemia than in gastric catarrh. He had also noted that the red cells were elliptical in shape a condition characteristic of pernicious anaemia. Increased haemolysis with a breakdown of the Hb molecules was the basis of the disease and the bilirubin content of the serum was nearly always increased. Professor Knud Lærke (Copenhagen), after agreeing that pernicious anaemia was a symptom complex with many different causes, spoke of the extreme importance of infection in the upper alimentary tract in all cases of achylia or whatever origin the bacterial flora was abnormal. In his view the constitutional factor involved the blood rather than the stomach. While not denying the good results obtained by Minot's diet, he thought it was too early to use them to explain the pathogenesis of the disease. Experimentally he described showing the possibility of producing a megaloblastic anaemia by the injection of bacterial endotoxin. Dr A. F. Hurst (London) gave figures to show the very intimate association between achylia and peripheral radial achylia, with pernicious anaemia and subacute combined degeneration of the cord. Dealing with the bacteriology, Dr Knott had found that the normal duodenum was always sterile. In pernicious anaemia and subacute combined degeneration over 60 per cent were infected with *B. coli* or streptococci. He had never found *L. velvelli*. He regarded prophylaxis as of extreme importance and showing glossitis and tingling of the extremities should be carefully investigated and spic teeth removed and achlorhydria treated with hydrochloric acid. He had found a paper describing a method of preparing tablets so that it was very palatable and easily taken. Dr J. Schiff (U.S.A.) discussed the appearance of serum bilirubin—this was increased in pernicious anaemia but not in the secondary anaemias. Dr W. E. Coul (Wigan) described alterations in the polymorphonuclear neutrophil cell and suggested the probability that the intestinal flora was a product of abnormal off-putting from the haemoblastic. Dr S. Davidson (Edinburgh) emphasized the importance of the work done on *L. velvelli* infection; this organism was far more frequent in the stool of patients with pernicious anaemia than in normal people. Dr J. H. Sharpe (London) urged that the disease was due to infection by a spirochaete. Dr A. Blackall Morrison read a paper on coronary angina pectoris.

#### SECTION OF SURGERY

*Thursday, July 21st*

#### TREATMENT OF TOXIC COECITIS

Mr T. P. Duvigne (London), opening the discussion, said that in both true exophthalmic goitre and toxic adenoma there was a strain thrown upon the gland. When the gland was normal a true exophthalmic goitre resulted, but when the strain acted upon a physiologically hypertrophied gland which had failed to involute a secondary

exophthalmic goitre occurred. Many patients coming to him had had the disease for many years and had become worse in spite of medical treatment. Surgical treatment arrested the disease more quickly and certainly than medical measures. Early operation should be considered if the patient was not improving six months after the onset of the disease. Auricular fibrillation demanded operation. Usually he removed one lobe and the isthmus first, and a part of the second lobe later, it was extremely difficult to decide how much gland should be taken away. Professor G. R. Murray (Manchester) said that in some forms of toxic goitre only surgery could bring relief. It was more frequently required for secondary than for primary goitre, in which only about one-twelfth of the patients required an operation for relief as x-rays or radium were usually effective. Mr C. Thurstan Holland (Liverpool) made an eloquent appeal for x-ray treatment, which had no mortality attached to it. He thought x-rays should always be used in early cases and be given a short trial in the advanced ones. Professor R. E. Kelly (Liverpool) pointed out the advantages of intratracheal anaesthesia and preliminary iodine medication. Dr John Erson (Edinburgh) declared death to be a remote possibility in primary exophthalmic goitre. Operation, whilst it acted quickly in restoring normal function, raised the general death rate from the disease. He regarded it as necessary when there were signs of deterioration of the internal organs. A general policy of operation was wrong. Sir William de Courcey Wheeler (Dublin) pointed out the occurrence of eyes in the disease. Among 82 personal cases 90 per cent had had medical treatment and had passed into a chronic stage. He believed the only way to prevent relapse was a subtotal thyroidectomy. Iodine was very valuable, but might give a false sense of security. Mr John Morley (Manchester) said that only x-rays and surgery had any effect at all upon the disease. Owing to the use of Lugol's solution the operative mortality had been very greatly reduced of late years. He thought seven-eighths of the gland should be removed. X-rays failed to influence cardiac disturbances. Mr A. J. Wilton (London) stated that diffuse colloid goitre, if it persisted into middle life, was transformed into diffuse adenomatous goitre. This kind of gland rarely gave rise to thyrotoxic symptoms. There were two types of exophthalmic goitre—vascular and nervous. The latter was frequently unrelieved by operation. Medical treatment had a considerable mortality. X-rays were useless except for carcinoma. The use of Lugol's solution was good. Dr L. A. Rowden (Leeds) said that in an experience of 550 cases treated by x-rays he had come to regard this method of treatment as the best. It was often necessary to give such a dose that the skin was damaged. Dr F. N. G. Stair (Toronto) had known death to occur soon after x-ray treatment and had seen many failures. During 1926 he and two assistants had operated upon 253 patients for goitre. Only 27 were non-toxic. Two exophthalmic symptoms had sometimes been associated with adenoma. Mr Cecil Joll (London) had never seen exophthalmic symptoms in toxic adenoma, though he had had a very extensive experience. Much judgement was necessary to decide how much gland to remove. The mortality was less in operations for toxic adenoma than in exophthalmic goitre. Mr Dunhill replied that he did not operate in the early stages, and that he considered opinion was gradually crystallizing as to the place surgery should take in the treatment of the disease.

#### TREATMENT OF INFECTED WOUNDS

Sir Almoth E. Wright (London) demonstrated the principle of wound treatment. He gave an outline of his researches into the conditions which determined the persistence of infection in a wound, and showed how the flow of serum to the infected surface was the best method of destroying bacteria. He described the factors favouring the growth of the gas gangrene bacillus, and demonstrated the relative futility of the simple irrigation of wounds. He also explained how the addition of antiseptics to wound discharges lessened their antibacterial power. Hypertonic salt was a much better therapeutic agent.

Friday, July 22nd

#### CHRONIC APPENDICITIS

Mr Wilfred Trotter (London) classified chronic appendicitis under three heads. In one of these the disease was chronic from the beginning and gave rise to symptoms which were due to an associated mesenteric lymphadenitis, disturbances of motility or secretion at the ileo-caecal angle, or to general septic absorption. Cholecystitis was definitely related to appendicitis and was apt to occur in young persons, urinary infections were also seen. In children disturbances of growth, pustular skin eruptions, and some cardiac disorders were sometimes attributable to chronic appendicitis. He outlined his procedure in operating upon patients in whom the diagnosis was a little uncertain. Mr J. W. Dowden (Edinburgh) confined his remarks to methods of diagnosis. He described the conditions which simulate appendicitis, and how they could be distinguished. Mr Victor Bonney (London) emphasized the frequency with which chronic salpingitis or ovarian blood cysts gave rise to symptoms resembling chronic appendicitis. He advised a mid-line incision for operating upon women who were thought to suffer from appendicitis. Mr A. J. Wilton (London) doubted the existence of primary chronic appendicitis, changes seen in the appendices of such cases he regarded as evolutionary in character. Appendicular dysplasia was a real disease, but very rare. He did not remove the appendix as a routine when operating upon the upper abdomen. Mr H. N. Fletcher (Brighton) found in a follow-up of 82 cases of chronic appendicitis that operation failed to cure in about one-third. In the diagnosis he regarded the history of a previous acute attack as very important. Mr A. H. Burgess (Manchester) said he explored the whole abdomen in all cases of chronic appendicitis. He regarded tenderness in the right iliac fossa as an extremely valuable sign if it was proved to be greater than that caused by symmetrical pressure on the left side. Mr Andrew Fullerton (Belfast) urged that the specific gravity of the urine coming from each kidney should be estimated and compared in every doubtful case. By this means a renal origin of the pain could be excluded. Mr G. H. Colt (Aberdeen) relied upon gurgling in the right iliac fossa when pressure was made there as the most certain sign of chronic appendicitis. Mr H. Temple Muisell (Johannesburg) called attention to Rovsing's sign of pain in the appendicular region on pressure over the left iliac fossa, he believed it reliable. Professor D. P. D. Wilkie (Edinburgh) thought that perhaps there was a tendency to precipitate operating for pain in the right iliac fossa. He deprecated this and urged the education of the public so that they could be induced to undergo a complete investigation by modern methods before insisting upon operative exploration. He did not believe much in the simple x-ray diagnosis of chronic appendicitis. Mr Trotter, replying, said he regarded chronic appendicitis as often the initial stage in a long train of symptoms. He thought for this reason the effective treatment of the disease in childhood was important.

#### BURNS

Mr A. MacLennan (Glasgow) reviewed methods of treating burns, and gave his experiences. Mr Wilson (Edinburgh) gave an interesting account of the use of tannic acid in the treatment of burns and showed some remarkable lantern slides of the results of its use.

#### SECTION OF OBSTETRICS AND GYNAECOLOGY

Thursday, July 21st

#### HYGIENE OF MENSTRUATION IN ADOLESCENTS

Professor R. W. Johnson (Edinburgh), opening the discussion, said that the period of adolescence in the British race extended from about the age of 12 to 18, varying within limits in each individual. He described the anatomical, physiological, and psychological changes of puberty, and said that it was obvious that at such a critical period unhygienic methods of living might easily produce disastrous results affecting both body and mind. The reproductive organs during this phase of life called for a specially good supply of healthy blood and nerve energy.

and if these were diverted either to the muscular system or the intellectual centres the proper development and early functioning of the reproductive organs were liable to suffer. A natural mode of life must be aimed at including the avoidance of excess in any direction, physical or mental. But almost as much damage might be done both to the reproductive functions and to the nervous system by encouraging a girl to believe that she was the subject of a very special delicacy during the menstrual period. From time immemorial menstruation had been regarded as a function imbued with mystery and to some extent that idea still persisted. If they could dispel the lingering relics of such morbid tradition the next generation would suffer less from dysmenorrhoea. He advocated individual instruction of each girl as she reached puberty, so as to ensure in each individual the recognition of menstruation as a normal physiological function during which a moderate amount of wholesome exercise was actively beneficial. Dr J. H. P. Paton (St Andrews) questioned the wisdom of allowing girls to take part in active games during menstruation. His rule was to stop violent forms of exercise but to encourage walking and his results were very satisfactory. He estimated the occurrence of dysmenorrhoea among girls of a high standard of general health at about 9 per cent, the low incidence being due to good general condition. He referred to the question of regularity showing that intermittent amenorrhoea was comparatively common, due to the severe mental and physical strain of a school term. Dr Alice Sanderson Clow (Cheltenham) referred to the somewhat earlier onset of the catamenia in the children of well-to-do parents than in those of the poorer classes. They were not justified in regarding a case as one of primary amenorrhoea so long as growth in height and weight continued. She allowed girls to continue games such as tennis and hockey and to take warm baths. She had reduced the proportion of those suffering from dysmenorrhoea by these measures from 46.7 per cent to 10.8 per cent, and the majority of the latter were not permitted by their parents to take the exercise advised. Dr Vaughn Swyer (London) thought that the specific severs of childhood were largely responsible for the incidence of dysmenorrhoea. Dr G. I. Strachan (Cardiff) recounted his experiences in connection with a large mental institution. Professor Gibbon FitzGibbon (Dublin) said that the cases of dysmenorrhoea seen by the gynaecologist were mainly those of acquired dysmenorrhoea in girls aged 20 to 25. Professor McIlroy (London) thought that girls without occupation were the most frequent sufferers from dysmenorrhoea. The discussion was continued by Dr Catherine Chisholm (Manchester), Dr Mabel Ramsay (Plymouth), Dr Farquhar Murray (Newcastle), Dr Jeffries (Brighton), Professor Hendry (Glasgow), the President Dr Haultain (Edinburgh) and Dr Sutherland (Australia). It will, it is hoped, be published in full in an early issue.

Friday July 22nd

#### SHORT COMMUNICATIONS

The final meeting of this Section was devoted to a series of short communications. Dr T. A. E. Crer (Edinburgh) read a paper on the effects upon the sex ratio of conception, early and late in relation to the oestrous cycle of the rat. His results appeared to show that the time of service in the oestrous cycle was of no importance in determining the sex ratio. The paper was discussed by Dr James Young (Edinburgh) and the President. Dr Fletcher Shaw (Manchester) discussed uterine fibroids after the menopause and urged that in view of the dangerous changes which might be undergone by fibroids their earlier removal was desirable. The paper was discussed by Dr Bethel Solomons (Dublin), Professor McIlroy (London), Professor FitzGibbon (Dublin), Dr Fordyce (Edinburgh), Dr James Young (Edinburgh) and the President. There was a general agreement among most of the speakers with the conclusions reached by Dr Fletcher Shaw. Dr Daniel Douglass (Manchester) reviewed the clinical features of ectopic pregnancy, based upon a hundred cases which had been under his care. Dr Leith Murray (Liverpool), Dr Bethel Solomons (Dublin), Dr Farquhar Murray (Newcastle), Dr Forsyth (Edinburgh),

Professor R. J. Johnstone (Belfast), and the President raised interesting points in connexion with the paper. Dr Bethel Solomons described his experiences of lower segment Caesarean section and the indications which in his view called for its performance. Dr FitzGibbon, Professor McIlraith (Toronto), Professor Hendry (Glasgow), and the President took part in the subsequent discussion. Dr Douglas Miller (Edinburgh) reviewed the clinical results in 83 cases of failed forceps delivery which had occurred in 500 emergency admissions to hospital. Unfortunately time did not permit of an adequate discussion of this most important paper.

#### SECTION OF THERAPEUTICS AND PHARMACOLOGY

Thursday July 21st

##### THERAPEUTIC USE OF CALCIUM SALTS

Professor F. R. Fraser (London) opened this discussion. He said that the function of calcium in the living organism was imperfectly understood, but it was known that it was essential in the clotting of blood. It appeared also to be necessary for the proper contraction of heart muscle, and it played an important part in the balance of ions in the tissues and body fluids. Professor Fraser dealt with the indications for calcium therapy, and observed that the effects of administration by the mouth were inconsistent and at best only produced a moderate rise in the level of the calcium in the serum in healthy subjects. Intravenous injections of calcium chloride could be utilized to raise the serum calcium promptly; the effect was transitory, but the method was useful in controlling the severer manifestations of tetany—namely, the convulsions and laryngismus. Indirect methods of influencing the calcium content of the body were perhaps more important than the direct administration of its salts. Dr L. G. Parsons (Birmingham) restricted his remarks to the treatment of children with special reference to tetany and bone calcification. He seldom gave calcium by the mouth, since he thought the child obtained sufficient from the food. Dr C. P. Stewart (Edinburgh) dealt with calcium absorption, in that process acidity in the intestine was an important factor. He said that careful distinction must be made between absorption and retention; he had shown experimentally that the parathyroid hormone had no effect in either process. Dr G. H. Pereira (Edinburgh) had found that the calcium content of the serum was very constant, symptoms occurring only when it was greatly reduced. Therapeutic value was disappointing and it was only when some controlling mechanism in the body failed that the amount in the body diminished. In pregnancy and lactation the content was low owing to the supply in the food being insufficient for both mother and child. Professor L. Blum (Strasbourg) exhibited charts showing that calcium chloride diminished oedema by promoting diuresis. He also referred to the employment of calcium salts in pleurisy. Dr F. C. Lind (London), Dr N. C. Burges (London), Dr C. G. Lambie (Edinburgh) and the President continued the discussion.

Friday July 22nd

##### OVARIAN EXTRACTS

Professor W. E. Dixon opening a discussion on the action and uses of ovarian extract said there was no doubt that the ovary was an organ of internal secretion. If an ovary was transplanted into an animal before puberty it did not grow or function and therefore, there must be in the body something else necessary for its growth and function. Clinical results with ovarian extracts had been disappointing possibly owing to their having been administered in a haphazard and unscientific manner. Professor Dixon considered in detail the three main instances contained in extracts of ovarian glands—namely (1) oestrogen which when injected into animals produced oestrogenic effects of the sexual organs; (2) lutein which had the effect of inhibiting the oestrogen period and (3) pituitary. He emphasized the fact of the close relation between the pituitary gland and the ovary. Miss Katherine Corbridge (London) gave an account of the results of injection of ovarian extracts in rats and mice after removal of the ovaries, and described her method of standardizing the

doses of ovarian preparations Dr A S Pules (London) said that he had shown experimentally that the presence of the corpus luteum in the mouse was essential for the continuance of pregnancy, an active corpus luteum extract was necessary in ovarian extract therapy, but so far only in oestrous hormone was available for use Dr W R Addis (Manchester) related the results of investigations with extract of ovary without corpus luteum to produce labour, in fifty cases There had been complete absence of consciousness of uterine contractions by the patient in the first stage of labour, and no pain until its end, thus approximating the condition in lower animals and the savage races Dr W F T Haultain (Edinburgh) described the effect of giving ovarian extracts after operations in which both ovaries had been removed Dr Kennedy, Dr Campbell, and Professor Greeno contributed to the discussion

#### THE ACTION OF DIGITALIS

Professor D Murray Lyon (Edinburgh) read a paper on the action of digitalis, illustrated with lantern slides

### SECTION OF DISEASES OF CHILDREN

Thursday, July 21st

#### ACUTE INTESTINAL OBSTRUCTION IN INFANCY AND CHILDHOOD

Mr A MacLennan (Glasgow), who opened this discussion, dealt first with obstruction due to congenital anomalies, citing in turn duodenal stenosis, jejunal and ileal atresias, colic obstructions, exomphalos, Meckel's diverticulum, and strangulated hernia He then considered acquired causes and protested against the classifying of intussusception among the obstructions, on the ground that this led to delay in operating Symptoms which had a mechanical explanation and those which were due to interference with function were discussed He emphasized the desirability of wishing out the stomach early in the anaesthetic period, and of avoiding handling He did not hesitate to perform enterotomy, and was not altogether opposed to chloroform as an anesthetic in these cases Mr Brunning-Wood (London) indicated the relative diagnostic value of the different symptoms and signs of obstruction, and referred at some length to internal hernia and volvulus of the small intestine In the treatment of intussusception he recommended Farr's method of injecting air into the large gut as an adjunct to operation Miss G M A Heifield (Edinburgh) reported 160 personal cases, 116 of acute intussusception (24 deaths), 16 of obstruction due to abdominal tuberculosis (6 deaths), 22 of irreducible and strangulated hernia (no deaths), and 6 of post-operative obstruction in acute appendicitis (1 death) She mentioned the importance of combating dehydration before operation As an anesthetic she preferred open ether combined with local infiltration with novocain She had also used spinal anaesthesia with success

Mr F C Pybus (Newcastle-on-Tyne) referred to the variation in the symptomatology according to the nature of the obstruction, and to the difficulties in diagnosis presented by ketonuria and Henoch's purpura He disliked chloroform as an anesthetic

Mr N M Dott (Edinburgh) suggested that children suffering from acute intestinal obstruction tolerated operation remarkably well, and that therefore it was doubtful whether the loss in debility and accurate technique did not nullify any gain due to speed in operating He thought that resection was possibly the best treatment in certain cases, in which the bowel, though reducible and viable, was severely bruised in the process of reduction Dr H C Cameron (London) mentioned the need for early diagnosis when there were grave symptoms of intestinal obstruction in a newborn infant With regard to acute intussusception, he called attention to the contrast in practice prevailing in Scandinavia, where in 80 per cent of cases taxis through the abdominal wall without laparotomy was successful He referred also to the differential diagnosis of intussusception from colitis and Henoch's purpura and to the value of blood transfusion Dr Lapage (Manchester) dealt with

points in diagnosis and pleaded for the avoidance of purgation Dr Margaret Tod (Edinburgh) emphasized the practical difficulties of distinguishing between enteritis and intussusception She was convinced of the value of transfusion

Friday, July 22nd

#### THERAPEUTIC MODIFICATION OF INFANT DIET

Dr H C Cameron (London), opening a discussion on the therapeutic modification of the diet in infancy, deplored the neglect of pediatrics in medical education and the dearth of professorial chairs The therapeutic modifications of the diet to which he directed particular attention were (1) high caloric feeding in post-infective dystrophy, (2) thickened feeding in the vomiting of aerophagy, nervous vomiting, and hypertrophic pyloric stenosis, (3) feeding with a high percentage of casein in fermentative diarrhoea Dr Dingwall Fildyce (Liverpool) thought that chemical tests of breast milk were of comparatively little practical value, but that occasionally bacteriological examination proved of the utmost importance In artificial feeding each case must be taken on its merits Dietetic modifications might produce their effects by influencing endocrine, particularly thyroid, activity Dr G B Fleming (Glasgow) thought that underfeeding was an extremely common cause of malnutrition, and discussed the food requirements of normal and malnourished infants Observations on basal metabolism were quoted Dr Lewis Thatcher (Edinburgh) dealt with the use of acidified milk, and spoke highly of the value of lactic acid milk, illustrating his remarks by charts Dr L G Parsons (Birmingham) gave his experience of milk acidified by the *Streptococcus lactis* He suggested that lactic acid was synthesized in the liver to carbohydrate Dr C W Vining (Leeds) mentioned the common tendency to underfeed the artificially fed infant, and commented on the confusion which resulted from slack methods of measuring quantities of solid and liquid food-stuffs He referred to the use of banana pulp Dr Catherine Clusholm (Manchester) discussed the teaching of this subject and the utilization for teaching purposes of the clinical material in Poor Law and similar institutions Dr Mary Lowenfeld (London) mentioned observations on the quantity and composition of the feeds taken by normal breast-fed infants, and with special reference to factors modifying the fat content Dr Dorothy Potter (Edinburgh) referred to methods of feeding in use in the Toronto Children's Hospital Dr Helen Mackay (London) commented on the great variation in bulk of different food-stuffs Dr C McNeil (Edinburgh) stressed the importance of the clinical observation of the individual child in relation to its feeding

### SECTIONS OF NEUROLOGY AND MENTAL DISEASES.

Thursday, July 21st

#### EPIDEMIC ENCEPHALITIS

Under the chairmanship of Professor Edwin Bramwell the second day's proceedings were devoted to a discussion on epidemic encephalitis, opened by Dr Ivy McKenzie (Glasgow), who dealt with the epidemiology of the disease and described its history Passing to the pathological anatomy, Dr McKenzie said that he had found that in the acute and early stages the lesions were diffuse, and tended to be more pronounced in the basal nuclei and in the mid brain In Parkinsonian cases the most pronounced lesions were in the substantia nigra It was clear that the possible toxin responsible for the disease showed a predilection for the grey matter on the afferent side of the proprioceptive system Dr McKenzie concluded by giving a short history of the disease in Glasgow Dr J G Greenfield (London) stated that the virus of epidemic encephalitis had not been identified yet, and it was still uncertain whether the disease had ever been transmitted to animals Some workers claimed that the etiological agent was identical with that of herpes febrilis, differing from it only in possessing a greater affinity for the nervous system In the early stages the cerebro spinal fluid might be quite normal or might contain a slight excess of glucose, which was of doubtful significance Usually in the first few weeks of the disease, however, there was a lymphocytosis of 10 to 100 or even more cells per cubic millimetre Dr Greenfield's



paper was illustrated with some admirable photomicrographic slides of sections of the brain showing different phases of the disease. Dr C Riddoch (London) considered the chronic forms of the disease, and maintained that encephalitis lethargica was a chronic malady, comparable in its course with neurosyphilis and disseminated sclerosis. An important group of cases was that in which the disease appeared to be chronic from the beginning. Dr Riddoch discussed the milder forms of Parkinsonism the most different kinds of involuntary movements, spastic paralysis, and muscular atrophies. He also described the various forms of respiratory disorders, and concluded by referring to the interesting endocrine involvements—adiposity, diabetes insipidus, and glycosuria—which sometimes followed the disease. Dr R MacNish Marshall (Glasgow) dealt mainly with the mental aspects of the disease, including (1) the clinical importance of the course (2) the incidence of the characteristic sequels (3) the mental state of the restless, naughty child, (4) the clinical affinities of the Parkinsonian syndrome. Professor G Guillian (Paris) described some cases, complaining of symptoms that at first appeared to be those of myasthenia gravis. Subsequent investigation showed the cases to be examples of post-encephalitic disorders, which illustrated the importance of fully investigating the physical signs in all cases of apparent myasthenia. Dr E Mapother (London) described cases that at first had appeared to be neurases. The intensity of the mental symptoms seemed to bear no relation to the degree of the physical disabilities. Dr B Sachs (New York) said that the lethargy of epidemic encephalitis differed from all other forms of lethargy, and considered that "central basilar encephalitis" was a better term to apply to the disease than encephalitis lethargica. Dr W A Potts (Birmingham) regarded the routine treatment of any focal sepsis, whether nasal, dental or intestinal, as most valuable even in chronic forms of the disease. He had seen good results following the use of autogenous vaccines made from organisms cultivated from the nose and throat. Professor R Cruchet (Bordeaux) spoke of the important sign of defective muscular relaxation in the diagnosis of post-encephalitic states. He also showed a myogram illustrating the increase in the relaxation-time in Parkinsonian cases, together with others demonstrating the greater degree of relaxation time following the injection of scopalamine. Professor K A Petren (Sweden) had found Guillian's "blinking reflex" a valuable diagnostic sign. In his experience no case had ever developed Parkinsonism at a longer interval than four years from the onset of the disease. Dr V D Ryle (New South Wales) gave a cinematographic demonstration of cases of post-encephalitic Parkinsonism illustrating the benefit following sympathetic ramisection. Dr J H Wolfsohn (San Francisco) had seen benefit in many cases follow the use of a polyvalent autogenous vaccine (from mixed nasal and intestinal cultures) applied immediately following the acute stage of the disease. Dr T A Ross (Penshurst) emphasized the importance of an adequate history in diagnosing neurosyphilis from post-encephalitic states. Dr Poston (Manchester) dealt with the relation of oculomotor disabilities to vestibular function, and Dr P C Cloake (Birmingham) commented upon certain mental aspects of the disease.

## SECTION OF LARYNGOLOGY AND OTOTOLOGY

Thursday, July 21st

### OTO-CLEOSIS

Dr J C FRASER (Edinburgh), in some opening remarks as chairman, pleaded for international investigation into oto-cleosis and also for term work between the otologist, the physician, the neurologist, the biochemist, and the endocrinologist. Mr G J Jenkins (London) in opening the discussion on otosclerosis is said that this term should include a variety of syndromes, and not merely the middle-ear deafness type of otosclerosis. Osteitis deformans deafness might simulate that of otosclerosis in all types, but in some cases the deafness might be due to the grafting on of true otosclerosis. Osteogenesis imperfecta did not itself cause deafness, but it favoured the implantation of true otosclerosis. The clinical peculiarities in the Eustachian tube, middle ear, tympanic membrane and external audi-

tory memans, which were commonly found in otosclerosis, were probably anatomical variations or a local defect, and were not due to otosclerosis, the peculiarities probably favoured the onset of otosclerosis. The symptoms and signs of otosclerosis were not due to primary disease in the labyrinth, but were secondary to a capsular bone disease extending to and involving the central elements. Professor F R Nager (Zurich) said that in 800 cases of deafness examined in private 200 were cases of otosclerosis. The sex incidence was 18 females to 1 male. Most cases started between the ages of 21 and 25, and after the fiftieth year very few cases were to be found. Of the patients, 58 per cent had a definite family history but heredity in otosclerosis was not uniform. The progressive character of the deafness might be slow, with in some cases, long stationary periods but very often it was marked by severe attacks of tinnitus. A diagnosis could only be patients 58 per cent had a definite family history but he did not hesitate to diagnose otosclerosis even when the membrane was thickened or not quite normal. In 71 per cent of his cases the drums were normal, and 20 per cent showed a redness of the region of the promontory. Professor Nager illustrated his paper with beautiful slides in colour photography. The discussion was continued by Dr Dan McKenzie (London) who pleaded that any method for the treatment of otosclerosis should be given a definite trial such as re-education and constitutional method. Dr Guthrie (Edinburgh) and Dr Scott Stevenson (London) spoke on the re-education of the deaf by method such as the Zund Buguet. Sir James Dundas-Grant (London) Dr O Miller (London), Sir William Milligan (Manchester) Dr Musgrave Woodman (Birmingham), Dr Wright (Bristol), and Dr Cathcart (London) also spoke and Dr William Hill (London) gave an account of the treatment of otosclerosis by radium, which, however, he did not find very effective.

## SECTION OF PREVENTIVE MEDICINE

Thursday, July 21st

### THE STATE AND THE FOOD SUPPLY

Dr HAPPIFFY CHICK presided over the Section and briefly introduced Professor Mellanby who read the opening paper on the question of the duties of the State in relation to the nation's food supply regarding research in the maintenance of food supplies and cooking facilities. He emphasized the importance of the diet factor in public health and the bewildering rapidity with which new knowledge on the subject was being gathered. He was convinced that the State had important duties to perform in connexion with both research and education and suggested the establishment of a new board of nutrition with powers to carry out these functions. Dr Eustace Hill (Durham) supported the proposal to form a board of nutrition. He pointed out the practical difficulties in the way of obtaining opportunities for the nutrition of parents and advocated better teaching or hygiene in the elementary school. Profiteering in food was a national question. It was an unfortunate that retailers preferred large profit and a small turnover to a large turnover with small profits. The consumer never received the benefit of a glut of either fruit or vegetable and a better system of distribution was required which would eliminate the middleman. Dr Kinloch (Aberdeen) protested against the attack on oatmeal which was a food that required to be balanced by vitamin giving elements in food. With this addition it was a valuable form of diet. He further distrusted the suggestion for communal cooking. It would lead to interference with family life. It was never done by the State on these lines. He would prefer the establishment of communal laundries which would relieve the mother of the drudgery of the wash and the father of the trouble to cook better meals for her family. Dr Gifford Leighton (Scottish Board of Health) agreed that the State had fundamental duties in connexion with the control of raw material. It had already fulfilled many of these duties through legislation regulating the milk supply, the distribution of preservatives in food and regulation governing the handling of meat. He believed that more progress had been made in purifying the milk supply in this country

years than in the previous fifty Sir George Newman (Ministry of Health) briefly described the action which the State now took in regard to nutrition which lay at the foundation of national health Dr Macgregor (Glasgow) said that owing to prolonged unemployment and other causes many of the people had only enough money to buy the bare necessities of life, yet vital statistics showed a marked improvement in health conditions The only conclusion was that old nutritional standards based on calories were fallacious

#### PULMONARY ASBESTOSIS

Dr Cooke (Wigan) showed a number of slides illustrating the microscopic structure of asbestos the nature of asbestos dust, and the histological appearances of the lung in a fatal case Sir Thomas Oliver (Newcastle) described the clinical features of a series of cases and pointed out the importance of the subject in view of the greatly extended use of asbestos and the increase in the number of persons engaged in its manufacture Professor Stuart McDonald (Newcastle) showed a number of slides illustrating the pathological changes in the lungs which resulted from asbestosis and especially the very remarkable foreign bodies which developed in the tissues There was some doubt as to the nature of these bodies and it had been suggested that they might be animal or vegetable in origin, but he inclined to the view that they were products of the hydrolysis of asbestos

### SECTION OF PHYSIOLOGY AND BIOCHEMISTRY

Friday, July 22nd

#### CHEMICAL CHANGES ACCOMPANYING MUSCULAR ACTIVITY

The second morning of this Section was devoted to a discussion of the chemical changes accompanying muscular activity, after which various short papers were read Professor T H Milroy (Belfast) opened the discussion by reviewing earlier work, and said that Embden now regarded "lactacidogen" as a monophosphoric ester The presence of phosphoric acid ester was essential for lactic acid production, but esterification and lactic acid production occurred simultaneously and in equimolecular proportions Esterification in the presence of fluoride which prevented lactic acid production, was accompanied by increase in acidity, which had been shown by Meyerhof to be due to the higher dissociation constant of the ester acid than the normal Muscular activity was shown to be accompanied by changes in permeability The free phosphate union liberated during activity was retained and was of importance during the recovery period Professor O Meyerhof (Berlin), dealing with the energetics of muscular contraction, said that besides the formation of lactic acid the splitting off of a new compound containing creatine and phosphite (discovered by Eggleton and Fiske) played an important part in the supply of energy producing a third of the whole heat of contraction Professor G Embden (Frankfort-on-Main) considered the production of ammonia as an accompaniment of muscular contraction He reviewed a large number of experiments and showed that the amount of ammonia varied under different conditions The nature of the precursor of ammonia was discussed Sir Gwlad Hopkins (Cambridge) referred to observations upon muscles made non-irritable by a prolonged stay in oxygen and restored by solutions of certain electrolytes After this discussion Professor J Mellanby (London) read a paper on the function of bile in which he showed that bile was the normal stimulus for the secretion of pancreatic secretion The question of fat absorption from the small intestine was also dealt with Professor J Traut (Montreal), in a paper on the natural arrest of haemorrhage from wounds said that this was due to agglutination of thrombocytes Coagulation of the plasma on contact with connective tissue aided in the process, but this factor was absent if the vessel had been denuded of its adventitia before puncture Dr C Harrington (London) read a paper on the constitution of thyroxine, the isolation and synthesis of the substance were described Professor R J McDowell (London) read a paper on physiological considerations in high blood pressure He discussed the various factors

which brought about the increased vasomotor action Dr H Whitridge Davies and Professor B A McSwiney (Leeds) read a paper on the circulation rate Experiments were described which showed that measurements made by the ethyl iodide method did not agree with those obtained otherwise

#### HAEMOLYSIS

In the afternoon a discussion on haemolysis was opened by Dr Eric Ponder (Edinburgh) who, after referring to the recent proofs of the lathane-like structure of the mammalian erythrocyte and of the presence of protein as a principal component of its envelope gave a short account of the kinetics of the action of the simple haemolysins such as soap, bile salts, and soaps He next emphasized the fact that in many of the more complex systems it was important that the components should be mixed in a particular order For example the addition of serum to a cell suspension before the addition of sodium tartrate inhibited haemolysis but adding the same amount of serum to the mixture of tartrate and cells resulted in great acceleration In the first case a mere substrate was formed, but in the second in which the lysin was adsorbed to the cell before the addition of the serum the combination of lysin and serum protein appeared to produce a very and very haemolytic substance He cited similar occurrences in the sensitization of cells with brilliant green and in the case of lysis by colloidal silicic acid and complement He concluded by indicating the bearing of these findings on the problem of the action of complement and antibody Professor J Mellanby (London) discussed the action of enzymes on the red blood cells Dr R Brinkman (Groningen) dealt with the reversibility of haemolysis Sir E Sherrin-Schäfer questioned the reversal changes and Dr Eric Ponder replied that in his opinion there was no fundamental difference between the kinetics of the complement and the antibody systems and of simple acid and simple lysins

### SECTIONS OF PATHOLOGY AND BACTERIOLOGY AND COMPARATIVE MEDICINE

Friday, July 22nd

#### PROBLEMS OF COMPARATIVE MEDICINE

The chairman Dr O Charnock Bradley expressed his gratification at the inception of this new Section and remarked on the already deep debt that veterinary education in Edinburgh owed to human medicine in that city The discussion on problems and aspects of comparative medicine was opened by Professor B Burton (Cambridge) who considered the various general aspects of the subject and the advantages of co-operation between the medical and veterinary professions Dr Andrew Balfour (London) directed attention to the essential unity of human and veterinary medicine and the methods by which this unity might be realized In tropical medicine this was very apparent more so than in many other branches He detailed many examples of advances in human tropical medicine which depended on animal experimentation and research Mr W H Andrews (Ministry of Agriculture) discussed the problems of filterable viruses, and drew attention to the advantages enjoyed by the veterinary pathologist in being able to select the actual species of animal suffering from the disease Professor Lyrain Sturges considered that the main problem lay in the application of experimental method to medicine and showed how animal experimentation had thrown light on many obscure human conditions Professor Browning pointed out the need for considering the peculiarities of the animal species the diseases of which were being investigated

Mr James McAllan (Aberdeen) dealt with the question of milk and meat inspection in regard to public health and believed that this should be in the hands of a veterinary officer under the administrative direction of a medical officer of health Professor Macleod discussed the work of his department in connection with the Edinburgh Zoological Gardens and the bearing of this work on comparative medicine Dr R A O'Brien (Belfast) expressed his belief in the benefits resulting from the co-operation between veterinary and medical workers and discussed the translation of the results of their work

into field experiments. Dr Nasmyth thought that comparative medicine could help to explain the periodic outbreaks of epidemics and the disappearance of certain types of disease from certain localities, and pleaded for the incorporation of the veterinary colleges in the universities and the extension of veterinary research.

Dr F. A. E. Crew considered it futile to talk about co-operation between professions, contact being essentially individual. The study of mankind was by no means only man, and those in power should take advantage of the already existing co-operation and extend it. One of the great problems of the future was the evolution of a disease-resisting stock. Lieut Colonel Greig discussed the importance of joint work by the medical and the veterinary professions and quoted examples from his own experiences in India. Dr T. W. M. Cameron stated that, while there was unanimity as to the value of co-operation between the medical and veterinary professions, no one had attempted to formulate a definition of "comparative medicine." It was neither "veterinary medicine" or "diseases common to man and animals," but the comparison of all the sciences which comprised medicine as applied to the whole of the animal kingdom. Viewed in this light comparative medicine was really medicine, and both human and veterinary medicine were sister sciences both subsidiary to a wider science, which had as its aim the elucidation of the laws and principles governing the cause, spread, and relief of disease.

## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL

#### INJECTIONS OF ACRIFLAVINE FOR TUBERCULOSIS

The use of subcutaneous injections of acriflavine in tuberculosis was suggested by G. H. Johnson<sup>1</sup> and unfavourably reported on by R. J. Gittins<sup>2</sup>, yet, in view of the bankruptcy of medicine in the face of this disease, every promising drug deserves an extensive trial. In recording the following cases I am actuated by the belief that all statistics are of value, for it is only by weighing the accumulated evidence of numerous observers that the effects of acriflavine in tuberculosis may be appraised.

The injection given in all cases consisted of 1 c.c.m. of 1 in 1,000 acriflavine in saline, it was given twice a week. All the patients were treated in the open air on the usual lunics.

F. W. male aged 5. Tuberculosis of dorsal spine. Ten weeks acriflavine treatment. General condition seemed rather worse.

T. S. female aged 7. Tuberculosis of dorsal spine with sinuses and amyloid disease. Slow improvement for past year. Six weeks acriflavine treatment. No apparent effect.

C. D. female aged 13. Tuberculosis of cervical spine with sinuses. Slow improvement during past eighteen months. Six weeks acriflavine treatment. No apparent effect.

R. M. male aged 10. Advanced phthisis. Ectetic temperature. Four weeks acriflavine treatment. No apparent effect. Temperature unaffected.

J. B. male aged 15. Advanced phthisis. Three weeks acriflavine treatment. Patient died.

W. M. male aged 6. Chronic tuberculous peritonitis. Ten weeks acriflavine treatment. No apparent effect.

W. B. male aged 10. Active tuberculous peritonitis. Three weeks acriflavine treatment. No apparent effect.

X. J. male aged 6. Tuberculosis of right hip with sinuses. Eleven weeks treatment. No apparent effect.

W. W. male aged 13. Advanced tuberculous disease of sacro-iliac joint and of iliac bone. Multiple sinuses. One month's acriflavine treatment. No improvement.

I am unable to convince myself that acriflavine has any effect on the course of the disease, those cases that were improving continued to progress, but those in whom the disease was active continued to go downhill.

I wish to thank Lieut Colonel P. MacDonald M.D. O.B.E., the medical superintendent of Alder Hey Hospital for permitting me to publish these cases.

READ AIDIN, M.D.  
Alder Hey Children's Hospital, Liverpool.

<sup>1</sup> Johnson G. H. BRITISH MEDICAL JOURNAL, March 21st 1926.

<sup>2</sup> Gittins R. J. Ibid. May 7th 1927.

## A PILLION RIDING ACCIDENT

The following rather peculiar injury has been brought to my notice three times in the last two months, and as it is a direct result of pillion riding—a pastime which although strongly condemned as dangerous, is without doubt becoming increasingly popular—I think it worthy of mention.

The patients were in all cases, young men who had been pillion riding astride. It seems from this that the majority of those injured will be of the male sex, for the pillion riding flapper usually elects to ride side-saddle.

The pillion rider, in order to obtain a more comfortable seat and also rest for his dangling feet, places his toes on the strand for the back wheel or any other convenient metal strut. A slight depression is encountered and the bump given to the back wheel moves one of his feet on its temporary rest and the heel, turning inwards comes into contact with the moving spokes of the back wheel and one of these causes the injury. The spoke catches the top of the heel of the rider's shoe and either rips off the shoe and tears the sock only, or, getting a deeper hold, tears down the whole heel flap as well. The heel flap usually ripped down in one piece, skin and subcutaneous tissue going together, and the lower end of the tendo Achillis and the posterior and inferior surface of the os calcis are exposed to a greater or less extent. The flap is attached at its lower end and retains a sufficient blood supply from the recurrent branches of the plantar arteries.

The wound, being made by a dirty spoke, requires early and thorough cleansing—irrigation with an antiseptic such as 2 per cent. acriflavine in normal saline—and should be loosely sutured. Healing is a little delayed on account of the nature of the injury and the part affected but in my cases was uneventful.

It appears as if special foot rests or wheel guards were required on all motor cycles which are going to be used for this form of recreation.

DOUGLAS I. CUPRIE, F.P.C.S.  
Surgeon, West Denbighshire Hospital, Colwyn Bay.

## MEASLES SIMULATING SCARLET FEVER

The following case is interesting and instructive in many ways.

I was recently called at midnight to a boy aged 2 years and 4 months. His mother said he had been out of sorts for a day or so and had been rather restless and feverish. He had a short dry cough and the general symptoms of a cold in the head such as running nose, sneezing, watery eyes, pains in the head and ears etc. That day he gave more definite symptoms of illness, such as sore throat and vomiting and when I saw him he had vomited again. His throat was very red and inflamed on both sides and on the posterior wall and although his bowels had recently moved he had a tongue having thick white fur with red papillae projecting through it—in fact what was almost certainly a strawberry tongue. The temperature was 103 and the pulse 140.

In both popliteal spaces there were several small bright red spots which were not raised and were distinct from each other. There were no other spots on the legs but on both elbows similar spots were found. There were no spots on the chest or abdomen and back or front and except for one or two on either cheek the face and head were also entirely clear.

I saw the child again at 11 o'clock the next morning when there was a fairly profuse rash on chest and abdomen and also on the limbs while the throat was still sore. The temperature was 101° and the pulse 130. After consideration I decided to regard the case as scarlet fever although I told the mother that I was not wholly satisfied and would not be very surprised if he did turn out to be measles as although the symptoms of scarlet fever were most prominent, the fact of the running nose and cough and short cough suggested measles to a certain extent. Accordingly the child was sent into the observation ward of the fever hospital and in a day's time I learned that the illness had turned out to be measles, not scarlet fever.

The rash appeared between the second and third days as is usual in scarlet fever and showed the very common bright red puncta. It also was specially evident at the bend of the elbow and elbow where it was somewhat inclined to be petechial, suggesting Paltauf's sign. The prodromal measles rash was less typical. The pulse was typical of scarlet fever, being 120 to 140 at 11 and then 130 while the temperature 103° and 101° was rather high for measles. The tongue had a very evident strawberry appearance but of course this occasionally to be found in measles and too much reliance is not to be placed upon it. The throat and mouth presented the appearance of a mild ordinary type of scarlet fever and although I looked for them most carefully no Koplik's spots were present. Only the cardinal symptom were really in favour of measles and they were rather overweighed by the other signs.

GLASGOW

JOHN WILSON, M.B., Ch.B. Glasgow

## Rebicus.

### COMPARATIVE PHYSIOLOGY OF THE HEART

THE book Professor A. J. CLARK has contributed to the new Cambridge series of volumes on comparative physiology is well worth reading and thinking over, if only for the reason that it is good at times to stand back from the mass of detail daily accumulating in the scientific journals and try to see the main outlines of our knowledge as they are being written by many hands. It is entitled *Comparative Physiology of the Heart*,<sup>1</sup> and the first impression it produces is that very little is really known about the working of the heart in the animal kingdom, here and there general conceptions of one or other aspect are emerging, but for the present we must remain content with the consideration of a number of isolated problems. Thus Professor Clark gives us a series of chapters, like short stories, on the transmission of the excitatory process, the nervous control of the heart, the work of the heart in relation to body weight, the influence of temperature and the influence of chemical environment on the heart's activity—each set of facts apparently distinct. Yet, in these and other chapters, we get an inkling of how in a multitude of widely different animals the heart, by variations in structure and mechanism, maintains an efficient circulation. Thus we learn of the simple tubular hearts of the lower invertebrates along which infrequent peristaltic waves slowly pass, and of the four-chambered heart of the canary, which contracts at the rate of 1,000 a minute. Again, we think of the hare and the rabbit with new interest when they are presented as extremely good examples of the contrast between the circulations of the athletic and non-athletic animals. The hare has a heart three times the size of that of a rabbit of the same bulk, and at rest the hare's pulse rate is only one-third that of the rabbit. The slow pulse of the hare is, however, due to vagal control, and when this control is removed the heart rates are similar. Simple abolition of vagal control, therefore, enables the hare to increase its rate of circulation fourfold, whereas the rabbit by this means can only produce an increase of 1.6-fold. The athletic animals as a class have large hearts, slow pulses, and a low oxygen utilization coefficient when it rests. This is an arrangement which permits a maximum increase in oxygen supply to the tissues during violent exertion.

In a short chapter on the properties of heart muscle Professor Clark shows us something of the relations between cardiac and other forms of muscle. The simplest forms of cardiac muscle—for example, the cells of the sinus venosus of the frog—resemble plain muscle closely in their general form, but they are striated and the cells are connected by thin strands. In the frog's ventricle the cells are shorter and thicker, the striations clearer, and the connexions between the cells thicker. In the mammalian ventricle these changes are carried a stage further. Skeletal muscle appears to be a further development from plain muscle, in that numbers of cells have fused completely to form fibres, and these fibres have no automaticity and are separated so completely that excitation is not conducted from fibre to fibre. Skeletal muscle is specialized to perform accurate rapid movements completely under the control of the nervous system, cardiac muscle is specialized so that a contraction, once initiated, spreads throughout the whole muscle. In skeletal muscle, since the refractory period is far shorter than the time required for the development of maximum tension, tetanus can easily be produced. In vertebrate cardiac muscle the absolute refractory period is considerably longer than the time required to produce maximum tension, and hence it is impossible to produce tetanus. The long refractory period of heart muscle, the author remarks, is a very obvious safeguard for an organ upon the continuous rhythmic activity of which the life of the individual depends.

These are examples of but a few of the many interesting things dealt with in this small volume, it is necessarily

incomplete, it is too short, but it is a good start. We echo Professor Clark's hope that it may stimulate research workers to provide more extensive and accurate information in this field of comparative physiology.

### INFECTIONS OF THE HAND

It has been said that there is nothing new under the sun, and even this remark has lost its novelty. Mr. LIONEL FIFIELD's book on *Infections of the Hand*<sup>2</sup> will herald no epochal discovery, but is, none the less, a thoroughly sound, workmanlike book, possessing no little originality and constituting an important contribution to a subject of unquestionable importance. If all house-surgeons, instead of thrusting to open the abdomen, would only make themselves masters of the principles laid down here, the advantage to many individuals in lessening of suffering, and the gain in money to the community at large, would be enormous. There is probably no branch of surgery which is on the average worse treated than infections of the fingers and hand. The public itself is no little to blame in this, as it habitually neglects injuries, often trivial enough at the outset, but essentially fraught with danger, and leading, maybe, to serious disablement and loss of earning power. The principles of treatment are sufficiently simple once the surgical anatomy of the hand has been mastered.

Time was when it was thought sufficient to know the arrangement of the synovial bursa about the flexor tendons. A study of these governed the early treatment, the essential of which was a medial incision along the fingers, with perhaps inspired incisions in the palm of the hand here or there. The resulting prolapse of tendons, which Mr. Fifield rightly terms a calamity, and dysfunction has brought such measures into disrepute. We have learned that infective processes tend to follow certain definite paths, that they spread from one place to another in a certain ordered way, and methods have been evolved to give drainage in the best manner and to prevent extension (particularly operative extension through ignorant measures) when care might have avoided it.

It would be folly to minimize the debt that English-speaking peoples owe to KRAUSE's masterly work on this subject. The present book is, however, no slavish imitation. Mr. Fifield has evidently given a great deal of thought to his subject, and has worked on the anatomy of infection and spread in his own way. The result is a book which excels on the clinical side, and is not the offspring of an anatomical pedant. It is well and clearly written, and plainly illustrated, whilst its price is not too high. A chapter on end-results (for one can speak of end-results here with more certainty than in many disease processes) would have been interesting, for most of us have but vague ideas as to the final outcome of these cases. Speaking generally, the prognosis seems to be bad, and an interesting chapter on the effects of more rational lines of treatment remains to be written. One might also be tempted to criticize the author's advice to incise on directors passed along tendon sheaths and so forth. It is true that this simplifies the operation a little, but unless it is done very carefully and in cautious stages the director may easily pass further than is good. No doubt Mr. Fifield intended this to be understood, but since his book is primarily for the relatively inexperienced a word of warning might have been opportune.

### EMBRYOLOGY

A *Textbook of Embryology*,<sup>3</sup> by Professors JORDAN and KINDRED of the University of Virginia, affords evidence of the great interest taken in embryology and the importance attached to it by the universities of America. The book, based on the curriculum followed for the last eighteen years or so at the University of Virginia, is elegant of the thoroughness with which the subject is there studied.

*Infections of the Hand* By Lionel R. Fifield, F.R.C.S. Eng. London: H. K. Lewis and Co., Ltd. 1926. (Cr. 8vo, pp. viii + 192. 67 figures, 2 coloured plates. 5s. net.)  
*Textbook of Embryology* By Henry Ernest Jordan, A.M. Ph.D. and James Ernest Kindred, M.A. Ph.D. New York and London: D. Appleton and Co. 1926. (Roy. 8vo, pp. xii + 613. 33 plates, 473 figures. 25s. net.)

<sup>1</sup> *Comparative Physiology of the Heart*. Cambridge: Cambridge University Press, 1927.

<sup>2</sup> *Heart*. By A. J. Clark, M.C., M.D. London: Cambridge University Press. 8. 6d. net.

Naturally, being designed for the use of students, the book is somewhat stereotyped in form, and contains illustrations many of which are already familiar to us through the works of other embryologists. Perhaps the most distinctive feature of the book lies in a series of so-called exercises, actually an abridged syllabus of the curriculum followed at the University of Virginia, supplemented by upwards of thirty plates made from original drawings. Another interesting feature is the attempt to widen the horizon of the student and to foster an interest in the history of embryology by the inclusion of chapters on such subjects as teratology, eugenics, heredity, and sex determination, as well as by brief biographical references to, and portraits of, certain of the more famous of recent workers in the science.

The book while adding perhaps, little to knowledge, is an admirable compendium of the subject furnishing the student not only with all the information he requires, but also with an added stimulus to pursue independent inquiries. To anyone desiring a textbook of a size intermediate between Keibel and Mall's on the one hand, and McMurich's on the other the work under review can be safely recommended.

### MEDICAL MEN AND CRIME

DR L. A. PARRY has collected a number of trials for various crimes, mostly committed by medical men, under the title *Some Famous Medical Trials*. He begins his book with the trials of Weston and Franklin in 1615 for the murder of Sir Thomas Orelbury and ends with the prosecution of Dr Hadwen in 1924. But the cases are given in no particular order—alphabetically, chronologically, or in accordance with the nature of the charges—so that Dr Collins the abortionist rubs shoulders with Dr Watson the firebrand who was charged with treason in 1817, and the case of Dr Hunter, the quack who sued the *Pull Mall Gazette* for libel, precedes a description of the torture of John Spreull of Glasgow in 1681 for the purpose of extorting a confession of treason. Dr Parry disagrees with the view of Sherlock Holmes that when a doctor goes wrong he is the first of criminals and supports Sir James Crichton-Browne in describing such offenders as the scum of the profession. He points out that all the notorious medical poisoners such as Pritchard, Lamson, Neil Cream and Palmer made egregious blunders. The stories of the various crimes and prosecutions are presented pithily and in a very readable manner. If we have one little complaint it is that in expressing his own views on the trials of two or three hundred years ago Dr Parry does not seem to make allowance for the different standards of justice and mercy which were then held. The modern attitude towards the proceedings of the Star Chamber is of no more value historically than modern surprise at Sir Thomas Browne's views on witches.

### ISAAC NEWTON

THE memorial volume, *Isaac Newton 1642-1727*, edited for the Mathematical Association by W. J. GREENSTREET, naturally contains a great deal that only a mathematician can properly appreciate, but there are sections which appeal to the non-mathematical lay mind. Recently some notebooks have been recovered which are interesting as showing certain tendencies of Newton's mind as a boy and again in middle age and facsimiles of some pages are evidence of the minute care with which he made notes of recipes for pigments, cations, and conjuring tricks and of projects for spelling reform. As is well known Newton had an almost morbid fear of controversy or criticism and shrunk from the thought of having to defend his statement. We do not think it is known that he was myopic yet surely none but a short-sighted man could have written the minute script of his "Scheme for prosecuting counterfeiters and diminishers of the current coin."

*Some Famous Medical Trials*. By Leonard A. Parry. M.D. B.S. F.R.C.S. London J and A Churchill 1927. (Demy 8vo pp x+326 10s 6d net.)

*Isaac Newton*. Edited by W. J. Greenstreet. London G Bell and Sons Ltd 1927. (Demy 8vo pp vii+161 9 plates 16s 6d net.)

written when he was Master of the Mint. The articles on plagiarism in the seventeenth century and on Newton's metaphysics are both interesting contributions to the volume, as is also the description of his home in Lincolnshire and the King's School at Grantham which he attended with distinction. Trinity College, Cambridge and Newton are forever associated, and the notes on the condition of the college in his time will interest lovers of the University. There is a short account of the paradoxes such as Morrison better known as Zadkiel and of Charles Palmer, who published in 1793 a treatise on the sublime science of heliography, wherein he claimed to have demonstrated that the sun was a body of ice of the Hutchinsonians who denied the force of gravity of Pichard Brothers and his followers and of the flat-world cranks and many others. A full list of portraits and of portrait medals is appended. The book is well illustrated.

### KNUD FABER'S LECTURES ON MEDICINE

PROFESSOR KNUD FABER has published the four *Lectures on Internal Medicine* which he delivered a year ago in the United States of America. The first covers some of the ground of his recent Seborstein Memorial Lecture at the London Hospital on achylia, the frequency with which this absence of acid occurs, both in children and adults—clearly brought out and the view is very definitely expressed that it is dependent on gastritis which may be due to direct irritation as by alcohol, or to poison reaching the stomach by the blood stream its congenital or constitutional origin is discredited. While it is admitted that transient achylia due to nervous influence may occur, recovery from achylia is not considered to be evidence against a causal gastritis, which must be regarded as just as much a disorder as nephritis or hepatitis. In the interesting lecture discussing the intestinal origin of pernicious anaemia, the fallacy of regarding as atrophy of the intestine what are really *post-mortem* changes is demonstrated by the results of the author's observations on the microscopic appearances of contracted and dilated coils of intestine fixed in formalin directly after death. He accepts the hypothesis that achylia favours infection and intoxication with a protein and points out that a protein intoxication should be characterized by symptoms of sensitization desensitization and anaphylaxis and that the variations in the course of pernicious anaemia fulfil this anticipation. The account of benign glycosuria like the previous lectures is useful in containing references to Danish and Scandinavian work much of which may not be familiar to English readers. The concluding article "An historical sketch of medical therapy" is illustrated by portraits of Louis Magendie, Moritz Schiff and by representations of incidents connected with the copious venesections of the past.

### NOTES ON BOOKS

DESCRIPTION of different phases of the mental and physical welfare of children by various experts has been collected in a volume of the Home and School Library edited by C. W. KIDDER'S D.Sc. The health of the child as a factor in the formation of character is treated generally by Sir Bruce Porter in a thoughtful chapter while Mr Bill P. Harris contributes a most valuable account of the case of the child which ought to be read carefully by all who have concern for children. Dr G. Murray Lewis discusses the influence of light on health and the physical and mental hygiene of the pre-school child as dealt with by Dr. Eric I. R. Dr. A. G. All director of the Yale Psycho-Clinic in the U.S.A. Dr G. A. Auden considers the responsibilities of health authorities as regards children and the needs of boys and school girls as respectively examined in the hands of Dr G. E. Friend and Mr Meredith Clarendon. Training of teachers in health subjects is dealt with in a contribution by Jane Reaney D.Sc. The comprehensive character of this volume the simple and attractive style in which it

*Lectures on Internal Medicine (Delivered in the United States of America)*. By Knud Faber M.D., Professor of Internal Medicine at the University of Copenhagen. New York Paul B. Hoeber 1927. (Demy 8vo pp x+177 4s 6d net.)  
*The Mental and Physical Welfare of the Child*. Edited by C. W. Kidder M.A. D.Sc. The Home and School Library. London S. V. Partridge and Co 1927. (Pocket 8vo pp 220 6s net.)



written, and the mass of practical details will ensure its popularity among parents and teachers, for whom it has been primarily compiled

The second quarterly number of the ninth volume of the *Annals of Medical History*, edited by Dr FRANCIS R. PARKARD, opens with an account by E. B. Krumpholtz of the stigmata of St Francis of Assisi, whose portrait forms the frontispiece of the number. The "stigmata of the crucified" appeared on the hands, feet, and side of St Francis after a vision of the crucifixion two years before his death. Dr Krumpholtz, after referring to many subsequent similar cases, concludes that these stigmata are not beyond the realms of pathological possibility. A portrait of Dr Nicholas Culpeper occupies the position of honour on the cover, and this "most confident of physicians" is, together with Laennec, considered, in the light in which Kipling represented them, by Dr L. J. Birgman. Dr R. T. Williamson contributes a sketch of Peter Mere Latham, who did so much to introduce auscultation into England and put forward views on medical education deserving attention at the present day. The scientific life of William Sharpey, who first systematized physiological teaching in London, is sketched by Dr J. C. Brougher. In his scholarly and well illustrated account of Galen's studies at the Alexandrian School Dr Joseph Walsh of Philadelphia describes Galen's teachers, and says that after studying geometry, astronomy, philology, philosophy, and the logical foundations of medicine, he wrote a great treatise on inductive philosophy in fifteen books or rolls, now lost, of which he was inordinately proud. Dr Jonathan Wright contributes a long article on the Platonic Socrates and the Platonic Aristotle, which is the first instalment of an account of the evolution of the thought of Aristotle. The defence reactions—physical and spiritual, rational and distorted—adopted against the Black Death of 1348-49 are described by Dr Stephen D'Irsay, who provides a long list of references. Dr Le Roy Crummer writes on the *Anatomia Porci* of Coppi, a somewhat hazy member of the Salerno School. The last article is by Dr Frederick Eberson, on the dramatist Charles Goldoni, born at Venice in 1707, who wrote 150 comedies, some of which have a distinctly medical flavour. The energetic Editor contributes an account of Benjamin Wetherhouse—a pioneer in American medicine—and a number of discriminating book reviews.

Dr R. KING BROWN has rendered a very useful service in translating into English the second edition of Dr O. BERNHARD'S comprehensive treatise on light treatment in surgery. The book is divided into two parts, the first of which deals with light treatment generally from the historical, biological, pathological, therapeutic, and climatological standpoints. In the second part an account is given in detail of the indications for sunlight treatment in surgery, and there is a full description of heliotherapy in surgical tuberculosis. Much useful information is presented in an attractive manner, and numerous illustrations and tables are supplied. Dr Leonard Hill contributes a characteristic foreword. There are many books on the subject, but this volume can be confidently recommended, for it gives a clear account of the science and art of heliotherapy, particularly in surgery.

That Savoy is a good place for a summer holiday most English people know, and this is what a handsome volume recently received sets out to prove by means of photographs and words. It is a country of a few small towns and many villages and alpine farms. As Mont Blanc and its aiguilles are within its borders it has attractions for the climber, but it appeals also to the humbler souls content by choice or want of money to tramp over grass passes from one valley to another. The photographs, which include many of the Lake of Geneva, are well reproduced, the text is gossipy and very much a translation. It is a relief to turn from it to the preface of Mr Geoffrey Young has contributed to the English edition, in it he sympathetically discusses the philosophy of mountain rambling.

The full text of the Morris Memorial Lecture, by Professor Cannon, and hence *Characters of the Human Skin*, tetanus. The long refractory period. Race and Health, has now author remarks, is a very obvious in these columns on upon the continuous rhythmic activity the individual depends.

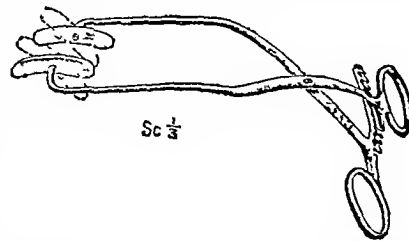
These are examples of but a few of the things dealt with in this small volume.

*Comparative Physiology of the Heart* By a preface by Geoffrey Cambridge. Comparative Physiology. London. Translated by Frank Price. 1927. (Demy 8vo, pp 157, 15 figures 8 6d. (62 x 92, pp 169,

## PREPARATIONS AND APPLIANCES

### Tonsillar Fossa Pressure Forceps

Mr L. Graham Brown, F.R.C.S. (London) has devised a modification of the Courtney Yorko tonsillar pressure forceps with handles curved instead of straight, and ends kidney shaped and movable to allow of more accurate adjustment to the tonsillar fossa and better compression. It can be applied to either tonsil, and can also be used in the reverse position. It has been specially designed for use in conjunction with the haemostatic tonsillar clamp, since it does not interfere, when left in position on the one tonsillar fossa, with the application of the clamp to the other tonsil and the subsequent dissection of the latter. The instrument is made by Messrs Allen and Hanburys, 48, Wigmore Street, W.



### A Pneumatic Splint Pad

A correspondent writes: In the treatment of fractures of the leg the box splint is still pretty generally and successfully used, but I have found it advantageous to use a splint pad made by the North British Rubber Company, Ltd, Edinburgh. The pad is a hollow pneumatic ring, and is used in place of the "birds' nests" of wool formerly employed. The latter, often hard and irregular, frequently cause skin irritation or ulceration, particularly behind the heel. The new splint pad is comfortable, efficient, and relieves pressure. It maintains the heel in a constant relation to the posterior wooden surface of the splint. The pad does not alter in height after the heel is laid upon it, therefore, when the fracture is satisfactorily aligned, no change in the relation of the fragments should occur during the early weeks of union. As with the "birds' nests" several pneumatic pads are required for each case of fracture treated in the box splint. The pad consists of a hollow india rubber ring, with a cold hollow 1 in by 7/8 in, the wall of which is 3/32 in thick, covered in stockinet, which prevents chafing of the skin from sweat. The inside diameter of the ring is 1 1/2 in.

## ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee thirty nine cases were considered, and £624 15s voted to thirty applicants. The following is a summary of some of the cases relieved.

Daughter of M.D. who died in 1920. The applicant has been out of work for two years owing to illness. The Fund voted £60 to meet her training and other expenses to enable her to take the midwife's certificate.

Widow, aged 60, of M.R.C.S. who died in 1925. Suffers from bronchitis, asthma, heart trouble, and irreducible hernia. Her only income is from letting her furnished house from which she received £50, after paying the rates. Voted £25 in twelve monthly instalments.

Daughter, aged 65, of M.D. who died in 1878. Crippled with neuritis and dependent on her sister for attendance. This sister has had to be removed to a mental home, and the applicant is now entirely dependent on paid attendant. Her only income is £74 from investments augmented by friends' help. Voted £5 and £25 in twelve monthly instalments.

Widow, aged 41, of L.R.C.P. who died in 1926. She was left with two children aged 7 1/2 and 6 1/2, and asked help for the children while young. Voted £20 in four quarterly instalments.

L.R.C.P. and S.E.d. 1891, aged 72. Nearly blind through diabetes is dependent on the charity of his landlady. His wife, upon whom he was entirely dependent, died last year. The Officers' Association gave help and the Fund voted £8 and £40 in twelve monthly instalments.

M.R.C.S. who died in 1921, leaving three sons aged 11, 9 and 6. One is at Epsom and the other two at an orphanage. These children are dependent on relatives, and help is asked to meet holiday expenses. Voted £15.

Daughter, aged 25, of M.R.C.S., who was trained as a teacher and has had a post for two years at an elementary school. To enable her to get a post in a secondary school she asks for help towards a year's training in needlework, which will cost £125. It was decided, after careful consideration, to vote £40 towards the fees and maintenance.

Subscriptions may be sent to the Honorary Treasurer, Sir Charles Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

# British Medical Journal.

SATURDAY, AUGUST 6TH, 1927

## LUNACY LAW AND LAWYERS

No one can justly assert that the greatest glutton for facts and opinions about lunacy administration has not had spread before him an ample feast in this issue of the JOURNAL and in the SUPPLEMENT for last week. Some readers may perhaps be inclined to think that there has been too much of one subject, but it seemed expedient to present the Memorandum of the British Medical Association on the Report of the Royal Commission on Lunacy, the debate in the Annual Representative Meeting at Edinburgh, and the discussion in the Section of Mental Diseases as nearly simultaneously as possible.

Broadly regarded, very considerable resemblance will be found between the criticisms and recommendations of the Memorandum and those of Professor Robertson in opening the discussion in the Section. He is bred to the administration of the law as it is in Scotland but he has made himself well acquainted with the law in England, which he thinks very inferior. The difference is in a matter of principle. Under the Scottish law the position of the medical profession in the management and treatment of persons of unsound mind, or alleged to be so, is paramount, in England and Wales it is subordinated to an erroneous legal conception that has helped to mislead public opinion, which has never outgrown mediaeval ideas about mental disorders.

The English lawyers of 1890 acted *a priori* did not study the facts of life, and allowed themselves to be so obsessed by the problem of the liberty of the subject and the fear of improper detention that for one thing, they closed their minds to the really fundamental difference between remedy and custody. Judging by some of the remarks dropped during the hearing of *Harnett v Fisher*, the attitude of many lawyers is much the same now. Professor Robertson did not mince his words. The English Act of 1890, he said, though designed for the welfare of the insane person, has turned out to be to his detriment, and thus affords one more example of how laws enacted with the object of reducing the sum of human misery have, in fact, increased it.

Professor Robertson's remedy for the present discontent is to assimilate the English law to the Scottish, and he claims that the recommendations of the Royal Commission would go some way towards this. So does the Memorandum in effect. But it does more than discuss the reforms necessary; they will require legislation, which in spite of Sir Frederick Wilks's hopes may not soon be introduced there must therefore, be some delay, and, moreover, any legislation proposed will almost certainly encounter much opposition, parliamentary, legal, and even public opinion being what it is. The Memorandum also gives sound advice (para 60) to practitioners on the precautions they ought to take to make sure that they shall be able to recall, perhaps years after the event, the reasons why they acted as they did. It refers also in the following paragraphs (61 and 62) to some things done by experts, in support of allegations of negligence, which had better not have been done.

The opposition in the Representative Meeting to the

acceptance of the Memorandum as an equivalent to a report from the committee would seem to have been due in the main to a feeling that members had not had sufficient time for consideration of a document containing arguments and recommendations of great importance to the public, and to the profession in its everyday life—a document, moreover on which the Association would be almost pledged to seek legislation. There are passages in the Memorandum which render it plain that the committee itself did not consider that it had finished its work, it makes specific reference to the resolution of the Representative Meeting last year (about Harnett v Fisher) instructing the Council to take steps to protect the interests of the medical profession, and mentions the *Hume Spry* case and that of *de Freville v Dill*. The Chairman of the committee, in fact, asked that the Memorandum should be approved and referred to the Council so that no harm seems to have been done by the decision of the Representative Meeting which referred the Memorandum to the Council with the request that it should appoint a committee for further consideration of the Royal Commission's report.

Meanwhile, it can be said without hesitation that the profession is deeply indebted to the committee for preparing a very valuable Memorandum which must have cost its members, and particularly its chairman, Dr Langdon-Down, much time and labour. The Association is fortunate in having members ready to give their services so freely and competent to handle a subject of great difficulty and complexity with so much ability and in language so clear and temperate.

## THE METABOLISM OF TUMOURS

THOUGH reiteration may often become a weariness to the flesh it is sometimes salutary to the spirit. Repetition may not be the highest service of faith, but it has been found effective in keeping the inconstant mind of man from turning after false gods. This has been the experience of all the prophets. So since science also is grounded in faith, we need make no apology for the repetition of a trite observation.

The problem of cancer is bound up in the wider problem of the nature of growth. To the lay mind at all events, there is no question but that the most disconcerting characteristic of a tumour is that it grows. The immediate practical problem of the pathologist is, doubtless, the discovery of the agent responsible for imparting to normal cells their tendency towards disordered growth but he will agree that the fullness of the problem will scarcely be apprehended until we are in a position to describe the processes of normal and malignant growth in precise physical definitions. In particular, it is an urgent question whether the growth of a neoplasm represents an intrinsic departure from the physiological routine of living cells, or whether it is but an undisciplined exhibition of normal metabolic processes. Every serious inquiry therefore, into the intimate nature of growth processes in normal and malignant tissue is or the deepest concern to medicine. Some time ago we published a review of the volume on the metabolism of tumours by the brilliant German biochemist Otto Warburg, being the collected papers of original work prosecuted over a period of some years.<sup>1</sup> The great significance of the work, the appearance of further important extensions to the story and the first signs of an awakening

<sup>1</sup> *Über den Stoffwechsel der Tumoren*. Von Otto Warburg. Berlin J. Springer 1926. (Roy. 8vo pp. 253, 22 figures, B. 1. 6. 0 to 1 s. 6d.) A review appeared in this JOURNAL on Dec. 10, 1926. An extensive critical review by Mr. R. K. Cannon was published in the *Cancer Review* July 1927.

interest in this country, justify our returning to the subject in some greater detail.

Growth in physical terms means work. It means the storage of a definite amount of chemical energy in the material and structure of the cell. Growth, therefore, is conditioned by the nature and extent of the metabolic activity of the growing cells, and a comparison of the sources of energy of normal and malignant cells is a logical and urgent subject for inquiry. Such are the premisses from which Warburg has projected his investigations and his argument. One further principle is fundamental to the latter. We are accustomed to regard the ability to live and grow in the absence of oxygen as the peculiar prerogative of a limited number of the simple unicellular organisms. Recent progress in physiology has demonstrated how unjust is this reflection on the versatility of the cells of the higher animals. Whilst it is true that the higher animals depend constantly on an adequate supply of oxygen for their continued existence, it is also true that a pronounced anaerobic habit persists in many of the activities of individual tissues. They exhibit that form of fermentative activity which has been called glycolysis—the anaerobic decomposition of carbohydrate into lactic acid. This reaction liberates energy. We have, therefore, to distinguish two potential sources of energy for the cells of the higher animals. One is the combustion of carbohydrate by respiration, and the other the fermentation (“glycolysis”) of carbohydrate. The investigations of Warburg were directed essentially to the determination of the relative contributions of these two processes to the energy metabolism of various normal and malignant tissues. The argument, it will be seen, is by no means abstruse, but the technique employed is difficult and involved, and thus, together with the fact that the studies were made on tissues *in vitro*, has prejudiced that attention, repetition, and extension which the results undoubtedly merit.

Notable differences have been laid bare in this *in vitro* metabolism of various types of cells. Normal resting tissues show a high respiratory and a low glycolytic rate, embryonic tissues exhibit high respiration and high anaerobic glycolysis, and neoplastic growths have a lower respiration and a higher anaerobic fermentation. In the presence of oxygen the glycolytic rate is in all cases depressed below that evidenced under anaerobic conditions. In a recent paper Warburg<sup>2</sup> makes a very plausible argument for the conclusion that the degree to which glycolysis is depressed bears an exact quantitative relation to the amount of oxygen consumed in respiration. In normal and embryonic tissues the latter is sufficiently great, and the anaerobic glycolysis sufficiently low, to result in the almost complete suppression of fermentation in the presence of oxygen. Not so is it with malignant cells. There remains, in their case, a considerable glycolytic activity under aerobic conditions. Warburg, who describes this as the ‘excess fermentation,’ shows that it is, in the case of tumours, sufficiently great to make an important contribution to the total energy metabolism of the tumour under aerobic conditions, and that it is a value upon which may be based a useful classification of tissues which follows closely their growth rate and malignancy. A number of interesting exceptions to this classification have been disclosed, and these and some technical difficulties make the method of doubtful diagnostic value, although it remains of supreme physiological importance.

To what practical conclusion are we led? It would

be tempting to surmise that the malignant cell is peculiar in its ability to derive energy for survival and growth by a fermentation process, even in the presence of oxygen. To relate such studies as these to the growth of a tissue is, however, very difficult, and at present little more has been achieved experimentally than to show that the survival of a tumour within the host does seem to be conditioned by the peculiarities of metabolism which have been defined by the studies *in vitro*. This is no mean achievement.

If these conclusions are true they would seem to offer little hope for the experimental control of malignant growth. It would be expected that cells which have a dual metabolic habit would be more difficult to restrain than normal cells with a purely respiratory metabolism. Some preliminary experiments on the intact animal, however, suggest that the situation is more promising than could be inferred. Reduction of the oxygen tension to which tumour-bearing animals were submitted resulted in a few hours in the death of the great majority of the neoplastic cells without injury to the normal tissues. Warburg finds an explanation for this anomalous result in the conclusion that the blood supply—that is, the supply of oxygen and carbohydrate—to the tumour is little more than adequate to its needs under ordinary conditions. Normal cells are more liberally treated. When oxygen or carbohydrate is experimentally restricted the tumour will be starved while yet the normal tissues are above the poverty line.

These observations are but a beginning, but they open wide the field for experimentation on the whole animal. They command attention to the whole subject of Warburg's thesis.

In conclusion, what shall we say of the origin of cancer? Warburg suggests an intriguing hypothesis. A tissue is a community of cells which exhibit wide individual differences in their respiratory and fermentative capabilities. Some few of the cells may be regarded as having the metabolic characteristics of neoplastic cells. These, being limited in number, will make no significant contribution to the aggregate metabolism of the whole tissue. Let, however, a local condition of anoxæmia supervene, and there will result the extinction of all the cells except those few that are able to derive the energy for survival and growth from fermentative activity—the potential cancer cells. These will survive, proliferate, and from them will derive a malignant growth. “Limitation” becomes “anoxæmia.”

Warburg challenges both physiologist, pathologist, and clinician. The repetition and extension of his work in this country should not be longer delayed.

#### THE BRITISH ASSOCIATION

The British Association for the Advancement of Science will meet in Leeds this year. The inaugural general meeting will be held on the evening of Wednesday, August 31st, when the President, Sir Arthur Keith, M.D., F.R.S., conservator of the museum of the Royal College of Surgeons of England, will give his presidential address on Darwin's theory of man's descent as it stands to-day. The meetings of the Sections will begin on the following day, September 1st, and will continue until Tuesday, September 6th. The concluding general meeting will be held on September 7th. There will be twelve Sections. The president of the Section of Physiology is Dr C. G. Douglas, F.R.S., of Oxford, well known for his researches on respiration and kindred physiological subjects. He will give his presidential address on September 2nd, and has chosen for

his subject the development of human physiology. The president of the Section of Psychology is Dr. William Brown, Wilde reader in mental philosophy in the University of Oxford, and consulting psychologist to the Bethlem Royal Hospital, his presidential address on mental unity and mental dissociation will be given on Monday, September 5th. The president of the Section of Anthropology is Professor F. G. Parsons, lecturer on anatomy at St. Thomas's Hospital, who in his address will discuss the Englishman of the future. The University of Leeds at a special degree ceremony on December 6th will confer the honorary degree of LL.D. on Sir Arthur Keith, and that of D.Sc. on Dr. J. S. Haldane, F.R.S. of Oxford. Two evening discourses to members will be given in the Albert Hall: the first on the evening of Friday, September 2nd, by Professor R. A. Millikan, of the California Institute of Technology, on cosmic rays, and the second on Monday, September 5th, by Dr. F. A. E. Crew, director of the Animal Breeding Research Department and lecturer in genetics in the University of Edinburgh, on the germ plasm and its architecture. Public lectures will be arranged in Leeds and neighbouring towns. A civic reception will be held in the Art Gallery on the evening of September 1st, and a reception will be given by the University of Leeds on the evening of September 6th. A large number of excursions have been arranged for Friday, September 2nd, for Saturday, September 3rd, and Sunday, September 4th, and on Monday, September 5th, a party will go by way of Harrogate to Plumpton Rocks. Leeds is a city of many industries and visits to works and factories in and near the city have been planned.

#### THE VOLUNTARY HOSPITALS COMMISSION

At the thirty-sixth meeting of the Voluntary Hospitals Commission on July 6th, Lord Onslow, Lord Clivedon, Sir Robert Bolam, Dr. Brist, Mr. Wade Deacon, and Dr. Menzies were present. Memorandums summarizing the position regard extensions of accommodation in voluntary hospitals were considered. Dr. Menzies inquired how much of the additional accommodation indicated in the tabular statements could be regarded as strictly new accommodation and not merely beds released for their original use after having been diverted to special purposes—for example in connexion with war services. The chairman said that an attempt should be made to verify the information which had been collected by the Commission's staff, and he suggested that a draft report might be prepared and the appropriate portions circulated to the local committees for their observations. The draft would then be revised in the light of the information obtained from the local committees and circulated to the Commission for their observations. The Commission approved this course and the chairman suggested that a map should be prepared to show particularly the areas in which little additional accommodation had been provided. Sir Robert Bolam raised the question of the continuance of the Commission and asked that an opportunity should be afforded for discussing its future. The chairman said that the Minister desired the Commission to continue in existence particularly as a link between the Government and the local committees. It was thought that the Commission might give the Government valuable help in connexion with the redistribution of hospital accommodation if a measure of Poor Law reform were passed. Sir Robert Bolam asked that the consideration of the continuance of the Commission might be put on the agenda for the next meeting.

#### MUSIC AND MILK

Among dairy folk there is a belief that a cow will yield more milk to a singing milker than to one who omits such "soothing stimulation"; indeed, the matter seems to go further, for some cows are said to discriminate, only

giving full measure of it may be any milk at all in response to a particular melody. A practical trial of the effects of music was made in Germany in 1924 concerns being provided in the stalls at milking time on certain days. Secretion of milk takes place in two phases—slowly between milkings and rapidly (two-thirds of the total) during these operations. It was found that on concert days this latter secretion was increased by 6 per cent compared with tuneless days, when the instrument employed was the gramophone or violin. It is hardly surprising that so pacific a function as milk giving was not favourably influenced by the martial strains of the trumpet. On the concert days the total solids and fat of the milk were increased in amount but lessened in percentage. Nebert and Koch<sup>1</sup> of Halle have tried to apply these observations to wet nurses, who were taken from their homes and placed in quiet comfortable surroundings; they gratefully responded to this treatment by an increased yield of milk, but they seem to have been less musical than the cows for no further increase is noted on days when a gramophone played Handel's Largo and the Tales of Hoffman during resting periods, and brisk marches during actual nursing, perhaps instrument company, and type of music were not happily chosen. The women tested all had a good natural flow of milk. Nebert and Koch mean to make further tests with women whose milk is failing or scanty. Now that broadcasting has made music available throughout town and country, perhaps large scale experiments may be made in dairy farms and infant clinics, but it will be harder than ever for the B.C. to frame generally acceptable programmes if the requirements of the milk trade and of nursing mothers have to be considered. So much for the favourable influence of music. Is there risk of harmful effect? Little positive evidence is available but the German trials with the trumpet suggest caution, and even before the days of saxophone and jazz band we had heard of the tune that the old cow died of, and a well known Scottish divine need to tell how in boyhood his cornet playing was first banned from the manse because it spoilt his father's sermons, and later from the lay loft because the cows, in the byre below gave sour milk. Recent Chinese law has specifically forbidden the sale of milk having blue, purple, and other colours. Can it be that such startling dairy phenomena have resulted from the effects of Chinese music upon imported milk cows?

#### THE FAT SOLUBLE VITAMINS IN MILK

DURING the past decade evidence has accumulated steadily to show the importance to the health of infant of an adequate supply of fat soluble vitamin. This fact has naturally prompted many investigations into the factors influencing the fat-soluble vitamin content of cow's milk. The earlier experiments were somewhat inconclusive because they did not distinguish clearly between vitamin A, the growth-promoting factor and vitamin D, the anti-rachitic factor. It is now known that green vegetables contain a rich supply of vitamin A but relatively little vitamin D. Feeding experiments on cows (see 1924-Chick and Peto 1926) showed that a ration rich in green fodder increased the vitamin A content of milk but had only a slight effect on the anti-rachitic factor. The problem of practical importance is to find a diet which will ensure that the cow's milk contains an adequate supply of both vitamins. The milk of pastured cows contains both vitamins but the difficulty is to produce an adequate content of vitamin D in winter milk. Goldenroes, and Zila have found that, whereas green fodder in the winter ration of the cow raises the vitamin A content

<sup>1</sup> Nebert and Koch, *Leit. f. f. Antirachit. v. d. 1925* 33 p. 62.  
Ting An, *Lat. Med. J. Brit. Coll. Ind. 1926* 11 p. 20.  
<sup>2</sup> Goldenroes and Zila, *Die Milch* 1926 p. 106.

but not the vitamin D content, yet addition of cod-liver oil to the cow's ration raises both the vitamin A and the vitamin D content of the milk, but unfortunately large doses of cod-liver oil decrease the fat content of the milk. These results are, however, of practical importance, since they indicate a method by which cow's milk of fairly high antirachitic potency can be obtained in winter. Moreover, they provide experimental support for the administration of cod-liver oil to nursing mothers to produce an antirachitic action in breast-fed infants.

#### ETHNOLOGY AND DISEASE

In a paper written shortly before his untimely death, Dr S. T. Dalling showed how the study of the geographical distribution of human parasites might throw light on the place of origin and migrations of races of mankind. Conversely, Ramsay<sup>1</sup> has invoked the aid of ethnology in support of his view of the origin of yaws among the tea-garden coolies of Assam. Powell believed that yaws in Assam could be traced to the arrival from Ceylon in 1877 of an infected coolie girl. There seems little doubt that this girl and her sisters, whom she infected, were the cause of a considerable local spread, but Powell would trace the spread throughout and even beyond Assam to the same source. Ramsay admits that such importations occur, but he noticed that those tea-gardens where yaws occurred were generally near the villages of hill tribes—Nagas, Kukis, Lushais, and Manipuris—or there was evidence of contact with these tribes in bazaars. There was, in fact, a Manipuri village in the middle of Powell's tea-gardens. When these tribes were investigated, yaws was found to be rampant among the first three and common in the fourth. In some Kuki villages practically every person was suffering or had suffered from yaws, though the disease was thought by a local missionary to be syphilis. This prevalence was very striking as compared with the comparative scarcity of *framboesia* among tea-garden coolies. The history of these tribes has been studied with the aid of several ethnological authorities. Immigration to the Assam hills has been from south to north. The Nagas appear to have arrived first of the present tribes, they show definite affinities with the natives of the Pacific Islands, and still have a suggestive fondness for marine shells, they are of Caspian stock mixed with Negrito. The Kukis, of Alpine (or Palaeo-Alpine) and Mongolian stock, came later from China or Tibet, and they too have absorbed much Negrito blood, as can plainly be seen in their women. The Lushais are believed to have come from the Chin Hills of Burma in the eighteenth century, and they and the Kukis are certainly of the same race as the Burmese Chins. The ethnological facts seem to connect the yaws of Assam with that disease in Burma, Malaya, and the Pacific Islands, and Hutton, who is quoted by Ramsay, suggests that the link is the negroid blood with which yaws is associated over most of the world, though if that blood has acted as the distributing agent the disease must have been present in Assam before the arrival of the invading tribes, for the aboriginals of the Assam hills were Negritos of Andamanese type. Ramsay propounds the possibility of a common origin of yaws for all the Far East, or perhaps for the Old World. It seems not impossible that links with the New World might be found.

#### SWINE ERYSIPELAS IN MAN

Swine erysipelas is a disease of pigs by no means uncommon in this country, and the cause of a considerable loss to farmers. It is characterized by the appearance of red, diamond-shaped blotches on the skin, and by the development of vegetations on the valves of the heart. The latter lesion has in recent years attracted the attention of com-

parative pathologists, mainly because of its resemblance to somewhat similar lesions associated with cardiac rheumatism. Its resemblance to that condition has proved to be more apparent than real, but it has been found to be very similar to the ulcerative endocarditis of human beings caused by streptococci, gonococci, and pneumococci. In this, as in swine erysipelas, the inflammation of the valve proceeds from the surface inwards, whereas in rheumatic carditis the inflammation commences in the depth of the valve and spreads towards the surface. The disease in pigs is caused by a specific bacillus, and numerous instances have been recorded in which human beings were infected with it, and developed an erysipeloid condition of the skin. The infection in man generally occurs through inoculation, and there is a tendency to regard the erysipelas of Rosenbach as identical with it. Klauder, Richter, and Harkins<sup>2</sup> have recently made a detailed study of a very similar condition occurring in fish handlers. Rosenbach's erysipeloid is seen most often in persons who handle game and fish, and is as a rule confined to the hands near the point of inoculation. The lesion consists of a sharply defined, slightly raised, reddened area, with few if any general symptoms, it has an incubation period of one to six days. Swine erysipelas in man is rather more severe in its symptoms, and lymphangitis may be present. The existence of a heart lesion has not yet been demonstrated. The series of outbreaks recorded in this paper occurred in fishermen on the sea coast of New Jersey. The lesions commenced within twenty-four hours after a bite from a fish or a prick from the spine or scale, and the disease lasts from four to six weeks. The sore is conspicuous and painful, the lymph glands are affected, and headache and fever are common in the early stages. Similar but milder symptoms are seen in those who handle the fish later. This erysipeloid condition is quite different from the other skin diseases of fishermen such as dermatitis from nets, etc., and urticarial eruptions associated with new hemp nets or from contact with fish such as the Portuguese man-of-war, and "stings" of various fish such as electric eels and catfish. Three strains of this bacillus are generally recognized—human, porcine, and murine, the authors believe that it may be necessary to add a fourth—a piscine—which is pathogenic to white mice and pigeons, but not to field mice, apparently it has a high virulence to man. The bacillus of swine erysipelas (*B. rhusiopathiae* or *B. marsepticus*) is apparently pathogenic to all groups of vertebrates, but its virulence varies with the different animals, and may be altered by passage. Man is relatively resistant to ingestion, but may be infected through the skin. It would seem that we may recognize at least three human conditions due to this organism: the erysipeloid of Rosenbach, "fish poisoning," as this condition is called locally, and finally human swine erysipelas. These conditions differ only in severity, the last being the most acute.

#### THE PERIODS OF EUROPEAN MEDICINE

In a paper read before a meeting of the Devon and Exeter Medico-Chirurgical Society on February 17th, 1927, and reported in our columns on March 5th (p. 429), Dr W. Gordon of Exeter reviewed in the brief space of an hour the medical history of twenty-five centuries. The text of this scholarly sketch, "The periods of European medicine," has now been privately printed, and bears eloquent evidence of the author's literary grasp and reading. But particular attention may now be directed to his method of treating the subject—namely, by making natural divisions of the centuries into periods, and by showing the reactions of medicine to changes in the environmental conditions. Three great natural periods are distinguished—the rise, mainly Asiatic-Greek, from 600 B.C. to 200 A.D.;

<sup>1</sup> Ramsay, E. C., *Trans. Roy. Soc. Trop. Med.*, April, 1927, p. 506.

<sup>2</sup> *Arch. Dermat. and Syph.*, xiv, 662-678.



the present, from the death of Galen to about 1500 A.D., when the Italian renaissance reached and revived medicine, and the reascend, from that time to this. Each of these three main periods has three subdivisions, thus the rise starts with the pre-Hellenic phase, lasting three centuries, is followed by the Alexandrian epoch of two centuries, and then by three centuries of Roman activity. The pause, commencing with a gap of 150 years of chaos, included the Byzantine portion (324-700 A.D.), beginning with the writings of Oribasius, the Arabian (700-1300 A.D.), and a third subperiod which Dr Gordon associates with magnificent architecture, carving, and glass. The reascend begins with a North Italian subperiod of a century's duration, and then passes into the trans-European phase down to 1840, when what is called the pre-Cosmic subperiod is reached. These divisions and subdivisions are made clear to the eye by a diagram in the reprint. Stress is laid on the greater sensitiveness exhibited by medicine to liberty of thought, and on the later maturity of medicine as compared with art or letters. In addition to this general consideration of the evolution of medicine, Dr Gordon gives much detailed information about the men who have played prominent parts in the history of our art and science.

#### A NEW DIPLOMA IN ANTE NATAL CARE, MIDWIFERY, AND INFANT WELFARE.

THE Examinations Committee of the Society of Apothecaries of London as recorded in our issue of July 30th (p. 193), has decided to recommend the governing body to institute at an early date a special diploma in ante-natal care, midwifery, and infant welfare. It would be granted to registered medical practitioners who had been engaged in post-graduate study of the subjects, both in practice and theory, a high standard of professional knowledge would be ensured by a stringent examination. The diploma is intended to meet the needs of the general practitioner who wishes to show that he possesses knowledge and experience in these subjects of a higher grade than that required or legal qualification. It is not proposed to limit the diploma to licentiates of the Society of Apothecaries, but to throw it open to all registered medical practitioners.

#### MR F G HALLETT

MR F G HALLETT has notified his intention to retire in December next from the office of secretary of the Conjoint Examining Board in England. When this resignation takes effect it will bring to an end an active career of fifty years passed in the service of the medical profession. Mr Hallett joined the office staff of the Royal College of Surgeons in December, 1877, became a assistant secretary to the College in 1882, and was appointed secretary of the Conjoint Examining Board in England when that body was instituted in January, 1885. The Committee of Management of the Examining Board, with regret, recommended the Colleges to accept Mr Hallett's resignation and the Royal College of Physicians at its meeting last week passed unanimously and cordially a resolution of thanks to Mr Hallett. Mr Hallett has won the esteem and friendship of succeeding members of the Committee of Management and of the Board of Examiners. He has always been remarkable for his courtesy and readiness to help and in the course of his long service has become a mine of information with regard to the conduct of examinations—in fact, his reputation is world wide, he visited the United States some years ago to give advice on the subject and has also given his help with regard to the adjustment of such matters in Egypt. In consenting to illuminate the Roll of Honour of the British Medical Association Mr Hallett disclosed one of his hobbies. This Roll, which is now preserved in the Library in the Association's House contains

the names of the members who gave their lives for King and country in the great war, and when the King and Queen in 1925 came to open the House they visited the Library and inspected the Roll. They congratulated Mr Hallett on its completion, and asked him how many hours he had spent on the task. The reply was 430. On this occasion the King accepted from Dr J A Macdonald (Chairman of the Journal Committee) a copy of the Roll, bound in morocco, each page being reproduced by photo-mechanical means. All who have worked with Mr Hallett, or have known him in other capacities, will wish him many years of life in his country home.

#### A FRENCH VIEW OF EARLY MEDICAL EDUCATION

WITH the ever-increasing amount of knowledge the problems of medical education and especially of the standard to be required before entry to the profession, and the organization of the preliminary teaching of the basic sciences—chemistry, physics, and biology—are rightly receiving anxious attention. The inevitable tendency now is to throw back on to the last year or more of school life the teaching of these subjects, and thus to obtain more time in the overlaid curriculum for clinical teaching. This course, however, entails some degree of early specialization, and so may encroach on the acquisition of a general education in letters. The amount of physical and chemical knowledge required for medical education has, of course, greatly increased, and with the object of finding a means whereby this end could be attained without, if possible, encroaching unduly on the opportunities for general culture, a committee of the Académie de Médecine de Paris was appointed in December, 1926. The committee in its report has recommended that, on the one hand, students intending to take up medicine should be obliged to present two baccalaureat diplomas—one for compulsory Latin and optional Greek, the other for mathematics, and, on the other hand, that the scientific instruction given in the preparatory year of medical studies should be provided in the Faculty of Medicine and the medical schools, instead of, as at present, in the Faculty of Science.

#### THE HUGHLINGS JACKSON LECTURE.

ONE of the events of the conference in London between the Section of Neurology of the Royal Society of Medicine and the American Neurological Association in London—of the opening of which we gave some account last week—was the delivery by Dr Charles L Dana of the Hughlings Jackson Lecture. Dr Dana said American neurologists came first under the influence of Charcot, then were attracted by Erb, Krausmaul and the Germans and a little later perhaps felt the inspiration of Jackson's work. His own earliest recollection of American neurology was as an intern, after that he received an appointment to a neurological clinic. Of the four men in New York in those days who were most active in psycho-neurological matters and gave a certain forceful touch to the subject one was Dr Edward C Spitzka, finely trained in anatomy under Meynert of Vienna who was very scornful of American work, and violently antagonistic to the United States methods of caring for the insane at that time. Another, Dr W A Hammond, was the dominant personality of the day, but a man of much more original and brilliant type was Dr George M Beard who first proclaimed and consistently taught the importance of noting and evaluating subjective symptoms, no equivalent decreased the serious characteristics of American life and of the American people, and was the first to indicate the importance to the State and the community of preventive methods along this line. Dr Dana believed that this was the most important angle

problem in neurology and sanitation to-day. At the time of his early acquaintance with Beard, Griffield, the President of the United States, was assassinated by Guteru Di Duna, in conjunction with Di Berid, examined Guteru, assisted at his necropsy, received part of the brain, and made a formal report. These were the days when Lombroso flourished in Italy, and when Moritz Benedict, in Vienna, had just written upon the cerebral fissures. The fourth man in the New York group was Di Edward C Segun, by far the best trained of the American neurologists of that day. His influence in developing precise methods of examination, his interest and skill in therapeutics, and his devotion to his patients, made a great impression and greatly helped to improve neurology. He was a believer in drugs, as were Beard and Hammond, and was inclined to give large doses. It was the period when potassium iodide was given to the extent of 300 or 400 grains daily. Tincture of iron women was used by Segun in doses of half a drachm or more, and hyoscine up to one-sixth of a grain. Bromides were also given massively, and periodic bromidization was employed in epilepsy. Di Duna thought the practice admirable in trained hands. The American Neurological Association was organized, and a *Journal of Nervous and Mental Disease* was founded at the end of the nineteenth century, the prime mover being Di Jewell of Chicago. Thirty years ago in New York there were only three nerve clinics and no special hospital. Now there were many well attended clinics, a neurological hospital, and several important neurological departments in the general hospitals. Preventive neurology was a phrase of work that was of high importance, though it had been greatly neglected. There were many chronic nervous diseases, such as paralysis agitans and disseminated sclerosis, with an enormous literature which ignored the question of prevention. Americans were a nervous race, using the term in the sense that nervousness meant an exaggeration of physical and mental activity. Nevertheless, the nervous disposition was the highest form of constitutional make-up, on the whole, it was well to have some degree of nervousness as an impelling force in a nation and community. He was opposed to the prevention of nervousness by the development of lymphatic and melancholic temperaments.

#### THE COMPILATION OF VITAL STATISTICS IN PORTUGAL

The first census of Portugal on a modern plan, comprising locality, age, sex, civil condition, occupation, and other points, was carried out in 1864, and the second in 1878. In 1887 it was affirmed by law that there should be a decennial census, the years selected being those whose terminal digit was a zero. This enactment has been three in operation—in 1900, 1911 (replacing 1910, which witnessed the revolution), and 1920. At the census of 1920, for which December 1st was the appointed day, the household schedules, as narrated in a recent account by the League of Nations of the official procedure, were distributed and recovered by census agents, who passed them on, after scrutiny, to the local census committees, and the local committees in turn transmitted them, after inspection, to the Director-General of Statistics in Lisbon. The data so gathered formed the raw material for the report of the census for 1920 which has been published in four volumes. The Director-General, in his preface to the report, states that locally appointed agents stuck for higher remuneration on the eve of the appointed day, that in some cases they did not take the census on the date fixed, and that they omitted to recover a proportion of the schedules they had distributed. He indicates that the organization by the local census committees was inefficient, and may be presumed to have viewed the figures supplied to him with some tincture of misgiving. He reports that the population of

Continental Portugal, excluding the Azores and Madeira, was 5,621,997 in 1920, and its area 34,254 square miles. Registration, the complement to the census for statistical purposes, formerly in Portugal entrusted to the clergy, has since 1900 been in the hands of civil authorities. In 1911 it was made compulsory, and failure to register is now a penal offence. Every live birth must be declared within one month at the local registrar's office by the father, or other specified person in his default. A similar rule obtains for stillbirths, the period of gestation being recorded in both cases. Every death must be declared immediately, in presence of two witnesses to the fact of death, by the nearest relative, or other specified person in his default. The medical practitioner who attended the deceased in his last illness must hand to the family a certificate of the fact of death and its primary and contributory causes. Registration summaries are sent monthly to the central statistical department from all local areas. The birth rate of Portugal, from 1913 to 1920 inclusive, ranged between 26.4 and 33 per thousand. The death rate, from 1911 to 1920 inclusive, ranged from 19.4 to 40.2, the latter high figure belonging to 1918, the influenza year. In 1920 it was 25.5. Two causes of death show a disparity with English returns. For cancer the frequency ratio of Portugal to England is as 1 to 4, for ill defined causes as 10 to 1. This low cancer rate, combined with a high rate for ill defined causes, is probably a matter of diagnosis. The birth rates and general death rates quoted may reflect the facts, they may, on the other hand, be misleading—if, for example, the annual population on which they are based, calculated presumably from the census of 1911, were underestimated. As regards the census for 1911 no opinion can be expressed. As to the census of 1920 the comments of the Director-General may be left to speak for themselves. Had control been rigidly centralized it is likely that the irregularities to which he refers would have been substantially reduced. Be that as it may, an essential requirement for the compilation of vital statistics in Portugal or any other country is a sound population figure.

#### BIRTHS AND DEATHS REGISTRATION ACT, 1926

Mr GEORGE P. STRATHFARN, honorary secretary of the Association of Registrars of Scotland, informs us that a number of medical practitioners in that country are sending death certificates direct to registrars under the impression that they are required to do so by the new Registration Act. It should be noted that this impression is erroneous. The Births and Deaths Registration Act, 1926, the new Act in question, does not apply to Scotland or Northern Ireland. Any change of procedure which it involves affects England and Wales only.

#### THE ANNUAL MEETING TWO CORRECTIONS

In our reports last week of the Annual Meeting of the British Medical Association at Edinburgh, there were two mistakes which need only correction. The number of those attending the Annual Dinner was in fact more than twice the figure mentioned. No fewer than 678 members of the Association and guests were present. Again, the winner of the Ulster Golf Cup this year is Dr A. J. Cronin, not Dr J. A. Cronin, as stated at p. 79 of the Supplement.

By an Order of the Committee of Privy Council, Sir Hugh K. Anderson, M.D., F.R.S., Master of Gonville and Caius College, Cambridge, and Professor T. R. Elliott, M.D., F.R.S., Director of the Medical Unit, University College Hospital, London, have been appointed members of the Medical Research Council into the vacancies created by the retirement of Sir Frederick Andrewes and Sir Cuthbert Wallace.

## THE HISTORICAL MEDICAL EXHIBITION AT THE EDINBURGH ANNUAL MEETING

In connexion with the History of Medicine Section at the Edinburgh Meeting of the British Medical Association, an interesting historical medical exhibition was shown in the Upper Library Hall of the University. A large portion of the exhibits were lent by the Wellcome Historical Medical Museum, by the courtesy of Mr. Henry S. Wellcome, who was one of the vice presidents of the Section.

Surgery became a science in recent times, not so much through individual skill as through the introduction of two new factors—anaesthesia and antiseptics. The earliest surgical instrument was in all probability some fragment of flint or of fish's tooth, with which blood was let, abscesses emptied, tissues scarified, skulls trephined, and, at a later date, operations like circumcision performed. Trephining for epilepsy goes back to primitive times, the bits of skull excised being used for amulets. Primitive man's wounds were dressed with moss or fresh leaves, ashes, or natural balsams, and, when poisoned, were

treated by sucking or cauterization. Cupping was performed by means of animals' horns. For couching a cataract or opening an abscess even a sharp thorn sufficed, but in more advanced stages of development pieces of hardened wood may have been pointed and edged like the flint knives. Examples were shown of knives belonging to medicine-men from the Congo, as well as various Sudanese surgical instruments, and glass surgical knives from Mexico, Australia, and other places. There were also horns and gourds to illustrate the evolution of the cupping vessel, along with specimens of Roman and Arab cupping vessels, and specimens of shells,

stone knives, etc., showing the development of the lancet from the sharpened finger nail through the stage of the thorn and bamboo, to the modern instrument.

Specimens of surgical instruments of the sixteenth, seventeenth, eighteenth, and nineteenth centuries were also shown. These were mainly knives and saws for amputation, and instruments for extracting bullets from wounds, and there was also a curious instrument, first described by Guv de Chauliac in 1300, for widening a wound in order to extract an arrow-head.

The chief method of Greek healing was by recourse to the Temples of Aesculapius, where advice was received by the patient in a dream interpreted to him later by the priests. If the treatment was successful the patient then presented a thank-offering to the god, usually a model of the diseased part in wax, silver, or gold while a votive tablet, giving the history of his case and its treatment, was suspended in the temple. These tablets formed the permanent clinical records of the Coan and Cnidian schools of medicine, in the first of which Hippocrates was himself a pupil. Several interesting examples of these votive offerings were exhibited, including plaques showing internal viscera, a fragment of a trunk showing digestive organs, and several small figures of diseased patients.

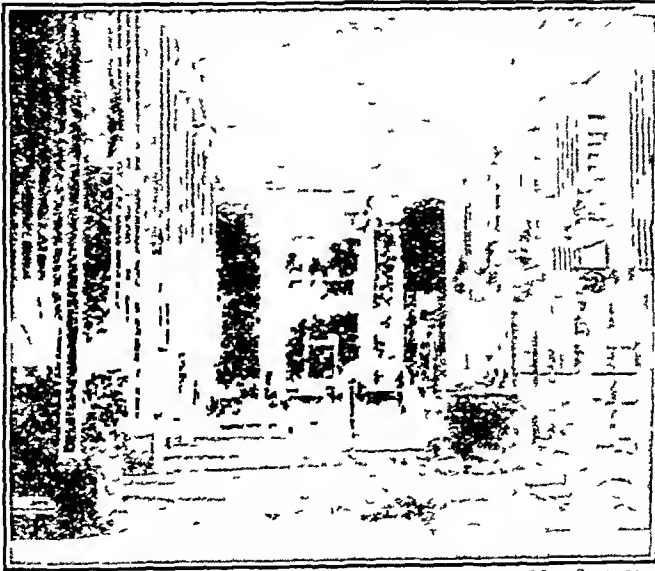
The highest point of development in ancient surgical treatment was reached in India. In the Susruta (fifth century A.D.), one of the three leading texts of Brahminical

medicine, about 121 different surgical instruments are described. These include scalpels, lancets, saws, scalps, needles, hooks, probes, directors, sounders, forceps, trocars, catheters, syringes, bougies, and a rectal speculum. The Hindus apparently knew every operative procedure except the use of the ligature. All these instruments were properly handled and pointed, the blades sharp enough to cut a hair, and kept clean by wrapping in flannel in a box. Examples of all the instruments mentioned above were shown.

Under the Romans surgery attained a degree of perfection which it did not again reach till the time of Ambrose Pare. Surgical instrumentation, in particular, was highly specialized, and in the ruins of Pompeii over two hundred different surgical instruments were found. Herniotomy and plastic surgery were known, as well as the operations for cataract, version, and Caesarean section. In this section of the museum were shown specimens of specula, catheters, elevators, trocars, canteries, and forceps belonging to the first century A.D., with a twentieth century example of the same instrument alongside. It was

interesting to note the striking similarity between each pair of specimens, maintained over this period of two thousand years, many of the modern instruments being practically identical with their ancient prototypes.

Surgery in Scotland was revolutionized in the sixteenth century by Peter Lowe who had been a surgeon in the French Army, and in 1599 came to Glasgow, where he founded the Faculty of Physicians and Surgeons. A set of dental instruments of types described by Peter Lowe was shown as well as French pocket instrument cases of the eighteenth and nineteenth centuries, and there were numerous specimens of scarifi-



By courtesy of]

THE HISTORICAL MEDICAL EXHIBITION IN THE LIBRARY HALL, EDINBURGH UNIVERSITY.

[The Secretary

cators. All these exhibits were from the Wellcome Historical Medical Museum, London. The medicine chest of Prince Charles Stuart, lent by the Royal College of Physicians of Edinburgh, was also shown.

An excellent idea of the conditions of early and mediæval medical and surgical treatment was to be gained from the many black and white and coloured illustrations displayed in the alcoves of the hall. They were divided roughly into illustrations of physicians and patients, depicting clinical methods, etc., of the thirteenth to seventeenth centuries, cauterization, which was shown as being used for epilepsy, falling sickness, sciatica, difficulty in breathing, and for diseases of the lungs, kidneys, liver, spleen, bladder, etc., bleeding which was employed with great freedom as a remedy from early times, surgical procedures, illustrating operations for stone fractures, tooth-drawing, reduction of dislocations, circumcision, and military operations, mainly amputations, and anatomical illustrations, which consisted chiefly of diagrams of the human body showing the veins for blood-letting and pictures of anatomical instruments. These also were lent by the Wellcome Museum.

An interesting collection of obstetrical instruments from the Obstetrical Museum of the University of Edinburgh was on view, and at the other side of the hall there was a collection of engravings from the Royal College of Physicians of London. These included portraits of Lamer-

and Carius, and passed on to Sydenham, Harvey, Wilks, and other celebrated physicians of the seventeenth century. Many of the physicians of the later Stuart and Queen Anne periods, such as Sir Richard Blackmore, Sir Samuel Garth, Sir Hans Sloane, Dr Richard Mead, and Dr John Radcliffe, were also represented. Good engravings of Sir James McGilgor, John Hunter, Edward Jenner, Sir Charles Hastings (the founder of the British Medical Association), and other men eminent in the nineteenth century, completed the series. The collection was one which well repaid inspection, both on account of its medical associations and its artistic merit.

A collection of pictures of former teachers in the Edinburgh medical school was another noteworthy feature of the exhibition. These included physicians such as John Rutherford, the first lecturer on clinical medicine in the Royal Infirmary, the celebrated William Cullen, Archibald Pitcairne, John and James Gregory, Professors Hughes Bennett, Alison, Sir Thomas Granger Stewart, etc. Among the surgeons there were fine portraits of Robert Liston, Sir William Ferguson, James Syme, and James Miller, and there were also groups showing professors and teachers in the Edinburgh school at different epochs.

A series of portraits of eminent past students of Edinburgh included three generations of Darwins—Easmus Darwin, Robert Waring Darwin, and Charles Darwin—and a number of engravings of portraits by the celebrated Scottish painter Raeburn, including Professors Thomas Charles Hope, Joseph Black, Alexander Monro, and others. There was also an interesting collection of pictures of celebrated American physicians and surgeons who graduated at Edinburgh.

A series of water-colour sketches by Sir Daniel Wilson, showing various old Edinburgh buildings, and particularly several views of parts of Trinity Church and Hospital, was on view. These are the property of the University of Edinburgh. In the cases there were numerous illuminated manuscripts and old printed books, many of them medical, the property of the University. There was also an interesting collection of relics of Dr John Fothergill, including diplomas, letters, books, and personal possessions, together with many other objects of medical and historical interest.

The exhibition was visited by over 5,000 members of the British Medical Association and of the public during the four days that it remained open.

## RESULTS OF TREATMENT OF UTERINE CANCER

ONE of the more important reports on medical subjects published by the Ministry of Health is that issued last month under the title of "Cancer of the uterus: a statistical inquiry into the results of treatment, being an analysis of the existing literature." The report is written by Dr Janet E. Lane-Claydon and is based on an examination of data contained in medical publications at home and abroad prior to March, 1926. The articles examined are derived from sixteen different countries, are 848 in number, and relate to the records of some 80,000 cases of the disease. The mere collection and sifting of the data from this mass of material must have been a work of great magnitude, and the results, embodied in twenty-four variously classified appendices, will form a permanent work of reference the value of which cannot fail to be appreciated by those interested in the subject. In addition, the author has applied statistical methods in extracting several deductions of great interest. The most important of these relates to the relative values of abdominal hysterectomy and radiation in the treatment of carcinoma of the cervix uteri, the figures pointing to the conclusion that for the cure of the disease, that is to say, to obtain a survival rate of five years and over, treatment by radium is almost as efficient as abdominal hysterectomy. This conclusion is based on cases reported from Germany, Austria, America, Sweden, France, Switzerland, and Belgium, England being conspicuous by its absence from the list. Referring to this point, Sir George Newman, in his prefatory note, remarks "One is im-

pelled to inquire whether these remedial agents, radium and roentgen rays, are used as widely as they should be and with similar results in England." It is difficult to believe that so distinguished a school of gynaecology as the English can be lagging behind the Continent in the matter of radium treatment, and Sir George Newman suggests that the absence of records may be due to a disinclination of gynaecologists and radiologists to publish accounts of series of cases, to an absence or incompleteness of clinical records, and to a lack of any system of ascertaining after-histories. If the results in this country are at all comparable with those obtained on the Continent it is to be regretted that they are not put on record, on the other hand, if the claims made for radium treatment are untenable it is still more important that the fact should be made known.

In discussing the various methods of treatment in cases of carcinoma of the cervix, Dr Lane-Claydon states that it is only necessary at the present day to consider the relative merits of two—namely, abdominal hysterectomy and radiation—and the first part of her report is concerned with a comparison of these two methods. In order to simplify the inquiry, no consideration is given, in the first instance, to the stage of the disease at the time of operation, the cases are merely classified into operable and inoperable, differences indicated by such terms as "borderland," "early," and "advanced" being excluded. In order to compare the two methods on this basis it is necessary to take out four sets of data: (1) the total number of applicants, (2) the operability, that is the number of patients reckoned operable out of the total number of applicants, (3) the immediate operative mortality, and (4) the number of survivors at five years after treatment, having regard to the total number of applicants as well as to the total number treated. With regard to the ratio of operability, several circumstances combine to render this a fluctuating figure. Thus there was an almost universal increase in the number of inoperable patients during the period of the war, which has not yet everywhere disappeared. Again, the personal opinion of the individual surgeon as to what cases should be considered operable must be a very considerable factor. Also a great increase in inoperable cases was noted in many clinics after the introduction of radium treatment in 1913, women being apparently more willing to come forward in view of the alternative to surgical treatment, and surgeons probably now regarding some advanced cases as inoperable which, in the absence of radium, would have been recommended for operation. As to the method of obtaining the operability figure, it was found impossible to discriminate between the standard of operability adopted by different surgeons; then figures have been accepted and a mean operability calculated on the basis of the massed figures. Even so it was found that the mean operability could not be calculated for all authors, since many fail to state the number of inoperable cases in their practice, and, where the figures are given it is by no means certain that they afford the total number of women making application. The mean operability thus calculated was found to be, in the case of abdominal hysterectomy, 48.9 per cent, and in the case of radiation, 40.8 per cent, the lower percentage in the case of radiation being due probably to the increase already mentioned of inoperable applicants following the introduction of radium. With regard to the operative mortality, no difficulty was found in estimating the percentage, large samples were available, the percentage for abdominal hysterectomy was 17.3, that for radium nil. Although deaths have undoubtedly occurred after radiation they have been few and have occurred chiefly at a time when the dangers of radiation were not appreciated. With regard to the survival rates, it is important that these should be calculated on the total number of applicants, both operable and inoperable, since a surgeon might readily produce a high percentage of survivors by the simple process of declining to operate on the more advanced cases. It would have seemed necessary also to have taken into account those patients whose fate could not be ascertained, and those known to have died within the five-year period from some cause other than cancer. It appears that these cases can safely be left out of consideration, since it has been recently shown in this country that the

united cases form a reasonably fair sample of the whole. Finally, with regard to the total number of applicants, it was mentioned above that some authors fail to record the totals in their practice, where this is the case the assumption has to be made that the total number bears a definite relation to the number of cases operated on, taking the standard mean operability rate into consideration. The results of this part of the investigation are set out in the following table:

	Abdominal by the operator	Radiation.
Operability	48.9	40.8
Operative mortality	17.3	—
Survival rates		
Total cases	18.3	22.0
Inoperable cases excluded	37.6	35.8

Thus if the inoperable cases are included radiology gives the better results but if they are excluded then operative surgery shows a slight preponderance of survivors. Radiation has the further advantage that in inoperable cases it can show a survival rate of 12.7 per cent.

In view of the very wide divergences in the survival rates shown by individual surgeons, Dr. L. C. Clayton has endeavoured to obtain more definite indications of the relative value of the two methods by taking out figures of authors who had published results of not less than one hundred consecutive cases treated exclusively by one or other method. In these selected series there still appeared such wide divergences that no general deductions have been found possible. The remainder of the report deals with the results of treatment in relation to the stage of the disease at the time of treatment, with questions as to the influence of age and civil state, of the symptoms and their alleged duration, of the infection of the glands, and of the dissemination of the disease in the body, a final section is devoted to cancer of the body of the uterus.

## MATERNAL MORTALITY AND MORBIDITY IN VICTORIA

Australia, like the mother country and the other Dominions, has been exercised about her puerperal mortality, and in the State of Victoria the report of a committee appointed by the Victorian Branch of the British Medical Association in 1924 to consider the matter had important consequences. Among them was a gift of £10,000 to the University of Melbourne for the appointment of a director of obstetrical research, whose duty was to inquire into the causes of maternal mortality and disability in Victoria and to suggest means to prevent or lessen both.

An interim report by the director, Dr. R. Marshall Allan,<sup>1</sup> presents many points of interest, particularly in that he has made a survey of domestic obstetric practice as well as of the work of hospitals and other institutions public and private. All practitioners in the State were interviewed and personal interviews obtained with 239 of them, both in Melbourne and throughout the country districts. The part of the report dealing with the director's observations on midwifery in private practice appears to be as applicable here as in the Antipode, and is certainly worthy of detailed study.

The author takes a decidedly optimistic view of the improvement in midwifery practice in Victoria and is not inclined to accept the statement in Dame Janet Campbell's report on maternal mortality,<sup>2</sup> that while the general death rate has been reduced by a third and the infant mortality halved, since the beginning of the century, the maternal mortality has been little affected. He gives figures for his own State to show that there has been a decrease of 22 per cent in the general death rate and 31.5 per cent in infantile mortality as compared with one of 23 per cent for all puerperal causes. Of the latter, sepsis decreased by 38 per cent and the rate for other causes by 17 per cent. It is to be noted, however, that

the statistics on which these findings are based are not of five-year periods, but of two selected years, 1905 and 1925. In contrast to Dame Janet Campbell's report the investigation into the results obtained in domestic practice allows of the inclusion of the records of successful work, although the manner in which they are stated leaves their precise meaning uncertain.

In one case quite an elected or sixteen men who had delivered between one thousand and two thousand women the average mortality was two. Another group of fifteen doctors who had delivered more than two thousand women had only one at an average of three patients.

In regard to ante-natal supervision attention is drawn to the handicap caused by the custom of many expectant mothers to engage their nurse early in pregnancy and not to visit the doctor till near the end or until labour begins. Dr. Allan states also that there is little trouble in keeping in touch with women in their first pregnancy, whereas the multiparous tend to be irregular in attendance. His conclusion is that save in some of the industrial areas, ante-natal supervision is good and that the public is being rapidly educated to its value.

Of the confinements 60 per cent take place in hospitals public or private the proportion varying with the locality and the reputation of its hospital. The report is emphatic on the need for the establishment of large modern maternity units with accommodation at reasonable rates, as by their establishment much of the drudgery of obstetrics and the temptation to force the natural sequence of events would be avoided.

Regarding the vexed question of forceps delivery the actual words of the report may be quoted:

The number of patients requiring the application of forceps varies from 10 per cent to 80 per cent with individual men. Those who employ them as a routine are invariably busy practitioners and confess that it is due to pressure of work. Poutine's application is denuded on two grounds: (1) The saving of the perineum; (2) the absence of any had after-effects. On the other hand many men are not so optimistic about the prevention of lacerations with the forceps. While no records have been given in support of these views the figures of St. George's Hospital, New in a district where the collective skill of the practitioners is certainly not below the average are instructive. Forceps were applied in the case of 19 per cent of the women and the percentage requiring suture was as great as with the following natural delivery. The total morbidity of all patients was 7 per cent while that of those who had forceps delivery was 10.5 per cent.

The remarks on operations for contracted pelvis and Cæsarean section are interesting. The report acknowledges that the family practitioner is not usually able to give any details as to the degree of pelvic contraction, and then goes on to say: "It is difficult to understand why some men have a monopoly of cases, whilst colleagues equally busy in the same suburb hardly ever see one."

Surely there is no difficulty in understanding this apparent anomaly. In protracted labours several factors are very often present—a trifling degree of contraction, relative weakness of the forces, a large or unduly hard head with perhaps some degree of extension or a persistent posterior position. No two obstetrists may agree as to the prominent factor, but to many the simple mechanical explanation of pelvic contraction is the easiest and simplest and is accepted as the cause of delay. Thus in a country where rich and contracted pelvis are rarities, a monopoly in contracted pelvis may be readily acquired by the simple process of ascribing all difficult and delayed labour to pelvic deformity. The remarks on treatment are also worth quoting:

Too few are given a trial of labour and it would be desirable if operation were deferred until reputable consultants had occurred as to its necessity. I have collected the records of one hundred and thirty-two Cæsarean sections with a maternal mortality of 10 per cent for all indications. Too many are performed for contracted pelvis, placenta prævia, and other conditions. The mortality following this method of treating cases of placenta prævia does not compare favourably with that following more conservative methods.

The director concludes that the public needs much more education regarding the danger and uselessness of injudicious interference in labour, also that the profession is not combining to raise the dignity of the obstetrical art especially by limiting the amount of midwifery which can be undertaken in a given period.

The amount of puerperal sepsis in private practice was

<sup>1</sup> Interim Report on Maternal Mortality and Morbidity in Victoria by R. Marshall Allan, M.D., F.R.C.S.E., Director of Obstetrical Research, University of Melbourne. Reprinted from the *Medical Journal of Australia* January 14, 1927.  
<sup>2</sup> *Ministry of Health Reports*, No. 22.



found difficult to estimate owing to lack of records, but, in the majority of cases, is stated to have followed some operative intervention. The cause was blamed only in a small proportion of cases, but the general opinion among the practitioners was that most of the infections occurred in the smaller type of hospital and not in private houses.

In summarizing the results of his inquiries, Dr Allan expresses the view that the high ideals set before students by their teachers are beginning to show results, and that he is able to see this improvement more clearly than others because he has been in a position to view it apart from the daily worries of practice. On the other hand, he utters a warning to the effect that the first result of an awakened professional conscience will be a rise in the statistical rate due to a more accurate certification of the cause of death, at present there is a disposition to take shelter behind a fictionally low mortality rate.

Clinical and laboratory investigations are being conducted at various maternity institutions, and accounts of them will be presented in the final report next year.

## Nova et Vetera.

### HANGED, DRAWN, AND QUARTERED

THERE is a good deal of grim interest in the forms of punishment that are now obsolete in this country. The pillory, the ducking-stool, the brank or scold's bridle, the whipping-post, and stocks are well known forms of punishment that are no longer in use. Among the rarer forms may be mentioned the *peine fort et dure*, or pressing to death, burning to death, and boiling to death. This latter was not allowed by the common law, but in order to deal more effectually with the crime of wilful poisoning a new statute was passed in the twenty-second year of Henry VIII, which made high treason punishable by this grievous and lingering death, without benefit of clergy.

The full punishment in the execution of traitors, although not absolutely done away with until the year 1870, cannot frequently have been inflicted for the last hundred years. From the thirteenth to the fifteenth century this sentence was often carried out at many of the principal cities and towns of the kingdom. In every case of high treason, save in the crime of coining, the sentence was that the offender be led to the gall from whence he came, and from thence be drawn to the gallows and there hanged by the neck, that being alive, he be then cut down and his entrails taken out and burned, that his head be cut off and his body divided into four quarters, the head and quarters to be at the disposal of the Crown.

In the *Chronique de la Traison et Mort de Richard Deux Roy d'Angleterre*, translated by Benjamin Williams, F.S.A. (English Historical Society, 1846), is given the following account of this ghastly business in the case of certain of King Richard's adherents:

"The king (Henry the fourth) commanded his chamberlain Sir Thomas Erpingham to have justice executed upon the lords who were taken prisoners, and to put them all to death except a young knight whom he had dubbed the Saturday before his coronation, whom the king pardoned for rising in arms against him, on account of his youth and noble lineage. Sir Thomas Blount and Sir Benet (Shelley) were drawn from Oxford unto the place of execution a long league or more, and there they were hung, they then cut them down and made them speak, and placed them before a huge fire. Then came the executioner with a razor in his hand, and kneeling down before Sir Thomas Blount, who had his hands tied, begged his forgiveness for putting him to death, for he was obliged to perform his office. 'Aie you he' said Sir Thomas, 'who will deliver me from this world?' The executioner replied, 'Yes my lord I beg you to pardon me. The king by pardon is all forgive him. The executioner had hysterectomy. This conelazoi and kneeling between the fire from Germany, Austria, AntThomas Blount and ripped open land, and Belgium, England with a piece of whipcord that absence from the list. Refereis escape, and erst the bowels Nowman, in his prefatory note, as Erpingham said, Now

bo the hour when I was born, and blessed be this day, for I die this day in the service of my sovereign lord King Richard. After he had thus spoken, Sir Thomas Erpingham asked him, 'Who are the lords knights and esquires who are of your accord, and treason?' To which the good knight replied, suffering as he was, 'Art thou the traitor Erpingham?' Thou art more false than I am or ever was, and thou heest, false knight as thou art, for, by the death which I must suffer, I never spoke ill of any knight, lord or esquire, nor of anybody in the world, but thou utterest thy false spleen like a false and disloyal traitor, for by thee, and by the false traitor the Earl of Rutland, the noble knightlyhood of England is destroyed. Cursed be the hour when thou and he were born! I pray to God to pardon my sins and thou traitor Rutland, and thou false Erpingham, I call you both to answer before the face of Jesus Christ for the great treason that you two have committed against our sovereign lord noble King Richard, and against his noble knightlyhood. The executioner then asked him if he would drink. 'No' he replied, 'you have taken away wherein to put it, thank God!' and then he begged the executioner to deliver him from this world, for it did him harm to see the traitors. The executioner kneeled down, and, Sir Thomas having kissed him, the executioner cut off his head and quartered him, and he did the same to the other lords, and parboiled the quarters. And in Oxford castle many other knights and esquires were beheaded.

Without wishing to be facetious over this grim affair, one may wonder at the refinement of cruelty of asking a man to have a drink in such circumstances, and at the fortitude of Sir Thomas Blount, as shown in his answer.

From a medical point of view the chief interest in these cases is the fact that a man on whom this barbarous sentence had been inflicted was yet able to retain consciousness and to answer questions. I assume that the executioner cannot have made a very large incision with his razor. If he had ripped up the abdominal wall and removed the mass of the intestines, the shock, I should think, must have been such as to make the patient unconscious at once. I assume that he can have made only a small incision, through which a knuckle or two of gut may have protruded, with a piece of the great omentum, this prolapse must have been tied and cut off, if he had divided the abdominal cavity of only the gut the shock would have been so great as to lead to instant death, at least that is how it strikes me, perhaps some surgeon can enlighten me.

In Sir Thomas Blount's speech to the chamberlain, it might be thought that what he intended to say was "thou art the traitor, Erpingham." The query is inserted here because it is in the text, and on looking up the original French on page 91 I find "*Es tu le traitre Erpinghem tu es plus faulx,*" etc.

R. R. JAMES

## New Zealand.

[FROM OUR CORRESPONDENT]

### DURATION OF LIFE

At the meeting of the American Public Health Association Professor Irving Fisher of Yale University expressed the opinion that increases in length of life are being attained at an amazing rate. He believes that the average length of life in 1930 will be 61, in 1940 65, in 1950, 69, in 1960, 72. Whereas in America the expectation of life is at present 58 years, in New Zealand female lives have already reached an expectation of 65 years. The male expectation of life in New Zealand is 62½ years and these islands appear to enjoy the longest expectation of life of any country in the world.

### SCHOOL DENTAL CLINICS

Since 1921 school dental nurses have undergone a limited but intensive training for work in dental clinics to cope with widespread dental crises in the children attending the State primary schools in New Zealand. The scheme has been approved by the New Zealand Dental Association, the members of which are frankly unable to touch more than the fringe of this work, which is felt to be of high national importance from the public health point of view. Experienced dentists now speak of very obvious improvement in the condition of the teeth of school children. In the year 1926 the dental nurses undertook 50,375 fillings,

53,387 extractions, and performed 43,452 minor operations. At the present time fifty-eight clinics are established, and 53,000 children are receiving regular dental attention. It is not only in actual treatment that good work is accomplished. The pamphlets distributed to each child on diet and oral prophylaxis are commendable, and have an educative effect upon the parents. Many parents are inclined to be careless, and others cannot afford the expense of having their children's teeth regularly attended to. A nice point is the extent of skilled work that should be executed by dental nurses with their relatively limited training, but that a proper limit is set is in evidence in the fact that the president of the New Zealand Dental Association advocates the extension of the scheme to all State primary schools. This extension would necessitate increasing the staff, and presumably also the expense, sixfold. The aim at present is to treat all the children who require treatment to the age of 9 years, and as far as possible to follow up this treatment to the end of the child's school career. The department cannot with its present staff instruct more than forty dental nurse pupils, and the period of training extends over two years. Claims have been made on behalf of private schools for the services of the school dental nurses, but the Minister of Health considers that the children in the State schools have first claim, and cannot at present see his way clear to incur the further expenditure necessary to overtake the dental work required for the full total of 200,000 children attending the State primary schools in New Zealand.

During the war period it was found that the extent of dental decay in recruits was amazingly great, and this was an important factor in the attempt to lessen the evil by beginning with young children in the schools. There is evidence that the education of parents in the need for regular dental attention to children is extending, but progress in this direction is slow. Probably benefits which are easily and cheaply attained, or which cost nothing, in public health matters as well as in education, are not sufficiently highly valued, but whatever may be said by way of adverse criticism there is no doubt that investigation revealed in New Zealand a deplorable bad state of dental sepsis in children which the dental profession was unable to treat adequately, and the system of dental clinics staffed by school dental nurses has been a pronounced success.

## England and Wales.

### X-RAY SERVICE IN LONDON MENTAL HOSPITALS

FOLLOWING a suggestion made by the Board of Control that valuable aid to diagnosis would be forthcoming if x-ray apparatus were available for each of the London mental hospitals, the mental hospitals committee of the London County Council is considering as to the best method of securing an efficient x-ray service. In the meantime, tentative arrangements have been made for obtaining radiographs as required, and as an experiment it is proposed to engage a consultant radiologist for one year to read and advise on radiographs in difficult cases. The fee suggested is one guinea (inclusive) for each case reported upon by him.

### Tuberculosis After-Histories

A report was furnished to the London County Council at its last meeting on the after-histories of persons who approximately five years ago, were discharged after residential treatment under the council's tuberculosis scheme. The patients, as in previous reports of the same kind are divided into several categories. A, cases in which tubercle bacilli were not found in the sputum, B, cases in which the sputum contained tubercle bacilli, these were divided into three groups, according to the severity of the disease—namely, B1, cases with slight constitutional disturbance, if any and obvious signs of very limited extent. B3, cases with profound disturbance or constitutional deterioration, and B4 cases with grave complications, and B2, cases not falling into groups 1 and 3. Thus cases described as A and B1 may be regarded as early, B2 as moderately

advanced, and B3 as far advanced. During 1921 the number of adults discharged after treatment was 4,094, of whom 2,746 were civilians and 1,348 ex-service men. In 348 cases the diagnosis of tuberculosis was not confirmed, of the remainder (3,746) 350 were not traceable and 218 were discharged from observation hospitals within a few weeks of treatment and were not transferred to sanatoriums. The number of cases investigated, therefore, five years after discharge was 3,178, including 223 surgical cases. The records showed the following results five years afterwards:

Class	Total	All-free 5 years after discharge	Dead
A	463	83.5%	16.5%
B1	350	61.5%	38.5%
B2	1,299	34.0%	66.0%
B3	838	3.7%	96.3%
Surgical	223	75.5%	24.5%

Particulars obtained as to the fitness for work of the 1,230 surviving patients who were discharged from treatment in 1921 show that out of a total of 594 A and B1 cases, 63 per cent were at work, which was considered satisfactory testimony to the value of sanatorium treatment when applied to cases in the early stage of the disease. The proportions at work in the other categories were B2, 40 per cent, B3, 25 per cent, and surgical, 71 per cent. Of the total number of 1,230 in all categories 57.5 per cent were at work, 4.4 per cent were fit for work but were unemployed, and 37.5 per cent were unable to work (including cases receiving further treatment) the condition of the remaining 0.6 per cent was not known.

### Proposed Segregation of Mental Defectives

The London County Council at its meeting on July 26th had before it a resolution from the Leicestershire County Council to the effect that the segregation of mentally defective persons unless accompanied by active measures for the prevention of the propagation of the mentally unfit, was likely to impose an unfair and continually increasing financial burden upon the public, and that legislation should be promoted in order to make illegal the marriage of any certified mentally defective person and to legalize a system of voluntary sterilization, with subsequent supervision of mentally defective persons. A similar resolution was also received from the Southampton County Council. The London County Council was not prepared to agree that surgical sterilization should be adopted as a prophylactic for mental deficiency but passed a resolution that legislation should be promoted by the Government to make illegal the marriage of a person who was for the time being subject to an order of detention under the Mental Deficiency Act. On the other parts of the resolutions from Leicestershire and Southampton it was decided to take no action.

### HEALTH OF LONDON IN 1926

Volume III of the annual report of the London County Council for 1926 consists of the report of Dr. Menzies as county medical officer, and his report as school medical officer together with chapters on public health, main drainage, and housing.

### General Statistics

The total population of the County of London in the middle of 1926, according to the Registrar-Generals estimate, was 4,615,400 including 10,000 non-civilians, being an increase of 91,400 since last census five years ago. As the excess of births over deaths during the period was 165,500 there has been a loss by excess of emigration over immigration of about 74,000 persons. The marriage rate for 1926 was 17.2 per 1,000 the same as in the previous year. The birth rate was 17.1 as against 17.9 in 1925, and 18.6 in 1924. It is suggested that the decline in the general birth rate of the country began with the Factory and Education Acts, which lowered the value of children as wage earners, and continued owing to the fall in the marriage rate due to the delayed wage earning power of the youths compulsorily educated. Since 1910 despite the revival of the marriage rate among women minors the fall in the birth rate has been accelerating. The deaths in

London in 1926 were 53,476, being 1,485 more than in 1925, which had the lowest record. The excess is due to circulatory disease and cancer at higher ages, measles in children under 5, and vehicular traffic.

### *Infectious Diseases*

Five cases of small-pox occurred during the year. Two separate channels of invasion were traced, both originating from Paris. There was one death, that of a woman who had not been vaccinated since infancy. The notified cases of diphtheria numbered 13,526 and the deaths 547. Of 302 notifications of typhoid fever with 31 deaths, 5 were ascribed to fried fish. Of 7 cases of anthrax 5 were infected by foreign hides and 1 by feathers from China. One case died, an infant in Paddington, the source of infection remaining obscure. There were 83 cases of poliomyelitis, 8 of these, and 2 unnotified cases died. Of 173 cases of encephalitis lethargica 68, together with 22 unnotified cases, died. Between 1919 and 1925 there were 1,325 cases, of whom 495 died. An analysis of the survivors reveals that 373 are now apparently well, 61 have slight sequelae, 100 have incommoding sequelae, 180 are wholly incapacitated, and 116 are untraced. Though the 100 chronic encephalitis beds at Winchmore Hill fall short of native requirements extra-metropolitan authorities are asking for the treatment of persons resident outside London.

### *Tuberculosis*

Deaths from tuberculosis during the year were 4,066, giving an annual death rate of 0.88 per 1,000, and for other forms 691, corresponding to a death rate of 0.15 per 1,000. The view is expressed that in comparing the incidence of phthisis in different populations more attention should be paid to the death rate in each from all causes. Three groups of metropolitan boroughs representing three different social grades are shown to differ widely in their phthisis death rate, yet the relative incidence of phthisis, expressed as a percentage of deaths from all causes, is much like in all. This contention is discussed also in its relation to Dr. Brownlee's three types of phthisis.

### *Cancer*

The deaths from cancer in 1926 were 6,920, equal to a death rate of 1.46 per 1,000, which is greater than that of 1925. Much of the increase in the cancer death rates since the beginning of this century merely reflects an altered age-constitution of the population of London. When allowance is made for this alteration it appears that the number of deaths among females has decreased, while the deaths among males have increased but slightly.

Under the heading administration reference is made to the tuberculosis scheme of the council. An investigation of the after-histories of 1,510 adult patients treated in residential institutions in 1922 reveals that 48.6 per cent are now at work, 5.6 per cent fit for work but unemployed, 43.7 per cent unable to work, and 2.1 per cent unknown. In April, 1925, a scheme was put into operation for removing children from overcrowded homes containing a case of advanced phthisis. Up to the end of 1926 688 applications had been received and 324 children boarded out. There is now no waiting list for residential treatment either for pulmonary or surgical cases in children. The extensive work of the council's chemical and bacteriological laboratories is reviewed. From observations made on visibility and retinicity there is no doubt that the smoke of London is an important and aggravating factor in screening off actinic light and in intensifying seasonal obscuration.

(To be continued)

### *HAM GREEN HOSPITAL, BRISTOL*

In Bristol, in the fourteenth century, there were three leper hospitals, and when leprosy became extinct no special hospital provision was made for infectious diseases for some centuries. In 1696 the guardians of the poor must have provided some accommodation for epidemic sickness, since Dover describes how, when spotted fever raged in Bristol, he visited from twenty to thirty patients a day, besides then poor children taken into the workhouse. During the cholera of 1849, and the typhus of 1865, the guardians provided isolation accommodation, a duty which

they shared with the sanitary authority in 1886. The sanitary authority's share was at first two temporary wooden buildings in St. Philip's Marsh, then in 1892 a hospital was established at Novis Hill, primarily for small-pox. But soon after, in 1894, a fine Georgian mansion, called Ham Green, with estate of ninety-nine acres, situated on the Somerset bank of the Avon near its mouth, was purchased by the Bristol city council, and on this estate a modern isolation hospital containing seventy-six beds was built and opened in 1899. The estate was enlarged to 92 acres in 1919 and 136 acres in 1920. The latter purchase included a farmhouse with outbuildings, and the total estate now covers 327 acres. The farm supplies the hospital with milk, butter, eggs, a considerable amount of meat, and all vegetables. There are fine fruit gardens, and a lake on the estate supplies water for domestic uses other than cooking and drinking. The original seventy-six beds have been increased from time to time, fifty-eight beds were added in 1904, with space allowed for 200 fever beds in emergency. There are fifty-two beds for advanced cases of tuberculosis, but in recent years, on one or two occasions, these beds have had to be commandeered for diphtheria and scarlet fever epidemics. The need for extension of "fever" accommodation was thus evident, and the Ministry of Health approved of the plans for fifty-six additional beds. The opening of the newest extensions was described in our issue of June 25th (p. 1160).

The original hospital consists of four ward pavilions and two isolation pavilions, providing seventy-six beds, together with administration building, laundry, electric light station, and lodge. In 1894 four more pavilions, accommodating sixty extra patients, were added, the administration building was extended, the discharge block was built, and also a water tower. The latest extensions include a two-story pavilion, containing fifty-six beds, a new administration building for twenty-four additional staff, and kitchens with offices. The new ward pavilion consists of a main entrance with vestibule and central hall, out of which the male ward (ten beds) opens on the east side and the female ward (fourteen beds) on the west side. There is a south wing containing four single-bed isolation wards on the ground floor, each opening on to a covered verandah, which extends along the west side of the south wing. At the end of each wing is a sanitary block. On the south side of the east and west wings are covered verandahs, twelve feet wide, communicating with the wards, so that all the patients' beds can easily be moved on to the verandahs if the weather is suitable. In the centre of the building is the nurses' duty room, so situated that complete observation is obtained over all the wards.

The new wards present several novel features compared with the older building. They are built asymmetrically. There are four more beds on the female than on the male side, as it is found that the admission of females is always in excess of males. The isolation block is attached to the main ward and will be nursed by the same nurses, the duty room being so arranged as to enable the main and isolation wards to be under observation through inspection windows by the provision of glass partitions between each isolation cubicle. The cubicles are intended for the nursing of doubtful cases, or cases where the patient may be suffering from two diseases simultaneously. It used to be thought necessary to nurse such cases in a separate block with a separate staff, but it is now believed that infectious diseases (with the possible exception of small-pox) cannot be airborne except through about half a dozen feet. In fact, if a second disease is introduced by accident into a ward of patients, it will not spread if free ventilation is practised by open windows, in addition to elaborate precautions to prevent the carriage of infection on the hands of attendants. The new buildings are constructed of red brick with Bath stone dressings. The designs were prepared in the office of the city engineer and the construction was carried out under the personal supervision of Mr. H. W. Harding, L.R.I.B.A., architect.

Ham Green Hospital has an additional interest in that the nursing staff has been for some years most satisfactorily protected from diphtheria by means of Schick's preventive inoculation. Prior to the introduction of this method in

1922, 20 per cent of the new staff were attacked by diphtheria, no case has occurred among the staff for over a year. This is a result of which Dr D S Davies (medical officer of health for Bristol) and Dr B A I Peters (resident medical officer) may well be proud.

#### MENTAL RESEARCH

The annual report of the Laboratory of the Joint Board of Research for Mental Disease at Birmingham for the year ending March, 1927, is prefaced by a tribute to the late Sir Frederick Mott, its honorary director, who passed away last July in the Birmingham General Hospital as a result of a cerebral thrombosis which occurred during a train journey from London to Birmingham. Sir Frederick Mott, the report recalls, accepted the directorship of the board following its inauguration in 1922, and devoted his energies to the establishment of a research laboratory at Birmingham in connexion with the Rulery and Hollymoor Mental Hospitals, on lines similar to those at the Maudsley Hospital in London. Work carried on under his direction included the determination of iodine in thyroid glands and the correlation of mental and physical conditions. A new method of determining the basal metabolism of patients by means of a chamber was devised and the apparatus was installed at Hollymoor. Other investigations begun were into the individual reaction of patients to certain problems connected with subacute and chronic infections, into the relation of the enteric group to the immunological processes as having a possible bearing upon endocrine activity, and into chronic sepsis in its association with focal lesions elsewhere, with possible toxic effects upon the nervous system. Work was carried on under his direction in the wards of the hospital, especially with regard to the treatment of general paralytics by trypanamide, the results were assisted by laboratory examination of the body fluids. He gave up much of his time to the teaching of the medical officers of the institutions, all of whom obtained the diploma of psychological medicine, he was also lecturer in morbid psychology at the University of Birmingham in 1923-24-25, and was about to continue in 1926. The great loss to the world of such a widely experienced neurologist, especially in the field of research in mental disease, could not be estimated. The laboratory director, Dr F A Pickworth, was appointed to the directorship of the board last October, and the work subsequently carried on has been planned for some time to continue on the lines initiated by Sir Frederick Mott. The work on basal metabolism has necessitated the investigation of the basal rate of normal subjects, and the results have been collected in a paper presented to the Royal Society by Professor Haldane, and published in its *Proceedings*. Serological agglutinations to the typhoid dysentery group of organisms have been made as a routine on every patient in the hospital, and serological agglutination curves of animals have been determined following treatment to elucidate the atypical agglutination reaction of the patients. Material from chronic septic foci has been investigated for the type of organism and the histological appearances of the tissue. Many patients have been examined for the alteration of the permeability of the brain membranes. The post mortem appearances of the nasal sinuses have been carefully studied and further cases of nasal sinus disease discovered. One case showed a long-standing perforation of the sphenoid sinus into the pituitary fossa. The pituitary was surrounded by a mucinous septic fluid, and there was evidence of considerable extension subdurally of this septic process.

## Scotland.

#### THE PINEL CENTENARY IN EDINBURGH

In commemoration of the centenary of the death of Philippe Pinel, a laurel wreath was placed, on July 22nd on his bust, which is built into the archway of the Royal Edinburgh Mental Hospital at Morningside. Sir H Arthur Roe, chairman of the General Board of Control for Scotland, who presided at the ceremony, referred to the magnitude of the change in psychiatry which could be traced back to

the labours of Pinel in France. Dr H Calm of Paris, commenting on the historical friendship between Scotland and France, said that, though Pinel had died in 1826, the statue to his memory in Paris was only erected in 1883, while the bust in Edinburgh had been placed in position as early as 1838. Dr Hamilton Marr, president of the British Psychological Society and one of the vice presidents of the Section of Mental Diseases at the Annual Meeting of the British Medical Association at Edinburgh, compared the aspirations and achievements of Pinel with those of Lister.

#### EDINBURGH DENTAL HOSPITAL

The new buildings of the Incorporated Dental Hospital and School were opened on July 15th by the Right Hon. Sir Francis Doyle Acland, chairman of the Dental Board of the United Kingdom. Dr William Guy F R C S, dean of the school, presided. In declaring the buildings open, Sir Francis Acland said that the work of the Dental Board fell under two chief headings. The first was to improve the importance of dental health as a basis of general health and of national efficiency, and the second to take care that the means for securing dental health were as good as it was possible to make them. The Board was using the annual fees paid by the dentists admitted to the *Dentists' Register* since the passing of the 1921 Act in order to give to others a better training. He believed that more dentists would have to be trained as the enormous importance of dental health became better appreciated. The reputation of the Edinburgh Dental School showed that the scientific and practical aspects of dental education were combined in it in an unusually thorough way. Only in those districts where, in addition to a fresh supply of competent dentists, the needs of the dental hospital were fully met could the claim be substantiated that the dental needs of the people were properly provided for. Among such districts he hoped that Edinburgh might always take a prominent place. After declaring the buildings open, Sir Francis Acland presented the prizes for the session. The new buildings, which have a handsome frontage in alignment with the other buildings in Chambers Street, stand in front of the old Dental Hospital, which has not been demolished. The present extension has cost £17,000, and has been carried out with the help of the Dental Board, which contributed £5,000 towards the new buildings, and £1,000 towards their equipment. A dinner to commemorate the official opening of the new buildings was held the same evening and Dr William Guy, who presided, remarked that he had seen the Edinburgh Dental School grow from the time when it occupied a single room at No 30 Chamber Street. From there it had migrated to Lauriston Lane and occupied a saloon; next it returned to 31, Chambers Street where the Dental School shared a building with the Eye Dispensary, nor it had a school in the city of Edinburgh, in which the facilities were fully adequate to the complete instruction and education of a very large number of dental students, he believed that the men who obtained there the highest at the Royal College of Surgeons need not fear comparison with men who had received their education anywhere else.

#### CHEMISTRY IN THE PROGRESS OF MEDICINE

The Society of Chemical Industry held its fortieth annual meeting in Edinburgh last month. It was attended by about 250 delegates who were received by Lord Provost Stevenson on behalf of the city and by Professor Sir Thomas Hudson Beare, dean of the faculty of science on behalf of the university. The dean remarked that in 1912 it had been decided to house the chemical department of the university in a new building. Although this project had been delayed by the war the university had now embarked on an expenditure of about a quarter of a million sterling for this purpose. The debt for the building of the great chemical laboratory at West Main had been practically extinguished already. The question of degrees in science had also been considered and they had been reorganized under a new ordinance. At the meeting followed Mr Francis H Carr C B E, president and delivered an address entitled 'Chemistry in the progress of medicine'. Pure and applied chemistry were, he said,

equally necessary for progress in the field of chemical industry, and medicine was dependent upon chemistry in some important respects. One of the principles of medical treatment to-day was to help the body to produce its own curative agents. The effect of most of the medicines employed was not directly to cure, but to relieve symptoms and to secure rest, and thus enable the body to overcome disease. Among the older drugs some, such as emehona and ippecuanha, acted directly as curative agents, and the lecturer directed particular attention to these and to the numerous synthetic chemotherapeutic substances which now found a place in medical treatment. Enough was not yet known regarding the physiology of living processes to enable a reasoned plan to be framed on which to search for chemical agents that would restore the unhealthy body to its normal condition. The chemical constitution of adrenaline, thyroxine, and histamine had been ascertained, and these compounds could be prepared synthetically, but the methods of their release from the glands which contained them was not yet known, nor even whether they could exert their action without first being built into more complex molecules within the body. In spite of numerous investigations on the production of antibodies, when bacteria or foreign proteins were introduced into the body, nothing of their real chemical nature was known. The fact that a chemical substance would destroy micro-organisms in a test tube was no guarantee that it would be of use in combating infection by the same organism in the living body. It was evident that the best therapeutic agent was likely to be the one which most nearly imitated nature, and it now appeared probable that the body by no means played a passive part in the effects thus obtained, as suggested by phenomena seen in the case of the action of salvarsan. Dale had pointed out that certain parasites in the blood of a mouse became more resistant to arsenical drugs after the animal had received a number of incompletely effective doses, whereas if the organisms were then transferred to rats they again became susceptible. Other observers had shown that a period of time elapsed between the injection and the development of the maximum toxic action, associated probably with oxidation-reduction processes in the cells. There was no reason to suppose that a dye produced any particular antiseptic effect because of its colour, many colourless substances would doubtless act as well, but the antiseptic property could not be so readily detected in them. Thus Bayer 205 and Fournier 309—colourless complex mer derivatives allied to dyestuffs—had a remarkable therapeutic action in sleeping sickness. Although effective *in vivo*, they had little action on trypanosomes *in vitro*, thus indicating that the host participated in the destruction of the parasite. A property which effective chemotherapeutic agents should possess was that of long-continued action. Such effects had been demonstrated in the case of bismuth. More effective therapeutic agents had been discovered against protozoal than against bacterial diseases, for experimental work in the former had been easier and less reliance had been placed on experiments carried out purely *in vitro*. The fact that a suitable animal test might lead to the discovery of useful therapeutic substances was shown by "plasmoguin," a quinoline derivative allied to quinine and most effective in the destruction of the crescent forms of the malarial parasite. The test animal used in this particular instance was the canary, infected with the parasite of avian malaria. The lecturer believed that future advances in chemotherapy lay in the direction of biochemistry, and needed more effective contact between workers in chemistry, bacteriology, physiology, and clinical medicine, less reliance must be placed on experiments *in vitro*, and adequate animal tests must be followed by extensive clinical trials.

#### ANNUAL REPORT OF THE SCOTTISH BOARD OF HEALTH \*

##### Water Supply

Under water supply it is satisfactory to observe that in terms of the last of a number of schemes entertained by the town council of Perth for the water supply of the city, as confirmed by Parliament last year, a chlorination plant

for the River Tay water is to be installed to the satisfaction of a person approved by the Scottish Board of Health, while the engineer in charge and the bacteriologist retained by the council must likewise have the Board's approval. Examples of outlying towns or villages which, though wishful to improve their supplies, have been deterred by prohibitive costs, are also cited in this section.

##### Veneral Disease

From a tabular analysis covering a five-year period it emerges that syphilis, soft chancre, and mixed infections in males are showing a steady decrease. New cases of gonorrhoea in males increased up to 1924-25, but have since declined. In women new cases of syphilis and soft chancre are diminishing in number, but gonorrhoea in 1925-26 showed a rise of 30 per cent, ascribed in part to the opening of four new treatment centres. The percentage of defaulters is slowly growing less. Edinburgh and Glasgow have each appointed a visiting nurse almoner to deal with these persons.

##### The Hospital Question

Reference is made to the report of the Hospital Services (Scotland) Committee, submitted in January, 1926. The committee, under the chairmanship of Lord Mackenzie, made certain recommendations in an attempt to secure, by co-operation all round, and not least between the voluntary hospitals and the local authorities, a continuously adequate hospital service. Such co-operation the Scottish Board of Health has always sought to encourage, and arrangements in this spirit seem likely to fructify at Stirling and Falkirk, where it is in contemplation to include a maternity wing in the proposed re-creation on a new site of the two general hospitals concerned. The enlightened policy of the parish council of Glasgow, which has raised Stobhill to the rank of a first-grade hospital, placed its surplus beds at the disposal of the Glasgow Royal Maternity Hospital, and opened its doors to receive encephalitis lethargica from every part of Scotland, is another pertinent instance. The town council of Aberdeen, anticipating Pool Law reform, are entering into a contract with the parish council to take over the Pool Law hospital and treat all Pool Law patients. The Scottish voluntary hospitals, too, are consolidating their position. The Northern Infirmary at Inverness is to be reconstructed, and general infirmaries in Glasgow and Edinburgh are erecting auxiliary hospitals. These various enterprises are all to the good, but there is still a shortage of general hospital beds in Scotland, and a national organization on the lines recommended by the Mackenzie Committee remains a pressing need.

##### School Health Administration

There were approximately 823,028 pupils in average enrolment in 3,458 State-aided schools in Scotland, in all of which there was systematic medical inspection. The total number of children in selected age groups examined during the year was 254,570. In addition, 209,574 special examinations were made. The total examinations were 464,144, an increase on last year.

The nutrition of 61 per cent of the children examined was below average, of 13 per thousand very poor. Marked enlargement of tonsils and adenoids was noted in 4.9 per cent. At least 6.5 per cent of the children in school have defective vision requiring glasses. Heart defects, organic or functional, were found in 1.4 per cent. Actual vermin were discovered on the heads of 2.16 per cent. The short hair now common should make it easier for parents to prevent infestation. The school medical officer of Roxburgh, however, suggests that since bobbed hair needs less attention it probably gets less. Mild infestation among girls in Roxburgh is increasing. Owing to the dispute in the coal-mining industry a fairly extensive scheme for the feeding of school children was adopted in most colliery areas.

Defective vision was treated in all districts. Renfrewshire education authority have introduced special classes for the blind of school age. Orthopaedic treatment is provided by a few authorities. In Glasgow two medical gymnasts are employed full time. Orthopaedic appliances were



supplied to 112 Glasgow children. Lanarkshire children received treatment at the Glasgow Royal Hospital for Sick Children and elsewhere.

#### The Insured Sick

The district medical officers of the Board, who act as referees and consultants, have now been at work for over five years and in that time 83,045 persons have passed through their hands. Three studies, based on this field of work, which are presented in the report, furnish material for estimating the medical significance of the system of national health insurance. The study of urban versus rural conditions as affecting the incidence and causation of incapacity reveals a higher proportion of lung tuberculosis in rural than in urban areas. In both areas rheumatism, rheumatoid arthritis and cardiovascular disease increase as incapacitating factors in each successive decade. The weight of anaemia, in the ages at which it occurs, appears as approximately equal in rural and urban areas. This equality is, however, fallacious, since 70 per cent of the rural cases were domestic servants who had given up situations in towns on becoming chlorotic and had returned to their homes in the country in order to recuperate. The seasonal incidence of rheumatism and non-tuberculous pulmonary disease is not dissimilar in urban and rural areas during most of the year. From October onwards, however, both conditions show a fall in rural areas but a rise in the towns. The study of the work of the district medical officer in a consultant capacity exhibits the variety of the circumstances in which he can aid the insurance practitioner. His work is of most value in the rural areas, where the sense of medical loneliness is so often felt, especially in cases where improvement is slow and friends are apprehensive. A note on mitral disease following rheumatic fever is appended to this study. The third study is based on cases of bronchitis referred in 1925. The weight of bronchitis among all forms of illness referred was represented by 8 per cent. It is questioned whether bronchitis alone results in a permanent nil working capacity unless in a small minority of cases. Except during acute or subacute attacks such patients are usually capable of some form of employment. It is admitted, however, that the disease entails a lowered working value. Of 495 cases of bronchitis in the district 297 were in the heavy trades, of whom 199 were miners, 57 general labourers, 18 metal workers, and the remaining 23 distributed among the occupations of iron and brass founders, woodworkers, quartermen, engineers, dock labourers, builders, blacksmiths, and brickmakers.

#### Other Subjects

Among other subjects of interest are influenza on St. Kilda, maternity service and child welfare, supervision of the food supply, including the Milk and Dairies (Scotland) Act, 1914, veterinary inspectors, dairy by-laws, Milk and Dairies (Scotland) Order 1925, milk-borne infections, meat inspection, humane slaughter, and preservatives in food, the handling and storage of food, national health insurance in its manifold aspects including dental and ophthalmic benefit, anaesthesia, mileage, and dispensing, Poor Law administration, old age pensions, and the welfare of the blind.

#### Conclusion

The foregoing are some of the more outstanding features of an annual report which, while conveying appropriate information on the departmental side, has at the same time a strong medical interest. The *res medica* is by no means a new topic in the reports of the Scottish Board, but it seems as if in that for 1926 it had emerged into special prominence. This is great gain. There is in these days a good deal of talk on the subject of health propaganda which has for its object to shepherd the masses along good ways of living. Any enterprise so directed is useful, and should be encouraged, but there is a not less important field of health propaganda, which is worthy of cultivation, among educated and well-informed people whose views or convictions on medical questions would influence or guide the trend of opinion in the country. To the perusal and attentive study of such the Board's report is commended. It will show them how medical thought is

moving, indicate the lines of administrative advance which are most vital at the present time, and will, if they are public spirited citizens, whether medical or lay, enlist their cordial co-operation in accredited schemes for the promotion of the public health.

## Ireland.

### REGISTRATION OF DIRECT REPRESENTATIVES

#### MEDICAL PRACTITIONERS ACT 1927 (IRISH FREE STATE)

NOTICE of election is issued for two direct representatives of the medical profession resident in the Irish Free State to be members of the Medical Registration Council. Any registered medical practitioner resident in the Free State is eligible to be nominated as a candidate, and every registered medical practitioner resident in the Free State is entitled to take part in nominating two candidates but no more. Every nomination paper must state the names, address, and registered qualifications of the candidate nominated. It must be signed by not less than three registered medical practitioners resident in the Free State. Nomination papers may be obtained from the Returning Officer, Room 242, Department of Local Government and Public Health, Upper Morrison Street, Dublin. Votes cast by voting papers must be received by the Returning Officer not later than August 22nd, 1927.

#### Dr P. J. Powlette's Candidature

Dr R. J. Powlette has consented to become a candidate as a direct representative of the medical practitioners in the Free State. He is one of the best known medical men in Ireland and for the past twenty years has given very freely of his time to the interests of the profession. He has been selected on several occasions by the joint medical organizations to represent the interests of the profession on all commissions of a medical nature. Through his extensive knowledge of medical matters generally and a commanding personality, he has been responsible in recent reports published by commissions and committees for recommendations of outstanding importance with regard to public health matters and the profession. Dr Powlette has been an active member of the British Medical Association, and was some years ago president of the Leinster Branch. He is a member of the Irish Medical Committee and of the council of the Irish Medical Association. He was also a member of the Irish Public Health Council in 1919, and of the Committee of Inquiry on National Health Insurance on the Public Medical Services in 1924. Dr Powlette is assured of the support of all medico-political organizations in Ireland. It is hoped that medical practitioners who will receive voting papers, will fill them up at once and forward them to the Returning Officer.

## Correspondence

### THE INTERNATIONAL CONTROL OF DRUGS OF ADDICTION

SIR—In the JOURNAL of July 16th (p. 167) an account is given of the attempt to secure the international limitation of morphine and other drugs of addiction to legitimate purposes. It is now generally recognized that the use of opium, either for eating or smoking, is responsible for relatively little harm at any rate in the West. It is only after the chemist has extracted the alkaloid morphine that the European falls a victim to the vice.

Most European countries prepare morphine from opium, but under the international convention this is done only as it is required for the legitimate purposes of medicine or for export to other countries under strict supervision. Unfortunately this convention was so worded as to leave plenty of loophole for the manufacturer to evade these restrictions, morphine derivatives which are not known to lead to addiction can be exported freely. As an example of my meaning I may say that it is known at the present time that certain Continental manufacturers are

exporting a new compound of morphine and benzene, a product which is not known to be a drug of addiction, and which, therefore, can be manufactured and exported like other non-addiction drugs. If this substance is treated with potassium carbonate the morphine is readily regenerated, and so it happens that morphine is easily transferred from country to country. No doubt the League, through its experts, will shortly be able to show that this substance can lead to addiction like morphine, and restrictions will be imposed, but a new substance will then doubtless be forthcoming to replace it. These facts point to the advisability—if this should be a practical policy—of controlling the growth of the opium poppy in Turkey, Persia, and other places—that is, of limiting the supply of material from which the alkaloid is manufactured.

The danger to Europe and America, however, does not lie even with morphine, but with the much more dreaded substance, the direct derivative known as heroin. This substance acts with rapidity and does not constipate, or does so only to a negligible extent. It is the "perfect" narcotic for the social and sexual pervert. It is not perhaps properly recognized, even by medical men, that heroin acts also as a powerful aphrodisiac, exaggerating pelvic reflexes for several hours after injection or snuffing. It excites the male in this respect much as cocaine excites the female.

Many thoughtful people who have followed the trend of modern addiction are convinced that evidence shows that heroin addiction is spreading in spite of all preventive measures. They fear that it is likely to become, in Europe as a whole, as serious a menace to social life as it is in Russia and America. At present the evidence afforded by the committee of the Ministry of Health sitting under Sir Humphry Rolleston has made it clear that England is relatively free from this vice. Nevertheless the "narcotic" is believed to be an increasing product of our civilization, and it is especially these people who fall ready victims to heroin. The soil is ripe, but the opportunity, knowledge, and material are not easily available.

On the Continent I have been left with the impression that experts are gradually becoming convinced that prohibition of the manufacture of heroin is the best and perhaps the only method of destroying this evil, a principle which I believe has already been adopted in America. In England, where there is no immediate menace, physicians freely prescribe heroin, and some distinguished physicians assert that for certain purposes its usefulness cannot be replaced by either codeine or morphine. While I do not in any way wish to grant this teaching, it appears to me that the time is coming when we shall have to choose between two policies—either to encourage the manufacture of heroin by still prescribing it, or to range ourselves with the United States and some European countries and adopt the policy of complete prohibition of heroin in this country for any purpose.

The menace on the Continent is already very real, and the medical profession in this country may be required to make a decision, sooner or later, as to whether the safety of and benefit to the British Empire which may be attained from the complete prohibition of heroin may not be greater than the palliative relief afforded to a few patients, which some of us think may be obtained with codeine or morphine—I am, etc.,

W E Dixon

Pharmacological Laboratory, Cambridge  
July 25th

### THE PROPOSED NEW HOSPITAL POLICY

SIR,—Mr Hey Groves, in his address published in the *JOURNAL* of July 23rd (p. 151), advocates the support of the hospitals from the rates and taxes. I agree that it is doubtful if voluntary aid will be sufficient to meet the demand for hospital treatment much longer, as the voluntary hospitals are now living such a hard financial struggle. But, recognizing the fact that voluntary support comes from those best able to pay, and who might feel they ought to do so, I think we should be glad to postpone the substitution of State aid for it, as this would necessitate an increase of the income tax, which would levy contribu-

tions from those by no means wealthy, as well as the rich, and, I fear, if the hospitals were also supported out of the rates, from even the poorest classes, which I think would be most undesirable. Neither do I think any further demand should be made on this class, in the form of insurance, for the support of the hospitals.

It may be suggested that a compromise would be a wise policy—that the charitable public should give all they can and the deficit be made up by a State grant. But if the charitable public knew that the State would make up any deficiency would they give at all? Are they not likely to leave all support to the State? It seems to me that the hospitals must be supported wholly by charity or wholly by the State. I do not refer to occasional State grants to help hospitals in exceptional financial difficulty, but to permanent aid.

I cannot agree with Mr Groves that the hospitals at present supported by voluntary contributions must be supported by the State in order that the standard of efficiency for treatment, teaching, and research may be raised, as I consider that the voluntary hospitals are very well equipped and very efficient, even having regard to the requirements of the present day.

As to Mr Groves's proposal to scrap existing city hospitals and build new ones in the country—for many patients treatment in a country hospital with open-air wards is, of course, clearly indicated, not only as it is valuable in all cases of tuberculosis, but also, I understand, in cases of heart disease in childhood, and it is an advantage in the treatment of many forms of chronic disease. When patients require very prolonged hospital treatment, as orthopaedic cases often do, it is also clearly indicated. But I do not think it is necessary that a patient who will only be confined in hospital a few weeks, with a broken leg, or an acute attack of pneumonia, or has required operation for some acute abdominal condition, or comes into hospital for a radical cure of hernia, should be in a country hospital. If it is suggested that a country air is an asset in treatment then even those whose stay in hospital is only short should have it, I would point out that it is such a subsidiary factor in the treatment of these cases as to be really negligible. It is a distinct advantage to have patients in the city hospital, as they are there readily accessible to the visiting staff, to their relations, and to the students. To scrap these city hospitals and replace them by country hospitals seems to me an unnecessary and very regrettable waste of money, which should not be incurred, even if the money to build new hospitals were provided by the rates and income tax, and not out of charity funds.

Certainly hospital extension might with great advantage be carried out by the provision of these open-air wards in country hospitals. Such cases as would materially benefit from treatment in them could be shifted out to them, and thus beds left free for cases suitable for treatment in the city hospital. No doubt if we rebuilt many of our city hospitals we should considerably improve their construction, but really they are too good to be scrapped, even though the site of their sites, as Mr Groves suggests, would help in some degree to pay for the erection of the new buildings.

One reason given by Mr Groves for abandoning the two large hospitals in this city (Bristol), and erecting one hospital large enough to receive all the cases, is that it would allow medical and surgical cases to be segregated into subsections, each under the care of one physician or surgeon, so that there would be departments of orthopaedic surgery, urogenital surgery, diseases of the rectum, the nervous system, and the heart, and so on. I agree that such increased specialization would be an advantage to the patients, for obviously the man who concentrates on the diseases of one region of the body, if he has sufficient cases to give him a wide experience, is able to make better diagnoses and provide better treatment than one with a less specialized knowledge. But the question is, Would this system work? The difficulty would be that when medicine and surgery had been subdivided into all these sections, and every physician and surgeon transformed into a specialist in a subsection, a city of the size of Bristol (or even a larger one) and its surrounding

may not supply enough cases of these special affections in private practice for these very numerous specialists to make a sufficient income. If it is suggested that this difficulty would not arise, because in future all members of the staff would be paid a sufficient salary for their hospital work by the State or municipality to make them independent of private practice, then the question will come: How are the members of the community who can pay for their treatment by these specialists to obtain their services? Is it proposed that they should become wholly Government officials, undertaking both hospital and private practice for their State salary, so that in future the public would only have the services of hospital specialists as paid State officers?

I think it is quite clear that a physician or surgeon taking over the charge of one of these new departments must devote his whole time to that line of work. A surgeon in charge of, say, a genito-urinary department in which were treated all such cases in a large city, would have to devote the whole of his hospital work to this department, and hence would have to confine his private work to that line of practice also, for all his hospital experience would only be required in that department of work. But what work will be left for the general physician and surgeon to do that will ensure him sufficient private practice? Would he become extinct?

This proposal to break up medicine and surgery into minute sub-sections and its effect on the general physician and surgeon, must also be considered in its relation to the teaching of students. The present plan of clerking and dressing for certain members of the staff would have to be abandoned, for there would either be no general physicians and surgeons, or their supply of cases would be too limited to teach from as the creation of all these special departments would leave very few cases for the general physicians and surgeons. The student would have to obtain his clinical knowledge by attending all the new departments, but as they would all be working separately he would have a very limited part of his curriculum to give to each. What would be the result on his training? It seems to me that the whole matter needs the most careful consideration—I am, etc.

BRISTOL, JULY 31st.

CHARLES A. MORTON

SIR,—I have read with great interest in the JOURNAL of June 23rd (p. 131) Mr. H. V. Croves' presidential address—a powerful appeal for the better organization, co-operation and co-ordination of our hospitals, the crying need for their development as one service. I can quite appreciate his impatience with the present system, or want of system, and his irritation at the very serious waste of opportunities.

I have no desire to re-open the controversy as between voluntary and State hospitals, but I cannot help thinking that Mr. Croves has overlooked the report issued six years ago, of the Voluntary Hospitals Commission. This report drew attention to the points so eloquently stated in Mr. Croves' address and suggested a system of local voluntary hospital committees and where necessary joint committees of these local bodies, for the better organization of the voluntary hospitals of any area. It pointed out that all that was needed was the active and willing co-operation of the hospitals.

A conference with a view to forming such a joint committee for Bristol, Somerset and Wilts was held in Bristol four years ago, but owing to the attitude of the two Bristol general hospitals the whole scheme aborted. I have no wish to pillory Bristol. I merely mention this instance to show that it is not the voluntary system that is at fault but the want of vision, the conservatism, the individualism, the parochial spirit of some of the governing bodies concerned.

It is quite possible that the methods to which resort has had to be had to obtain funds for these institutions have fostered the spirit of detachment. It is local contributory schemes and hospital Sunday with their wider appeal to the wants of the area and not of any particular institution should be some remedy for the disease. The

more general the practice of promoting hospital funds for the district and not for an institution the better the chance of getting adopted a policy of co-operation.

But I believe that the most powerful force at our disposal to bring about the reform Mr. Croves calls for is a carefully considered and agreed action of the medical profession in the districts concerned and this can best be obtained through the organization of the British Medical Association.

If a meeting representative of all the medical men in the district would discuss Mr. Croves' paper apart from the question of voluntary or State support would agree on a policy and would bring it to the notice of all authorities concerned and press it I have sufficient faith in the power of our profession to feel confident that in the end they would get their way—I am, etc.

BRADFORD on MON. JULY 24th

C. E. S. FLEMING

SIR,—I congratulate Mr. H. V. Croves on his bold statement of policy (July 23rd p. 131).

The change from voluntary to State control has increased the efficiency of the election system. Should the voluntary hospital system suffer a like change financial resources would be increased. Central control and greater co-ordination might be expected and an increase in the efficiency of this important national service.

So far the State has been most active in preventive medicine but it has made inroads into the domain of the voluntary hospital system. It is to be congratulated for the success which has attended its assumption of control in the treatment of venereal diseases.

That the voluntary hospital system has survived so long is a tribute to the excellence of its work but the time for change is ripe if only for the reason that shortage of funds is hampering the work—I am, etc.,

C. GIBSON

WIDEN, JULY 26th.

#### SALICIN AND SALICYLATES IN THE TREATMENT OF INFLUENZA

SIR,—I am sure all general practitioners must be greatly encouraged and inspired by the excellent address of Mr. E. B. Turner before the Metropolitan Counties Branch (JOURNAL, July 16th p. 93) on the clinical and therapeutical aspects of influenza since 1839 and on treatment by salicin. I have had somewhat similar experiences since 1890, the only difference being that my results were better with sodium salicylate in big doses repeated frequently than with salicin. This may be accounted for by two variables. When at the meeting of the British Medical Association at Edinburgh in 1893 Dr. J. J. Reid a paper on chorea, he mentioned the fact that nearly all his cases in the Great Ormond Street Children's Hospital in London had rheumatic nodules on the hands or feet. The late Dr. I. J. Reid at Steven was sitting next me at the time and I asked him if that was his experience in his Glasgow wards and he said, "No." On returning to Glasgow we went over a number of cases in the various hospitals, and privately and did not have the same experience. Later in the year we were both in London together and Dr. J. J. Reid verified his statement by showing his cases in Great Ormond Street. Over even the short distance of 100 miles we evidently have these race differences and this accounts in a great measure for our different experiences.

One of my teachers in medicine was great on salicin in rheumatism 20-grain doses every two hours. I was not long in general practice till I found that sodium salicylate responded better to the salicylates than to salicin and my experience was the same in epidemics of influenza. I agree with Mr. Turner's remarks on arthralgia and rheumatism given in his address. In regard to big doses I have given 60 grains of sodium salicylate at one time. The common practice of an Edinburgh consultant in the epidemics varied from 10 to 20 grains and he was not at all different in treatment. I had not my own experience from the very beginning. I was a poor lad none till later in the disease and then I lasted for an indefinite period. I am

with a friend an epidemic in the Midlands of England which was very much worse in type and in mortality than anything I had seen in Scotland. In an epidemic I saw in Barcelona in Spain the type was gastro-enteric, not very severe, and was followed by few sequelae. I think Christison was right when he characterized rheumatism as a form of exorating malaria or Roman fever, and influenza seems to be similar, since the products of the *Salix alba*, or witch willow, act very satisfactorily in both conditions—I am, etc.,

JAMES CRAIG, L R C P and S

Glasgow, July 16th

### THE EPIGLOTTIS IN RESPIRATORY OBSTRUCTION UNDER ANAESTHESIA

SIR,—Mr H Mortimer Wharry's account of the epiglottis in respiratory obstruction under anaesthesia (*BRITISH MEDICAL JOURNAL*, May 21st, p 914) is of considerable interest. In the *JOURNAL* of August 25th, 1923, Mr Wharry described in detail a case of epiglottic obstruction of the larynx, in which the patient became "completely cyanosed," "the epiglottis was entirely devoid of cartilage, and was of the consistency of a soft piece of wash-leather. It was lying right over the larynx, and in tight contact with the posterior pharyngeal wall, to which it was adhering by means of sticky mucus. It was thus acting as a valve, permitting a little air to escape from the chest, but none to enter. On hooking the epiglottis forward with my finger the patient took several deep breaths and became quite pink again."

In the corresponding columns of the *JOURNAL* for February 23rd, 1924, is a contribution on the same subject, entitled "Prevention of death under chloroform anaesthesia," by Lieut-Colonel F J Palmer, R A M C (Assam). He states therein "respiration fails first owing to the epiglottis sagging back and occluding the upper aperture of the larynx; forcible attempts at inspiration may lead to its rupture." "I am not prepared to state that all cases of chloroform emergency are due to this cause, but it is my belief that the overwhelming majority (probably 80 per cent) are. I am of opinion that in every case, during chloroform administration, the respiration fails first, as the Hyderabad Commission stated, but that the interval between respiratory and cardiac failure, in the case of a feeble heart, is so short that the respiratory failure is overlooked and the death attributed to primary heart failure." He states that he made this discovery of obstruction of the larynx by the epiglottis some seventeen years before, and that subsequently, in seventeen years of surgical work under varying conditions, where chloroform was usually the anaesthetic of choice, he never lost a case from respiratory failure under anaesthesia.

As shortly before this I had been present at a case of death from respiratory failure under anaesthesia, I was much interested. A few days later I was looking on at an operation on a tonsillar growth (dysplasia). Soon after the gag had been placed in position respiration ceased. The throat was swabbed out, etc., and various expedients tried without effect. Rather diffidently I suggested a digital examination. I found the epiglottis impacted in the larynx, and on this occasion, on being pried up, it flew out with an audible click (this is the only time I have heard it "click" out). It was audible to those close to the patient's head.

Since then I have taken the opportunity, whenever any respiratory trouble arises under anaesthesia and is not immediately overcome, of making a digital examination of the epiglottis. Up to the present time the epiglottis has been found to be the sole cause of the respiratory failure, and, in all, I have now seen eight cases of this type. It has occurred with four different anaesthetists, during abdominal as well as throat operations, during administration of chloroform, and also when nothing but ether had been administered. I am led to believe that many deaths under anaesthesia may be due to this preventable cause.

Two factors appear mainly responsible in my opinion, and result in the actual occlusion: (1) change in the position of the epiglottis, (2) commencing inspiration. The

first consists in the epiglottis sagging back, and may result from falling back of the jaw, or the tongue, from swallowing before deep anaesthesia is completely attained, from relaxation of the extrinsic and intrinsic tongue muscles, or from disturbance of the epiglottis during swabbing. Commencing inspiration completes the misfortune by suction on the epiglottis. In several cases the epiglottis appeared to have been completely "swallowed" by the larynx.

The emptiness of the lungs minimizes the chance of the epiglottis being spontaneously freed. A little air may escape from the chest, but none enters. On artificial respiration no air can be heard passing in and out—a useful and suggestive sign, if somewhat sinister. One is easily led to believe that air is passing to and from the lungs when this is not the case.

A striking feature of epiglottic obstruction is the silence of the process. Before anything amiss is noticed the obstruction is a *fait accompli*. There is no sound of active respiration, no movement of the diaphragm with abdominal excursion, no convulsive effort. The patient goes from bad to worse, with increasing cyanosis and failing pulse.

Once the obstruction is relieved, provided this is done early, respiration starts immediately. The respiratory centre is undoubtedly strongly stimulated at first, and if the obstruction is relieved before the centre has reached the stage of depression no trouble is likely to be experienced from this cause. Where artificial respiration is necessary oxygen administered alone would, in my opinion, be sufficient, as carbon dioxide would not be required as a stimulant to the respiratory centre, and in cases where the centre is depressed would be harmful.

The chief difficulty in freeing the epiglottis is due to inaccessibility. Curved instruments, direct laryngoscopy, or swabbing may be necessary if digital manipulation fails. Pushing the jaw well forward or traction on the tongue will unfortunately not usually free it. The digital method described by Colonel Palmer is useful. Endotracheal anaesthesia rules out the possibility of this type of obstruction, but may not always be available where an anaesthetic is essential, and the obstruction may arise during the anaesthesia before the introduction of the catheter.

Occlusion by the epiglottis may play a part in asphyxia neonatorum, particularly the cyanotic variety, and further investigation in these cases may be instructive.

In considering respiratory failure under anaesthesia occlusion of the larynx by the epiglottis appears to have passed largely unnoticed. In my opinion this type of respiratory failure is more common than is generally recognized, and is probably responsible for a considerable proportion of deaths under anaesthesia—I am, etc.,

G H CRAIG, F R C S Eng,

Assistant Surgeon, Royal East Sussex Ho Spital.

St Leonards on Sea, June 5th

### THE DEFINITION OF BLINDNESS

SIR,—In the issue of May 7th (p 848) there is a reference to the definition of blindness. The matter has come up in Melbourne in very practical form. In the Royal Victorian Institute for the Blind those who are willing are paid the difference in rate between their earnings and what they would have received if they had not been blind. The definition of total blindness adopted by the Australasian Medical Congress of 1923 was not being able to count fingers at two to three metres and possessing no vision which would assist in an occupation.

It will be obvious that people with vision of 6/60 will be helped considerably in doing their work, even as supposed blind people. Consequently two classes have come into existence, at all events from a scientific point of view—those possessing 6/60 vision and those who are totally blind. In my opinion the earning capacity of the two differs considerably.

On the administrative side I do not think the matter is finalized at present, but the issue must be settled sooner or later—I am, etc.,

Melbourne, June 12th

JAMES W BURRETT

## THE GENERAL PRACTITIONER AND ANTE-NATAL WORK

Sir,—At Edinburgh, the Representative Body resolved

That it be an instruction to the Council to consider the Midwives Act 1918 in the interests of all concerned in ante-natal work.

In moving this I dealt very briefly with the ante-natal problem, only referring, in the order of their importance, to those concerned (1) the unborn child, (2) the expectant mother, (3) the general practitioner, (4) the public, (5) the certified midwife. It can be proved clearly that none of these are getting anything like a square deal.

1 and 2 The mother and child have to negotiate an entanglement of very inferior, still difficult, red tape before they reach the skilled services of a practitioner in emergencies, not infrequently too late to prevent the calamities most of us are too familiar with.

3 By the public health authorities the practitioner is deemed competent enough to deal with the grave emergencies arising before, during, and following the lying-in period but is harried from carrying on that very work, ante-natal, by which these grave emergencies might be anticipated, mitigated, or even wholly eliminated. Why do the health authorities fail to co-operate more closely with the modern practitioner only too willing to carry out this essentially preventive work? Why is the general practitioner—competent to do this work, willing, and in a favourable position to influence, not a few, but every expectant mother—excluded from this, his legitimate field of work?

4 Is the attendance of 25 per cent. (usually it is less) of mothers at these clinics, when financial provision is made for 100 per cent. attendance, giving the public a fair deal? Surely not, especially when this low percentage does not include the very poor mothers, the most ignorant mothers, but often the reverse. The profession could demonstrate to the public that a more efficient and fuller service could be provided at the same, or even less, cost, than the services established in many areas without the general practitioner being allowed to participate in any way.

5 From many midwives complaints come of pressure brought to bear upon them to undertake work which is in the sphere of medical practice, involving careful measurements, tests, etc., to arrive at accurate diagnosis.

I write to urge the presentation of the case by the rank and file of the profession to the Council of the British Medical Association, not too fully versed, it seems, in all the facts. The Representative Body means by the above instruction that the Council should press for the amendment of the 1918 Act, without which no advance is possible.

Surely every expectant mother—the poorer, the greater need—is entitled to have briefed for the protection of herself and child as early in the case as possible the services of a certified midwife and the medical attendant who will ultimately have to deal with any emergency which may arise?

Access to maternity and ante-natal clinics and the carrying on of the work there by all those members of the profession practising midwifery, supplemented by following the same ante-natal methods in their own consulting rooms, is the solution.

At the Representative Meeting, on the platform and elsewhere frequent allusion was made to the increasing menace to the very existence of private practice—not forgetting that this refers to private specialism of every kind as well as general practice—from the increasing number of public clinics and hospitals staffed by whole-time officials. I would add also from the increasing use of the so-called voluntary hospitals by all classes of the public, but to which the private practitioner, unless he is one of the privileged staff, has little, if any access, except in certain enlightened areas. The remedy must be "Reasonable access to all clinics and hospitals—save strictly teaching hospitals—for the private practitioner, whether general or specialist who is competent and willing to co-operate in bringing within the reach of his patient the best facilities for modern treatment."

This is too formidable a question to discuss further at the moment but that it is not beyond solution I am convinced, knowing that this principle has been put into practice in this industrial part of Kent (population 140,000) as regards all the voluntary hospital, the one Poor Law hospital, and also as regards part of the public clinics.

May I take this opportunity of correcting a slight but important misreport in the SUPPLEMENT of July 30th.

I said "I wished I could agree with Dr. Martin that if the general practitioner made himself efficient he had the solution of ante-natal work in his own hands", not that "I agreed with Dr. Martin". I venture to emphasize this by putting it that if one hundred per cent. of practitioners in Dr. Martin's or any other county made themselves one hundred per cent. efficient neither he nor any other medical officer of health could, if they would ( ), bring them into this important work, as the Act stands.—I am, etc.,

Dartford July 24th.

M W PENN

## BREATHING EXERCISES WITH MOVING ARMS AND MUSCULAR INHIBITION

Sir—May I be allowed to add a small quota to the correspondence on breathing exercises in the form of a reply to Mr. Paramore's letter of March 19-1 (p. 542)? I plead distance to excuse the lateness of this note.

The simple experiments which Mr. Paramore describes—for example palpating the pectorals, major muscle during abduction of the arm while lying—do not in my view bear the interpretation which he gives them. He writes "It is found that with and during the movement, as the pectoralis major is being extended (that is, elongated) its tone—its tension—that is, its state of contraction, progressively increases." (The italics are mine.) I agree that its tension increases but it is surely unwarrantable to deduce from this that the "tone increases" or that the muscle is in a "state of contraction". Surely the muscle is simply stretched passively by the movement of abduction of the arm and hence its tension increases. Similarly we may stretch a slack piece of rope by simple extension and so make it tense but it does not follow that the "tone" of the rope is different, or that it is in a state of contraction. I think that this explanation holds in all the examples which Mr. Paramore produces. In the case of the erector spinae the movements are obviously more complicated and opposing groups of muscles have to come into play simultaneously owing to the varying angles of inclination of the body. Again, in extending the leg the tension of the fascia lata is increased and it seems to me that on this account also the hamstrings feel more tense.

The arguments adduced by Surgeon Commander Hill in his communication of March 5th appear well founded and it is reasonable to suppose that in order to support the extra effectual weight of the raised arms various muscle groups have to keep the thorax and abdomen more rigid than normal, and he claims that the spirometer and x-rays confirm these statements.

Surely we cannot assume that the effect of raising the arms actively during breathing exercises has the same effect on the thorax as the passive movements in artificial respiration but Mr. Paramore in his third paragraph seems to make this a supposition. In artificial respiration the thorax cannot be actively and more rigidly fixed by contraction of other muscles, as Surgeon Commander Hill rightly claims, since the arms are raised during breathing exercises.

This explanation of Mr. Paramore's example therefore does not appear to be at variance with the theory of the inhibition of antagonistic muscles. He suggests that the inhibition is the exception and that active participation of opposing muscles is necessary for co-ordinated movement. The co-ordination may reasonably be explained on Hunter's theory of the sympathetic innervation of striped muscles.

According to Hunter (BRITISH MEDICAL JOURNAL vol. 1, 1922a) postural tone is due to contractile tone (omatic nerves) and plastic tone which is provided by non-medullated sympathetic nerves, innervating the "fixing" muscle fibres. On voluntary movement there is inhibition



of this postural tone, the new position is taken up by contractile fibres, and then the fixing fibres supply plastic tone to assist in maintaining the new position. This plastic tone is present not only in the muscles actively producing the posture, but also in the antagonistic muscles, and it is reasonable to suppose that there is more inhibition of contractile than of plastic tone in opposing muscles. Compared with the state of affairs in the moving muscles (where over-contractile tone is very obvious), there is relatively a preponderance of plastic tone over contractile tone in the antagonistic muscles. But this plastic tone in these muscles will not be evident (as is a contraction) on palpation by the hand. Co-ordination is thus provided, but the explanation of the tense feeling in Mr Paramore's examples is as I have outlined above.

The evidence for the reflex inhibition of antagonistic muscles is weighty, and a disturbance of this function and corresponding failure of co-ordination is more likely to be the explanation of the phenomena of the diseases mentioned by Mr Paramore than an active contraction of opposing muscles normally—I am, etc.,

ROBERT J GITTINS, M D

Friends Hospital Trust, C P, India

## Obituary.

SIR BRYAN DONKIN, M D, F R C P,

Late Physician to Westminster Hospital and a Commissioner of Prisons

WE announced with much regret last week the death, on July 26th, at his house in London, of Sir Bryan Donkin, at the age of 82. He had been in good health until comparatively recently, when his vigour began to fail.

Horatio Bryan Donkin was the son of a civil engineer. He was born at Blackheath, and there went to school. He entered Queen's College, Oxford, in 1862 as an open scholar and took a first class in Greats (classical). He attended St Thomas's Hospital and took the M B degree at Oxford in 1873. He proceeded to the M D in 1893, and was elected F R C P in 1880. He at first settled down in practice as a physician in London, and became attached to the Westminster Hospital (where he was lecturer on medicine) and to the East London Hospital for Children, Shadwell. He lectured also on medicine at the London School of Medicine for Women. On his appointment to be a commissioner of prisons and director of convict prisons he resigned these clinical appointments, and was appointed consulting physician in both instances. During his connection with the prison service he was a member of the visiting committees at the Borstal institutions, of the Royal Commission on Control of the Feeble-minded (1904-8), and of several departmental committees appointed by the Home Office. When he retired from the directorship he was appointed medical adviser to the Prison Commission. Afterwards he lived in retirement in London, but continued to take keen interest in matters relating to criminology and mental disease. He gave a course of lectures at the Maudsley Hospital on mental defect and criminal conduct, and delivered the Harveian Oration of the Royal College of Physicians in 1913, taking as his subject "The inheritance of mental characters." He received the honour of knighthood in 1911.

He was a frequent writer of articles, not only in the medical and psychological press, but also in the monthly reviews, and made many contributions to the *Times*. He took an active interest also in the prevention and treatment of venereal disease, and was one of the founders of the Society bearing that name. He held strong personal views on the subject, and did not always see eye to eye with some of his colleagues in the society. He was for a good many years a member of the British Medical Association, but never took an active part in its affairs. He was also an honorary member of the Royal Medico-Psychological Association.

Donkin, during early middle-life, and indeed beyond, was very well known in London, both to the profession of medicine and to biologists. In association with his friend Sir E Ray Lankester he was active in the investigation,

and on some occasions in the exposure, of spiritualistic methods. Intellectually in this matter, as indeed in all others, he was fearless and was not afraid to go where his observations and conclusions led him. The controversy was rather died down, but at the time to which we refer it was burning fiercely. Donkin was a clubbable man, he was particularly fond of the Swile Club, and followed its fortunes from Savile Row to Piccadilly.

Donkin married rather late in life, his first wife being a Polish lady. After her death he married again, an American lady, the widow of Mr Isaac Bites of Belfast.

## CHARLES CREIGHTON, M D

CHARLES CREIGHTON died on July 18th in the country village of Upper Boddington, Northamptonshire, to which he retired some years ago. He was born at Peterhead in 1847, graduated M A Aberdeen in 1867, studied medicine at Aberdeen, Edinburgh, Vienna, and Berlin, and received the degree of M D from his own university in 1878. For four years he was occupied with research on cancer for the Medical Department of the Local Government Board, and thereafter was demonstrator of anatomy at Cambridge for five years, taking the degree of M A (King's College) in 1880. He settled in London in 1881, and for the remainder of his life was largely occupied in the study of epidemiology and the preparation of books and numerous papers on subjects belonging to that department of science.

The death, in his 80th year, of Dr Charles Creighton should excite emotions of pride, shame, and sorrow in members of his profession, pride in his scholarly achievements, shame that his colleagues never paid him the tribute of respect willingly conceded to far smaller men, sorrow that what Johnson would have called the infirmities of his character, if they did not excuse, partly explained the cold hostility with which he was almost universally treated. Creighton was a voluminous writer, but it is practically certain that he will be remembered for two works. His translation of Hirsch's *Handbook of Historical and Geographical Pathology* for the New Sydenham Society secured him the kind of immortality gained by, say, Tieck and Sehlegel or North—namely, that earned by those who have made really available to foreigners the original text of an epoch-making work. His *History of Epidemics in Britain* admits him to the circle of great original writers, and is, in the strict sense of the word, a classic. The admirable literary style of this work can be appreciated by any educated reader, to assess its scholarship requires some independent experience of the subject matter. I have worked over a small part of the field and never detected any error of fact. But Creighton's historical scholarship was greater than is implied even by minute accuracy in citation and power of focusing the data. Anybody who studies the medical writers of the eighteenth and earlier centuries with a serious intention of understanding them eventually realizes that a great deal more is needed than mere study of the texts, that it is necessary to acquire a new sense of intellectual values by reading the books—particularly the Latin versions of the most popular works of Galen and Hippocrates—with the teaching of which the older epidemiologists were saturated. Although Creighton makes no parade of erudition it is obvious enough that he had taken these pains, and could, in the stock phrase of the *Arabian Nights*, both read a letter and understand it. He was wholly free from the neocentury error of supposing that because a writer of the seventeenth or eighteenth century uses words which, used as we use those words, seem nonsensical he was therefore writing nonsense. This was a great merit, a fine quality in an historical writer, but as Creighton had, like all other men, his share of human frailties, this very virtue betrayed him into a fault which his contemporaries had not generosity enough to forgive. The fault was that, while he tried to do justice to the past and succeeded in that aim, he never tried to do justice to the present. He despised the pseudo-historian who awards praise or blame in accordance with the extent to which the opinions or descriptions of the old writer can be

"identified" with those of modern idols of the market place. His reaction was either to ignore wholly or to mention with cold contempt those lines of thought and research which his own contemporaries highly prized. He acted in the spirit of the epigrammatist who said that whatever is generally believed is necessarily false. Contempt is more wounding to one's vanity than vehement attack. This habit of mind, together with the inevitable exploitation of his scholarship by one party to an acrimonious dispute, will explain the practical ostracism of Creighton. A very small number of Englishmen openly recognized him as the most learned epidemiologist we have ever produced, some others borrowed from him without acknowledgement or even affected a certain superiority, to most he was just Creighton the antivaccinator and—what more is there to be said?

Although Creighton will surely live as an epidemiologist, he seemed to value himself far more upon his microscopic work. I met him several times some twenty years ago in his friend Professor Bulloch's laboratory, and remember that he used to speak lightly of the amount of ability required for literary research in comparison with the demands made by work in the laboratory. But his literary conversation was fascinating. Those of us who gathered round Bulloch's tea-table will remember Creighton's brilliant solutions of literary puzzles. He had solved, or thought he had solved, most of the problems of literary identification. I recollect a particularly neat identification of the "four beasts full of eyes before and behind" of the Apocalypse: one stood for Isaiah, another for Jeremiah, another for Ezekiel, and the last for Daniel. Very likely—I am no judge—his pathology and his literary criticism may have been amateurish, but he was quite certainly something much bigger than a technical expert, he was a scholar and a gentleman.

It was rather hard to explain to Continental scholars who had a habit of assuming that Creighton was one of our great men, that the practical British mind could not take an antivaccinator seriously, they might actually suggest that such heterodoxies were of no more relevance to Creighton's work than Vichow's political alarms and excursions detracted from his scientific position! A dead man does not offend the herd instinct any more. Let us hope that now all will read the *History of Epidemics in Britain*.

M. GREENWOOD

#### ALEXANDER CAMPBELL, M.D., F.R.C.S., Dundee

We regret to record the death of Dr. Campbell, on July 10th, in his 86th year. He graduated at Aberdeen in 1865, settled in Dundee in 1870, and before long was appointed surgeon to the Royal Infirmary there. In the *Edinburgh Medical Journal* of July, 1874, he reported one of the earliest British cases of successful nephrectomy, a cystic tumour provisionally diagnosed ovarian being found to proceed from the lower pole of the kidney; the kidney and tumour were removed together. After ten years' service Dr. Campbell was appointed consulting surgeon, and he was several times a member of the board of directors. He was certifying factory surgeon and surgeon to the Post Office.

He was keenly interested in public affairs and served as surgeon-major of the Rifle Volunteers. In 1901 he was president of the Dundee Branch of the British Medical Association. He is survived by his elder son, Dr. A. Sydney Campbell, and by a married daughter, to whom we desire to express our sympathy.

### Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

On July 29th, before Parliament adjourned for the Recess, the Royal Assent was given to the Diseases of Animals Act, Poor Law Act, Midwives and Maternity Homes (Scotland) Act and other statutes including the Finance Act and the Trade Disputes and Trade Unions Act. The House of Lords and House of Commons will both reassemble on November 8th. The Unemployment Insurance Bill will come before the Commons for second reading on November 9th. The Mental Deficiency Bill

and the Nursing Homes (Registration) Bill are awaiting consideration by the Commons on report, and both should be in law before Christmas.

### The Scottish Board of Health

#### Housing

On the Estimates for the Scottish Board of Health Mr. Adamson and other members discussed housing difficulties. Mr. James Stuart thought that the Government should accelerate the building programme in Scotland and compel local authorities to hasten. In Glasgow 277,000 people were living in overcrowded conditions according to the Scottish standard that three persons or more per room was overcrowding. The results were respiratory diseases, tuberculosis, measles and whooping-cough. Three children died of tuberculosis in the overcrowded areas of Glasgow for one in the well-to-do residential part. From measles the proportion of deaths was five to one and from whooping-cough seven to one. Even in the new houses 23 per cent of those who had come from the slums were living in overcrowded conditions. The number of houses required in Glasgow in 1919 was 57,000 to-day 107,000 were needed. In 1939 13,000 Glasgow houses were in a state to-day not fewer than 20,000. Dr. Elliot said the Scottish Board of Health was not responsible for policy. For the health of the country he said that the death rate from all forms of tuberculosis per 100,000 of the population in Scotland fell from 110 in 1925 to 99 in 1926 and the rate for deaths from non-pulmonary tuberculosis from 110 to 85. Compared with 1916 174 fewer people died in Scotland during 1926 from pulmonary tuberculosis and 1,071 from non-pulmonary tuberculosis. Reserved for treatment of tuberculosis were now 4,339 compared with 4,170 at the end of 1925. Infant mortality in 1925 was 23 per 1,000 or 8 less than the rate in 1925 and 13 less than that for the preceding ten years. It was the lowest rate on record except that for 1923, despite last year's unemployment and depression in the coal trade. He agreed there was a high death rate in the crowded areas but that could not be attributed only to one factor. It was also correlated to the low rate of unemployment in Dundee, an overcrowded city infantile mortality was lower than in Aberdeen. Mr. Stewart intervening said that in the Rose Street district of Glasgow the infantile death rate was 235 per 1,000 children born against an average for the city of 107 and that the rate for the congested districts remained practically steady. Dr. Elliot said that this year to the beginning of July houses had been built to meet the whole of the year's housing requirements for Scotland—practically 10,000 houses. He hoped another 6,000 would be built before the end of the year.

#### Highlands and Islands Medical Service

Mr. Macpherson referred to the Highlands and Islands Medical Service Fund drawing attention to the fact that it was still at the pre-war figure of £12,000. The Highland doctor did splendid work often for a miserable fee. He asked whether the attention of the Secretary for Scotland had been drawn to the appeal by the medical officers for the establishment of a superannuation fund. The local doctor in remote parts should be guaranteed a house or the site of a house. Last year the Board of Health had caused three houses to be built for doctors. That was well worth doing.

Dr. Elliot said the Highlands and Islands Fund had an accumulated balance out of which the Board of Health was drawing between £18,000 and £20,000 a year. By 1923 or 1929 that balance would be exhausted and the Secretary for Scotland would ask the Treasury for an increase in the sum given for medical benefits to the Highlands and Islands. An occasion for this approach would be found in the reconstitution of the fund which had been recommended. The vote for the Board of Health was carried.

#### Scottish Prisons

On a subsequent vote for Scottish prisons, some protests were made about the sending of persons to prison for minor offences. Sir John Gilmour in reply said that Scotland admitted a larger behind England in the use of probation but the Scottish Office was investigating the problem and he hoped progress would be made. Prison administration particularly at the new prison in Edinburgh was an advance on anything previously seen. This vote was also carried.

#### Public Education in Scotland

On the vote for public education in Scotland Mr. Maxton remarked that Glasgow had to be responsible for two-thirds of the physically defective and two-thirds of the mentally defective children in all Scotland; this he argued showed that a high percentage of Glasgow children were in a condition which tended to make them defectives. The debate was adjourned.

#### Irish

Answering Mr. Forrester, Mr. Chamberlain said that it was a curative agent in the ordinary sense. No anti-cancer treatment was possible at the number of persons who had received it. It was not possible to ascertain in how many cases it had been of use in the treatment of ulcers had contributed to the cure of cancer.

Projects of Irish emigration.—Mr. Neville Chamberlain states that as soon as consideration of the committee's report on the recent Royal Commission on National Health Insurance has been completed the Government hopes to introduce legislation and the question of the compulsory insurance of fishermen both in England and Scotland is so far as it is not already included in the scheme would be dealt with in legislation.



**LARYNGOLOGY AND OTOTOLOGY**—M O Abdeen J B Baird J Bernslein  
O H O Byrne E E Day II W Gutteridge D R Macgregor E M  
Savage W McE Snodgrass G E Tremble Mary A Wiles W O S  
Wood

**OPHTHALMOLOGY AND SURGERY**—A S Anderson M A H Atiya  
J Biggs Catherine McL Buchanan W B Cupsham A G  
Curran Miller Edith Hatherley E F Kirk V M Métiévier F J B  
Miller J H Moorhouse W M Muirhead W D O Donoghue W J  
Robertson G Singh II G Sott S E Ward J B Wheeler  
N Yallie

**PSYCHOLOGICAL MEDICINE**—S M Coleman G F Graham F H  
Healey S Hillier E G Howe McCarran Doris M Odium  
T Paton F E E Schneider F L Scott G O Slater T Tenney

#### Election of Officers

The following officers were elected—*Generals* Sir Edward  
Farquhar Bazzard K C V O M D Frederick John Poynton  
M D John Walter Carr C B E M D Arthur Philip Beddard  
M D Emeritus *Treasurer* Sir Dyce Duckworth Bt M D  
*Treasurer* Sidney Philip Phillips, M D *Registrar* Raymond  
Crawford M D *Harveian Librarian* T H Arnold Chaplin M D  
*Assistant Registrar* Robert Oswald Moon M D

Sir Hugh Kerr Anderson was elected a Councillor in the place of  
Dr J H. Sequeira resigned

#### Harveian Orator and Lecturers

The President announced that he had appointed Sir Humphry  
Rolleston to deliver the Harveian Oration in 1928 and the Registrar  
reported the following acceptances of appointments: Dr G J Still  
as FitzPatrick Lecturer for 1928 Dr J S Collier as Linnæan  
Lecturer for 1928 Dr E P Boulton as Oliver Sharpey Lecturer for  
1928 Dr H H Dale as Croonian Lecturer for 1929 Dr T Izod  
Beunett as Goulstonian Lecturer for 1928

#### Moxon and Baly Medals

On the recommendation of the Council the Moxon medal was  
awarded to Sir Henry Head M D F R S, and the Baly medal to  
Professor A V Hill F R S

#### Marchmont Scholarship

The award by the University of Edinburgh, of the Marchmont  
Scholarship to Mr John M Michael, an undergraduate of that  
University, was announced

#### Various Communications

Communications were received from the secretary of the Royal  
College of Surgeons reporting the proceedings of the Council of  
that College from the Board of Trade asking the College to advise  
them whether a suitable microscope should be part of the com-  
pulsory medical instrument equipment of ships that are required  
to carry a medical officer from the secretary of King Edward's  
Hospital Fund for London asking if the College would desire to  
give evidence before the special committee of inquiry called the  
Pay Beds Committee Dr C McMoran Wilson and Dr J H  
Thursfield were nominated

#### The Secretary of the Conjoint Examining Board

A report was received from the Committee of Management of the  
Examining Board in England stating that it had received a com-  
munication from Mr F G Hallett expressing his desire to retire  
in December next from the post of secretary of the Examining  
Board in England Mr Hallett was appointed the first secre-  
tary of the Board in January 1886 but had joined the office  
staff of the Royal College of Surgeons in December 1877 and had  
become assistant secretary to the College in 1882 he had therefore  
completed fifty years of service at the Royal College of Surgeons  
and the Conjoint Board On the motion of Sir William Hale  
White it was resolved unanimously that an expression of much  
regret at his resignation and of the great appreciation felt by the  
College for the ability zeal and devotion with which he had  
carried out his duties for nearly fifty years should be conveyed to  
Mr Hallett The recommendation of the Committee of Manage-  
ment that Mr Horace Hayter Rew who has held the post of  
assistant secretary to the Examining Board for the last seven  
years should be appointed secretary as from December 5th was  
accepted

#### Recognition of Universities and Colleges

The following institutions and colleges were added to the list of  
institutions whose graduates in medicine are admissible to the  
final examinations in medicine surgery and midwifery under  
the conditions of Paragraph IV Section III of the old Regulations  
and Paragraph III, Chapter III of the Regulations dated January  
1st 1923—namely The Masaryk University of Brno Czechoslovakia  
the Kornensky University of Bratislava Czechoslovakia  
the Medical College of Virginia Richmond U S A, the Meharry  
Medical College Nashville Tennessee U S A

#### ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary Council meeting was held on July 23th when the  
President Sir Berkeley Moynihan Bt was in the chair  
Mr W Thwaites Thomas was admitted to the Council

#### Diplomas and Licences

Diplomas of membership were granted to 172 candidates The  
Licence in Dental Surgery was granted to Lilian Mary Jocelyne  
Diplomas were granted jointly with the Royal College of  
Physicians in public health to 27 candidates in ophthalmic  
medicine and surgery to 19 candidates

#### Board of Examiners

Mr J Lewin Payne was re-elected a member of the Board of  
Examiners in Dental Surgery

#### Lister's Surgical Notes

The College accepted the custody of Lord Lister's Surgical  
Notes which had been offered to the College for permanent loan  
by the Committee of Management of King's College Hospital, upon  
the recommendation of the medical board

## Medical News.

APPLICATIONS for the Milroy Lectureship for 1929 are  
invited by the Royal College of Physicians of London  
The lectures must be on some subject in State medicine and  
public health, and copies of Dr Milroy's suggestions and  
further information can be obtained from Dr Raymond  
Crawford, Registrar Royal College of Physicians of London,  
Pall Mall East, S W 1 It should be noted that applications  
must be received by the Registrar on or before September  
28th, which is earlier than has been usual Further par-  
ticulars will be found in our advertisement columns

THE general secretary Dr Hugh Woods, of the London  
and Counties Medical Protection Society has called our  
attention to a letter he has addressed, on behalf of the  
society, to the town council of Ramsgate It appears that  
some time ago charges were made against the police surgeon  
Dr A J K Drew, with regard to the manner in which he  
gave evidence in an inquiry relative to a member of the  
Famsgate police force It is stated that Dr Drew has not  
obtained a formal statement of the charges, and that the  
only information he had as to their nature was given to him  
at an informal meeting of the Watch Committee Dr Drew  
communicated with the society of which he is a member  
but its solicitors have been unable to obtain particulars of  
the charges and complaints, and the *Thanet Advertiser* on  
July 2nd announced that the town council had unanimously  
resolved in committee to give Dr Drew three months notice  
to terminate his appointment as police surgeon The secretary  
of the London and Counties Medical Protection Society in his  
letter to the town council, observes that its action, in view of  
the publicity of the circumstances is virtual dismissal The  
object of the society's letter appears to be to extract from  
the town council a statement formulating the charges against  
Dr Drew, so that he may have an opportunity of an un-  
prejudiced hearing and of a decision given after full investi-  
gation

PROFESSOR ROBERT HOWDEN has resigned the chair of  
anatomy in the College of Medicine Newcastle upon Tyne  
(University of Durham), which he has held for thirty eight  
years, he has been elected emeritus professor Professor  
Howden is well known to medical students as the editor of  
Gray's *Anatomy*, the last edition of which (the twenty third)  
was reviewed in our columns last December Professor  
Howden has been the representative of the University of  
Durham on the General Medical Council since 1918

At the annual meeting of the British Spas Federation  
which was held at Strathpeffer a small committee was  
appointed to develop further research into the chemical and  
physical properties of the mineral waters of Great Britain  
It was decided to take steps to draw attention to the import-  
ance of the fullest use of British spas both from the stand-  
point of national health and as a means of restoring the  
adverse balance due to the large English expenditure at  
foreign resorts

MR CHAMBERLAIN Minister of Health has during the  
temporary absence of Captain Bras M P who is accom-  
panying Mr Amery on his tour of the Dominions appointed  
Mr Geoffrey Peto, M P, to be his Parliamentary Private  
Secretary

THE fifth gold medal of the African Society instituted for  
presentation to those who have done the best work for Africa,  
has been awarded to Sir Ronald Ross K C B, F R S, F P S

At the annual meeting of the Automobile Association it  
was stated that in little over twenty years it had obtained  
a membership of nearly 350 000 that it disposed of an income  
which was not far short of £700 000 and that its services to  
its members facilitated travel not only in this country but  
practically throughout Europe Improved arrangements had  
been made with Austria, Germany, Norway, Spain and the  
Irish Free State The association can induce to press for  
reintroduction of the petrol tax In this connection it has  
been suggested that the horse power tax handicaps the  
British manufacturer in foreign trade by preventing the pro-  
duction of cheap high powered six cylinder engines such  
as are suitable for very hilly country

THE fifth International Congress for the Protection of  
Childhood held at Madrid in April 1925 decided that the  
next congress should be held in Paris in 1928

THE fifth French Congress of Stomatology will be held in Paris, under the presidency of M. Gires, from October 24th to 30th, when the following papers will be read: surgical extraction of teeth, by M. Monier, osteitis of the lower jaw, by M. Gornovec. The following subjects will also be discussed: buccal hygiene of children at school and at home, introduced by M. Teller, sterilization in stomatology, introduced by M. Fargin-Fayolle. Further information can be obtained from the general secretary, M. Lecleercq, 9, Boulevard de la Madeleine, Paris, 1<sup>re</sup>.

THE celebration of the fiftieth anniversary of the French Society of Public Health and the fourteenth Congress of Hygiene will be held at Paris from October 25th to 28th at the Pasteur Institute, with Dr. Roux, director of the institute, as president of honour, and Dr. Léon Bernard, professor of hygiene in the Paris Medical Faculty, as president. Papers will be read by Professor Madsen of Copenhagen on the international organization of public health, and by Professor Dopfer, of the Val de Grâce Military Hospital, on military hygiene. Further information can be obtained from the secretary, Dr. Dujarric de la Rivière, 26, Rue Dutot, Paris, XVI<sup>e</sup>.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **British Medical Journal** must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **British Medical Journal** are **MUSEUM 9361, 9362, 9363**, and 9364 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are

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(Advertisements, etc.), **Aitcliffe Westcent London**

MEDICAL SECRETARY **Mediscera Westcent, London**

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams **Bacillus, Dublin**, telephone 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams **Associate, Edinburgh**, telephone 4361 Central).

## QUERIES AND ANSWERS

### RAISING A BOOT FOR SHORT LEG

DR W. D. HOPKINS (Hayes, Middlesex) writes: When a boot is to be raised an inch or so I have usually had it done with an extra leather sole, which makes a weighty article for feeble muscles. What inexpensive method can be used to add the least weight?

\* \* We have referred this question to Mr. E. Muirhead Little, who has been good enough to reply as follows:

When a boot or shoe is to be raised an inch at the heel and not at the tread a piece of cork of that thickness can be fitted inside the shoe, and in such a case it is not always necessary to alter the leatherwork of the shoe. A leather heel of, say, 2 in. (in place of the usual 1 in.) is not heavy enough to matter much, but above that height the weight is important, and cork is preferable. Two inches or even more may be placed inside the boot, but, of course, in that case the boot must be specially made to take it. Larger amounts are placed in whole or part outside the boot between the welt and the sole. For the sake of appearances part of the cork may be placed outside and part inside the boot. It is only possible to adapt an ordinary boot when the amount of shortening to be accommodated is small, say up to 1½ in. at most. For greater disparity specially made surgical boots are needed. There seems to be no inexpensive method of raising the height of the heel and sole beyond a small

amount, but any bootmaker should be able to insert 1/2 in. of cork between sole and welt without difficulty, although he will generally decline the job as being "surgical."

### INCOME TAX

#### Three Years' Average

"J. V. B." claimed, and was allowed as for an expense of the year 1925, £310 as the cost of replacing his car. For 1927-28 he will be assessed on the basis of the 1926 earnings, and therefore will lose two thirds of the benefit of the renewal allowance. Has he any remedy?

\* \* The cost of renewal has to be treated in the same way as any other professional expense, and no special claims can be made to set a portion of it against the 1926 profits. If, however, "J. V. B.'s" profits for 1925, as adjusted for income tax purposes, were less than the average earnings of the practice for the six years up to and including 1923—or for such shorter period as he may have been the owner of the practice—he can claim to be assessed for 1927-28 and 1928-29 on the basis of the three years' average, in accordance with Section 29 of the Finance Act, 1926-27. His claim must be lodged by October 5th.

## LETTERS, NOTES, ETC.

### THE "MEDICAL DIRECTORY"

THE Editors of the *Medical Directory* inform us that their annual circular has been posted to each member of the medical profession. Should any form not have reached its destination, they will be glad to send a duplicate. They hope that complete forms may be sent to them at 7, Great Marlborough Street, London, W., by an early post.

### MEDICAL MARKSMEN

DR C. W. WIRGMAN (London, E.C.) writes: I was glad to see the excellent notice given in the *JOURNAL* of July 23rd to the victory of Dr. C. H. Vernon at Bisley. It is curious that the medical profession have in the last three years twice occupied the second place and won this year. A very strong team of ten could have been got up from among doctors attending the meeting. The following attended and had a very good meeting on the whole: Captain A. B. Bratton, D.S.O., M.C., Colonel H. D. Brook, V.D., J. Elgood, M.J. Barker, Colonel L. Langford Lloyd, D.S.O., F. H. Kelly, Colonel W. F. McLean, G. Robertson, G. C. I. Robinson, Captain C. H. Vernon, Major C. W. Wirgman.

\* \* We take this opportunity to correct an error in our note on the King's Prize-man. Dr. Vernon's age is 35, not 45.

### TREATMENT OF VARICOSE VEINS BY INJECTION

MAJOR GENERAL T. M. CORRIE, A.M.S., draws attention to recent references in our columns to the treatment of varicose veins by injection (February 26th, p. 375, and *Epitome*, March 12th, para. 286) and suggests that some clear statement is desirable as regards the possible danger of thrombosis. He adds that if there is little risk of trouble from this cause, the advantages of the injection treatment, particularly the avoidance of a cutting operation, and the rapidity with which recovery seems to follow, would render this procedure worthy of more thorough investigation, with a view to its general adoption. He invites comment from those who have had experience of the results of treating varicose veins in this way.

### PORTUGAL FOR THE TOURIST

WE have received an illustrated pamphlet about Portugal, published by the Sociedade Propaganda, and extolling the beauties of that country in climate, landscape, and watering places. The pamphlet was published in 1916, it has only just reached us, presumably, because, as the preface states, "the functioning of the various services" during the war was "somewhat less regular." It is noted that the political and geographical situation of Portugal in face of the European conflagration, readily explained the influx of foreigners, who were quietly awaiting an opportunity to return to their own lands. The pamphlet might have mentioned also that the national industry, revolution, is carried on in a gentlemanly manner, with a minimum of bloodshed. We fully agree that the country is admirably adapted for the development of "tourism," and the well known affection of the Portuguese for the English makes it additionally attractive. The illustrations of scenery and buildings in the pamphlet invite the visitor. The address of the Sociedade Propaganda de Portugal in 1916 was Rua Garrett, 103, Lisbon.

### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 31, 32, 33, 36 and 37 of our advertisement columns and advertisements as to partnerships, assistantships, and locum tenencies at pages 34 and 35.

A short summary of vacant posts notified in the advertisement column appears in the *Supplement* at page 100.



## THE RELATION OF PREGNANCY TO GENERAL DISEASES

### I—CARDIAC DISTURBANCE

BY

J. M. MUNTO KEPR, M.D.

Peggy Professor of Midwifery, Glasgow University

THE choice of the Committee in selecting cardiac diseases in relation to pregnancy as one of the subjects for discussion in the Section of Obstetrics and Gynaecology is particularly appropriate, for in Scotland at least it will always be associated with the name of Angus Macdonald whose early death was such a loss to the Edinburgh school of obstetrics.

Much has happened since Angus Macdonald's monograph appeared in 1878. Cardiology to-day is an infinitely more complex subject. The mechanical methods of diagnosis have been enormously developed. But with all the modern and more exact methods of diagnosis, the real test the "acid test" of the journalists, still remains—the response of the heart makes to the call of increased work, and if organically diseased and disturbed in function the response it makes to such simple methods of treatment as rest, suitable diet, and improved elimination.

In approaching the subject of cardiac disease in pregnancy, the first question which naturally arises is the effect pregnancy has upon the anatomy and physiology of the healthy heart. Considering the large number of investigators who have interested themselves in cardiology one would have thought that by this time definite decisions would have been reached. But this is not so. Take the simple question of hypertrophy of the left ventricle during pregnancy: does it, or does it not, occur? Is there a work hypertrophy, or is the extra effort brought about by its latent reserve? Sir Thomas Oliver, writing the other day, states, "On the whole the consensus of medical opinion is that in pregnancy there is a slight increase in the size and weight of the heart, and my own experience confirms this." Sir James Mackenzie held the other view. Here are his words: "The assumption that the heart hypertrophies during pregnancy is not justified. All this additional work is met by a call upon the reserve force." The latest contribution to the subject which has come to my notice is by Jensen and Norgaard; it is entitled "Studies of the functional cardiac diseases and the essential cardiac hypertrophy in normal pregnancy," and is based upon observations in 239 cases of pregnancy. These authors state "The roentgenograms showed an increase in 60 per cent of the pregnant while the electrocardiograms showed hypertrophy in all the cases examined. This means that a cardiac hypertrophy is of normal occurrence during pregnancy and that it is associated with dilatation of the heart in about 60 per cent of the cases."

Percussion gives little information except in gross cardiac enlargement for during the later weeks of pregnancy the heart in health is displaced upwards and backwards, the apex beat being often felt in the fourth interspace with the left margin of dullness displaced outwards.

As regards the physiology, again we find differences of opinion even on such a simple question as blood pressure. This undoubtedly is due in some instances to the fact that in pregnancy variations in blood pressure readily occur from disturbances in metabolism, the toxæmia of pregnancy, etc. In normal pregnancy there is no increase in blood pressure. Next to the systematic examination of the urine, estimation of the blood pressure is probably the most important detail in the medical examination of the pregnant woman. We are all familiar with the danger signal of a distinct rise in blood pressure associated with the toxæmias, a distinct fall in blood pressure is also a danger signal.

Report on a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association in Edinburgh (Wednesday July 26th). Dr James Haig Ferguson, President of the Section was in the chair.

The pulse rate is very easily disturbed in the later weeks of pregnancy. Slight exertion often produces a marked increase in the rate, which falls relatively soon on resting. I have observed marked tachycardia in quite a number of cases, and in two with very pronounced enlargement of the thyroid gland. Paroxysmal tachycardia is occasionally encountered, and for it is not necessarily serious.

Lastly, there is the increase in the body weight, blood volume, and cardiac output—all playing a part in effecting variations in normal activity.

The functional disturbances which may occur are palpitation, tachycardia, slight cardiac irregularities, dyspnoea on exertion, soft blowing murmurs over the pulmonary area, and accentuation of the second sound. Some are undoubtedly mechanical, from pressure of the enlarging uterus; others of a much more subtle origin, are caused by disturbed innervation, alterations in metabolism and over activity in the endocrine glands, more especially the thyroid.

Putting aside the cases in which there is no great difficulty in deciding that the disturbance is purely functional and not organic we come to those of a definitely organic nature—the lesions associated with murmurs and irregularities of cardiac force and rhythm. Here we find a unanimity of opinion that in the condition of the heart muscle which determines the seriousness of the lesion. Thus the cardiologists have concluded that in dealing with pregnant women the problem is complicated by the fact that pregnancy is associated in many instances with insidious metabolic disturbances and overactivity in the ductless glands, disturbances which in themselves may play an important part in aggravating a tendency to decompensation.

Within the last year several important contributions to our subject have been made by physicians and obstetricians. There are the remarks made by Price at the Annual Meeting last year, the interesting lecture by Sir Thomas Oliver, the discussion on heart disease and pregnancy at the February meeting of the Midland Obstetrical and Gynaecological Society, and lastly an important contribution by Fennie, made to the Sixth British Congress of Obstetrics and Gynaecology in Manchester in April of this year. Reading the remarks of the different contributors who introduced or took part in the discussions one finds a general consensus of opinion on such questions as: (1) the gravity of the condition, (2) the distress signals manifested, and (3) the treatment to be employed. This highly satisfactory result has been reached by co-operation between physicians and obstetricians and is a testimony to the value of co-operation in the consideration of problems that affect the domain of both these branches of medicine. Every maternity hospital should have its visiting physician. There is in the ante-natal wards of all maternity hospitals invaluable material for medical research.

Let me discuss the question under the headings just mentioned.

#### 1. THE GRAVITY OF THE CONDITION

Our experience in the Royal Maternity Hospital in Glasgow is that cardiac disease takes a heavy toll of its victims. In Lenné's series of 2,400 there were 19 deaths—that is, a mortality of 22 per cent. Other writers of the subject have recorded a lower and many a higher, mortality rate. The figure is probably somewhere between 15 and 25 per cent. I give here a summary of the cardiac cases in all admitted to the Glasgow Maternity Hospital during 1926. The records have been kept with particular care and supervised by Dr Cruickshank.

(Cardiac Cases, 1926)

During the year 1926 the cardiac cases admitted to the hospital numbered 53 (approximately 16 per cent of all admissions). Of these patients 7 died in the ward and 51 were dismissed alive. 47 were delivered and 11 were undelivered. 39 of the patients were under ante-natal supervision. 16 were sent in as emergency cases and 3 applied for admission at the onset of labour. 5 of the fatal cases had been under ante-natal treatment and the remaining 2 were emergencies.

*Mode of Delivery*

As stated previously, 47 of the 58 cardiac cases were delivered, and the mode of delivery was as follows:

Spontaneous delivery (including spontaneous abortion)	30
Forceps delivery	6
Induction (including two abortions)	4
Cæsarean section	6
Hysterectomy	1
	47

*Spontaneous Delivery*—In 30 cases there was spontaneous delivery, with 3 maternal deaths, 1 abortion, 1 stillbirth, and 28 live born children (29 including twins), 1 premature child died.

*Forceps Delivery*—In the 6 cases of forceps delivery there were no maternal deaths and no stillbirths, but 1 premature child died some days after delivery.

*Induction*—All 4 cases of induction were under ante natal treatment. One was an induced abortion and 3 were induced near term, 3 living, though premature, infants were obtained.

*Cæsarean Section*—All 6 mothers delivered by Cæsarean section recovered. One had been sent in as an emergency, and the others were treated in the ante natal wards, 4 living, and 2 stillborn, children were delivered.

*Hysterectomy*—The 1 case of hysterectomy (at the third month) resulted in the recovery of the mother.

*Fatal Cases*

Seven of the 58 cardiac cases resulted in the death of the mother. The youngest of these 7 patients was 27, the eldest was 44, and the mean age was 32.3 years. The parity of the fatal cases ranged from 3 to 9, with a mean of 4.6 pregnancies. All the fatal cases were examples of mitral disease, and 2 had definite auricular fibrillation. There were two examples of ulcerative endocarditis. The mode of delivery in the fatal cases was as follows:

<i>Mode of Delivery in 7 Fatal Cases</i>	
Spontaneous	2
Forceps	Nil
Induction	2
Cæsarean section	Nil
Hysterectomy	Nil
Not delivered	3

## 2 EVIDENCES OF APPROACHING DANGER

In many cases, although there is an improvement in this direction in recent years, decompensation had reached an advanced stage at the time of admission. It is very desirable that cardiac cases should be sent into hospital early, so that ordinary medical remedies may have a fair trial.

In patients with failing compensation who improved in the early months and were allowed to leave hospital prior to delivery, recurrence of decompensation was much more difficult to correct, and in some cases was impossible on the subsequent admission.

Undoubtedly all evidence in favour of a general tendency to earlier and more pronounced decompensation with each succeeding pregnancy. Specially anxious must one be if, prior to the pregnancy, there is a history of unsatisfactory compensation, or a compensation readily unbalanced by slight exertion or any mild intercurrent ailment.

As already mentioned the condition of the myocardium calls for first consideration. In judging of this the opinion of a physician is of inestimable value to the obstetrician. Mackenzie states that "evidences of heart failure are to be found not in the examination of the organ but in the manner in which the circulation is maintained in the different organs of the body." Thus dusky skin of the face, slight increase in the respirations, occasional crepitation at the bases of the lungs, and breathlessness on slight exertion, are often more important indications than occasional cardiac irregularity that a heart is beginning to find the strain too great. Generally speaking, at this stage, with careful nursing, dieting, etc., the pregnancy, labour, and puerperium can be safely negotiated. Less certain is the outlook and prognosis when cyanosis, oedema, and albuminuria are present, and when crepitation is continuous. We get a considerable number of cases sent into the wards at this stage, and it has always been my practice in such cases, no matter what the nature of the cardiac lesion, to try for a week or ten days the effect of the recognized treatment for cardiac decompensation. If no improvement results the pregnancy is terminated. Patients the subjects

of cardiac disease improve very soon, if they are going to improve, so that a week or ten days is almost always sufficient.

When the decompensation is more pronounced, the heart is enlarged, and other organs are markedly disturbed as a result of a weakening myocardium, the sooner the pregnancy is terminated the better.

Only a word or two is necessary regarding the various valvular lesions from one whose knowledge of cardiology is limited.

*Aortic Regurgitation*—I have seen comparatively few examples of this lesion. Relatively speaking, they are not very common in pregnant women. Lennie's figures for the Glasgow Maternity Hospital show its occurrence in 4.7 per cent. All writers are agreed that decompensation in this condition is very serious. Especially grave is a much enlarged heart with a "Corrigan" pulse. With good compensation I have seen several women pass through pregnancy and labour with comparatively little disturbance. But even in the absence of marked decompensation I should be inclined to terminate pregnancy if moderate effort produced distress. For with aortic regurgitation, once distinct decompensation develops it is generally impossible to arrest the progress downhill. The immediate prognosis and the treatment are comparatively simple, therefore, with this particular lesion, and operative treatment should not be too long delayed.

*Mitral Regurgitation*—I have had many cases of mitral regurgitation under my care. My personal experience is that if the condition of the cardiac muscle is satisfactory the prognosis is good both as regards the pregnancy and the labour. This is borne out by Lennie's figures—one death in 17 cases (7.8 per cent.) of simple mitral regurgitation contrasting with a fatality of 24.5 per cent for mitral stenosis. It is seldom difficult, therefore, to decide when a patient with simple mitral regurgitation may be safely left to continue in her pregnancy.

*Mitral Stenosis*—This lesion has always seemed to me the most difficult to gauge, as a clinical study it is much the most interesting of all the cardiac murmurs. Of the grave examples of cardiac disease complicating pregnancy it is the one which most frequently gives us concern during pregnancy and labour. My own personal experience of this lesion has led me to view with grave concern any example of the condition when there are marked cardiac irregularity, crepitation at the bases of the lungs, breathlessness on the least exertion, and especially if these symptoms were not relieved by simple treatment. The danger signals have been wonderfully described by a great master. Chapter IX of *Heart Disease in Pregnancy* is most fascinating reading. The story of how, as the disease progresses, the murmur changes in character, auricular fibrillations and other features appear, seems to me a perfect example of exact clinical observation. Very interesting too, are the remarks of Price at last year's meeting of this Section.

## 3 TREATMENT

I now turn to the treatment of this condition, and more particularly to the obstetric treatment, for this is a subject regarding which there are differences of opinion amongst obstetricians and rather vague views are held by many physicians. While in a considerable number of instances a damaged heart stands up to the strain of pregnancy to a surprising degree and no obstetric intervention except shortening the second stage by forceps delivery is necessary, there are undoubtedly many exceptions. The mistake, therefore, may be made of delaying obstetric treatment too long, just as there may be the mistake in initiating it too soon. Here I would again emphasize the importance of co-operation between physician and obstetrician. It is quite unnecessary to describe in detail the management of a cardiac case in pregnancy when the cardiac condition justifies one in adopting an attitude of watchfulness and employing ordinary medical remedies. I feel my contribution to the discussion will be most useful if I refer to my own clinical experiences in the grave examples of cardiac disease. I will presume that the physician and obstetrician have consulted, ordinary medical treatment has been employed and proved inadequate, and it is decided that

the symptoms indicate that the pregnancy should be terminated. How is it to be done?

At the outset permit me to state that operative intervention—that is to say, the artificial termination of pregnancy—is not infrequently the immediate cause of the patient's death (1) because it is too long lived (2) because the most suitable method is not employed. The first of these causes I have already mentioned, and the fatalities due to it, although not so numerous to-day as formerly, are not inconsiderable. No obstetricians still encounter in our private and hospital work too many examples of cardiac disease in pregnant women where the question of terminating the pregnancy should have been considered much earlier. As regards the second cause—the method of terminating the pregnancy—I find that many consulting physicians and general practitioners are not fully alive to the importance of selecting the method which will cause the patient the least amount of shock. Many consulting physicians and general practitioners think that emptying the uterus is a simple procedure, but this is not the case. In the early months induction of abortion necessitates dilating the cervix prior to removal of the ovum. All are familiar with the fact that stretching or dilating a sphincter has a very pronounced depressive effect on the heart, especially if it is done rapidly. If to avoid this one employs the more gradual method in tents—a common procedure ten or fifteen years ago—time is lost. Further, although one can introduce laminaria tents without an anaesthetic in a multipara it is difficult to do this in a primipara and at the same time take every precaution against septic infection. I have long been convinced therefore that where the uterus has to be emptied in the early months vaginal hysterotomy (vaginal Caesarean section) should be employed. It is a comparatively simple operation can be performed in ten or fifteen minutes, at one "sitting," and is attended with little shock.

In terminating a pregnancy in the later weeks the ordinary procedure is to induce labour by bougie. This in a multipara is not difficult, and can often be done without anaesthetizing the patient, but in a primipara it is much harder, because the cervix is closed and must be dilated to a slight extent, unless one is going to employ the simplest of all methods—rupture of the membranes. Besides, prior to carrying out these manipulations, it is very important that the canal should be disinfected, and this is not easy in a primipara unless she is anaesthetized. But there is another and even greater objection to induction of labour—namely, that there is no guarantee that one or two days may not elapse before labour starts. Thus the patient, already in a critical condition, is, if the ordinary method is employed, faced with the disturbance from the anaesthesia, the nervous tension of waiting for the labour to start, and, finally, the strain of the labour. It is not surprising, therefore, that the results from this method of treatment are, generally speaking, unsatisfactory. In Lennie's group of cases this method shows a mortality of 44 per cent, whilst in Cruikshank's table for last year the mortality was 50 per cent. Similar unsatisfactory results have led many of us to advocate Caesarean section, and it gives me special pleasure to tell you that Lennie's figures for Caesarean section in 17 cases show a mortality of 11 per cent, while last year, in the 6 cases in which this operation was performed, there were no deaths. As further evidence of the wisdom of selecting this operation I would remark that some of the worst cases admitted to the hospital were treated by this purely surgical procedure. I feel convinced we shall see in the future Caesarean section the accepted treatment for grave cardiac conditions where pregnancy has to be terminated in the later months. There is one peculiar advantage of abdominal Caesarean section for this condition—it permits the operator to sterilize the patient by excising a portion of the Fallopian tubes. He may even perform hysterectomy and conserve the ovaries if he deems this advisable. Undoubtedly there is something to be said for bringing about a cessation of the menstrual discharge while conserving the ovaries in function.

As regards cases in which labour comes on spontaneously, in many of them the termination is satisfactory if ther are 1) it alone, or if the second stage is shortened by forceps

In the cases for last year spontaneous delivery took place in 30 cases with 2 deaths (6 per cent) and forceps delivery was employed in 6 cases with no deaths. But I feel convinced that in a number of the gravest examples of cardiac disease it is a wiser procedure to employ Caesarean section. Particularly does this apply to primiparae, for delivery of a primipara with forceps in order to shorten the second stage produces distinct shock. The child has to be dragged through the vagina not previously dilated.

As you will see from the above record of cases, forcible dilatation of the cervix, manually or by instruments, was not employed. I know few conditions for which accouchement force is suitable, and certainly cardiac disease is not one of them. The unsatisfactory results from accouchement force are illustrated in Lennie's series, where this method of treatment shows a mortality of 50 per cent.

It is generally believed in this country that the parturient runs little if any danger from chloroform, and this has been my experience. But it would be folly to maintain, as some have done, that chloroform is the ideal anaesthetic for patients suffering from cardiac disease. I would like to have the views of expert anaesthetists on this subject. The more I operate the more importance do I attach to the administration of the anaesthetic. I am convinced that the anaesthesia induced by the "finished artist" not only materially lessens the ordinary discomforts following operation, but very decidedly affects the mortality and morbidity.

I cannot conclude this paper without referring to the fatalities in the puerperium. Anyone who has had to deal with a large number of cases of cardiac disease complicating pregnancy must have experienced the disappointment of fatalities occurring three or four days after labour. The pregnant and labour are satisfactorily tided over, all seems well after the delivery and on the day following, and even on the second and third day, and then failing compensation sets in and nothing can be done to save the patient. Angus Macdonald<sup>1</sup> refers to this, and every obstetric clinician is aware of it. What is the explanation? I have often spoken to my students about it and I have now and again been able to let them see the disaster occurring. Two special factors probably play a part in this particular type of decompensation: (a) a degeneration of the hypertrophied muscle fibres, and (b) absorption from the decidua debris in the uterus. Further, at the post-mortem examination in a number of cases there are distinct evidences of an acute endocarditis superimposed on the chronic valve lesion. Cruikshank refers to two examples of this in the summary of the cases already given.

The patient suffering from cardiac disease must receive, therefore, in the puerperium very particular care and attention.

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## II—TUBERCULOSIS

BY

E. PISTON D. P. PARIS

It is a curious fact that the very unfavourable influence exerted upon lung tuberculosis by pregnancy should have been completely overlooked in the past, and that at the present day there should still be a small proportion of physicians who doubt it or even deny it. Hippocrates believed that pregnancy was the best cure for consumption, and his to us very surprising opinion was followed blindly along the twenty centuries during which medicine was hardly anything else than a dogmatic systematization of the Hippocratic creed. We, of course know better now, and the serious aspect of the coincidence of pregnancy with tuberculosis has become a matter for study and research. There is no same physician, I am sure, who would not strongly object nowadays to a tuberculous girl being married. But there are perhaps still some who would

object more on account of the menace to the progeny than of the danger to the expectant mother. And we still hear occasionally of medical men who, while admitting that there is such a danger, nevertheless believe that it has been, to a certain extent, exaggerated, and that a noteworthy proportion of consumptive women are able to bear children without having to pay a heavy tax for it.

I have been interested in that problem for many years, and after having carefully read whatever arguments have been put forward in order to minimize the awkward effects of pregnancy upon tuberculosis I came to the conclusion that the principal causes for such divergence of opinions lay in the somewhat loose conditions of our diagnostic criteria. It has been one of the lessons of the great war that we have realized how necessary it is that we should revise those criteria, and that we should adjust our clinical methods of diagnosis to the far-reaching discoveries which, at the beginning of the present century, have so completely transformed our ideas concerning the pathology of tuberculosis. Since we have learned to discriminate between tuberculous infection of the adult, which in civilized countries is nearly universal, and tuberculous disease, which develops only in a small proportion of the infected adults, we are no longer justified in endeavouring, as we formerly did, to make the diagnosis and the early treatment of tuberculosis coincide as nearly as possible with the initial stage of infection. We must rely, therefore, less on general and functional symptoms, to which such a decisive importance was attached in the near past, than on positive signs—the demonstration of a definite lesion on an x-ray plate and of tubercle bacilli in the sputum being, as a general rule, the most fundamental of those signs. Previous to the war we all complained that a large proportion of tuberculous disease of the lung was overlooked and mistaken for some other morbid condition. That this is still going on we sadly know, but to many of us it came as a surprise that, by using more correct diagnostic criteria, we should find that the reverse error was by no means less common—namely, that a considerable proportion of morbid conditions, some very harmless, some serious, were in ordinary practice mistaken for tuberculosis and unduly treated as such.

Now if we read some of the papers where the association of tuberculosis with pregnancy is regarded as being only exceptionally harmful, we may observe that the diagnostic criteria used by their authors are generally very disputable, they are of a vague and purely symptomatic character, and we get the impression that, among the favourable cases, a few only were really and positively tuberculous. When, however, statistics are based upon reliable diagnostic criteria they invariably show that pregnancy in a tuberculous woman leads to an aggravation of symptoms, to the extension of existing lesions, to the production of fresh ones, and to the flaring up of those which were quiescent. Death may occur during the course of pregnancy or after a premature or mature birth. The mother may survive confinement for some time, but her condition has become definitely and permanently worse. The few exceptions to this rule concern women who had a markedly fibrotic and obviously mild form of tuberculosis.

Summing up last year with my assistant, Dr. Andler, the cases which had been followed in my hospital department since 1919, concerning women who, being already affected with some form of lung tuberculosis, had become pregnant, I found a total number of 52. Among them 12 had only one lung affected, 40 had a bilateral tuberculosis. The fate of these 52 women can be summarized as follows:

Condition unchanged, but incurable	8=15.3%
Condition worse	44=84.6%
Death after one year	19=36.5%
Death after two years	26=50.0%

In 2 cases the women died during the last three months of pregnancy—one woman died during the first week after confinement, 6 died during the first three months after confinement. I presume that almost all of the "worse" cases have since passed into the "deceased" group. The symptoms and signs of an aggravation of the tuberculous process may appear at any time during the course of pregnancy. A considerable number of cases turn suddenly worse immediately after confinement.

But this does not give us an insight into the more important side of the problem, the largest proportion of facts where tuberculosis is associated with pregnancy is not made up of cases where an already tuberculous woman becomes pregnant. For obvious reasons such cases are rather seldom observed. A woman who knows that she is affected with tuberculosis, or who simply feels in a condition of bad health, generally avoids pregnancy.

We meet much more frequently with women who previous to becoming pregnant, were in good health, and in whom the symptoms and signs of tuberculosis of the lungs appear either during the course of pregnancy or immediately after confinement, or during the first three or four months following confinement. In the statistical survey previously mentioned I find 117 such cases.

In a first group of 11 women the generally acute and sudden onset of tuberculosis was coincident with the beginning of pregnancy.

Condition unchanged	2
Condition worse	9
Death at end of first year	6
Death at end of second year	7

In a second group we find 22 women who became consumptive during the first three months of pregnancy.

Condition unchanged	2
Condition worse	20
Death at end of first year	9
Death at end of second year	13

In a third group of 22 women the onset of tuberculosis occurred in the last six months of pregnancy.

Condition unchanged	2
Condition worse	20
Death at end of first year	7
Death at end of second year	12
Death after the second year	16

If we sum up these three groups, including all the cases where the onset of tuberculosis occurred during the course of pregnancy, we get the following figures:

Condition unchanged	6=10.9%
Condition worse	49=89.09%
Death rate after one year	41.8%
Death rate after two years	58.1%

Our fourth and last group concerns 62 cases, where the onset of tuberculosis followed confinement either immediately or during the first six months. There is no doubt that the previous pregnancy was a determining factor in the incidence of tuberculosis in such cases, 55 out of them had both lungs affected, 7 only one, 12 had died at the end of the first year, 5 more at the end of the second year, 7 more still later, 8 only no more or less quiescent. Therefore, among the 117 cases where tuberculosis began either during pregnancy or shortly after pregnancy, 60 (51.2 per cent) died after two years, 43 (36.7 per cent) were still alive in a severe condition, leaving little hope of recovery, a large number of these have probably died since this survey was made. But we must not forget that even in the 14 temporarily arrested or quiescent cases, representing 11.9 per cent of the total, pregnancy was the determining cause in the onset of tuberculosis.

It is a matter of common observation among physicians who specialize in the treatment of consumption that there is no circumstance more likely to disturb the healing process determined by a sufficient in and rest cure, or by a successful artificial pneumothorax, than the occurrence of pregnancy. The flaring up of the disease may be only temporary, it may be limited to the reappearance of some bacilli in the sputum, which had remained sterile for a long period before, to a transient loss of weight with abnormal temperatures. But it may also be, and it too often is, quite serious, characterized by the rapid extension of the existing lesions or by the appearance of severe lesions in the hitherto sound contralateral lung. Many a woman who had the most favourable prospects for making a complete recovery has lost all her chances and has died because of an intervening pregnancy. Conversely, I know of no better criterion of complete and permanent healing of a once confirmed tuberculous lesion in a woman than the fact that she has been able to bear a child without having to suffer from any recurrence of symptoms or signs of her lung disease.

How are these causal relations between pregnancy and tuberculosis to be explained? How does it come about that pregnancy not only gives an already existing tuberculous lesion but is also a determining factor in the onset of tuberculosis in women who previous to their pregnancy, had been in perfect health. We know very little concerning that aspect of the question as we know very little in general concerning the causes which more or less suddenly, turn a healthy adult having a normal tuberculin skin reaction into a tuberculous patient. But I think we cannot but give due consideration to an important fact which has been ascertained by many a student of the subject—namely, that there is a comparatively high proportion of pregnant women who lose their capacity of giving a positive skin reaction to tuberculin and recover it only some time after confinement. This condition of anergy is not universal in pregnancy, as it is in measles, for instance. According to Nohacourt and Paraf, it is found in 15 to 20 per cent of pregnant women during the last three months of pregnancy. Other workers give a somewhat higher percentage. If, as we have good reason to believe, the temporary loss of the allergic state acquired by civilized man during his childhood through a mild primary infection means that his specific resistance to tuberculosis has given way, we are led to think that pregnancy is one among the causes which diminish the specific allergic resistance to tuberculosis. Why it should be so is far from being clear.

Nevertheless I would like to mention in that respect the very extensive and prolonged studies which have been made concerning that difficult problem by one of my co-workers Dr J. Coulaud of Paris. He has succeeded in showing that pregnancy and confinement are not the only phases in a woman's life which are able to determine a temporary allergic condition. Abortion has the same effect. The advent of puberty may act in a similar way and in some women even premenstrual period is accompanied by a more or less noteworthy failing of the skin reaction. The menopause may also produce a transient anergic condition and so does operative castration. It is certainly interesting to note that the variations in the reaction of the skin to tuberculin to a certain extent run parallel with some characteristic features of female tuberculosis. The periodical and on the whole unfavourable influence of menstruation upon the symptoms of consumption is a well known fact. Less well known, perhaps is the fact that, among the cases of tuberculosis occurring late in life, a considerable proportion began at the time of the menopause. Coulaud has also collected quite a number of cases where the onset of tuberculosis occurred shortly after a double ovariectomy.

According to his views which he has supported with a great number of carefully conducted animal experiments the link between all these facts should be looked for in the hyperactivity of the thyroid gland, which normally accompanies almost every phase of the female sexual life. Having had an opportunity for studying the morbidity distribution of tuberculosis in a region in the north of France in which goitre is prevalent, he found that people affected with goitre and having an abnormally low thyroid activity were only exceptionally affected with tuberculosis and then only in a mild form. There should be, therefore, some relation between the activity of the thyroid gland and the susceptibility to tuberculous disease. This problem of the interrelation between functional disturbances of the thyroid and the course of tuberculosis has been approached in many ways by several clinicians. It is a very intricate one, and I do not propose to discuss it here. My aim was only to mention how Coulaud's studies show it to be connected with the problem of tuberculosis and pregnancy.

Let us now turn to a more practical aspect of the question. The coincidence of pregnancy with tuberculosis being so ominous and having such fatal consequences, what can we do in order to lessen its dangers? Abortion has been advocated by several obstetricians and physicians as being the only way to save the life of the mother. Some have even gone as far as recommending total hysterectomy, arguing that by so doing the possibility of such a coincidence occurring in the future is prevented. Both practices have met with considerable opposition. For my own part,

I rather side with the opponent, for many reasons. In the first instance, I am convinced that should abortion be encouraged in these circumstances it would lead to many regrettable excesses. Not to mention the cases where unjustifiable abortion would be ruthlessly practised by unscrupulous people and the pretence of tuberculosis is a figment, I feel certain that many a pregnancy would be honestly but unduly interrupted because of that loose condition of the diagnostic criteria of tuberculosis to which I referred above. Personally I have been a led on some occasions to give an opinion regarding the advisability of inducing abortion in women who were regarded as tuberculous and in whom I could find absolutely no reasonable evidence of tuberculosis. On the other hand I do not think it has been sufficiently proved at the present time that abortion is really efficient in arresting the course of tuberculosis of the lungs determined or aggravated by pregnancy. Some very satisfactory results have been published, but these are few in number. For my part, I have seen spontaneous abortion influence tuberculosis just as unfavourably as confinement. The advocates of abortion all agree that it should be practised only during the first three months of pregnancy, because after that period it always leads to an aggravation of the lung symptoms. This of course, limits the intervention to a small proportion of cases, but, even within these limits I think we should be exceedingly cautious in recommending it.

Artificial pneumothorax has been—at first timidly and seldom, but lately with much greater frequency—applied to pregnant tuberculous women. That it interferes in no way with the favourable course of pregnancy or labour has been very conclusively proved. It has therefore, the considerable advantage over abortion that it saves the child's life in a large proportion of cases. It ought to be tried whenever it is possible—that is, when the lesions are one-sided and there are no extensive pleural adhesions.

From June 1919 up to January 1st 1926 the influence of artificial pneumothorax upon tuberculosis previous to or coincident with pregnancy or beginning shortly after confinement has been studied in 53 cases in my hospital department.

In a first group we find 15 women who came to us after confinement, having a lung tuberculosis which had been either aggravated or determined by pregnancy. The collapse treatment was begun not less than two months after confinement, with the following result:

Clinically well	5
Treatment unnecessary	2
Deceased	8

In a second group we have 25 women who had their artificial pneumothorax established during the course of pregnancy. The results were as follows:

Clinically well	6
Situation unchanged	3
Worse	6
Deceased	10

In these two groups the results are far from being brilliant, although I doubt very much whether abortion could have shown a better record. The proportion of successful cases is only 27.5 per cent whereas it is 52 per cent among the 476 women treated with artificial pneumothorax for chronic common unilateral tuberculosis of the lung, outside of any connexion whatever with pregnancy. This certainly illustrates the peculiarly malignant character of tuberculosis associated with pregnancy. The probability of recovery through lung collapse is twice as great for non-pregnant as compared with pregnant women. It shows most clearly that pregnancy is a decidedly aggravating factor in tuberculosis of the lung.

If on the contrary we turn to our third group—namely 18 women who were already treated with artificial pneumothorax when they became pregnant—the encouraging proportion of success is:

Clinically well	14
Deceased	4

The older the collapse the better the result. This I think is one of the most drastic indications which could be given to support the use of artificial pneumothorax as really an efficient treatment of consumption, and this is



able to restore patients, who formerly had to be given up as hopeless cases, to all the privileges of health. As I said before, there is no better test of healing in a tuberculous woman than the capacity of bearing children without having any recurrence of the lung disease. If a woman who has been successfully treated by artificial pneumothorax for tuberculosis of the lung has become clinically well, if she has been, say, two years without expectorating bacilli, if her temperature is permanently normal, there is no person who she should not be allowed to become pregnant, but I always insist that the collapse should be maintained during the first trial, and for at least six months after confinement. I also insist that the mother should not nurse her baby. I have now on record, beside my hospital cases, several young married women in my private practice who have been wise enough, being treated by artificial pneumothorax, to defer pregnancy until I thought that collapse had lasted long enough to make them safe, and who have in due time borne healthy children. On no single occasion have I had to regret it. I should also mention four cases of girls whom I had treated successfully by artificial pneumothorax for severe one-sided lung tuberculosis, and who married and bore children with my approval after their collapse had been abandoned for two or three years. They have all remained perfectly well. Here we have what may be called the sunny side of the interrelations between tuberculosis and pregnancy. The dark side, as you have seen, is dark enough.

### III—VENEREAL DISEASES IN PREGNANCY

BY

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Those in charge of the arrangements of this Section are to be congratulated on including this as one of the subjects for discussion. There are few subjects in obstetrics that cause more anxiety to the man in general practice, and none in regard to which he obtains less assistance from reading the current textbooks, either on midwifery or venereal diseases.

#### SYPHILIS IN PREGNANCY

I shall deal with syphilis under four headings: (1) Frequency, (2) Diagnosis, (3) Treatment, (4) the Outlook.

##### Frequency

In the ante-natal clinic of the Edinburgh Royal Maternity Hospital, of which I was in charge for some years, Miss Gladys H. Dodds found a positive Wassermann reaction in 130 of 2,000 (6.5 per cent.) consecutive cases examined. In 3.6 per cent of these the reaction was triple positive. In 0.3 per cent it was moderately strongly positive, in 1.4 per cent it was weakly positive, and in 0.8 per cent the reaction was doubtfully positive. In 0.3 per cent the serum was anti-complementary, and, finally, in 0.7 per cent the reaction was negative, but the patients were considered from other evidence to be syphilitic.

These figures show that in an ordinary ante-natal clinic the frequency of syphilis is at most about 7 per cent.

##### Diagnosis

In diagnosis attention should be directed to the following points:

1. *The Clinical History*—In about 70 per cent of syphilitic primigravidae a history of clinical evidence of syphilis will be obtained. In syphilitic multiparae such information is only obtainable in about 30 per cent. There is a good deal of evidence to show that the reason for this absence of history of syphilis in multiparae is not that signs of syphilis have never been present, but that they have been forgotten or are denied. I have discussed this fully elsewhere, but have since then met with a striking example in illustration. A letter was sent from the venereal diseases clinic of the Edinburgh Royal Infirmary with a letter which stated that her previous pregnancy two years before had ended in a miscarriage, and that just before the miscarriage she had

come under observation, suffering from the usual signs of secondary syphilis—namely, rash, sore throat, mucous patches, and condylomata, with a triple positive Wassermann reaction. On questioning her most carefully regarding her past history I found that she denied that any such signs had ever been present.

2. *Clinical Signs of Past Syphilis*—These may be found on careful examination in the form of scars of healed gummatous, especially about the calves and knees, leucoderma, etc.

3. *Obstetric History*—A history of repeated stillbirths, abortions, or neo-natal deaths, without obvious causes to account for them, such as nephritis or birth injury, should arouse suspicion.

4. *The Wassermann Reaction*—A strongly positive Wassermann reaction is, in my opinion, certain evidence of syphilis. I do not believe that the toxæmia of pregnancy can give rise to it, at least I have never seen an example of that. On the other hand, a patient may have a negative reaction and yet be syphilitic and give birth to syphilitic children. It is important that the practitioner should recognize this. It is only fair to state in this connexion that I have never met with a case in which a mother with a negative Wassermann reaction gave birth to a foetus the organs of which contained spirochaetes.

5. *Examination of the Product of Conception*—This is perhaps the most valuable method of diagnosis at our disposal, and it is strange that it should be almost entirely overlooked by those who write textbooks. In one of the most recent and excellent textbooks on venereal diseases, for example, it is not even referred to. Evidence may be found in (a) the placenta, (b) the cord, (c) the foetus.

*The Placenta*—The classical characters of the syphilitic placenta are well known, its pale, greyish, bulky appearance is described in every midwifery textbook. What is less well known is that these typical appearances are only found in the placenta of the macerated foetus, and that if the foetus is born alive, though syphilitic, the placenta may seem perfectly healthy both to naked-eye and microscopic examination. Why is this? Because intra-uterine death of the foetus in syphilis is directly due to obliteration of the foetal capillaries in the villi. This obliteration is brought about by subacute inflammation, the end-result of which is fibrosis causing enlargement of the individual villi. If the fibrosis is extensive the foetus dies and is born macerated, if the fibrosis is less marked the foetus is born alive, and the placenta shows little or no change from normal.

The normal placenta at term weighs less than one-fourth of the foetal body weight. If a placenta at term, or in the ninth month, weighs one-fourth or more of the body weight it is almost certainly syphilitic.

A placenta, however, with a normal weight ratio does not necessarily exclude syphilis. That is because a healthy placenta at term may weigh as little as one-tenth or even one-fifteenth of the foetal body weight. Even if such a small placenta were affected by syphilis the consequent enlargement might not be sufficient to raise its weight ratio above the normal limit.

Although the microscopic examination of the syphilitic placenta usually reveals nothing absolutely diagnostic, yet the appearances are generally highly suggestive—namely, the enlarged cellular avascular villi with the correspondingly diminished intervillous spaces.

*The Cord*—Most valuable evidence may be obtained from the cord. The piece of cord for examination must be taken as close to the foetal end as possible. The usual change is round-cell infiltration around, and in the walls of, the umbilical vein. The spirochaete may be demonstrated in the tunica intima by appropriate staining methods. This diagnosis of syphilis from the cord is particularly valuable, as it is available when the foetus is born alive and apparently healthy. It must, however, be emphasized that even when syphilis is present the cord may be quite normal.

*The Foetus*—If the foetus is macerated this is in itself suspicious, as one-third of all macerated foetuses are syphilitic.

In the examination of the macerated foetus four points will be of assistance: (a) the liver, (b) the spleen, (c) the epiphyses, (d) the presence of the spirochaete in the organs.

**The Liver**—The normal foetal liver weighs about one-twentieth of the body weight. If it weighs one-twelfth or over it is almost certainly syphilitic. At the same time it should be remembered that, as in the case of the placenta and for the same reason, it may be less than one-twelfth—for example, one-twentieth or one twenty fifth, and yet be syphilitic.

**The Spleen**—A normal foetal spleen may weigh 1/150th of the body weight. If it weighs more than this it is almost certainly syphilitic. Again, as in the case of the liver and placenta, a normal weight ratio does not exclude syphilis. Such exceptions, however, are rarer than in the case of the liver and placenta. An enlarged spleen is a most valuable sign of foetal syphilis.

**Chondro-Lipofusis**—The jagged, irregular chondro-epiphyseal junction is well known and requires no further description. In doubtful cases it may be demonstrated microscopically.

**Presence of Spirochaetes**—These are, as a rule, best demonstrated in the liver, spleen, suprarenal gland, and kidney, either by dark-ground examination or by the Levaditi method of silver staining for permanent specimens. Their presence is, of course, absolute evidence of syphilis.

**The Fresh Dead Fetus, or the Dead Infant**—If the foetus is expelled dead but in a fresh condition, or if the child dies, its organs are available for microscopic examination. The changes are best found in the liver lungs, thyroid gland, and pancreas, and are, generally speaking, of the nature of subacute inflammation and fibrosis. I shall not refer to these, as they have been fully described elsewhere.

#### Treatment

In treatment four main principles should be borne in mind.

(a) It should commence as early in pregnancy as possible or, better still, a full curative course of treatment should be completed before pregnancy is allowed.

(b) The patient should be treated by arsenical compounds in every pregnancy—no matter whether she seems cured or not.

(c) Treatment may be continued with perfect safety up till the time of confinement.

(d) Arsenic and mercury, or bismuth should not be combined in treatment, on account of their tendency to damage the kidneys. In this respect bismuth and mercury are more dangerous than arsenic, if there is no albuminuria. However, they may be given alternately. If there is albuminuria it may be necessary to stop all treatment, except by potassium iodide, so long as the albuminuria lasts. In some rare cases the albuminuria may be due to syphilis, and then arsenical treatment carefully watched, may be tried.

**Method of Treatment**—The best results are obtained by the use of nonarsenobenzol intravenously, starting with a small dose of 0.3 or 0.45 gram, and increasing carefully to 0.6 or 0.75 gram. The injections should be given once weekly, and continued until six or eight doses are given. A careful watch should be kept for albuminuria. After this there should be a month's interval, during which mercury, in the form of 10 minims of grey oil (corresponding to 1 grain of metallic mercury), is administered intramuscularly into the buttock once weekly, the site of injection being massaged so as to aid absorption. Intramuscular bismuth—preferably one of the insoluble compounds such as hiocel—may be given as an alternative twice weekly. In the case of both bismuth and mercury treatment the most careful attention should be paid to the state of the teeth. These courses of arsenic and mercury or bismuth should be given alternately until the end of pregnancy. After delivery treatment should be continued, a course of treatment of eighteen months duration as outlined above, is the minimum, and it is well to continue treatment for a year after all tests are negative. In the case of husbands with old and probably cured syphilis it is well to advise a prophylactic course as a safety measure for some weeks preceding marriage. Finally it must be emphasized that there is no proof of the cure of syphilis except re-infection, and that antisyphilitic treatment should be repeated in every pregnancy, no matter whether apparently cured or not.

#### The Outlook

What is the outlook for obtaining a healthy child by such measures?

The most complete figures with which I am acquainted are those of Boas and Cammelfort, who have followed up some of the children for as long as fifteen years. The following table gives the main facts.

Treatment of Mother	No. of Children	Syphilitic Infant	Healed by Infant	Percentage—	
				Survived	Healed
Syphilis not treated	21	14	7	9.5	3.5
Mercury before pregnancy	87	73	9	9.0	1.0
No treatment during pregnancy					
Salvarsan before pregnancy	15	12	3	80.0	0.0
No treatment during pregnancy					
Mercury during pregnancy	111	80	31	77.0	2.0
Salvarsan before pregnancy	20	7	19	47.0	7.0
Mercury during pregnancy					
Salvarsan during pregnancy	68	13	73	90.0	81.0
Salvarsan before pregnancy	7	1	6	17.0	20.0
Salvarsan during pregnancy					

The best results are therefore obtained from salvarsan both before and during pregnancy, but even with that no guarantee can be given that the child will not be a congenital syphilitic.

#### GONORRHOEA IN PREGNANCY

My experience of gonorrhoea in pregnancy is that it does not often give rise to acute symptoms such as cystitis, if it does the diagnosis is fairly obvious, and treatment in the acute stages is almost standardized—namely rest in bed, prevention of spread of infection by vaginal protection, hot antiseptic Sitz baths, carbohydrate diet and plenty of fluid and, as soon as the patient can bear it, treatment by local applications in the lithotomy position. Arthritis is, in my experience the most common complication, and its treatment often demands much circumspection.

I shall deal here with the more common subacute or chronic infection, its methods of diagnosis and treatment. Some anatomical peculiarities of the female genital tract explain why primary infection is limited to certain areas. The vulva and vagina are covered by a squamous epithelium, which in the adult female is very resistant to the entrance of the gonococcus. But there are about the vulva certain vulnerable areas which are not so protected and through which the gonococcus can therefore enter and set up infection. These are (1) the duct and gland of Bartholin, (2) the urethra and periurethral gland, especially Skene's glands. Therefore while we do not find a primary vulva in the adult, we often get a Bartholin's and a urethritis. The cervix is a third vulnerable area in the lower genital tract. Its canal is lined by columnar epithelium, between the cells of which the gonococcus can easily penetrate into the deeper cervical tissue. From the canal open into the racemose glands of the cervix and into warm moist gonococcus can easily enter and he safely enclosed beyond the reach of local applications. The cervical infection sets up cervicitis—the well known cervical erosion or crater with discharge of mucopurulent mucus and is accompanied by vaginitis or vulvitis and both vagina and vulva become inflamed and swollen.

#### How to Examine a Case of Suspected Cervicitis

Examination can only be properly carried out with the patient in the lithotomy position and in a good light. In private practice the position can easily be obtained with a pair of lithotomy props. The gland of Bartholin is first examined by picking up the labium majus at the

junction of its posterior and middle thirds between the finger and thumb. Normally the gland is not palpable. If any enlargement is felt it is almost invariably due to gonorrhoea. It may, if only slight enlargement and induration are present, be caused by very old-standing infection.

Next the orifice of the duct should be examined, this is a pin-point opening at the junction of the hymen with the labium minus, near the posterior end of the latter. An area of rose redness spreading on to the adjacent mucosa is suspicious, but it is not so strong evidence as enlargement of the gland. It may be possible to squeeze a little pus from the duct, if so, it should be spread on a glass slide and allowed to dry in air, being afterwards sent to a bacteriologist for examination.

The urethra should next be examined, care being taken that the patient has not passed urine for three hours. The urethra should be milked from the neck of the bladder downwards to the external meatus, and if pus is obtained a smear, and possibly a culture, should be taken. The absence of Bartholinitis and urethritis, however, by no means excludes gonorrhoea.

The cervix should then be examined, preferably using a bivalve speculum, which gives the best exposure. In acute infection it usually appears purple and congested, and bleeds on touching. In more chronic cases there may be actual desquamation of epithelium, the well known erosion. Often it is bathed in muco-purulent secretion. A swab must be taken from the cervical canal, care being taken not to trespass above the internal os. Smear or culture is again made. The cervix, however, may look perfectly normal, and yet gonococci may be obtained from the canal. A swab merely from the vagina is generally of no value whatever in excluding gonorrhoea.

What is the value of a negative smear? A negative smear is of little value in diagnosis and it should be repeated on at least three successive occasions. The gonococcus is most likely to be found just after a period, but this test is not available in pregnancy. We may, however, give a provocative injection of 200 million gonococcal vaccine and examine the discharge twenty-four, forty-eight, and seventy-two hours later. If in doubt regarding the diagnosis it is always better to treat the case as if it were gonorrhoeal.

#### Treatment

The multiplicity of remedies in gonorrhoea is evidence that none is very efficient. Almost the weakest antiseptic will kill the gonococci; it can be brought into contact with it, but the organisms are entrenched in the peri-urethral or cervical glands beyond the reach of most local applications.

The patient should be in the same position as for diagnosis and the external genitals cleansed with a solution of lysol or mercury perchloride. With a bivalve speculum the cervix is exposed, and from it and the vagina all mucus is wiped, either with a dry sterile swab or with sodium bicarbonate solution. The latter removes mucus better and leaves a clean surface. The position and vagina should now be swabbed with a silver or other preparation, such as 10 per cent protargol or neoprotosil, or 1 per cent picric acid in spirit. After trying many of these remedies I think as good results are obtained by swabbing with saline solution. In pregnancy the parts must be handled very carefully, and special care be taken in making application to the cervical canal, lest premature labour be induced. One may, however, very gently swab the canal, using a Playfair's probe dressed with cotton-wool dipped in the selected solution, and rotating the probe carefully. It is rare to find urethritis persisting at this stage, but if it is, it may be necessary to inject, with a glass syringe carrying in turn nozzle, a silver or other preparation such as 1 per cent picric acid or 1 in 1,000 resorcin, or 1 per cent silver protein, or, as an alternative, medicated methyl bougies may be used containing 10 per cent neoprotosil or any similar preparation. Sometimes there is a chronic infection of Skene's ducts, and it is necessary to inject them by means of a blunt-pointed hypodermic needle or they may be destroyed with a cautery. Finally, the cervix and vagina are dusted with an astringent dusting powder such as dermatol, which helps to keep the

surface dry. Twice a week is generally sufficient for local treatment, and in most cases there is no need for rest in bed.

Detoxicated vaccines are of considerable assistance in clearing up the discharge, starting with a dose of 5,000 million, repeating once weekly, and gradually increasing to 50,000 million, which may be continued till the end of pregnancy. I have no experience of ionization or diathermy in treatment, neither do I think they would be applicable in pregnancy.

With the treatment outlined above it is almost always possible to get the discharge cleared up in a few weeks and before delivery occurs. Very few of the cases are troublesome in the puerperium.

Douching is, in my opinion, dangerous, and less effective than the method above described, and should have no place in the treatment of gonorrhoea in pregnancy.

Finally, it must be emphasized that the only absolute test of cure of gonorrhoea is the absence of the power to reinfect the male, and that treatment must be continued after pregnancy is over until at least all clinical evidence of disease is eradicated.

#### ARRANGEMENTS FOR TREATMENT

The following principles may be laid down as the minimum necessary for the proper diagnosis and treatment of venereal disease in pregnancy.

- 1 A routine Wassermann test should be carried out on every patient at the first visit to the antenatal clinic, treatment being started immediately a positive diagnosis of syphilis is made.
- 2 The treatment centre should be in the maternity hospital, special days being set apart for that purpose. Pregnant women with venereal disease are generally innocent victims, and resent attendance at an ordinary venereal disease department amongst patients of doubtful character.
- 3 The treatment should be carried out by a woman expert who may or may not be a member of the maternity hospital staff. It is probably preferable that she should be the person responsible for the treatment of women in the ordinary venereal disease clinic. She would then have charge of the mother also after delivery and until discharged child.
- 4 Antenatal beds should be provided in the maternity hospital for women suffering from venereal disease. They should not be labelled "V.D." beds, but simply "antenatal." In the Edinburgh antenatal department of 25 antenatal beds 13 were devoted to venereal cases. The beds were always referred to (amongst the staff) as "D.K. beds" and the department is the "D.K. department." To the patients it was simply the "antenatal department," although the venereal cases were in separate wards with a separate nursing staff. Such beds are necessary for—

- (a) Cases of acute gonorrhoea and those ill with complications such as arthritis.
  - (b) Cases living too far away to attend as outpatients.
  - (c) Cases who, because of the advanced stage of pregnancy, cannot attend as outpatients with sufficient regularity.
  - (d) Patients suffering from venereal disease plus some of the ordinary non-venereal complications of pregnancy—for example, albuminuria—requiring indoor treatment.
- 5 All cases suffering from severe vaginal discharge should be treated in the clinic, whether the gonococcus has been found or not. If only cases of proved gonorrhoea are treated the majority will be missed, and if the department is not labelled "V.D." no stigma attaches to treatment there.
  - 6 Attached to every maternity hospital there should be a pathologist who is expert in the examination of the products of conception for evidence of syphilis. Unless this is done invaluable evidence—often the only evidence—will be missed.
  - 7 At the end of each month or oftener, a list of congenital syphilitic infants or of suspected cases requiring observation should be sent to the child welfare medical officer. He will, of course, keep in touch with the children, examine them at intervals, and have treatment carried out if necessary.
  - 8 The maternity hospital venereal disease clinic should be in close contact with the general venereal disease clinic of the hospital or town in which it is situated. After delivery it will generally be found best that treatment should be continued in the general clinic. This continuity of contact will generally be easy if the treatment in each is carried out by the same medical officer.
  - 9 Any complete scheme demands the appointment of a nurse who will follow up patients failing to attend regularly for treatment. It is usually unnecessary to tell patients that they

are suffer from syphilis or gonorrhoea but if they fail to attend regularly or refuse to undergo treatment it is often less to do so and a quiet talk with the patient and perhaps also with her husband usually has a salutary effect.

10 Co-operation with the venerable diverse centre will ensure getting in touch with the husband and treating him as well as the mother.

The scheme I have outlined is practically that which has been in operation in Edinburgh since 1920

In conclusion I feel it my duty once again to advocate the compulsory notification of pregnancy at an early period say the third or fourth month. Only in that way will all cases of syphilis in pregnancy be discovered & such an early period that effective treatment may be carried out. If all syphilitic pregnancies ended in abortion or the birth of macerated foetuses such early notification would not matter. Diagnosis could be made at delivery and treatment carried out before and during the next pregnancy. But such a happy termination does not always take place. A baby may be born alive and continue to live with congenital syphilis and grow up to be a burden to itself and the community. As Professor Karl Pearson says "We persecute parents for cruelty to their children, but what is a greater cruelty than bringing children into the world of whom we can predict on the average that a certain number will suffer from incurable disease and that others, without being afflicted, will transmit that disease to the next generation."

PREFACE.

1 Harold Das and S. A. Gammeltoft "Arbejdet i den Fodestof og  
t mark 1911" Udgivning af Det Danske Landbrugsselskab, 1912, page 1.  
Karl Pearson "On the Right of the Turn of Mind" Cambridge  
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#### IV—CARDIAC DISEASE IN PREGNANCY AND LABOUR

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During my mastership of the Rotunda Hospital I find I have recorded 22 cases of cardiac disease complicating pregnancy and labour out of a total of 13,000 confinements. This gives an incidence of 0.16 per cent. These are all cases of loss of compensation and delivery. In the last two years a result of ante-natal supervision, the number of cases has increased, giving a percentage of 0.33.

## Mortality

Of the 22 patients 5 died a mortality of 22.7 per cent but omitting a case of acute vegetative endocarditis the mortality is 19 per cent in chronic valvular lesions. Three deaths were of patients who were admitted with loss of compensation labour set in before the cardiac state showed any improvement. One of these patients was a primigravida aged 30 thirty-seven weeks pregnant who delivered herself rapidly of a macerated foetus and died in a few hours. The other two patients were multiparae a 3 para aged 36 twenty-eight weeks and she died thirty-two days after delivery and a 4 para aged 30 twenty-four weeks pregnant with aneurism fibrillation which never altered she delivered herself of a macerated foetus and died three days later. The fourth death was that of a 3 para aged 33 admitted at thirty-four weeks she improved under treatment for three weeks when commencing developed. The cardiac state relapsed when digitalis was stopped she was delivered by section during decompensation and although improving for a few days died nine days after delivery. The fifth death was that of a primigravida aged 19 thirty-four weeks pregnant who died a few hours after spontaneous delivery and was found to have an acute endocarditis with vegetation on the mitral and aortic valve. Two all the deaths were of patients who were delivered while the heart was in a state of acute decompensation.

Counting the case of acute endocarditis there were 10 patients of these pregnancies complicated by cardiac disease. Five of these patients went to term and decompensation appeared to be precipitated by the onset of labour they all delivered themselves, two being completed by forceps in the second stage, all recovered and all the infants were born alive. The age of the patients were 19, 22, 22, 22 and 23 years, all being multiparae, the last case a primigravida as the cardiac lesion had been acquired since her previous confinement six years before.

Three primigravidae developed a failure of compensation during pregnancy—one case at the thirty-second week, one at the thirty-seventh week and three at the thirty-eighth week. The three cases at the thirty-fourth week were pondered to cardiac uterine were secured in hospital and delivered there, i.e. of living infants by spontaneous labour one aided by forceps at the thirty-sixth, thirty-seventh and thirty-eighth week of pregnancy. The patient at thirty-eighth week had no compensation for several

days without treatment and fell into labour after two days treatment without any improvement in the cardiac state. She delivered herself of a macerated foetus after a hardly noticeable labour of two and a half hours and died ten hours later. The patient at thirty-two weeks had failure but recovered no treatment until after labour started. She delivered herself in two hours of a small living infant. Cardiac condition was very low over several months but finally compensation was established.

Of the 11 multiparae only 3 went to term and the loss of compensation appeared to be the result of the onset of labour. Two of these patients, aged 23 and 24, were in their second pregnancy and one aged 35 was in her third pregnancy; they all delivered themselves of living infants and subsequent convalescence was satisfactory.

Eight multiparae developed loss of compensation during pregnancy; three received no treatment before the onset of labor, while the other five were treated at ages 35, twenty-eight week pregnant did without improving thirty-two days after delivery. The other two recovered both were aged 40 one a para at the twentieth week withortic stenosis causing fainting rather than decompensation the other a 17 para at the twentieth week but in only her third pregnancy to carry beyond the sixteenth week with double mitral murmur and enormous hypertrophy of the heart.

A 4 para aged 30 twenty four week pregnant had failure for some days but received no treatment until in a state of irregular fibrillation she showed no response to treatment for two days then delivered herself and died three days later without any improvement.

any improvement  
 Four multiparae responded to treatment. A 2-para aged 35 (twenty-four weeks pregnant) improved following labour at thirty weeks and delivered herself. Compensation had been fairly well re-established but again failed during labour and for a few days then convalesced at home. A 3-para (1 abortion) aged 31 had failure at thirty-four weeks responded well to treatment and went home but returned at thirty-seven weeks severely decompensated and in labour she delivered herself in two hours but was in a critical state for the next two days after which she improved steadily. A 3-para aged 33 improved but at thirty-seven weeks digitalis had to be stopped and failure recurred. She was delivered by section improved for a few days but relapsed and died nine days after delivery. A 3-para aged 39 at thirty-two weeks improved but the membranes ruptured at thirty-five weeks and at thirty-six weeks placenta praevia. She was delivered by section compensation was maintained.

### Prognose

The cases recorded above may be divided into three groups

- 1 When decompensation only occurs as a result of labour the prognosis is definitely good
- 2 When decompensation occurs during pregnancy and is treated early the prognosis is good
- 3 When decompensation occurs during pregnancy and is neglected until labour sets in the prognosis is bad

In the second group the prognosis is damaged by multiparity. The prognosis is better for cases under 25 than for those over 30 years of age.

*Results to the Foetus*—Of the 10 primigravida nine infants were born alive and all but one born at the thirty-second week survived. Of the 11 mult parae ten infants were born alive but only five survived the others being too premature. The prognosis for the infant is good provided decompensation is not selected during pregnancy while survival depends upon the maturity at time of birth.

## Conclusions

Decompensation does not tend to develop until the second half of pregnancy but is liable to set in progressively earlier in that half of pregnancy as the number of pregnancies and the age of the patient increase.

The majority (over 75 per cent) of primigravidae as a compensated cardiac lesion will carry to term and although one-third of them develop failure as a result of the onset of labour they deliver themselves of living infants and recover. In considering primigravidae it must be remembered that all the manipurians had delivered themselves successfully in their first labours.

When compensation fails in a primitive manner it can usually be reestablished and subsequently occur it is well borne

Only about 50 per cent of mulberry leaves are eaten during 1 hour than in the case of promastix.

When comparison fails during pre-trial preparation it is more difficult to reach a settlement in the grey area. There are very marked and real differences in labour which frequently occur and there is much greater probability of labour starting before a comparison is reached.

*Cases of Cardiac Disease in Pregnancy and Labour*

Case	Age	Pregnancy	Duration of Pregnancy when failure developed	Failure set in during labour	Labour started during loss of compensation	Compensation re established before labour	Period of Pregnancy at time of Delivery	Mode of Delivery	Result to Mother	Result to Infant	Cardiac Lesion
3	30	1	37 weeks	—	Yes	—	37 weeks	Spontaneous	Died	Macerated	Mitral stenosis
4	27	1	34 weeks	—	—	Yes	37 weeks	Spontaneous	Recovered	Alive	Mitral stenosis
6	24	1	32 weeks	—	Yes	—	32 weeks	Spontaneous	Recovered	A died	Double mitral
8	19	1	Term	Yes	—	—	Term	Spontaneous	Recovered	Alive	Double mitral
13	21	1	Term	Yes	—	—	Term	Forceps	Recovered	Alive	Double mitral
14	25	1	34 weeks	—	—	Yes	38 weeks	Forceps	Recovered	Alive	Aortic stenosis
17	34	1	34 weeks	—	—	Yes	36 weeks	Spontaneous	Recovered	Alive	Mitral regurgitation
18	24	1	Term	Yes	—	—	Term	Spontaneous	Recovered	Alive	Mitral stenosis
19	24	1	Term	Yes	—	—	Term	Spontaneous	Recovered	Alive	Mitral regurgitation
15	29	3 (1)	Term	Yes	—	—	Term	Forceps	Recovered	Alive	Aortic stenosis
1	36	3	28 weeks	—	Yes	—	23 weeks	Spontaneous	Died	A died	Double mitral
2	24	2	Term	Yes	—	—	Term	Spontaneous	Recovered	Alive	Mitral stenosis
5	33	3	34 weeks	—	Relapse	Yes	37 weeks	Caesarean section	Died	Alive	Double mitral
7	23	2	Term	Yes	—	—	Term	Spontaneous	Recovered	Alive	Double mitral
10	40	17 (3)	25 weeks	—	Yes	—	25 weeks	Spontaneous	Recovered	A, died	Double mitral
11	40	9	26 weeks	—	Yes	—	26 weeks	Spontaneous	Recovered	A, died	Aortic stenosis
12	30	3	32 weeks	—	—	Yes	35 weeks	Caesarean section	Recovered	A, died	Mitral stenosis
16	30	4	24 weeks	—	Yes	—	24 weeks	Spontaneous	Died	Macerated	?
20	31	5 (4)	34 weeks	—	—	Yes	37 weeks	Spontaneous	Recovered	Alive	Mitral stenosis
21	35	2	24 weeks	—	—	Yes	30 weeks	Spontaneous	Recovered	A died	Mitral regurgitation
22	35	3	Term	Yes	—	—	Term	Spontaneous	Recovered	Alive	Mitral regurgitation
9	19	1	31 weeks	—	Yes	—	34 weeks	Spontaneous	Died	Alive	Acute

When compensation has failed during pregnancy in any case and been re-established the pregnancy will practically never carry on beyond the thirty-sixth or thirty-seventh week.

Cardiac lesions tend to produce abortion and diminish the incidence of pregnancy. A woman who has decompensated during labour, and more particularly during pregnancy, is likely to abort in the first few months of a subsequent pregnancy, or to remain actually sterile.

This fact is not shown in my cases, but of the women I have treated I only know of two who have become pregnant, and these both aborted early.

*Conclusions as to Treatment*

Primigravida and multiparae who have never been decompensated during pregnancy may be allowed to continue through pregnancy and labour, with special care during the last eight and sixteen weeks respectively. If decompensation occurs during pregnancy, treatment should be directed only to re-establishing the cardiac function, and the patient should be kept at rest until after delivery. Primigravida may be allowed to go through labour, but multiparae will probably be best delivered by section at the thirty-sixth week and should be sterilized.

If decompensation occurs in a multipara before the thirtieth week the cardiac state should be re-established and then the pregnancy terminated, as the probability of the pregnancy reaching a period when the foetus will be likely to survive is practically nil. If labour sets in during the acute period of decompensation it is easy and rapid, and natural delivery will give as good a prospect as operative, the second stage should be shortened by forceps. A woman who has suffered from loss of compensation during labour should be kept at rest from the twenty-fourth week of a subsequent pregnancy, and this pregnancy should be terminated by section with sterilization at the thirty-sixth week.

A woman who has decompensated during pregnancy should never be allowed to continue another pregnancy, and such pregnancy would be best terminated by section and sterilization.

Induction of labour has no place in the treatment during decompensation, and at other times would be better preceded by section and sterilization as a means of terminating a pregnancy.

I have said nothing about the type of cardiac lesion, I think there is little to choose among them. Among my primigravida cases 3 suffered from mitral stenosis, 2 from mitral regurgitation, 3 from double mitral regurgitation, 1 from aortic stenosis, and 1 from acute endocarditis. Among the multiparae there were 3 cases of mitral stenosis, 2 of mitral regurgitation, 4 of double mitral regurgitation, 2 of aortic stenosis, and in one case the condition was unknown. My mortality was in mitral stenosis 1, in double mitral 2, 1 unknown, in acute endocarditis 1, in all delivery occurred during decompensation.

*DISCUSSION*

SIR EMERY MACLEIN (Cardiff) thought that individual experience of tuberculosis in pregnancy must be limited, except in the case of those working in special institutions. Two of the leading tuberculosis experts in Wales had expressed the view that Dr Rist was unduly pessimistic. Accurate diagnosis was extremely difficult, and many mistakes were made. A patient's progress could not safely be estimated by the physical signs. In some cases there was apparent improvement during pregnancy, and it was possible that the enlarged uterus produced some immobilization of the diaphragm, and thus acted favourably, especially if the bases of the lungs were involved. He thought that marriage need not be forbidden, but pregnancy should be avoided until three years had elapsed after the subsidence of all signs and symptoms. When pregnancy had occurred it should be allowed to continue so long as the larynx was not affected.

Professor LOUISE McILROY (London) did not agree with Professor Munro Keir's dismal view of the gravity of heart disease in pregnancy. She stressed the need for prolonged rest, and opposed the use of cardiac stimulants in the case of working women. Every heart case should be investigated by a cardiologist. She had established a cardiac



clinic in connexion with her ante-natal department, and only found it necessary to induce abortion in the rare cases when every other treatment had failed. She was agreeably surprised at the small number of Caesarean sections. Professor Kerr had mentioned she had abandoned sterilization for heart cases to a great extent and strongly disapproved of hysterectomy as the means to this end. Future pregnancy might be prevented by x rays or radium, or a contraceptive pessary might be used when further pregnancy was not advisable for a year or two. She thought that many patients with tuberculosis became worse through being discharged too soon from a sanatorium to bad home conditions for fear that labour might occur in the sanatorium.

Dr. Miss Macnicol (Edinburgh) thought that the outlook in syphilis with pregnancy was very good, but with gonorrhoea the reverse was the case. She urged that once a patient was known to have had syphilis the treatment should be given in every subsequent pregnancy even if the Wassermann reaction was negative. A history of repeated miscarriages was sufficient to justify a course of anti-syphilitic treatment. With more attention to cervical and vaginal discharges less would be heard of the occurrence of autogenous puerperal sepsis.

Dr. L. K. Macenzie (Tinn) gave his experiences as a rural practitioner far from specialist advice and help. Cases of mitral stenosis and aortic incompetence had caused him the greatest amount of worry. He thought that digitalis should be restricted to cases of fibrillation. The mental state of cardiac patients, especially in aortic disease, was sometimes particularly distressing.

Mr. R. H. Paramore (Rugby) explained the absence of higher blood pressure in normal pregnancy as being due to the rise of intra-abdominal pressure which increased the blood supply of the brain and extremities. It was the rise in pressure within the abdomen which led to an increased strain on the right side of the heart and hence, in disease, to failure of compensation. In cases where Caesarean section was called for on account of cardiac distress he suggested that hysterectomy would be advantageous by removing the products of involution, which otherwise might seriously affect the already embarrassed heart muscle.

Professor R. G. McKernon (Aberdeen) said that the majority of cases of valvular disease passed through labour without distress provided the myocardium was good. When failure of compensation occurred opinion was divided as to the best mode of procedure. Very little help could be obtained from the textbooks, while approval might be found for practically any method of treatment. In the early months it was very rarely necessary to interrupt pregnancy. In mitral stenosis induction of abortion was by no means free from danger. He advised induction in any case when decompensation had occurred in a previous pregnancy.

Dr. D. Lees (Edinburgh) asserted that the examination of films was of no use in the diagnosis of gonorrhoea. In suspected syphilis a provocative dose of salvarsan would frequently lead to the Wassermann reaction becoming positive, but a negative reaction was without value. He strongly objected to the phrase "venereal disease" the majority of cases occurred in those who had not contracted the disease venereally. Syphilis should be suspected in cases of aortic disease, treatment on these lines often led to improvement.

The President opposed the sterilizing of cardiac patients, especially in old standing cases. Compensation might later be established and with it the chances of a successful pregnancy being sustained. He agreed that artificial pneumothorax was a most valuable addition to the treatment of pulmonary tuberculosis.

Professor Mayo Kern in his reply stated that he had been struck by the number of times the pathologist reported the presence of fresh vegetations on the valves in cases

which terminated fatally. He thought that Mr. Paramore's suggestions in regard to hysterectomy were of great importance, and he was disposed to act along these lines in the future in cases of the type under discussion. He agreed with Dr. Macenzie that digitalis should be reserved for cases of definite decompensation.

Dr. E. Rist (Paris) explained that he had obtained his experience by an elaborate follow-up system. He was not formerly so pessimistic as at present. He thought that the physician saw patients for a more prolonged period than the obstetrician and was thus in a more favourable position to observe the bad effects of pregnancy. He did not agree that the excursions of the diaphragm were seriously impeded in pregnancy.

## THE USES AND LIMITATIONS OF ULTRA-VIOLET RADIATION IN DERMATOLOGY

### THE EVOLUTION OF ACTINOTHERAPY

BY

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I must first express my appreciation of the honour you have done me in asking me to open this discussion although the task of replacing a distinguished foreign actinotherapist is not an easy one, and the views I shall express will no doubt differ from his.

I do not propose to bring before you details of cases which are tedious and often misleading or statistics which are notoriously fallacious but I shall endeavour to give you the impressions I have formed as the result of a considerable experience of ultra-violet light treatment in hospital and private practice extending over many years.

My first acquaintance with this work began in the year 1900, in conjunction with the late Sir Malcolm Morris, and, if you will permit me, I will quote a sentence from a paper published in the *BRITISH MEDICAL JOURNAL* of May 31st, 1902, and repeated in the preface of a little book published in 1907, stating the view we had formed of the value of phototherapy in dermatology:

Although in our opinion the results we have obtained have fully justified the employment of the treatment and in some cases no other treatment could have produced such good results we do not regard it as the only method to be used in all cases nor advocate it indiscriminately to the exclusion of other methods.

I emphasize this opinion because I think there has been a growing tendency to exaggerate the results of actinotherapy in recent years. My own view today are the same as those stated in 1902 and I expressed the same opinion two years ago at the British Medical Association meeting at Bradford and at the Royal Society of Medicine last March. I must therefore ask you to bear with me if there is a certain amount of repetition of what I said on those occasions.

The bacteriological effect of light was discovered as long ago as 1877 by Downes and Blunt, but ultra-violet light was of course first employed systematically in the treatment of disease by Niels Finsen of Copenhagen who not only advocated its use in the treatment of lupus but who chiefly devoted his attention to its use in the treatment of small pox—a method which has recently been criticized by French observers after it tried in a recent epidemic in Paris. Finsen's light treatment was first introduced into England by the late Sir Malcolm Morris in May, 1900 and I remember seeing him in the treatment of the first case of lupus at the beginning of that month. A few months later the light treatment of lupus was instituted at the London Hospital by Dr. Sequeira whose publications did so much to secure for it a permanent place in British dermatology.

\*The opening paper of a discussion on the Section of Dermatology at the Annual Meeting of the British Medical Association Edinburgh 1927. The President of the Section Dr. Cranston Low was in the chair.

Finsen used both sun and arc light, the rays being brought to a focus by means of quartz lenses, the concentrated light being cooled and the skin rendered anæmic by pressure with a quartz vessel containing circulating water. The fact that the original type of lamp is still employed at the London Hospital and other institutions is sufficient evidence that the principles laid down by Finsen—namely, the necessity of concentrating the light and compressing the tissues to allow penetration of the ultra-violet rays—still hold good, although they seem to have been forgotten by a good many workers of the present day.

The original Finsen lamp was a cumbersome and expensive piece of apparatus devised for the treatment of four patients, and this was improved upon by Reyn, who used a focusing tube embodying the same principles and adapted for the treatment of a single patient. With both these lamps, however, the exposures were so long, and the area treated at each application so small, that the results obtained in extensive cases were slow and comparatively ineffective. Attempts were then made to obtain penetration and increase the size of the area exposed by bringing the source of light close to the skin, burning being prevented by the interposition of a quartz lens containing circulating water, which was placed in the path of the diverging rays and brought into contact with the skin. This was the principle of the apparatus devised by Loret and Genoud, which was modified for use at the London Hospital, being known as "the London Hospital lamp," and was the forerunner of the Kromayer lamp, in which the U-shaped mercury vapour burner replaced the carbon arc.

An attempt was also made to increase the proportion of ultra-violet rays and decrease the time-of-application by using iron electrodes, circulating water or ice being employed to intercept the heat rays. The action of these lamps, however, proved too superficial to affect the deep infiltration of lupus, and the results were less satisfactory than those obtained by the more penetrating concentrated rays of the Finsen lamp. Another development was that of the Simpson arc in which wolfram electrodes were employed. Dr Sequerra demonstrated the superficial action of this lamp and the failure of the rays to penetrate even a thin sheet of paper, a disadvantage which still holds good for the tungsten and mercury vapour lamps used at the present day.

I have dealt at some length with the evolution of these different types of lamps, because we are still faced with the difficulty that the mercury vapour and tungsten lamps lack penetrating power, whereas the available arc treated by concentrated carbon arc rays is too small to give entirely satisfactory results. For those of us who have charge of large dermatological clinics, and have the disheartening experience of seeing numerous cases of facial lupus every week, it is an undoubted advantage to have at our disposal a conservative method which can be repeated almost indefinitely from week to week, with much mental comfort and little physical discomfort to the patient, who is thereby kept under constant supervision, and quite rightly encouraged to persevere with the treatment in the hope of eventual cure. But, speaking from my own experience, I doubt if many extensive cases of lupus are cured by unaided light treatment. With surgical measures and such applications as red nitrate of mercury, pyrogallol acid—which is, I believe, extensively used in Denmark—and other selective caustics, we are able to accomplish in a short time and with little expense, although with more pain and scarring, what it would take months of light treatment to achieve.

Lupus rarely tends to get well spontaneously, but in alopecia areata, another condition for which light treatment is widely advocated, there is a tendency to spontaneous recovery which makes it more difficult to assess the value of treatment. There is no doubt that ultra-violet irradiations are an excellent stimulant of hair growth, I have seen growth of hair occur on a bald scalp in circles corresponding to the area covered by the pressure glass of the Finsen lamp, but the results with the mercury vapour and tungsten lamps are less convincing. In this disease, as in lupus it seems that the result depends upon the intensity of the inflammatory reaction, in other words, the actinic rays act as a counter-irritant in a similar manner

to the various stimulating preparations which are commonly used when light treatment is not available.

In psoriasis there is considerable difference of opinion regarding the response to actinotherapy. I have seen extensive eruptions clear up under light baths and relapse during a continuance of the treatment, and the majority of cases in my experience have shown little permanent improvement. Possibly patients treated with carbon arc lamps are benefited by the heat rays and the sweating produced, although I have noticed that in cases treated by radiant heat the psoriasis patches sweat with difficulty. It seems probable that if the applications are pushed to the point of causing erythema and desquamation, in which the psoriasis shrives, better results are likely to be obtained than those in which little inflammatory reaction is produced. On the whole I agree with Dr Roxburgh, who has written one of the most unbiased papers I have read on the subject, that "in most cases an equal degree of benefit can be achieved more quickly, though less pleasantly, by the use of chrysarobin."

In tinea vulgaris the suppuration is to a certain extent controlled, but improvement is chiefly due to exfoliation of the skin, and the results of actinotherapy are not much better in my experience than those obtained by keratolytic preparations, and much inferior to those produced by x-rays.

Cases of impetigo and staphylococcal infections which fail to yield to the ordinary antiseptic applications are benefited by light, and the same may be said of chronic septic and tuberculous ulcers, and some neurosphyrial conditions. The sphere of light treatment has been greatly extended during recent years, and it would be impossible to refer to all the pathological conditions for which it has been advocated, nor is it necessary to discuss the more general aspects of actinotherapy, such as the results obtained in rickets, or the well known work of Rollier and Gamm on surgical and other varieties of tuberculosis. What concerns us more particularly as dermatologists is the combined local and general use of light therapy. This was first advocated for lupus by Reyn, of the Finsen Institute, in 1918, who stated that the percentage of cures obtained by this method was increased from 60 to 60 per cent. Heiberg and With gave the percentage as 90, and stated that light baths alone could cure lupus without any local treatment, the same results having been previously claimed by Stindberg and Heiberg for intranasal lupus. Dr Sequerra confirmed the value of the combined method, which he introduced at the London Hospital in 1922. I have had many cases of lupus treated in this manner, and in at least one extensive case of lupus of the face remarkable improvement followed light baths alone, while others have not improved when both local and general treatment have been adopted.

Time does not permit me to discuss the biological properties of ultra-violet irradiations, but it seems probable that their action is mainly distinctive, the defensive properties of the tissues being stimulated by the products of the damaged cells. That light can have pathological effects on the skin is well known to dermatologists, as exemplified in such conditions as xeroderma pigmentosum, hydrotic vesicle, solar dermatitis, etc., and it is recognized that harmful results may occur from excessive therapeutic exposures, or from the injudicious treatment of acute and febrile cases. On the other hand, there is abundant evidence of improvement in the nutrition of children and adults as the result of actinotherapy, although the exact mechanism of its production is not clear. In rickets, in which the mercury vapour lamp appears to give the best results, it is thought that the effect is due to the activation of the cholesterol of the skin, whereas in surgical and other forms of tuberculosis carbon arc light, with its greater preponderance of luminous and heat rays, is the method of choice where sunlight is not available, and heat and flesh are the probable factors in the increase of haemoglobin and leucocytes, and in the bactericidal power of the blood.

It seems probable that the well known stimulating effect produced on fully clad operators working in close proximity to ultra-violet rays may be due in part to inhibition of the ionized air. It is well known that inhibition of the

vapour given off by tungsten arcs has been employed successfully in asthma and other bronchial conditions in children. The fact that suggestion may also play a part in the results is often overlooked and, without attributing too much importance to this factor, it is possible that the psychological effect may have no small influence even in infants.

The luminous and heat rays must also be taken into account. When the comparatively small number of ultra-violet radiations—none below 2,970 Angstrom units—which penetrate the atmosphere is considered it seems doubtful if the health of the community can be dependent to any large degree upon the short wave radiations and the value of such improvised measures as the provision of ultra-violet-passing glass in smoke-laden cities seems problematical, and in country districts superfluous.

It has been shown by Leonard Hill that the basal metabolism rate is not raised by actinic light unless accompanied by the cooling power of air. Hess gives charts showing the amount of sunlight in five of the great cities of the world, New York having twice as much as London, and more than Berlin, Paris, and Stockholm, but he forgets to mention Edinburgh. In this city, where cooling winds predominate and perhaps sunlight is not at its maximum, you will probably agree that the hardy northerner takes precedence in health and endurance of the softer, sunbaked, ultra-violet lighted inhabitant of the south.

In conclusion may I say that if I have taken, as some may think, an unnecessarily pessimistic view of the value of actinic light in therapeutics, I am far from wishing to depreciate a measure which aims at the relief of disease and the improvement of the public health, and I hope this discussion will not only help to place actinotherapy on the proper scientific basis it deserves but will lead also to further progress in the knowledge of its effects and still better results from treatment.

# DISCUSSION

Dr F GARDNER (Edinburgh) thought that too much stress could not be laid upon the psychic effect of a new remedy such as this, administered in the semi-theatrical manner of all electrical treatments. The accurate and scientific dosage and the limitations of the new therapy could not yet be stated. Rickets was undoubtedly greatly benefited, but in other conditions the value of light was less certain. It was necessary to consider not only the various sources and wave lengths but also superficial and deep effects and the compression or absence of compression of the tissues. It was still doubtful whether the ultra-violet rays could or could not penetrate to a greater or lesser degree the epidermal horny layer and the blood and to what extent they were bactericidal. In tuberculosis of the skin the benefit, especially of a cosmetic character, was very noticeable but there were occasional failures, most often when pulmonary affection was also present. In one case he had found by means of a-ray examination enlarged bronchial glands, in another the fumes of the lamp produced bronchitis. The fungating and ulcerative types responded better than the fibrous type. From January, 1924 to June 1927, 171 patients had been treated at the Royal Infirmary with the carbon arc. 27 had been discharged provisionally cured, 65 as improved while 76 were still under treatment. In addition to using the arc light it had been their custom to treat stubborn areas with trichloroacetic acid and other caustics. Better, especially, cosmetically, better results and a higher percentage of cures were obtained by light treatment than by any other method. Tuberculous, such as Bazin's disease and allied conditions, healed remarkably well, and many cases of lupus or the matous also did well. Skin diseases associated with general debility were benefited—as for example long-standing prurigo in debilitated children or the other hand prurigo in adults was aggravated. Extensive pitular cases of acne vulgaris affecting the back and chest were much improved. The systemic treatment of bad scrofula in debilitated subjects was useful. He warned against the dangers of unskilful use of the mercury vapour lamp and thought that it was very unsatisfactory in psoriasis. In alopecia areata he had had good results,

but not equal to those expected by Nagel Schmidt. In ulcers of the leg although it benefited those of the Bazin type it was useless for varicose and chronic ulcers. He concluded that the effects of the treatment were systemic and should be used where there was some general systemic disturbance, they stimulated certain areas and might be used to reduce pustulation.

Dr W J O'DONOVAN (London) described the origin of the light department at the London Hospital which was opened on May 1st, 1900, with the lamps from Copal-hagen given by Queen Alexandra since then 2,800 cases of lupus had been treated. He emphasized the necessity of prolonged and uninterrupted treatment and the equally continuous supervision of the patient in these conditions were fulfilled the prospect of curing the cases was good. He thought that the only incurable type was that in which there was lymphatic obstruction of the area affected usually the face, with this exception and with the help of proper supervision he could claim 90 per cent cures. The introduction of light bath treatment at the London Hospital was second only in importance to the original application ofinsen light to the treatment of lupus. Some cases were healed by light baths alone, these were subsequently combined with local treatment. The light baths had perhaps been particularly valuable in dealing with lupus of the mucous membranes which before 1922 had to be treated by surgical methods alone, it was often impossible to reach by these means the whole of the diseased area. A few cases always relapsed a few months after the suspension of treatment, for these a prophylactic course of light baths every year was advised. In the whole series there had been three deaths from meningitis. The only other bad effect which had been noticed was the occasional occurrence of tropical fatigue during general light treatment. He stated that there was no evidence whatever that carcinoma ever developed on the healthy scars left afterinsen treatment, although he was very familiar with carcinoma engrafted on lupus itself and on the scars left by x-ray treatment. Light therapy in psoriasis was of very occasional benefit in acne very doubtful. He had known acne develop during retinal light treatment. Cases of prurigo in general improved and multiple subcutaneous abscesses in infants did very well indeed with it but exfoliative dermatitis was sometimes produced. It was also most valuable in the septic complications of compound fractures in securing the separation of sequestra and the healing of troublesome sinuses.

Dr J GOODWIN TOMKINS (Glasgow) said that his first acquaintance with heliotherapy dated from the Paris congress on tuberculosis in 1905 while his first case was that of a lady who began heliotherapy under his instruction for lupus in Egypt in 1908 and did very well indeed. Since then he had had other patients treated on the arc lines at Darga in the Apennines at Viareggio and at Leysin. The value of heliotherapy was indubitable and the various ultra-violet light lamps were very efficient substitutes for sunlight though not for the invigorating atmospheric conditions of high altitude. Most of the cases for which he prescribed the artificial sun in bath were tuberculous. A noteworthy feature of these patients was their cheerfulness due no doubt to their progress toward cure and to the absence of pain and discomfort in the treatment. He thought it was early to form a final judgement as to its exact limitations but it only removed some of the loathsome features of an extensive ulcerative tuberculous condition and was useful in controlling it. It would still be one of the most useful therapeutic agents that the present century had produced.

Dr H MacCORMAK (London) agreed with Dr Dore that many extravagant claims had been made for the treatment by ultra-violet rays but admitted that it was a very valuable method of treatment, especially in lupus vulgaris as shown by the high proportion of cures obtained by Peven and others. His best results had been obtained in lupus but he had also seen the rapid of prurigo completely fade. The effect of ultra-violet light was however, very variable in psoriasis and he remembered one case in which the disease extended rapidly all over the

body, except over an area covered by short trunks worn by the patient while undergoing treatment. He had also found the light bath a valuable adjunct in cases of trabs with debility when, owing to the patient's general condition, intensive antisyphilitic treatment had ceased to be efficacious, or had actually become harmful.

Dr GILCHRIST (Baltimore, U.S.A.) described a new method of measuring the dosage of ultra-violet light by means of lithopane. He referred to attempts in the United States to ascertain whether it might be possible to desensitize individuals vulnerable to light by means of small doses, just as desensitization to proteins could be produced. He also mentioned the discovery of a new range of rays between the ultra-violet zone and x rays, which were called "border" rays. Investigations in haematomorphyrinuria had revealed that the cause of death was the depression of blood pressure and dilatation of vessels. In lupus he had found diathermy the best method of treatment. He was optimistic about the treatment of psoriasis.

Sir NORMAN WALKER (Edinburgh) indulged in reminiscences. He said that the London Hospital lamp employed thirty years ago in Edinburgh did not then apparently give good results, but ultimately the patients did well. He asked whether strong lamps acting for a short time had as good an effect as weaker lamps acting for a longer time. His great recipe for the successful treatment of lupus was perseverance. Another indispensable factor was early and accurate diagnosis, which nowadays was far better than it used to be. He expressed optimistic views as to the prognosis and treatment of psoriasis.

Dr W MITCHELL (Bradford) preferred diathermy to any other treatment for lupus, owing to the excellent scars which were left. He also used it in the treatment of cancer of the tongue and tonsils. He mentioned an interesting case of a girl who developed menorrhagia after every exposure to ultra-violet light.

Dr A C ROXBOROUGH (London) referred to the employment of ultra-violet light in the diagnosis of ringworm of the scalp. Infected hairs examined in a dark room by ultra-violet light passed through a piece of Wood's glass shone with a brilliant green fluorescence. They had been using this method at St Bartholomew's Hospital for the past six months, both for detecting very early infections and for deciding whether cure had been attained after perhaps rather incomplete epilation with either thallium or x rays. He had found ultra-violet light very useful in tuberculosis of the skin as an adjunct to local treatment, but in one or two cases he had seen an unsuspected tuberculosis of the lungs light up. Other conditions which did well were multiple boils, superficial sepsis, and, in a few cases only, chronic dermatitis and eczema, the latter were very easily irritated by light, and treatment should commence with extremely small doses. He had found local applications by mercury vapour or the tungsten arc most useful in healing ulcers and sluggish wounds—as, for example, after mastoid operations—also in various forms of alopecia and impetigo contagiosa, but not in cases of premature baldness. In psoriasis progress was slow and uncertain. Acne vulgaris and rosacea sometimes benefited, but on the whole did better with x rays. Telangiectases following excessive x-ray treatment could be materially reduced by local treatment with the mercury vapour lamp.

Dr HOWITT (London) said that the action of the sympathetic nervous system was an important factor in ultra-violet light therapy. He also emphasized the necessity of perseverance if good results were to be expected.

Dr KERR RUSSELL (Newcastle-on-Tyne) said that there was no difference between the results obtained at Dr Rollier's clinic at Leysin, where natural ultra-violet light radiations were used, and those obtained at the Finsen Institute, Copenhagen, where carbon arcs were solely used. Those who thought sunlight superior to artificially produced radiation should ask themselves, How could sunlight be used for the treatment of a case, say, of port wine stain? For these cases a lamp of the Kromayer type was essential. He deprecated the allusions to the psychical effects of the treatment.

Dr CHRISTINA BIRROWMAN (Newcastle-on-Tyne) said that ultra-violet light had a very wide application in the treatment of burns, the relief of pain, the prevention and cure of sepsis, the healing of fairly extensive areas without grafting and with little evidence of cicatrization, and the general appearance of well-being of the patient were important features. On the Continent the ultra-violet rays had been successfully applied through cellophane dressings, use of this artificial silk fabric avoided frequent change of dressings and allowed very easy application of ultra-violet rays. Recent infections of tinea capitis yielded to the action of the rays, she had cured a baby aged 2 months with two applications. In more chronic cases, although some of the recently infected areas disappeared, examination under Wood's glass showed that infection was still present.

The PRESIDENT emphasized the frequency of carcinoma following x-ray treatment of lupus, and sounded a note of warning as to the possible risk of a similar danger after the use of ultra-violet rays. An attempt should be made to find out the general principles which underlay the treatment. He suggested that in lupus there was always a positive skin reaction, this indicated that in lupus the antibody to tubercle was anchored in the skin. When the skin was exposed to ultra-violet rays an erythema was produced that caused congestion of the skin and absorption of those antibodies which were carried by the circulation to the tuberculous lesions. In all infective diseases where a positive skin reaction was present the ultra-violet ray treatment was likely to do good.

Dr DONE, in reply, agreed that in lupus vulgaris other methods, such as diathermy and the use of salicylic acid, should be combined with light treatment. Continuous daily applications were required, but excessive exposure might have the opposite effect to that desired. Edinborough had recently stated that there was a period of immunity, lasting fourteen days, following the exposure of a given area to ultra-violet light, and suggested that better results would be obtained if that interval of time were allowed to elapse between the exposures. In the case of children it had been shown that too long or too frequent exposures had a detrimental action. He had tried the treatment of ringworm by ultra-violet light without success. Although it was possible that a superficial infection in an infant might respond (as it would to antiseptic applications), ordinary ringworm of the scalp in children could not be healed successfully in this manner.

## THE TREATMENT OF LUPUS ERYTHEMATOSUS BY KRYSOLGAN\*

BY

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The etiology of lupus erythematosus is still a matter of conjecture, and no decisive facts have emerged since Dr A M H Gray summarized the position in a paper read before the British Association of Dermatology and Syphilology at Manchester in 1925. Two theories of causation are favoured—the tuberculous, mainly in France and Germany, and the streptococcal, which finds its chief adherents in this country.

The results of the gold therapy of the disease, which were not considered at Manchester, seem to me, so far as they go, to support the tuberculous theory, and I am further inclined to that assumption by a consideration of the facts elicited by Jorgen Schaumann from three post-mortem examinations of patients who died as a result of, or in the course of, the disease. This author's brilliant work on certain sarcoids, which he has renamed the benign lymphogranulomata, is well known, and entitles his present pronouncement in the case of lupus erythematosus to more than a cursory perusal. In these three fatal cases Schaumann demonstrated a "special granulomatous process in the lymphatic system, combined in the third case with classical tuberculous lesions, in which necrotic phenomena were conspicuous."

\* Read in the Section of Dermatology at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

I need not here detail the exact cellular structure of the tissue to which he refers, it is only necessary to explain that "disseminated in that tissue there were to be seen many small tubercle-like foci mostly well defined and often surrounded by a zone of lymphoid cells." Inoculations from these foci into guinea-pigs were negative as regards tuberculosis, but several weeks later the animals mostly succumbed, either to pneumonia or to a form of narasmus in exactly the same way had occurred after similar injection experiments with specimens from cases of sarcoid disease (benign lymphogranulomatosis) the tuberculous nature of which is now generally accepted as proven. The author further points out that coccal infections are not infrequently a terminal event both in lupus erythematosus and other "lymph system" diseases, and to me it seems likely that there is in lupus erythematosus an acquired susceptibility in this respect, which may account for the undoubted frequency of focal septal tonsils, intra-frontal sinus, and even teeth in many of the cases and may come to be regarded eventually rather as a complication than as an etiological factor in the pathology of the disease. Some further support of Schramm's belief is afforded by the "leucocytic formula" of lupus erythematosus, which closely resembles that usually found in the benign tuberculous infections but the most cogent argument, and one which it is in the capacity of all of us to examine and critique, is that based on the previous history, personal and family, and the results of the von Pirquet or complement fixation tests in the individual patient. I am persuaded that in the words of Schramm, "the observation cliniques montrent trop souvent l'apparition du lupus erythematosus chez des anciens crofulo-tuberculeux pour que nous puissions écarter toute idée de rapport de cause à effet." In the series, short though it is, of the krisolgan-treated cases I am about to report there was in the majority a history either of pulmonary tuberculosis or pleurisy, and the results of the von Pirquet test in the remainder were at least suggestive of a tuberculous diathesis.

The gold treatment of tuberculous manifestations of all kinds has been on trial for the past two years. There is no doubt of the value of the procedure in certain types and stages of this protean disease and krisolgan is an attempt by the well known firm of Schering to produce a relatively non-toxic salt of the metal. It has the formula  $C_6H_5NH_4S_4O_6Na$ , and is a member of the group of gold thio-phosphates. It is administered solely by intravenous injection, and should be dissolved in the returning ampoule in one or two cubic centimetres of sterile distilled water. The makers state that in non-tuberculous cases no effect is observable even after doses of 7.5 grains. The highest single dose advised in the treatment of lupus erythematosus is 15 grains. I have not exceeded 125 grains for the drug is cumulative, and when a week later, that dose was followed by one of 0.75 grain there ensued (Case 1) symptoms of prostration and cardiac weakness although no pain or harm resulted.

The question of dosage is the most disputed point in connexion with the drug and while the pioneers are still in doubt it is perhaps wise to err on the side of caution even at the risk of therapeutic failure. My practice nowadays is to commence with a dose of 0.015 grain a week, then 0.15 grain is given, and then 0.375 grain. If no toxic symptoms supervene the next dose would be 0.75 grain but if improvement has manifested itself on the previous dose I should prefer to repeat it, and continue to do so weekly while its effects were favourable. Every case selected for the treatment must be tested for albuminuria which, if caused by renal tuberculosis, is a direct contra-indication. One of the only two deaths recorded in the literature was due to anuria resulting from a severe renal reaction to the drug.

There are other toxic symptoms beside albuminuria but none of them so serious—for example, stomatitis and dermatitis which may resemble that due to novarsenobismuth or more anaphylactic in type and resembling urticaria or erythema multiforme. I saw the latter type in one of my series (Case 1). Fleeting pruritis in facial spaces are very common especially in the neck and round the face joints and it may be mentioned here that I found an intravenous

injection of 0.6 gram of sodium thio-sulphate exceedingly quick and efficient in their removal in one or two cases. Depression, fatigue and melancholic tendencies were rather prominent in three cases. Lebril reaction on at least in the two cases observed as in patient at the Royal Northern Hospital, were conspicuously absent. Facial reaction indicated subjectively as irritation and visible as an increase in erythema, I have come to regard as of favourable prognostic import, though its absence need not discourage further treatment (Case 11).

Since the first case in which I made trial of it exhibited some interesting and characteristic features I report it in rather more detail than I shall give to the others.

#### CASE 1

A married woman aged 59 came home from China in 1925 with suspected pulmonary tuberculosis which was not confirmed in London. In 1925 she had two or three attacks of pleurisy. Eruptions of the face occurred in 1918 and in 1925 there appeared crusting in the nose, headache and a tendency to eczema behind the ear with loss of hair. In 1924 a rash appeared on the scalp margin forehead and in front of the ears. On November 26th 1925 the patient had a scalp superficial type of lupus erythematosus of the pre and postauricular region, the forehead and scalp margin. Very little cicatricial tendency was observable. She was a rather feeble subject with cardiac asthenia, a poor colour, some dullness at the right base (C1 pleurisy) and some crusting in the nasal cavity. On January 25th 1926 she had an operation for right auricular valve made from a streptococcus recovered from pus. From February to April 1926 twelve injections of 1 cc. of gold vaccine were given without any benefit to the lupus. On March 28th the facial lesions were as above and there were also scalp macules of a bright reddish tint on the backs of the hands and on the neck.

Krisolgan injections were given as follows: on August 8th 0.015 grain on August 25th 0.015 grain on September 1st 0.375 grain on September 8th 0.75 grain and on September 15th 1.125 grain. There were joint pains, followed by diarrhoea, slight pyrexia and some hyperaemia of the face. No pyrexia was observed at any other time. An injection of 0.75 grain on September 22nd was followed the next day by symptoms suggesting cardiac instability and weakness for which rest was enjoined. On October 6th the patient felt better. All the lesions were paler. On October 23rd 0.75 grain was given and on November 3rd local hyperaemia was pronounced. Additionally there were a few rose-coloured and yellowish brown medallion lesions at the waist line (von Noorden's anaphylactoid rash). On November 24th all the lupus lesions had involuted there was delicate crusting and over the right preauricular region a light brownish purple discoloration extended to local direct action and deposit of a gold salt. In March 1927 the husband reported that she had no recurred and that the general health was in every respect greatly improved. He added that he would immediately acquaint me with any local or general manifestations that might take place in the future.

In this case we cannot I think ignore the very striking history which is suggestive both from the tuberculous and streptococcal points of view. Apart from the suggestion of pulmonary tuberculosis there were live attacks of pleurisy while erysipelas aortic and other evidence of a susceptibility to streptococcal infections may have had some etiological influence at a later date. Her general condition was poor at the commencement of the treatment and appeared to be aggravated by the anaphylactoid streptococcal vaccine from the nasal infection. The spread of the eruption to the backs of the hands at this period suggests that the streptococcus was the actual envenoming agent. It is a fact that the lupus erythematosus was completely eradicated in this case but not before the patient had some rather the more or less severe anaphylactic reaction set up by the krisolgan injection. That these effects are a cure of the local condition is a great gain but even more so was the effect on the general health. The symptoms of fatigue and mental lassitude were a feature of the disease and the inability for sustained effort of an kind were greatly benefited and in her husband's words "he is now capable of doing much more than formerly. He is stronger and energy tires him easily and in the past he astonished me by her capacity for sustained effort. He has lost weight which had given her so much trouble. I now much stronger—very little pain and palpitation, ordinary etc. now."

To me it would seem that in addition to the visible effects of the treatment on the lupus lesions there must have been some subtle action of the drug on some deep (possibly glandular) foci of an active type in the chest or abdomen.



## CASE II

A single woman, aged 67, had had scattered lupus erythematosus of the face, neck, tip of nose, and right ear for seventeen years. There was no history of tuberculosis or pleurisy either in herself or family. Various treatments, including carbon dioxide snow, autogenous vaccines from enucleated tonsils (1919) for a period of six months in a London hospital, and local applications, failed to do more than afford temporary relief.

On admission to the Royal Northern Hospital on January 13th, 1927, the von Pirquet reaction was strongly positive and persistent. She was of a stout pale phlegmatic type, and breathlessness ensued on slight exertion. Cardiac enlargement, and weakness of the cardiac musculature, with a pronounced presystolic bruit, were obvious features in the case.

Between January 13th and February 23rd, 1927, five doses of krysolgan were administered at weekly intervals, rising from 0.015 to 0.75 gram—in all only 2.04 grams. On March 9th all the lesions had completely involuted leaving delicate, pale, and almost invisible atrophic patches in their original sites.

This patient had always been subject to vague rheumatic pains around the joints. They were greatly aggravated, especially in the neck muscles and around the knees, by the injections. The intravenous administration of sodium thiosulphate (0.6 gram) was very effective in relieving

## CASE III

A married woman, aged 42, had had lupus erythematosus of the face, nose, tip of right ear, and scalp for twenty years. The lesions were scaly, of chronic erythematous and very irritable type. Scarring was very slight. She had had pleurisy seven years previously. Auscultation and x-rays revealed nothing abnormal, the von Pirquet reaction was slightly positive. She received many local treatments—carbon dioxide snow, Kromayer lamp, phenol, lactic injections, etc.—without much benefit.

She began krysolgan treatment, as an out-patient of the Royal Northern Hospital, on February 2nd, 1927. Between this date and March 30th four injections of krysolgan were given, rising from 0.015 to 0.75 gram—1.515 grams in all.

On April 27th the facial lesions had involuted, and the scalp lesion, which had shown marked local irritability throughout the course, was pale and no longer tender to the touch.

When seen on June 30th the facial lesions had not recurred, and the patient looked and felt extremely well. She had put on 2 st in weight since she first began the krysolgan treatment. The scalp lesions had not benefited at all from the treatment, and a further course, together with iodine (Ficuch Codex) by the mouth, has been decided upon.

## CASE IV

A married woman with two children had had a typical butterfly distribution of subcutaneous type for two years. There was no tuberculous history. A sister also has lupus erythematosus and attended with the patient on one occasion for diagnosis. In December, 1926, an abdominal mass in the ilio-cæcal region was thought by Dr. Bruce-Williamson to be due to tuberculous glands. The von Pirquet reaction was very violent, and accompanied by fever and prostration for three days. Local reactions developed in the lupus lesions a week later, and subsequent pricking was noted at a later date. The improvement was only temporary.

She was admitted as an in-patient on March 20th, 1927. Examination for focal sepsis in the teeth, sinuses, and tonsils was negative. Between March 23rd and May 19th six injections of krysolgan were given without any constitutional effects, dosage 0.015 to 0.375 gram at weekly intervals.

On May 19th there was great improvement in the general health, with gain in weight and decrease of the ilio-cæcal mass. The lupus lesions, which had reacted throughout with increase of irritation, were still present on the cheeks and bridge of the nose but were reduced to linear dimensions; the central portions having cleared up without any tendency to atrophy or scarring. She is continuing the treatment with injections as an out-patient.

## CASE V

A married woman, aged 27, first seen as a private patient on December 12th, 1925, had had lupus erythematosus of the cheeks and temporal regions for four and three-quarter years. The tonsils had been removed at another dermatologist's suggestion, also several teeth, without benefit to the eruption. Vaccines from the above sources proved ineffective. At her confinement all the lesions involuted, but recurred a few months later.

During treatment applied by me between March 19th and November 29th, 1926, six injections of silver sal. were given. A marked improvement. Other treatments included application of carbon dioxide and Unna's microbrenner, guanine and tincture of iodine (Ficuch Codex) by the mouth without ascertainable results. Krysolgan was begun on November 29th, 1926, and doses of 0.375 gram to 1 gram were given at intervals of not less than a week. Up to May 22nd, 1927, 5½ grams had been administered. There is now very great improvement, three of the lesions—those in the temporal regions and on one cheek—have completely involuted, the former with a slightly bluish tinge (gold deposit), there is a slight tendency of a very small lesion to persist on the right cheek.

## CASE VI

A man, aged 46 (a private patient) twenty years ago was treated for pulmonary tuberculosis in a sanatorium in California. He first consulted me on June 25th, 1925. Fifteen years ago he first noticed a warty and striking condition of the nose in the region of the left nostril and similar small patches behind both ears over the mastoid processes. When first seen by me he had typical but exceedingly chronic lupus erythematosus which had led to some considerable atrophic deformity in the left naso labial

angle. Previous treatment by radium in New York was doubtless responsible for the few telangiectases present. There was scarring of the patches over the mastoid processes. The lupus was slowly progressing with a raised scaly edge on the left upper lip. The internal aspect of the left chlorea was slightly affected.

On June 25th, 1925, carbon dioxide snow was applied to the advancing edges, two applications were sufficient, and the patient returned to America. When seen again, on March 21st, 1927, the condition was very much the same as when he was treated two years previously.

A course of krysolgan treatment was agreed to and between March 21st and May 13th six doses, rising from 0.075 to 0.75 gram, were injected—2.3325 grams in all. On May 13th, 1927, there was very definite flattening of the raised hyperæmic edge, and complete cessation of the tendency to scalo. A complete cure could not, however, be claimed. Throughout the course the patient complained of more or less severe pain in the back of the neck, and a feeling of fatigue and mental depression. I think that in this case the marked cicatricial effects of the disease and the consequent damage to the local circulation militated against a free access of the drug to the affected area.

## CASE VII

This patient, a man aged 30 (a severe case of neurasthenia due to shell shock), had been under treatment by various physicians at the Ministry of Pensions and the Hampstead General Hospital since 1915. On July 20th, 1925, the lupus erythematosus was limited to the scalp, where there was an extensive cicatricial hyperæmic and denuded patch including the vertex, frontal, and some of the parietal areas.

The nervous state of the patient prohibited any drastic local applications, and treatment was confined to soothing lotions and the internal administration of tincture of iodine (Ficuch Codex), which was continued without any effect on the local condition but with benefit to the general health, until December, 1926. There was no history of any tuberculous condition in the patient or his family. The von Pirquet test was weakly positive.

From January 24th to April 4th, 1927, krysolgan treatment was given in doses rising from 0.015 to 0.75 gram weekly, the total administered being 3.3 grams. The result showed no appreciable objective effect on the lesions at the conclusion of the course, although there appeared to be some increase of the hyperæmia, and the patient complained of aggravation of the irritation after two of the larger doses.

Note—It is, of course, open to question whether the diagnosis of lupus erythematosus was justified. Syphilis was excluded by a Wassermann test.

## CASE VIII

A man, aged 33, first seen on August 6th, 1926, had a nine years' history of a red scaly patch limited to the bridge of the nose, there was a slight cicatricial tendency. He was subject to frequent sore throats and colds. There was no suspicion of tuberculous in the patient or his family. Carbon dioxide snow applications effected some improvement, but on February 28th, 1927, there were four fresh areas or relapses in the previously affected area. From March 21st to May 23rd, 1927, four injections of krysolgan—1.88 grams in all—effected a striking improvement in the local lesions. There was brownish discoloration in the central part of the area, similar to that described in Cases I and V.

This case cannot be claimed as a cure, and is still under observation.

## CASE IX

A man, aged 41, an out-patient at the Royal Northern Hospital, had typical butterfly localization of the chronic scaly indurated type of lupus erythematosus on the cheeks, lower third of the nose, and the lobes of both ears. It was first noticed about a year ago. There was no history of pleurisy, glandular trouble, or tuberculous affections in his family. The von Pirquet test was feebly positive. Dental and throat reports were negative. No treatment of any kind had hitherto been given or applied for.

He was given injections of krysolgan in doses as follows: On June 8th, 1927, 0.015 gram, June 15th, 0.375 gram, June 22nd, 0.75 gram, June 29th, 0.75 gram. On this date some local improvement was noted, the lesions were decidedly paler and less scaly. On July 6th he received 0.375 gram, he complained of depression and feeling dazed since the last dose, the urine was normal, there had been no febrile reaction hitherto. On July 13th he was again given 0.375 gram—making a total received by the patient of 2.640 grams. He now showed very definite improvement, both objectively and subjectively, in the feeling of irritation. The nose had completely lost its tendency to scaly exfoliation, and there was less erythema, and the infiltration had almost involuted. Similar changes, rather less marked, were noted in the remaining lesions.

This is the most typical case of the fully developed disease in my series. The patient is greatly encouraged by the results so far obtained, which are certainly striking. In this case I am supplementing the krysolgan with oral administration of tincture of iodine (Ficuch Codex) 5 to 30 minims three daily.

It is obvious that with so small a series no very definite conclusions can be emphasized, but there are a few points of interest. Of the nine cases reported, two are assumed to be well, and both were demonstrated as cures at the Dermatological Section of the Royal Society of Medicine. Only four months have elapsed since the cases were exhibited, and relapses may yet occur. In one case the

facial lesions cleared up, but the scalp lesions were not influenced to any extent. Five cases were greatly improved and one, a case limited to the scalp, remained uninfluenced.

I am therefore able to record 22 per cent cures, 66 per cent improved, and 11 per cent uninfluenced. These results do not compare favourably with those reported in Germany by Martenstein in 1922 (66.5 per cent cures, 14.5 per cent improved), Ullmann, Fried, and other workers. Schamberg has recently published success up to nearly 50 per cent in twenty-five cases treated with sodium and gold thiosulphate (sanoerxsin). It is quite possible that my series differs both in their selection as suitable cases and in the relatively small amounts of the drug administered.

The striking preponderance of either a tuberculous history (three cases) or a strongly positive von Pirquet reaction (four cases) in a series of nine, one of which was not examined from this point of view, lends considerable support to the theory advanced by Schramm and those who favour the tuberculous etiology of lupus erythematosus.

In conclusion I desire to state that in my opinion kysolgan has established itself as a most valuable remedy in the treatment of lupus erythematosus, and that if it really has a specific action on tuberculous foci its effect lends further support to the theory of a tuberculous origin of the disease.

## THE TREATMENT OF RINGWORM OF THE SCALP BY THALLIUM DEPILATION

BY

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Depilation of the whole scalp is generally admitted to be an absolute necessity in all cases of ringworm of the scalp, with the single exception of kerion, which does not require this treatment.

While x-ray depilation has been the customary method of treatment for about thirty years, and on the whole a very successful method, there are certain objections to it which are obvious and well recognized.

1. A x-ray can only be employed with safety by those who are highly skilled and constantly employed at the work, for the dose must be very exact. A small margin of error on either side will result either in failure to produce complete defluvium or, on the other hand, in some degree of permanent alopecia. The possibility of the latter accident is the most serious objection to the method.

2. X-ray depilation is impracticable, or at any rate very difficult, for children of 3 years of age and under, for the reason that they cannot as a rule be made to keep still for the time necessary for a depilatory dose. Dr J. M. H. MacLeod has overcome this difficulty by means of a special apparatus which he has invented, but it is a method which at present at any rate cannot be applied universally.

3. A very unpleasant though temporary inflammatory reaction of the scalp occasionally follows irradiation, while any inflammation already present is invariably aggravated, so that cases of inflamed ringworm (I do not refer to kerion) are not suitable for immediate x-ray depilation.

Any reliable alternative method of producing defluvium would therefore undoubtedly be a welcome addition to the already existent methods of attacking the disease.

The depilatory action of thallium acetate has been well known for many years, and about thirty years ago Sibouraud attempted to use the drug for the treatment of ringworm. He came to the conclusion, however, that the method was unsafe, in all probability the doses he gave were too large. At all events it was given up. After Sibouraud's therapeutic failures no attempt to make use of thallium for its depilatory action appears to have been made until quite recently, and it is due entirely to the experimental researches of A. Buschke that the method has at last attained a degree of practical usefulness.

The advantages of making use of this property of

thallium are obvious, but a dose had to be found that would be effective and at the same time non-toxic. So about twenty years after Sibouraud had abandoned his therapeutic trials in this direction, A. Buschke, at first alone and afterwards in collaboration with L. Peller and others, took the experimental work on animals which eventually resulted in establishing the minimal dose that could be relied upon to make the scalp depilate. This was established to be 8 mg. per kilo of body weight. An effective method of administration was found to be a single dose by the mouth dissolved in sweetened water. Buschke obtained imperfect epilation when the drug was given mixed with food.

The therapeutic value of the treatment has been tested on a large scale in Mexico by Cicero and on a somewhat smaller scale by Buschke in Germany, by others on the Continent, and more recently in England. A very large number of cases altogether approaching 1,000 were reported in 1925, and the results were stated on the whole to be remarkably successful.

My own experience has been of cases of which 10 are still under treatment—a sufficient number to warrant some definite conclusions concerning its value. The technique advocated by Buschke has been followed. I have given 8 mg. 85 mg. and 9 mg. per kilo of body weight dissolved in about 2 oz. of sweetened water. 8 mg. has been found rather too small a dose, and I have generally used one or other of the larger doses, using 9 mg. only in certain circumstances to which I will refer later.

I have employed two preparations of thallium acetate—one made by Marx and Baker, the other by Kahlbaum of Berlin, which is the preparation used by Buschke. I have not been able to observe any obvious difference in the depilatory action of the two drugs. Kahlbaum supplies the drug in tablets containing 1 decigram, 1 centigram, and 1 milligram, so that it is a simple matter to convert the weight of the child in pounds to kilograms, multiply by 85 or 9, and administer the required number of tablets in water.

The effect of this single dose of thallium acetate is well known about the seventh day the hair begins to loosen, and by the fourteenth day it comes out in a most dramatic fashion. By the nineteenth day depilation is complete except for some sparse fine unpigmented but quite long hairs of the lanugo type scattered over the scalp, but found mainly near the hair margin, particularly in the frontal region. These hairs never come out and incidentally they appear never to be infected with ringworm. The eyelashes and eyebrows do not fall though the outer third of the eyebrows thin out occasionally, reminding one of the appearance of leucism in thyroid insufficiency. In adults the pubic and axillary hair and the hair on the arms do not come out with a dose of 8 mg. or 9 mg. per kilo. The infected stump, though absolutely loose, does not fall with the ready ease of the normal hairs. In actual fact most of the hair appears to be the result of slight traction—for example, if the hair brush is used. The stump being very short naturally escapes the limit of traction.

The same failure of the stump to fall out spontaneously also occurs after repeated x-ray depilation, and in such cases adjunct measures have to be used such as the application of some number of adhesive strappings, followed by withdrawal. This is a very important point for attention, for these loose infected stumps may come out eventually and then persistence for a few days or even several weeks after depilation does not necessarily mean that the hair will not be cured, yet it is necessary to use a depilatory treatment all over the scalp with one or two exceptions to guard against reinfection. The infection of the scalp to appear almost immediately. This infection of the scalp must not be stopped until it is certain that the roots of the infected stumps are dead.

Occasionally this infection does not refer to the stump, but comes on with the regrowth of the hair. This is particularly the case in inflammatory ringworms. As a general rule it may be stated definitely that the stumps do not come out as readily as the normal hair except in inflammatory cases, or so well as in a good x-ray depilation. The procedure, then, is as follows: A single dose of thallium

acetate—8.5 or 9 mg per kilo of body weight—is given in sweetened water. From the first day a fungicide ointment is rubbed twice daily all over the scalp. At the time of depilation (seventeenth to nineteenth day) the scalp is examined carefully for infected stumps. As many as possible are removed by means of adhesive stripping in the manner already described, or with epilating forceps. However thoroughly this is done it is certain that some stumps will be left behind. In many cases these will come out spontaneously in the course of time. It is advisable, however, to make a daily examination for stumps and to epilato with forceps, as well as to continue local treatment in all cases for a good fortnight after a careful examination of the scalp has failed to reveal the presence of any evidence of infection. I should like to refer to Dr. Roxburgh's method, which he has recently exhibited, of testing for cure by means of an ultra-violet beam—a method which I am sure will be adopted eventually by all skin clinics.

Regrowth after thallium depilation begins very early, the actual time varies a good deal, but, generally speaking, it begins within a fortnight or less of the deslucium. The point I would like to emphasize is that the chief practical difficulty in the thallium treatment is that the hair grows again so rapidly that particular care must be taken to get at all the infected hairs as quickly as possible and to protect the new hairs with fungicide treatment applied vigorously. This entails a considerable amount of trouble on the part of the doctor or nurse.

The local treatment is of the greatest importance. Buschke advocates the use of 10 per cent sulphur ointment from the first day of treatment. Then at the time of deslucium ointment and tincture of iodine are applied on alternate days. I regret that I did not follow these suggestions of Buschke until recently, and I attribute some failures to this omission. I used at first either mercuric ammonium chloride ointment with 2 per cent of salicylic acid, or Whitfield's benzoic and salicylic acid ointment. Buschke's treatment has been carried out in the last ten cases that have undergone full treatment, and all of these have been cured.

The weighing of the patient and of the drug must be scrupulously accurate. The difficulty of weighing the drug to the nearest milligram may be overcome by buying it weighed up in decigrams, centigrams, and milligrams.

The time should be realized in each case. Sulphur ointment (10 per cent) is rubbed twice or three times daily all over the scalp, and at the time of deslucium this treatment is combined with application of tincture of iodine twice daily on alternate days, and the daily removal of as many loose stumps as possible. It is better to keep the children in bed during the treatment, though most of my cases have of necessity been ambulatory cases.

### Results

I have divided my own cases into four classes: (1) Children aged 3 years and under and for whom early treatment would not be available, 16 cases, all cured. (2) Children over 3 years of age, 46 cases—35 successes, 11 failures. (3) Four of these cases had already been treated with rays without success. All these were successfully treated. One of them was still completely bald, except for the patches which had resisted epilation. The thallium was administered two months after the ray treatment. An interesting feature of this case was that regrowth all over the scalp commenced within a fortnight of the deslucium due to thallium—earlier, I thought, than would have occurred had he been left alone. (4) Six cases were treated with two-thirds of a depilatory dose of thallium and either half or two-thirds of a depilatory ray dose, depilation either failed absolutely or was incomplete in all these cases, except one, in which I am inclined to attribute the depilation to thallium alone. This appears to prove that rays and thallium act in different ways and that they cannot be used to supplement one another. Twelve patients ceased to attend for further observation and treatment after varying periods or attended irregularly. Some of these may have been cured eventually, for they were all supplied with ointment for local treatment. They are excluded from further consideration. Ten patients

have been treated within the past four or five weeks, and are still attending for treatment.

Other observations which appear to me to be of importance are these: Children with stout, coarse, usually black, hair resist thallium depilation more than those with fine hair. I consider that these cases require the larger dose, 9 mg per kilo. I have noticed that the crown depilates rather less readily than the rest of the scalp, so for uniformity of this area also I consider 9 mg advisable.

Thirty-seven cases have been treated with Miv and Baker's thallium, 25 with Kahlbaum's preparation. The results have been 29 successes and 8 failures with the first preparation, 22 successes and 3 failures with the second. Ten children have been treated locally throughout with sulphur and iodine, all with success, and though I cannot be certain that all cases treated by this method will be successful, the results are suggestive. Of 62 cases fully treated and observed throughout, 51 have been successful, 11 have failed, this excludes patients who have not attended for full treatment or have attended irregularly, and the cases in which a ray has been combined with thallium, so that a possible 18 further cases must be added to the failures, though some few of these may have eventually cleared up. Of 10 remaining cases still under treatment 7 have already epilated, they are undergoing sulphur and iodine treatment, and I expect them to be cured.

### Toxic Effects

I do not think sufficient stress was laid upon the toxic side of thallium treatment by those who published the first cases, or, I must confess, by myself in a small series that I published six months ago. Further experience has proved to me that these are not negligible.

There has been great variability in the degree of toxic effects, but very few patients have been entirely free from them (12 cases out of 90). The commonest symptoms are undoubtedly joint pains, particularly in the lower limbs. These pains usually begin about the eighth or tenth day, but occasionally earlier. They pass off by degrees, usually disappearing altogether in three to four weeks. There is in addition frequently loss of appetite, drowsiness, and irritability. These manifestations pass off more gradually than the pains in the joints. In some cases these general manifestations have been almost totally absent, the joint pains being the only trouble. Two of my cases, and possibly more, have unfortunately been seen by practitioners who, unaware of the facts of the case, have diagnosed acute rheumatism. The fall of hair has taken place, regrowth has occurred, and the new hair has become infected. I do not know the explanation of the joint pains, but it is possible that the drowsiness may be due to temporary damage of the thyroid gland. At any rate, it has been shown experimentally by Buschke and by Curtis that this gland suffers severe damage in animals that are given repeated poisonous doses of the drug.

It has been found also that children develop a temporary hypochlorhydria or achlorhydria during thallium treatment. With this information I have attempted to counteract the general symptoms with small doses of thyroid extract and of dilute hydrochloric acid. I have observed, apparently as a result of this, a rapid recovery to their normal condition of the children who have received this treatment. I should add, further, that in spite of this alarming list of symptoms no child that I have treated appears eventually to be any the worse in general health. This is substantiated by the experimental fact that rats and rabbits remain healthy after a depilatory dose of thallium.

Finally, it must be added that very young children are much more tolerant of thallium than older children. This may be because older children require a larger dose, but I do not think this is entirely the reason. My youngest patients have been 1 year old, and have shown no toxic symptoms whatever.

### Pharmacological Action

The very remarkable action of thallium acetate in producing alopecia is, so far as is known, shared by no other substance. The exact mechanism of its depilatory action is not absolutely known, but certain established facts appear to show that this action is upon the sympathetic nervous



The first thirty cases treated at Booth Hall were in the early part of 1927 and were all complete failures. The preparation used was probably stale and inactive, the demand for the drug being negligible at that time. Evidently it does not remain active indefinitely, and we suggest that thallium acetate in contact with the air may slowly become changed into the carbonate.

With a fresh supply of thallium acetate about fifty children have been treated, and with the exception of three all have been successfully depilated. There were three failures where, at the end of twenty-one days, there was only patchy depilation, the remaining hairs being absolutely firm. We cannot explain this, but it is interesting to note that the statement of another observer, that fair children depilate more readily than dark-haired children, is borne out, for the failures were dark children in the proportion of two to one. On the other hand, we have had perfectly satisfactory depilation of a considerable number of dark-haired children.

Signs of thallium toxicum were manifested in five children. Two of these, aged 3 and 6 years respectively, had very transitory albuminuria, the former showed albumin on the thirtieth day only, and the latter on the first and second days after the dose. In the other three children (girls—two aged 11 and one 10) pruritis in the knee-joints and down the tibiae to the ankles arose between the tenth and twelfth days, and were evidently severe. In one there was definite effusion into the right knee-joint, but the two others showed nothing on examination except tenderness and some pain on full flexion. No rise in temperature occurred, but in one girl the pulse rate increased with the onset of pruritis. All three cleared up in less than a week on salicylates, with the methyl salicylate liniment applied locally on lint, they depilated well, and up to the time of their departure to the convalescent home showed no other untoward symptoms. These three girls were the oldest and heaviest children who were given the drug, and consequently received the largest doses. This may give some clue as to the limit at which the method is applicable, since we understand it has been shown that serious toxic signs develop in adults given doses far short of that which would be required to produce depilation. The heaviest child among our cases which depilated without showing any toxic signs weighed 23 kilos, the lightest among the bone and joint cases weighed 23.9 kilos, and the heaviest 32 kilos. The two cases of albuminuria occurred in younger and lighter children.

#### Conclusions

We have in thallium acetate a drug which may have a great future in the treatment of ringworm of the scalp, both in institutions and in private practice, but we consider that more observation is needed before its use becomes general. We do not know the ultimate effects of thallium acetate on the kidneys. The questions which demand answers are: Why does it produce albuminuria in some cases and not in others? Are any changes produced in the kidneys in those who do not show this symptom? Is the e possible irritation which may give the way for future kidney trouble? How soon is all the thallium acetate excreted by the kidneys? We presume it is all excreted in this way, and we need a suitable chemical test for its presence in the urine. We also do not know what the exact changes are which produce the bone and joint symptoms, and, so far, we can only assume from their short duration that no lasting damage is done.

We can say definitely that treatment by thallium acetate, thoroughly carried out, shows a 90 per cent standard of efficiency. Local treatments with tincture of iodine, ointments, etc., are unsatisfactory compared with thallium and x-ray depilation, and thallium has the advantages over the x-rays of producing a speedier and equally efficient depilation, of a speedier occurrence of new growth after treatment, and, so far as we have seen, no permanent alopecia. X-ray depilation is unsuitable for children under 3 years of age, and in these cases thallium is successful. We have dosed a child as young as 10 months. At the other end of the scale we are driven to conclude that there is a limit of body weight beyond which toxic symptoms tend to arise readily. We do not yet know if with this type

of case a lesser amount of the drug per kilo of body weight would be efficient in procuring depilation without the occurrence of such signs, but in the next cases which weigh 23 kilos or over we intend to try seven milligrams per kilo instead of eight.

When applying this method of treatment it is necessary to bear well in mind the following salient points:

- 1 Remember the routine examination of the urine and the nature of possible toxic signs.
- 2 Weigh the child naked.
- 3 The drug must be of recent manufacture, and if the solution method is used, the solution should not be kept more than a day.
- 4 Depilate between the fourteenth and nineteenth days, and above all strip the patches thoroughly as suggested. The old patches should be examined with a lens after this to see that no stumps are left. A few dirty stumps will reinfect the new growth, which comes very quickly.

Our acknowledgments are due to Dr. J. D'Ewart, medical superintendent, for permission to publish our observations, and to Dr. Gibson, visiting dermatologist, for his interest and help in the supervision of the treatment.

## NASAL HEADACHES.\*

BY

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BATH, JACKSONIAN PRIZE ESSAYIST, 1926

To bring forward again the well-worn subject of headache may appear to be in the nature of flogging a dead horse, but, in the many papers recently published on this symptom, I have found few references to nasal disease as a possible causative factor. This is my excuse. In what follows I shall omit consideration of those cases in which the headache is obviously part and parcel of some remote nasal infection, and confine discussion to those of Egyptian headache where there is no definite signpost to the cause.

Every medical man frequently has to deal with the type of case to which I refer. Some of the patients suffer almost constantly, and look ill, run down, and toxic, others have violent attacks of headache with periods of freedom, some suffer in silence, as far as any reference to a medical man is concerned. Others seek remedies even where, if they have sought medical advice they will probably have been investigated for bowel trouble, menstral disorders, errors of refraction, and possible sources of toxicæmia such as septic teeth, but comparatively rarely will the nose have been examined. I am far from suggesting that these other conditions are not important and frequent causes of headaches, or that some nasal lesion is more common than any of them, but I wish to suggest that, other possibilities having proved negative, the nose should be thoroughly examined for any possible source of the trouble before labelling the patient as, for example, a case of toxicæmic headache, or of atypical migraine.

There are essentially two conditions in the nose which may give rise to headaches of nasal type—sinus disease and some form of nasal obstruction. The more usual and more important of these is the former, and unsuspected pus held up in one or more of the sinuses is productive of many obscure complaints. There is a widespread belief that accessory sinus suppuration is always associated with nasal discharge, either anterior or posterior, or both, and that in the absence of this symptom sinus disease can be excluded. This is erroneous. Many cases do not show this symptom, and manifest only a concealed focus of sepsis by their general toxicæmic appearance—sallow complexion, listlessness, undue mental and physical fatigue, and the headaches, which may be general or may be of special type according to the sinus involved.

It will make for simplicity to title the various sinuses in turn and describe the kind of headache to be expected in each case.

Disease of the maxillary antrum produces no typical variety; the headache is toxicæmic, sometimes frontal, \*

\* A paper read before the Bath and Bristol Branch of the British Medical Association.



sometimes general, sometimes described as neuralgic, and increasing usually towards the end of the day. It is often thought to be due to eye-strain, but on close question the patient may confess to frequent colds, which are apt to be worse on one side than the other, and that at such times there is some pain in the corresponding cheek.

A lady aged 43 was sent to me for investigation because of arthritis in the shoulder on transillumination it was found that the antrum on one side was dark. She then said that ever since she was a girl of about 12 she had suffered from headaches and from pain beneath the corresponding eye, especially if she had a cold, all had been called neuralgia. She looked thoroughly toxic and said she never felt really well but was so busy that she had no time to feel ill. Puncture of the antrum yielded foul inspissated pus. The antrum was drained intranasally and gradually cleared up. This was last autumn. She has gone through the winter without a cold, has been free from headache for the first time for years, and looks and feels quite a different woman.

In this case there was only discharge from the antrum during a cold, when it was not noticed. Sometimes no history of discharge or offensive smell can be obtained.

A man aged 62 was sent on account of two or three recent attacks of laryngitis, with the warning that he was always exceedingly nervous and suffered at times from incapacitating headaches. He had pus in one antrum, very foul, probably originating from a carious upper molar tooth which had been extracted some twenty years previously. Question him as one might he would not admit to any nasal symptoms. After some trouble he and his doctor were persuaded to agree to intranasal drainage of the antrum since then (18 months) he has only had one attack of headache and that not severe when he caught cold and his antrum flared. His laryngitis has not returned.

**Frontal sinus disease** is usually associated with headache of a very definite type. The pain is situated in the frontal region immediately above the eye, and may spread over the whole of the affected side of the head—a true hemi-crania. Hence it is often mistaken for migraine. In severe cases it may extend to the other side of the forehead, and thence all over the head, though only one frontal sinus is involved. It occurs typically in the morning, starting soon after the patient gets out of bed, and gradually subsiding to disappear about lunch time. It may be so severe at the onset as to cause vomiting and some interference with vision on the affected side, thus making the mimicry of migraine more complete. But the typical battlemented spectra of migraine are absent. Frontal sinus headaches often occur in bouts in chronic cases, the headache coming on every morning for a fortnight or three weeks, but gradually diminishing in intensity and then disappearing for weeks or months. These bouts are initiated by some catarrhal infection, which causes the sinus to flare up, and the headache diminishes coincidentally with the superimposed catarrh. The diagnosis can often be made on the history, but should always be confirmed by a skiagram. There is usually little or nothing to be seen inside the nose. A deviation of the septum to the affected side is common, and during an attack there may be oedema of the middle turbinate with, possibly, some pus exuding beneath it. Often both these signs are absent. An interesting case of this type occurred a few weeks ago in a boy of 16—unusually young for such cases.

This boy had suffered from typical frontal attacks for two or three years and his father had before him. The tonsils had been removed on account of the headaches but without benefit and he was then labelled migraine—no doubt the family history led to this. Then he started a cold at school and had another of these attacks. His school doctor, an alert clinician, diagnosed an infection of the frontal sinus. But examination of his nose showed no oedema of the turbinate nor could any suspicion of pus be obtained from beneath it, even after the most thorough shrinking with cocaine. A skiagram, however, showed the frontal sinus on the affected side blurred and hazy, the fronto-nasal duct was acutely kinked and narrowed by a large fronto-ethmoidal cell which was preventing drainage and ventilation. When this and the other anterior ethmoidal cells were curetted away there was a free passage into the frontal sinus which contained mucus and flavo-purulent pus—obviously an acute catarrh superimposed upon an infection of long standing. He is now doing well and has had no more headache.

The anterior ethmoidal cells are frequently involved at the same time as the frontal sinuses, and then the headache is apt to be more persistent and not so typically matutinal,

while eye symptoms are, in addition, not uncommon, such as some blurring of vision or a sensation of pressure or of throbbing in the orbit. This often leads to the diagnosis of a refractive error, if one is present, as the cause of the headache, and when correction of such error by glasses fails to relieve, the case is again usually labelled migraine. It is, therefore, of importance that all cases of hemi-crania in which the symptoms are not those of classical migraine, and are not relieved by suitable glasses, should have a thorough examination of their nasal sinuses before being left to their fate. They should be seen by a rhinologist in the second place as automatically as by an ophthalmologist in the first. In these cases, as in those affecting the frontal sinus only, examination of the nose often reveals very little, and recourse has to be had to a skiagram for diagnosis.

A middle-aged lady developed all the symptoms of an acute infection of the antrum following extraction of an upper molar tooth, but in addition to this she told a story of years of headache with more recently failing or rather blurring of vision to such a degree that she had had to give up needlework almost entirely. This suggested that there was something more than an affection of the antrum and a skiagram showed infection of all the anterior group of sinuses. An intranasal operation upon the ethmoids to drain them and give access to the frontal and at the same time upon the antrum produced an extraordinary change. She lost her headaches and tiredness, her sight rapidly improved so that she could with ease do fine embroidery, she gained in weight, improved in colour and said when last seen some three months ago, that her friends could recognize her.

These two cases of frontal sinus disease, which had been unrecognized for long periods, indicate what can be done in favourable cases in the way of relieving headache. Unfortunately all cases do not respond so well. Many patients, even after free drainage continue to have headaches, perhaps not so severe, but quite enough to render their lives a burden to them, and not infrequently one fails to relieve them even by external operative procedures. Many relapse into complete invalidism and some even develop suicidal tendencies. In others, again, one fails entirely to stay the progress of the infection, so that ultimately it may spread to the intracranial contents. My impression, unsupported by statistical evidence, is that those cases of frontal sinus headache with a patent ostium and with obvious discharge from the sinus are the least satisfactory in their results, while those in which headache is the only indication of the disease, in fact the closed cases with which this paper deals, are the most satisfactory.

**Vacuum Frontal Headache**—Another cause of frontal headaches is the condition named by Sluder vacuum frontal headache. It results from closure of the fronto-nasal duct so that the air in the sinus is absorbed, producing a partial vacuum and congestion of the lining mucosa. This causes the thin bony floor of the sinus to become very sensitive to pressure, the point of maximum tenderness being at the thinnest part—that which lies internal to and behind the point of attachment of the pulley of the internal oblique muscle (Ewing's sign). Consequently, therefore, movements of the eyes aggravate the pain, and this is a very characteristic feature. These cases are not very uncommon, they are partly anatomical and partly pathological. A deviation of the septum may so narrow the nasal passage as to pressure the middle turbinate against the outer wall of the nose—in it of a cause or pain. If to this is added a catarrhal swelling of the mucous membrane the orifice of the duct may be completely blocked and headache result or the bone and covering mucosa or the middle turbinate may be the seat of an inflammatory process causing oedema or polypoid formation, which will block the duct. A patient who had an acute infection of the antrum stated that he had had typical frontal headaches for several days (great oedema of the middle turbinate was causing the block). The headache went away soon as the antrum was drained and the oedema began to subside. In cases due to a temporary constrictor swelling no judicious application of cocaine is likely to

be of long use a patient who is suffering from a vacuum headache may be relieved by the application of a vacuum to the anterior end of the middle turbinate with a vacuum

The first three cases treated at Booth Hill were in the early part of 1927 and were all complete failures. The preparation used was probably stale and inactive, the demand for the drug being negligible at that time. Evidently it does not remain active indefinitely, and we suggest that thallium acetate in contact with the air may slowly become changed into the carbonate.

With a fresh supply of thallium acetate about fifty children have been treated, and with the exception of three all have been successfully depilated. There were three failures where, at the end of twenty-one days, there was only patchy depilation, the remaining hairs being absolutely firm. We cannot explain this, but it is interesting to note that the statement of another observer, that fair children depilate more readily than dark-haired children, is borne out, for the failures were dark children in the proportion of two to one. On the other hand, we have had perfectly satisfactory depilation of a considerable number of dark-haired children.

Signs of thallium toxicæmia were manifested in five children. Two of these, aged 3 and 6 years respectively, had very transitory albuminuria, the former showed albumin on the thirteenth day only, and the latter on the first and second days after the dose. In the other three children (girls—two aged 11 and one 10) pains in the knee-joints and down the tibiae to the ankles rose between the tenth and twelfth days, and were evidently severe. In one there was definite effusion into the right knee-joint, but the two others showed nothing on examination except tenderness and some pain on full flexion. No rise in temperature occurred, but in one girl the pulse rate increased with the onset of pain. All three cleared up in less than a week on salicylates, with the methyl salicylate liniment applied locally on hut, they depilated well, and up to the time of their depilation to the convalescent home showed no other untoward symptoms. These three girls were the oldest and heaviest children who were given the drug, and consequently received the highest doses thus far given, some this is to the limit at which the method is applicable, since we understand it has been shown that serious toxic signs develop in adults given doses far short of that which would be required to produce depilation. The heaviest child among our cases which depilated without showing any toxic signs weighed 23 kilos, the lightest among the bone and joint cases weighed 23.9 kilos, and the heaviest 32 kilos. The two cases of albuminuria occurred in younger and lighter children.

#### Conclusions

We have in thallium acetate a drug which may have a great future in the treatment of ringworm of the scalp, both in institutions and in private practice, but we consider that more observation is needed before its use becomes general. We do not know the ultimate effects of thallium acetate on the kidneys. The questions which demand answers are: Why does it produce albuminuria in some cases and not in others? Are any changes produced in the kidneys in those who do not show this symptom? Is there possibly mutation which may pave the way for future kidney trouble? How soon is all the thallium acetate excreted by the kidneys? We presume it is all excreted in this way, and we need a suitable chemical test for its presence in the urine. We also do not know what the exact changes are which produce the bone and joint symptoms, and, so far, we can only assume from their short duration that no lasting damage is done.

We can say definitely that treatment by thallium acetate, thoroughly carried out, shows a 90 per cent standard of efficiency. Local treatments with tincture of iodine, ointments, etc., are unsatisfactory compared with thallium and hair depilation, and thallium has the advantages over the others of producing a speedier and equally efficient depilation, of a speedier occurrence of new growth after treatment, and, so far as we have seen, no permanent alopecia. Hair depilation is unsuitable for children under 3 years of age and in these cases thallium is successful. We have dosed a child as young as 10 months. At the other end of the scale we are driven to conclude that there is a limit of body weight beyond which toxic symptoms tend to arise readily. We do not yet know of with this type

of case a lesser amount of the drug per kilo of body weight would be efficient in procuring depilation without the occurrence of such signs, but in the next cases which weigh 23 kilos or over we intend to try seven milligrams per kilo instead of eight.

When applying this method of treatment it is necessary to bear well in mind the following salient points:

- 1 Remember the routine examination of the urine and the nature of possible toxic signs.
- 2 Weigh the child naked.
- 3 The drug must be of recent manufacture, and if the solution method is used, the solution should not be kept more than a day.
- 4 Depilate between the fourteenth and nineteenth days, and above all strip the patches thoroughly as suggested. The old patches should be examined with a lens after this to see that no stumps are left. A few dirty stumps will react the new growth, which comes very quickly.

Our acknowledgments are due to Dr J D'Ewart, medical superintendent, for permission to publish our observations, and to Dr Gibson, visiting dermatologist, for his interest and help in the supervision of the treatment.

## NASAL HEADACHES.\*

BY

E MILES ATKINSON, M.B., F.R.C.S.,  
BATH, JACKSONIAN PRIZE LECTURER, 1926

To bring forward again the well-worn subject of headache may appear to be in the nature of flogging a dead horse, but, in the many papers recently published on this symptom, I have found few references to nasal disease as a possible causative factor. This is my excuse. In what follows I shall omit consideration of those cases in which the headache is obviously part and parcel of some remote nasal infection, and confine discussion to those of cryptic headache where there is no definite signpost to the cause.

Every medical man frequently has to deal with the type of case to which I refer. Some of the patients suffer almost constantly, and look ill, run down, and toxicæmic, others have violent attacks of headache with periods of freedom, some suffer in silence, as far as any reference to a medical man is concerned others seek remedies everywhere. If they have sought medical advice they will probably have been investigated for bowel trouble, muscular disorders, errors of refraction, and possible sources of toxicæmia such as septic teeth, but comparatively rarely will the nose have been examined. I am far from suggesting that these other conditions are not important and frequent causes of headaches, or that some nasal lesion is more common than any of them, but I wish to suggest that, other possibilities having proved negative, the nose should be thoroughly examined for any possible source of the trouble before labelling the patient as, for example, a case of toxicæmic headache, or of atypical migraine.

There are essentially two conditions in the nose which may give rise to headaches of nasal type—sinus disease and some form of nasal obstruction. The more usual and more important of these is the former, and unsuspected pus held up in one or more of the sinuses is productive of many obscure complaints. There is a widespread belief that accessory sinus suppuration is always associated with nasal discharge, either anterior or posterior, or both, and that in the absence of this symptom sinus disease can be excluded. This is erroneous. Many cases do not show this symptom, and manifest only a concealed focus of sepsis by their general toxicæmic appearance—sallow complexion, listlessness, undue mental and physical fatigue, and the headaches, which may be general or may be of special type according to the sinus involved.

It will make for simplicity to take the various sinuses in turn and describe the kind of headache to be expected in each case.

Disease of the maxillary antrum produces no typical variety of the headache is toxicæmic, sometimes frontal,

\* A paper read before the Bath and Bristol Branch of the British Medical Association.

sometimes general, sometimes described as neuralgic, and increasing usually towards the end of the day. It is often thought to be due to eye-strain, but on close question the patient may confess to frequent colds, which are apt to be more on one side than the other, and that at such times there is some pain in the corresponding cheek.

A lady aged 45 was sent to me for investigation because of arthritis in the shoulder. On transillumination it was found that the antrum on one side was dark. She then said that ever since she was a girl of about 12 she had suffered from headaches and from pain beneath the corresponding eye especially if she had a cold all had been called neuralgia. She looked thoroughly toxic and said she never felt really well but was so busy that she had no time to feel ill. Puncture of the antrum yielded foul inspissated pus. The antrum was drained intranasally and gradually cleared up. This was last autumn. She has gone through this winter without a cold has been free from headache for the first time for years and looks and feels quite a different woman.

In this case there was only discharge from the antrum during a cold when it was not noticed. Sometimes no history of discharge or offensive smell can be obtained.

A man aged 62 was sent on account of two or three recent attacks of laryngitis with the warning that he was always exceedingly nervous and suffered at times from incapacitating headaches. He had pus in one antrum very foul probably originating from a carious upper molar tooth which had been extracted some twenty years previously. Question him as one might he would not admit to any nasal symptoms. After some trouble he and his doctor were persuaded to agree to intranasal drainage of the antrum. Since then (six months) he has only had one attack of headache and that not severe when he caught cold and his antrum flared. His laryngitis has not returned.

**Frontal sinus disease** is usually associated with headache of a very definite type. The pain is situated in the frontal region immediately above the eye, and may spread over the whole of the affected side of the head—a true hemicrania. Hence it is often mistaken for migraine. In severe cases it may extend to the other side of the forehead, and thence all over the head, though only one frontal sinus is involved. It occurs typically in the morning, starting soon after the patient gets out of bed, and gradually subsiding, to disappear about lunch time. It may be so severe at the onset as to cause vomiting and some interference with vision on the affected side, thus making the mimicry of migraine more complete. But the typical battlemented spectra of migraine are absent. Frontal sinus headaches often occur in bouts in chronic cases, the headache coming on every morning for a fortnight or three weeks, but gradually diminishing in intensity and then disappearing for weeks or months. These bouts are initiated by some catarrhal infection, which causes the sinus to flare up, and the headache diminishes coincidentally with the superimposed catarrh. The diagnosis can often be made on the history, but should always be confirmed by a skiagram. There is usually little or nothing to be seen inside the nose. A deviation of the septum to the affected side is common, and during an attack there may be oedema of the middle turbinate with, possibly, some pus exuding beneath it. Often both these signs are absent. An interesting case of this type occurred a few weeks ago in a boy of 16—unusually young for such cases.

This boy had suffered from typical frontal attacks for two or three years and his father had before him. The tonsils had been removed on account of the headaches but without benefit and he was then labelled migraine—no doubt the family history led to this. Then he started a cold at school and had another of the attacks. His school doctor, an alert clinician, diagnosed an infection of the frontal sinus. But examination of his nose showed no oedema of the turbinate nor could any suspicion of pus be obtained from beneath it even after the most thorough brushing with cocaine. A skiagram however showed the frontal duct was affected, also blurred and hazy the fronto-nasal duct was acutely kinked and narrowed by a large fronto-ethmoidal cell which was preventing drainage and ventilation. When this and the other anterior ethmoidal cells were curetted away there was a free passage into the frontal sinus which contained muco-pus and flake pus—obviously an acute catarrh superimposed upon an infection of long standing. He is now doing well and has had no more headache.

The anterior ethmoidal cells are frequently involved at the same time as the frontal sinuses, and then the headache is apt to be more persistent and not so typically matutinal,

while eye symptoms are, in addition, not uncommon such as some blurring of vision or a sensation of pressure or throbbing in the orbit. This often leads to the diagnosis of a refractive error, if one is present, as the cause of the headache, and when correction of such error by glasses fails to relieve, the case is again usually labelled migraine. It is, therefore, of importance that all cases of hemicrania in which the symptoms are not those of classical migraine, and are not relieved by suitable glasses, should have a thorough examination of their nasal sinuses before being left to their fate. They should be seen by a rhinologist in the second place as automatically as by an ophthalmologist in the first. In these cases, as in those affecting the frontal sinus only, examination of the nose often reveals very little, and recourse has to be had to a skiagram for diagnosis.

A middle-aged lady developed all the symptoms of an acute infection of the antrum following extraction of an upper molar tooth but in addition to this she told a story of years of headache with more recently failing or rather blurring of vision to such a degree that she had had to give up needlework almost entirely. This suggested that there was something more than an affection of the antrum and a skiagram showing in evidence of all the anterior group of sinuses. An intranasal operation upon the ethmoids to drain them and give access to the frontal and at the same time upon the antrum produced an extraordinary change. She lost her headaches and tiredness, her eyes rapidly improved so that she could with ease do fine embroidery. She gained in weight improved in colour and did what she had not done some three months ago that her friends scarcely recognized her.

These two cases of frontal sinus disease in which had been unrecognized for long periods indicate what can be done in favourable cases in the way of relieving headache. Unfortunately, all cases do not respond so well. Many patients, even after free drainage continue to have headaches, perhaps not so severe, but quite enough to render their lives a burden to them, and not infrequently one fails to relieve them even by external operative procedures. Many relapse into complete invalidism and some even develop suicidal tendencies. In others, again, one fails entirely to starve the progress of the infection, so that ultimately it may spread to the intracranial contents. My impression unsupported by statistical evidence is that the cases of frontal sinus headache with a patent osium and with obvious discharge from the sinus are the least satisfactory in their results while those in which head ache is the only indication of the disease, in fact the closed cases with which this paper deals, are the most satisfactory.

**Vacuum Frontal Headache.**—Another cause of frontal headaches is the condition named by Sluder vacuum frontal headache. It results from closure of the fronto-nasal duct so that the air in the sinus is absorbed, producing a partial vacuum and congestion of the lining mucosa. This causes the thin bony floor of the sinus to become very sensitive to pressure, the point of maximum tenderness being at the thinnest part—that which lies internal to and behind the point of attachment of the pulley of the internal oblique muscle (Ewing's sign). Consequently, therefore, movements of the eyes aggravate the pain, and this is a very characteristic feature. These cases are not very uncommon they are partly anatomical and partly pathological. A deviation of the septum may so narrow the nasal passage as to prevent the middle turbinate against the outer wall of the nose—in it is a cause of pain. If to this is added a catarrhal swelling of the mucous membrane the orifice of the duct may be completely blocked and headache result or the bone and covering mucosa of the middle turbinate may be the seat of an inflammatory process causing oedema or polyp formation, which blocks the duct. A patient who had an acute infection of the antrum stated that he had had typical frontal headaches for several days. Great oedema of the middle turbinate was causing the block. The inflammation was soon in the antrum was drained and the oedema subsided. In cases due to anatomical factors or to inflammation the judicious application of cocaine is of value.

I am, I think, justified in saying that the cases of vacuum frontal headache are not infrequently overlooked and that with a careful examination of the nose and a skiagram the diagnosis can be made.

swollen, and his nasal passages were very narrow. Cocaine was applied preparatory to removing the polypus, which I suspected of being the cause of the trouble by blocking the duct, and while waiting for it to act he suddenly sat up and said "My headache has gone! I felt it go this moment." The cocaine had caused the mucosa to shrink sufficiently to allow air to enter beside the polypus. The polypus was removed, and he attended to his business. He has had no more trouble.

Such dramatic cures are regrettably rare. More usually relief is obtained gradually by means of the usual remedies for catarrh, or by an operation to correct a septal deformity or remove the anterior end of the middle turbinate.

The posterior group of sinuses are less often the cause of chronic headache, and the pain caused by chronic infection in them is not characteristic. It has been said that suppuration of the sphenoidal sinus causes a "bursting" temporal headache or pain in the occipital region, but this does not always happen. However, a complaint of headache of this or any other type, especially if associated with post-nasal catarrh or crusting, would raise a suspicion of involvement of the posterior group and lead to an x-ray examination. I have never come across a case of otherwise symptomless headache of which the sphenoidal sinus was the cause, but they are said to exist, and adequate drainage should produce rapid relief of symptoms, for the sphenoidal sinus is one of the most satisfactory to deal with.

Atrophic rhinitis is associated at times with severe headaches. There are cases of this condition in which there is no fetor, and in which the crusting in the nose seems to be a minor annoyance. The main complaint is of severe generalized headache, and in the absence of fetor, or of any mention by the patient of nose trouble, the rhinitis may be overlooked. The cause of the headaches, of course, is that not only the mucosa of the nasal passages is atrophic and crusted, but all the sinuses also are full of crusts. If the crusting has extended to the pharynx and larynx, as it may, the cause of the headache will be apparent.

Nasal obstruction may seem at first sight beyond the limits of this paper, yet it is surprising what a degree of obstruction patients will tolerate seemingly without distress, and will complain of their headache and not of their nose.

A man came one day with a polypus protruding from the anterior nares, having been unable to breathe properly through his nose for years, or at all for months. He said that he could not stand prolonged or extensive operative treatment, as he was a very sick man, having been under treatment for years for chronic headaches, neuralgia, and gastro-intestinal troubles. He was thin, pale, and sunken-eyed. He had never mentioned his nasal trouble to anyone, and his slightly nasal voice had apparently not attracted attention. He was persuaded to consent to having the nose cleared of polypus, which was done bit by bit under local anaesthesia, and took months, but since he has acquired nasal respiration and ceased to swallow mucus his troubles have vanished.

Patients with severe septal deviations will do the same thing.

An educated man of 23 said that he did not know he had nasal obstruction and was only persuaded with difficulty to see a rhinologist by his doctor, who had by chance seen him sleeping with his mouth wide open and had found out his trouble. Yet he has such a gross deformity that he cannot breathe at all through one nostril and only very badly through the other. He suffers from frequent headaches, as do most cases of severe septal deformity. Complete submucous resection produced an excellent result.

A word of warning may not be out of place. There are many sufferers from headache, and there are even more people with minor septal deformities. The two are not necessarily related. It is scarcely an exaggeration to say that a perfect septum does not exist. Given the right case, however, and a complete operation, which is often far from easy, and the results are excellent. The operation has fallen rather into disrepute because it is sometimes performed ill-advisedly and incompletely, and an inadequate septum operation is worse than none at all.

#### Summary

The thesis has been that many cases of chronic recurrent headache are of nasal origin though there are no obvious signs of nasal disease, that many are missed because their

incidence is not sufficiently appreciated, and that therefore the nose should take a place with the eyes in a mental list of possible aetiological factors in such cases. Some clinical material has been brought forward to back the contention that more cases of headache are due to nasal disease than is generally realized, and that the rhinologist can often help heads as well as noses.

## THE ETIOLOGY OF FIBROUS STRICTURE OF THE URETHRA

BY

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STRUCTURE of the oesophagus and stricture of the rectum are rarely diagnosed without some effort being made to eliminate the possibility of syphilis acting as a determining factor in their etiology, but, strangely enough, I have never heard it whispered that stricture of the urethra is associated with syphilis. Recurring or successive attacks of gonorrhoea have been held to account for most cases, while some few have been associated with physical or chemical trauma.

Fifty consecutive cases of stricture of the urethra have been examined thoroughly at the Seamen's Dispensary, Liverpool. Every case of chronic urethritis in the male was examined by the urethroscope, and if stricture tissue was found the blood was examined. It is well known that a considerable number of apparent infections with gonorrhoea are in reality infections with syphilis also, although no external signs of syphilis are present then or later—that is to say, that the syphilis is latent from the beginning, and there is neither primary ulcer nor secondary syphilides. The Wassermann reaction is the only method of diagnosis, and a second confirmatory test is absolutely essential.

Of the fifty cases of stricture under review, twenty-one conformed to this type. Twelve others gave a history of penile ulcer during or before the attack of gonorrhoea, and the blood Wassermann test was positive. Six others gave a history of treated syphilis and gonorrhoea, and their blood Wassermann reactions were returned as "negative." One man was sent by a general practitioner to have his blood tested, as his wife had a history of several miscarriages, followed by five full-time children who were born dead or who survived birth for a few hours only. This patient attended twice, stricture tissue was found at 5 cm and 11 cm from the meatus, and his blood reaction was reported negative. Had he returned again a provocative injection of neosalvarsan might have given a positive reaction, as the gonorrhoeal infection was eighteen years old. Ten cases of stricture gave no history of syphilis, and the Wassermann reaction in the serum was returned as negative.

#### Analysis of 50 Cases of Stricture of the Urethra

Wassermann reaction positive	33=66%
History of syphilis, Wassermann reaction negative	6=12%
No history of syphilis, Wassermann reaction negative	11=22%

Stricture of the urethra, therefore, is more common in cases which have coincident syphilis and gonorrhoea, and it is good practice to ascertain the Wassermann reaction of the blood in all cases of stricture. In cases of long duration a negative Wassermann reaction may become positive after a provocative dose of neosalvarsan.

The pathology of the condition is probably that the inflammation of the mucous membrane by the gonococcus provokes a greater response in the submucosa of syphilides, that an abnormal number of small round cells is developed, and that these subsequently form the urethral stricture.

In view of this connexion between syphilis and stricture it is not surprising to find that cases of resistant stricture having a positive Wassermann reaction become amenable to dilatation after a course of antisyphilitic treatment with bismuth alone, or neosalvarsan and bismuth. One patient, who on four different occasions had been diagnosed as a case of impermeable stricture, was dilated up to 45 Charrière within three months of the inception of antisyphilitic treatment.

## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL.

#### MINERS' NYSTAGMUS IN A SURFACE WORKER

Dr FREDLAND FERGUS in a recent communication referred to the occurrence of occasional cases of miners' nystagmus among pithead workers, but stated that no such case had come within his own experience. If any undoubted case of miners' nystagmus can be demonstrated in which the disease developed in spite of adequate illumination of the working place, doubt is at once thrown on the validity of the deficient light theory of the causation of the disease.

T F a miner aged 47, first came under my care in February 1926 complaining of cough, expectoration and loss of weight which were soon found to be due to early pulmonary tuberculosis. With the exception of trench fever in France he had never had any illness. He did well under sanatorium treatment and was able to resume work in January, 1927.

He had an attack of influenza during the last epidemic and has not been able to return to work since. I noticed nystagmoid movements in June 1927. The man on questioning admitted that his eyes had felt weak for a few days and that he felt giddy in the twilight. Apart from the fact that he has pulmonary tuberculosis he is a typical case of miners' nystagmus but he has never been underground. An agricultural labourer before the war he only went to the pit in 1919. Since then he has been employed on the top, working in daylight but exposed to coal dust.

It is just possible that the nystagmus may be due to an intracranial tubercle but there is nothing to support this idea, and I personally regard the case as one of true miners' nystagmus. It is possible that the nystagmus was due to a toxin in the coal dust as Dr Fergus suggests but in any case illumination could have nothing to do with it.

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#### TREATMENT OF GONORRHOEA

The following case seems to have a special interest in illustrating the value of early and energetic treatment in cutting short an attack of gonorrhoea and in the prevention of its sequelae.

On May 5th a man aged about 43 consulted me for gonorrhoea. He informed me that the incubation period was about a week and that it was his first attack. He stated that on May 3rd he had had itching of the meatus and on the following day a discharge. On examination I found that he had a thick yellowish white discharge and signs of acute inflammation with painful and difficult micturition. I thought over the advisability of giving injections and decided on hydrogen peroxide (10 vols.) (this I found too painful to continue until a solution of cocaine was added). The first injection was given on May 6th; on the next day there was much less discharge and redness. I repeated the treatment. One injection was given each day up to May 10th when the discharge had ceased. Two days later there was still no discharge and the meatus appeared healthy, the smarting and irritation had also disappeared. The only additional treatment was liquor copalivae by the mouth, and fairly large doses of sodium bicarbonate and tincture of bromocresol.

According to the usual teaching, when the discharge is copious and scalding continues injections are harmful and should not be employed, either because of the pain caused by the injection or the danger of spreading the infection backwards. A great number of antiseptics are recommended for use as injections in the later stages of the disease, but I have not seen mentioned hydrogen peroxide (10 vols.), which is a powerful, non-poisonous, and oxidizing agent, and is practically harmless in some respects it even rivals corrosive sublimate. It is a powerful antiseptic and does not precipitate albumin, on coming into contact with pus it destroys bacteria of all kinds and causes activity in the tissues which leads to rapid healing. At the same time brisk effervescence occurs. This last point is very important, because, if the injection is retained in the urethra by compressing the glands against the nozzle of the syringe, the peroxide works under considerable pressure, understanding the urethra with its numerous follicles. As is well known, much of the intractability of gonorrhoea is due to invasion of the numerous follicles which open on the mucous surface of the urethra, when the inflammation gives rise to cysts and invades the connective tissue. The cure has practically passed beyond reach. Such after-

effects then appear as a stricture and the invasion of the blood stream. In my opinion the best method of cure is to get the gonococci early and treat them rough. I understand that hydrogen peroxide can be obtained in any strength up to 50 per cent, or a 100 volume solution—perhydrol. Patients will tolerate much stronger antiseptics in the early stages than can be applied later on, and, moreover, they often discontinue treatment after the discomfort has ceased and remain a great source of danger to others for years afterwards. They are much more likely to come for treatment in the painful or acute stage, and this is the best time to deal with the infection, before it escapes out of the reach of antiseptics. Perhaps others with greater experience would give their opinion on this subject.

London E.

R. COX M.P.C.S. L.P.C.P.

## Reports of Societies

### THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION

#### ANNUAL MEETING AT EDINBURGH

The eighty-sixth annual meeting of the Royal Medico-Psychological Association took place at the Royal College of Physicians and the University Edinburgh during the week commencing Monday July 18th. The business portion was presided over by Lieut Colonel J. R. IGOY C.B.E. the retiring president, and he was succeeded in the chair by Dr HAMILTON MARR of the General Board of Control for Scotland. At the business meeting it was announced that the next Maudsley lecturer would be Sir John Macpherson.

On July 18th the new president delivered his annual address, taking as his subject, "Dante and Pabelais: an account of two mediaeval physicians, with a summary of their philosophy."

#### Dante and Pabelais

Dr Marr said that not only was Pabelais qualified to practice medicine, but he did so in the city of Lyon and wrote there on medical subjects. To call Dante a physician, however, needed some explanation, he was included in a list of members of the art of medicine and the apothecaries of 1297, but there was no record that Dante ever practiced medicine though he studied it and qualified himself to be a practicing physician. There were in his works numerous references bearing his practical knowledge of medicine his accuracy and scientific observation. Some of these he pointed out. It was essential for a Doctor of Paris in the day to have a knowledge of astrology and astronomy and Dante was a firm believer in the influence of the stars on human destiny as some of the extracts would show.

Dante was an exile from Florence for political reasons, Rabelais was persecuted for his classical studies. The humour and temperament of Rabelais were of a type which did not leave him wholly excusable on the ground that his life would have been endangered had he resorted to a verbal embroidery of nonsense and iniquity he had an impish disposition and would play on words in such a manner as to overstep the bounds of decency. Dante was of a different temperament and when he used words which were unseemly they corresponded with the matter he was treating. Also his type of humour was different from that of Rabelais as it was whimsical. Dante and in the Dr Morrell that Dante obtained for his ultimate end, blessedness of this life which was figured in the earthly paradise and his in the otherworldly which consisted in the fruits of the Divine life in the heavenly paradise. The former much to be desired following philosophical teaching in accordance with the moral and intellectual virtues. I quote from Dr Marr the utmost limit of the only province to which the psycho- and prehistoric truth travel in the course of life. The moral nature of the Inferno was modelled on the Ethics of Aristotle but the order of Purgatorio was Platonic, and the results were considered according to the cause. The speaker gave an interesting analysis of the



works. The works gave graphic pictures of the mental agony of human souls which had chained themselves and refused to leave the darkness of ignorance and vice, wasting their time on fleeting material attractions.

The conclusions of Ribelsius could be stated as follows: work, seek, study, instruct your-elves. In arriving on the work of your predecessors you will go further than they. Time brings new knowledge. Truth is the daughter of time, but in seeking truth do not isolate yourself from your fellow men. Love each other.

Both Dante and Ribelsius recognized the bondage of the intellect, and both pointed out how easy it was to descend to perpetual darkness, how difficult to cast off intellectual bondage, while both led to an earthly paradise, where, drinking of the streams of Icthe and of Pinnoc, the memory of evil was lost, and the good which was overlaid and withered was resurrected, and philosophy was rendered pure and disposed to mount to the stars.

On the mornings of July 20th, 21st, and 22nd the members of the Royal Medico-Psychological Association took part in the discussions held by the Mental Diseases Section of the British Medical Association, on the subjects of chronic sepsis as a cause of mental disorder, epidemic encephalitis, and the Report of the Royal Commission on Lunacy and Mental Disorder.

On July 22nd, at Morningside Royal Hospital, a panel bust of Philippe Pinel was unveiled by Sir Arthur Rose, chairman of the General Board of Control of Scotland, and during the week visits were paid to the Bangour Village Mental Hospital and Morningside, a fine exhibition of handicraft wrought by the patients being on view at the former institution. On the evening of July 20th members dined together at the Royal College of Physicians.

At the spring meeting of the Forfarshire Medical Association, held at Arbroath Infirmary, with the president, Dr R. C. Blair, in the chair, Dr Gilchrist contributed an appreciation of the work of Professor Shapley. It was of interest at this time, he said, to recall that William Shapley, who at University College, London, carried on the traditions of Padua, was one of the teachers of Lister. Shapley was born at Arbroath in 1802, and from Arbroath High School went to Edinburgh University in 1815. After studying in London and Paris he took his M.D. at Edinburgh in 1823, and then for a time assisted his stepfather, Dr Arrott, in his practice in Arbroath. In 1827 he returned to the Continent, and later, after a period of extramural teaching, was called to University College, London. There he was a professor for thirty-eight years. He died in 1880, and was buried in Arbroath Abbey. Dr Gilchrist then showed an unusual case of keloid occurring in a scar after operation for appendicitis. A boy at the age of 12 was operated on for acute appendicitis. Two years later a keloid developed in the scar and was excised. Now, four years after the original operation a large new growth of scar tissue, mostly nodular, occupied the site of the operation scar, while there were smaller nodules in the scars of the sinuses. On one leg he had two scars, the results of accidents before and after his appendix operation. The former was a healthy cicatrix, the latter showed keloid growth. Dr Yule read notes on three cases of infusception, all of the ileo-ileal type. In two of these the "tumour" was situated in the left half of the epigastrium. He emphasized the necessity of examining such cases under an anæsthetic. Dr Yule also read notes on an unusual development of appendicitis. After an initial febrile illness the patient, a boy, had shown no symptoms for a fortnight. Thereafter he passed loose stools containing mucus, and on examination there was found a marked bulging of the plicæ, resembling that of a woman in the second stage of labour. Laparotomy showed that the appendix was very long and that its tip dipped into the pelvis, where it was lost in an abscess cavity. Dr J. L. G. Thomson read a paper on perforation of duodenal ulcer. It had been his experience that a considerable proportion of cases of duodenal ulcer had no symptoms of dyspepsia prior to perforation. Three of his five most recent cases had no history of indigestion, and had remained free since operation. Dr Thomson also showed a case of pre-tibial oedema with optic atrophy. The patient, a man of 43, had argyll Robertson pupils, but no incoordination of the limbs and no Pambertism. The Wassermann reaction was positive and the cerebrospinal fluid showed a lymphocytosis. He had come under observation because of rapid deterioration of vision. A demonstration of radiograms by Dr Laing concluded the meeting.

## Ribelsius.

### THE LIFE AND WORK OF SIR PATRICK MANSON

Sir Patrick Manson was one of the greatest of medical pioneers, and his *Life*,<sup>1</sup> written by Dr. Manson-Barm and Colonel Alcock, two workers in the same field long associated with him in the London School of Tropical Medicine that Manson founded, cannot fail to be of the greatest interest not only to workers in that field but to medical men generally, to administrators in tropical countries, and indeed to the intelligent layman everywhere. The story is fascinating and has been told here within a reasonable compass, the two authors have produced an eminently readable and sympathetic account of the "father of tropical medicine," as he has justly been called, it will be treasured by the now numerous band of workers in the tropical vineyard.

After a brief account of his early years, and of his going to China to practise within a few months of taking his medical degree in Aberdeen his remarkable early work on filariasis, when an isolated medical practitioner in Amoy, is related, the account being founded on his own extensive notebooks. Here, with little apparatus save a microscope, and without any previous training in tropical medicine, he laboured to good effect in tracing the mosquito cycle of *Filaria bancrofti*, illustrating once more the far greater importance of the man than the laboratory, as, indeed, Manson himself pointed out. The modesty of true greatness is well shown by his statement in a letter of 1879 that, "Man, like myself, in general practice, are but poor and very slow investigators, crippled as we are with the necessity of making our daily bread." We are next shown him in Hong-Kong, founding a medical college, at the opening of which he made a speech remarkable for its insight into Chinese character. After twenty-three years in China we find him returning, a comparatively wealthy man, to a country life in Scotland, with his favourite hobbies of shooting and fishing. Fortunately for medicine the depreciation of the Chinese dollar compelled him to embark in practice in London, where he had up-hill work until he became physician to the Albert Dock Hospital, where he made indefatigable use of the opportunities for investigating the life histories of tropical parasites, and did so much to lead "medical education back to those solid biological foundations from which it has been inclined to stray," as the authors happily put it.

Manson had felt the lack of instruction in tropical diseases before going to practise in China, and when on leave in 1875, for want of any teaching in the subject, he had gone to the British Museum library to study, there he first learned of Lewis's discovery of the *Filaria sanguinis hominis*, which he followed up with such success. He now set himself to found the London School of Tropical Medicine, and gathered round him young men who have since proved the wisdom of his choice by their own original work, much of it inspired by his own remarkable foresight and powers of induction, as illustrated by the verification of several ingenious hypotheses he put forward regarding the life histories of various helminths, as is brought out in this book.

It was during this period that he adumbrated the mosquito theory of malaria in his Goulstonian Lectures, and, as he aptly put it, "he discovered Ross," and converted him into a brilliant experimenter in the truth of the hypothesis. The enthralling story of Manson's four years' labour as guide, philosopher, and friend during Ross's epoch-making researches is well told by means of numerous extracts from Manson's letters to Ross, and Ross's early acknowledgements of Manson's invaluable assistance are quoted, in one of them Ross likened himself to the astronomer directed by an actioner. It is also said that it was due to Manson's influence that, as soon as the military exigencies in India permitted, Ross was put on special duty to complete his work, Manson advised him to work with the protozoa of birds, and thus Ross was enabled

<sup>1</sup> The Life and Work of Sir Patrick Manson, by Dr. Philip H. Mearns, D.S.O., M.D., F.R.C.P., and A. Alcock, C.I.E., LL.D., Aberdeen, F.P.S., Hieut. Colonel I.M.S. (ret.), London, Cassell and Co., Ltd. 1927 (Demy 8vo, pp. xv + 273, 12 plates 16s. net)

to advance beyond Manson's original hypothesis and proved that new infections were produced by rejection of a stage of the parasite by the bites of the insects. This is an example of the happy conjunction of two very original minds in winning for the British race the credit for a great scientific discovery; this Manson was anxious to secure, as is clearly shown by his letters here recorded.

Lastly, we are shown that after Manson's retirement from active work in 1912 as the result of increasing infirmities due to nearly life-long gout, he continued to take the closest interest up to a few weeks before his death in the school which he founded; it remains a monument to his genius. This brief and well-written account of his life will enable future generations to learn what manner of man he was, and will be treasured by all who had the privilege of knowing him. It should also be widely read by aspiring young men in every branch of medical and scientific life as a stimulating example of how this great man, by seizing the opportunities of general practice in a distant land, was able to take an important share in building up the great temple of medical science.

### TRAQUAIR'S PERIMETRY

SOME thirty years ago the study of the normal and abnormal visual fields was raised to the level of a quantitative and exact science—exact as far as subjective clinical methods go—by Bjerrum, and his teaching and methods have been elaborated and brought to a high level of perfection by his follower and disciple Roenne. The exact and differential methods of the Contraental writers were introduced to English-speaking ophthalmologists by Berry in 1890, and the painstaking and intensive researches of Dr TRAQUAIR of Edinburgh, which have now extended over many years, have established him in a unique position of authority in this country to-day as their foremost exponent. His work has been fittingly recognized in the bestowal upon him of the Middlemore Prize in 1920 and the Edward Nettleship Medal in 1922, and it is now gathered together and presented in readily accessible form in *An Introduction to Clinical Perimetry*.

An adequate appreciation of the charting of the visual fields can only be arrived at when its quantitative variations are explored not from the standpoint of vision itself, but from that of the degree of visual acuity. The field may well be compared to an island of vision in a sea of blindness, and the endeavour of the modern perimetrist is not merely to chart out the coastline by rough and ready methods, but to make a complete orographical survey of the whole area with the differences in level shown by contour lines and with all the depressions marked to explore the valleys of small visual acuity and trace their mergence into the plateaux where definition is greatest, to follow out the regions where the finer differentiation of colour is possible, and to demark the regions where blank spaces exist, whether they be erosions upon the coastline (as it were) or inland lakes. In comparison with this which may be termed the technical side of perimetry, the interpretation of these findings is no less important. The aim is to discover and distinguish the various forms of deviation from normal vision, and to correlate as far as possible each alteration with a definite anatomical site of interference in the visual pathway and with a definite causation. Thus in the study of disordered vision the perimetrist is the aesthesiometer of the second nerve and its central organization, and its use in its fullest sense is indispensable, not only to the ophthalmologist, but also, and pre-eminently so, to the neurologist and the intra-cranial surgeon.

In his book Traquair deals with the clinical aspects of the method, and only refers to the more academic questions associated with the physiology and neurology of the vision response in as far as their introduction is necessary to elucidate the clinical findings. The first part of the book deals with the normal field of vision and gives an outline of the characters and the use of the standard instruments. Simplicity in the instrument and simplicity in the technique are insisted upon. The difficulties of perimetry are subjective and psychical, it can never aspire to objective

exactitude. While an elaboration of refinement in apparatus and method may be of value in special circumstances, their use for clinical purposes must be allied with a due sense of perspective for "simple tools" properly used are much to be preferred to "elaborate" ones which induce reliance on the data of an elaborate instrument.

The second part of the book is devoted to the various pathological alterations and defects in the visual field, and to the interpretation of the changes in the retinal lesions in the eye, the visual pathway and the cerebral cortex. The types of defect met with clinically are described and their anatomical and pathological significance pointed out. Each region of the visual tract is then dealt with seriatim: the choroid, the retina, the optic nerve, the chiasm, the optic tracts, the geniculate bodies and the geniculo-calcarine pathway, special attention is paid to glaucoma, and there is a final chapter on functional changes. Changes in the field are interpreted on an anatomical basis, and the various etiological factors causing them are dealt with in detail. Henschen's views are largely followed with regard to the neurological anatomy and controversial points are only lightly touched upon.

Throughout the teaching is sound and the book maintains a high standard of excellence; moreover, it has the merit of personalty and individualism, representing as it does the life work of the author and an immense amount of time and labour spent on accurate clinical observation. The bibliography appended is also valuable. Here and there, however, the argument tends to be diffuse but although it might have been curtailed it always makes pleasant reading. It is luxuriously produced and extremely well printed and illustrated, unfortunately its price is correspondingly luxurious.

### THE NEW HAEMATOLOGY

THE success of the "Recent Advances Series" brought out by Messrs J and A Churchill will be more than maintained by Dr A PRYER's *Recent Advances in Haematology*, which in a comparatively small space contains a large amount of new material, fresh ideas and thought-stimulating suggestions clearly set out. Dr Pryer, whose recent output of work is remarkable and whose industry in keeping abreast with haematological publications is obvious from this book and especially from the appendix briefly summarizing those in his private library, has unobtrusively indicated his own view and thus added a personal interest to a thoroughly up-to-date review which original workers cannot fail to find most helpful.

The reticulo-endothelial system and its relations to the blood diseases are fully discussed and interesting descriptions are given of Gaucher's phenomenon and of the Niemann-Pick disease recently paraded from it. Splenic anaemia is, of course dealt with and attention is drawn to Gamma's disease or splenogranulomatous siderosis. In the account of lymphadenoma reason is brought forward in favour of the view that it is a reticulo-endothelial disease. The origin of solid endonemas from the reticulo-endothelial system is shown by the author to rest on the demonstration of intracellular fibrin in the cells. The ever shifting hypotheses concerning leukaemia and pernicious anaemia are considered in the light of the new data regarded as truly neoplastic in origin, but the possible relation of leukaemia to pernicious anaemia is regarded by Ellermann as still a not really settled. The importance attached to a high percentage of Addisonian anaemia is criticized and it is suggested that the percentage of reticulocytes is a more reliable factor to enable a more precise estimate to be made of the degree of anaemia. Such a suggestion is quite reasonable and it is to be hoped that the present work of the author will be followed by a series of papers to enable a more precise estimate to be made of the degree of anaemia.

The clinical features and the treatment of the blood diseases are succinctly and clearly dealt with in a haematological dictionary. The book is a valuable addition to the literature of the subject and it is to be hoped that it will receive from the medical community the recognition it so thoroughly deserves.

## DEMENTIA PRAECOX

Dr. GABRIEL LANGFELDT, assistant physician at Neerengaarden Asylum, Bergen, records the results of his clinical and experimental investigations of forty unmistakable cases of dementia praecox in a monograph entitled *The Endocrine Glands and Autonomic Systems in Dementia Praecox*.<sup>1</sup> The author set himself two problems to examine: the first, whether the hypothesis of dementia praecox as an endocrine disease was sufficiently supported, and the second, whether there was a distinct difference in somatic respects between the two main types of dementia praecox—katatonia and hebephrenia. Each case was examined by exactly the same methods, which were clinical observations in general (measurements of testes and radiological examinations of sella turcica, thymus, and epiphyseal lines), determination of blood picture, basal metabolism, and effect of endocrine extracts upon physiologically changed basal metabolism, examination of the carbohydrate metabolism, examination of the visceral nervous system.

The characteristics found by the author for the two groups are summarized by him as follows: in katatonia the essential disturbances, present in both acute and quiescent cases, were slow pulse, low blood pressure, lymphocytosis, glandular swelling, positive pilocarpine and Aschner tests (vagotonic signs), and reduced basal metabolism. In acute cases he observed, in addition, certain sympathetic signs such as dilated pupils, tachycardia, exophthalmos, and reduced glucose tolerance. In hebephrenia, in its acute as well as chronic phases, only sympathetic symptoms were observed—tachycardia, tremor, dilated pupils, and reduced glucose tolerance. These symptoms were found most pronounced in acute phases, and only in one was there increased basal metabolism.

These results are made the subject of an interesting discussion, and in concluding his observations the author remarks how important it would be if the somatic symptoms of dementia praecox could be demonstrated at such early stages that they could be applied to forensic psychiatry. It would certainly be useful from the standpoint of prophylaxis if we were able to apply biological tests which would reveal the existence of a psychopathic constitution before morbid symptoms had made their appearance—something analogous to the Schick test for susceptibility to diphtheria. As Rollston has suggested (*BRITISH MEDICAL JOURNAL*, 1925, ii, 782) we feel, however, that the legal mind would be reluctant to recognize any such biological test as affording evidence of responsibility for a delinquency, especially if the offender had exhibited no evident psychic peculiarities at or before the time of the offence.

## EXPERIMENTAL PHARMACOLOGY

HEFFTER's handbook of experimental pharmacology<sup>2</sup> is slowly approaching completion, for the first half of the third and last volume has now appeared. The preparation of this work has been greatly hindered by the sad circumstance of the death of the original editor, and of no fewer than seven of the original contributors.

The section under review deals chiefly with the pharmacological actions of various inorganic substances, and contains articles upon osmotic pressure, action of saline purgatives, action of acids and alkalis, and action of the alkalis and alkaline earths.

The general subject of the action of non-toxic ions on the functions of protoplasm is a field common to physiology, physical chemistry, and pharmacology. The subject is one of particular difficulty, but it is very clearly treated in this volume. The article by Professor R. Hober on the alkalis and alkaline earths is of special value because the author has a wide and fundamental knowledge of the subject.

Professor Buigi of Berne contributes an interesting summary of the action of iodine. The relation between iodine supply and thyroid disorder is dealt with very thoroughly.

<sup>1</sup> *The Endocrine Glands and Autonomic Systems* By Gabriel Langfeldt, Bergen. J. W. Eides L. Co. Ltd. 1926. (52 x 9 pp. 326, 7s. 6c.)

<sup>2</sup> *Handbuch der experimentellen Pharmakologie* By A. Heffter, fortgeführt von W. Heubner. Herausgegeben von H. K. Lewis and Berlin. J. Springer 1927. (Sup. roy. 8vo, pp. vii + 619, 62 figures, 12s. 6d.)

The history of this subject is of particular interest. A full account is given of the wonderful pioneer work of Clinton, who in 1850 stated that endemic thyroid disease was due to deficiency of iodides, and it is interesting to learn that prophylactic administration of iodides was tried in France in 1860. This subject has, of course, aroused much interest in recent years, and great credit is due to the workers who have succeeded in establishing the value of iodine prophylaxis, but it is the same time equal credit must be given to the older workers who arrived at similar conclusions long before it was known that the thyroid excretion contained iodine, or, indeed, before anything was known regarding the functions of the gland. The account given of the history of iodide metabolism is particularly full and is well up to date, as is evidenced by the fact that mention is made of the recent work of Huntington and Bruger on thyroxine.

The enormous subject of the pharmacological action of compounds of arsenic and antimony is dealt with somewhat briefly in articles written by the late Professor Heffter and revised by Professor Keffer. Amongst the other articles mention may be made of one by Professor Rost on the very vexed question of the pharmacology of boric acid. He gives a full account of the researches carried out in Berlin by himself and others on this subject, but fails to provide a critical discussion of the work done in other countries. Though such a discussion would have been best with obvious difficulties, it ought to have been undertaken in a book of this character and magnitude.

In general it may, however, be said that this section maintains the high reputation the book already has established, the hope may be expressed that it will not be long before the publication of the final section, and that this will contain that all important feature—a good general index.

## NOTES ON BOOKS

IN his book on cyclic vomiting accompanied by ketonuria,<sup>3</sup> which has now deservedly reached a second edition, Professor A. B. MARION, from his wealth of experience, describes in detail this well known condition. The interesting question of its etiology is fully discussed: the victims, usually from 2 to 6 years of age, come of the neuroarthritic diathesis, and in adult life are prone to migraine, hepatic disorder, and diabetes; the attacks are favoured by a fatty diet and residence at a high altitude. A sudden disorder of metabolism leads to the formation at the same time of a poison which causes vomiting and of ketone bodies in excess, emphasis is laid on the early appearance of ketonuria, and the suggestion that it is secondary to vomiting and emulsion is firmly controverted, as is also the view that the condition is due to appendicitis. Other explanations, such as nephritis and hepatic insufficiency, are also considered cyclic vomiting being critically compared with delayed chloroform poisoning. In the section on treatment alkalis and avoidance of a fatty diet are recommended, and the rapid curative effect of insulin in the attacks is mentioned.

In *Education for Life: The Training of the Girl Worker* Madame JULIE EVE VÁJNÁK, administrator in Hungary of the Save the Children Fund, has provided an attractive account of the work schools in Hungary, especially of that in the Maria Valéria Huts at Budapest, and asks for subscriptions. Children are not admitted until they have passed the obligatory age limit of the ordinary school, which in Hungary is 12 years of age. Their education, or preparation in the work schools for their future in the factory, has a broad outlook, and has been arranged on a sound psychological basis. This system, though started a few years ago only, has been so successful that the public authorities are taking the schools over, and the girls are so improved in appearance, taste, and efficiency that many of them get married.

Meick's Annual Report 1927, second part, contains a considerable amount of interesting information. An article by Buins on myklostomiasis gives a clear description of this scourge which afflicts so large a proportion of humanity; the author estimates that 500 million individuals are infected. Details are given of the preventive measures by means of which the disease has been practically stamped out in the coalfields, in 1903 about 10 per cent. of the 180,000 miners were infected. The *Lesements Périodiques de la Société de Médecine* Par A. P. Marion. 2e édition. (Paris, 1927.) *Education for Life: The Training of the Girl Worker* By Julie F. Vajnak, administrator in Hungary of the Save the Children Fund with a foreword by Ethel Sigmund. London: The War Child. 1927. (Cr. 8vo, pp. v + 18, 2 plates.)

were infected, whereas to-day much less than 0.1 per cent. is infected. This is a very remarkable triumph for preventive medicine. Much of the book is occupied by short summaries of recent literature regarding various new drugs and new methods of treatment.

## PREPARATIONS AND APPLIANCES

[illegible]

Inti, no nome e Seren

Wellcome has announced that its new Type 1 anti-toxin serum for use in the treatment of pneumonia. Laboratory tests have shown that 0.2 c.c. of this serum will protect a non-vaccinated 100,000 fatal dose of a culture of pneumococcus Type 1. It is therefore hoped that the serum will give favourable clinical results.

4 Simplified Ophthalmic case

Mr. L. L. Farquharson, medical student in the University of Edinburgh, has devised an ophthalmic scope attachment which fits over the end of an Ever Ready pocket torch (fountain pen type). I consist of a lens with a small sight aperture at the back containing a slit and scale to



## MEDICAL INSURANCE IN GERMANY

The working of the national insurance scheme in Germany is apparently beset with considerable difficulties at the present time. These have been brought out and traced to their cause in a pamphlet recently published by Dr Kurt Finkelnburg, who has devoted four years of study to the subject and to an analysis of the schemes in operation in other countries.

The defects in Germany exposed by the author are partly inherent in the original scheme and partly the result of the progressive increase in expenditure and of the measures adopted to diminish it. Under the first heading are included the relation of the medical man to the insurance committees and to the patient. The economist or of medical benefit is not a it is in this

counts, delegated to a special committee with a strong medical representation the insurance committee are composed of two-thirds workers and one third employers and this fact, combined with the strong class antagonism existing in Germany, has an unfavourable influence on the relations between the committees and the doctors who are regarded by the majority in the light of employers. As regards doctor and patient Dr Finkelnberg has definitely deplores the loss of the old personal relationship under which the interest of the patient was the sole concern. Under national insurance the doctor has to consider on the one hand his patient on the other his committee whose watchword is parsimony. The partial detachment from the interest of the patient became complete later on when the medical man grew to be regarded as practically an official of the committee. Nevertheless, the personal relation still seems to be greatly prized in Germany and the tendency to regard the patient as merely an embodied disease is heartily disliked by a wide circle.

A more long blo difficulty is connected with the expenditure on national insurance which appear to have increased by leaps and bounds. The communities blame the doctors, whose expenditure they point out, increased ninefold during the period 1825-1914. It is admitted that they may have been extravagance on the part of individual doctors but not on their part alone apparently, since the communities administrative expenses increased fourteenfold in the same period. Dr Pinkerath mentions several causes for the increase. In the first place the restraining influence of the private part under the old system has gone and treatment is now free. No deep psychological research was needed, he contend to predict that increased demands on the part of the patient would result they may be quite reasonable, and only about under the old system owing to lack of means. Secondly the doctor being to a large extent relieved from personal responsibility would often be tempted to go beyond what was strictly necessary in treatment or employ methods that entailed unjustifiable expense. Thirdly a considerable increase in expenditure, he says to be attributed to propaganda to campaigns against tubercular syphilis, and cancer to the extension of the scope of insurance, to increased price and to innovations in medical technique and the introduction of new drugs.

The matter chiefly in dispute relates to the means adopted to diminish the increased expenditure. The most obvious expedient so far as the medical man is concerned was to limit as far as to a certain fixed maximum and as a general rule to deny a percentage of the revenue of the committee was adopted. This was satisfactory enough in favourable times but in period of financial stress the result has been very much the contrary. Another method was to establish direct control over the doctors either by a committee of medical men or by some leading medical men or superintendents acting as representative of the committee. It is difficult to believe that this plan could work satisfactorily in any circumstances it must be a humiliating position for a doctor to be liable at any moment to have his diagnosis and treatment called in question by an outsider, and the more so in appeal to a higher authority is provided for.

Dr Finkenrath suggests that the first step in reform should be a statutory limitation of the demands of the patient. Insurance in Germany entitles a patient to all "necessary" treatment but what precisely may be considered necessary is a financial matter of dispute between patient, doctors, and committees. no distinction is made between ordinary and special treatment. In these circumstances the remuneration of the doctors must in many instances be fairly inadequate. German doctors evidently have reason to complain.

If it is possible to have opinions on the subject, it would seem that it might be considered in the direction of establishing, on part of the Government, the independence of the medical men, conferring the right of appeal to the Ministry of Health in matters of dispute, bringing the amount of medical fees into relation with the services demanded and defining more clearly the scope of national insurance.

<sup>1</sup> DL Kastenzelfs im 22 und 410 1 1 2 Dr m 1 Kurt  
Finktrath Junction Peht-nel Wirtelalt erig 16.7 (fr 200  
pp 32)

# British Medical Journal.

SATURDAY, AUGUST 13TH, 1927

## LIFE ASSURANCE AND PERIODIC HEALTH EXAMINATION

THREE recent books, originating respectively in South Africa,<sup>1</sup> America,<sup>2</sup> and India,<sup>3</sup> and all making contact with life assurance at various angles, serve to mark its steady growth throughout the world, and suggest reflections upon the influence of medicine within this sphere. In the early days of life assurance in London the proposer was inspected by the lay directors of the company, and accepted or rejected on his aspect alone. Later, an experienced medical practitioner was appointed to do the inspecting through professional glasses, but without examination. Later again, with the advance of scientific attainment this rough-and-ready choice gave place to a more or less thorough examination—a vogue which still holds the field. But it no longer holds it unopposed, for twenty five years ago came the bold innovation of assurance without medical examination to challenge our professional complacency, and did it to some purpose. We need not blune ourselves, having acted in good faith, but there is no doubt that we were to some extent misled by our own discoveries, as many a man now living can testify who, twenty, thirty, or forty years ago, was declined for some abnormality—albuminuria, cosuria or heart murmur—which proved harmless. We are wiser now, and have lived to see the medical and the non-medical appraisements coexisting amicably enough, as indeed they ought, being mutually complementary systems. But it is not to be supposed that the success of non-medical insurance under appropriate safeguards, which has been won in London by those who have had wit enough to master its limitations, has enhanced the influence of medical opinion in the life assurance world at home. Things seem to be otherwise in the United States, and probably in South Africa also, if we may judge by the preface of Dr. Paterson MacLaren's sincerely written and laborious book. Who that has been faced with the intricacies of an American medical report for life assurance can doubt that what claims so much in labour must feel assured of an equal claim upon consideration? Besides, not only is medical aid invoked in America for the meticulous selection of candidates, but also for the gracious office of keeping those candidates alive (and in full enjoyment of the privilege of paying regular premiums) by dint of periodic health examinations.

There is probably no department of our professional activities which exhibits more variation in method than the medical examination for life insurance, as appears from a comparison of the questionnaires in use by the various companies. At one end of the scale we

find lists, especially the American which are truly portentous in their extent and particularity, and bid fair to exhaust, not only the subject, but examiner and examinee as well. No crevice of family history or medical past is left unexplored, no clunk or cranny in the physical present escapes the probe, and the luckless applicant (were he fully aware of the inquisition which threatens him) might be forgiven for throwing up his hands and leaving the quest of life insurance to those dauntless souls who are cast by Nature for perilous pursuits. At the other extreme are the societies which seem able to achieve their aims with a far less forbidding display of ink and curiosity, features which at this end of the scale present themselves in diminishing abundance until we reach the zone where approved lives are accepted without medical examination of any kind.

Life insurance, being a trade in a commodity, may be expected to be amenable to ordinary commercial considerations. Accordingly we should look to see the seller making things as easy for the prospective buyer as it is possible to make them. But since in this case the buyer pays for his purchase on the instalment system—that is, by periodical premiums—it follows that the commodity can only be sold profitably to such purchasers as have an average chance of not defaulting (by way of precocious demise) in the payments they have undertaken to make. Hence the necessity for medical selection and the introduction of difficulties in the buyer's way. For medical examination is a difficulty, and the more searching it is the more likely is it to scare away custom. On the other hand, it gives security and improves the quality of the customers, so to speak, and thus counterbalances its drawbacks more or less. At what precise point of balance these competing interests attain their equilibrium of advantage must remain a matter of opinion, and conflicting notions on the subject will no doubt continue to dictate variations in practice.

As regards the medical examination itself, it is a clinical problem, in its way, and needs for its successful solution that the examiner should concentrate upon the few features which are essential to the exclusion of irrelevance. Thus good sense, clinical faculty, and (for choice, of course) experience are the qualities most needed. Given a good equipment in these particulars the examiner stands above the necessity for guidance as to the points which should claim his attention, and exhaustive schedules of questions are superfluous. So we may find added satisfaction in our relative freedom from the microscopic inquiries scheduled in America by regarding it as a tribute to the general level of clinical good sense to be found among our medical examiners.

We have alluded to the periodic health examination offered to their assured lives by some of the American offices. The subject is dealt with at great length in the volume entitled *How to Make the Periodic Health Examination*, though the work itself is in effect a textbook of practical diagnostics. Considering that there is in essence nothing about the periodic health examination which should distinguish it from the routine examination in daily use by the careful practitioner, we may take leave to doubt whether it needs a rather grandiose textbook to itself. But the subject is important, and has not obtained in this country the attention it deserves. Undoubtedly there are among us to day untold numbers of people who are daily inviting (and acquiring) ill health because in all innocence they are entertaining the elements of disease. One man, for example, accustomed in the heyday of

<sup>1</sup> *Medical Insurance Examination* By J. Paterson MacLaren, M.A. B.Sc., M.P., C.M. London: Baillière Tindall and Cox, 1927 (Demy 8vo, pp. vii + 308, 10s. net). — *How to Make the Periodic Health Examination* By Eugene L. Luman, F.R.C. M.D., and J. Ramser Crawford, M.D. New York: Little W. Ireland, New York, 8vo, pp. 393, 4 dollars. <sup>2</sup> *Pocket Guide to* The Macmillan edition revised and enlarged. Bombay: The Times Press, 1927 (Cr 8vo, pp. ii + 85 + 222).



his strength to so much whisky, beer, meat, and so on, continues his eccentric practices into later middle age without any consciousness that he is taking risks. In his duty in his ignorance with rheumatoid arthritis and all the hazards known and suspected which attend upon orils' pils. And so in other connections good citizens continue to court formidable harms or lack of timely advice. There is force no doubt in the argument that the less a man thinks about his health the better and that *quarta non nocet* is a good idea. Nonetheless the periodic health examination conducted on model lines, is a sane and sensible idea which may in time become popular here. So it behooves us to prepare ourselves to do it simply and sensibly with it when it comes in the guise of a free examination paid for by an interested assurance office or as a precaution self sought by a public that has grown wise—wise enough in short to be willing to pay for insurance of health against avoidable risks as it does already for the insurance of life against the inevitable.

### IF GOLD RUST WHAT SHOULD IRON DO?

The report prepared by the Westminster Survey Group on the housing conditions in the Victoria ward of that city is based on an inquiry apparently made with care into a random selection of houses in the area and is now issued with the object of enlightening public opinion so as to strengthen the hands of those engaged in similar work and prepare the way for remedies.

Victoria ward which includes Chelsea Barracks and Victoria Station is bounded on the west by Flury Street and on the east by Vauxhall Bridge Road. Its dwellings range in descending order of merit from good class houses to poor tenement property and cottages which have survived more spacious days. Too old for remodelling, but not yet decrepit enough for demolition, the tenement houses examined showed in general a low state of repair and were invaded by damp from roof and ground and through defects in their walls. Cottages—types of *rue de urbe*—were found with no water laid on indoors. Dark and dangerous staircases, broken fixtures, saturated ceilings, falling plaster, damp basements, absence of refuse bins, and presence of bugs and insects made many houses undesirable or unfit to live in. The number of dirty and careless tenants is said to be surprisingly small and the frequency of damp is adduced as suggesting that omission or neglect of repair by land lords is the principal factor responsible.

The reports were impressed by the abundance of rats in the properties visited. Children are terrified of the rats and refuse to go to bed. In one house the rats gnawed through a new bond in twenty-four hours. In another the tenant keeps a dog for his protection against them. There are however instances.

The existence of overcrowding seems indubitable. Many figures are quoted. The demolition of Walls Yard now happily achieved shows the kind of difficulties which arise. A number of the displaced families have crowded into houses already full and so helped to bring about a return to slum conditions. The recent tendency in Westminster to merge industrial and commercial property at the expense of housing is deplored, and the statement is made and seems incontrovertible that every site so lost for residential purposes is a definite aggravation of the existing evil.

The report points out the administrative and other measures which may be adopted to right what is

wrong. It indicates the steps the citizen may take to set the machine of local government in motion. Being a mission document it does not enlarge on things already being done. It is therefore proper to say that in the annual report of the medical officer of health for Westminster noted on page 279 of this issue a section is devoted to a discussion of the housing schemes of the city. The council would perhaps have displayed a more progressive attitude if they had not reduced the baths in their Willow Street scheme, although a number of bathrooms will be included.

The survey group appear to have made out their case that the housing in the Victoria ward of Westminster is defective and calls for remedy. On the hygiene side it is inhuman. On the social side owing to its degrading influence on family life it reveals an equally serious position. It is not claimed by the survey group that conditions similar to those in Westminster do not exist in other areas but they say that the city of Westminster, with its rating resources, could do more than most to cure the evil and could do it more quickly.

A reader perusing this interesting document with a detached mind receives the impression that defective housing not only exists in Westminster but it has added significance from its setting. Westminster age long has been the heart of England. It may never be regarded as the nucleus of the Empire. It or all cities should be above reproach. It should take the lead and set the pace in this vital matter. If the city of Westminster will not do right what can be expected of other authorities less favoured by tradition and a historic name and less in the public eye? The article quoted as a title above written long ago by the author of the *Canterbury Tales*—a Londoner born and one moreover who knew his Westminster well—is commended at this juncture to the city council for its guidance and inspiration.

### MAJOR GENERAL LEONARD WOOD

MAJOR GENERAL LEONARD WOOD who after a adventurous military career in the service of the United States was appointed governor of the Philippine Islands six years ago died in a Boston nursing home of an operation on the skull on August 10. He was the son of a doctor came of pure New England stock and was born at Winchester, New Hampshire on October 6, 1850. He was a wheel student at Harvard at Harvard in 1868 and entered the army as contract surgeon in the following year. He also immediately saw action in Armenia then hurried by the terrible April of the time when the army and the General Miles was entering on the Indian campaign for the overthrow of Geronimo and his followers. Though there was not much fighting it was an exceedingly dangerous type. It was carried on in the mountainous New Mexico and northern regions of old Mexico in conditions of great physical hardship. Wood was of iron constitution and broad-chested was able to withstand more than most whites whether Indians or frontiersmen and could not be beaten even by the friendly Indian tribes themselves. By the end of the campaign Wood was rated as a commanding officer of a team of foot soldiers and was for particularly arduous and dangerous work and for courage and enterprise won that coveted and of distinction the Medal of Honour. In 1875 he was given an appointment at Washington where he became a friend of Roosevelt, and when war broke out with Spain in 1898 they were together authorized to raise and equip a regiment of volunteer cavalry or rough riders. Wood again distinguished himself by his courage and endurance, as well

as by his abilities, and having been promoted brigadier-general was, on the capture of Santiago, made military governor of that city, which was in a terrible state of anarchy and disorder. Less than four years afterwards he was appointed governor-general of Cuba, and was promoted to be major-general. During his term of office he gave his cordial support to the experiments of Carlos Finlay, Walter Reed, and their colleagues, which made it possible to extirpate yellow fever. In an address Major-General Wood gave in Philadelphia at the end of 1912, he described the reorganization of the government of the island, and said that when the Cuban Republic was set up the government of the island was transferred as a going concern. All the public offices were filled with competent well trained men, its finances had been put in order, completely equipped buildings for the transaction of public business had been provided, and the people were governed in all municipalities by officials of their own choice. Sanitary conditions had been made better than those existing in some parts of the United States, yellow fever had been eradicated, the island was well supplied with hospitals and asylums, and a modern system of education had been introduced, including a university. Very shortly after his return from Cuba President Roosevelt appointed Wood military governor of the Moro Province in the Philippines, and after a tour round the world, during which he made the acquaintance of Lord Roberts in this country and of Lord Cromer in Egypt, and visited India and Java to study administration, he began his work among the Moro tribes, who were pirates by tradition and who lived in open defiance of the government. By 1905 he had pacified the province, which he handed over to his successor possessed of a strong government. After holding the Philippines command for three years, Wood, in 1908, was appointed G.O.C. the United States Department of the East, and after a diplomatic mission to the Argentine was in 1910 appointed Chief of the General Staff. He set to work to impress on his countrymen the necessity, having regard to the position both in America and Europe, of being prepared for war. He succeeded in establishing "volunt officers' training camps, and in the early years of

European war formed several others, so that by 1916 there were six, with an attendance of over 16,000 cadets. It was by these camps that the United States of America were prepared to raise an army of nearly four millions, officered by over 200,000 ex-students of the camps Wood had established. Some thought that when the United States army took the field in France Wood ought to have been commander-in-chief, but party politics intervened, and he was not sent to France until 1917, and then only as an observer. In January, 1918, he was wounded by a fragment of shell, when he recovered he returned to Washington to advise the Military Committee that America should prepare to mobilize an army of five million men. In 1920 he was nominated as a candidate for the Republican Party as President, but he had to give way to Mr. Harding, who, however, as soon as he came into office, sent Wood to the Philippines to investigate the conditions there and to report upon the fitness of the people for independence. A year later he was appointed governor-general of the Philippines, where he had to deal with a strong agitation for independent status. Wood firmly maintained the principle that the essential step was to educate the Filipino people in the principles of popular democratic government, and to give them gradually more share in administration. He held strongly, however, that American sovereignty should be retained, and this was the opinion he expressed when he returned home a short time ago. His death removes a man of strong character and independent views, who, had his life been spared, might have rendered yet other great services to his country.

#### AN OUTBREAK OF FOOD POISONING

We are indebted to Dr. James F. Blackett (M.O.H., Bath) for some particulars of the outbreak of food poisoning which, as has been extensively reported in the daily press, occurred at the end of last week in Bath and some neighbouring districts. He informs us that during the week-end, more particularly on Sunday, August 7th, the medical men practising in certain areas in Bath and to the west of it received a very large number of calls to see patients suffering from gastro-intestinal disturbance. It soon became evident that in practically every case the patient had partaken, on Friday evening, of ice cream from a particular dealer, who travels through the districts affected with a motor cycle and sidecar. This dealer lives at Koyngsham, the area affected consists of that place (a market town of nearly 4,000 inhabitants, about seven miles west of Bath), the western portion of the city of Bath, and certain intermediate villages. The rough estimate of from 200 to 250 cases made by the daily papers is probably approximately correct. Of these, perhaps 50 occurred in the city of Bath. There has been one death (in the city of Bath), but many patients have had severe attacks. Though most of the cases occurred in connexion with Friday night's supply of ice cream, the dealer, ignorant of what was happening, also did his usual round on Saturday, and a certain number of later cases are definitely attributed to ices sold on that day. The attacks varied very little in their clinical nature, except in intensity. Inquiries showed that there had usually been an initial rigor, coming on within twelve hours of eating the ice cream. This was followed by profuse and persistent diarrhoea, associated in the earlier stages with vomiting. The temperature was raised and the pulse rate very rapid. Most of the patients seemed drowsy, but there was no definite evidence of paralysis or changes in the reflexes. The dealer, who has made and sold ice cream for many years, is reported in the press to have stated that the ingredients used were Grade A milk, new laid eggs, corn-flour of a well known brand, and vanilla flavouring. He pointed out, what is certainly true, that a number of persons had consumed ice cream from the same supply and had not been ill. It is understood that a sample of the ice cream made on Saturday is being examined, and that investigations are also being made of material obtained from the patients. The results of the investigations have not yet been made known.

#### ANTIVIVISECTION LETTER WRITERS

SOME five-and-twenty years ago, perhaps earlier, a favourite stunt of the antivivisectionist was to write to rising young medical men—rising in the big national world or in the life of a country town not less important to them at the moment—to ask whether they were sound on vivisection, that is to say, in disapproving it, because the writer knew of someone who would like to consult them but would not be allowed by her conscience to do so if they were shaky. From a spirited letter by Sir Alfred Rice-Oxley, published in the Times of August 9th, it would appear that the plan has been revived, he states that he has received a number of communications from antivivisectionists inquiring if his name may be included among those physicians and surgeons who discountenance vivisection, and informing him that there are many people who desire to consult only those members of the medical faculty who dissociate themselves from what is called vivisection. Thus he interprets to mean that if a practitioner should happen to be in favour of experiments on animals, and if he does not change his views, they will not consult him, and, presumably, will endeavour to persuade other people not to consult him. He expresses the view, which he thinks (as do we) will be shared by most fair-minded people, that



governing organization of nurses only." The pamphlet, which can be obtained (price 3d) from the offices of the Labour party, 33, Fecleston Square, London, S.W.1 is a study of study. We believe it to be true that in the past nurses have often been treated by institutions which employed them with insufficient consideration, and that there is still need for improvement. At the same time we must not be taken as agreeing to the proposition that the Labour party's practice of a trade union is well applicable to them calling

#### MACALISTER MEMORIAL AT ROYAL SOCIETY OF MEDICINE

A new episcopo has been installed at the Royal Society of Medicine as part of the memorial to the late secretary, Sir John MacAlister. The instrument has been constructed in Germany by Carl Zeiss according to the specifications of the committee in charge of the memorial, on whose behalf the secretary of the society (Mr. G. R. Edwards), accompanied by the operator, made a special journey to Jena and spent four days in the Zeiss workshops conferring with experts of the firm. The instrument offers excellent facilities for projection, and images of solid objects, such as books or bottled specimens, highly illuminated, are thrown on the screen with great clearness. It has two optical benches, both served by a 10 ampere a.c. lamp, one of them fitted for the purpose of microscopical projection over a great range of diameters, and the other for the projection of all kinds of lantern slides and photographs up to the largest ordinary plate or film size of 10 in. by 12 in. The working of the instrument is very smooth so that it is possible to change from one type of projection to another without any disturbing hiatus. Another device is a dimmer, whereby the lights in the hall are slowly extinguished, thus avoiding the ocular strain consequent upon abrupt transition from light to darkness. The whole instrument is mounted on a suitable platform, and a plate on the front records the fact that it is part of the memorial subscribed by the Fellows of the society to the late secretary.

#### PARATHYROID HORMONE AND CALCIUM ABSORPTION

The measurement of calcium output and intake by the animal body has always presented a very difficult problem to those working on calcium metabolism. The difficulty is due to the fact that calcium is excreted both by the kidney and by the large intestine, while, if conditions are favourable, it is absorbed in the upper part of the bowel. When the calcium content of the faeces, therefore, has been determined, it still remains to be decided how much of that calcium represents excretion and how much is merely material which has passed along the alimentary canal without being absorbed. The determination of "calcium balance" is on this account a matter of difficulty. Stewart and Percival endeavoured to determine the source of the extra calcium that finds its way into the blood as a result of the administration of Collip's parathyroid extract. They solved the difficulty presented by intestinal absorption and excretion by using anesthetized animals from which the whole alimentary canal was removed. They had previously ascertained that anesthesia did not interfere with the rise of blood calcium caused by the injection of the extract. In the conditions of their experiment, had the rise in blood calcium been due to increased absorption it would have been prevented, if it had been caused by diminished excretion it must have occurred without administration of the hormone. As it was the blood calcium remained stationary until the extract was given, after which it showed a rise quite comparable to that found in the intact animal. Absorption and excretion, therefore, play no part

in the phenomenon. The extra calcium may come from either the soft tissues or the bones, a question which can only be definitely decided by further inquiry. There is some evidence which points to its ultimate source in the bones, but the soft tissues may very likely form a more immediate calcium reservoir.

In the list of birthday honours published in our issue of June 11th the distinction of C.B.E. (Civil), conferred upon Dr. Gustav Weber Thompson, medical officer of health to the Jamaican Mines Board of Health, Bihari and Orissa, was omitted, the official announcement did not indicate that the recipient was a member of the medical profession.

#### THE NEUROLOGICAL CONFERENCE IN LONDON

The conference in London last week of the American Neurological Association and the Section of Neurology of the Royal Society of Medicine held two discussions, one on the cerebellum and the other on sensory disorders in organic disease of the nervous system.

##### *The Cerebellum*

The discussion on the cerebellum was opened on Wednesday, July 27th, by Dr. H. A. Remy (New York) in a most illuminating communication. He gave the results of investigations carried out in conjunction with Dr. Frederick Tilney of New York on the comparative morphology of the cerebellum. He showed charts and models of the inferior olives and their connexions and of the lateral expansions of the cerebellum in the primate series. By these and lantern slides he demonstrated a correlation between the arbor vitae and the folial pattern on the one hand and the physical form of the various animals studied on the other. For example in the sloth, with its specialized and simple arboreal activities, there was an arbor vitae without lateral expansions, whilst in the elephant both arbor vitae and folial patterns were very complicated. Of the animals studied rodents and bats possessed the smallest cerebellum, but its structure was by no means simple. He believed that the development of lobulus C in primates is related with the greater independence of the fore-limbs. It was, he considered, unnecessary to recognize a middle lobe, a division into anterior and posterior lobes being sufficient. His studies indicated that the most cephalic and caudal portions of the vermis are least modified in primates. Development of certain parts of the cerebellum could be related with peculiar activities characterizing each animal group. Thus, in aquatic mammals, lobulus parafloccularis was prominent. No definite statement could be made as to the functional localization in all the lobules in man. Lobulus 4 and lobulus C with their hemispherical expansions showed the greatest progressive differentiation in the primate series. This was probably due, he thought, to the result of the perfection of skilled movements and the unilateral independence of the fore-limbs and hind-limbs. He was hopeful that further investigation on comparative morphology would further illuminate the study of functional localization in the cerebellum.

Dr. Porro (Chicago) who has been working in conjunction with Dr. L. Davis on the physiology of the cerebellum, gave an epitome of their results on reflex patterns in decerebrate animals, with and without the cerebellum. They stated that by ligation of the basilar artery in front of the inferior cerebellar arteries, followed by ligation of both carotids, ideal decerebrate preparations could be obtained. By cutting out, in addition, the inferior cerebellar supply the cerebellum was rendered functionless. They claimed that one advantage of this method is that the temperature of the animal does not tend to fall so rapidly as in the Sherrington preparation produced by transection of the mid-brain.

Dr. MESSERS (Baltimore) described certain experimental results, many of which are so revolutionary that confirmation will be necessary before they can be accepted. For example, he described various movements obtained by bipolar electric stimulation of different parts of the cerebellum, results that are opposed to all previous observations.

Dr. FRANK STERN (Philadelphia) dealt with the surgical aspect of the problem, and Dr. L. H. WITKOWSKA with the clinical results of cerebellar lesions. The latter rightly criticized the diversity of the nomenclature used to describe the various phenomena and pleaded for more coherence in this respect. Lesions of the cerebellum resulted in disorders of movement and attitude which were extremely difficult to describe from clinical observation alone, but could be better analysed in kinesthetic pictures which he had used extensively in his investigation. On the basis of disorder resulting from focal lesions of the cerebellum, he had been led finally to believe in functional localization in this part of the brain. These conclusions were described along with many interesting observations on cerebellar disorders in a whole.

Dr. LUCIEN BERNI gave an account of her investigation on disorders of the vocal cords following cerebellar lesions. She concluded that dysplasia of cerebellar origin results in lesions which involve not only the cerebellum itself but also the tracts which connect it with the medulla. The discussion was continued by Dr. WALSH, Dr. GORDON HOLMES, and Dr. KENNETH WILSON.

#### Sensory Disorders in Organic Disease of the Nervous System

At the beginning of the meeting on Thursday it was unanimously agreed to send a message of sympathy and appreciation to Sir Henry Head whose clinical contributions on this subject form so much of the basis of our present knowledge.

Professor J. S. B. STOFFORD introduced the discussion on sensory disturbances following division and suture of a peripheral nerve. His experiences during the war had led him to accept Head's primary classification of cutaneous sensibility into cutaneous and deep. Cutaneous sensibility, as Head described it, was composed of two systems—namely, epipathic and protopathic—the first discriminative and the second protective in function. Professor Stofford, however, diverged from Head's published views in believing that a similar classification in regard to deep sensibility was possible and in fact, imperative on clinical evidence. The evidence upon which this classification was based by Head in regard to cutaneous sensibility is well known. It depends upon the investigations of sensation in the intermediate zone after injury of a peripheral nerve upon the division the following division of posterior roots in which the intermediate area is sensitive to epipathic but not to protopathic qualities—the opposite condition in other words to that which occurs after lesion of peripheral nerves. The recovery of protopathic before epipathic sensibility after suture of a peripheral nerve, the persistence for an indefinite time of protopathic forms of sensation when regeneration is incomplete, and, finally, the normal absence of protopathic sensibility in the glans penis. According to Professor Stofford, evidence of a similar kind as the result of clinical observation, supported his claim that deep sensibility was also based on two anatomical systems with the same phylogenetic significance. Thus, after suture of a peripheral nerve, the two-stage process of recovery could be shown to occur: protective elements such as pressure and pressure pain reappearing before epipathic functions such as localization and passive position. So also he found indefinite persistence or the first stage of recovery. Finally, in the glans penis localization in the normal individual is imperfect and increasing pressure gives rise to diffuse pain. He therefore urged that deep sensibility should be brought into line with Head's classification of cutaneous sensibility. He suggested that a better classification, based on the clinical facts of recovering sensibility after suture of a peripheral nerve, would be into (1) those elements that recover early, and (2) those that recover late. He went on to compare the two groups of peripheral sensation with thalamic sensibility on the one hand and cortical sensibility

on the other. The phenomena of peripheral "reference," which have never been adequately explained, he believed to be due in the case of recovery after suture, to disturbance of intracranial patterns.

Dr. WILFRED HARRIS gave a description of the sensory disorders which may follow spinal and brain stem lesions. Dr. GORDON HOLMES dealt with the disorders of sensation resulting from lesions of the spinal cord, brain stem and optic thalamus. He recalled the results of investigations by Head and himself which demonstrated that many sensory qualities could be recognized without intervention of the cerebral cortex. The ones they had attributed to the activity of the optic thalamus. But he has since been led to believe that portions of the brain stem are also concerned in the recognition of certain sensory elements. After lesions confined to the cerebral cortex, sensibility to pain to heat and cold was never abolished over the affected area of the body, but in intelligent patients qualitative changes could be demonstrated. It was characteristic of sensory disorders after cortical lesions that hallucinations were frequent and tended to confuse the observer. These abnormalities were described by Head and himself, and consisted of the persistence of a sensation for some time after the removal of the stimulus. This phenomenon Dr. Holmes believed to be due to imperfect cortical inhibition of thalamic and other subcortical sensory "centres", in other words it was a reflex phenomenon. He pleaded for the more common use of the compass test in sensory investigation and illustrated its importance by relating four cases of cerebral lesion in which tactile discrimination was the only sensory quality affected. He recalled Head's classification of sensory function subdivided by the cerebral cortex into three categories—namely, the appreciation of spatial relationships, the power of reacting adequately to stimuli of different intensities, but of the same sensory quality, and the recognition of similarity and difference. Finally, he described his views on the localization of the sensory functions. He believed that the cortex in front of the Rolandic fissure took no direct part in sensation and that the sensory cortex extended backward, from the fissure into the anterior part of the supramarginal gyrus. The posterior part of this region was concerned mainly with the recognition of form, shape, and size, whilst defective postural sensibility resulted from lesion in front of this area.

Dr. KENNETH WILSON's contribution dealt with certain dysaesthetic and thalamic correlations. It had he said long been known that numbness, tingling, pins and needles, and other abnormal sensations were common results of lesions of the nervous system at different anatomical levels. The fact that they were not infrequently associated with vascular disorders had led him to believe that there were two factors in the production of dysaesthesia—namely, nervous and vascular. He gave as an example, the neuropathetic disease common in middle-aged women, and described an interesting case of occlusion of the posterior inferior cerebellar artery in which there were abnormal sensations on the right side of the face and so long as they were experienced by the patient the skin did not bleed when pricked. When the numbness disappeared bleeding could be produced. He urged that this instance was most suggestive of vaso-constriction as a factor in the production of both phenomena. At the thalamic level, painful as well as thermal dysaesthesia might be prominent in the clinical picture. With lesions at the level of the cortex, abnormal sensations such as pins-and-needles and numbness were frequently described as auras to epileptic motor seizures. In one case a patient or severe coldness over the whole of one side of the body complained of. Pain was very rare at this level but Foster has described pain in the region of the head at the onset of a Jacksonian fit. This paper was not suggestive and instructive and illuminated a subject on which too little attention has been paid.

The whole of Tuesday and the afternoon of Wednesday and Thursday were given up to demonstrations and the reading of independent papers. The delivery of the Hughlings Jackson lecture by Dr. Charles L. Dana was noted in the week (p. 225).



## Nova et Vetera.

### ITALY'S CAMPAIGN AGAINST MALARIA

BY  
PROFESSOR ARTURO CASTIGLIONI, M.D.,  
MEMBER OF THE HIGH SANITARY COUNCIL OF THE KINGDOM

FROM ancient times the struggle with malaria has been one of the gravest problems in the lands now comprising the Kingdom of Italy. The archaeologists' excavations show that the Latins attempted to drain the marshes and swamps, looking to this as a means whereby they might exterminate the disease. The Romans also fully realized the peril of malaria infection, and erected temples to the god *Febus*, even to-day their great aqueducts can still be traced, and testify to the grandeur of Rome, whose colonization of the "Campagna Romana" included not only the eradication of the marshlands of the provinces, but thereby made possible the building thereon of flourishing cities and magnificent villas. With the fall of the Roman Empire the population of Italy was sensibly decreased by the devastation of war, disease, and famine, and Rome, now little more than a borough, her culture abandoned, the "Campagna" became again the seat of malaria infection.

In the subsequent renaissance of Italian medicine, however, there were several illustrious members of the profession, as, for instance, Giovanni Maria Lancisi, professor of medicine in the University of Rome (1654-1720), who affirmed that the prevalence of malaria resulted from the unhygienic state of the marshlands. From this time onwards attempts were made to carry on a systematic campaign against the disease. Italy, divided into small states and foreign principalities, was in no position to make a definite attack upon such a serious question, but on the formation of the kingdom, the labours of the great Italian malariologists—Grassi, Celli, Marchesani, Bignami, and others—with the collaboration of foreign students (of whom, in the first line, Ronald Ross shall be named), traced the malaria parasite and the mode by which it was transmitted into the human blood. They inaugurated and founded hygienic legislation based on the gratuitous supply of large quantities of quinine in the malarial regions and on the improvement of the marshlands, these steps producing immediate and favourable results.

From 1887 to 1922 there was an average of 15,000 deaths per annum from malaria. This figure, however, rapidly decreased to an average of about 8,000 deaths per annum between 1903 and 1905. Such decline continued until, in 1914, the number of deaths was little more than 2,000—that is, 57 deaths per million inhabitants. The war years showed a great augmentation, with a maximum of 11,487 deaths in 1918 in which year also a very serious influenza epidemic was responsible for the death of a large number of individuals already weakened by malaria. The subsequent years show a rapid and progressive diminution of malaria, and in 1925 the number was again little more than 3,000—a figure not far off that for 1914.

The regions most sorely stricken by malaria are those in the south of Sardinia and certain Sicilian provinces. Northern Italy influences the statistics most favourably with a proportional average of not more than 10 deaths per 100,000 inhabitants. The observations recently gathered and summarized in an interesting publication of the Board of Public Health show the whole of Italy divided into two large zones, the first of which comprises the whole of Northern Italy and a part of Central Italy. In this zone the malaria is shown to be of a very mild character, with a reduced mortality. The second zone comprises the province of Grosseto and all Southern Italy, where the mortality is very great. The centre of the malaria infection is shown to be found in the island of Sardinia, this being attributable to the special conditions of the locality, which render very difficult the campaign against the disease.

The statistics dealing with the morbidity from malaria also indicate the same rapid diminution in the figures registered by the hospitals and the army.

As already stated the Italian legislature considers one of the principal points of the antimalaria campaign to be the State distribution of quinine. All quinine in Italy is prepared in the State laboratories under the direction of the Minister of Finance, and after an exhaustive scrutiny on the part of the Board of Health is sold to the pharmacists and public retailers. The local authorities, the hospitals, and charitable organizations are empowered to receive the quinine on special conditions at a lower price than that asked from the public sellers, and the poorer local authorities are allowed to have it on credit. All profits arising from the sale of quinine are placed in a special reserve fund.

Another important step towards the diminution of malaria is the classification of this disease as an occupational complaint. By the provision of the law the entire expense of the protection from malaria of the rural population, and of those employed in public works, has to be borne by the landowners or by the contractors, deaths from malaria are therefore considered as a misfortune arising from occupation, and, as such, carrying a right to indemnity.

Other features of Italy's antimalaria legislation provide for a gratuitous supply of quinine and assistance towards sanitation purposes for all workers and settlers inhabiting malarial zones. Mechanical prophylactics are also guaranteed in many infected rivers.

During recent years the Italian Government has introduced a series of new enactments, which are the fruit of twenty years' experience of antimalarial work, they having opened in malarial centres research institutes for purposes of diagnosis, and founded at Nettuno, in the vicinity of Rome, a school of malariology. Further, an antimalarial ambulatorium exists in every district where malaria has occurred, but one of the more important measures for the permanent immunity of the malarial regions has been to render the ill-malarial conditions such as will make impossible the reproduction of anopheles, by draining the marshlands and increasing agricultural cultivation in these parts.

With regard to prophylaxis, for many years scientists have been engaged on plans for the extermination of anopheline mosquitos. These include the poisoning of petioles with oil of heavy oil on the surface of stagnant pools, the introduction of the *Gambusia affinis*, a fish that will devour the larvae and breed very rapidly, and the breeding of cattle in the malarial regions. The latter, however, represents a more important measure, namely, the obtaining of anopheles without malaria—that is to say, mosquitos which no longer sting the human species but prefer other species, mosquitos, in fact, which have taken a dislike to human beings and at the same time have become zoophilic. There are places in Italy where such anopheles have but no longer sting our species, and hence malaria is definitely disappearing, such, for instance, is the district of Schio between Castellana di Stabia and Torre Annunziata. In other places the anopheles sting human beings solely from the spring onwards to July, and hence the malaria takes on a very mild character in these localities, as, for example, at San Rossore, near Pisa.

Another problem which is much more important for Italy, as well as for other lands, such as India, the United States, and the Philippines, is that of the relation between malaria and the cultivation of rice. The study of the subject which has been made in Italy demonstrates that in the places where rice is cultivated the development of anopheles is much more marked. Therefore, from this aspect also research has obtained considerable success. A change in the biological state of malaria—namely, that the insects sting non-human species much more readily than greatly facilitating the campaign against malaria, as their gathering in such places as stables renders their destruction much easier.

The whole of the problem of malaria has been discussed in long debates at the International Conference held at Rome in 1925, and also in other important gatherings, such as the conference of the American National Committee at New Orleans. The particular character, however, of the campaign against malaria in Italy is due to the fact that this campaign is directed on the basis of a special antimalarial legislation conducted under the energetic and

continuous control of the Government with the aid of funds derived in part through the said campaign, a sum of nearly four million lire (£25 000 sterling) being obtained from the State sale of quinine in the course of a year for subsequent employment in subsidies for antimalarial purposes. This campaign, under the wise and energetic guidance of the men who control Italy's public health service, with the co-operation of all her hygienists and physicians and of many institutions such as the Italian Red Cross which has established various colonies for malnourished children, is conducted with the utmost goodwill.

Thus with high hopes of solving this grave problem, modern Italy follows the example of her great masters of hygiene the Romans of old time, aided by energetic legislation and every modern weapon.

## England and Wales.

### TREATMENT OF AFTER-EFFECTS OF ENCEPHALITIS

A CONFERENCE on encephalitis lethargica, summoned by the Minister of Health, was held in London on June 14th, when the Secretary to the Ministry of Health presided, and there were present medical officers of health, representatives of the Ministry of Health, Board of Education, and Board of Control. At the conference the chairman recommended that the procedure adopted in Bristol for dealing with patients suffering from late manifestations of the disease should be carried out throughout the country.

There are in Bristol between 150 and 200 such cases. By arrangement between the medical officers of the Health and Education Committees and the officers of the Board of Guardians these patients have been admitted for the last eighteen months to the Southmead Pool Hospital for long periods. In 1925 thirty-one cases were treated there, of whom eleven were men, thirteen women, and seven children. The numbers for 1926 were about the same. At Southmead these patients are kept under close observation by the medical superintendent, Dr P. Phillips.

The best results have been obtained from open air treatment. The adults sleep on balconies and are encouraged to follow out-of-door pursuits during the day. Terraces in front of the hospital have been made into putting greens. The instillation of fresh air has also given a new interest to many patients and improved their powers of concentration.

The fewest number of refractory cases occur amongst children. They are also kept in the open air as much as possible. They all attend a school in the hospital for three hours daily. Their diet includes fruit and cod liver oil and malt with iron. Ultra-violet irradiation has been given during the winter, but no definite improvement has followed. Laparotomy of the parathyroid glands, to raise in patients with excessive albinism has been tried but the results are disappointing. Massage and remedial exercises are given to both children and adults, the improvement of the physical disability is slow, but the effect on the moral of the patients is excellent. Children suffering from inversion of the diurnal rhythm have been put to sleep in rooms illuminated with various coloured lights, or these blue seems to have the most soothing effect. On the whole, however, this line of treatment is a failure and much better results are obtained from a firm but kindly discipline. Restlessness and sleeplessness are better overcome by obtaining natural fatigue than by the use of drugs—for example, boys who could not sleep at night were encouraged to kick about a football by day until thoroughly tired. Their restlessness soon vanished. Drug treatment both in children and adults is disappointing, and the prognosis of patients with the Pauli mania syndrome is bad.

The encouraging results obtained by the Southmead system have led the public health authorities in Bristol to conclude that the majority of patients suffering from the late effects of encephalitis lethargica are unsuitable for treatment under the Mental Deficiency Act that they benefit most by an out-of-door life under skilled discipline, and that there is ample provision at Southmead for the needs

of such patients at present. The Bristol Health Committee has not felt justified in pressing the Ministry of Health to sanction the provision of special accommodation for patients from the Bristol area. If this plan proves equally successful elsewhere the necessity of building large and expensive institutions for dealing with the disease, as originally proposed, will be obviated.

### HEALTH OF WESTMINSTER

Dr Andrew J. Shinnie, medical officer of health for Westminster, in his annual report for 1926, estimates the civilian population of the city at 141,578. The birth rate for the year was 11.3 as against 17.1 for the County of London, and the death rate was 11.6 the same as that of the county. The infantile mortality rate was 59.7 per 1,000 births. Measles, prevalent during 1926, was on the whole mild, and diphtheria and scarlet fever were less frequent than in the previous year. The Schick test, followed by active immunization against diphtheria, had been carried out in 1925 at the Newport Market Army Training School. In 1926 this work was continued and a beginning was made also, on a community basis, at one of the child welfare centres. During the year the council took over the child welfare activities of the Westminster Health Society in the northern wards of the city, and two new centres were opened elsewhere, one by the council and one by the society. The Regency Street housing scheme was modified to meet the views of the Minister of Health, the change involving some loss of accommodation. Of 77 flats 4 will be two-room, 45 three-room, and 28 four-room. The Willow Street scheme will contain 41 flats and take in 200 people. By the terms of the lease building must be completed by September, 1927, and the council, wishing to make speed, decided to forgo the formalities qualifying for a State subsidy and to meet the cost from revenue. They took the opportunity at the same time to omit baths from some flats "although a number of bath rooms will be included." Seventy-one families since 1925 have accepted vacancies on London County Council housing estates. Many Westminster people, however, cling to Westminster and would be immigrants to it are many. So congestion continues.

### TUBERCULOSIS VILLAGE SETTLEMENTS

The Insurance Committee for the city of Coventry has passed a resolution urging the Government to require local authorities to formulate schemes for village settlements on the lines of the Cambridgeshire Tuberculosis Colony at Papworth. The committee is of opinion that such colonies would stop the leakage in value of tuberculosis schemes, and would seem to assume that the number of workers to be dealt with in this way is comparatively limited. Hence it thinks that such schemes would not be too costly, and that the subsidized work of the colonies would not compete unduly with ordinary industry. Perhaps the time is not yet ripe for being dogmatic in this matter at all events the committee appears to have overlooked the weighty criticism of their proposal involved in the remarks made by Dr F. N. Kay-Menzies in his address to the National Association for the Prevention of Tuberculosis in July, 1924. The Coventry Insurance Committee might be advised to ascertain the number of families in the country requiring transplantation, the accommodation needed, and the cost of such a national scheme, including the new officials who would be required. An experiment in a purely industrial area would be interesting and if the earnings of the inhabitants should prove to fall a little short of complete economic maintenance the financial risks would not be too onerous for local private philanthropy to undertake. We note by the by that the Coventry committee does not differentiate between village settlements and colonies. Some seem to use the former term for a place of permanent residence while reserving the latter for training places used as a stage through which the tuberculous person will pass back to ordinary industrial life.

### TREATMENT OF TUBERCULOSIS BY ARTIFICIAL LIGHT

Very good results have been obtained in Lancashire by the use of artificial light for lupus and adenitis with abscess formation and skin involvement. Of forty-eight

patient with lupus, several of whom had been treated in other ways for many years without much benefit, twenty-one were apparently cured, while twenty-seven still under treatment have been much improved. Similarly, thirty out of thirty-six patients with adenitis became quiescent, three were benefited, and three remained stationary. Dr G. Lassus Cox, central tuberculosis officer to the Lancashire county council, has issued a special report on the treatment of tuberculosis by artificial light in the dispensaries at Lancaster and Ashton-under-Lyne, the former was opened in July, 1925, and the latter two months later. The sources of light employed were the low flame carbon arc and mercury vapour lamps. The average duration of light therapy in lupus was thirteen months, and in adenitis eight months, it is claimed that considerable financial economy has resulted in the treatment of these patients. The total initial outlay on light equipment in Lancaster was £105 and at Ashton-under-Lyne £333, down to the end of 1926 the number of patients treated at Lancaster was thirty-seven and at Ashton-under-Lyne 150. Considerable benefit also followed the use of artificial light in the treatment of tuberculous lesions of the bones and joints, but the few pulmonary cases in which it was employed did not respond well.

#### CITY OF LONDON

In his annual report for 1926 on the health of the City of London Dr Howarth estimates the population at 13,230. The birth rate was 7.1 per 1,000 and the death rate 10.4. The cases of infectious disease notified numbered 105, and all but 22 per cent were removed to hospital. New patients at the tuberculosis dispensary numbered 410. Investigation of the atmospheric pollution of the city continues. During November the total deposit in the city, limited as in area of one square mile, was 73 tons. Over the year the amount of impurity at noon ranged from half a milligram to six milligrams per cubic metre of air. The number of milk samples examined in 1926 was 295, of which all but 12 were up to the 3 per cent standard for fat. Of 42 samples examined for dirt 28 were clean and the rest nearly so. Thirty-four specimens were examined for *B. tuberculosis* and all were found to be free. These are satisfactory figures. The account of the meat inspections at Smithfield contains many points of interest. The quality of the British supplies was good. Inquiries addressed to the owners of tuberculous pig carcasses elicited that the diseased pigs in many cases had never been in contact with cows or cow's milk, a viral infection, contracted from fowls, was probably responsible. Argentine meat was, as usual, nearly perfect, but both Argentine and New Zealand mutton showed an increase of caseous lymphadenitis. A consignment of chilled Australian beef was good in quality, grading and dressing, but many pieces, when unsheated, were found to be affected with mould. Explanations offered by the consigning firm were insufficient pre-cooling of the storage chamber before loading, lack of circulation, excess of moisture in the atmosphere, or opening of the chamber en route. The Alcock electric defrosting process for meat was continued experimentally at Smithfield, but the trade does not favour it on the ground that the meat is burred round the insertion of the electrodes. Fresh meat from Holland was under embargo from May, owing to the discovery of the lesions of foot-and-mouth disease in nasals of pig carcasses imported into Scotland. An increase in the number of live pigs sent by the Irish Free State assisted in supplying the deficiency so occasioned. A problem arose in connexion with the tinned fruit trade. Preserved loganberries in blown or convex-ended tins were found on inspection to be quite good, and sample blown tins were sent for examination to the city bacteriologist and the city analyst. The bacteriologist saw no signs of putrefaction on puncture, found the contents nearly sterile and decided that the convexity of the ends was not due to bacterial action. The analyst observed bubbles of gas on puncture, found the alcohol content up to 0.46 per cent proof spirit, and ascribed the blowing of the tins to alcoholic fermentation. The Ministry of Health was informed of the facts. Rat destruction was carried on continuously throughout the year and the number killed was large. The proofing,

tipping, and other measures adopted mainly strike at *M. norvegicus*, or the brown rat. Its numbers, therefore, are being proportionately more reduced than those of *M. rattus* or the black rat, so that the black rat in the city now outnumbers the brown rat by at least three to one.

#### PLYMOUTH VOLUNTARY HOSPITALS COMMITTEE

The report, recently issued, of the Plymouth Voluntary Hospitals Committee for the year ending September 30th, 1926, affords evidence of much activity. The income from the "1d in the £" contributory scheme has increased by £4,379 to a total of over £16,000 for the year, and the membership of the scheme is 42,000, compared with 14,000 in 1923. The committee does valuable work in inquiring into the hospital accommodation available, and making suggestions for modification or extension. Thus the possibility of amalgamating the South Devon and East Cornwall Hospital and the Bar and Throft Hospital has been considered, questions of additional benefits granted by approved societies to members who were also "1d in the £" contributors have also been discussed. A new method of medical certification for members applying for hospital treatment has been introduced, with, it is hoped, advantage to the working of the contributory scheme.

#### LIGHT TREATMENT AT THE ROYAL FREE HOSPITAL

The Royal Free Hospital was presented by the late Mr Langton with a fully equipped light department, which is attached to the electro-therapeutic department under the care of Dr Hield. In the *Magazine of the London (R.F.H.) School of Medicine for Women* Dr F. Mackenzie Shattock recently published a report on the first year's working of the department. The accommodation is well arranged, a variety of lamps are in use, and 9,562 treatments were given in twelve months. Of the 290 patients treated, 118 are stated to have been cured or much improved, in 88 cases there was slight improvement, and 84 patients were either not improved or became worse. Miss Shattock is content to record the results with very little comment, so that it is not possible to gather the value she attaches to the treatment. Moreover, in diseases in which marked improvement occurred, such as rickets, it is noted that other treatment was used concurrently. Doubtless with extended experience the department will be able to issue more definite reports, in the meantime it has been found that students of the hospital who took occasional doses of light found that it acted as a pleasant stimulant. May we suggest that in future reports Miss Shattock will not write of "patients which" and "cases who"?

#### \* PROPOSED SEVERIFICATION OF MENTAL DEFECTIVES

The paragraph published under this heading in last week's issue (p. 231) was in error in stating that it was the London County Council which had passed a resolution on this subject, the resolution in question was passed by the London Mental Hospitals Committee in the form of a recommendation to the Council, and although it was on the agenda of the Council for July 26th it was not submitted.

## Scotland.

#### NOTIFICATION OF PUERPERAL FEVER

A circular has recently been issued by the Scottish Board of Health dealing with the notification of puerperal fever. The Board states that instances have been brought to notice of failure or delay on the part of medical practitioners to notify to the Public Health Authority cases of puerperal fever in their practice. The Board has impressed on local authorities in Scotland the necessity for making arrangements for treatment under the best hospital conditions, with the use of a theatre or suitable room where operative treatment can be carried out, for adequate safeguards against infection from other diseases, and for the services of a specialist in gynaecology and a resident medical officer. In certain cases where the hospital provision made by a local authority is insufficient,

arrangements have been made for treatment in one of the larger hospitals within reasonable distance. The Board has advised local authorities that, should any instance of failure or delay in notification come under the notice of the medical officer of health, he should report it to the local authority in order that it may consider whether the facts should be reported to the Procurator Fiscal in accordance with Section 5 of the Infectious Diseases (Notification) Act 1887. The Board also intimates that on receipt of particulars of a conviction, the Board will consider whether the case is one that should be brought to the notice of the General Medical Council. Principal morbidity is defined as including all conditions in which the temperature reaches 100° F. on two occasions from the end of the first to the end of the eighth day after delivery.

#### SCOTTISH WESTERN ASYLUMS' RESEARCH INSTITUTE

The seventeenth annual report of work done in the laboratory of the Scottish Western Asylums Research Institute has been issued by the director, Dr William Whitlaw. It is situated in Glasgow, and makes reports for the asylums of the Glasgow district and also conducts research work. Specimens associated with typhoid fever were very much fewer than in the previous year when an outbreak of the disease took place at Dalkeith Asylum. No specimens examined for clinical purposes during the year included 564 of blood for the Wassermann reaction and 135 of cerebrospinal fluid. The laboratory had carried out an estimation of the sodium and potassium contained in cerebrospinal fluid in cases showing convulsive attacks and had estimated also the cholesterol and organic phosphorus contained in similar cases. Cases of tumour of the brain and disseminated sclerosis had also been investigated. 12 cases of general paralysis had been treated by protein shock therapy but only one showed any improvement. The treatment of general paralysis with malaria from infected mosquitoes had been carried out in 33 cases; good remissions had been obtained in 18 per cent of cases treated while all the cases treated showed an improvement in physical health.

#### HEALTH OF GLASGOW

The annual report for 1926 by Dr A. S. M. Macgregor (M.O.H. Glasgow) states the population of the city was estimated at 1,101,622, compared with 1,097,241 for the same area in 1925. The births during the year numbered 24,345 compared with 25,416 in 1925. The birth rate is therefore, 22.10 per 1,000 per annum, as compared with 23.15 in 1925. This is the lowest rate recorded since the war. The total number of deaths registered during the year was 16,156 and the corrected number allowing for transfers was 15,628. The death rate was thus 14.2 per 1,000 compared with 14.0 for the previous year. The death rate due to infectious diseases was 1.25 per 1,000. The most serious infectious disease which had prevailed was measles but its effect on the vital statistics was to some extent balanced by a lower prevalence of whooping-cough. Scarlet fever has been gradually increasing since the war in incidence although not in severity, and the mortality from this disease was 89 per million. The influenza death rate was 330 per million but the incidence of this disease was confined to the late spring when a sudden severe outbreak occurred. The death rate from pulmonary tuberculosis declined still further and had reached the comparatively low figure of 0.66 per 1,000, as compared with 0.82 for 1925 and 1.0 for 1924; the rate was half that of 1915. Enteric fever has become almost negligible as a cause of death. The deaths of infants under 1 year of age numbered 2,532 in 1926 compared with 2,591 in 1925. The death rate per 1,000 births was 164. During the year supplies of milk and meat had been given to expectant and nursing mothers in needy circumstances and to children up to 5 years of age requiring them. The cost of milk thus supplied had been £21,600. The principal feature of the housing situation was the overcrowding in the small houses of the city which continued to much the same great extent as had prevailed in the previous year. The method of meeting the housing shortage by substituting rooms was becoming prevalent in certain districts, and contributed largely to the overcrowding in small houses. Thus, it is pointed

out, reflects most unfavourably on child life by producing a high incidence of diseases such as pneumonia, measles, and whooping cough.

#### MENTAL DEFECTIVES IN FIFE HIPE

A conference was held at Tarrit House, Cupar, on June 10th, to discuss the problem of treating mental defectives in the county of Fife. Dr P. D. Clark, superintendent of the Royal Scottish National Institution, Perth, gave an address in which he said that the mistake in connexion with promoting schemes for helping the mental defective had been that their administration was entrusted to a number of small bodies such as parish councils, education authorities, etc., and this led to uneconomical management to support an institution with economy a unit of 1,000 should be aimed at. The education authorities should combine with various parish councils and the district board of control ought to get together and provide more accommodation. In Fife there were 76 mental defectives not chargeable, 122 chargeable, 32 at home, 20 boarded out, 18 in poorhouses, 46 in institutions, and 18 known to parish councils to be waiting admission making a total of 338. Dr C. G. A. Chislett, medical superintendent, Stoupeville, said that Scotland was far behind in the care of the mental defective although education authorities had made great progress and had established special schools. A resolution was adopted that the conference should memorialize the District Board of Control of Fife and Kinross with a view to having mental defectives provided for institutionally.

#### PROPOSED NEW EDINBURGH HOME FOR BLIND WOMEN

The 134th annual general meeting of the Royal Blind Asylum and School, Edinburgh, was held on June 16th. Sir John R. Findlay, who presided, stated that during the past year £30,055 had been directly paid to blind persons in Edinburgh by way of wages, allowances for maintenance, etc. This was about 66 per cent of the money subscribed to the institution, the remaining 14 per cent was used for administrative expenses. The amount of attention and study given to the training of the blind was he said one of the most remarkable and unobtrusive developments of the last fifty years; there had been a great increase in the number of men put forward for training. Sir Poot Gordon Gilmore, speaking of the adoption of the report, spoke of many graduates of universities who had been pupils of the Blind Asylum and School, and referred to the proposed home for blind women. The Rev. Dr T. Burns, chairman of the district, proposed a resolution affirming the need for a home for blind women to be erected at Alfred Place, Newington, to replace the home at present situated at West Clerkhill. It was proposed to erect a building with sufficient accommodation at a cost of about £16,000.

#### Ireland.

#### CANDIDATES FOR MEDICAL REGISTRATION COUNCIL

The Executive Committee of the Irish Committee of the British Medical Association, Irish Medical Association, and Irish Medical Committee have approved the candidature of Dr M. P. J. Hayes and Dr P. J. Porter for election as the two direct representatives of the medical profession on the Free State Medical Registration Council, under the Medical Practitioners Act, 1927, and recommend the profession to support them.

#### PRECAUTIONS AGAINST THE SPREAD OF SMALLPOX

The Minister of Local Government and Public Health (Irish Free State) has addressed a circular letter to the Joint Urban and Rural Sanitary Authorities drawing their attention to the prevalence of smallpox in England and the necessity of making protective regulations of a temporary character with regard to the importation of infected bedding with a view to guarding against the spread of the disease. Accompanying the Minister's letter

was a copy of the regulations which will operate as from September 1st next. The following is a summary of their purport:

1. Articles transmitted by the postal service or forming part of passengers' luggage and goods in course of transit through Great Britain to an outside destination (if suitably packed) will not be subject to restrictions.

2. Second hand clothing, used bedding, and rugs accompanied by a certificate of the medical officer of health of the place of origin or of the port of arrival in Ireland that they have been efficiently disinfected may be imported in the same manner as at present.

3. Such articles accompanied by a certificate from a medical officer of health in Northern Ireland that they have not been imported from Great Britain may be imported as at present.

4. Such articles not coming within the above mentioned description may be imported only through the ports of Dublin, Cork, Waterford, or Galway.

It will be the duty of the Port Sanitary Authorities of the four ports named to undertake the disinfection of the articles and to return them to the custody of the Customs and Excise Authorities. The Port Sanitary Authorities are directed to proceed at once to ascertain that their disinfection facilities are adequate and effective for dealing with the new service and are asked to confer with the local representatives of the Revenue Commissioners (whose acceptance of the regulations has been duly obtained) with a view to ensuring that the arrangements shall operate without inconvenience or undue delay.

## India.

### HOSPITALS AND DISPENSARIES IN THE NORTH-WEST FRONTIER PROVINCE

The completion of the main buildings of the new city hospital at Peshawar during the present year will permit the creation of the Peshawar Hospital, which was old, insanitary, and unsuitable for the demands made on it, not only by the city, but by the province as a whole. In his annual report for 1925, Lieut.-Colonel C. I. Butler, I.M.S., chief medical officer for the North-West Frontier Province, states that during that year, in spite of the adverse conditions prevailing, more than 60,000 patients were treated and 7,015 operations were performed. Towards the middle of 1925 a site was obtained for a new city hospital, which should not only serve the needs of Peshawar city, but should also become the central medical institution of the province. The foundation stone of this building was laid in March, 1926, by Lady Reading. The port now completed will be adequate for local needs, and additions will be made as funds permit, until it reaches the standard of a large provincial hospital and is equipped on the most modern lines. A new city hospital has also been erected in the Bannu district. During the year under review six private hospitals in the province dealt with over 50,000 patients; five of these hospitals belong to the Church Missionary Society, and the sixth—the Victoria Diamond Jubilee Hospital—is solely maintained by Rai Bahadur Karam Chand. The total number of medical institutions in the province at the end of 1925 was eighty-five, and the aggregate of patients treated during the year was 855,000, an increase of more than 44,000 over the total in 1924. Cholera became epidemic in Bannu but was limited to this district by maintenance of strict medical supervision over travellers along the main roads to neighbouring areas. Tuberculosis is said to be increasing so seriously in the large towns of the province as to indicate the necessity for intensive prophylactic measures.

### ANTHRAX TREATMENT IN THE PUNJAB AND THE UNITED PROVINCES

In the twenty-fifth annual report of the Pathological Institute of India at Kasauli reference is made to the proposed extension of the anthrax campaign in the Punjab and the United Provinces by the establishment of additional centres for its control. Besides the financial difficulty there is the problem of procuring the purity of the serum employed since the most effective preparations deteriorate rapidly, and therefore, the treatment has to

be given at the place where the vaccine is prepared. Lieut.-Colonel J. Cunningham I.M.S., director of the Kasauli Pasteur Institute, states that during 1925 the policy of decentralizing treatment was continued, subsidiary centres being opened at Lahore and Rawalpindi, which, with the centre opened at Allahabad in 1924 were supplied with vaccine from Kasauli. 8,623 cases of anthrax were treated during the year under review with the older and more stable type of vaccine, which consisted of carbonized killed cultures. Improvements have been made in the collection of statistics, with the result that 80 per cent of the patients treated at Kasauli, 94 per cent of those at Lahore, and 100 per cent of those at Rawalpindi and Allahabad were cured. The death rate so obtained was 1.5 per cent during the year, and the rate of failures in treatment was 0.95 per cent. Nearly all the fatal results occurred in patients who had sustained bites on the head or neck, or deep wounds of the body and limbs. Bites on the face were shown to be over six times more dangerous than those on the limbs, and the risk was increased nearly ten times when free injuries were complicated by wounds of the trunk or extremities. Bites on the hands or arms were found to be twice as serious as those on the lower limbs, but body wounds appeared to entail little danger to life. The importance of early treatment is illustrated clearly by the statistics, and the necessity for providing centres for all thickly populated areas receives further endorsement. Colonel Cunningham agrees that rabid bites are twice as dangerous as those of dogs, the number of patients bitten by wolves was too small for definite conclusions to be drawn, but the mortality was evidently high.

### THE PROGRESS OF THERAPEUTICS IN INDIA

In his presidential address to the Section of Medical and Veterinary Research of the fourteenth Indian Science Congress, at Lahore, last January, Major R. N. Chopra, I.M.S., professor of pharmacology in the Calcutta School of Tropical Medicine, commented on the inadequate attention paid in India generally to the teaching of pharmacology, and attributed to this deficiency the prevalence of irrational therapy which was retarding medical progress. Besides eight colleges which trained annually some 600 medical practitioners, there were, he added, a large number of small medical schools continuing many thousand students who eventually commenced practice for the most part without registrable qualifications and without any real comprehension of the science of therapeutics. Moreover, even in the best medical schools, too much of the instruction given was theoretical only, and most of the teachers were handicapped also by being engaged in private practice. In spite of its obvious importance as the basis of successful therapeutics, very little time was allotted to pharmacology in the curriculum and few schools had adequate equipment for the necessary practical demonstrations. Major Chopra therefore advocated the complete remodelling of the teaching of this subject in order that students might learn to be more scientific and less empirical in practice. He added that while some of the clinical and teaching posts in educational institutions might well be held by general practitioners, the appointment of whole time professors and lecturers would materially improve the teaching and would facilitate research. He condemned the provocation to irrational drug therapy afforded by the profuse advertising of proprietary preparations, and thought that legislation might well be introduced in India to restrict the use of new remedies which had not been adequately tested by experimental methods. Standardization by the Government of the therapeutical efficiency of the alkaloids and similar drugs prepared in India was urgently necessary, in the case of imported substances insufficient attention was still being given to the question of their deterioration due to climatic influences. Thus the practice of scientific therapeutics was rendered very difficult. More control of dangerous and narcotic drugs was required. Major Chopra suggested the institution of some central organization similar to the Medical Research Council so that pharmacological and therapeutical researches into the special problems could be started on a large scale. In this connexion he mentioned the need of a



systematic effort to do over-effective treatment for filariasis and guinea worm infection. Other conditions requiring investigation on similar lines were malaria and epidemic dropsy. The training of research workers at such a centre would enable concentrated attacks to be made by co-ordinated groups of workers on the problems concerned in the treatment of various diseases. Major Chopin believed that such a stance given by the Government to research would stimulate private generosity and result in the endowment of similar institutions, the coincident improvement of medical education resulting from such activities would tend to raise the standard of medical practice, with great gain to the country as a whole. Such a central research organization might also concern itself, most advantageously, with veterinary medicine and such allied subjects as zoology and botany.

## Correspondence.

### LAW & MEDICAL TRIAL OF MENTAL DISORDERS

SIR,—Owing to want of time no opportunity was given to me to reply to the discussion in the Mental Diseases Section, yet it would be discourteous not to reply, however briefly, to the observations of Dr. Risien Russell, since to make the case journeyed specially to Edinburgh. They are paradoxical and self-contradictory, and indicate the introduction of unsolved conflicts in Dr. Russell's mind.

Dr. Russell begins by saying that he would be content to enjoy the privileges available in Scotland. The chief of these is that medical men are paramount in a medical question, and that no layman ever sees the patient or encroaches on the domain of the physician to prescribe what course is required for the treatment of an illness. Dr. Russell was fully aware of these facts, nevertheless with this knowledge he next proposes that no patient should ever be placed in a mental hospital for treatment without a full trial before a representative of the law, in which the medical man should give evidence on oath, as in a criminal trial, and be subjected to cross-examination like any other witness. While content to enjoy the privileges available in Scotland, he proposes the very antithesis of the practice in Scotland, and what the Scotsmen would regard as anathema.

Dr. Russell has had some experience of mental trials, he knows how the subject stimulates forensic fury, so that they may go on for days and even weeks. Does he imagine that any busy practitioner will ever allow himself to be involved in such a waste of time or expose himself gratuitously to such offensive observations as he may expect in cross-examination?

Dr. Russell, to carry out his views on their logical conclusion, has as little regard for the welfare of the sick patient as for the time and feelings of his doctor. In a case of urgency, in which the patient requires immediate care and treatment, Dr. Russell would allow no action to be taken by the patient's natural guardians and his family doctor under the certificate of emergency until a lay official visited the patient and granted authority for this. I wonder how many certificates of emergency, if any, Dr. Russell has signed? Has he had any experience?

To keep the legal procedure pure and undefiled, Dr. Russell considers that the legal representative who presides at this mental trial should not be a barrister trained in medicine, that he *must* would leave the matter too "medical," hence the importance of having, as justice, a man with no medical training. Medicine according to Dr. Russell's views, is a source of contamination, and if a barrister is unfortunate enough to have become infected with the virus, he is, if not debarred from this judicial post, at least deemed unsuitable.

We now come to the next paradox. Mental hospitals are naturally better equipped for the treatment of mental disease than most nursing homes or hospitals: their staffs have special knowledge and skill, they are administered under stricter regulations, and they are regularly inspected. Whilst the greatest obstacles are to be placed in the way of

patients obtaining treatment in mental hospital, every facility is to be given for their treatment in places in which the accommodation, the equipment, the staff, and the management may be anything or nothing and there is no inspection of these. Dr. Russell himself has had some experience of mental disease but some physicians may not have had as much as he, and others none at all. All the medical men, however, are to be allowed to treat mental patients, according to him, in any place they wish and without any interference from the law for at least a year, but not so mental physicians in mental hospitals. Many people would be prepared to say that such a rash and unjust proposal could only have come from someone ignorant of the problem and of the history of the care of the insane. It is simply throwing the door open to exploitation of the insane and to every kind of abuse.

Dr. Russell has no faith in the members of the honourable profession of medicine. Yet it is no more than the truth to say that in no country in the world does the average standard of care and treatment in mental hospitals stand higher than in our own. While in our courts of law, the perfect justice of which has never been questioned, there have been in recent times an Adolph Beck and an Edalgi case, in our mental hospitals a Special Committee and a Royal Commission have both failed to find a single instance of wrongful detention, and for seventy years and more no such instance has been found in Scotland. Such a record of careful and honourable service in a very difficult problem is beyond all praise. Fortunately for the profession of medicine and for the sick in mind, there can be few who hold Dr. Russell's views.—I am, etc.,

GEORGE M. ROBERTSON

University of Edinburgh Aug 6th.

### VARIATION IN THE SEVERITY OF EROUPOUS PNEUMONIA

SIR,—In the valuable discussion upon the treatment of eroupous pneumonia in the Section of Medicine at the Edinburgh Meeting there was one point which did not receive the attention to which it is entitled—namely, the variability in different years in the virulence of the infection.

Some years ago I published a series of consecutive cases of eroupous pneumonia occurring in my wards in the Royal Victoria Hospital. The cases numbered 100, and were spread over a period of seven years. The average mortality was 20 per cent, but the interesting point is that in two of the seven years the mortality was 40 per cent, and in other two years there were no deaths.

It is clear that unless this variability is allowed for methods of treatment are liable to a certain amount of failure.—I am, etc.

JAMES ALEX. LINDSAY, M.D., F.R.C.P.

Edinb. Aug 6th.

### FRACTURES OF THE FIRST CERVICAL VERTEBRA

SIR—Mr. Jefferson's admirable paper on fractures of the first cervical vertebra (July 30th p. 155) contains one observation of considerable importance which I should like to support from neurological experience of similar conditions.

In observing that the common cause of the particular fracture he describes is an injury to the head, he records the opinion that the cervical lesion is apt to be overshadowed by the cranial and so to escape recognition. I have not encountered a fracture of the atlas—or if so have not recognized it—but I can recall the details of three cases with fractures at a lower cervical level, which were not suspected until the patients after they had been discharged from the hospital where they had been admitted and treated for cerebral contusion presented themselves with complaints or root pains, limitation of movement, and in one case symptoms of a minor degree of cord compression.

Another condition equally liable to be overshadowed by an associated head injury is a small haematoma in the cervical cord. The absence of any gross physical signs in such a case renders it especially likely to escape

recognition unless the observer is alert and prepared on the patient's complaint of weakness pains or paresthesiae to make a thorough neurological examination.

A cervical haematomyelia is caused not uncommonly by direct violence to the head from above, of the same type as that which Mr. Jefferson describes in fracture of the atlas. Even a small haematomyelia may, on account of destruction of the anterior horn cells, cause serious permanent disability. I recall the case of a dock labourer who had been in hospital for a severe head injury from which he recovered, but afterwards complained of weakness in the right shoulder, which prevented him from raising heavy weights above his head. This had persisted for a year and he had put in a claim for compensation which was contested on the statement by a well known authority in medico-legal cases of this kind that the man was a malingerer. Neurological examination revealed slight wasting of right deltoid and spinal muscles and extensive loss of pain and temperature sense on the opposite side of the body.

The medico-legal importance of these cases is obvious—I am, etc.,  
London W 1, Aug. 1st C. P. SIMONDS

### THE METABOLISM OF TUMOURS

SIR,—I have read with much pleasure the generous and well-merited appreciation of the work of Otto Warburg contained in a leading article of your issue of August 6th (p. 221).

The last sentence in the article, "*The repetition and extension of his work in this country should not be longer delayed*" (the italics are mine), expresses a hope which Professor Lewis and some of the physical chemists working with him on behalf of the Liverpool Medical Research Organization have been fulfilling for the last eighteen months. I have made frequent references to this work, on more than one occasion, indeed, in the *BRITISH MEDICAL JOURNAL*. Directly Warburg's work came to our notice we realized the importance of it, and two of our chemists went immediately to Berlin to obtain first-hand information regarding the somewhat difficult technique. They were cordially received by Professor Warburg, and through his good offices obtained a duplicate of the actual apparatus used in his laboratory.

As I have already stated on many occasions, we have fully confirmed the main issue, namely, that malignant tissues exhibit a high degree of glycolytic power in the presence of oxygen, and can thereby be distinguished from benign neoplasms and from normal and somatic embryonic tissues.

With regard to extensions of this work on which we have been engaged, I shall say no more here than has already been published. Contrary to the views expressed by Warburg and in accordance with the results of Murphy and Hawkins of the Rockefeller Institute, we have found that the chorionic epithelium acts like a malignant tissue—an essential point in the confirmation of our views as to the nature of malignant neoplasia.

All this part of our work will shortly be published, and then we shall, I think, be able to explain why Warburg's findings in regard to the placenta differ from our own. We hope, too, shortly to publish other observations of considerable importance—I am, etc.,

Clifton Bristol Aug. 8th

W. BLAIR BRY

### RESULTS OF TREATMENT OF UTERINE CANCER

SIR,—With reference to the report recently issued by the Ministry of Health and your review thereof, in Section A, Part II, is contained a number of tables bearing on the results of different forms of treatment according to the stage of the disease, and on pages 101 and 102 there is a table (Appendix 12) concerned with abdominal hysterectomies, in which Bonney is credited with having performed and published the results of 114 operations, and Berkeley and Bonney the results of 65 operations on cases in which the disease was "early" and "still local." In a footnote it is admitted that the cases of ours were grouped on

the fact that the regional glands removed at the operations were not malignant, and the reason given for their inclusion in Table A is that the operative results of these series were almost identical with groups of cases classified and published by other surgeons as "early and still local" on the interpretation of pre-operative findings.

We strongly dissent to the inclusion of our cases in this table. There is no constant relation between the degree of advancement of the growth in the cervix and adjacent structures and the involvement or not of the regional glands. On the average of course, the extent of the growth in the cervix and adjacent tissues is less in a group of cases in which the regional glands are found not involved at the operation than in a group in which they are involved, but there are a great many exceptions, and among these cases of ours were many in which the growth was very extensive, and in which resection of a uterus or part of the bladder, or even a part of the rectum, was necessary in order to remove it. Indeed, we would point out that the decision to carry through an operation in which the growth in the cervix and adjacent parts is very extensive is frequently determined by the fact that, after opening the abdomen, the regional glands on palpation are judged not to be encroaching. For instance, the formidable step of resecting and grafting a uterus, or deliberately resecting a part of the bladder, is more likely to be undertaken if it is believed that the regional glands are not involved, and, as a fact, in much the larger proportion of cases in which we have gone to these lengths, the glands removed at the operation have proved not to be encroaching. The classification of cases of carcinoma of the cervix into "early," "medium," and "borderland" on the interpretation of pre-operative findings, even when carried out by surgeons experienced in Wertheim's operation, is inaccurate, and has no value at all when attempted by persons having no such experience.

The classification we have adopted is accurate, since it is founded on the microscopical examination of the glands removed at the operation, and its value is that it clearly separates off those cases in which a cure by radium applied from the vagina would appear to be impossible—namely, those in which the regional glands are already encroaching by the time the patient comes under treatment.

We wish also to point out what appears to us to be another error in the report. On page 38, Appendix 5, Table A, Waid and Irons in 1925 are credited with 71 patients treated by radium, of whom 40 survived five or more years. From a reprint of what is presumably the same paper kindly sent to us by Dr. Guy Waid it appears that the figures should be 72 treated cases of whom 17 were living at the end of five years.

As regards the main purpose of the report—namely, to ascertain from statistics the comparative values of operation and radium in cases in which either can be employed, we believe that a decision should be postponed until fuller and more numerous results of treatment by radium are forthcoming from British sources. At present, from a personal experience of many years in the treatment by radium, and our knowledge of the work and experience of others in the same field in this country, we are emphatically of the opinion that operable cases should be operated upon—We are, etc.,

CONYNS BRIDFAY  
VICTOR BONNEY

London W 1, Aug. 8th

### THE PROPOSED NEW HOSPITAL POLICY

SIR,—In expressing appreciation of Mr. H. V. Groves's courageous article in the *BRITISH MEDICAL JOURNAL* of July 23rd (p. 131) on our present hospital system, I should like to mention one or two points supporting his argument. There must be many men who, like myself, have had much experience in voluntary hospitals, and who now are working in other hospitals and various kinds of municipal and State medical services, and who agree with every word Mr. H. V. Groves has written. His propositions are somewhat similar to the system at present used in Germany and Austria, where it appears to work better than ours, especially in the matters of research, education of students, and correlation of the work done.

Thus the number on the staffs of Poor Law hospitals are extremely small in comparison with the number on the staff of voluntary hospitals. This would not matter if, as formerly, the class of patient were of the chronic type, but this is no longer the case—about two-thirds of the cases admitted to this hospital are now exactly similar to the cases admitted to voluntary hospitals, and the other third consists of these cases, never admitted to a voluntary hospital but which form the bulk of the cases with which the general practitioner has to deal from day to day, such as abortion, acute bronchitis, pneumonia and cerebral hemorrhage. And there is a constant scrambling for beds on the part of the staffs of voluntary hospitals especially the junior staff, there is a great waste of material for observation and research going to waste in the Poor Law hospital for want of adequate staff.

Secondly in the matter of education of students the present staffs of voluntary hospitals are becoming too much specialized. One surgeon becomes known as a gastro-intestinal surgeon, another as a kidney surgeon etc., with the result that their wards are filled with such cases, to the exclusion of others. This is bound to be so since the patients admitted to these wards are sent to these surgeons by general practitioners—either to the out-patient department or to their consulting rooms. It thus happens that the doctor, during his term of office is apt to see a great number of cases of one kind and a very few of any other. On the medical side the position I believe is even worse. The beds available only admit of the entrance of interesting cases also in one ward neurological cases, in another chest cases, and so on. The student is in this way being trained as a specialist before he has even had the opportunity of seeing the general run of cases with which he will have to cope when he enters practice. Then he finds that he can forget most of the specialized training he has received, and he has to start out learning his job for himself.

It seems to me that only by some system which will correlate and share the work now done by the voluntary and the Poor Law hospitals can the treatment of the patient, advancement in research and the efficient teaching of the student be attained—I am, etc.

J S M CORNFELT F R C S Ed

Birmingham July 31

SIR—In answering your correspondent's comments on my recent address, may I begin by thanking Dr Gordon, Mr Gibson, and Mr Fleming for their kind remarks, and at the same time say how greatly I have been encouraged by the many private letters of commendation which I have received.

Dr Ackman asks whether I have overlooked the fact that the two great hospitals of this city have refused to unite in forming a common scheme for hospital reform. Certainly I have not. During the last five years, besides the Voluntary Hospital Commission there have been three distinct attempts to bring about hospital amalgamation in this city. The first was made from the common sense business man's point of view by the late Mr W. H. Wells, the second by the united staffs of the two large hospitals and the third and most recent by the University. The history of each has been the same, the policy of amalgamation has been forcibly put from the economic, the clinical, and the educational aspects, and the arguments in its favour have never been answered. But the managing bodies of both institutions have always refused to take any practical steps to bring about the desired change.

Dr Fleming writes of 'want of vision the conservatism, the individualism the parcelled out of some of the governing bodies concerned', and it is the cause of the 'vision' that I believe it to be hopeless to expect a reform now within, and why I earn the sobriquet of *drusus machina* which will break down the present system and the first step toward building up something better.

Dr Morton objects to my proposals as being impracticable. The exigencies of space did not permit the publication of the full part of my address in which I spoke of visits to the hospitals of Canada, Denmark and Switzer-

land, in all of which countries the hospital plan which I am advocating is in operation. I also referred to the hospital policy of Madrid in which there are now three large general hospitals of out-of-date type and it is not possible to dilute. They cannot be enlarged or modernized because of want of space, moreover any attempt at enlarging these hospitals full equipment of apparatus and personnel would involve tripling the men and things. The Government have therefore decided to build a university city on high ground on the outskirts of the present capital and there, unhampered by considerations of price, to build the ideal university hospital in which every department will be as perfect as modern science can make it.

If any of your readers agree with Mr Morton that the voluntary hospitals are very well equipped and very efficient even having regard to the requirements of the present day, then I could beg such people to spend a business holiday at Toronto, Copenhagen or one of the Swiss cities and to tell us when they come back whether they are still satisfied.

Mr Morton, in opposing the ideal of a country hospital site for the main general hospital is rather hard pressed for reasons. He thinks the cleanliness of the country negligible for cases of pneumonia or tubercular disease, and I will leave that as a matter of opinion. His first of the advantages of the city site for a hospital is being accessible to the visiting staff and the students, but actually none of the visiting staff live in the city, neither do the students. All now have to go two or three miles to visit the hospitals and they might just as well go two or three miles in the opposite direction. But apart from cleanliness and quiet there is the very urgent need for room for extension. The city hospitals cannot be built in the modern pavilion pattern because there is no room. Again the matter is urgent on account of the nursing staff who must spend three years or more at the hospital, and some of whom contract pulmonary disease which compels them to give up their work. Is it wise or right to spend large sums of money in housing nurses in the noisy slums of a dust polluted city?

The immediate need for reform is not the necessity of bringing the country hospital but the desirability of bringing together the present independent voluntary hospitals into a unified scheme for the good of the community. This could be done without any capital outlay but if the Government would allocate three million pounds out of the profits of the National State Insurance to the unrecited cities then I think it that any impartial hospital committee would spend the money on a single new hospital in the country in which to pack up the many existing rival institutions.

Space will not permit me to follow Mr Morton's remarks about specialization. He admits that such increased specialization could be to the advantage of the patient, but not for the economic position of the doctors, and therefore specialization must not be encouraged. He raises a difficulty in the matter of the student's education, if all special branches of medicine and surgery are adequately equipped and properly staffed. Such an argument would not be admissible in connexion with any other branch of science. The chemist, physicist or biologist to be told that his science must not be further elaborated because the undergraduate will not be able to comply with the course of study. The undergraduate students of medicine must be taught the essential principles of their science and not by teachers and tutors who combine to give an undergraduate curriculum. The more recalcitrant specialties must still be pursued in the case of the patient for the sake of research and for purposes of post-graduate teaching—I am, etc.

Chilton W. 24

FREDERICK W. HENCH

#### REMUNERATION OF HOUSE APPOINTMENTS

SIR—There must be a number of newly qualified practitioners present and future house officers who would welcome the ruling as it appears in the *British Medical Journal* in 1921 in which the conditions of appointment of house and residents, and the present scale of remuneration

the number of applications for these posts to fall suggests that the time is opportune for discussion and co-ordinated action.

No one who studies the advertisement columns of the *Journal* can fail to be impressed by the inconsistencies which exist in the remuneration of house officers, the salaries offered varying from nothing to £200 a year. After some five years' training a medical man should be able to command an adequate remuneration, and the average salary of £100 a year can hardly be said to fall within this category. The experience gained as a resident by a recently qualified practitioner is valuable in putting the finishing touches on his education, but it is doubtful whether this is not amply repaid by the strenuous and often onerous duties of the house officer. In the smaller hospitals, where only one or two residents are employed, there is often, in addition to the usual medical duties, a large amount of clerical and administrative work, especially where no whole-time secretary is available. The house officer has gained a very real and indispensable position in the life of the community, and the fact that the holder of a resident appointment is gaining further experience while discharging his duties should not be an excuse for offering a remuneration which is considerably less than that obtained in other professions by actual apprentices.

The salaries of house officers should be substantially revised, and, for the purposes of grading, appointments could be conveniently classed as senior and junior according as to whether previous resident posts have been held. In cases where only one resident is required, the salary should be that of a senior appointment. Only in the cases of bona fide teaching hospitals, recognized by the universities, should a reduced figure be allowed, and the practice of appointing honorary house officers is much to be deprecated. There must be many promising men who have to forgo the kudos of holding a post in their teaching hospital on account of their inability to afford the inevitable preliminary wait for an appointment and the subsequent period without remuneration.

In all cases where short lists are compiled, and candidates interviewed from a distance, reasonable travelling expenses should be granted. If a candidate is worth interviewing he is worth his expenses, and such an allowance is practically a guarantee that due care will be taken to prevent needless and expensive journeys, for the desire to economize now becomes mutual.

Lastly, it is desirable to call attention to a practice which some metropolitan hospitals have adopted of asking candidates to call on members of the staff when applying for an appointment. It is difficult to understand the need for this, which involves much inconvenience and waste of time, and which excludes all applicants who happen to be outside the London area. In the case of permanent staff appointments no objection can be raised, but, in view of the fact that house posts are at the best only temporary, the requirement seems neither reasonable nor necessary.

The British Medical Association has done much in the past to raise the status and terms of service of the established medical profession, and its opinion and guidance in the above matters would no doubt be appreciated by that small army of house officers whose ranks are so constantly changing that it has no opportunity for an organized action.

As a present resident I beg to take refuge in a simple title—I am, etc.,

“HOUSE-SURGEON”

#### DEATH CERTIFICATION

Sir,—On July 1st the Registrar-General distributed new forms for death certification to the medical profession. These are so designed as to ensure more accurate information, by eliminating the necessity of furnishing the relatives with the technical causes of death. A woman, aged 68 died in a nursing home in Putney. I filled up a certificate (a) coma vesicles (b) cirrhosis of liver, known for years. The local registrar refused it and referred the matter to the police. The coroner's officer called. In constable visited the home, pestered the

matron with questions, and refused to refer to me on her suggestion. Last night the coroner's officer rang me up to say that the post-mortem examination had shown my diagnosis to be correct. Neither the matron nor I have been summoned to the inquest. Wandsworth is the largest borough in London, and the inevitable result of this unmanly interference with the doctor's certificate will be that the registrar will not obtain the correct information that it is so important for him to receive. I have done my bare duty, and the relatives are gravely annoyed with me. Is it not possible to take some action that will prevent such pettifogging interference with the registrar's returns on the futile grounds that death was not due to natural causes. It is surely unnecessary for me to emphasize the lack of respect shown to the profession in the high-handed neglect of the doctor in charge of the case—I am, etc.,

VALGKAN PRABHED, M.D., F.R.C.S. Eng

East Sheen, July 31st

#### Obituary

WILLIAM JONES GREER, F.R.C.S.I.,

Surgeon, Royal Gwent Hospital, Newport, Mon

THE news of Mr Greer's death, which took place at Llanwrtyd Wells on August 3rd, was received with profound regret, not only amongst the medical profession of South Wales and Monmouthshire, where he was so well known, but also in a much wider circle amongst surgeons in England, where his work was highly appreciated.

Mr Greer, who was an Ulsterman, was born in the city of Armagh, and received his early education at the Royal School in that town, he pursued his medical studies in Queen's College, Belfast, and the Schools of Surgery, Dublin, and obtained the diplomas of L.R.C.P.I. and L.R.C.S.I. in 1891, after a further period of study he received the F.R.C.S.I. and D.P.H. in 1895. He settled in Newport, Monmouthshire, in 1896 as a general practitioner, and after a few years' hard work his success was undoubted. During these years he performed many major surgical operations on patients in their own homes, and he soon gained a local reputation as a surgeon. He then relieved a most difficult feat, he relinquished general medical practice and started again as a consultant surgeon. Although he was not at that time on the staff of any hospital his success was almost immediate, and he became known to his professional colleagues in Monmouthshire as a brilliant operator. Hospital distinctions came later, he was appointed honorary surgeon to the Royal Gwent Hospital, Newport, and consulting surgeon to the Blaenau and Pontypool Hospitals. He was a major R.A.M.C. (T.F.), and during the war was on the surgical staff of the 3rd Western General Hospital at both Cardiff and Newport. His work during the war years was very strenuous, and undermined his health, which was never very robust. He contributed many articles to the medical journals from time to time, and was the author of a book on *Industrial Diseases and Accidents*, which was, and continues to be, very popular, not only with the medical profession, but with barristers having charge of cases under the Workmen's Compensation Acts in the County Courts.

His work for the British Medical Association will not soon be forgotten in South Wales. He was the first secretary of the Monmouthshire Division, and during his years of office the famous contest with the Ibbw Vale Workmen's Fund took place. The heaviest portion of the work fell on his shoulders, and he guided his medical brethren with rare skill and wise judgment. When he relinquished the position of secretary he received a valuable gift, subscribed for by all the members of the Division. Amongst other offices which he held in the Association were representative for many years, deputy-chairman of the

in 1919, member of the Central Council, chairman of the Monmouthshire Division, president of the South Wales and Monmouthshire Branch, chairman of the Committee on Fracture, and a member of the Medico-Political and Parliamentary Elections Committees and of the Contract Practice Subcommittee. He





C S Raminachandran A W M Battersby S B Stoker A S Spira  
A C Town C J Peoples A C Voon B F Levin I A Oliver  
Alice Lay H I Marechal J D Cooper H C Duncan D J Camp-  
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I G McInane Day I Ameriaiche  
J L D M L Murray V H Leach I How



## Letters, Notes, and Answers.

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### QUERIES AND ANSWERS

#### A "BORDER LINE" HOME WANTED

"OXY" wishes to hear of a "border line" home for patients of strictly limited means. The patient is an ex-service chaplain, who has for the last year been having epileptiform attacks, during which he is mentally confused and requires the attention of a male nurse. At other times he is quite normal.

#### INCOME TAX

##### Replacement of Car

"R. W. M." bought a car in 1922 for £400, in January, 1926 he replaced it by another, which cost £289 less £80 received for the old car—that is, £209. If he had bought a car similar to the one displaced the cost would have been £235—£80=£155. He claims to deduct £320 as the 'depreciation figure', the local inspector has allowed £155 only.

"\* \* The Income Tax Acts do not make any allowance for 'depreciation,' except the percentage allowance, which has applied to the past year or two, so far as professional men are concerned. Any other allowance is based on the cost of replacing a discarded asset by a similar one, and on that basis the inspector's allowance seems to be technically correct, though obviously inadequate to cover the full 'depreciation'."

#### Ascertainment of Consultant's Earnings

"I. T. W." has submitted a statement to the effect that he commenced practice, mainly consulting, in November, 1926 and for the first five months—to April 1927—has lodged a statement showing a professional loss of £253—that is, gross earnings £34, less expenses £297. The local inspector of taxes declines to accept the result as correct for income tax purposes.

"\* \* The statement seems open to attack at three points (1) Is £34 the gross amount of earnings on the basis of what is due and will probably be paid for the work of the first five months, or is the £34 the amount of the cash received in that period? The latter basis is inapplicable to such a case as this. (2) Is £50 a fair charge for quasi domestic service, having regard to total cost and the ratio of time expended by the maid in connexion with the professional side of the establishment? (3) Cost of running the car (including depreciation and chauffeur's wages) £202, this seems excessive for work represented by the fees stated. What our correspondent should do is to ascertain the total amount expended (preferably not by estimate) and divide it on the ratio of the mileage for professional and private use respectively. I think we cannot advise "I. T. W." to press for the acceptance of the figures as they stand."

### LETTERS, NOTES, ETC.

#### TREATMENT OF VARICOSE VEINS BY INJECTION

Dr. A. H. DOWLING (Worthing) writes: Major General T. M. Carter has assumed that there is no danger of embolism resulting from the treatment of varicose veins by injection. I have given over 2,000 injections without mishap and similar results can be obtained on the Continent. Thrombosis of the veins can occur but the clot is firmly rooted in the wall of the vein.

### DIFFERENTIAL DIAGNOSIS OF SMALL POX

In a paper published in the *Indian Medical Gazette* of April 4th Dr. J. W. Lamb, chief sanitary officer to the Assam Valley Board of Health in Bengal, states that greater accuracy can be obtained in the differential diagnosis of small pox from chicken pox by ascertaining the interval between the onset of fever and the outbreak of the eruption. In an investigation at Assam it was found that this interval never exceeded twenty-four hours in chicken pox and always exceeded forty-eight hours in small pox. In cases diagnosed as chicken pox during one or two years preceding the investigation, revaccination was successful in practically the same proportion of persons as in the general population. But in 103 patients who had been diagnosed as suffering from small pox by the same criterion of interval in the same period, not a single revaccination was successful. Dr. Lamb urges that all public health authorities in India should adopt the method of diagnosing small pox by the time interval between the 'date of onset of fever' and the 'date of outbreak of eruption'. At the same time he admits that in certain cases of a vesicular eruption unaccompanied by fever, to which the term 'alastrum' has been applied, the method is impossible.

### ETIOLOGY OF RHEUMATIC INFECTION, ETC.

"C. M. H." (Hong Kong) writes: I would like to suggest that a close study of the tropical and subtropical distribution of some diseases prevalent in temperate climates would throw light on their cause and treatment. Years ago I was asked why rickets was never, or almost never, seen in Hong Kong, a big city with many slums, and why children could thrive for long periods on an exclusive diet of condensed milk. This was before the days of vitamins and ultra violet ray treatment. The absence of rheumatic fever and chorea from Hong Kong suggests that these diseases may have an etiology and cure on somewhat the same lines as rickets has. Amongst thousands of post mortem examinations in Hong Kong I have never seen signs of any kind of disease, therefore perhaps, there may be a lamp or diet treatment which would prevent or cure this disease in England. The seasonal prevalence and mildness of diphtheria and scarlet fever in hot countries makes it probable that if the scarlet fever and diphtheria wards of English hospitals were to be maintained at a high temperature, then the diseases would run a shorter course and 'return cases' be scarce. A temperature not allowed to fall below 86° F. would probably be sufficient. I have noticed many times when a calf was vaccinated during the late stage of the incubation period of rinderpest, that, after the temperature of the animal rises, the commencing vaccination rapidly aborts. This suggests that there must be some way of aborting a small pox eruption, and that temperature will be a factor in it.

### A GUILD OF HEALING

The Guild of St. Raphael, founded in 1915, is endeavouring to restore the Ministry of Healing "as part of the normal function of the Church." At the annual meeting Dr. H. M. Raven of Broadstuns delivered an address, which has now been printed in the quarterly journal of the Guild. It is satisfactory to learn that members of the Guild do not approach a case of sickness without the consent and, if possible, the goodwill of the doctor in charge. Dr. Raven as a good Anglo-Catholic, lays stress on the benefits to be obtained from Holy Union and from the laying on of hands, but he deplores the enthusiasm which reports as a cure of lockjaw the case of a young and highly nervous woman, who went to bed with pain and stiffness in her jaw and was cured by sacramental healing and the extraction of the bad tooth. He has been impressed by the healthy outlook advocated by Christian Science speakers, notwithstanding their curious refusal to face facts, and he thinks that in slow degenerative processes, which do not cause much distress patients would be much more healthy, spiritually and mentally, if they took a courageous view of life and made less fuss. Dr. Raven's address was a cheerful and earnest attempt to inspire the Christian with fortitude and to balance his faith with reason. Whether he is right in saying that the 'gift of healing' is in the hands of certain people who have the healing touch is debatable, but the personality—whatever that may be—which aids the physician in curing patients must assuredly be one of Dr. Raven's assets.

### THE BEGGING LETTER AGAIN

A MEDICAL man in London has sent us a letter addressed to him from Cardiff appealing for a loan of £3 to help the writer's family. The father is described as a former medical student ('you will probably remember him') who failed to qualify and is now seriously ill with consumption. Repayment is promised when 'father's allowance' is received from Australia. Our correspondent wrote to the Cardiff police and learnt that the family are a well known firm of begging letter writers.

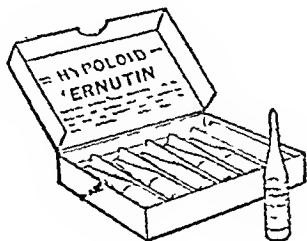
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A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 204.

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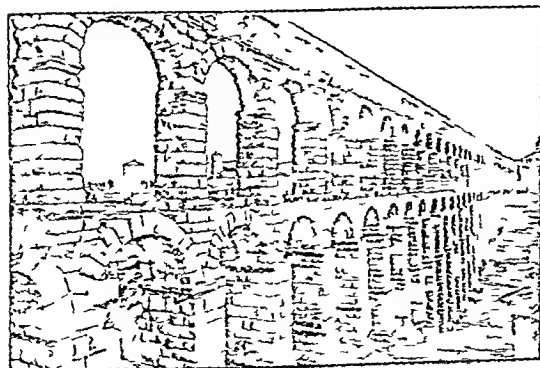
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## A Review

or

## THE STRUCTURE AND FUNCTION OF THE SPLEEN

JOHN FAIR M.D. D.S. F.R.S.

Professor of Physiology and Director of Experimental Medicine  
Mullum University, Montreal

I wish to say what a pleasant thing it is for me to be back in a familiar lecture-room under the presidency of my distinguished chief and teacher of physiology. When in 1899 as a young student I attended the first course of lectures that he gave as professor in Edinburgh—which I still look back upon with delight—he told me, along with other wonderful things about the known attributes of and about the perplexities that surrounded the function of the spleen. As happened so often in his case the information he gave was from first hand knowledge, for he was fresh from an important investigation on the subject which had taken a winter of work by his pupil Benjamin Moore and himself. That work was fundamental for our knowledge of the muscular and nervous control of the spleen. I wish I could go on to say that there and then I was filled with an eager desire to probe further into the mystery that shrouded splenic function. I can only speak for my classmates, but certainly not for myself, further along the thought. At the same time it was of this mystery that he had on his introduction to the subject in 1901—when he had equal range of the finer structure as displayed by the microscope and over the gross behaviour of the organ as studied under the conditions of its normal laboratory vivisection.

My particular interest in the spleen began accidentally when Miss Menzies (now Mrs. McCartney) and I were engaged in any thing particle of Indian and into the circulation of mammals so as to compare with one of the results previously obtained by similar injection into Crustacea. We found that the particles, even when injected in enormous quantities, were speedily swept out of the circulation and deposited in the spleen, the liver, and in the bone marrow. While the former period slipped past the cells of the vascular endothelium without any tendency to adhere to them, the latter, the liver, spleen, and bone marrow, by contrast and in addition by special cells that here line the blood channels. In other words, in each of these three organs of the mammal there are named areas devoid of the normal endothelial lining and many of the cells situated along the blood vessels are phagocytic. We thought for the moment that we had lighted upon a new fact of obvious importance in connection with blood spread of infections—namely typhoid, kala-azar, small pox, tularemia. Our interest in discussing these diseases had certainly told us little of the extraordinary phagocytic properties of the cells in spleen, liver, and marrow. As so often happens with discoveries so simple and so easily made, other people had been in the field long before us, only their work had been forgotten. We were also unaware that Aschoff had just before us, seized the great significance of the same facts.

This was in the early days of the war. The next thing was that I found myself out in Macedonia treating malaria patients in the return country from which we obtained our spleen, and in 1902, 2500 years ago the organ commanded almost as much attention in connection with sacrificial ceremonies on animals and with disease in man as the brain or the heart does in modern times. To the early Greek physicians—and Galen later reflects the same outlook—the curious variations in volume of the malaria infected spleen possessed an interest that more fortunately situated people find difficult to understand. So prevalent has malaria long been in Greece, but there is reason to believe that this disease, even more than political

It was an amazing experience to come back from Greece and from Macedonia, I should say, and to read the *functio organo* of the head literature Hippocrates, where the history of malaria stands printed on page after page of the most original, the most detailed and objective writing in the whole of medicine. Had we not had unusual medical experience in Macedonia for which our clinical training our pathology had failed to prepare us—cases of black urine, cases of delirium, of coma, bodily disorder, protein in variety and in quantity—regards both rational and treatment? And in our ignorance we had imagined that these manifestations of disease were being seen and recorded by us for the first time in history. Some of you may in your childhood's days have landed on some lone deserted island. As flocks of wild birds rise on the approach of your boat you imagine that you are actually a Robinson Crusoe, sitting fast for the first time on utterly unknown shores. When you get older you discover that your Crusoe island has a proprietor. It has been carefully mapped, measured, and charted, and even had its human population in earlier days to whom every beach, every curve of the coastline, every putting rock was perfectly familiar. So it was on returning from Macedonia to read the story of malaria in Hippocrates.

In the case of this disease Hippocrates finds that the spleen is suddenly enlarged and within a day or two becomes again reduced in size. One of his remarks is: "The spleen is enlarged in the case of malaria, and it is reduced in size when the fever subsides." We examined the children of the army and the soldiers of the army, and we found the level of the spleen. In other words, the enlarged spleen represented the normal condition of the Greek child, whence in point of Hippocrates was not unusual. Could any statement better illustrate the universal prevalence of malaria in his day? Galen informs us that both Hippocrates and Plato considered the spleen as an organ for purifying the blood, a opinion as prophetic as consistent with modern findings as are the ideas of Democritus. If we can make one rational embracing statement about the spleen as it occurs throughout the animal kingdom, it is that it purifies or catenates the blood.

However, this is not a historical lecture. I have to open a discussion in the vein of the Physiology Section of the British Medical Association and under the exacting eye of Sir Howard Crosby, Schafer himself. There are other speakers to be met. Professor Barcroft, who is working on splenic function, has been so fruitful and so illuminating.

## FUNDAMENTAL FEATURES

The spleen is essentially a vertebrate organ, and is steadily present in the mammalian group as an indication of its importance. Comparative anatomy shows that it has certain comparative value in the class we may count fundamental or essential in some animals—for example, mammals—we find it, and it is notably atrophied in the avian and splenic in the chelonian. In regard to secondary acquisitions it is in our animal kingdom to the fundamental features which are suited to particular advantage in the life of the creature.

## The Spleen of the State

This is a tough and it is movable organ, externally quite like the placenta of mammals. It has, however, no lymphoid tissue, no trabeculae, and no special splenic musculature, the only muscle being that which invests the arteries. The firmness of the organ is due chiefly to the strong-walled vessels which invest it. The principle of a tough stringy foundation on which in turn is embedded in a more deformable and divisible cellular tissue of the reticular which serves to envelop all the cellular elements of the parenchyma, are stout reticula, and more conspicuous in the reticulated in the mammalian spleen, yet their strength a dissection shows falls far short of that of a ramifying artery and veins. In other words, so far as mechanical resistance is concerned, the principle of construction in the state spleen is life

sharp y Schafer M.D., F.R.S. President of the Section was in the chair.

The annual general meeting was given in regard to the state of the work done in connection with Dr. E. S. M.

that employed in ferro-concrete, where strings or rods of more resistant material greatly augment the strength of the composition. A fibrous capsule surrounds the whole.

### Development

As Laguesse has shown, the spleen of elasmobranchs as well as of other fishes takes origin as a kind of reticulated venous sinus alongside the subintestinal (later the portal) vein, with which it stands in open communication. At an early stage no regular or rapid blood current sets through it, though delicate ramifying sinuses begin to form defined channels for blood eddies. Arteries eventually penetrate from the exterior into this spongy, sinus-provided tissue. When they have worked their way well into the interior their ends become open, and then for the first time arterial blood pours into the reticulum. As might be expected, the strong-walled veins proper of the organ have been taking form and semblance during the time of involution of the arteries, and now for the first time the natural through-and-through current is established. There are thus two distinct stages in the development of this unique organ, and even after the second stage the circulatory arrangements remain unusual. In the first stage the spleen is a spongy, blood-sodden, yet sinus-provided excrescence on the side of a vein. In the second stage arteries, carrying their muscle coat and their fibrous adventitia with them, shoot in from the exterior. Coincidentally, well formed veins, with fibrous tissue wall, reach inwards as a counterpart to these arteries. Though they tend towards each other their terminations never meet by direct anastomosis. Everywhere between the ends of the tubular arteries and the stout-walled veins lies a mesh, a mass of reticulum with its tunnels, the venous sinuses.

In this description I have closely followed Laguesse. At one point only have I ventured to modify his account. He would have it that the walls of the intrasplenic veins are everywhere formed of compacted reticulum. In point of fact, over a considerable part of their intrasplenic course the walls of the larger veins are composed mainly of tendon-like bundles of wavy, non-branching, white, collagenous fibrils, which may be assumed to have grown in from the adventitia of the parent vein or veins. The spleen of the skate, therefore, consists of arteries which have invaded its texture, of veins, which we may also look upon as having grown in from the exterior, and between these two—what? The original reticulated and sinus-provided spongy which originated in close relation to the subintestinal veins.

### Arteries and Ellipsoids

The arteries eventually terminate in penicillar vessels. Each penicillus gives off near its extremity a small cluster of terminal vessels. Each of these in turn ends in one or more ellipsoids. The ellipsoidal mode of termination of the arteries is a fundamental feature of splenic architecture, and in fishes, just as in mammals, the sessile phagocytic cells of the ellipsoids capture foreign particles introduced into the blood stream and probably also ingest effete corpuscular elements of the blood, this being our modern conception of the "blood-cleansing" process of Hippocrates. It is noteworthy that in the spleen of the skate each terminal vessel comes to a blind end within the ellipsoid. In the mammalian spleen the terminal vessel frequently passes through an ellipsoid and ends beyond it. Whether this peculiarity of the arterial endings in the mammalian spleen is correlated with the presence of the special splenic musculature I am unable to say. The spleen of the skate, which is devoid of muscle, exercises no detectable pumping action, and it is a debatable question whether it acts as a temporary store of erythrocytes as Bancroft has shown the mammalian spleen to do. In texture the ellipsoids resemble those of the mammalian spleen, being composed of very finely meshed reticulum, which is continuous with the general reticulum of the parenchyma.

### Veins and Venous Sinuses

The veins of the skate spleen originate as venous sinuses, this mode of origin being again a fundamental splenic feature. The sinuses have none of the elaborate architecture described by Møller in the case of the mammalian

spleen. They are mere endothelium-lined tunnels in the general reticulum. Although to the eye the lining sheet of endothelium appears continuous, the blood and blood corpuscles can evidently pass freely between the endothelial cells, for nowhere is the uniform continuity of any sinus wall seen to be broken. As in the mammalian spleen, the walled veins do not reach quite so far into the organ as do the arteries, the place of the penicilli being taken by venous sinuses. The disposition of the veins, however, is different from that in the mammalian spleen, in which these vessels are crisscrossed by trabeculae. In the spleen of the skate, which is devoid of trabeculae, venous and arterial branches tend to run side by side, being bound together in a common investment of thickened reticulum. Within this common reticular sheath the larger venous branches have a very stout wall composed of bundles of non-branching collagenous fibrils. In possessing a real fibrous tissue wall both the arteries and the veins of the spleen may be regarded as foreign intrusions lying in the midst of the general reticulum. The venous are invariably of wider calibre than the corresponding arterial branches.

### Fundamental Vascular Features

Let us now review the vascular arrangements, confining our attention solely to the fundamental features. Inasmuch as the arteries and veins have a wall containing real fibrous tissue they constitute intrusions into the splenic reticulum. The arteries are a little longer than the veins, at the level at which the arteries ramify into penicilli the veins give place to venous sinuses. The penicilli break into terminal vessels, each associated with one or more ellipsoids, which are composed of finely meshed reticulum. The ellipsoids contain sessile phagocytic cells, which, after ingestion of foreign particles, migrate into the parenchyma. Within an ellipsoid the endothelial lining of the arteries may come to an end. Between the ellipsoids and the venous vessels intervenes the general reticulum of the spleen. The blood passing through this reticulum enters venous sinuses before reaching the veins proper. Notwithstanding the apparent continuity of the lining endothelium of the venous sinuses, their walls are everywhere porous. The venous are of larger calibre than the corresponding arterial branches.

### The Reticulum

The reticulum of the skate spleen is beautifully displayed by the Bielchowsky staining procedure. Fortunately, too, the Bielchowsky method in this case usually makes a distinction in depth of colouring between the two reticular and the non-branching collagenous fibres present in the wall of the veins and arteries and in the external capsule. Thus the limits of the reticulum can be defined, and we shall devote our attention to the problem of assigning its exact boundaries.

Besides the Bielchowsky method of displaying the reticulum there is another equally instructive method, which serves, too, as a valuable check upon the staining procedure. This is to inject backwards through the main splenic vein a suspension of Indian ink particles, followed by a similar injection of formalin. The latter material, clearing the ink out of the veins and venous sinuses, drives the last of it into the reticulum, which the reagent also fixes—and here I might say that, whatever its disabilities for fixing cells, in its application both to reticular and to white connective tissue fibres, formalin for special reasons stands supreme as a fixing agent. The particles of ink find their way to every available part of the reticulated interior, and as the reticular fibres have as strong a molecular attraction for these particles as the strands of a cobweb have for dust, on microscopic section after this form of treatment shows practically the full extent of the ink-laden cobweb of reticulum. Instead of dying or staining, we have here succeeded in painting the reticular fibres, which is a rather unusual histological procedure. There is one exceptional region. The ink does not gain entry to the ellipsoids, which therefore remain unpainted. To coat the reticular fibres of these structures we must inject the pigment, not by way of the veins, but by way of the arteries. By what means this sharp barrier is maintained at the surface of the ellipsoids is hard to explain.

### The Reticular Boundaries

Let us now consider the reticular boundaries. When we remember that over and above the fibrillar capsule on which the reticulum must of necessity depend, there are only two major intrusions into the reticulum by the arteries and veins, it is plain that the ultimate boundaries of the reticulum are either capsular or vascular. Suppose we examine the reticulum when it encounters one of the larger arteries or veins. As they enter practically within the sphere of influence of the structure, the interlacing reticular fibres surround it and rapidly merge into it. While the fibres thus enclose their vessels rapidly become smaller and finally in contact with the true fibres. It is said that fibres do not pass of the reticulum, but that reticular fibres have planted themselves into a dark world in which clunk and interlace, virtually unperceived. Up to a certain point the cap penetrates between and slides upon the within of the network, but at finer progress it is to be held by the mere compression of the fibrillar material and just beyond this boundary lies the true thin wall of the vessel. So far noted conditions of the reticulum may be found in any region under the capsule and over the leaves, the vessels under the capsule and at the very part of its boundary surface we might be concluded that the fibrillar material separated from the reticulum, but a minute and constant of those conditions. In any place, however, particularly toward the periphery and around vessels, but also under the capsule, it is evident that but upon the interior of the reticulum, more could be said in the arrangement of the capsule. Yet the derangement between the vessels and the capsule is very small and the reticulum is practically sharp. Where are many strands of reticulum, a fully developed vessel or more often the capsule, the various layers or lights between the anchoring fibres are seen to bring it with blood. In other words, a thin but complete screen of reticulum exists off the capsule and the minute vessels from contact with the splenic blood.

### Two Modes of Arrest of Haemorrhage from a Vessel

In order to appreciate the significance of this arrangement let me address for a moment to you in an experiment which is easily carried out though I have not seen it described. Suppose the carotid artery of a dog has been laid bare with the intention of observing the method of arrest of haemorrhage when the vessel is punctured. If the adventitia is removed before puncturing the artery, the blood sprays out for a very long time. When the haemorrhage eventually ceases the wound is seen to be plugged with a platelet thrombus. Coagulation plays no part here in stopping the bleeding. It is on the other hand the intact vessel is punctured the course of events is totally different. No external bleeding occurs. The blood simply enters the meshes of the adventitia which it distends like a sausage. The bleeding is very soon over. No plugs of platelets has this time formed in the orifice in the media. Arrest is due to the prompt coagulation of the blood in the adventitia. The same experiment may be carried out on the tort of a skate. If the adventitia has been previously removed, the wound is eventually plugged by agglutination of the nucleated spindle cell. If the vessel is punctured through the adventitia prompt coagulation occurs which leads to rapid arrest of haemorrhage.

### Haemothymic and Anaemothymic Tissues

This experiment teaches us that in contact with the fibres of ordinary connective tissue blood undergoes a change being inevitably induced to coagulate. We know that the blood may come freely in contact with reticulum without being induced to clot. In its negative action upon the blood reticulum like ordinary endothelium may be termed *haemothymic*—that is to say these tissues may freely touch blood. By contrast with the *haemothymic* structures probably the great mass of the other tissues of the body and certainly ordinary connective tissue, are *anaemothymic*, these may not touch blood. In the spleen the anaemothymic structures—namely the capsule the blood vessels, the Malpighian corpuscles, which lie in the

adventitial sheaths of the arteries, and the trabeculae—are screened off by means of haemothymic reticulum from the reticular interior.

### Continuity of Reticular and White Fibres

A striking fact is that the reticular fibres are structurally continuous with the fibrillar bundles of collagenous material that form the capsule and the true sheaths of the vessels. For a time I was inclined to think that the distinction between the two kinds of fibres, the anastomosing reticular and the non-branched "reticular" is absolute. Our president Sir Edward Sharpey Schafer had observed in lymphatic glands complete structural continuity of the two kinds. It was difficult at first to confirm this in the spleen, but repeated examination eventually showed that the larger reticular fibres around the vessels and under the capsule directly and abruptly change into fibrillar bundles of the ordinary white connective tissue type. This is not the place to enter into a discussion as to the possibility of an ultimate chemical separation between the two kinds of material. Hitherto no satisfactory chemical differentiation has been made and Mallory has recently shown that the supposedly specific reticular stain fails to differentiate between reticulum and ordinary connective tissue fibres. Suffice it to say that there is a difference of a physicochemical kind which involving the surface properties of the fibres may well lie at the root of their ultimate divergent in features of structural character.

### Function of Endothelium with Reticulum

Our survey of frontiers is not yet wholly complete and the boundary question into which this meeting has temporarily constituted itself has all too obvious problems before it. These being questions of "corridors" and "ports" rather than of land frontiers are of very particular interest and before concluding we must have some decision however provisional regarding these critical regions. The blood is conveyed to the spleen in a conduit of endothelium. It leaves the spleen by a similar conduit. The arterial endothelium creeps inwards to a certain distance and then stops. The venous endothelium of the organ derived from the parent stock of endothelium that lines the chief veins likewise creep inwards as far as it may. Between the two conduits of haemothymic endothelium intervenes the whole irregular sponge of haemothymic reticulum. How a junction of endothelium with reticulum effected at the two terminal station respectively.

I have said that the substance of the ellipsoids consists of very finely meshed reticulum. Their central cavity is lined with endothelium. The junctional station in this case is therefore to be sought in the interior of the ellipsoid and just at the place where the endothelium rests upon the finely meshed reticulum. Although to the eye this endothelium appears to form a complete lining to the central cavity we know that the blood can pour between its constituent cells. May it be that endothelial cells possess a bipolarity as we know them to be and resting upon a haemothymic instead of an anaemothymic tissue have difficulty in obtaining a proper base or foundation for their attachment. Some such supposition that is rendered more likely by a turn from the ellipsoids to consider the venous sinuses which are also endothelium lined. In the spleen of the rat these may be readily studied. They consist of nothing but tabs of endothelium surrounded by the simplest possible reticulum. So far as any special modification of the arrangement of the intervening reticulum goes the venous sinuses might simply be punched out of the general reticulum with a sharp needle. Yet when the inner sinus-directed surface of the reticulum envelops each sinus is examined with a little power innumerable fine brushes of freely ending reticular fibres are found projecting towards the endothelial surface. In turn appears in action to form a complete lining of the sinus. Now we know that blood can pour as easily through the wall of the sinuses as through a sieve. The apparent continuity of the lining endothelium is wholly deceiving and we connect the anomaly of the porosity or the lining with the intrinsic difficulty of attaching endothelial cells to reticular fibres. They are here cemented, not to the haemo-

flagmies sides of the fibres, but to the delicate truncated or amputated ends of the microscopic brushes, which alone can obtain a grip on these pavement cells. Thus at least is my interpretation, conjectural, but I hope reasonable, of what I see.

#### CONCLUSION

In the survey I have elected to deal with one single aspect of the spleen problem. It is true that members of my laboratory in McGill University—Dr M F Cashin, Dr L S Mills, Dr J G P Cleland—have recently been publishing or participating in publishing certain novel findings with regard to the spleen, but as these are already available in printed form I thought it better to branch away from the details of their work and to attempt to express some general ideas which emerge in considering the peculiar architecture of the organ. There has been no time as yet to put these views, in so far as they are hypothetical, to direct experimental test, or otherwise to develop experimentally any of the further issues that forthwith present themselves.

In view of the increased interest in reticular tissue since the introduction by Aschoff of the term "reticulo-endothelial system," may I be permitted to say that, important as the conception of this system is, the name that Aschoff chose for it is rather apt to mislead, for the reticulo-endothelial system is essentially devoid of any endothelium. In view also of a common misconception attaching to the name, it is well to remember that reticulum occurs in many places to which the corpuscular fluids, blood and lymph, have no access, in other words, the presence of reticulum in an organ does not mean that the organ constitutes part of the reticulo-endothelial system. It is true that reticulum, at least as we find it in spleen, bone marrow, and lymph glands, is haemolymphatic, but this may be a macro incident of its constitution, in the same sense as one might say that the excitability of nerve fibres to an external stimulus applied anywhere along their length is a fortuitous rather than a necessary feature of their organization. Should inquiry be made as to the primary function of reticulum is compared, say, with areolar tissue, I should like to make one significant observation. When we examine the various localities in which areolar tissue occurs—for example, between muscle fibres or tendon bundles, under the skin, around nerves, blood vessels, etc.—we find that they are all places where shearing or sliding movements occur. Such movements of slip also occur between serous membranes and in synovial joints. The shearing movements that occur where areolar tissue is found are, however, subject to definite limitation. It is the inextensible white fibres of the tissue that impose a limit on the amount of shearing displacement, the elastic fibres serving the purpose of restoring the structures to the neutral position. Now reticulum constitutes the connective tissue framework of solid glands, such as the kidney, liver, or spleen, where shearing displacements as such are not called for, but where uniform expansile movements must be provided for. According to this conception the primary purpose of reticulum is a mechanical one, its haemolymphatic properties are secondary.

#### DISCUSSION

Professor J BARNETT (Cambridge) reviewed the relation between the nervous system and the vascular function of the spleen. Using the preparation in which by a surgical operation the spleen could be placed outside instead of inside the dog's body, it had been shown that during muscular exercise the discharge of the spleen was controlled by the nervous system. The spleen anticipated exercise, and even expelled its blood into the general circulation when irritated by jealousy or anger. In the case of a jealous animal, the spleen of which had been made to grow outside it like a mushroom, the organ might be seen to grow pale when the animal's liver was fondled. Was this pallor specific to the spleen, or did it affect the whole alimentary tract? The spleen circulated the blood in its pulp: this also seemed to be ruled by the nervous system, for it did not occur in denervated portions of the spleen. The function of the rhythmic contractions of the spleen might be the production of this concentration.

Professor P T HERRING (St Andrews) pointed out the necessity of considering the allied glands, especially haemolymph glands, in investigating the functions of the spleen. He considered the circulation of blood through a lymph gland and mentioned that cells could be taken up from the circulation and held by the reticular cells. These cells became detached and migrated to the centre of the nodule. It was considered that attention should be paid to this aspect in relation to the lymphoid tissue of the spleen.

Sir HUMPHRY ROLLESTON (Cambridge) asked for further information about the data for the existence of two methods of circulation of blood through the spleen—one, perhaps, through the subcapsular area, the blood rapidly leaving the organ, the other of the storage nature, in which the blood remained there until it was wanted. He added that it would be interesting to know about the influence, inhibitory or otherwise, of the spleen on the bone marrow. How far had the spleen any special influence on immunity? Secondary as well as primary growths were very rare in the spleen, the rarity of secondary growths was perhaps partly due to the infection cells being drawn on into the liver, or was there some further power of resisting neoplasia in the spleen?

Dr H C HOU (Peking) reviewed the experimental work in progress in Peking. The spleen was attached to the body wall and divided into halves. The upper portion had an intact nerve and blood supply while the lower half was denervated. A marked reduction in the size of both portions was observed after exercise, the diminution being more pronounced in the denervated segment. It was suggested that this was due to the liberation of adrenaline, as no change had been found in animals where both adrenal bodies had been removed. Spleens of doubly adrenalectomized dogs only contracted to a slight extent after death, while a marked reduction was found in the normal dog. Injections of adrenaline and pituitrin caused diminution in the size of the spleen.

Sir EDWARD SHARPEY-SCHAEFER (Edinburgh) described experiments proving that the spleen was an organ most sensitive to adrenaline.

Sir BERKELEY MOXMEYER (Leeds) remarked that recent investigations by the physiologists had borne out the anticipations of older writers. Pliny had stated that the spleen was enlarged in those who exhibited "immoderate laughter," and MARIN in *Twelfth Night*, calling Sir Toby Belch when he was twitting Malvolio, refers to the same function. In *King John* the Bastard spoke of "spleen of speed to serve Your Majesty." Physiology had been termed a "laggard science." The surgeon evidently seeking for knowledge of many of the functions of the spleen turned almost in vain to the physiologists for answer to such questions as why all the splenic blood passed through the liver, why the veins from the tail of the pancreas carrying blood from the islands of Langerhans conveyed more blood than from the larger end of the gland, and why the blood from the large intestine joined the splenic vein before the blood from the small intestine. In connection with splenic anatomy, many problems needed consideration and answer. The surgeon had shown, by his operations for haemolytic jaundice, one of the functions of the spleen. Sir Berkeley urged that physiologists should make their observations not only upon cats and dogs and mice, but upon men. Their work should be not only in the laboratory, but side by side with physicians and surgeons in the wards and in operating theatres. They would so give a purposeful direction to investigation and fill many gaps in the knowledge of functional anatomy.

Professor TAIT, in his reply, said that lymphoid tissue was not an essential element in the structure of the spleen. At the same time the circulatory and phagocytic arrangements present in the spleen showed a remarkable similarity to those adduced by Professor HERRING as occurring in lymph glands. In the ellipsoids the blood first came into contact with reticulum, and foreign particles tended to adhere to the reticular fibres of these ellipsoids.

The particles were now collected and ingested by the sessile phagocytes of the ellipsoids, which thereafter migrated into the splenic parenchyma, just as the phagocytes of the lymphatic glands travelled when the empty ellipsoids underwent a regenerative process accompanied by hypertrophy. As Dr I. S. Mills had shown, this process might be at the root of splenomegaly. In answer to a criticism by Sir Almoth Wright, who objected to a division of the tissues into haemolymphic and anemolymphic, on the ground that the blood coagulating principles were soluble rather than cellular, he stated that no tissue extract was active unless it contained cellular debris. He referred to recent work by Dr Ekland and himself on the nervous machinery controlling rhythmic contraction

example we may take the case of saponin acting on washed mammalian red cells at a constant temperature.

In such a case it is easy to satisfy one self that the reaction which results in lysis is accompanied by a using up of saponin, and by a combination of the lysin with some component of the red cell envelope. This component is certainly protein in nature. The amount of saponin used up in producing lysis of any given number of cells can be very exactly measured and the rate at which the using up proceeds gives us the rate of the reaction between the lysin and the protein component of the envelope with which it combines. This reaction we call the "fundamental" reaction. The factors upon which its velocity depends have been exactly determined and it is known that the amount of saponin,  $\sigma$ , used in producing lysis in time  $t$ , is given by the expression (1)

$$kt = \log \frac{c}{c-x}$$

where  $c$  is the initial concentration of saponin present in the system, and where  $x$  is a constant which varies with the surface presented by the cells, the temperature, and other factors. The fundamental reaction which is described by this expression with great accuracy, is therefore a reaction of the first order, and its velocity at any moment dependent on the concentration of free lysin present at that moment.

Expression (1) thus gives the quantity of saponin combined with the cells at the end of any given time, but it does not, as it stands, give the amount of lysis which results from this combination. The reason for this is that the cells offer different resistances to the lysin, so that the least resistant cells haemolyse when only a small amount of their protein component is united with the saponin, whereas the more resistant cells require large quantities of the protein component to unite with the lysin before haemolysis takes place. On theoretical grounds we should expect that the cells if grouped according to their resistance, would give a frequency distribution of a symmetrical type, the resistance of a few cells being small, the resistance of a few cells being great and the resistance of the majority being intermediate. This is in fact the case, and the particular distribution for human cells at least, is of the type shown in expression (2)

$$n = y_0 \left(1 - \frac{x}{a}\right)^m$$

Here  $n$  is the number of cells expressed as a percentage of the whole for convenience in any group of resistance  $x$ ,  $y_0$  is the number of cells of mean resistance, and  $a$  and  $m$  are constants.

Now as the fundamental reaction proceeds according to expression (1) quantities of lysin  $x_1, x_2, x_3$ , etc. combine with the cell in times  $t_1, t_2, t_3$ , etc. The cells whose resistance corresponds to  $x_1$  haemolyse when  $x_1$  is formed, and, if we want to determine their number, we can do so by means of expression (2). When  $x_1$  is formed the cells whose resistance corresponds to  $x_2$  haemolyse; this number is again given by expression (2). And so on for  $x_3$  and for all other values of  $x$ . The number of cells which are haemolysed at any moment from the beginning of the reaction until the stage of complete haemolysis is accordingly not to be found from any one expression but from the simultaneous solution of expressions (1) and (2).

The result of this simultaneous solution is an S-shaped curve which gives the number of cells haemolysed at any stage of the experiment and a the fundamental reaction is steadily slowing down the S-shaped curve is always asymmetrical. Recently several methods have been introduced for the study of such curves by far the best being that which depends on the use of selenium as a means of measuring the intensities of the light transmitted by the cell suspension. By this method which we owe to Mellanby it can be shown that the S-shaped curves obtained from experiment agree exactly with those calculated from expressions of the form of expressions (1) and (2). The conclusion must be that the fundamental reaction between the protein of the envelope and the lysin is of the first order and that the resistances of the cells are expressed by a frequency distribution of a Pearson's Type II. That some explanation such as this is the probable one was suggested by Brooks<sup>5</sup> in a theoretical

## THE KINETICS OF THE VARIOUS HAEMOLYTIC SYSTEMS

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THE object of an opening paper should admittedly be to arrange and to condense the subject so that it can be easily grasped even by those who are unfamiliar with it. In the case of the subject of haemolysis with its many and diverse investigations, this is impossible, I propose, therefore, to fix at the very beginning the point upon which all these investigations must ultimately converge and to deal with the subject by describing certain successive steps which lead up to the final problems for the solution of these final problems, concerned as they are with the reactions occurring in complement-antibody systems, forms the principal justification for the labour spent on the study of simpler haemolytic phenomena. This treatment can only result in the presentation of the subject from a restricted point of view, it will, however, make the connexion between the simple and the complex forms of haemolysis as plain as is possible.

Before considering the action of even the simplest haemolysin it will be as well to be quite clear about the structure of the cell upon which it acts. All the recent investigations lead us to the conclusion that the red cell of mammals is a balloon-like structure possessed of an envelope of considerable strength. One of the clearest proofs of this is the fact that the changes of shape and size which the cell undergoes both in hypotonic solutions and in solutions containing haemolysins, are those of a balloon-like body and not those of a sponge-like structure; if more direct evidence is required Seifriz<sup>2</sup> has actually microdissected the human red cell stretched its envelope and observed the escape of fluid containing haemoglobin. There is considerable evidence, from investigations on quite different lines, that the envelope is composed principally of protein and not of lipid as was once thought in this connexion may be mentioned the work of Oliver and Barnard<sup>3</sup> on cell agglutination of Seifriz on microdissection as well as the results of the recent work on the haemolysins. The best conception of the structure of the envelope is probably one similar to Bechold's—a protein framework, in the interstices of which lipid is contained. Several proteins probably enter into the composition of the framework.

The action of the haemolysins must therefore be principally on this complex envelope, its continuity being destroyed, with the result that the fluid contents are liberated into the surrounding fluid.

### 1 Simple Haemolytic Systems

Setting aside the instances of lysis by mechanical means, which tell us very little, the simplest cases of haemolysis are to be found in systems which contain one lysin of known constitution and in known quantity acting on washed red cells and acting in the absence of any substances which accelerate or inhibit the reaction. As an

A paper read in opening a discussion on haemolysis in the Section of Physiology and Biophysics at the Annual Meeting of the British Medical Association, Edinburgh, 1927. Sir Edward Sharpey-Schafer, M.D. F.R.S., President of the Section, was in the chair.



paper of outstanding importance some six years ago, all the investigations since that time, both theoretical and experimental, have placed this hypothesis in an unassailable position.

From the foregoing we should expect there to be a relation between the quantity of protein in any particular type of red cell and the resistance of that cell to saponin. This relation certainly exists, for if we arrange the cells of different species in order of their resistance to saponin, we find them arranged very nearly in order of their protein content. Unfortunately for simplicity, however, this relation does not appear to hold for other haemolysins. Kofler and Luzzati<sup>6</sup> have shown that the protein content does not determine the resistance to digitonin, senegin, and other glucosides, and McLachlin and I have shown the same absence of the relation in the case of the haemolysins of bacterial origin.<sup>7</sup> Such observations certainly give rise to some little difficulty, but it is to be remembered that the affinity of the protein of the cell for the lysin, as well as the absolute amount of the protein in the cell, has to be taken into account. In the case of saponin, the affinities of the proteins of the cells of the ox, sheep, rabbit, etc., for the lysins are much the same, with the result that the absolute quantity of the protein is the only factor influencing the resistance, in the case of other lysins the affinities may be quite different, perhaps owing to slight differences in grouping within the protein molecule, and thus the effect of the absolute quantity of protein present in the cell envelope may well become of secondary importance. The matter can be decided by a careful evaluation of the constant  $k$  in expression (1), but this is a matter of great difficulty.

By methods identical with those used for the investigation of the haemolytic properties of saponin it can be shown that sodium taurocholate, and also sodium glycocholate in certain concentrations, form compounds with the proteins of the cell envelope, the process of formation of this compound is, in the case of saponin, a reaction of the first order, and is described by an expression of the form of expression (1). The complete solution of the kinetics of the haemolytic reaction involves two expressions just as in the case of saponin, the first relating to the velocity of the fundamental reaction, and the second giving the distribution of the cell resistances. The frequently made statement that the bile salts act as solvents of the lipoids of the red cell envelope and thus produce lysis will not bear even the most superficial examination, it is, for example, quite incompatible with the fact that sodium glycocholate in concentrations of about 1 in 100 is much less haemolytic than the same salt in concentrations of 1 in 1,000.

To the substances which fall into this simplest class of haemolysins may be added most of the haemolytic glucosides (digitonin, senegin, smilacin, sapotoxin, helleborin, etc.), the soaps,<sup>8</sup> and the salts and acids allied to the bile salts. Each of these substances forms loose compounds with protein, and each, when studied quantitatively, will be found to follow the same laws as have been shown to hold for saponin. Sodium glycocholate alone presents peculiarities. Within the last few months McLachlin and I have been able to show that most of the lysins of bacterial origin fall into this class, for the haemolytic substances produced by *B. uelchii*, *B. anthracoides*, *B. tetani*, *B. histolyticus*, *B. subtilis*, *B. coli*, *El Tor vibrio*, *Streptococcus pyogenes*, and *Staphylococcus pyogenes*, all act in a manner similar to saponin, and conform to the same quantitative laws. It is of interest to note that two of these lysins—that of *B. histolyticus* and that of *Streptococcus pyogenes*—are definitely known to be proteolytic.

## 2 Inhibition by Serum

Since, in the case of all the lysins of the saponin class, the reaction which results in haemolysis appears to be one between the lysin and the protein of the cell envelope, we should expect these lysins to unite with other proteins to form non-haemolytic compounds. This can be readily shown to occur, for, if small quantities of serum or plasma are added to the haemolytic systems, inhibition of haemolysis results. This inhibition was first shown by Bayer<sup>9</sup> to be dependent on the presence of serum proteins, although

previously it was believed that it was due to the presence of lecithin or cholesterol. Bayer's observations have been repeatedly confirmed. Recently it has become possible to measure the amount of the lysin which unites with the proteins, and the results indicate that the combination takes place according to the formula applicable to adsorption processes.<sup>10</sup> We therefore conclude that the lysins of the saponin type, which are all surface active, form with the proteins of serum and plasma non-haemolytic adsorption compounds, as the result of which lysin is removed from the system, so that in inhibition of haemolysis results. These observations have been confirmed by Kennedy<sup>11</sup> and by Donnelly and Grime Mitchell<sup>12</sup>; they are in themselves interesting examples of adsorption occurring in colloidal systems, and their full significance from the point of view of haemolytic reactions will appear when we consider the more complex systems. In the case of sodium taurocholate and of the soaps, the non-haemolytic substance which is formed can actually be seen as a fine opalescence which appears on the addition of the serum.

## 3 Cell-Serum-Lysin and Cell-Lysin-Serum Systems

We have now to consider one respect in which haemolytic systems containing sodium taurocholate, sodium glycocholate, or certain of the soaps, differ from systems containing saponin, the glucosides, or the bacterial haemolysins. The serum proteins always inhibit the action of saponin, owing to the formation of a non-haemolytic compound as the result of a combination between the lysin and the proteins, the serum proteins may, on the other hand, either inhibit or accelerate the action of the bile salts, according to the order in which the components of the haemolytic system are mixed together.<sup>13</sup> As an example, let us take 1 ccm of a suspension of washed cells and add first 0.1 ccm of serum, one minute afterwards we add 1 ccm of 1 in 3,000 sodium taurocholate. The result is an inhibition of lysis by the serum. Now we reverse the process, adding to the same quantity of cells the same quantity of lysin, and adding after the same interval of time 0.1 ccm of serum, the components of the system are exactly the same, but the result is not an inhibition, but almost immediate lysis. We have here the interesting case of haemolysis depending not only on the components of the system, but on the order in which these components are brought together. This occurrence introduces into the investigations quite a new type of complexity, and since the two systems which give diametrically opposed results are made up of the same substances in exactly the same quantities, the only way to distinguish between them is to draw attention to the order of the additions, calling the first system, in which there is inhibition, a cell-serum-lysin system, and the second, in which there is acceleration of haemolysis, a cell-lysin-serum system. The order in which the components are mixed thus indicates the order of addition which is necessary.

The inhibition is easy to explain, for it occurs for the same reason as in cell-saponin-serum systems in which the order of addition is immaterial, the proteins of the serum unite with the lysin to form a non-haemolytic compound, and by the formation of this lysin is removed. The explanation of the acceleration, on the other hand, constitutes a most formidable problem, and, indeed, would probably be impossible to obtain were it not for the fact that an almost identical occurrence takes place in systems in which the lysin is one of the haemolytic dyes. To the consideration of these systems we therefore pass.

## 4 The Haemolytic Dyes

Browning and Mackie in 1914,<sup>14</sup> and Mackie in 1919,<sup>15</sup> have described a curious phenomenon occurring in systems containing brilliant green, and to a less extent in systems containing other dyes of the triphenyl-methane group. Brilliant green is itself a haemolytic, but only in high concentrations, in lower concentrations it acts by "sensitizing" the cells, so that the subsequent addition of small quantities of serum produces rapid lysis. The "sensitization" is carried out by mixing washed cells with a dilute solution of brilliant green of about 1 in 50,000. The mixture is allowed to stand for a short time, the cells centrifuged down, and washed till the dye disappears from the super-

nating fluid. The cells are then re-suspended in saline. The addition of about 0.1 c.c. of any normal serum or plasma to these sensitized cells brings about haemolysis in a short time.

The similarity between this phenomenon and that observed when serum is added to cells which have been previously mixed with one of the bile salts will at once be apparent. In each case the lysin brilliant green, or bile salt must first be brought into contact with the cells, and in each case the subsequent addition of normal serum or plasma brings about rapid haemolysis. The similarity is made even more striking by Mackie's observation that, in the case of brilliant green as in the case of the bile salt, it is the serum proteins which are responsible for the reaction, and that if the components of the system are mixed in the reverse order—that is, cells and serum first with subsequent addition of the dye—no haemolysis results. Expressing this more concisely in the cell dye system we get rapid lysis while in the cell serum dye system we get an inhibition of lysis.

The first step in the investigation of this phenomenon is to determine the nature of the "sensitization." So all appearances the sensitized suspension is free from brilliant green, but this appearance is quite deceptive. Large quantities of the dye can be extracted from the cells by the addition of acetone or alcohol, and it is therefore plain that the repeated washings remove only such portions of the dye as is not united to the cells. Further, the portion of the dye which is united to the cells must be united very loosely, for merely warming the suspension of sensitized cells causes a considerable quantity of brilliant green to be liberated into the fluid surrounding the cells. This liberated dye does not appear to be altered in any way and it can be used to sensitize more cells. The "sensitization" thus seems to be nothing more than the formation of a loose compound between the brilliant green and the erythrocytes, so that the dye is present as free lysin in the suspension adsorbed to the cells, and capable of uniting with added serum protein. Quantitative determinations of the amount of dye adsorbed show, moreover, that the union is not with the envelopes alone but also with the contained haemoglobin within the limits of the experimental range the dye taken up is nearly proportional to the amount used in order to bring about the sensitization.

In a case such as this there are no doubt several hypotheses which might be advanced in order to account for the facts. Of these we have to select the simplest and that which is the most in keeping with the explanations which are known to be satisfactory in the case of other haemolytic systems. We therefore assume first that the adsorbed dye combines with the serum proteins of the added serum to produce a lysin which is haemolytic for the sensitized cells. That the brilliant green adsorbed to the cells is certain and that it is capable of uniting with the serum proteins is equally certain, the only obscure point is why the new lysin is either produced only, or effective only when the latter combination takes place after the occurrence of the former.

On this hypothesis the whole of the complex phenomenon can be accounted for. Suppose, to make the matter clear, that one unit of brilliant green is adsorbed to the cells and that this one unit can unite with one unit of serum protein to form one unit of the new lysin. In the circumstances, if one unit of protein is added to the system containing the sensitized cells, the whole of the dye and the whole of the added protein will unite to form one unit of new lysin. This new lysin will produce haemolysis of the cells in a time  $t$  dependent principally on the concentration of new lysin present. Suppose next that only half a unit of protein is added. The whole of the dye will be unable to combine to form new lysin for there is insufficient protein for the combination, as much dye as possible will unite, and half a unit of the new lysin will be formed. This will take a longer time  $t'$  to bring about lysis, for the concentration of the new lysin is only half of that present in the first case. Similarly if we add smaller and smaller quantities of serum smaller and smaller quantities of new lysin will be formed and the time will take longer and longer times  $t''$ ,  $t'''$ , etc., to bring

about lysis. When very small amount of protein are added there may be so little new lysin formed that complete lysis of the cells will never occur, the result is a partial haemolysis, even after long periods of time.

Experiment shows that the above assumptions are in keeping with the facts. As less serum is added, lysis becomes slower the observed time,  $t$ ,  $t'$ ,  $t''$ , etc., corresponding with times which can be calculated from an expression of the form of expression (1). The new lysin, whose concentration is dependent on the quantity of dye which can unite with the added protein according to the law of simple proportions, thus acts as a simple haemolytic the velocity of whose action depends on the concentration present at the moment. In considering the haemolytic reaction in full, the resistance of the cells have, of course to be taken into account, this being done, the entire kinetics of the reaction can be solved in terms of expressions similar to (1) and (2) just as in the case of a simple haemolysin.

So far as the reaction between the brilliant green and the cells is concerned, we can recognize at least two distinct stages. In the first the dye is adsorbed to the cell envelopes and their content still existing as unaltered brilliant green or a free lysin. In the second, which occurs after a long period of time a reaction which results in haemolysis occurs between the adsorbed dye and the cell envelopes. It is essential to note that the union of the dye with the serum protein, and the production of the new lysin which we have been considering occur in the first of the two stages. If we replace the brilliant green by sodium taurocholate we get very similar occurrences taking place the problem is, however, far more complex, because the reaction which results in haemolysis begins immediately the bile salt is added to the cell. There is thus never a stage or "sensitization" at which the reaction can be stopped short, for the taurocholate which is haemolytic by itself, is continually attacking the cell envelopes, with the result that the free lysin in the system is continually decreasing. The amount of free lysin at any moment can, however, be calculated quite easily, so that, if at any moment we add serum, we can say just how much free lysin is present in the system to react with the added protein, as well as the amount of taurocholate which has been transformed as the result of the primary haemolytic reaction. In adding serum, we have therefore to be careful that the extent to which this primary reaction has proceeded is allowed for, so that all additions are made under known conditions. Although this involves an elaborate technique, it leads to results which are capable of explanation. They show that the phenomena observed with the bile salt are identical with those observed with brilliant green, the taurocholate replacing the dye as a "sensitizing agent," although it is haemolytic by itself, the sensitization seems to be due to a loose combination of the bile salt with the cells, and the lysin which follows the addition of serum to the formation of a new lysin as a result of the combined taurocholate uniting with the added proteins. Unless care is taken, however, the reaction is influenced by inhibition phenomena although the nature of the reaction itself is clear the effect of these secondary reactions still needs investigation.

### 5 Cell Complement Silicic Acid Systems

These systems have attracted a great deal of attention since the discovery by Landsteiner and Jagiel<sup>1</sup> that colloidal silicic acid can replace antibody in complement-antibody system. The colloidal silicic acid is best prepared from ethyl silicate, and the complement used should be that contained in guinea pig serum after removal of the native haemolysins. As there is no specificity attached to the reaction, any type of red cell can be employed.

In one respect at least these systems resemble those already considered for the velocity of the haemolytic reaction depends on the order in which the components of the system are brought together. The complement should be added to the cells first, and the two allowed to stand for a short time, the subsequent addition of silicic acid then brings about a rapid lysis. The following remarks apply only to systems in which this order of mixing is observed.

The most interesting point in connexion with these systems is the way in which the velocity of the haemolysis

varies with the quantity of complement and of silicic acid. Adding a constant amount of silicic acid, which is non-haemolytic by itself, to systems containing an increasing amount of complement, we get increasingly rapid lysis until a certain maximum is reached, with greater amounts of complement, however, the lysis becomes slower once more, until finally there is no haemolysis at all. There is thus, for every quantity of silicic acid, one particular quantity of complement which gives a maximum velocity of lysis, quantities greater or less than this give less rapid lysis, or none at all.

These maxima possess a special property which greatly simplifies the kinetics of the systems, for the ratio of complement to silicic acid at any maximum is always constant. For example if with 0.5 ccm of silicic acid we need 0.2 ccm of complement to give a maximum, we shall require 0.1 ccm of complement with 0.25 ccm of silicic acid, or 0.02 ccm of complement to give a maximum with 0.05 ccm of silicic acid. But the most remarkable point of all is that when complement and silicic acid are added in this ratio which gives the maximum lysis proceeds as if the lysis were a simple haemolysis. The kinetics of the system become capable of expression in terms of expressions (1) and (2), and all complexity seems to have disappeared. So far as this evidence is concerned, we are therefore justified in assuming that the complement and the silicic acid unite to form a simple haemolysin, provided that they are present in certain proportions.

Too much complement on the one hand, or too much silicic acid on the other, results in a haemolysis slower than at the maximum. In such systems the kinetics have still to be reduced to simple laws. We know, however, that the slower lysis is the result of a reaction very like the inhibition of a simple lysis by serum. Suppose, for instance, that the ratio for the maximum is one unit of complement to one unit of silicic acid. If we add to one unit of complement three units of silicic acid, two of the added units cannot combine to form the lysis, as there is insufficient complement, these two units act as an adsorbent, ready to adsorb and to render inactive the lysis as it is formed. Excess of complement acts in the same way, for the proteins in the complement-containing serum are scarcely inferior to colloidal silicic acid as an adsorbent, only when there is no excess of either component is the newly formed lysis free to act without inhibition.

This completes the account of the problems which connect the simplest haemolytic systems with the most complex, for the next step in order of complexity is the problem of the kinetics of the complement-anticoceptor systems themselves. In general, these systems are similar to cell-complement-silicic acid systems, they are, indeed, in some respects even less complex, for the inhibition phenomenon is less marked. They can be investigated by the same methods as are applicable to the simpler haemolyses, and their complete elucidation is only a matter of time.

As a review of what is known about haemolysis in general this account is very incomplete. All consideration of haemolysis by hypotonic saline, cobra venom, and ultra-violet light is omitted, no mention has been made of the results of the investigations into the changes of form which the cells undergo during lysis, nor is there any reference to the effects of salts, sugars, and other such substances on the action of the various haemolysins. The necessary degree of compression precludes even the description of the essentials of the technique employed. The paper therefore gives quite an inadequate idea of the weight of the evidence on which the conclusions are based, and accordingly the reader may be left with the impression that some of the explanations offered are rather too simple to be true. It is to be remembered, however, that the almost notorious complexity of most of the less simple haemolytic systems is very largely the result of investigation by methods which are often faulty in themselves and which are never strictly quantitative. It is only when technique is rigidly standardized, and when every variable is subjected to exact measurement, that the apparent complexity disappears.

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## DISCUSSION

Professor J. MELLANBY discussed the action of enzymes on the red blood corpuscles. He pointed out that the cell envelope could not be acted upon by either trypsin or lipase. Haemoglobin was found to be digested by enzymes, and there was, therefore, evidence that a protective layer or envelope existed which protected the haemoglobin. It was shown that at the end of haemolysis the anticoceptor disappeared while the complement was still present in an intact form. The speaker stated that probably in the Wassermann test the complement was precipitated by the syphilitic substance in the presence of the antigen.

Mr E. SHAMPEL-SCHARRER questioned the reversal changes described.

Dr ERIC PONDIN, in reply, said that in his opinion there was no fundamental difference between the kinetics of the complement-anticoceptor system, and of silicic acid and simple lysins.

## THE PLACE OF BISMUTH IN THE TREATMENT OF SYPHILIS

BY

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DURIĆ (1921) SZVERCO and LEONARDI were able to prove that experimental syphilis in rabbits could be treated successfully with a bismuth preparation. In the following year the same workers, and Fournier and Guenot, submitted a series of cases of human syphilis to treatment with a salt of bismuth, and found that the active signs of disease disappeared rapidly, and that this drug appeared to be able to exercise a favourable influence, at least in the earlier cases, on the serological reactions of the blood. Subsequent to the publication of this work in France bismuth and its salts came into general use, and bismuth is now accepted as one of the few drugs which can favourably influence the progress of syphilitic infection.

In considering the place of any drug in the treatment of syphilis it is essential to take into consideration the value of that drug as compared with existing and well known therapeutic remedies, and to review our present knowledge as to—

- (a) The effect of bismuth on the *Spirochaeta pallida* in vivo.
- (b) Its effect on the surface lesions of syphilis in all stages.
- (c) Its effect on the serological reactions in all stages of syphilis.
- (d) Its effect on the general health of the patient.
- (e) The toxicity of bismuth and the immediate or remote side effects to which it may possibly give rise.
- (f) The permanency of the results obtained by its use.

In the limited time available I propose to give a short summary of the observations which it has been possible to make during an extensive clinical experience of the use of this drug in over 6,000 cases of syphilis. The number of injections of bismuth given in this series was over 100,000. In some of the cases bismuth was the only drug used, in others it was used in combination with drugs of the arsenobenzol series and with trypanamide, in others it was administered with mercury and some form of iodide.

\* A paper read in opening a discussion on this subject in the Section of Venereal Diseases at the Annual Meeting of the British Medical Association at Edinburgh. Mr Liles was President of the Section.

Among the many bismuth preparations which are available the following have been used: (1) soluble preparations, (2) insoluble preparations suspended in oil, (3) insoluble preparations suspended in glucose or water. Different preparations from each of these groups, and especially from the latter, have been used, and, from practical experience, the preparation which gives the most consistently good results with the least likelihood of upset to the patient is one of insoluble bismuth in a very fine suspension in isotonic glucose solution. It should contain a high percentage of bismuth, and the drug should, in our opinion, be given intramuscularly.

#### The Action of Bismuth in Destroying the *Spirillum pallidum*

When a therapeutic dose of bismuth is administered intramuscularly to a patient suffering from a primary chancre or a secondary rash in which the *Spirillum pallidum* has been demonstrated, the organism is not destroyed so rapidly as it is when a therapeutic dose of one of the arsenobenzols is given either intravenously or intramuscularly. After an arsenobenzol product is administered one can rarely find a living spirochete in the surface lesion twenty-four hours later, whereas after a potent therapeutic dose of almost any bismuth preparation, spirochetes can not infrequently be demonstrated for three or four days subsequently. From this we may assume that bismuth does not act so rapidly in reducing the contagion of syphilis. This slowness of action is not due to the slower absorption because the bismuth is administered intramuscularly. We have had the same experience when comparing the effect of an intramuscular injection of sulpharsenol with that of an intramuscular injection of bismuth. We have noted the same slowness of action after the intravenous injection of colloidal bismuth.

#### The Effect of Bismuth on the Surface Lesions of Syphilis in all Stages

The continued administration of bismuth intramuscularly causes the primary sore, the surface skin lesions, and the later gunnathous manifestations to disappear rapidly, and in this respect bismuth is almost as efficient as the salvarsan preparations. It is much more rapid in its action on these signs of active syphilis than any of the mercurial preparations. In this respect it would seem to be almost the equal of and occasionally superior to, the arsenical drugs. In three cases which were seen by the author, all of which were in the nature of hypertrophic papular syphilides of a recurrent type, the administration of bismuth rapidly cleared up the eruption when arsenic in one case, and arsenic and mercury in combination in the two others, had previously failed to do so.

The first patient, a case of primary syphilis with a strong positive Wassermann reaction, had been treated by a complete course of novarsenobillon totalling 4.5 grms in a period of eight weeks. Three weeks later a papular syphilide appeared on the face. A second course of 360 grams of novars nobillon was administered in the succeeding even weeks and one month later the papules again recurred. Bismuth was administered intramuscularly and after three injections of hypodermic bismuth the papules disappeared and have not recurred since. The bismuth treatment was continued in this case for close on two years and the patient has been under observation for over eighteen months since. There has been no recurrence of any clinical sign of syphilis and the Wassermann test has been consistently negative for over two years.

In the second case, one of early generalized syphilis, the patient had had a course of injections of neobarsavan and simultaneously mercury being given by the mouth. The total amount of neobarsavan administered in eight weeks was 465 grams. Six weeks subsequent to this course a papular syphilide appeared at the angles of the mouth and nose. Bismuth was administered and the patient apart from appropriate interval of rest has now been under treatment with bismuth and iodides for two years. There has been no recurrence of the clinical signs, the blood Wassermann after two courses of bismuth became negative and has continued negative up to the present.

The third case is even more striking.

A patient with a primary sore of ten days' duration and a weak positive Wassermann test was treated during the first three months with novarsavan and mercury (grey oil) 4.5 grams of the former intravenously and 1 gram of the latter intramuscularly. Some three to four weeks after this treatment a cruminate syphilide appeared on the forehead and palmar and plantar syphilides on the hands and feet. A second intravenous course

consisting of 4 grams of novars nobillon and an intramuscular course of 8 grams of mercury (grey oil) was administered. It failed to influence the skin eruptions. Intramine and colloidal iodine were then given in the former intramuscularly and the latter intravenously in large doses. This was followed by a course of intramuscular injections of grey oil, the total quantity given being equivalent to 16 grams of metallic mercury. Potassium iodine was also given in large doses (23 grain (three drachms)) by the mouth. As this course of treatment failed to influence the syphilides, after which an was administered in weekly injections to a total of 3 grms in eight weeks. The syphilides disappeared temporarily during this treatment but recurred six weeks later. First in the palms and feet, then in the face, and finally in the trunk, a second course of 4 grms of novars nobillon was injected and this was followed by a course of novars nobillon and mercury. There was no sign of syphilis for three months after this, but after the plantar syphilides reappeared and also a recurrent papulo-erosive syphilide on the forehead and on the extensor aspect of one elbow. Bismuth was now exhibited and four courses totalling about 15 grams of metallic bismuth were given in the following year. After the third injection of bismuth in the first course the signs of syphilis on the skin completely disappeared and they have not recurred since. The blood Wassermann reaction became negative after the first course of 4 grams of bismuth and has remained negative since. The patient has been under observation for close on two years without treatment and has had no recurrence of any sign of syphilis and the blood Wassermann and cerebro-spinal fluid has remained negative throughout.

While these may be isolated cases they are impressive, and there are undoubtedly certain cases of syphilis in which the surface signs react extremely well to bismuth, and better than they do to salvarsan and its derivatives.

#### The Effect of Bismuth on the Serological Reactions in all Stages of Syphilis

If bismuth is administered to any case of syphilis before the Wassermann test has become positive, and if the Wassermann test taken again seven days subsequent to the first injection, is still negative (sero-negative syphilis), it is our experience that very few of these cases, if the bismuth treatment is persevered with, will ever develop a positive reaction in the blood. One or two of our cases, however, have developed positive reactions when so treated and Parnell has quoted similar cases. In all the cases in which this has occurred the second test taken within a week after the first treatment showed a weak positive reaction. It is our experience that the development of a positive reaction in a case of sero-negative syphilis treated with the arsenobenzols is extremely rare. Bismuth, therefore, would not seem to be so potent as the arsenobenzols in making certain that a sero-negative case does not become sero-positive.

When comparing the effect of bismuth with that of the arsenobenzols on the reactions of sero-positive syphilis in the primary and early generalization stages, as assessed by the Wassermann test taken at least one month after a course of treatment, the percentage of negative findings after bismuth is not, in our opinion, so large as with the arsenicals. It is certainly much inferior to that obtained when salvarsan and bismuth or salvarsan and mercury are administered concurrently. In late syphilis and latent syphilis it is difficult to estimate comparatively the effect of bismuth and salvarsan respectively on the Wassermann test. Both are successful in a considerable number of cases, while in others both fail to render it negative. In cases in which we have failed to influence the Wassermann test by combinations of salvarsan and mercury or salvarsan and iodides, bismuth also has failed, and we have not as yet been able to find any drug or combination of drugs which will permanently influence certain cases with resistant Wassermann reactions. It is our experience that bismuth is rather more potent than is the intravenous injection of the arsenicals in altering some of the pathological reactions in the cerebro-spinal fluid in certain types of case.

#### The Effect of Bismuth on the General Health of the Patient

When bismuth is given in therapeutic doses it appears to influence the patient's general health beneficially and especially so if before and during the time of its administration the hygiene of the mouth is attended to. The arsenobenzols also have a tonic action, but it is our experience that old and debilitated patients tolerate bismuth in appropriate doses rather better than they tolerate the arsenobenzols. In cases which have shown

themselves sensitive to the arsenobenzols, bismuth is often well tolerated and greatly benefits the health of the patient. It does not appear to be so depressing in its action as mercury, and there is not the same tendency on the part of the patient to lose weight when under bismuth treatment as when mercury is being administered.

#### *The Toxicity of Bismuth and its Immediate and Remote Side-Effects*

In therapeutic doses bismuth gives rise to remarkably few toxic symptoms if the technique of its administration is good. There is practically no pain subsequent to its administration such as there is subsequent to the intramuscular administration of mercury, and there is certainly less discomfort than there is with the intramuscular administration of arsenicals such as sulpharsenal or kharsulphim. The main toxic condition to which it gives rise is stomatitis. This can be obviated by careful cleansing of the mouth and care of the teeth. When it does arise it is not so severe as is the stomatitis set up by mercury. It can be rapidly controlled and ameliorated by the administration of sodium thiosulphate and by oral hygiene. Other toxic effects of bismuth are albuminuria, urticarial eruptions, mild erythema, and loss of weight. If ordinary care is exercised in the administration of the drug, and if appropriate intervals are allowed between successive doses, these complications are rare when metallic bismuth is used. Bismuth, in fact, can be given with advantage to many cases of nephritis and to many delirious patients who would not tolerate the arsenobenzols. In general, it is a much less toxic drug than the arsenobenzols and less toxic than mercury. If care is taken that none of the drug is introduced into a vein there are practically no immediate side-effects in the great majority of cases. It does not seem to damage the liver to the same extent as do the arsenobenzols, nor the kidneys to the same extent as mercury, and rarely if ever is an injection of it followed by a Herxheimer reaction.

#### *Permanence of the Results of Bismuth Treatment*

We have referred to the fact that cases of sero-negative syphilis may not always remain so while under treatment with bismuth alone, but there are undoubtedly other cases of established syphilis which have been cured both clinically and serologically by bismuth alone, and have remained so over periods up to three years. The period during which treatment by bismuth alone has been observed in most cases is as yet too short to enable us to state definitely that its results are permanent, and, in addition, there is up to now no general agreement as to what is the requisite amount of the drug to administer so as to ensure permanent negative serological tests and a complete cure.

The therapeutic power of bismuth compounds in comparison with that of the salvarsin group of drugs when each is used alone may be recapitulated as follows:

Bismuth does not so rapidly kill spirochetes in the early contagious stages of syphilis, and therefore does not so rapidly reduce contagion.

Bismuth has almost as rapid an effect as the salvarsin derivatives in clearing up the surface manifestations of syphilis in all stages of the disease.

Bismuth is less likely to cause intolerance and side-effects, especially in debilitated patients, and in general its intramuscular administration is followed by less constitutional upset than is the intravenous or intramuscular administration of the arsenicals.

Bismuth does not so certainly control the Wassermann and flocculation tests as do the arsenicals, although there are cases in which it very favorably influences these serological tests when other drugs have failed to do so.

When we compare the effect of bismuth with that of mercury when each is administered alone, the evidence is undoubtedly strong that of the two bismuth is the more potent drug in syphilis both in its effect on the surface lesions and on the serological tests. Bismuth kills the surface spirochetes and heals up the skin manifestations more rapidly than mercury; there is less pain after its intramuscular administration and it is followed by fewer signs of intolerance; it has a more rapid action than mercury on the blood Wassermann and other tests. In

therapeutic efficiency bismuth seems to approximate much more closely to the arsenobenzols than mercury when these drugs are exhibited alone in any given case of syphilis.

#### *The Use of Bismuth in Combination with other Drugs*

For a long time we have held the opinion that in the treatment of syphilis in all its stages, with the possible exception of cases of pregnancy, it is advisable to administer conjointly both arsenic and mercury in preference to either alone. Since the introduction of bismuth we have come to the same conclusion with regard to it, and we are firmly of opinion that with few exceptions the joint administration of arsenic and bismuth is preferable to that of either alone. The joint administration of these drugs is comparatively safe, it is well tolerated, and the results in the large majority of cases so treated are highly satisfactory. It is impossible to deny that the therapeutic results following the joint administration of arsenic and mercury were very good, and especially so if the mercurial drug was administered intramuscularly, so as to ensure certainty and accuracy of dosage. The joint administration of arsenic and bismuth has, in our experience, given slightly better results. There is, however, the great advantage from this latter combination that there is practically no discomfort or pain following the intramuscular injections of bismuth and, if due precautions are taken as to the teeth and as to the technique of administration, no intolerance is set up such as occasionally follows the joint arsenic and mercurial treatment. The fact that bismuth is being administered to any given case is not, in our opinion, a reason for lessening the amount of the arsenical drug, and even with the dual therapy there are still some cases of resistant syphilis which we slow to react favorably, although seen and treated intensively at a fairly early period of the infection.

If at any time a rest from either drug is considered advisable, iodides may be substituted, and can be given alike with either arsenic or bismuth.

In several cases we have tried the effect of giving bismuth in combination with mercury, the latter in such cases being given intravenously as mercury oxide. The two drugs do not, in our opinion, go well together. These two drugs are not dissimilar in their action, and they give rise to toxic effects on the same structures of the body. Their joint administration is apt to lead to depression, loss of weight, neuritic symptoms, and to stomatitis. In any cases which showed a very resistant positive Wassermann test we have not been able to influence it permanently by this combination any more effectually than by other and safer methods of treatment.

#### *Tolerance of the Patient to the Various Drugs when*

##### *Administered over Long-continued Periods*

With the arsenobenzols great care must be taken to avoid too intensive treatment over long periods, because of the risk of cumulative effect and the possible onset of such conditions as pruritus and exfoliating dermatitis. In long-continued mercurial treatment stomatitis, diarrhoea, and albuminuria are not infrequent, and the discomfort following on intramuscular therapy by mercury is against its long-continued use. Bismuth can be given over long periods without pain and with comparative safety.

In bismuth therapy there is no complication of any importance which cannot be easily counteracted or controlled. So far as safety of administration is concerned, we are of opinion that either alone, or in combination with an arsenical or iodide drug, bismuth can be given over long periods with comparative comfort and safety.

#### *Combination of Drugs and their Influence in Preventing Neurosyphilis*

There is considerable evidence to show a general consensus of opinion, that the joint administration of arsenic and mercury is superior to that of an arsenical drug alone especially in the prevention of the later manifestations of syphilis. So far as the combination of arsenic and bismuth is concerned, it is our opinion that the joint administration of these drugs is superior in its action to that of either alone, especially in early cases of syphilis. It is too early as yet to make a dogmatic statement on the



subject but we are inclined to the opinion that the two drugs if given together in every case of early syphilis will tend to prevent the later manifestations of syphilis just as does the joint administration of arsenic and mercury.

As regards the comparative therapeutic efficiency of the two combinations we are not as yet in a position to judge. In our own cases the end results are almost similar if viewed from the standpoint of the disappearance of the symptoms and signs of disease. If judged from the standpoint of their effect on the Wassermann reaction there is not a very little difference in the results. Where they differ most is in the fact that the combination of arsenic and bismuth is better tolerated by the individual patient, is followed by fewer signs of intolerance, and gives rise to less pain and discomfort.

This latter effect alone is of very considerable importance in hospital work, in that patients are very likely to continue under treatment for long periods. There have been very few published statistics of the comparative effect of the two combinations, and those of Smechula of Hanover published in the *Klinische Wochenschrift* of July 30th, 1925, are interesting. He selected two series of 100 cases, as his criterion for comparison he compared the efficiency of arsenic and mercury salivate with that of neosalvarsan and bismuth. His findings were that neosalvarsan and bismuth was superior in their action in secondary syphilis and all more so in their rapidity in changing a positive to a negative Wassermann test in latent cases. He was of opinion, however, that the administration of neosalvarsan and bismuth was followed by fewer relapses than that of neosalvarsan and mercury.

Our observations on the comparison of cases so treated do not agree with those of Smechula. We are of opinion that arsenic and bismuth jointly administered influence secondary lesions rather more rapidly than arsenic and mercury. Arsenic and bismuth in our experience has also produced a negative Wassermann test in latent syphilis more often than arsenic and mercury. We agree with him that there are very few relapses met with if either arsenic and bismuth or arsenic and mercury are used but this is more dependent on the long continuity of the treatment than on the combination used. The combination of arsenic and bismuth is, we think, much more efficacious in many cases of neurosyphilis than is that of arsenic and mercury.

In their enthusiasm over bismuth several workers have discarded not only mercury but also the arsenicals in the treatment of syphilis. This is to be deprecated, and especially so in early and congenital syphilis. Arsenical medication is undoubtedly our most efficient method of dealing with syphilis and rendering it rapidly non-contagious, and it cannot be removed from its place of pride by bismuth. Mercury also has still a place in the medication but must give way to bismuth for routine use since it is less well tolerated in that its administration causes rather more discomfort, it is moreover slower in its action in killing spirochaetes in healing the surface lesions and in its effect on the Wassermann test.

The arguments on which the superiority of bismuth to salvarsan rest are based solely on isolated cases of which most of us have had experience, and of which I have quoted three. There is no doubt that bismuth is an extremely valuable drug and that its discovery as an efficient therapeutic agent in syphilis must be regarded as one of the most important developments of therapy during the last few years. We must not, however, allow our enthusiasm over its effects in isolated cases to outrun our discretion and make us lose sight of its deficiencies and of its inferiority to the salvarsan derivatives. What can be said of bismuth is that it is a very valuable addition to the treatment of syphilis, and especially if it is used in combination with the arsenobenzols. It is particularly effective and safe in most of the cases which show a tolerance to the arsenicals and to mercury. In cases which are proving resistant to arsenic or mercury it not infrequently gives brilliant results in causing the disappearance of the specific lesions. In some cases of neurosyphilis and congenital syphilis it apparently gives better results in clearing up the symptoms and signs of disease than either arsenic or

mercury. It is undoubtedly also a safer method of treatment in some of the debilitated subjects who suffer from syphilis such as cases of cardiovascular and visceral syphilitic disease.

It is important in our view that in every case of syphilis in its earlier stages a combination of either arsenic and bismuth or arsenic and mercury, should be given, and that this combination should be continued up to the point of tolerance until both the clinical and the serological manifestations are cleared up. In the subsequent period of treatment we are of opinion that both drugs should still be continued but the amount of the arsenical drug now then be conveniently lessened with a view to avoiding intolerance. The advent of bismuth may in the course of time enable us to learn the quantity of the joint therapy which is necessary to control and possibly cure syphilis but as yet there is far too little evidence of the actual permanence of the results obtained to justify anyone in relying too much on the drug which cures of syphilis should remain under active treatment and observation.

Bismuth in therapeutic doses even in large doses over very long periods without any very noticeable weakening the patient to the same extent as mercury does, and fact alone renders it of very considerable value in the treatment of resistant cases of infection and of old and debilitated patients.

If we were to summarize the present place of bismuth in the therapy of syphilis we could be justified in coming to the following conclusions:

1. Bismuth is an actinotissipulative agent and is more rapid in its destructive action on the *Spirochaeta pallida* than mercury; it is not so rapid as the salvarsan group of drugs in this respect.
2. Bismuth influences the surface lesions of syphilis as rapidly as the arsenobenzols, and more rapidly than mercury.
3. Bismuth with few exceptions is less active than the arsenobenzols in influencing the Wassermann test but is more active than mercury in this respect.
4. The combined administration of bismuth and arsenic is more potent than either drug alone and is free from danger if given in therapeutic doses. The same holds good of arsenic and mercury.
5. The administration of metallic bismuth in a tonic glucose solution is remarkably free from pain and side-effect, and in this respect is better tolerated than either arsenic or mercury.
6. Bismuth is a very valuable drug in cases of syphilis which are intolerant to treatment by arsenic or mercury.
7. Bismuth is a very valuable drug in the treatment of any patient who has advanced organic disease whether the latter is due to or is intercurrent with the syphilis.
8. The intramuscular injection of an insoluble compound of bismuth gives better therapeutic result with less risk of toxic effects than other methods of administering it such as the intravenous administration of colloidal bismuth or the intramuscular injection of the salts of bismuth.
9. The addition of bismuth and its salts to the other available methods of treatment does not as yet justify anyone in lessening the length of time over which every case of syphilis should be treated and kept under observation.
10. Apart from cases of intolerance to other drugs, bismuth is only an adjuvant to the treatment of syphilis and should not be used alone even in the very earliest cases of infection.

#### DISCUSSION

Dr. J. C. BRADLEY (Nottingham) considered the introduction of bismuth of importance only to that of salvarsan. He expressed opinionistic views as to the prognosis in early cases of syphilis and thought that nearly all could be cured by a properly conducted dual therapy. He had found bismuth particularly useful in patients who were intolerant of arsenic and only in interstitial keratitis was mercury more valuable than bismuth. It was not justifiable to give bismuth alone in early cases of syphilis, but it should be combined with arsenic. The dose he gave

of bismuth was 0.2 gram daily. He asked whether the blue line on the gums, a common concomitant of bismuth therapy, contraindicated the continuance of the treatment.

Dr MARY MACNICOL (Edinburgh) said that she had been using bismuth now for three years as an adjunct of arsenic, and thought it more valuable than mercury. In those cases which, although reacting well clinically to arsenical treatment, persisted in giving a positive Wassermann reaction, bismuth had often succeeded in reducing the reaction. She quoted two cases in illustration of this, and referred to its utility in old tertiary cases of gummatous. She had found the drug very useful in cases of intolerance to arsenic, and had not met any case intolerant to bismuth, and only one in which there was stomatitis. In congenital cases she had also been able to obtain negative Wassermann reactions. Intellectually, however, she had found arsenic and mercury better than arsenic and bismuth in very bad congenital syphilis, but bismuth had the great advantage of being painless. She also found it convenient to give arsenic by the mouth during a course of bismuth, it still acted as a tonic and obviated the continual hypodermic injection which many women disliked.

Dr E. T. BURKE (Manchester) placed bismuth just second to arsenobenzol as an antisyphilitic, but much higher than mercury, he said it must be realized that bismuth was a reinforcement and not a substitute for arsenobenzol. He was in favour of bismuth being given alternately with arsenobenzol—not concurrently. He thought that the experiments of Lelhoff-Wyld to show that the therapeutic action of arsenobenzol was enhanced by the presence of another metal in the blood were very unconvincing. Personally he believed that when two highly treponemocidal drugs were used simultaneously either the tissues of the patient would refuse to react properly or the treponema would become resistant. He thought that the practice of concurrent administration was the cause of many persistent positive Wassermann reactions. He was now able to convert many of these into negative reactions by means of potassium iodide followed by metallic bismuth. Arsenic and bismuth might have an actual neutralizing effect on one another. Cases treated with histoval—a bismuth and arsenic combination—gave extremely disappointing serological results. If, as Kolle held, bismuth merely kept syphilis latent, the concurrent administration of the two elements might be very harmful. Bismuth was particularly useful in syphilitic lesions of the circulatory mechanism, in cases of coronary and aortic disease it was safest to rely on it, possibly to the exclusion of arsenobenzol. In the newly born syphilitic child carrying an enormous burden of treponemata he also began always with bismuth. One of its greatest uses was in interstitial keratitis, he only administered arsenic after the eye condition had cleared up. He thought that the best method of administering the drug was in the metallic form suspended in glucose and injected intramuscularly, the intravenous injection of any bismuth salt was dangerous.

Dr W. R. SPOONER (Glasgow) considered that metallic bismuth in isotonic glucose solution was the most satisfactory preparation. Up to the present the quantity of a standard bismuth preparation necessary to effect and maintain a clinical and serological cure had not been established.

Colonel L. W. HARRISON (London) drew attention to the work of Collard and Lucas, who formed a depot of bismuth in a rabbit's ear and then attempted to inoculate it with syphilis. So long as the depot was there no chancre was produced, but as soon as the depot was excised the chancre appeared showing that the bismuth had only kept the syphilis latent. As regards the effect on the Wassermann reaction he thought there was but little difference between the effect of bismuth in combination with arsenic or mercury in combination with arsenic. He had found bismuth particularly useful in myocarditis, sometimes in conjunction with very small doses of sulfarsenol. The toxic effects of bismuth had not proved very severe, but he had

had occasional complaints of rheumatic aches and pains and also of colitis, and he had known dermatitis to be produced.

Dr STORFORD TAYLOR (Liverpool) described a severe case of toxic reaction due to bismuth. The patient had suffered from abdominal pain, sickness, diarrhoea, a mercurial rash, and gingivitis. He also recommended sulfarsenol in very small doses for eridmic cases.

Mr LEE, in reply, agreed that bismuth alone should not be used in early cases. He did not regard the appearance of the blue line on the gums as a contraindication to the continuance of bismuth, but merely as an indication for dental attention. The principal contraindication to further treatment was loss of weight. Bismuth was exceedingly well tolerated as a rule, unlike mercury it never produced nodules. It was painless, and very useful in cases of patient women before starting arsenical treatment. It was also particularly useful in cases which were clinically syphilis but serologically negative. He considered that theunction and oral administration of bismuth were far inferior to injection. He did not agree that the joint and simultaneous administration of arsenic and bismuth and of arsenic and mercury reduced the bodily resistance of patients, though theoretically it might possibly be expected to do so. Myocardial cases, in his opinion, were the only ones in which bismuth should be used alone, in other cardio-vascular patients it should be combined with sulfarsenol. He found it difficult to explain the cases of dermatitis. Some of the cases of gross intolerance he thought might be due to a slight embolism, a small quantity of the metal finding its way into a vein during injection.

### THE EMPLOYMENT OF "POLAR-BODY" DEVELOPING STRAINS OF THE GONOCOCCUS IN TREAT- MENT OF GONOCOCCAL INFECTION \*

BY

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For the last two years, at the Royal Herbert Hospital, Woolwich, we have been endeavouring to elaborate a line of treatment of gonorrhoea in the male by intensive immunizing methods. Preliminary reports of this work have already appeared in the *British Journal of Venereal Diseases* for January, 1927, and in the *R.I.M.C. Journal* for 1st March. For the present report we cannot claim any degree of finality, our researches are continuing and our methods constantly changing.

The treatment of gonorrhoea at Woolwich aims at—  
(1) Raising the immunity of the mucosa through which the organism enters the body. (2) Raising the resistance of the particular glands and organs susceptible to attack by the gonococcus. (3) Raising the antibacterial properties of the blood and tissue fluids in order to minimize the risk of systemic spread of the infection. (4) Bringing the patient under certain precise biochemical and colloid-chemical conditions which have been found to give optimum results as regards defence against the invading organism, and placing the infecting organism under conditions in which it is least able to withstand the defence mechanism of the body. (5) Providing a means of determining whether any local foci of the disease remain or whether the patient is completely freed from the infecting organism—in short, to provide a "test of cure."

These objectives have been sought in the following ways—  
(1) Thorough drainage of the whole urethra by mild irrigating fluids. (2) The maintenance of the patient's urine reaction at a pH of 7.2 to 7.4. (3) The intramucosal instillation of a product of gonococcus metabolism which may be referred to as "exotoxin." (4) The proctural

\* A paper read in opening a discussion on this subject in the Section of Venereal Diseases at the Annual Meeting of the British Medical Association at Edinburgh.

administration of this "exotoxin" (5) The instillation into the urethra of another gonococcus product which we call "endotoxin"

#### Drainage

The procedure advocated is the posterior irrigant method. The most efficient drainage is obtained by educating patients to irrigate in this way. The irrigating fluid is potassium permanganate (1 in 20 000 strength) which is the least irritating to the mucous membrane. No bactericidal or astringent action is desired. All that is expected from irrigation of the urethra is drainage and cleanliness and as a consequence, probably a more intimate and prolonged contact of the intraurethral vaccine preparation with the affected mucous membrane. The results obtained without irrigating methods were poor and we were compelled to fall back on routine irrigations.

It is not easy to carry out perfect irrigating method in the acute stages of the disease but the time and trouble spent in educating patients to irrigate efficiently is well repaid by result and as our vaccine method becomes more efficient we find that it is only when patients cannot be induced to irrigate efficiently that results are disappointing.

#### The Hydrogen Ion Concentration of the Urine

The body's optimum response to the attack of the gonococcus occurs when the hydrogen ion concentration of the urine is within the limits of pH 7.2 to 7.4. Within these limits phagocytosis is at its maximum and the gonococcus is almost invariably placed to withstand the attack of the body cells and fluid. Below this reaction on the acid side conditions favour the gonococcus phagocytosis is at a minimum and the invading organism surrounded by a tough capsule of sclero-protein, is in its most resistant form.

With an alkaline reaction there is a tendency to auto-lolysis of the gonococcus with liberation of toxic "endotoxin" which has an irritating and provocative effect on the body. In practice we endeavour to bring the patient into this optimum state by administration of comparatively enormous doses of disodium monohydrogen phosphate by the mouth. Our dosage amounts to 2-5 grains four times a day. Even in such large doses it is extremely difficult to maintain the desired reaction, especially at the stage of the disease when the diet tends to be more generous. The reaction is determined roughly by daily urine titrations; thus to 1 c.c. of urine add a drop of phenol red solution—a pink colour indicates a pH of 7.2 to 7.4 approximately.

Other alkalies have been tried but for one reason or another have been abandoned. For example sodium bicarbonate raises the CO<sub>2</sub> content in the tissues and CO<sub>2</sub> is a gonococcus growth stimulant. We thought there might be an appreciable danger of overalkalinization with lysis of the gonococcus in the urethra and consequent elaboration of toxic endotoxin but we believe not on clinical grounds at least that the danger is exaggerated and that a very alkaline reaction which is almost invariably temporary is of little consequence.

#### Gonococcal Exotoxin

By special cultural methods it was found by Major Diamond that when gonococci are grown on a medium rich in animal nucleo-protein approximately one third of the isolated strains develop polar bodies (Bordet's bodies), which can be demonstrated histologically by staining methods identical with those employed in the demonstration of the polar body in *Bacillus diphtheriae*. The polar bodies are composed of alpha-nucleo-protein and beta-nucleo-histone. They are only loosely attached to the bodies of the gonococci and can be separated easily from the cells by washing off the culture with 2 per cent saline solution and fractionally centrifuging the emulsion or by means of gravity the polar bodies are then found in the supernatant fluid. Since the 2 per cent saline solution dissolves the beta-nucleo-histone, the solid elements in the supernatant fluid are the alpha-nucleo-protein fraction of the polar bodies. Clinical experiments have shown that both the alpha-nucleo-protein and beta-nucleo-histone are antigenic (the beta-nucleo-histone more so than the alpha-nucleo-protein) and relatively non-toxic.

Human serum we have found to be the best vehicle for the separation of the polar bodies from the gonococci. By this means the polar bodies are retained intact and clinically the best results have been obtained by using the serum washes. However, serum has at least two serious disadvantages: an adequate supply is difficult to maintain and the question of keeping the emulsion suitable for universal use has not yet been satisfactorily accomplished although experiments are in progress to test the value of the addition of certain salts both as regards maintaining sterility and also the effect of salts on the antigenicity of the emulsion. Substitutes for serum such as Ringer's solution have been found useless for the purpose.

The employment of 2 per cent saline solution is not altogether a perfect method for the separation of the polar bodies. The beta-nucleo-histone is in solution and the alpha-nucleo-protein is in suspension but on separating the supernatant fluid from the bodies of the gonococci the fraction of the alpha-nucleo-protein is lost and it is impossible to close to the bodies of the gonococci the larger portion of them be included in the product. It has been found clinically that there is a definite provocative effect if gonococci are injected so that the use of 2 per cent saline by itself results in much less of what we call for the true gonococcal antigen—namely the polar bodies or their product.

Recently it has been found that if the pH of the 2 per cent saline during the process of separation is kept at 7.2 the alpha-nucleo-protein fraction is kept in suspension much longer and at the end of twenty-four hours the deposit of this fraction on the bodies of the gonococci is very appreciably diminished the supernatant fluid in consequence being richer in antigenic substances. This observation regarding reaction applies to the serum washes of polar bodies—they remain very appreciably longer in suspension.

For intra-urethral use the 2 per cent saline or serum washes are standardized so that the nucleo-protein of 500 000 million organisms is contained in 15 c.c.m. Larger doses than this can be given without any sign of provocation and with even better result but a polar body producing growths on nucleic acid media are never luxuriant; there is a limit to the number of culture tubes which can be dealt with in the conditions under which we work. To this 15 c.c.m. of 2 per cent saline—representing say the product of 500 000 million gonococci—is added 5 per cent sodium taurocholate and the reaction brought to a pH of 7.2.

Most samples of sodium taurocholate are acid and cause great irritation; the only preparation of sodium taurocholate which we have found to comply with our requirements is that produced by Fairbairn. To this mixture of taurocholate and polar body emulsion is added umbilical cord mucin 1 per cent up to 100 c.c.m. The dose is 20 c.c.m. intra-urethrally representing the product of 100 000 million gonococci. Formerly we had hoped that commercial mucin might be used as a substitute for the umbilical cord mucin but unfortunately all the subsequent samples we obtained were adulterated and did not represent true mucin and the results were irritative.

For intradermal subcutaneous and intramuscular administration we use the serum or 2 per cent saline emulsion of polar bodies or their product but standardized to represent 1 000 million per c.c.m.

#### In the Preparation of Exotoxin

For the preparation of endotoxin we have used strains which do not throw out the polar bodies employed in the exotoxin preparation. These strains comprise roughly 65 per cent of those isolated. They are grown for ten days on a special alkaline medium or on yeast. The culture is washed off and after being repeatedly frozen and thawed yields a product of albumens in a blue opalescent solution. It is made up to a strength representing the product of 250 million gonococci in 1 c.c.m. the diluent being chemically prepared colloidal silver. The effect of an intra-urethral injection of this preparation in a quiescent gonococcal carrier is to produce a temporary activity with the appearance of gonococci in the urethral discharge.

This product, which we believe to contain the true toxic elements of the gonococcus, is the original gonococcus product which has been employed for over four years as a "test of cure" both at Woolwich and at other military hospitals, to Major A. T. Frost, R.A.M.C., is due the credit of conceiving the possibilities of an efficient "test of cure," and of encouraging by his advice the manufacture of this product.

The provocative effect may be observed as early as twelve hours, or may be delayed several days, sometimes a week, and to cover all cases we keep the patient under observation for seven days after an endotoxin instillation before we pronounce him free from active signs. We have comparatively recently put up this "endotoxin" preparation in weaker strength—for example, 1 c.c.m., to represent 50 million of the organism—and employed it as an intra-urethral instillation much earlier in the course of the disease as a mild provocative in certain cases. This introduction of the provocative products of the gonococcus at an early stage was at the suggestion of Colonel Harrison, the idea being mildly to provoke infected urethral foci, which appeared on clinical grounds to be developing into indolent and probably latent foci.

To summarize our methods:

1. We bring the patient's urine and tissues to what we conceive to be the optimum pH reaction.

2. We attempt local immunization by the intra-urethral instillation of exotoxin (gonococcal) in mucin.

3. An effort is made to raise the general immunity response by the parenteral administration of gonococcal exotoxin vaccine.

4. Endotoxin is injected into the urethra as a "test of cure," and in certain cases to stimulate a reaction in the course of treatment.

#### *The Clinical Application*

As regards general treatment, all our patients in the army are treated in hospital, and for the first fourteen days are confined to bed on a low diet. At the end of that period they are allowed "up" and given fish diet, and graduated exercises are permitted, these latter are not special exercises, but comprise the ordinary hospital fatigues, which vary from quite light duties to comparatively heavy work.

Urethral smears are taken and examined microscopically daily, and a rough daily estimation of urine pH value is made. Immediately the case is diagnosed routine local treatment is commenced, this consists of an irrigation, followed by an intra-urethral exotoxin instillation, which the patient retains in the bladder and urethra for as long as possible—three hours or more. At the same time he receives an intradermal injection of exotoxin vaccine into the skin of the shaft of the penis, and an intramuscular injection of the same vaccine at any convenient site.

As regards the intra-urethral instillation, this is repeated as soon as the urine pH becomes optimum, and subsequently whenever urethral smears show the presence of gonococci throughout the course of the disease. This instillation causes no irritation or provocative effect, and in practice it can be repeated whenever an antigenic or ameliorative action is desired. As regards the intradermal injection, this route and site are chosen with the object of stimulating the local reticulo-endothelial system, in which immune bodies are manufactured. The administration at this site causes a slight local reaction and a definite temporary tenderness of the lymph glands of the groin. The intramuscular injection causes only the slightest local reaction.

The two initial doses by the intradermal and intramuscular routes are 0.2 c.c.m. = 200 million respectively. In the average case they are repeated at ten-day intervals, the intradermal dose remaining the same, but the intramuscular doses are gradually increased. Every case is treated on its own merits as regards intervals and dosage, many cases can be given larger doses at shorter intervals.

When, on clinical grounds, the course of events justifies the consideration of cure, the patient receives an intra-urethral injection of endotoxin, the dose being 1 c.c.m. = 250 million. This is to provoke into activity any latent active foci. If following this provocative injection the case

relapses, treatment with exotoxin intramuscularly is repeated. Should there be no recrudescence after seven days' observation the patient leaves the hospital, there have been very few subsequent relapses.

For a long time we had observed that although there might be an immediate recrudescence of the disease following an endotoxin injection as a "test of cure," the subsequent course of events was good. When this "flare up" of the disease had settled down the case went on to recovery, and subsequent endotoxin injections failed to provoke a relapse. This induced us to try the effect of endotoxin locally in its original strength at an earlier stage of the disease, but the results were not good, there was severe provocation in the average case, and these followed what appeared to be a prolonged "negative phase."

Lately we have reduced the strength of endotoxin for special use in treatment to 1 c.c.m. = 50 million, and to distinguish it from the original product used as the "test of cure" we have called it "treatment endotoxin." Thus, by reducing the dose, we can employ it much earlier in the course of the disease as a mild provocative. For example, quite a fair proportion of cases are apparently cured clinically after one or two initial instillations of exotoxin. These cases often progress until the third week without any active signs, when they relapse with a "gleet" showing gonococci occasionally. They may go on in this state indefinitely, the origin of the trouble being a few local submucous foci which have become indolent and resistant. The instillation of the "treatment endotoxin" at an earlier stage would appear to be of use as a mild provocative of such indolent foci, and this specific stimulation gives the necessary flip to complete their cure.

Although we believe that endotoxin contrasts the two toxic derivatives of gonococcal metabolism, there is no doubt that clinical experiences point to the fact that it also possesses antigenic properties when administered in correct dosage and at the right time in the course of the disease. Major A. T. Frost, R.A.M.C., observed this clinical fact in the early days when Major Leonard first produced endotoxin, but we have been inclined to forget it in our enthusiasm to produce a non-toxic exotoxin.

#### *Deductions and Results of Treatment*

Except in a general way we do not venture, at this stage, to claim that in employing these methods for the treatment of gonorrhoea we have elaborated a perfect line of treatment, or even that we have very appreciably decreased the duration of the disease. We feel that in attacking gonorrhoea by these special polar-body producing vaccines we have accidentally tackled the most difficult disease in which to apply these methods. The gonococcus is notoriously a toxic organism, and the anatomy of gonorrhoea is exceptionally difficult.

Another unfortunate fact was the elaboration of endotoxin—our "test of cure"—before the production of the non-toxic exotoxin. By applying endotoxin as our "test of cure" our standard of cure is exceedingly high—in the opinion of many, too high. Certainly patients are kept in hospital when to all intents and purposes they are clinically cured, for they are incapable of being provoked to relapse by any other method than by endotoxin. If we had not employed endotoxin we might have produced some excellent statistics as to days under treatment. However, we are conscious that there has been a general all round improvement clinically. Complications are comparatively rare, and the relapse incidence is lower than it has ever been. The most striking feature is the great diminution of the urethral discharge with corresponding decrease in the number of gonococci in the films after an intra-urethral instillation of exotoxin. In an early acute case, with all essentials at an optimum, such as the pH reaction and efficient irrigation, the sequel of events is dramatic. Naturally such happy results are not frequent, but they occur sufficiently often to convince even the sceptic that their occurrence is no mere coincidence.

All of us who have followed this research from the beginning feel that we have not yet perfected our methods of application and that we are not getting the optimum of results which we are so confident are to be obtained. As regards the exotoxic vaccine used parenterally, its anti-

gene value is high it is non-toxic and has given very good results in many severe cases of local and metastatic complications.

#### Polar Body Production in Organisms other than the Gonococcus

Although perhaps outside the question under review the following general remarks may be of interest by way of confirmation.

Polar body which we have been able to obtain in 33 per cent of all gonococcus strains—provided the necessary elements for their formation are present in the culture medium and the physical conditions required for their development are maintained—have also been found to develop in a certain percentage of strains of every organism investigated up to the present. For example, this development has been observed in strains of *B. tuberculosis* (bovine), typhlococcus streptococci pneumococci, *Neisseria bacillus B. coli, B. catarrhalis, B. crassus, B. influenzae* (Pfeiffer) *B. septus* Hoffmann's bacillus *B. zoster* etc.

In the case of the above with the solitary exception of *B. coli* a very large percentage of the strains show this development. In the case of the true *B. diphteriae* this organism as is well known, develops polar bodies on Teichner's medium and when subcultured upon nucleic protein media shows a remarkable increased production of polar bodies.

Of interest is the culture of true Kleb-Loeffler bacilli upon Dorset egg medium the primary culture invariably shows a certain number of elements containing polar bodies apparently due to the carrying over to the medium of nucleic proteins derived from the leucocytes and cells of the membrane. In the second third and fourth subculture, however, no polar bodies are developed. However if such a non-polar body culture of Kleb-Loeffler bacilli from the third or fourth Dorset medium subculture be transferred to a nucleic-protein media an immediate and enormous development of polar bodies can be observed as early as the seventh to eighth hour of culture.

As in the case of the gonococcus, if vaccines have been cultured upon media providing for detoxication during the period of subculture and if means are taken during the process of manufacture of the vaccine to prevent further development of toxin it is noteworthy that there is a complete absence of negative phase following the administration of such vaccine as compared with the marked negative phase resulting from vaccines prepared from non-polar body producing strains. For example polar body strains of *M. catarrhalis* sterilized by means of 0.5 per cent phenol cause no immediate positive phase and amelioration of symptoms in *M. catarrhalis* infections. On the other hand if such vaccines are heated at 60°C., though a favourable antigenic action is ultimately obtained, there is a definite negative phase apparently due to the liberation of some toxin by the action of heat. The same effects are seen following the employment of gonococcus vaccines both locally and parenterally.

In tuberculosis *B. tuberculosis* will probably be of value when cultured and detoxicated with the development of polar bodies. A bovine strain of tubercle bacilli with abundant polar body production brought about marked clinical improvement in a case of pulmonary hemorrhage, and with no evidence of negative phase.

Observation of the serum ferments in the mononuclear digestion of a polymorph leucocyte shows the following invariable time reactions. The ectoplasm of the cell is first digested leaving the nuclear lobes free in the ectoplasm of the mononuclear, the nuclear reticulum disappears and the lobes are stained a uniform blue. Subsequently the nuclear lobes gradually become smaller and smaller until the protoplasm is dissolved by the escape of the reticulo-endothelial cell vacuole.

Preceding similar is the course of events in the case of the polymorphonuclear leucocyte laden with polar body-containing gonococci here the ectoplasm of the polymorph cell and that of the gonococcus first disappears leaving the nuclear lobes and polar body granules free in the mononuclear ectoplasm. Subsequently these disappear at a much later period.

It is possible that in the above phenomena we have an explanation of the positive and negative phases resulting from vaccine administration—the negative phase being due to the liberation of endotoxin from the early digestion of the ectoplasm of the organism whereas the positive phase may occur later as a result of the liberation of the antigenic complexes present in the polar body fraction of the organism.

If this explanation is a true one the negative phase as a result of vaccine administration does not appear to be necessary to the development of the ameliorative positive phase—this being confirmed by the fact that it is possible with properly detoxicated polar body producing strains of all organisms to bring about immediate positive phases with clinical improvement.

This has been our experience after eighteen months' employment of this toxin-free gonococcus vaccine, provided every precaution is taken against the elaboration of endotoxin during manufacture. In a certain number of cases when, for experimental reasons various modifications in the technique of culture and preparation have resulted in the evolution of a negative phase this has invariably been found to be the result of the presence of endotoxin caused by faulty methods of manufacture.

#### DISCUSSION

Colonel HARRISON said he had always thought that these variations in potency were due to differences in the strains of gonococci employed to make the vaccine and he had also hoped that perhaps by means of special cultural methods the antigenic properties of the vaccine might be enhanced. He had had some of the new vaccine satisfactorily prepared and tested at St. Thomas's Hospital. So far as could be ascertained from investigation of only a few cases by Dr. Oliver utilizing the complement fixation test they had established that the polar body vaccine was of definite value in raising the production of antigen. Clinically they had had one brilliant result—an absolute cure in three days after one injection, notwithstanding the most rigorous efforts to excite a relapse. Other cases had cleared up more quickly than usual but had then relapsed. He asked, Why should the vaccine-producing body be called endotoxin when it was not toxic?

The PRESIDENT believed that the authors had opened up a subject which might eventually yield important results in the treatment of gonococcal infections and also produce an explanation of the discrepancies known to all who had used vaccines for gonorrhoea and other infections. There was a large field for a reliable vaccine therapy in the treatment of female gonorrhoea.

Major LANGE in reply said that the term "endotoxin" was scientifically correct as the substance was the product of the disintegration of the gonococcus. The term exotoxin was more debatable as it was doubtful whether the substance was true toxin but it was difficult to find a more appropriate and descriptive name.

## WORLD EPIDEMIC AND THEIR RELATIONSHIP AS CAUSE AND EFFECT TO SOCIAL CONDITIONS

BY

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ONE who speaks with authority has told us that—

There are nine hundred ways of contracting Typhoid fever and a single one of them is right.

Much of some might be said with regard to his art, only the number of methods would require to be indefinitely extended since almost every historian has his own views of the manner in which it should be written and there is scarcely a philosopher from Aristotle onwards, who has not tried to show the professed historian how his work should be done. The reader of history therefore comes under a spell of infinite variety. In one volume he will

A paper communicated to the Section of the History of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, July 1917.



find the doings and sayings of the kings minutely recorded, while his next author will write as if the various statutes were the only things worth remembrance. After that he may meet the historian whose pen will service waste a drop of ink on these things, but acts on Johnson's words

"How small of all that human hearts endure,  
That part which law or kings can cause or cure"

History, of course, has only too often been perverted to the purpose of the pure partisan or propagandist but with all this variety of point of view it is at least curious that the influence of disease on the history of a nation or people has been almost entirely overlooked. No one can deny that ill health very greatly affects the individual and may make or mar his life work, but the biographer also for the most part minimizes or misses its significance.

Not can it be said that the medical man turned biographer has been much more successful. The reason for that perhaps lies in the fact that he is not so much writing a biography as proving a thesis. In one such book, if I remember rightly, the author showed to his own satisfaction that all his subjects suffered from eyestrain or had errors of astigmatism. In another the remarkable men and women whose lives were sketched were proved to have been insane. I need only say a word in passing as to the efforts of the psycho-analysts in this direction, they have at least succeeded in adding a new turn to death.

It is true, indeed, that almost every history records such dramatic events as when

"The Angel of Death spread his wings to the blast  
And breathed in the face of the foe as he passed",

so that a siege was suddenly raised or a hostile army rapidly destroyed. But it is no less true that the remote and less obvious consequences of terrible and world-wide epidemics have failed to gain recognition. Thus Hume only devotes one short paragraph of sixteen lines to the Black Death, and seems to have been prompted to mention it merely because it interrupted the festivities held to celebrate Edward's victories on the Continent, and because it prolonged the truce entered into between him and the King of France. It is still more strange to find Green, whose ideas as to the proper subject matter of history were so different from those of Hume, failing to notice the awful aftermath of that pestilence. Fortunately the term of this neglect has now passed, and we stand in the dawn of a new day, of the brightness of which there is an excellent augury in the book of W. H. S. Jones, *Malaria and Greek History*. The reason for this welcome change is to be found in the interest recently awakened in the medical mind as to the story of medicine in bygone ages. To-day for the first time the British Medical Association has assigned a special Section at the Annual Meeting to the history of medicine, and this is in itself a testimony to the widespread interest in the subject and an acknowledgement of its importance.

The theme allotted to me is manifestly too wide to be developed adequately in the time at my disposal, even if I had the competent knowledge to do so. As it is denied to me to enter the promised land, I esteem it a privilege to have even a glimpse of it from my lowly Pisgah, and I shall be happy if I may rightly discern the lines along which others may be able to enter into possession.

Let me, then, direct attention to three dates: 430 B.C., A.D. 542, and A.D. 1348—periods when Death held such high carnival throughout the world that the survivors thought it a miracle to find themselves alive. Now if the mind be cast back to the century which followed each of these dates, it will be found to be marked by events of world-wide importance. In 430 B.C. Greece was at the height of its power, but one hundred years later it had fallen before barbarous Macedon, and Alexander had pushed his conquests from Egypt to India. In A.D. 542 Justinian at Constantinople and Chosroes in Persia were each at the head of a long established and strong empire, and yet within a century the Arabs had set out on a career of conquest that wiped the empire of Persia off the map, and deprived the Byzantine ruler of half his dominions. Then in 1353, ten years after the Black Death, a fresh race of barbarians, the Turks, first set foot in

Europe, at Gallipoli, that shrine of dolorous memory to all of British blood, and passed from victory to victory till in 1453 the Byzantine empire was numbered with the things of the past.

It may be said that these are merely curious coincidences and nothing more, that the immediately preceding circumstances brought these events about, and that the direct effects of the pestilence had worn themselves out long before. It may be so, but the matter seems well worth more careful investigation. However widespread the pestilence there must have been some inequalities in its distribution, and in general its destructive powers must have been greater in the closely packed towns than in the more widely spread population of the country. We certainly know that the popular method of trying to avoid contagion was for the citizens to fly to rural districts. Other things being equal, then, the dreadful effects of plague must have been much heavier in civilized communities than among barbarians, for the city is the symbol of civilization. For these and many other reasons I believe that there is real ground for thinking that it was pestilence that gave the Macedonian, the Arab, and the Turk the first push on the road to power and empire.

This idea is greatly strengthened if we consider in a little more detail what happened after the Black Death. We know that the cities suffered so much from the loss of citizens that various means were adopted to attract fresh inhabitants. These efforts were successful through the rapid influx of people from the country. As a result and because of the lessened power of the nobles owing to the drain of their rural retainers, the cities rose in power and influence. Thus we find that by the treaty of Stralsund in 1371 the Hansa League of towns entered upon its period of greatest prosperity.

The weakened power of the nobles led to the downfall of the feudal system, which was the ministry of the land and barons, its end was hastened by the protection given by the kings to the towns. By the gradual absorption of fiefs the power of the king waxed stronger and stronger till by the end of the fifteenth century all the land became vested in him alone, and the kings of England, France and Spain became absolute monarchs. This trend toward concentration of sovereignty had already been manifested in 1397 in the treaty of Kalmar, which brought Norway, Sweden, and Denmark under one crown.

The indiscriminate visitation by death of the estate and the hovel gave a fearful object lesson of the essential equality of man. When the corpse of the lord was dragged in the same tumbrel as that of the labourer and both were cast into the same trench, it was inevitable that the question should be asked why it should be the privilege of the one to have power and wealth, while the lot of the other should be poverty and labour. In England it found popular expression in the refrain,

"When Adam delved and Eve span,  
Who was then the gentleman?"

Besides, owing to the lack of labour, the peasant found himself to be a person of importance in the State. Land had to be tilled if the nation was to escape starvation, so that landowners competed with one another in offers of wages for labour. Parliament stepped in with ineffective laws to try and fix wages or to prevent the labourer leaving the land. And so came the insurrection of the peasants of England, which had already been preceded by a similar movement in France—the "Jacquerie." It was thus the pestilence which first enlisted the labourers against the army of capitalism.

It is to this period also that we must assign the real beginning of the middle classes. Naturally the citizens were the begetters of the prosperity of the towns, and the riches and power of the towns were reflected in the affluence and influence of the burghesses. In the order of things, the accumulation of wealth is gradual, but the great morbid brought undreamt-of riches into unaccustomed hands, which as rapidly dissipated the money in reckless prodigality. Such people thought of nothing but rich clothing, sumptuous feasts, and generally riotous living. Many social customs were changed. The cloak was cut down into a garment which only reached the knee and was still further abbreviated, and as it now closely fitted to the body it was no

longer drawn over the head but was left open in front and fastened with buttons. The indecency of the new fashion, the jacket was the theme of many homilies.

In no direction perhaps did the Black Death make greater havoc than in regard to religion. To some the mortality brought a greater sense of their own sinfulness and the need of a greater dependence on Divine providence. But even the devotions that were the consequence of this feeling were of a different character from those previously followed. Such people still kept within the line of orthodoxy, but there were many others to whom the extraordinary fatality among the priesthood brought other thoughts. To them it was a sign of God's judgment upon the wickedness of the clergy, of whom they had been a part. Thus Wacht taught that only those priests who were in a state of grace could properly administer the sacrament. So many parishes were left destitute of incumbents that the faithful became accustomed to the absence of the spiritual directors and began to fend for themselves. From this time we can trace the growth of a somewhat Presbyterian cast of thought. It is significant that the flatterers were almost all lay people and that priests or religious when present did not direct the proceeding. The efforts to make good the depleted ranks of the clergy and to fill up the vacant places in the monasteries were far from attaining success. The monks were to a great extent made up and places filled but in too many instances the hasty selection of unsuitable recruits and the inadequate training to which they were submitted gave to the lay people pastors quite unfitted to discharge their duties adequately. It is abundantly clear indeed that with the harvest of death there was a wide prevalence of the dragons' teeth which were to grow up in due time into an army of rebels against the authority of the Church of Rome. Further merely applied the torch the Black Death had already assembled the fragments.

The moral and religious effects that follow the contemplation of death on a great scale may be noted even in our own time. Four years of war on a scale unparalleled in history followed by an epidemic which perhaps can off even more than the war, may give us some faint idea of what happened during the Black Death. As this, so now the non-believers insist on the increased selfishness of mankind the blurring of religious feeling, the inordinate pursuit of pleasure, the new manner for dining the immodesty of coarseness and of garments. It is no part of my duty to inquire to what extent these complaints are justified. I merely note that the symptoms are similar and the resemblance might be greatly multiplied. It was in a time of pestilence that Max Augustin, a singer and bagpipe player of Vienna, composed his well known song. Is it a further coincidence that his tune has received a new consecration in the froth-blowers' anthem?

## Memoranda;

### MEDICAL, SURGICAL, OBSTETRICAL

#### TREATMENT OF VARICOSE VEINS BY INJECTION

THE inquiry of Major General T. M. Corker in your issue of August 6th (p. 244) leads me to send a brief report of my own experience during the last six months in the treatment of varicose veins by injection. The number of cases treated is small and too short a time has expired to allow me to judge the permanence of the results obtained. I do not wish to pronounce a final opinion at present.

Of six cases which have been completed I treated two by very large and extensive varicosities in the veins of both legs, two were early cases and two were still standing but not extensive, only one limb being affected. Sodium silicofluoride solutions in 20 and 50 per cent strengths have been used, because the same can be prepared and sterilized at home and the patients have attended at my house for treatment. The two severe cases have had many injections I have felt very little pain, and I have shown no evidence of spreading thrombosis. On the other hand relief was

felt after the first treatment. Both patients have recorded burning and stinging sensations for 10 to 15 days and they appear quite satisfied with the result.

Of the lighter cases one was cured by two treatments of seven punctures, although one patient who was extremely nervous did not like kindly to the injections and never discontinued. I should consider this as a failure. A third and much pain and after her second treatment showed signs of phlebitis extending down towards the ankle not upward. The veins are smaller, and I am hoping for a cure. The fourth had developed varicose veins in the right leg during pregnancy, the veins were getting bigger quickly, and she complained of increasing pain. Two treatments of three injections each were given with one week's interval. The pain was relieved and the veins in the leg became smaller and quite hard. About the same time I attended another lady who had developed varicose veins of the internal saphenous during pregnancy. No treatment was given, and I was interested to find a few days later delivery, that the vein had become thrombosed from the saphenous opening downward for about four inches—evidently a natural cure, by a process similar to that which follows injection.

Up to the present I have followed the instructions given by Prof. or Sierd and Dr. Morton. I have seen no sign of danger from thrombosis and no long standing of blood from escape of the injected fluid into the tissues. A fine sharp needle and a little pressure in manipulation are needed and, of course, surgical cleanliness. An expensive outfit is not required.

This method of treatment is to be recommended for the varicose veins but should not be used for patients with dilated superficial veins following phlebotomy.

S. C. S. VALLIN F. A. H. S. LAM M.B. C. B.

#### ACUTE APPENDICITIS IN AN INFANT

INCISIONS OF THE VERIFORM APPENDIX BEING FOUND IN A HERNIAL SAC HAVE BEEN REPORTED IN THE JOURNALS FROM TIME TO TIME, BUT THE UNUSUAL HISTORY AND FEATURES OF THE FOLLOWING CASE MAKE IT WORTHY OF RECORD.

In September 1922 a male infant aged 15 weeks was admitted to the Royal Manchester Children's Hospital with the following progress: vomiting and inflammation of the right side of the abdomen more marked on the right side. The child formed a riding boot shaped inflammation measuring about 3 inches in diameter. The temperature was 102.2 and the pulse 120 (approximate).

A provisional diagnosis of acute enteritis was made and treatment of the abdomen in the form of hot fomentations. The fever subsided and the inflammation disappeared. The child was discharged home in good health having gained 14 lbs in weight during convalescence.

Two years later the same child was brought back to hospital for further treatment. A discharging sinus had formed in the scrotum shortly after the hernia had been reduced and a rupture had been present on the right side since operation and was becoming increasingly prominent and troublesome. A typical right testicular swelling could be partially but not wholly reduced and a small indurated mass was present on the art or a part of the right side of the scrotum from which a clear green fluid of discharge could be expressed.

An operation for reduction of the hernia was performed by Mr. A. H. Southam on September 1, 1925. A large hernial sac containing a large amount of intestine was found and the contents were returned to the abdomen. The hernia was then closed and the scrotum was treated with the usual after-treatment. The child was discharged home in good health and the hernia was no longer a problem.

It is interesting to note that the previous treatment had originated in a hernia of the scrotum which must be unusual at such an early age and which had resulted in the formation of a pathological appendix tumor.

I am indebted to Mr. A. H. Southam under whose care the boy came for permission to place this case on record.

SAMUEL POPE, M.B. C.B.

Late Paediatric Surgeon, Officer, Paediatric Medical Officer, Children's Hospital.

ALLIANCE EDITORIAL CLIPPING

1. The First Medical Journal, June 1925  
2. The Chicago Standard, June 1925  
3. The Medical Journal, June 1925  
4. The Medical Journal, June 1925  
5. The Medical Journal, June 1925  
6. The Medical Journal, June 1925  
7. The Medical Journal, June 1925  
8. The Medical Journal, June 1925  
9. The Medical Journal, June 1925  
10. The Medical Journal, June 1925

### THE SYMPATHETIC SYSTEM IN MINERS' NYSTAGMUS

Many cases of miners' nystagmus pass through my hands, and I have examined the pupil with great care. Apparently there is no dilatation. This answers Dr Baldwin's question (July 30th, p 191). The chief symptoms of the disease, however, might well be due to hypertonicity of the sympathetic nervous system, and the conditions under which a miner works certainly involve overaction of this system—for example, the maintenance of unnatural posture and a fully dilated pupil.

It appears to be fairly well established that miners' nystagmus is associated with lack of light. There is considerable evidence, from work done at Jesionek's clinic at Giessen, that ultra-violet light has a definite effect on the sympathetic nerve endings. Also in Rygaard's disease good results have been obtained by treatment with ultra-violet light, and this is said to be due to indirect action through the sympathetic nerves.

It seems possible, therefore, that a considerable deprivation of retinal light during a man's employment as a miner, combined with the extra call upon the sympathetic nervous system due to unnatural posture and dilated pupil, may bring about a more or less permanent condition of sympathetic hypertonicity. Such sympathetic hypertonicity might account for all the symptoms of miners' nystagmus—tachycardia, disordered tone of the eye muscles (clonus?), sweating, psycho-neurotic changes, etc.

This suggestion is merely tentative and naturally can only be expressed in outline here, but the chain of evidence is so strong that it seems worth while to test the effect of retinal light upon patients suffering from miners' nystagmus. For some time past I have been investigating this matter, and arrangements have been made for me to test the treatment.

Wrexham

RAYMOND S. BROCK, M.B., Ch.B.

### COINS IN THE OESOPHAGUS

MR KENNETH LEE'S memorandum on coins in the oesophagus (April 23rd, p 761) recalls to my mind an interesting case of the same kind which came under my care when casualty house-surgeon in 1916 at St Mary's Hospital.

A boy, aged about 9 years, was brought to the casualty department with the history that he had swallowed a halfpenny a fortnight previously, and that it had not been passed by the bowel. A rectal examination at the hospital showed the halfpenny fixed at the cardiac end of the oesophagus. It was decided to attempt to recover it with a coin catcher.

The boy was anaesthetized in the x-ray room and the coin located by the x-rays. By gently insinuating the coin catcher into the oesophagus until it reached the level of the coin, I managed, with much difficulty, to grip the halfpenny with the teeth of the instrument, and pulled it up gently to the boy's mouth. The grip on the coin was now relaxed, but the boy gulped suddenly and swallowed the coin again.

The entire procedure had to be repeated for the coin had reached the same level in the gullet as when first swallowed. Before the second attempt was made it occurred to me that it might be easier to push the coin from the oesophagus into the stomach, but a second attempt finally recovered the halfpenny.

The case is worthy of record because it shows that a small coin does not always pass from the oesophagus into the bowel with ease.

T. STEVENS EVANS, M.B., B.S. Lond.

Fochriw Glamorgan

## Reports of Societies.

### SPONTANEOUS RUPTURE OF THE UTERUS

At a meeting of the Edinburgh Obstetrical Society, on June 28th, with Professor JONATHAN, the President, in the chair, Professor JAMES HENDRY (Glasgow) read a paper on spontaneous rupture of the uterus before or during labour.

Professor HENDRY described four cases of spontaneous rupture which had recently come under his care in Glasgow, and referred to 54 other cases which he had extracted from the literature since January 1st, 1926. He said that it was impossible to ascribe rupture to one cause only. In 21 cases it had followed a previous Caesarean section and in two of these the lower uterine segment incision had

been used, 16 of the ruptures having occurred during pregnancy and only seven during labour. It would seem from the Statistics that induction of labour after a previous Caesarean section was liable to cause rupture. In one of Professor Hendry's cases rupture had occurred through the whole length of a previous Caesarean section scar. In 10 other cases rupture had followed some previous intrauterine manipulation such as manual removal of the placenta at a previous confinement. No case of rupture following a myomectomy was noted in the series. In one of Professor Hendry's patients rupture was associated with a deep tear of the cervix which had occurred at a previous labour. In four cases pituitary extract was regarded as a causal factor, though many French and Spanish obstetricians had reported no cases of rupture following the use of pituitary. In five cases prolonged labour due to various abnormalities was cited as the cause of rupture. In two of Professor Hendry's cases the presentation was a brow in one and an occipito-posterior in the other, which he considered etiological factors in the rupture. No patient had shown the usual classical symptoms of rupture, and in one instance there were practically no symptoms, the rupture being diagnosed by the distinct feeling of the foetus and the inability to produce any response of contraction of the uterine wall over the foetus. To this type Professor Hendry ascribed the name "silent rupture," and said that its recognition was extremely difficult. With regard to diagnosis he laid special stress on the easy palpation of the foetal parts and the inability to get the uterus to contract over them by gentle massage. Another important sign was the recession of the presenting part from its position in the pelvic brim which occurred in two of Professor Hendry's patients, the amount of blood lost either intra-abdominally or externally was always very little and did not exceed six to eight ounces. All his patients had been treated by supravaginal hysterectomy with invariably good results.

### Therapeutic Abortion

Dr H. S. Davidson read a paper on therapeutic abortion with special methods of induction, with particular reference to cases in which abortion had been induced either at the Royal Maternity Hospital, Edinburgh, or in his own private practice since 1923. The first reason for induction which he discussed was hyperemesis gravidarum, in which he thought that induction should be performed if the pulse rate was consistently over 100 for forty-eight hours. It was shown from his own results compared with those of the hospital that the earlier the induction after the forty-eight hours the better it was for the patient, there having been no mortality in any of Dr Davidson's patients. He also laid stress on the importance of jaundice as a bad prognostic sign, but he considered the state of the myocardium was much more important than the state of the liver with regard to mortality. He then discussed heart disease and phthisis in pregnancy, and stated that in some of these cases abortion had to be induced. Albuminuria, sleepiness, and mental conditions were also discussed with regard to induction of abortion. Dr Davidson divided the methods employed into the slow and the rapid. In the former dilatation and packing of the uterus with gauze either with or without destroying the ovum was considered the simplest procedure, the abortion might be expected to occur in from three to five days' time. This method was considered eminently suitable in cases where no haste was required. Induction by means of tents was a useful method when the uterus had to be cleared out within forty-eight hours at the most. Of the rapid methods vaginal hysterotomy was said to be suitable only in multiparous patients. Dr Davidson had performed abdominal hysterotomy in several cases with excellent results. The operation was easy, and the amount of shock was less than in the case of vaginal hysterotomy. It was the operation of election when sterilization had to be effected at the same time, and it would seem to be a very useful method in cases of hydatid mole, since the uterus could be cleared out under direct vision and not by touch. He concluded by asserting that the life of the mother was much more important than the life of the child, especially as it was impossible to foretell whether the child would be an asset or otherwise to the community.

# Rebichus.

## THE RESPONSES OF THE BLOOD VESSELS OF THE HUMAN SKIN

The wealth of experimental material presented in this monograph on *The Blood Vessels of the Human Skin and their Responses* had already formed the basis of Sir Thomas Lewis's Croonian Lectures, delivered before the Royal College of Physicians of London in June 1926 and when an abstract was published in this JOURNAL on July 10th of that year (1926 ii, p. 61). Much of the work has appeared in detailed form in an imposing series of original monographs published chiefly in *Heart* and in the *Journal of Physiology* from 1916 onwards. Sir Thomas Lewis, with his co-workers at the time was indeed the first among the several investigators in different countries who in the past decade have contributed to the new awakening of interest in the activity of the minute blood vessels, and in its importance for the adjustment of the circulation to the needs of the tissues. His book, embodying his Silliman Lectures on the capillary blood vessels has acquainted a wider circle with much of the work in this field. In the work under review full justice is done to the collateral evidence produced by other investigators. It is a bearing on the author's own theme, there is, indeed, a bibliography containing 275 references. The book, however, is a carefully and judiciously presented and discussion of the investigation carried out during the past few years by Sir Thomas Lewis himself and his colleagues on the reactions of the small and large of the minute, blood vessels in one tissue of one species—in the skin of man. It has, accordingly, the invaluable quality the peculiar interest and authority of a personal document. We see the problem as it originally presented itself to the author. We can follow the gradual unfolding of the story the shaping and testing of every link in the chain of evidence. As the reaction of the skin vessels to each type of stimulus comes in turn under investigation we see the separate lines converging to one inevitable conclusion. The results are of high intrinsic importance but this reasoned presentation of them is of even wider interest as a demonstration of scientific method, and, in particular, of its application to the study of reactions of the normal human body.

While apparatus of precision is used where the nature of the observation demands it—as in the measurement of small localized changes in skin temperature—many of the experiments recorded and among these some of the most important employ only the simplest technique. They could be repeated by anybody possessing a Piro-Rocci armlet, a needle a flat ruler a thermometer and—the only uncommon item in the equipment—a faculty of keen and accurate observation. A few milligrams of histamine would do serviceable. With such simple tools and with a masterly ingenuity in so combining their use as to give significant results in logical sequence, Sir Thomas Lewis weaves the close fabric of his argument. From the pattern emerges a common type of vascular reaction in the human skin to mild injuries of all kinds, mechanical (chemical or thermal—the triple response), consisting of the sharply localized capillary dilatation, the coincident wheal which succeeds it and the surrounding 'flare' which is due to arterial dilatation produced by the local axon reflex. Point by point the evidence is accumulated to show that all three constituent phases of this complex response are due to the local liberation from the injured epidermal cells of a chemical substance, identical in its action with histamine, but here referred to, with proper caution, as the "H substance." The idea that injured cells may liberate such a histamine-like substance, producing a local capillary dilatation and wheal or a general circulatory collapse according to the manner and dimensions of the

injury, is not new in itself. The novelty is the production of precise and convincing evidence for what was hitherto but a plausible suggestion. In the case of the surrounding arterial dilatation, on the other hand the conception that this, though produced by a local nervous reflex, is also due to the liberation of the "H substance," acting in this instance on the sensory nerve endings is both novel and surprising. Even more so is the conclusion that peripheral liberation of the "H substance" is responsible for the vaso-dilatation and vessel formation caused by irritation of a sensory nerve, as in the Stricker-Bühner antidromic dilatation and in herpes zoster. There is some difficulty—teleological, one may admit—in the conception that vaso-dilatation resulting from such irritation of an axon having a vasodilator as well as a sensory peripheral branch, should be due to liberation of H substance in the neighbourhood of the sensory ending, and a consequent axon reflex, rather than to direct passage of impulses down the vasodilator collateral. Sir Thomas Lewis does not indeed, exclude the latter mechanism as a possible factor, but it is the former which his evidence supports and the evidence is as cogent and as irresistible as any that he brings forward.

This triple vascular reaction to injury and the chemical stimulus responsible for it constitute the central theme of the treatise. Most of the other vascular reactions described have some relation to it. Thus the reactive hyperemia following temporary arrest of the circulation is shown to be due to the accumulation of H substance during defect of the cleansing stream of the blood. The anaphylactic reaction, studied in terms of its local expression in the skin receives an interpretation of new clearness. Hitherto there was difficulty in reconciling the two lines of evidence as to its nature. There was strong reason on the one hand for attributing it to the interaction of the sensitizing antigen and a specific antibody in the living cell. On the other hand, the obvious similarity between the details of the anaphylactic reaction in different organs and different species and the effects produced by such substances as histamine in the same organs and species, had led many to support the view that a substance having this type of action on "anaphylactin," was liberated by some fermentative or other action of antibody on antigen in the blood. The two lines of evidence when viewed in the light of Lewis's demonstration lead to a common conclusion. The immediate effect of the interaction of antigen and cell fixed antibody is like that of the injury of the protoplasm by other methods: the liberation of the H substance from the cells producing in each organ or tissue in which it is thus liberated the characteristic response of that organ or tissue to histamine.

It is impossible in the scope of a review to touch upon more than a few of the numberless points of suggestive interest to be found in the monograph but one of more general significance deserves further notice. All the world of medical science knows of the leading part which Sir Thomas Lewis played in the remarkable advance in clinical knowledge of the details of the heart's action made possible by the experimental analysis of the mechanism of the normal mammalian heart beat. Here we find him conducting an investigation equally exhaustive and original into the physiological behaviour of another part of the normal circulatory mechanism. In this study of the blood vessels of normal skin he finds that man himself provides not only a possible but for many experiments the only possible subject. He is led to generalize from this experience telling us that his chief motive in writing the book was a desire to stimulate a wider study and teaching of human physiology for knowledge relating to the healthy man forms the most manifest and abiding bond between physiology and medicine. It is obvious that the data of physiology can furnish a firm foundation for human medicine only in so far as they are valid for man himself. The case of the reaction of the skin vessels is however a special one. The human skin is peculiar in its variability and in the readiness and variety of its vascular responses while the skin is pre-eminent among the organs in its harmless accessibility for experiment. In other huge domains of its activity, however as in studies of respiratory metabolism and the effect thereon





must necessarily be somewhat cursory but in spite of its comprehensive and ambitious nature the book never loses proportion in the presentation of the subject matter, and never loses interest in its manner of treating it. It is primarily a reference book although in no sense a mere encyclopedia. It reveals the vast industry and comprehensive knowledge of its author and the translator has done it every justice.

## TWO X-RAY ATLASES

A LITTLE over two years ago the first edition of McKEEN and WHITTAKER'S *X-ray Atlas of the Normal and Unnormal Structures of the Body* appeared and now a second edition<sup>1</sup> is issued. Many additional radiographs appear in the new edition, and special attention should be called to the series which show lipiodol injections of the bronchi. These have been supplied by Dr. John Cuy who also furnishes a note on the method employed.

The book has been extended by thirty-four pages, but, except for these additions is substantially the same as when first published. No attempt seems to have been made at any definite revision and many very poor and quite inadequate radiographs have been retained. One notable omission is in the part dealing with the spine, for with one exception—a lateral view of the cervical spine—no lateral view are reproduced; this is difficult to understand, as there is no doubt that in probably most cases of disease and injury the lateral view is of more importance than the antero-posterior. A further criticism might also be made that, with ample space the authors have not seen fit to add to the descriptions accompanying each radiograph. The bold statement that this or that picture is an example of this or that condition is hardly calculated to convey much information of value to a practitioner who may not be an expert and it is obvious that it is to the general practitioner that a book of this kind appeals. We venture to think that generally speaking a greater effort should have been made to point out the nature of the x-ray changes shown. This could have been done without increasing the size of the book and would have added much to its value. However, that a second edition has been called for in so short a time shows that there has been a considerable demand for the atlas and there is no doubt that it serves a useful purpose. It is a pleasant book to handle inasmuch as it is well presented and attractive, and is printed on paper which suits the illustrations and renders good reproduction of the radiographs possible.

*Atlas de Radiographie Osseuse*,<sup>2</sup> by HARET DARIATX, and QUELST, presents a series of radiographs in a somewhat novel manner. There are two reproductions of each either side by side or opposite to one another the one in the usual style while the other is the same radiograph with the outlines artificially strengthened and marginal notes stating what is the cause of each part of the shadow. The atlas is beautifully got up and is of large size but very unfortunately in the bulk and especially the more difficult parts such as the hand etc., the radiographs are by no means up to the standard of modern x-ray technique. Except for a very short introduction and at the end a few tables dealing with the data of ossification of the bones and epiphyses there is no printed matter other than the marginal notes. The material for practical purposes is divided into two main parts, the first consisting of some sixty odd reproductions of the adult human skeleton and the second with sixty illustrations dealing with the child from the time of intrauterine life to the age of 16. A book of this kind dealing only with the normal is a useful for teaching and will be valuable for occasional reference in an x-ray department. It is a novelty inasmuch as it differs from most atlases in portraying only the normal appearances and as a knowledge of the normal is essential in reading the abnormal it is a handy method of having

at hand a series of the normal in which no individual bone can be looked up whilst the marginal notes will at once indicate the various radiographic points. Medical students and those reading for a diploma in radiology will find it of value.

## NOTES ON BOOKS

THE third edition of *Kerr's Manual of Fever* has been ably revised by Dr. CLAUDE PRINGLE, medical superintendent of the Fazakerley Hospital, Liverpool, who is to be congratulated on having brought the work up to date without modifying its essential feature. The new matter includes information about the bacteriology of measles and scarlet fever, the Dick and Schultz Charlton test, immunization against scarlet fever and the antioxin treatment of the disease and the serum prophylaxis of measles. We are pleased to see that the reviewer recommends much larger dose of antioxin than the one mentioned by Dr. Kerr and that he deprecates the routine administration of alcohol in diphtheria which was advised in previous editions of the work. We have detected a few omissions. Although reference is made to Cronin's organism there is no mention in the paragraph on the etiology of measles of Trenchard's grain producing diplococcus which is more likely to be the causal agent of the disease nor do we find any reference to Ramon's antioxin erythema infectiosum or exanthema subitum to which so much attention has been given lately in Continental and American literature. We note with regret that the historical illustrations of scarlet fever and serum rashes have been removed though they might as well have been pointed out in the review of the last edition (JOURNAL, April 22nd 1922, p. 645) have been better replaced by coloured plates or omitted altogether.

*Practical Tropical Sanitation* by Dr. MINETT and SEVER represents the second edition of a somewhat smaller work by the first named author published even years ago. It is a little difficult properly to assess the value of this book as the premises that it is for sanitarians and others in tropical countries. The others from the general character of the book must mean non-medical persons and the directions to inoculate all contacts with antiplague and F4P vaccine would not come within the province of either. There is a considerable improvement on the first issue. The number of pages has been increased by fully one third and the illustrations by 25 per cent. But several pages previously occupied by the regulation and by laws in force in British Guiana have been omitted the addition are more than the mere number of pages would indicate. We note incidentally that the picture of Dr. Balfour's strap is still deprived of its emptying approach without which the flies depicted would certainly not be induced to enter. The author's experience in China enhances the value of the present edition for the former was based almost entirely on conditions in British Guiana. The most notable addition in the present issue is the final chapter on cholera for which the assistance of Mrs. Minett who has had experience in both the West India and the Far East has undoubtedly been enlisted.

For a book he has written on therapeutics in general practice Dr. CUMPLES FLEISCHER who is a frequent member of the Académie de Médecine draws on an experience of nearly fifty years. These years have taught him that in many maladies nature is still more intelligent than the doctor. It is no surprising the more to find that he has much respect for rational medication which seems to be very popular in France and still less for the rational administration of drugs. He does not believe in heavy pain but he finds that two or three grains of morphine are correct. For confirmation of the principle that his use like he advances the doubtful argument of vaccination. The other principle is that if the immediate effect of a remedy is violent its duration is short and vice versa. Upon this principle Dr. Fleischner bases his view that the cause of disease should be treated by large doses in order to speak clearly the disease on the head while the symptoms of disease should be treated by minimal doses of drugs. Dr. Fleischner is content upon the confidence inpired by the doctor's therapeutic agent of his high value. At the same time devoted to meditation such a therapeutic agent is general in the rapidity the author describes the treatment he has found successful in disease of various tract of the body.

*Kerr's Manual of Fever* Revised by CLAUDE PRINGLE, M.D., etc. Third Edition. (Oxford Medical Publications.) London: H. K. Lewis, Ltd., 1927. (Cr. 8vo pp. xv + 350. 12 figures.) 12s. 6d. net.  
*Practical Tropical Sanitation* By E. P. MINETT, M.D. DPH, D.T.M. and H. and A. G. M. SEVER, M.A., M.D. DPH. Second Edition. London: Baillière Tindall and Cox, 1927. (Fcap. 8vo pp. viii + 125. 50 figures.) 5s. net.  
*La Pratique Thérapeutique en Clinique* Par Ch. FLEISCHER, Com. m. et Gu. r. But. technique des Praticiens. Paris: J. Maloine, 1927. (Imp. 16mo pp. 3-2. 20 fr.)

<sup>1</sup> *X-ray Atlas of the Normal and Unnormal Structures of the Body* By Dr. P. McKEEN and Dr. C. WHITTAKER, DPH, FRCS, and Charles R. Whitaker, FRCS, FRCS. Second edition revised and enlarged. Edinburgh, E. and S. Livingstone, 1927. (Demy 4to pp. xvi + 250. 42 figures, 120 plates. 30s. net.)  
<sup>2</sup> *Atlas de Radiographie Osseuse. I. Squelette humain adulte*. Par C. HARET, J. DARIATX, Jean QUELST. Avec la collaboration de H. P. Chatelier. Préface du professeur Pierre Duvul. Paris: Masson et Cie, 1927. (Po. 4to pp. 123 figures, 160 fr. sans majoration.)

The sixth issue of *L'Année médicale pratique*,<sup>10</sup> edited by Dr CAMILLE LIAN, supported by a staff of thirty-three contributors, contains in alphabetical order a concise account of the chief recent contributions to medical literature. A classified list of the principal French medical works published during the year is appended.

In *Nan of Ailemore: A Highland Tragedy*<sup>11</sup> Dr A NIVEN ROBERTSON tells in easy verse a story gripping in its dramatic situations and withal attractive in the human pathos and word pictures of the Highland glens in summer and in storm. Nan is a fine independent character in love with a stalwart country man, who, while seeking his fortune abroad, is concussed, and becomes so changed that he brings evil upon all who love him, eventually causing her death. In the background there is a fine picture of a country doctor, with his self-denying ordinance. Mixed with idealism there is realism, as shown in the account of a music hall in the purlieus of a foreign city.

"Or else to see a bloated mass of flesh  
In fitting tights, 'the fattest woman known,'  
Be ide a man diseased had in its mesh,  
'The thinnest man on earth,' all skin and bone."

At the commencement of this interesting story in four cantos the reader is warned that the persons and events described in the poem are entirely imaginary, and that no reference is made or intended to any living person.

<sup>10</sup> *L'Année médicale pratique*. Edited by Dr Camille Lian. Sixième année. Paris: René Leprieux, 1927. (Gr 8vo, pp. xx + 518. 16 figures. 21 fr.)

<sup>11</sup> *Nan of Ailemore: A Highland Tragedy*. By A Niven Robertson. London: Erskine MacDonald, Ltd. 1927. (Cr 8vo, pp. 67. 3s. 6d.)

## PREPARATIONS AND APPLIANCES

### *Ultra violet and Radiographic Apparatus*

Messrs WATSON AND SONS (43, Parker Street, Kingsway, W.C.2) announce that they can supply British made carbons for ultra violet emission which are entirely reliable and cheaper than those of foreign make. It is claimed for these carbons that it is possible to standardize the ultra violet output in such a manner as to cover all requirements. The same firm has issued a second edition of a pamphlet entitled *Radiography for the Dentist*. After pointing out the possibilities of dental radiography the question of cost is discussed, and it is stated that a complete apparatus required for this form of x-ray work can really be purchased for a comparatively small sum, and that the upkeep and running expenses are moderate. The necessary apparatus is described and illustrated, and there are notes on the technique.

## MEDICAL EDUCATION IN INDIA

### REPORT BY SIR NORMAN WALKER

DURING the early part of the present year Sir Norman Walker visited the medical colleges and associated hospitals of several Indian universities, and in a report to the Secretary of State for India, which is printed in the minutes of the Executive Committee of the General Medical Council, he summarizes his observations.

Until quite recently medical education in India was directed and controlled by the Indian Medical Service. "That it is as good as it is," says Sir Norman Walker, "and in many respects it is excellent, is almost entirely due to the zeal, energy, and versatility of that Service." With the Indian Medical Service the various colleges grew up in close relationship, all the professors were presidency medical officers, and at first and for many years all of them were Europeans. So long as the Government was solely responsible for staffing the colleges almost all the candidates were holders of British qualifications, inasmuch as entrance to the Indian Medical Service, from which the staffs were drawn, could be gained only by passing an examination in London. But medical administration, including provision for medical education, has now become a provincial subject in India, and the change has been followed in the colleges everywhere by a great diminution in the number of European teachers. Methods of providing teachers other than through the Indian Medical Service have been called for, and men whose teaching experience has been small and

whose training as teachers has been brief have been appointed to professorships. Sir Norman Walker thinks it would be well if young men of promise, after a couple of years' service in a scientific department of an Indian university, were sent abroad to carry their studies further under different conditions before being appointed to chairs.

With regard to examinations, he points out that there is no pre-registration examination in India, and also that all the limitations for the matriculation examination have been removed, so that not a few candidates pass at the age of fourteen, and after two years spent in studying for the intermediate arts or science examination, find it possible to commence the study of medicine proper at 16, which is one year earlier than in this country. The level of secondary education in India is admittedly lower than in Great Britain, and no British university accepts the matriculation examination of an Indian university as equivalent to its own. After pointing out that it is easier to work hard for nine months out of twelve in Great Britain than in India, Sir Norman Walker suggests, as to the medical curriculum proper, that it would be well if all the Indian universities followed the lead of Calcutta in establishing a curriculum of six years (eighteen terms) and continued in the curriculum the study of chemistry, physics, and biology as applied to medicine.

At present the length of the medical curriculum varies in different universities from thirteen to eighteen terms. In anatomy, physiology, pathology, and materia medica and pharmacology India shows to great advantage, and the laboratories are generally satisfactory in building and equipment. Hygiene is taught usually by the officers of the public health department in the respective provinces, and the teachers are well qualified and experienced. Forensic medicine—a very important subject in India—is taught by lecturers, usually the civil surgeon or his assistant, or by the police surgeon in addition to his ordinary work. The teaching in systematic medicine, surgery, and midwifery is along lines similar to those followed by medical schools in this country twenty years ago. In practical midwifery there has been an improvement during the last few years. Madras has an excellent maternity hospital, and in Bombay the new Wadia hospital will provide opportunities for teaching second to none. The teaching of midwifery and gynecology in the Calcutta Medical College is at a high level, and in Lahore an excellent modern maternity hospital is well on the way to completion, but in Lucknow things are not so far advanced.

So far as hospitals in general are concerned, Sir Norman Walker says that some of the new ones are really excellent, and India is to be congratulated on its hospital architecture. The ophthalmic department is nearly always a special feature of Indian hospitals. In Madras the ophthalmic hospital, thanks to the zeal and perseverance of Colonel R. H. Elliot and his successors, is one of the finest in the world. The special departments for diseases of children, ear and throat, skin, venereal diseases and tuberculosis, have a long way to go to catch up with ophthalmology. The arrangements for the teaching of mental diseases also leave much to be desired. There are many large asylums in India, but they are rarely in close proximity to the medical colleges. With regard to research, Calcutta has one of the foremost schools of tropical medicine in the world, and institutes at Kasauli, Bombay, and Madras are all doing admirable work, but it is greatly to be desired that research should be active in many centres, notably the universities.

On the general subject of organization of medical education Sir Norman Walker states that what India lacks is a co-ordinating authority between the universities. That universities should be independent and should follow the lines which seem to them most fruitful is generally admitted by educationists, but when medicine is concerned the public interest is involved to a greater degree than with any of the other faculties. Here independence and autonomy must be combined with a minimum standard maintained for the public benefit. Some more satisfactory basis than periodic visitation and inspection through the direct agency of the General Medical Council should be found. The number of medical colleges has doubled since

Sir Norman Waller's first visit of inspection to India in 1922, and the need for setting up there some co-ordinating authority comparable to the General Medical Council, with which the Council could communicate, grows more urgent. The absence of any such directing authority in India is really the chief obstacle to a satisfactory solution of the problem. Pending the setting up of such a body, he suggests that a commissioner of medical qualifications and standards with a permanent office at Delhi should continue and extend the work already done by the Council's inspector, Colonel R. A. Needham, who has just completed the last of a series of visits and reports extending over a period of five years, and is now home on long leave. The General Medical Council would willingly accept the suggestion commissioner as their visitor, until a central authority can be established, and his regular reports would be of much assistance in determining whether or not recognition should be accorded or continued.

## CINEMATOGRAPHY APPLIED TO THE STUDY OF TISSUE GROWTH

DEMONSTRATION BY DR R. C. CANTI

MUCH interest was aroused at the Annual Meeting of the British Medical Association at Edinburgh by Dr R. C. Canti's cinematograph demonstration of the growth of normal and malignant tissue cells. The application of cinematography to medical research represents an advance on the study of living cells by dark ground illumination, to which we have referred more than once during the last twelve months, in this work Dr Canti was associated with the late Dr T. S. P. Strangeways, and a description of the procedure they devised was given in our issue of July 24th, 1926 (p. 155). Those interested in the subject may be referred to an article by these two authors in the *Quarterly Journal of Microscopical Science*, May, 1927, which contains some particularly good illustrations. Their research formed part of a larger investigation into the nature of cancer in progress at the Strangeways Research Hospital, Cambridge, and at St Bartholomew's Hospital.

The obvious impossibility of continuing observation over long periods of time and of retaining in the memory the ever-changing condition of the cells led to the introduction of the cinematograph. By this means a series of pictures taken at frequent and close intervals over as long a period as might be necessary, provided a record which could be referred to as often as desired. Moreover by running the film backwards, events could be observed in the reverse order of time, and thus be traced to their origin—an ideal method of conducting biological research. The tissues photographed specially for display at Edinburgh were the periosteum of the chick embryo and a malignant tumour of the rat, known as Jensen's rat sarcoma, these were cultivated at the laboratories in Cambridge. Ordinarily in cinematograph films the individual pictures are taken at the rate of 16 a second and are projected at the same speed. In the "slow motion" films the speed of taking is increased to 50 or 500 a second, or in some cases even to 5,000 a second, the projection being at the normal rate of 16 a second. The films exhibited at Edinburgh were the reverse of this, and might be termed "quick motion", the exposures were made at intervals of 3, 10, 30, or 60 seconds, and the results being projected at the speed of 16 a second gave the impression of speeding up of 50, 160, 480, or 960 times respectively. Dr Canti explained that the apparatus used had to be specially constructed. The optical parts were built on a concrete bed supported on alternate layers of concrete and sorbo sponge to prevent vibrations. The mechanical part of the apparatus was capable of running automatically for as long a period as required.

Dr Canti's first cinematograph picture showed the micro-culture slide on which the culture was prepared, the minute individual implant of tissue being just visible in the centre. The second picture, which was one of the most impressive, was taken under low magnification, and showed the whole of the original implant during incubation at 38°C for twenty-four hours. Soon after the commencement of in-

cubation the wandering cells could be seen coming out from the implant. These were quickly followed by fibroblasts growing out radially and giving the implant a fluffy appearance. This migrating continued until the field was covered, the actively amoeboid wandering cells always keeping in advance of the fibroblasts. The speeding up of this picture was 960 times, and Dr Canti explained that the audience, while being careful to realise this fact, might for the moment ignore it, as after all time was relatively unimportant. They had the advantage at this demonstration, in half an hour or so, of seeing the events which took more than five days to happen. A series of individual cells was then shown under a higher magnification undergoing cell division. The elongated fibroblast was seen to become shortened and to round up into a spherical form and, the nucleus having disappeared, the chromosomes could be seen arranged equatorially. Then followed a quick series of events. The chromosomes migrated rapidly, half to either pole of the cell, the cell developed a waist and divided, each portion underwent violent bubbling, processes of protoplasm being thrown out and withdrawn with great activity. As this gradually simmered down the two halves slowly reformed into two vegetative daughter cells and wandered away from each other, the fresh nucleus in the meanwhile gradually reappearing. Then followed a series of pictures illustrating the growth of sarcoma tissue, the cells of which were in striking contrast to the normal tissues already shown. Two varieties of cell at least were present. One, which was highly mobile, was furnished with long, actively moving pseudopodia, which ended in fine fibrillated extremities, the other, or fibroblastic type, was less mobile, in shape rounder and with undulating edges. The degeneration of some of these cells was watched, the active and more healthy cells were seen to be attracted and to adhere to the edges of those which were degenerate.

Dr Canti explained how the method of observation could be applied to the investigation of a variety of problems in many fields and in several pathological, pharmacological, and physiological, as well as biological research. His present line of investigation was the effect of radium irradiation on normal and malignant tissues, and the second reel dealt with his photographs to date. The radium used was in the form of radium emanation (radon), and was supplied by Professor Purvis. The quantity varied in different experiments from 70 to 150 millieuries, and the distance of the radon from the culture ranged from 4 to 7 mm. The radon was unfiltered except by the walls of the capillary glass container and the cover-slip of the tissue culture preparation. The cells were therefore receiving both beta and gamma radiation of relatively high intensity. In order to record the time at which events took place a small clock was photographed in the corner of the film. The details of the experiment and the time at which the radon was applied to the culture were noted in a caption preceding each section of the film. First the effect on normal periosteum was observed. Cell division, which was plentiful before the radon was applied, ceased immediately the spreading edge of the fibroblasts advanced no further and the movements of the cells themselves were arrested. A proportion of the fibroblasts became rounded and degenerated giving rise to the "breaking down" cells characteristic of irradiated cultures. The majority of fibroblasts however were not affected in this way. The wandering cells continued their amoeboid movements for twenty minutes after irradiation was commenced and then became still and eventually broke down. The last series of films depicted the effect of radon on the sarcoma tissues which was dramatic. Within fifteen minutes or the application of the radon the seething mass of cells was completely immobilized, and those which were in the act of cell division did not continue the process. As time went on the cells became rounded their edges became indistinct and irregular and the final stage of disintegration set in.

Sir ROBERT PHILIP, at the first demonstration, expressing the appreciation of the audience to Dr Canti for giving this demonstration three times congratulated him on his important revelation of cell life and hoped that valuable developments might follow in the near future.

## NoVA et VETERA.

### PROVINCIAL CONSULTANTS IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES.

AMONG the many alterations in the social life of this country which followed on the introduction and spread of the railway system, one of the most striking was the decay of the importance of country towns. Perhaps the smaller towns, especially those within comparatively easy reach of London, suffered most.

In the novels of the end of the eighteenth century—such, for instance, as Jane Austen's *Emma*—we read of dances held in inn rooms, as in the little town of Highbury, which, if not identifiable with Epsom, was at least no further from London, and in such a small place as Uckfield in Sussex there was till recently a large assembly room in the principal inn. If such provision for social gaieties was common in minor towns, it was still more usual and greater in the large provincial capitals such as Salisbury or Exeter. At the same time the well-to-do inhabitants of such places and of the country around them often had recourse to consulting physicians and surgeons in those capitals rather than to those of the metropolis. Even later George Eliot, in her description of society in Middlemarch, writes of a physician as practising there as well as the surgeons and apothecaries. Erasmus Darwin of Lichfield is a much earlier instance, and there were, of course, many others after his time, including Sir Charles Hastings, the founder of the British Medical Association, who established himself in Worcester the year after Jane Austen's death. Worcester was indeed a good example of a county town self-contained so far as the practice of medicine went, and so continued down to our own times, as did many other cathedral towns.

In a recent correspondence in the *Times Literary Supplement*, Mr. Paul de Cistio has drawn attention to a once well known Salisbury surgeon, Mr. Edward Goldwyer or Goldwire, who died in 1774. His father, William, had also practised in Salisbury, and two of his brothers were practitioners in Blandford and Marlborough respectively. Mr. de Cistio argues with much force that Edward Goldwyer was probably the surgeon who treated the first wife of Henry Fielding the novelist, when her nose was severely injured in a carriage accident, an event which made an incident in his novel *Amelia*.

That Edward Goldwyer was a surgeon of note is evident from the following letter which was found among his papers. It is given in an anonymous work in three volumes, published in 1825 under the title *Professional Anecdotes or Lull of Medical Literature*.

"Fisherton Anger Grol, October 31d 1736 Sir.—Being informed that you are the only surgeon in the city or county, that antonnes men and I being under the present unhappy circumstances, and in a very mean condition would gladly live as long as I can but by all appearances I am to be executed next March, having no friends on earth that will speak a word to save my life, nor send me a morsel of bread to keep life and soul together until that fatal day so if you will vouchsafe to come hither I will gladly sell you my body (being whole and sound) to be ordered at your discretion knowing that it will rise again at the general resurrection as well from your house as from the grave. Your answer Sir will highly oblige Yours, etc, James Brooke."

This letter was addressed "to Mr. Edward Goldwyer [sic] at his house on the Close of Salisbury." For what offence James Brooke was doomed to die we cannot tell, but it was quite probably a comparatively trivial one, such as a small theft. One would like to think that Goldwyer was able to save him from starvation and the gallows without accepting the offer of his cadaver. Such offers were prob-

ably rare, though it is said that the bereaved relatives sometimes solved themselves with the proceeds of the sale of the corpse of the lamented one. It will be remembered that her detractors alleged against Mrs. Sarah Gump that when her husband died—

"and I see him lying in Guy's Hospital with a penny piece on each eye and his wooden leg under his left arm" if certain whispers current in Kingsgate Street circles had any truth in them, she had indeed borne up surprisingly and had exerted such uncommon fortitude, as to dispose of Mr. Gump's remains for the benefit of science" (*Martin Chuzzlewit*, ch. xxix).

Goldwyer seems to have been an active pioneer in the practice of inoculation for small-pox, if Dr. Junn's reference to the fifty-three cases inoculated in Salisbury by "Mr. Goldwyre, Surgeon," applies to him.

There is a monument to an earlier medical celebrity near the west door of Salisbury Cathedral. It commemorates Dr. Drubney Turberville, who had a great reputation as an eye-surgeon and died in 1696. Dr. Walter Pope, F.R.S., who succeeded Sir Christopher Wren as professor of astronomy in Gresham College, and who himself held the degree of M.D. Oxon., composed the epitaph on Turberville, whose patient he had been. In the life of Bishop Seth Ward in Cassan's *lives of the Bishops of Salisbury* (Pt. III, p. 103), Dr. Pope gives us a lively account of Turberville and of his ways. Lilo Pope he was M.D. Oxon. It is said that it was by his mother's advice that he devoted his attention to diseases of the eyes, as "he would find it turn to a good account." The event proved her prescience, for he had crowds of patients whom he began seeing at eight o'clock every morning. "He generally prescribed to all shaving their heads and taking tobacco" (snuff?) "which he had often known do much good and never any harm to the eyes." Ophthalmology scarcely existed at that time, and the methods of regular and irregular practitioners were alike largely empirical. Here is a specimen of Turberville's methods, as recorded by his admirer Pope. The patient's eye was "protuberant and could not be contained within the lids, and seemed like a piece of raw flesh, the doctor placed him in a chair, and with a pair of scissors cut large gobbets, the blood trickling down his cheeks in abundance, and yet he seemed no more concerned than if it had been a barber cutting his hair, I was surprised at his behaviour and said to one of the bystanders, 'without doubt this is a married man, otherwise 'twere impossible to be so patient.'" (Pope was a bachelor.) What the result was of this heroic method of treating conjunctivitis we are not told.

Turberville's reputation in Salisbury spread to London, so that he was called in by the Duchess of York, to treat her daughter, afterwards Queen Anne, then a child. Other physicians and surgeons were dismissed and Turberville was put in sole charge and cured her "in a few months." It may have been during this visit to London that he was consulted by Samuel Pepys, for under the date June 22nd, 1668, we read in the Diary "Mr. Boyle refers me to one Turberville of Salisbury, lately come to town, which I will go to", and on June 25th, "then to Westminster to Dr. Turberville about my eyes, whom I met with and he did discourse, I thought leaguely about them, and takes time before he did prescribe me any thing, to think of it." Lastly, on June 29th he wrote "I stop at Dr. Turberville's and there did receive a direction for some physic, and also a glass of something to drop into my eyes, who gives me hope that I may do well." If, as Sir D'Avenant has shown is probable, Pepys's troubles were due to hypermetropia and astigmatism, no amount of drops or plasters could have cured him, although the secondary conjunctivitis might have been relieved for the time. After his death in 1696 at the advanced age of 85 Drubney Turberville's sister Mary was practising in London "with good reputation and success." No doubt she possessed his prescription books.

In recent years the pendulum of practice has begun to swing back again, for with the foundation of provincial universities and their medical schools, and the growth of hospitals in many other large towns, first-rate advice may be had without coming to London.

# British Medical Journal.

SATURDAY, AUGUST 20TH, 1927

## THE NATIONAL INSURANCE DRUG FUND

It should be within the recollection of all those interested that Section 2 of the Economy (Miscellaneous Provisions) Act, 1926, provides that the whole cost of medical benefit shall be a first statutory charge upon the Insurance Fund, as from January 1927 up to a maximum, including administration of 13s for each insured person entitled to that benefit. In our comments on the Economy Bill while it was passing through the House of Commons (JOURNAL, April 10th, 1926 p. 663, and April 24th, 1926, p. 750) it was explained that the Medical Benefit Fund bears the cost not only of the practitioners' capitation charges and mileage, but also of the supply of drugs and appliances to insured persons, and part of the cost of medical referees and some other administration expenses. We pointed out that it was only 'the most elementary common sense' to make these costs a primary charge on the fund as medical benefit is the fundamental provision on which all other insurance benefits depend but we expressed very emphatically the opinion that it was far from wise to limit the charge to the maximum amount prescribed, or, indeed, to fix by statute any such maximum at all. We said at that time: 'It may be doubted whether the maximum amount is really sufficient. The present capitation fee for practitioners is undoubtedly too low. The amount of work has demonstrably increased, even since the Court of Inquiry awarded the 9s. The call on the Drug Fund has increased considerably of late years, and does not yet appear to have reached its limit. On present figures alone the margin available appears to be very small, and whether by reason of an expanding call for drugs and appliances, or by reason of a justly augmented payment to medical practitioners, no one can desire a repetition of the legislative situation which arose two years ago. These fears were, we understand, shared by the Ministry of Health but our warning was unheeded by the Government, and already, in the first year of working one of the contingencies we mentioned has arisen and the situation we indicated has come about. The demands on the Drug Fund have continued to expand, and there is not enough money within the 13s limit to meet them without a radical modification of the arrangements with the pharmacists.'

A circular now issued by the Ministry of Health to Insurance Committees informs them that such a modification has been negotiated, and indicates its main features. The arrangement is that the chemists in England and Wales shall collectively accept liability for the provision of all the drugs and appliances prescribed for insured persons by insurance practitioners and that in return they shall receive collectively the maximum amount available for the purpose. The agreement is to run for six years from January 1st 1927 subject to the right of the pharmacists to ask for a revision in certain contingencies, and the Minister of Health has undertaken that during its currency the annual sum available shall not be less than 2s 9½d for each insured person concerned. There is a curious provision whereby an Insurance Committee may be able to reserve a pro-

portion (not exceeding one tenth) of its Chemists' Fund for any year for payment for those chemists who have been continuously on its list for a specified period of time. The implications of this are not fully evident but it may be interesting to watch its practical working. In addition, the Minister has undertaken to adopt every practical means with a view to checking unnecessary prescribing.

Any agreement of this general nature, though probably inevitable in the circumstances of existing legislation and the unwillingness of the Treasury to go beyond it is not very desirable in the interests of the public nor, we should have thought, in the interests of the pharmacists. It has features analogous to the former objectionable 'floating sixpence' arrangement which insurance practitioners hastened to get rid of, with all its consequential regulations at the earliest convenient moment. It gives an opportunity for adverse critics to allege that it is to the financial advantage of pharmacists in general that the quantity and quality of drugs and appliances supplied to insured persons shall be as small or as inferior as possible, and that there may be a temptation for the Ministry to bring undue pressure to bear upon insurance practitioners to restrain the amount and nature of their prescribing. Experience shows that even a consciousness of virtue is not a sufficient answer to such criticisms.

Insurance practitioners are tenacious of their right to prescribe whatever they believe to be of advantage to their insured patients. Under the present arrangements they have no financial interest whatever either in underprescribing or in overprescribing and their liberty, short of sheer extravagance, is secure. The Medical Benefit Regulations have always contained provisions under which individual cases of extravagant prescribing, whether wanton or ignorant, can be investigated and checked. Formerly, when the initiative lay with Panel Committees such action was taken from time to time. In recent years these provisions have been in abeyance at first on account of a general inquiry undertaken by the Ministry, and latterly by reason of a surprising inactivity on the part of the Ministry and its officers, to whom the initiative has now passed. The Insurance Acts Committee intervening at a late stage of the negotiations between the Ministry and the pharmacists has had to resist the suggestion that these provisions should be strengthened in the direction of allowing pharmacists more direct power to make complaints against practitioners. The existing regulations and system of pricing are to remain unchanged, and Panel Committees should, of course, do their best to facilitate any reasonable action taken in accordance therewith.

The great and continuous increase in the calls upon the Drug Fund is disquieting and practitioners as other taxpayers, are concerned to check it in so far as it involves any demand for what is more than proper and sufficient. The inquiry of the Ministry of Health already referred to disclosed the most extraordinary differences between practices and areas apparently comparable in respect to the cost of drugs and appliances per insured person. These differences have not as yet been explained and they may prove inexplicable. There are however certain considerations which may go far to account for the general, though surprisingly great increase of cost. In the first place, there is no doubt, a much greater appreciation by insured persons of their opportunity for obtaining medical advice and attention and an almost entire abandonment of their initial reluctance to take advantage of such opportunity. In the next place, there is



we believe a reaction on the part of the medical profession from that scepticism is to the value of drugs which prevailed some years ago. With this has come a more prudent and rational use of forms of medication, more expensive than the old, by reason either of their origin or of their more careful preparation and testing. Further there can be little doubt that, whereas in the early days of national health insurance most insurance practitioners thought it their duty to make themselves familiar with the official drug tariff, more recently little attention has been paid to this, and most practitioners are now almost wholly unacquainted with its peculiarities. Such want of knowledge is not blameworthy on scientific grounds, but on economic grounds it is unfortunate. This last circumstance, at any rate, is remediable, and combined action on the part of Insurance Committees and Panel Committees—such as that, for instance, which has recently been taken in Smethwick by the issue to practitioners of an admirable memorandum on the subject—is to be commended and encouraged. A revision of some of the anomalies of the tariff itself, and, more remotely, some regard for economic considerations in the official inclusion of preparations in the *British Pharmacopoeia*, would also be of service.

It is unfortunate that somewhat hurried action should have had to be taken by the Ministry of Health to meet an emergency in this matter. It is still more unfortunate that the resulting agreement should have been fixed for six years. We can only hope that all concerned will combine to reduce its manifest disadvantages.

### PROHIBITION THROUGH THE AGES

DR L. LEWIN of Berlin, who is justly famous for his knowledge of the history of drugs and poisons, published some time ago a treatise on habit-forming drugs, to which he gave the rather whimsical title *Phantastica*.<sup>1</sup> He has now published a second edition which contains his latest views. The subject is rather bewildering both in extent and variety, but the chief impression produced by the perusal of his essay is one of astonishment at the ingenuity displayed by man in all ages, and at every stage of civilization, in finding drugs to stupefy and confuse their brains. We are led through all sorts of strange passages of history, and into all the out-of-the-way corners of the earth. The fly agaric is suggested as the cause of the berserk rage of the Vikings, and atropine as the probable source of those delusions that brought so many witches to the stake. In the chapter on alcohol the author relates a few instances which he thinks prove the profound effect the drunkenness of monarchs has had on the course of history. Dr Lewin discusses all the ordinary drugs of addiction used by Europeans and gives details of others less well known. We have a short history of each drug, an account of its sources, of the action it produces on the individual, and of its sociological influence.

The spread of drug habits and the fate of the measures designed to abolish them make an interesting story which it must be confessed provides little comfort for would-be reformers since it is a record of unbroken failure. The prohibition of alcohol has been acclaimed as one of the great social experiments of the twentieth century, and it is interesting to learn that Charlemagne issued drastic edicts, but they were ineffective. Some of the ancient laws did not fail for lack of vigour. For example in 1378 the Emir Boudoun Sherboung determined to stop the consump-

tion of Indian hemp, and ordained that all hemp plants should be destroyed, and that all habitues should be imprisoned and have their teeth torn out. Indeed, the history of every common habit-forming drug is crowded with the recital of strongly worded interdictions that periodically have been launched against its use.

In the case of alcohol Lewin concludes that "not one of the penalties and prohibitions enacted since earliest times against drinking and drunkenness has had even a general, half perceptible, success." On the other hand, he relates many instances of the queer results that have followed attempts to interfere by legislation with the habits of a people. For example, the Presbyterian missions in Polynesia instituted a campaign against kava drinking, it was successful, but the natives took to alcohol instead—a far more serious scourge. It is perhaps unnecessary to add that Lewin is not optimistic regarding the success of prohibition in the United States, since he regards it as an experiment that has been tried and failed times without number.

Although he believes that it is impossible to abolish a deep-rooted custom or habit by repressive legislation, however draconic, Lewin recognizes that there is a possibility of anchoring the spread of such drug habits as morphinism and cocaine, which affect only a portion of the community, and depend upon a supply of drugs that could be abolished, or at least greatly restricted, by international agreement. He thinks that commercial interests have frustrated the efforts made in this direction at Geneva, he recalls Napoleon's saying *Le commerce n'a pas de patrie*, and adds that much worse things could be said of trade, were its activities in regard to habit-forming drugs to be correctly and frankly described.

The essay is of great interest and value, because it gives a clear general picture of the drug habits with which mankind has afflicted itself. In particular its study is to be recommended to those who propose to modify these habits by legislation.

**THE SPECIFICITY OF SCARLET FEVER STREPTOCOCCI.** There were at one time good grounds for believing that the streptococci isolated from the throats of scarlet fever patients formed a homogeneous group distinguished by their serological and then toxicogenic properties. It was hoped that by laboratory tests alone it would be possible to identify the origin of a given strain of streptococcus, and to ascertain what etiological relation it bore to the disease with which it was associated. Recent work, however, seems to render it more and more probable that the problem set by the streptococci is not to be solved so easily, these organisms are subject to considerable variation, and any attempt at rigid classification is likely to fail. Further evidence of this contention is afforded by a paper by Dr D. G. S. McLachlan in the *Journal of Hygiene* (March 26th, 1927). Studying ninety-eight strains of hemolytic streptococci isolated from scarlet fever cases, he found that all but three produced a toxic principle capable of evoking a cutaneous reaction in susceptible persons in a dilution of 1 in 1,000, the three exceptions produced a reaction only when lower dilutions were employed—1 in 100 or 1 in 250. But, on the other hand, no fewer than five out of thirty-two strains isolated from non-scarlatinal sources produced a similar toxin active at 1 in 1,000, while six others out of the same series produced a toxin active at 1 in 100 to 1 in 250. These results appear to indicate that no hard and fast line can be drawn by means of estimations of toxigenicity between streptococci of scarlatinal and of non-scarlatinal origin. Nor do neutralization tests with immune sera

afford much help. Of nine or eight scarlatinal toxins tested, eight or eight were neutralized by a specific anti-toxin serum or two or two non-scarlatinal toxins tested, eleven were neutralized by the same serum. Though the scarlatinal toxins appeared to differ among themselves there was no indication that their neutralization by a specific serum differed in any way from that of the non-scarlatinal toxins. The author considers that these tests show that the scarlatinal streptococci are closely related to other haemolytic streptococci, and illustrate the difficulty of demonstrating satisfactorily that *Streptococcus scarlatinae* is a distinct variety characterized by specific toxigenic properties. Undoubtedly it would be easier to study this problem if only there were a suitable laboratory animal that reacted to cutaneous injections of streptococcal toxin. So far, with the exception of certain experiments on young goats, all tests of toxicity have had to be conducted on human volunteers. Various investigators, however, have stated that by artificial immunization laboratory animals can be sensitized to the toxin. Professor T. J. Mackie and Dr. D. G. S. McLachlan<sup>1</sup> were able by repeated injections of living organisms, to produce cutaneous sensitiveness in guinea pigs to scarlatinal toxins. But further investigations showed that the reaction occurred only when high concentrations of toxin were used, that the reaction was generally mild, that the active principle in the filtrate was not inactivated completely even after three and a half hours' exposure to a temperature of 100° C., and that the sensitive strain was not specific. They conclude that the skin reaction in sensitized guinea pigs is not definitely comparable with the Dick reaction in persons susceptible to scarlet fever.

#### VISCERAL MANIFESTATIONS OF TERTIARY SYPHILIS

It is interesting to note the swing of the pendulum of medical opinion on visceral manifestations of tertiary syphilis. In a note published on Mar 7th (p. 835) Mr. Rodney Malingot, in recording a case of gummatous colitis, called attention to the change of attitude in the medical profession towards syphilis of the large intestine. The syphilitic, he said, used to be regarded as one of the commonest forms of intestinal stricture; opinion has now swung round almost entirely to the opposite view. In a recent communication to *l'Académie de Médecine* (March 1st) Drs. Emile Sergent and R. Benda mention the obit on from which Dr. Letulle has recently drawn pulmonary syphilis and with this introduction describe their observations on tertiary syphilis in the lesser bronchial tubes. They are convinced that some of their cases showed bronchial sclerosis solely due to syphilis, while others were possibly open to two interpretations that they were due to tuberculous disease in syphilitic subjects. In the first group there were eight cases in which syphilis was evident and tuberculosis could be ruled out thorough examination was made for traces of other diseases but the only case of doubt in the group was a man who had been gassed in the war. In the eight cases of the second group, although syphilis was present and the bacillus of Koch could not be found the occurrence of haemoptysis, and the discovery of nodular formation on x-ray examination prevented the exclusion of tuberculosis. In confirmation of the views the authors call attention to the recognized predilection of syphilis for the large bronchi, the frequency of the origin of dilatation of the bronchi from syphilis, and the predominance of lesions in the bronchioles in pulmonary syphilis. Drs. Sergent and Benda speak of syphilitic sclerosis of all the viscera as being generally admitted, they also regard it as uncontested that syphilitic antecedents are frequent in the subjects of tuberculous fibrosis. They conclude that in any discussion of syphilis of the respiratory tract consideration should be given to

disease of the middle and smaller bronchi, and that this form of the disorder should be distinguished from syphilitic bronchiectasis. As the affection is not fatal, autopsies in chronic syphilitic bronchitis are rare, but the authors express the hope that the condition will be sought for during *post mortem* examination of old specific cases, such as those with manifestations of tabes or arthritis.

#### NATIONAL HEALTH INSURANCE AMENDMENTS

Two months ago we drew attention (*JOURNAL* June 18th, p. 1116) to the fact that the Government was considering the introduction, either in the autumn session this year or early next year, of a bill to amend the National Health Insurance Acts in some important particulars. During the past week it has been stated apparently with authority, that this bill is now drafted, and that the proposals have been considered by the Ministry's Consultative Council of Approved Societies. Presumably, if the Ministry's Medical Consultative Council had been functioning, the proposals might have been submitted for its observations also. This, however, being obsolete, apparently with the acquiescence of all concerned, there are strong reasons why the proposals should be placed before the Insurance Acts Committee and Council of the British Medical Association. It is true, as stated in our previous note, that the approved societies insist on restricting the amendments of the Ministry to a relatively small field. However much the Ministry may wish to carry out the simpler, more urgent, and more beneficial of the recommendations of the Royal Commission, it is not to be allowed to do so. The Royal Commission, it will be remembered, unanimously recommended that an extension of medical benefit to include consultant and specialist services with laboratory provision was urgent, was "immediately possible," and would probably cost not more than a million and a half per annum, and that an extension to make dental benefit a statutory instead of an additional benefit was placed much further down on the list of desirable extensions. The possibility of carrying this recommendation into effect lies either in the Ministry and the Government insisting on it by legislation, or in the approved societies consenting thereto. It is understood that the societies have refused their consent, and it may be held by some that they are placing the conservation of their individual power and financial strength above the common interests of the insured population. However restricted, in these circumstances, the amending proposals of the Government may be, it is still possible that they may include suggestions some of which will require the co-operation of the medical profession, and certain that they must include proposals which will directly or indirectly affect its interests. An early consultation with the representatives of the profession is therefore desirable.

#### INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE

On July 18th, exactly two years after the Congress at Geneva, the sixth international Congress of the History of Medicine opened at Leyden where the meetings were held on that and the two following days they were then transferred to Amsterdam, and the meeting ended on July 23rd. The Congress was formally opened by H. P. H. Prince Hendrik of the Netherlands after addresses had been delivered by the President Dr. J. G. De Lint, lecturer on the history of medicine in the University of Leyden, and the delegates of the various countries. Nearly two hundred members in all were present from Austria, Belgium, Denmark, Egypt, Finland, France, Great Britain, Germany, Greece, Holland, Italy, Morocco, Norway, Poland, Portugal, Prussia, Spain, Sweden, Switzerland, and the United States,

<sup>1</sup> *Brit. Journ. Exper. Path.* 1917 viii 123.

<sup>2</sup> See *BRITISH MEDICAL JOURNAL*, Aug. 1<sup>st</sup> 1915 p. 225.

representatives from Germany and Austria were present for the first time. Owing to the simultaneous meeting of the British Medical Association at Edinburgh there were only a few representatives from this country, but nearly all played an active part in the proceedings. Dr Charles Singer, as the official delegate of the British Government, delivered an address at the opening ceremony, Sir D'Arcy Power took the chair on the second day and read a communication by Mr C J S Thompson, who was unable to be present, on Boerhaave's prescriptions for English patients, Dr J D Rolleston contributed a paper on St Blaise, physician and martyr, and was chosen by lot to propose the health of the ladies at the banquet. The outstanding personalities in the Congress were the veterans, Professor W H Welch of Baltimore and Professor Karl Sudhoff of Leipzig, who, by the active part which they played in the scientific and social life of the Congress, roused the admiration and envy of the younger members. Space does not permit even a brief account of the ninety odd papers communicated to the Congress. Suffice it to say that, while a considerable number dealt with Boerhaave and Dutch medicine, a great variety of other subjects were discussed. Among those that may be mentioned were those on medical folk-lore by Dr van Andel, on St Sebastian by Professor Sigerist of Zurich, on the gynecologist Luit Noeggerath by Dr Diepgen of Freiburg, on the evolution of medical philosophy by Dr Delmar of Louvain, on Dutch students in Italian universities by Professor A Castiglioni of Padua, on a Catalan plague tract by Dr A Klebs, on Dr Oliver, the Bath physician, and the biscuit that goes by his name, by Dr L B Krumpholtz of Philadelphia, and on the teaching of medical history in the United States by Dr Victor Robinson of New York. The meetings were, on the whole, well attended, and the discussions animated. Special addresses were also given on the history of the treatment of nervous and mental disorders by Dr C U Ariens Kappers, on the work of Leeuwenhoek and Swammerdam by Drs A Schriebeek and W H van Steers, on the doctors in Canaries by Mr C Veeth, and on the bier of the surgeons and druggists preserved in the church at Wolkum by Dr J B F van Gils. A collection of Dutch physical instruments of the seventeenth, eighteenth, and commencement of the nineteenth centuries was brought together in the physical laboratory at Leyden, where an excellent preliminary address was given by the assistant director, Dr C A Crommelin, who showed contemporary portraits of Huyghens, Musschenbroek, and others. Credit is also due to Drs Nuyens, de Feijer, and van der Hoeven for their admirable collection of pictures, sculpture, books, and manuscripts relating to medicine in the Municipal Museum at Amsterdam. It was only fitting that during the stay of the Congress at Leyden homage should be rendered to the memory of Boerhaave, who was the most eminent physician and clinical teacher of his age. Visits were paid to his tomb in the Peterskerk, a memorial tablet was unveiled on the wall of the house where he died, and a wreath was placed on his statue in one of the principal streets of Leyden and in appropriate address given by Professor Welch. The social festivities, for which the organizing committee deserve the highest praise, included receptions by the burgomasters of Leyden and Amsterdam, by the Minister of Public Instruction at The Hague, by Mr and Madame Fokker at Boerhaave's house, and a tour on the Zuyder Zee, including visits to Enkhuizen, where the members were entertained by the mayor and inspected the Surgeons' Hall, and to Volendam. A visit to the diamond-cutting factory was also arranged for the ladies, who were accompanied by several members of the Congress. The Congress terminated on Saturday evening with a banquet at Vondel Park where speeches were delivered by the President of the Congress, Dr Tricot-Rouvi of Antwerp

(President of the International Society of the History of Medicine), and Dr Crippon, the President-Elect of the next Congress. This will be held at Rome in 1930, but in 1928 the International Society of the History of Medicine will take part in the Congress of Historical Science to be held at Oslo.

#### INFECTIOUS DISEASES IN BULGARIA

BULGARIA, owing to its geographical position, is exposed to the pestilences which come from the East. It has quarantine stations at Varna, Burgas, Silvelgrad, and Rustchuk, together with thirteen health posts elsewhere. Infectious disease within the country, as stated in a recent paper, is controlled centrally by a director of public health, and locally by medical officers and sanitary inspectors, aided by provincial and district councils. For plague, cholera, small-pox, typhus fever, and relapsing fever hospital isolation is obligatory, for enteric fever, scarlet fever, and diphtheria it is not unusual, other infectious diseases are treated at home. In home isolation the house is placarded, access forbidden, and a gendarme or watchman placed on guard. There were two cases of plague in 1924 but cholera has not occurred since 1916. Small-pox has become comparatively rare. Vaccination in the first year of life is compulsory, and must be followed by two revaccinations before the ages of 7 and 20 respectively. All contacts with small-pox must be vaccinated or revaccinated, and general vaccination, under conditions, may be imposed during outbreaks. In 1919 there were 8,746 cases of small-pox, in 1923 there were 20, mainly refugees and Turks. Typhus was imported from Serbia in 1914, and in 1917 there were 6,697 sick. Since that date its prevalence has declined, but in 1923 there were 413 cases with 51 deaths. Enteric fever is frequent in the poorer districts where wells are unprotected, flies numerous, and life in general unhygienic. Scarlet fever is widespread. In 1923 there were 15,585 cases with a case mortality of 18 per cent. The type of disease is severe and its treatment inadequate. Measles is prevalent but generally mild, and diphtheria is sporadic. Rabies is endemic in Bulgaria among domestic and wild animals, and the number of people bitten is increasing year by year. In 1923 the antirabies section of the State Institute of Bacteriology at Sofia treated 3,429 persons, of whom 3,171 had been bitten by dogs, 101 by cats, 3 by wolves, 14 by human beings, and the rest by other animals. In some declared infective rabid animals and their animal contacts are killed. Dogs must be muzzled and wear collars with identity badges, they must be kept on the chain at home and taken out on the lead, luxury dogs are heavily taxed and all strays are killed, from fifteen to twenty people die each year of hydrophobia. Tuberculosis is not notifiable but the annual mortality from all forms in fifty towns has recently ranged from 2.4 to 3.5 per 1,000. The disease has a rising incidence in Sofia, and is beginning to invade the rural districts. Its spread is ascribed to the introduction of schools and factories. Malaria is very common, is not notifiable, but in 1922, of 23,863 school children examined in selected areas, 8,839, or 37 per cent, had splenic hypertrophy. Mosquitoes thrive in this land of lakes and marshes. *Anopheles maculipennis* is widely distributed and *Myzomyza pseudopictus* swarms in place of *1. bifurcatus*, however, is rare. Curative quinquina intermittent, oiling is usual, and effective drainage on the large scale financially impossible. Venereal disease appears to be rare. During the year 14 per cent of the army had syphilis and 20 per cent gonorrhoea, many men mobilization had to be sent home still infective. Epidemics of civilian syphilis are recorded. In one village 45 per cent of the inhabitants were syphilitic, in another 62 per cent. In towns the disease is spread by the usual channels, in the country by the use of one common feeding bowl and drinking vessel at meals. There is no leg

for venereal disease, but not prostitutes are supervised Bulgaria has a surface of some 40,000 square miles and a population of 5,000,000, of whom one-half are engaged in agricultural pursuits. It possesses various minerals, but their development is in its infancy. The country was greatly impoverished by the European war. Its public health service, as is to be expected under such conditions, is crippled by a shortage of personnel and equipment. Despite the above progress has been made, as the above observations show, but what remains to do will present to the public health administration of Bulgaria a sufficiently formidable task.

#### TRUDEAU SANATORIUM

EXCEPTIONAL activity in all departments is recorded in the forty-second annual report of the Trudeau Sanatorium, at Saranac Lake in the Adirondacks, for the year ending September 30th, 1926. More patients were dealt with than in any previous period, and the increased number of the infirm beds enabled many patients with advanced disease to undergo treatment. There was much renovation of the existing buildings, and the new animal house and bacteriological cottage were completed and opened, additional roads were constructed, and the general equipment of the hospital was much improved. The work of convalescent patients was considerably extended, and proved a very valuable factor in their treatment. Publication was begun of a series of books containing the results of the clinical observations of physicians connected with the Trudeau Foundation. Of the results of a prolonged study of intestinal tuberculosis contained in a volume prepared by Dr. LAWRENCE BROWN and Mr. H. L. SAMPSON, roentgenographer of the sanatorium, some account was given recently in our columns, (February 5th, 1927, p. 242). The second book of the series related to the diagnosis of tuberculosis by laboratory methods, it was written by Drs. E. R. BALDWIN, S. A. PETROFF, and L. U. GARDNER, and appeared early this year. The forty-second annual medical report of the sanatorium is published separately, and appended to it are the pathologist's report and the tenth collection of the studies of the Trudeau Foundation for research and teaching in tuberculosis. It is stated in it that 2197 examinations have been made of the 1,200 school children who live at Saranac Lake, with a view to determining the age at which pulmonary tuberculosis begins. Further attempts have been made to immunize guinea pig, it has been shown that as few as five tubercle bacilli can produce tuberculosis in a normal guinea pig, and it is suggested that skin testing immunity the usual injection of 80,000 to 100,000 bacilli is too high. Other subjects dealt with are the diagnostic and prognostic significance of pleurisy in phthisis, and the progression of tuberculous lesions in the lungs. A modification of the Ziehl-Neelsen method of staining tubercle bacilli is described. The claim is made that by its use there is an increase of 5 per cent in the positive results of the examination of sputa, the bacilli appearing larger and more deeply stained while beaded and hair-like forms are scarcely ever seen.

#### SMALL POX

SICKS are not wanting here and there in England that the respect of the public for the grim type of small pox which is so prone to kill or disfigure has been appreciably reduced in recent years through the local prevalence of a milder form with an almost negligible fatality. The name of small pox in the ear of many is beginning to lose its formidable sound. As fear is relieved the need for precaution is lost sight of, and the claims of vaccination as a safeguard against the disease are slighted or passed by. This attitude, however, is quite mistaken. The pre-

valence of mild small pox implies susceptibility also to the severer type, and, rightly understood, should serve as a warning that the need for vaccination is a great as ever. It is important that the public should realize the situation, and that the medical profession should be prepared. The appearance now of two publications on small pox by Dr. W. M. WAINLYN is therefore well timed. One of the prints, entitled "To whom it may concern," is a popular address on small pox and vaccination. It describes the aspect of the disease, citing tragic instances, shows how it spreads and implicates whole families, quotes the figures of small pox mortality in England from 1841, indicates the need for prompt action, and points the value of vaccination. The other print, "The accurate diagnosis of small pox," is the third edition of a post-graduate lecture. It impresses the importance, to the doctor confronted with an obscure case, of bearing in mind the possibility of small pox. It deals with the initial rashes and the crusting stage. It discusses maturation and the prostration of onset, and concludes with the statement that, however the rash may be mitigated in its severity, its relative distribution as between face, trunk, and limbs is constant in all cases. The popular print, "To whom it may concern," is recommended to the persons indicated. It puts the position as it really is, in a straightforward and vigorous manner. The post-graduate lecture is recommended to medical men, both general practitioners and health officers. It contains useful hints for those hours of trial in which reputations are made or marred.

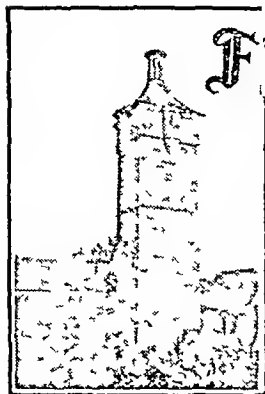
#### MR ALBAN DORAN

MR DORAN's many friends will regret to know that he had to undergo an operation for the relief of acute glaucoma last week, and now lies in his old hospital, St Bartholomew's, where he became a student sixty years ago. Although in his seventy-eighth year, Mr Doran's mind is as active as ever, and he recalls the fact that it was during the period of his house surgeonship in 1872 that a ward was first set aside for ophthalmic cases. Sixteen years ago, on returning from consulting practice, Mr Doran gave his voluntary services to the museum of the Royal College of Surgeons, where he prepared a descriptive catalogue of surgical instruments, which will long remain the standard treatise on the history of surgical invention. In this museum, too, there are many mementoes of him, particularly the splendid collection of anatomic models which he made while a student in the museum under Sir William Flower. He also assisted Sir James Paget in the compilation of the pathological catalogue, now being again revised by Mr Cecil Beadles and Mr T. W. P. LAWRENCE. Mr Doran has been an investigator and student all his days, and there are few professional men who possess his breadth and depth of scholarship. Our readers will hope for an early recovery, meantime they will be glad to know he is receiving the utmost attention and kindness from his old hospital.

WITH very deep regret we announce the death, on August 15th, at the age of 65, of Dr HARVEY LITTLEJOHN, Professor of Forensic Medicine in the University of Edinburgh. He had been ill for some time, and was unable to take the chair at the Section of Forensic Medicine at the Annual Meeting at Edinburgh last month.

1 PROFESSOR R. T. LEITCH, F.R.S., Director of the Division of Medical Zoology in the London School of Hygiene and Tropical Medicine, whose successful researches into bilharziasis in Egypt are well known, has been invited by the Egyptian Government to continue them next winter, and to advise on the best methods of combating the disease.

## THE CULT OF WATER CURES IN GERMANY.



Tower at Rothenburg

FOR the average Englishman his holiday is an opportunity of rest and change from his work. With the German it is different, to judge from the number of "health springs"—apparently well over one hundred—scattered throughout the country. Thousands of people flock to these springs annually, and utilize their holidays in the serious business of restoring their health. Their faith in the properties of the waters is such that in Berlin it has become fashionable to continue the cure by visiting the Zoo at breakfast-time, and drinking a glass of the accustomed water while inspecting the collection of animals. The spas are federated, together with sea-bathing resorts on the North and Baltic seas, and so-called *heil-cure-spots*, under the Allgemeiner Deutscher Bäder-Verband of Berlin. The equipment of all the spas is very complete, and mostly up-to-date, so that a large range of diseases can be treated, although each place specializes in accordance with the constituents of its waters.

### Aachen (Aix-la-Chapelle)

Aachen, being close to the Belgian frontier, is easily reached through Antwerp and Brussels. It is a commercial and industrial town of 150,000 inhabitants, but the Quellenhof hotel, with extremely well appointed baths attached to it, and the Kurhaus are situated in a large garden, cultivated and wild, in a quiet spot on the edge of the city. As a spa, Aachen has suffered recently from three crises—the occupation by the Belgians, the Separatist movement, and its former reputation for the cure of syphilis. Its hot sulphur waters are said to be of about the same temperature as the waters at Culsbad. They are used for rheumatism, skin diseases, gout, and late syphilis. It is stated to have been shown by experiment on animals that the sulphur can penetrate the skin, and blacken bismuth in the subcutaneous tissues. Douche massage is considered at Aachen to be given best by an attendant in the bath with the patient, the douche nozzle being controlled by the attendant's finger. The method of Hufsch of Berlin is in use for cases of high blood pressure. Some portion of the patient is inserted into an arm bath, a sitz bath, or a leg bath, and the temperature is gradually raised to a high degree by adding hot water through a funnel leading to small perforations in the bottom of the bath. The swelling of the limb induced by the heat is believed to deplete the internal organs and lower the blood pressure. It is suggested that bi-weekly repetition of the treatment will keep the blood pressure permanently reduced. The equipment at Aachen includes mud baths, ultra-violet light, electric baths, a Zander institute, and an inhalatorium after the fashion of Ems for nasopharyngeal treatment. Patients unable to move are lowered into the bath in an invalid chair, worked by somewhat nerve-

acking machinery. An attraction of the cure at Aachen is that bathing facilities are attached to the main hotels.

### Bad Kreuznach

Kreuznach is situated on the river Nahe, near its junction with the Rhine. The wines of the Nahe district are very good. Those who prefer water can drink from the Elizabeth spring, and bathe in radio active brine. Kreuznach claims to have been the first place at which radium-emanation therapy was applied as a recognized method of medical treatment. The radio activity is said to be derived from the porphyry in the fissures and crevasses of the neighbouring cliffs, and to contain in concentration a proportion of 100,000 Mache units, "fifty times that of the strongest radium spring in the world." In the valley near Kreuznach are the *Salinen*, where the brine is concentrated for the production of "mother lye" and salt. Kreuznach also bottles its radium water. The list of diseases treated at Kreuznach is a long one, ranging from gout and scrofulosis (a term of frequent use in Germany) to skin diseases, heart diseases, and the diseases of old age. The waters are supposed also to encourage the libido sexualis. In fact, the view taken locally is that Bad Kreuznach is an ideal resort for everyone. Like Aachen it is open all the year round, with a main season from May to October.

### Bad Münster-am-Stein

Münster-am-Stein is a charming little place close to Kreuznach, and a few miles higher up the River Nahe. It lies between the Rheingrafenstein rocks and the hills called Rotenfels. Its waters are the same as those of Kreuznach, in fact, the saline works from which Kreuznach produces its mother lye originally belonged to Münster-am-Stein. The bathing establishments were rebuilt in 1911, all the baths being now supplied direct from the springs with water which does not require artificial heating. In addition to natural thermal radium acid baths, mud baths can be obtained, composed of radio-active spring sediments. In the radium emanatorium patients breathe the gases of the springs.

### Bad Meientheim

Unlike so many German spas, which are owned partially or wholly by the State or municipality, Bad Meientheim belongs to a private company, which owns the baths, kurhaus, gardens, and four hotels. Each hotel has its own bathing establishment and equipment, and a resident physician. All the hotels are run as hotels, with freedom for the guests, and not as sanatoriums. But in the Hotel Kurhaus the hotel element predominates while in the others, such as the Kuranstalt Hohenlohe, under the capable management of Dr. Leopold, the medical supervision is more thorough. Patients in boarding houses and certain sanatoriums go to the Kurhaus hotel baths for their treatment. Bad Meientheim is the German substitute for Culsbad. Its waters are suitable for diseases of the liver and gall bladder, for gastro-intestinal diseases, for diabetes, and for obesity. Six different menus are provided in the hotels to suit different patients, and these diets are supervised by the resident doctors. Meientheim is an ancient and interesting town, situated on the banks of the Tauber, and was once the home of the German knights. The delightful medieval town of Rothenburg is within easy reach, and Würzburg, the erst-



Meientheim



of Hohenlohe and the cloister of Bronnbach can be visited. Mergentheim is a quiet spot, amidst beautiful scenery, with an able director, Herr Hengst, who has been connected with hotels in London and Cairo, and there is, perhaps, more efficient supervision of the patients than is usually the case.

#### Baden Baden

As a bathing resort Baden Baden, on the river Oos, suffers from the fame of its social attractions. It has been called the "Lido of Central Europe" and the fashionable meeting place of the elite from all parts of the world. It is a well laid out and well kept town, situated amidst the dark pine-covered hills of the Black Forest, where the wealthy can live in luxury, indulge in a little mild gambling, and, when not too much exhausted with the round of pleasure, can drop into the Friedrichsbad or the Augustabad, and experience the sensation of a "wildbad" or "bain sauvage." This name is derived apparently, from the fact that the patient sits in a shallow bath on a bed of sand, through the middle of which the warm water flows. The flow of water keeps the sand clean, the sand retains the heat of the bath. The use of this bath is often combined with a prolonged process of Turkish and steam baths, massage showers, cold plunges, and, if necessary, some Zander exercises. There is accommodation for the taking of a wildbad by family parties. The baths are under the State, the municipality runs the outside attractions, the hotels are private companies. The bathing establishments are well appointed and under the control of a very capable chemist and engineer, Dr. Brur, but one is left with the impression that the baths at Baden-Baden are only one of many side shows, less closely connected with the life of the spa than is usually the case. Baden-Baden treats rheumatism and gout, and also provides a grape cure for constipation and obesity at the end of August and in September. Owing to the mildness of the climate the season is perennial.

#### Wildbad

Though Wildbad seems to possess more "Princes' baths" than most spas, and its bathing establishment is richly decorated in Oriental style it takes its treatment more seriously than Baden-Baden. It is a little town situated in the Black Forest in the midst of magnificent scenery, on the banks of the river Enz. Here the rheumatic patient can devote himself to his wildbad, with water coming from the earth at a temperature of 94°. The effects of the water are attributed mainly to its being thermal. There is nothing noteworthy in its composition, there is less radium than in many waters and it is not thought that drinking the water is of much use. Bathing is the only important thing. The patient feels worse for the first few days of treatment, and then begins to improve, and in twenty-nine days progress is complete as far as it is possible. For nervous and excitable people it is considered better that the water should be lowered 2° in temperature by storing overnight. The visitor to Wildbad has no excitements beyond the band the scenery, a beautiful park, and much trout fishing.

#### Bad Reichenhall

Reichenhall situated in the Bavarian Alps not far from the Austrian frontier, has perhaps some of the most beautiful surroundings of any spa in Germany. It was known for its salt works in Roman times, but as a bathing place it only dates from 1845, and as this town was completely burnt down last century, no old buildings remain. The springs vary greatly in strength, but some contain as much as 24 per cent of salt. Owing to its climate and its scenery Reichenhall is prepared to treat a large variety of diseases, and equipment exists for all sorts of methods, from sun baths to Storm van Leeuwen's filtered air. The main treatments, however, are by bromine baths and by compressed air. Consequently the diseases treated are chiefly those of the organs of respiration, such as asthma and emphysema, heart disease, and some diseases of women and children. The pneumatic chamber installation is very complete, and further respiratory treatment is obtained by inhalations and by promenades in the neighbourhood of the salt-evaporating works.

#### Bad Elster

Elster in Saxony is a middle class watering place, consequently it has many homes or homes for black coated insured persons and for kraunkene on patients. Prices are reduced for some 3000 patients a year. It has a very fine modern bath house, a new wing to which has just been opened. The waters contain iron and chloride salts, and in some cases natural carbonic acid gas. Radio-active waters are also in use, but these are obtained largely from the neighbouring spa, Brambach. A specialty is made of mud baths, and in the neighbourhood of Elster there are large flats of used mud which are intended to be made use of again in twelve years' time. The diseases treated are chiefly anaemia, sundry diseases of the internal organs, and women's diseases. A short distance from the town there are open air swimming baths for men and women, and for mixed bathing. There is in Elster a very well run sanatorium owned by Dr. Kohler.

#### Bad Brombach

At Brombach near the Czechoslovakian frontier a new spa has been founded. Like Mergentheim, the establishment is under a private company which runs the baths and hotel. The waters are said to be highly radio-active and under an agreement Brombach has to furnish a daily supply of radium water to Bad Elster. Because possible of its nervous the establishment was not very impressive, and the close odour in the hotels did not add to the attraction of the place.

#### SANATORIUMS

The observer of German cure places will be struck not only by the completeness of equipment at the spas, but also by the facilities offered for other forms of treatment. Thus throughout Germany there are many sanatoriums, establishments to which the nearest approach in this country are Puthy Castle, the New Clinic in Wanders Forest, and perhaps some of the hydropathic establishments. As examples of such sanatoriums we may take Buhlerhohle near Baden-Baden, Dr. Kohler's sanatorium at Bad Elster, and Dr. Konig's clinic for asthma in Reichenhall.

The Sanatorium Buhlerhohle is situated high up in the Black Forest, and is a palatial building originally erected as a home for a dozen retired army generals. It now accommodates some fifty visitors with a new wing for thirty-five more. The sanatorium itself is a clinical establishment in which all the patients are under medical discipline. In the Kurhaus diagnosis and treatment are available from the resident doctor, but for those who do not need medical attention it is a place of recreation. All internal diseases and nervous diseases are treated very little seems to be excluded except infectious disease and insanity. Diet, hydrotherapy, sun and air baths, inhalation, massage, electricity, and gymnastics are used in treatment. The cost for board and lodging is from ten to seventeen marks a day, with an additional charge of 20 per cent in the summer season. The medical fees are fifteen or twenty marks for the first examination and thirty marks every ten days for daily visits or consultations. There are other hotels and sanatoriums under the same direction at St. Blasien and Selznach.

Dr. Kohler's sanatorium at Elster is more definitely linked to spa treatment. It consists of several villas with equipment for baths and for electric, ultra-violet, gymnastic, orthopedic, inhalation, dietetic, and psychic treatment. Attached to Dr. Kohler's sanatorium is an open air establishment for poor children suffering from scrofulosis. This home was started with a donation from the Saxe-Weissenhof Fund. The children live in a state of nudity exposed to sunlight and open air.

Dr. Konig's private clinic at Bad Reichenhall is arranged for treatment by the system invented by Prof. van Leeuwen of Leiden. The principle is to keep the patients, at all events for the night, in airtight chambers erected in their bedrooms through which dried and purified air is pumped. The so-called fresh air is collected through a large galvanized iron pipe erected among the chimney pots. This air is conducted to the basement of

the sanatorium, where it is dried over ice, filtered (presumably of soot from the chimneys), treated for the removal of halogens—also derived largely from the home fires, we imagine—and then conducted in pipes throughout the house into the closed chambers and one sitting-room. Doubtless the process removes from the air pollen and other particles, and so relieves the symptoms of hay asthma while the patient is hermetically sealed up. But why the symptoms do not return during the daytime, when the patient wanders in the streets of Reichenhall is not clear. Even if spore-proof mattresses are provided while the patient is in the clinic, it does not seem to be known what happens if he subsequently drifts into an ordinary hotel. As an article by Professor Storm van Leeuwen, describing his method, is to be published shortly in the *JOURNAL*, the matter need not be pursued here. It has only been introduced to show the extent to which unusual forms of treatment are made available.

#### SUMMARY OF SPA TREATMENT

It is evident that the facilities for treatment in Germany are very complete. The establishments, whether bath-houses, sanatoriums, or hotels, are well appointed and equipped, and the charges, particularly for travelling and in the hotels, are not high. The sanitation seems good. Social amenities and amusements are numerous, and the surroundings of most of the spas are beautiful. The treatments that can be obtained are very varied, and in most cases facilities exist for more or less extensive clinical examinations. There seems to be a tendency to standardize the equipment of the establishment, so that while at Ems, for example, inhalations and nasopharyngeal treatment are the special feature, and at Reichenhall a great display is made of pneumatic chambers, such specialization does not prevent the use of most other forms of treatment. Thus mud baths can be obtained at quite a number of spas, and if the orthodox volcanic mud is not available, there is probably a moor in the neighbourhood from which a sufficiently presentable peaty substitute can be brought.

The German spa doctor seems to use his treatment intelligently. He is naturally prepossessed in favour of the water of his district, he is inclined at times to over-estimate its effects. In many cases he is not particularly given to self-questioning as to the rationale of his treatment, on the other hand he has discarded many of the less justifiable allegations of effects formerly attributed to water cures. He is ready to admit the value of the psychological results of regimen and environment on the patient. After all, the "health-springs" have been kind enough to choose as their outlet from the earth some of the earth's best beauty spots. If the seeker after rest and change finds it necessary to vary the enjoyment of scenery with the definite pursuit of health, the provision of water and mud baths, light cures, Zander exercises, and inhalation for gases from radio-active springs may well add to the benefit he receives. The advantages of these forms of treatment do not seem to require the same amount of confirmation as may be thought necessary in the case of the fresh air taken from amongst the chimney-pots.

#### GENERAL IMPRESSIONS OF GERMANY

A few general impressions derived from a tour in Germany may be recorded. It would appear that economic conditions are rapidly improving. Poverty is not visible, though it is said that many in the middle classes who drew incomes from investments were wiped out during the period of inflation. What has happened, apparently, is that, having lost their savings, those who were fit for it have taken up various occupations. Everyone seems to be working fairly hard, though there is some resentment that the products of this labour should go to satisfy the whims of the Dawes plan. During a visit to a factory two points were noticed. Some work, which looked as if in America it would have been done by machine, was being done laboriously by hand, secondly, all the workmen had a sulky and somewhat dissatisfied appearance. Both these impressions may have been erroneous. At the spas the average German is a cheerful person, by no means as fat as he used to be represented. In fact, the typical fat German *frau* seems to have disappeared. She has become

short-skirted and shingled, like the women of other countries, though shingling is by no means so universal as in England. The number of Germans who speak English is very large, and it was startling to meet a German doctor who had never been in England, yet spoke perfect English and had read the whole of Shakespeare twice, many of the plays five times, knew Mrs Gaskell's *Cranford*, and quoted Byron at length.

It is quite rare nowadays to meet any German in uniform, except policemen and sweeps in top-hats. One of the most complete changes brought about by the war must have been the disappearance of universal conscription. Probably the average German is rather pleased at being relieved of the obligation for service, apparently he is turning his attention more to sport. Some games, however, do not seem to attract the German, and golf is mainly an amusement for foreigners. To the visitor there is little evidence of the existence of restrictions to his freedom, notwithstanding the number of police regulations that are supposed to exist. It is true that in Reichenhall smoking is *verboten* in many unexpected places, but the prohibition is probably intended for the comfort of the bronchitic and emphsematic patients.

The German is quite ready to talk about his aspirations. He feels very keenly about the Danzig "corridor," and is quite convinced that it has got to be abolished. He is equally convinced that Austria will not be able to stand without him, and must come into his republic. He does not appear to want either the Kaiser or the Crown Prince back, but large numbers of the South Germans are said to be in favour of the return of Prince Ruprecht. As it is felt that the German must have room in which to expand, there is a slight hope that England may restore some of the German colonies, but as this hope may be doomed to failure it is regarded as possible that the German may set about developing Siberia, in order to make it a second Canada. In the meantime it is said that quite a number of Germans are emigrating to the colonies of other countries.

## Union of South Africa.

[FROM OUR CORRESPONDENT]

#### HOSPITAL SURVEY COMMITTEE

REFERENCE was made on March 26th (p 591) to the appointment by the Minister of Public Health of a committee to make a hospital survey of the Union, and to investigate the hospital requirements of each of the provinces. The committee consisted of Sir Edward Thornton, Director of Medical Services, Union Defence Forces, and assistant health officer for the Union—chairman, Dr A H Lowy, superintendent of the Pretoria General Hospital, Mr J R Booth, secretary of the Kimberley Hospital, Mr R F Smithers, Public Service Inspector, and a lay representative in each of the four provinces, nominated by the administrator of the province. This committee's report has now been published. It confirms the finding of the Hospitals Committee appointed two years ago—that the accommodation at most public hospitals is utterly inadequate, particularly in regard to provision for the coloured and native races. The shortage of hospital beds in the Union now is even greater than it was in 1925, only in Johannesburg has there been any appreciable improvement.

There are in the Union at present one and a half million Europeans and six million non-Europeans. The population is most dense in Natal, with 44 to the square mile, and least so in the Orange Free State, with only 13 inhabitants to the square mile, Transvaal has 21, and Cape Province 17 inhabitants to the square mile. In South Africa the density of the population is not a good indication of the amount of hospital facilities required. This depends very largely on the constituent elements of the population. The raw native living in the heart of Natal or the Transkei obviously does not require the same proportion of hospital bed accommodation as the European, and even among Europeans the demand varies. The old Boer on the farms has a fearful distrust of hospitals, thus the demand for

European hospital accommodation is relatively small in the Orange Free State, whereas in farming communities comprised mostly of members of the other dominant race the demand is large. Only along the mines of the Witwatersrand can the hospital accommodation provided for natives be considered reasonably adequate. Only good hospitals are also maintained by some of the sugar estates in Natal, and by the diamond mines and larger collieries. The Witwatersrand mines are required by law to provide one bed for every forty natives employed, but it is not unreasonable as the committee found that over 2 per cent of the average number of natives employed are constantly in hospital. On the Natal sugar estates hospital accommodation is required in the proportion of one bed for every 200 employees.

Since the demands vary so greatly in different parts of the Union, the committee recommends varying ratios of bed accommodation to population for Europeans and non-Europeans in different parts. It recommends the division, for hospital purposes, of each province into a number of central hospital areas—the province of the Cape of Good Hope being divided into six such areas, and the provinces of the Transvaal, Natal, and the Orange Free State each into two. The ratio of bed accommodation to population to be aimed at in the public and private hospitals for acute medical and surgical cases, and maternity provision is shown in a table. For non-Europeans the ratio is one to 700 of population in the whole of the Union except the Cape Western area—in which the non-European population consists largely of Europeans whose degree of civilization often approaches closely to that of European—for this area the ratio given for non-Europeans is one bed for every 375 of population. For Europeans the ratio of desirable bed accommodation to population arrived at varies from one for every 200 in Natal to one for 350 in the Orange Free State. In the Transvaal and three of the Cape areas it is one for every 250, in the Cape Western area it is one for 275, and in the Cape Midlands one for 300.

The approximate total accommodation at present available in public and private hospitals for surgical, medical, and maternity cases—excluding the beds in military prison, chronic infectious disease, and mental hospitals—for all four provinces of the Union is 5 002 European and 9 113 non-European beds. The existing ratio of beds available for communities is given as follows for Europeans and non-Europeans respectively, for the four provinces:

Cape of Good Hope	479 and 233
Transvaal	2 and 2 631
Natal	160 and 1 63
Orange Free State	845 and 7 695

For non-Europeans the actual ratio in all provinces there fore falls very far short of the theoretical ratio suggested by the committee.

Except at a few places no medical or nursing service whatever is available for natives living under tribal conditions in the native reserves and locations. There the witch-doctors and herbalists flourish, teaching the people that sickness is the result of witchcraft, and that they alone are able to cure the sick. In times not a long past, when no breath of doubt interfered with his practice the witch-doctor smelt out the supposed offender, the procedure generally ending in the torture by fire or stinging ants, and in the death of the accused person—in addition to the confiscation of his cattle and property. The witch-doctor had great value in war when he could bewitch the enemy and give invincible power to his tribe, enabling them to overcome even the white people. When tribalism continues the power of the witch-doctor has been little if not fed with. The only serious effort to break down his influence was made by Sir George Grey in 1853 when he founded the Grey Hospital in Kingwilliamstown, this was intended to be one of several hospitals in the native areas of the old Cape Colony. His scheme was however abandoned when he left the colony. Since his time little attention has been paid to the personal health of the natives in the reserves and locations in any of the areas now forming the Union.

Apart from the punishment of serious crimes, the collection of taxes, and the suppression of serious outbreaks of

epidemic disease, the tribes have been left alone as long as they lived peacefully. Much private and public money has been spent in educating and bringing Christians to the people, but their bodily health has been left largely to be cared for by witch-doctors and herbalists, the latter are officially recognized, and over 1 250 of them are still housed by the State in Natal at £3 a head per annum. When the Kaffirs leave the native area at the call of the mining industry they are not cared for medically, large numbers are actually being treated in mine and other hospitals. These are chiefly Kaffirs who have left their wives for work, and who are unable when ill to proceed home. Dr Morledge, in charge of a mission hospital in Zululand, emphasises in a recent report the urgent need for native hospitals. He describes the torture that native women must still in many cases undergo during labour. All the neighbouring women crowd into the patient's hut. Some old women may think that progress is no fact enough, and will then tie the girl tightly about the abdomen or squeeze it with her hands, if this is ineffective she kneels or stamps on the patient. Needles to relieve the pain of the child and mutilation of the mother are common sequelae. The committee expresses the opinion that the European section of the community has sadly neglected its duty to these people. It is convinced that the policy inaugurated by Sir George Grey but long since forgotten, or bringing European medicine within the reach of tribalized natives, could meet their great outstanding need, and all available native funds should be directed for this purpose.

It has been suggested that the best way of relieving the desired end would be to give facilities for the training of natives as medical practitioners. Recently a committee considered the best methods of giving such facilities for training should it be decided on. The qualified native practitioner is however rarely content to practice among his own people in the tribalized condition. Only last month grave embarrassment was caused in the administration of a public hospital by a native practitioner treating paying European female patients therein. The present committee is therefore convinced that the medical needs of the tribalized natives will not be met by providing for an influx of natives into the medical profession. It recommends the introduction of a system of dispensaries and hospitals similar to that of French West Africa. While emphasizing the fact that they do not advocate the creation of a class of native practitioners with inferior medical qualification, they believe that the problem in South Africa can best be met in the first instance by the training of a large number of native nurses and midwives. Such persons would then be available to carry European medicine to the heart of the native area, and there would be created a number of health centres working for the benefit of the people. The committee urges that no new licences for native herbalists be granted, and that all existing licences be withdrawn in any district as native nurses and midwives are posted to such a district. The herbalists would then be entirely eliminated during the next five to ten years.

The report of the committee has been well received by the daily press. In the Cape it is described as an able and courageous document giving a more vivid and arresting account of the plight of the natives than did the report of the Hospitals Committee of two years ago. The public and Parliament should bear in mind this time in such a form that they would have to take notice. Its chief virtue lies in the businesslike way in which it sets down a reasonable and exact standard for hospital bed accommodation in the Union, and then applies that standard to the position in the four provinces, and in the various hospital units into which it divides the territory of each province.

#### LEPROSY RELIEF ASSOCIATION

Mr Frank Oldrieve, general secretary of the British Empire Leprosy Relief Association, has just completed a tour of the Union. He visited all the leprosy institutions and gave lectures in the larger towns. For the lectures he made use of a cinema film entitled "Leprosy—the Great Scourge," and numerous lantern slides. His best

meeting was held in the City Hall, Capetown, when several hundred people attended. That audience included thirty-five members of the First Moslem Division of the St John Ambulance Brigade. In all his lectures Mr Oldrieve was optimistic—rather more so than local experience warrants—regarding the results of modern methods of treatment and the possibility of eradicating the disease within a comparatively short period. Provided the cases can be discovered and treated in the early stages such eradication would appear to be reasonably possible. He proposes that compulsory segregation be discontinued and that treatment and isolation be made voluntary.

Mr Oldrieve pays a tribute to the Health Department of the Union because of its policy of discharging non-infectious lepers from the institutions on probation. Since the Department of Public Health took over the administration of leprosy matters in 1923 a total of 1,026 such patients had been liberated from South African institutions. These arrested or "hunt-out" cases were no danger to the public. Segregation of infective cases was a sound policy, but far and away the most important was to get the early cases for treatment. Mr Oldrieve has now left the Union for Rhodesia en route to England.

#### NATIVE MEDICAL PRACTICE AMONG EUROPEANS

The Mafeking nurses' trouble, to which reference was made in the *BRITISH MEDICAL JOURNAL* of June 11th (p. 1078), has been taken a further stage by Dr Molema, the native practitioner concerned, having agreed to accept payment of the costs to date in connection with the application he had made in the Supreme Court against the nurses. The nurses, through their attorneys, gave Dr Molema the assurance that they would afford his patients the same treatment and attention as patients of other practitioners, they would make no differentiation whatever, nor would they alter their attitude as long as they remained attached to the hospital, subject to the provision of the law governing the treatment of patients. A fund was raised in Mafeking to assist the nurses to pay the cost of the proceedings. The whole of the nursing staff have now tendered their resignations and, as it has been found impossible to replace them, the hospital will have to close down on July 19th. This will only be averted if legislation is enacted in the Cape Provincial Council giving hospital committees the right to exclude practitioners at their discretion. The Cape Administrator is attempting to do this by introducing an amendment to the Hospitals and Charitable Institutions Draft Ordinance. But this proposed amendment is meeting with strong opposition as being designed to exclude a particular individual.

In the Transvaal Province, where the problem of native practitioners attending European patients in hospitals has not yet arisen, legislation has actually been enacted to deal with the possibility. The Transvaal Provincial Gazette contains in a schedule certain regulations approved by the Administrator in the Executive Committee. This schedule states that

"No patient shall be admitted to hospital unless such patient is attended by a medical practitioner approved by the committee and no medical practitioner shall attend any patient in hospital unless he has been duly authorized thereto by the committee, provided that any medical practitioner to whom a committee refuses authority shall have the right to appeal to the Administrator, whose decision shall be final."

## England and Wales.

### ST THOMAS'S HOSPITAL

SIR ARTHUR STANLEY, treasurer of St Thomas's Hospital, has succeeded in arousing public interest in the structure of St Thomas's Hospital by stating in his annual report that examination of the chimney stacks has shown signs of weakness attributable to two main causes: first, the deterioration of the mortar, and secondly, the increasing vibration, which is, he says, distinctly affecting the whole of the building. The hospital, which was founded about 1200, and refounded in 1553, was erected on its present site in 1871. The greater part of it is built on made-up ground, reclaimed from the river bed when the Albert Embankment

between Westminster Bridge and Lambeth Bridge was constructed. Great care was taken at that time to provide efficient concrete foundations, "but," Sir Arthur Stanley continues, "the vibration by the heavy weight and rapid pace of increasing traffic throws a severe test on the buildings, however admirably they may have been built fifty years ago." The original architect of the hospital was Mr H. Currey, his grandson, Mr H. W. Currey, who is now the consulting architect, has stated that he called the attention of the governors to the dangers arising from vibration six years ago. Though the heavy traffic of to-day was not anticipated when the buildings were erected a bed of concrete 10 ft thick was put in, but it has proved insufficient to prevent vibration from heavy lorries, and from trams, which are as bad as lorries. He states that below the shore mud there is a bed of gravel beneath the hospital, but it is waterlogged. Although there is no immediate danger it is impossible to foresee the effect of future building operations and deep excavations near the hospital. Deterioration of mortar was to be expected, as the result of age, and can be remedied, although the work will be costly, owing to the height at which some of it will have to be done. There has also been some falling away of stonework, due to the fact that when the building was erected artificial stone had only recently been introduced, and the art of making it had not been fully mastered. Structurally, however, that is not a serious matter. In his report the treasurer states that a clinical laboratory for teaching is to be erected and that a sum of £30,000 is available for this purpose. Half of it has been contributed by the medical and surgical staff and the teachers of the school, the Rockefeller Foundation has found the rest. The average daily number of in-patients last year was 547, the excess of expenditure over income was £19,543. Mr W. R. Morris has promised the munificent contribution of £16,000 a year for the next six years and a half.

### THE ORDER OF ST JOHN AND THE BRITISH RED CROSS SOCIETY

Gratifying progress in all departments of the work of the Order of St John of Jerusalem and the British Red Cross Society is reported in the seventh report of the Joint Council, which covers the period from April 1st, 1926, to March 31st, 1927. The number of cases helped by the department of auxiliary hospitals for officers is now 17,688, the majority of the patients being ex-officers suffering from tuberculosis. Grants for beds for occupational work were given to eleven hospitals, six of which were institutions under the Ministry of Pensions. Under the emergency help scheme nearly 30,000 sick and disabled ex-service men and their dependants were assisted during 1926. The total grants approved for this work from its commencement until March 31st, 1927, amounted to £739,900, and the present average monthly provision of grants is about £7,500. Although 2,140 more cases were dealt with during the year under review than in the previous year, the total expenditure shows a reduction, and the committee anticipates that the need for this emergency relief will gradually diminish. The voluntary refund of money by those so assisted remains a very satisfactory feature, no less than £15,758 having been paid back during 1926, and over £90,000 since the commencement of this scheme. More than half a million patients have been cured by the home ambulance service since it was established, and it has been particularly helpful in the case of patients in remote country districts. Ambulance stations to the number of 376 are equipped by the joint committee of the two organizations and there are in addition fifty affiliated ambulances. During the twelve months ending March 31st, 1927, the ambulances conveyed over 109,000 persons. The mobile x-ray unit has been in constant use in the smaller hospitals in and around London, and a number of treatments have been undertaken at the homes of patients. A grant of £2,000 was made to a Leeds organization which for the past six years had employed an average of 100 tuberculous men in remunerative work. With this help additional plant was installed enabling expansion of such work as brush making and painting. In spite of a considerable falling off in some

of the sources of income during the year under review—the total amount received by the Joint Council being £56,397—the income for the year exceeded the expenditure by £335, as compared with a surplus of £630 in the previous year. It is hoped that when industrial conditions become more settled the Council's income will increase.

#### THE OUTBREAK OF LOOD POISONING IN SOMERSET

WE were enabled last week by the courtesy of Dr. James F. Black (M.O.H., Bath) to publish some particulars of the sudden and rather widespread outbreak of food poisoning in the Keynham and Bath districts. Various investigations have been carried out since then, and though they are not yet completed we are indebted to Dr. Black for the following further information. The pathologist at the Bath Royal Infirmary was able to report on August 10th that he had recovered an organism of the salmonella group from a patient sent into that institution for treatment. It was the "mutton" type of *Vertricks* bacillus. In the meantime some of the remains of the ice cream which appeared to be responsible for the second batch of cases had been sent to the Ministry of Health. On August 11th the pathologist stated that it contained *Vertricks* bacilli. The inquest on the child of 5 who was the only patient to succumb was adjourned by the Bath City coroner to enable an examination of the stomach and intestinal contents to be made. In his evidence at the resumed inquiry on August 12th, the director of the Bath Central Laboratory said that he had discovered a bacillus of the salmonella group in this material. In his opinion it was the unknown variant mentioned by the medical practitioner in charge of the case in his post-mortem certificate as being the probable cause of death. A verdict to that effect was returned. In response to the request of the Ministry of Health two samples of the feces of patients under treatment at the Bath Statutory Hospital were sent to London, and one of these was shown to contain the muton variety of *Vertricks* bacillus. Although the chain of evidence implicating the ice cream is now very strong, two points yet remain to be cleared up. The first is the presence or absence of an appropriate serological reaction in the blood of patients. This will be decided in a few days. The other is the method by which the ice cream came to be infected. In this connection the following facts are of interest. In the investigation made by the vendor at the inquest, it was found that two of his own children were ill during the week, and only one had eaten any of the ice cream, may possibly be significant. It should be added that the general conditions in regard to cleanliness and sanitation under which the ice cream was manufactured by the vendor is reported to be satisfactory, and it would seem therefore, unfair to blame him for the extensive outbreak of food poisoning which has occurred. No further deaths have taken place, and all the patients are said to be going on well. In many cases, however, the symptoms were severe and prolonged.

#### PRINCIPLES AND PRACTICE OF MOSQUITO CONTROL

THE British Mosquito Control Institute at Havling Island has issued a pamphlet prepared by Mr. John F. Marshall giving a succinct history of the foundation of the institute which "owes its existence to the success of an anti-mosquito campaign which was initiated at Havling Island in 1920 to deal with the local mosquito nuisance. The details of the organization which came into being, and some account of the work accomplished. The inception and carrying into effect of the ideas was due to private enterprise and forms an excellent example of the success which can be so achieved. The knowledge obtained will form a basis upon which similar campaigns called upon to deal with similar problems in other parts of the country may build their schemes. The subject is dealt with simply and yet in detail, and while originating in the desire to rid communities in the country of a "nuisance," the principles carried out upon the problem of mosquito control will prove of value in the bigger problem of antimalarial measures in other parts of the world.

<sup>1</sup> Principles and Practice of Mosquito Control. By John F. Marshall. M.A. F.L.S. F.E.S. Havling Island British Mosquito Control Institute 1927. (D.M.S. 810 pp. 45 55 figures 2. 6d.)

#### HEALTH OF LONDON IN 1926\*

##### School Children

In the school medical officer's report the plenum and natural systems of ventilation are compared with respect to certain schools. While plenum is judged by the carbon dioxide test was superior it was found to produce an enervating effect owing to its action on the atmosphere, especially in schools which were warmed solely by heating the air in the plenum. Although objections can be made against the plenum system it is stated to be so to have it advantage, and it is concluded that there is at present no case for its general abolition in London schools. Observation on the use of dusts on soil for school floors have been continued. There is a strong preponderance of opinion that the dampness and soiling of pavement, its two chief drawbacks, are not serious enough to weigh against the increased freedom from dust which is obtained. It is proposed to extend the method to one hundred more schools.

By arrangement with the Metropolitan Asylums Board 50 beds are available at Queen Mary's Hospital, Carshalton, for cases of poliomyelitis of three months' standing.

The number of children medically in period during 1926 was 330,395 together with 191,182 previous year found alive, and inspected. The newer system has not yet penetrated into all London houses. A number of parents obstinately refuse to obtain the treatment recommended. The attitude of resistance is most marked where dental caries is concerned. One parent wrote: "I dare my daughter's teeth to remain as they are the same Power that placed them there will make due change when necessary." And another, "What are our teeth given us but to eat with, and you wants to destroy them?" But the records in general show an improvement in the health of children during school life and an intensification of the activities of children's care in the two years immediately preceding the school leaving age. Last treatment by ionization continued. Distillation for hypertrophic rhinitis and kindred affection has been introduced.

Rheumatism was the cause of the chronic invalidity of 24 per cent of London school children in 1926, as contrasted with 12 per cent for tuberculosis. Additional provision for rheumatic children was established as from November, 1926, at Queen Mary's Hospital, Carshalton in the form of a rheumatic unit of 60 beds for cases of primary acute rheumatism with temperature and acute local manifestations but without chorea.

Other sections of interest in the school medical officer's report are those relating to open air education, sun classes, physical training, co-operation with general hospitals and other voluntary agencies, defective children and the measures adopted or in prospect for the control of infectious disease in schools. Many school nurses have attained high proficiency in the swabbing of throats for bacteriological purposes in the presence of diphtheria outbreak. The measles scheme of the County Council which is put in force when the cases of measles reported from schools approach 1,000 per week involves the seconding to measles duty of nursing staff normally otherwise employed. It was in force from November 1925 to April 1926, a period of seventeen school weeks. The schools concerned numbered 759. The hours demanded by the staff to measles work were 12,189. In future epidemics there will be extended hospital provision for the treatment of measles cases. By the agreement with the Metropolitan Asylums Board of October 16th 1926 when measles is epidemic, measles case will generally be admitted to hospital in preference to scarlet fever. The object of this scheme is to save life and prevent disabling complication.

##### Miscellaneous

The report of the Public Health Department among other things with tuberculosis health programme, general directions about protection and living home. In terms of the Milk and Dairies (Consolidation) Act, 1915, the Council's powers under Part IV of the London County Council (General Powers) Act, 1907, relating to the taking and examination of samples of milk, lapad on August 31st,



1926 Eleven prosecutions against railway companies for smoke nuisance occasioned by locomotives were instituted, and eleven convictions obtained. The chapter entitled "Main drainage" deals, among other matters, with the conversion of hand-operated storm overflow penstocks on three main sewers to the tidal flap system, and flood relief works at a number of points. The chapter entitled "Housing" recounts the progress of the Council's housing schemes. Since the war, up to December 31st, 1926, the Council has completed 15,903 houses and flats, of which 4,643 belong to 1926. Since 1894 the Council has provided accommodation for about 178,728 persons in 25,874 tenements and houses, and three lodging-houses with 1,889 cubicles. The programme of work in hand comprises 15,000 additional new houses, apart from rehousing under slum clearance schemes.

#### CENTRAL MIDWIVES BOARD

At the meeting of the Central Midwives Board for England and Wales last month, when Sir Francis Champneys was in the chair, the Standing Committee dealt with letters from the Worcestershire County Council and the Worcestershire City and County Nursing Association expressing the hope that the Board's form of keeping ante-natal notes would be simplified. The Board replied that in its opinion the training prescribed by the rules should give midwives the knowledge necessary to keep the notes indicated in the form approved by the Board, and added, that while the Board appreciated the fact that there are in practice some midwives who may not, at present, be able to keep all the notes prescribed, it hoped that any such midwives would receive adequate instruction in the matters in regard to which, at present, they lack sufficient knowledge. A communication was received from Tynemouth asking the Board to reconsider its decision to discontinue its approval of lectures at that place. The Board considered that its decision should not in any way prejudice the carrying out of the practical midwifery training at Tynemouth, and declined to alter it. A communication was also received from Dr J W Thomson of Wakefield stating that the Board's decision not to approve lectures at Wakefield in future would hamper the Maternity Hospital, and might lead to the abandonment of the scheme to build a large maternity block. The Board, in its reply to Dr Thomson, pointed out that its decision only applied to lectures, and would not in any way interfere with practical training. The Board has found occasion to call renewed attention to its memorandum pointing out that certificates submitted by candidates must not be tampered with in any way, but sent exactly as received.

### Ireland.

#### SALE OF MILK IN NORTHERN IRELAND

A BILL to govern the granting of licenses for the sale of milk under special designations, now before the Northern Parliament, provides that no person shall, without a licence granted by the Ministry of Home Affairs, sell or offer for sale milk as certified Grade A, tuberculin tested, or T.T., or use any description or designation, including or resembling these. The fee for the licence and the period of its duration will be determined by regulation, and the Ministry will have power to suspend or revoke a licence at any time. Any person guilty of a contravention of the provisions of the bill will be liable, on summary conviction, for the first offence to a fine of two pounds or any greater sum not exceeding ten pounds, and for the second or any subsequent offence to a fine of five pounds or any greater sum not exceeding twenty pounds, and, if the offence is a continuing offence, to a further fine not exceeding two pounds for each day during which the offence continues. Any authorized officer will have power to take and submit for expert examination samples of any milk offered or exposed for sale. The expression "authorized officer" means any police officer or constable having authority to act as an inspector for the purposes of the Sale of Food and Drugs Acts, 1875 to 1907, and any person authorized by the Ministry of Home Affairs. A prosecution shall not be

instituted except by, or with the consent of, the Ministry of Home Affairs. All fines recovered will be paid to the Ministry of Home Affairs.

#### CANDIDATES FOR MEDICAL REGISTRATION COUNCIL

In addition to the two candidates, Dr M R J Hayes and Dr R J Rowlette, whose candidature for direct representatives on the Irish Free State Medical Council was approved by the medical organizations, Surgeon P Hayden has entered the contest. Medical practitioners who have received voting papers are reminded that the latest date for their receipt by the Returning Officer is August 22nd.

## Correspondence.

#### THE CONSTITUTIONAL FACTOR IN DISEASE

SIR,—There appears to be a slight discrepancy in Dr Hurst's extremely instructive address on the constitutional factor in disease, published in the JOURNAL of May 7th. He states that the hyposthenic gastric diathesis occurs especially in individuals of the asthenic type with long chests and narrow intercostal angle, and that it is associated with a normal or low gastric acidity. He then states that achlorhydria is always, or almost always, present in Addison's anaemia, and gives an illustration of a patient suffering from that disease, with a short chest and wide epigastric angle—that is, a hypersthenic type—I am, etc.

Alang, Federated Malay States, June 28th

J G REED

\*We referred this letter to Dr Hurst, who replies as follows

SIR,—Dr J G Reed's letter concerning the type of individual in whom Addison's anaemia tends to develop raises a very important question. It is true that the hyposthenic gastric diathesis occurs especially in hyposthenic individuals with long chests and narrow intercostal angles, whereas the constitutional achylia gastrica which predisposes to Addison's anaemia is associated with a short chest and wide intercostal angle. In the past I have assumed that constitutional achylia gastrica is simply an exaggeration of the hypochlorhydria which forms part of the hyposthenic gastric diathesis. But, apart from the difficulty mentioned by Dr Reed, it is a remarkable fact that in many cases of constitutional achylia gastrica the stomach is short and high, very similar to that observed in the hypersthenic gastric diathesis, and in striking contrast with the long and low stomach seen in most people with the hyposthenic habitus. Moreover, the achylia gastrica of Addison's anaemia is always absolute, and extreme hypochlorhydria, which occurs sometimes in normal individuals, as well as in chronic gastritis and in cancer of the stomach, is never seen in Addison's anaemia, the contrast has become very clear since the introduction of the fractional test meal, which may show a trace of free acid in one or more fractions in cancer of the stomach, but never in Addison's anaemia.

I am therefore inclined to think that achylia gastrica is a mutation rather than a normal variation from the average, like hyperchlorhydria and hypochlorhydria, hyperpiesia and hypopiesia, and is, as I first suggested some years ago, an inborn error of secretion, strictly analogous to Garrod's "inborn errors of metabolism," such as cystinuria, alkaptonuria, and pentosuria. The error is one of function and not of structure, as the mucous membrane is normal and shows a normal number of oxyntic cells, unless secondary gastritis has occurred—I am, etc.

ARTHUR F HURST

New Lodge Clinic, Windsor Forest, Aug 11th

#### RESULTS OF TREATMENT OF UTERINE CANCER

SIR,—It is a matter of regret to me that Messrs Berkeley and Bonney (August 13th p 284) are displeased at the method employed by me on page 101 of the report referred to. The more so, because I am grateful to them for their extremely valuable paper, which I have been able to use in the compilation of the report. I am not

is responsible for the divisions into clinical classes made by the surgeons concerned, who admit to have been merely taken from their published works. The foot-note was inserted for the express purpose of differentiating Mr Bonney's figures from the others on account of the difference of basis. A separation of the figures can readily be made by my reader with the sole result of a decrease in the size of the sample. In view of the foot-note it seemed hardly necessary to offer a separate table of Mr Bonney's data alone and equally it was impossible to exclude them.

On the second point I am indebted to Mr Bonney for pointing out an obvious inaccuracy. I will not trespass on the hospitality of your columns with an explanation of the precise manner in which the error arose. One case requires deducting from the 72 being in class IV all of which cases have been deducted throughout for reasons given, leaving a total of 71 and the number alive at 5 years should be 17. This error modifies slightly certain of the percentages in the text of the report (the modifications vary from 0.3 to 1.1 per cent) which have been noted and will be corrected if and when occasion offers—I am etc.,

London W.C.2, W. L.H.

JANET L. LANE CLAYTON

### VARIATION IN THE SEVERITY OF CROUPOUS PNEUMONIA

Sir,—I am glad to see so eminent an authority as Professor J. A. Lindsay (August 12th, p. 283) referring to the variability in the virulence of infection in pneumonia and the consequent fallacies which this variability introduces when the value of different methods of treatment is being assessed. I should like to support Professor Lindsay's experience by a reference to a series of cases of lobar pneumonia which I had the opportunity to observe during the war. In two and a half years I saw 559 cases, with a mortality of 10.9 per cent. At one time 53 consecutive cases recovered, and were succeeded after one death, by another 40 consecutive recoveries. All the patients were treated under precisely similar conditions and were drawn speaking generally, from a selected population.

Professor Lindsay's experience, though naturally relating to a smaller number of cases in hospital, is perhaps the more striking because his patients must have been drawn from all sections of the population and, although spread over so long a period as two years, a number—presumably about 30—recovered, when the average mortality was as he states 20 per cent. I have previously referred in your columns (March 26th, p. 595) to this subject in pointing out that had I adopted some special or peculiar therapeutic measure at this particular time the credit for an exceptionally high a recovery rate would almost unavoidably have been given to such treatment. Yet at no time was any but symptomatic treatment employed. It seems impossible to envisage the opportunity of any one observer to test the effect of a particular form of treatment on a sufficiently large number of cases during a period so short that fluctuations in the virulence of infection could with confidence be eliminated—I am etc.,

London, N. 1, A. L. H.

ADOLPHUS ABRAHAMSON

### THE PROPOSED NEW HOSPITAL POLICY

Sir,—Mr Groves in his letter of August 13th (p. 285) says Dr Flemming, in his letter of August 6th, had if he had "overlooked the fact that the two great hospitals of this city have refused to unite in forming a common scheme for hospital reform." But this was not what Dr Flemming asked. As Mr Groves advocated State control of hospital Dr Flemming suggested that Mr Groves had overlooked the report of the Voluntary Hospitals Committee, which, it will be remembered, was strongly in favour of the voluntary principle in hospital policy being retained as was also the Hospital Committee set up by the Ministry of Health which preceded it, and this policy has been repeatedly affirmed by the British Medical Association during the last seven years. Dr Flemming states (he does not ask Mr Groves if he recalls the fact) that, at a con-

ference with a view to forming a joint committee to consider co-operation and improved organization of hospital in Bristol, Somerset and Wiltshire Bristol General Hospital by the attitude they adopted, wrecked the scheme. I do not know exactly what the scheme was, but I doubt very much if it included actual amalgamation of any hospital in the city, in distinction to co-operation in working. Mr Groves states that the Voluntary Hospitals Commission made an attempt to bring about amalgamation of certain hospitals in the city. I think this is a mistake. I do not believe it ever concerned itself with the question of the actual amalgamation of two hospitals in this city, though no doubt it favoured all efforts at hospital co-operation and improved organization.

Mr Groves expresses his great regret that amalgamation of the two large general hospitals in Bristol has not been brought about, and states that this is due to the refusal of the committees of the two institutions to agree to it. That is quite true. After the most careful and prolonged consideration—at any rate on the part of the committee or one of the hospitals—they came to the conclusion that working in separate buildings each hospital was best managed by a separate committee, and worked by a separate staff and that the amalgamation of finance was practically impossible, as very large sums had been bequeathed to each separate institution. At the same time they are perfectly willing to enter into any scheme of helpful co-operation which will improve the working of the institutions or economize their expenditure.

Then Mr Groves says we should not be content with our voluntary hospitals if only we had seen them of Toronto, Copenhagen or any of the Swiss cities. No one doubts that it is possible to construct better hospitals than many of our present voluntary ones. No doubt the comparatively new King's College Hospital is much superior in construction to St. Bartholomew's, or Guy's or the London Hospital, but it would not, therefore, be justifiable to scrap these older, but still very efficient, hospitals. As I said in my last letter if all the old hospitals were rebuilt we should undoubtedly build better hospitals but I asked: Are the existing ones so inefficient that it is necessary to abandon them? When at a meeting in London a few years ago a surgeon expressed the opinion that all hospitals built fifty years ago should be scrapped Lord Knutsford, the chairman of the London Hospital, said "that if they followed changes in architectural fashions the London Hospital might have been entirely rebuilt three or four times and even now be structurally out of date" that was in 1922. Probably the comparatively new King's College Hospital is already out of date as compared with the latest Canadian or Swiss hospital.

Mr Groves thinks I have been "hard pressed" for reasons for opposing the country hospital. I have not been "pressed" at all, the reasons for replacing the city hospitals by country ones are clear and obvious. He suggests that it is really no advantage to have the hospital in the city, even though though it may yet be several miles from the staff and students (the patient's relative). But planning that the staff and students live one or two miles from it on the outskirts of the city (certainly the patients' friends and relatives live in the city) it is clearly of much easier access to them than several miles away in the country and most probably on the opposite side of the city to that on which the suburb in which they live is situated.

Then he says there is no room in the city to extend the existing hospitals on the pavilion pattern. But if he will take the trouble to read my last letter carefully he will find that I proposed that extensions should take place in the form of country annexes with open air wards. The nurses' homes attached to the city hospitals at any rate in Bristol are not in noisy lanes but in quiet airy surroundings.

With regard to specialization I am afraid Mr Groves has misrepresented my meaning. As he expresses it I am quoted as saying it does not matter that increased specialization is better for the patients we must not have it because it will reduce the incomes of the staff. What I really pointed out was that if so many new specialists were

created, the scheme might prove unworkable, because even specialists must get sufficient income to live, and they might not if they were very numerous. A city can only support a very limited number of specialists, and if they were created in excess of this number the whole scheme would break down. I was only concerned with the amount of income made, because if it was insufficient for them to live on, as it would be if too many of them were created, the scheme would not work.

Mr. Groves says I raised a difficulty in the matter of the student's education "if all special branches of medicine and surgery are adequately equipped and properly staffed." I did nothing of the kind. I said if medicine and surgery were broken up into a number of subsections it might have a serious effect on medical education, which is a very difficult matter. I agree that the "undergraduate students of medicine must be taught the essential principles of their science and art by teachers and tutors, who combine to give an undergraduate curriculum"—it is indeed quite obvious—but I must point out that clinical teaching is one of the most important departments in that curriculum, and that the proposal further to subdivide medicine and surgery should be very carefully and critically examined in its bearing on clinical teaching—I am, etc.,

Bristol Aug 14th

CHARLES A. MORTON

#### A TUDOR SANITARY RELIC

SIR,—At Kelston in Somersetshire, about four miles from Bath on the upper road to Bristol, there lived in his great Tudor mansion the celebrated Sir John Harrington, godson of Queen Elizabeth and translator of Ariosto. This witty and somewhat Rabelian countier introduced into this country—or certainly into the great houses of this country—the water-closet. A nice pamphlet, *The Metamorphosis of Ajaar*, describes in the broadest and most humorous terms his reasons for such an innovation, and gives a sketch of his own palatial edifice for its housing. His mansion was pulled down by Sir Caesar Hawkins, and only a few remains of one of the towers still stand, built on to the churchyard, but at the foot of a garden now the property of Mr. Spence of Kelston, and closely adjoining the site of the Italian garden of the ancient mansion, I discovered the remains of the famous "pan" house, which the present owner had carefully preserved, and which corresponds with the structure illustrated in the ancient pamphlet. To all sanitary authorities I think this information may be of interest—I am, etc.,

London, W1, Aug 3rd

F. JOHN PONTON

#### ONCHOCERCA GIBSONI AND ITS POSSIBLE TRANSMISSION BY SIMULIUM

SIR,—Dr D. B. Blacklock, at the end of his article in the *BRITISH MEDICAL JOURNAL* of January 22nd (p. 129) on "The insect transmission of *Onchocerca volvulus* (Leuckart, 1893)," suggests that possibly *O. gibsoni*, responsible for the production of worm-nests in cattle in Australia, might be transmitted by some species of *Simulium*.

As one of the principals engaged some years ago in the study of *O. gibsoni* (Johnston and Cleland), and in endeavouring to ascertain its possible means of transmission, I can state authoritatively that transmission occurs in districts entirely free, so far as careful investigations showed, from any species of *Simulium*.

In one experiment the transmitting agent seemed to be ruled down conclusively to a tabanid or a mosquito. In New South Wales transmission occurs on the lower Hawkesbury River, and abundantly on the north coast near Kew, in neither place has *Simulium* so far been detected, and a very close search has been made for all biting flies. In my experience over a wide area of Australian species of *Simulium* are not widely distributed. I have only met with them myself at Bambera and on the Cranbills in New South Wales, on the Cooper in the interior of Australia, and near Hallett's Cove, south of Adelaide—I am, etc.,

J. BURTON CLELAND,

Professor of Pathology, University of Adelaide

May 28th

#### REMUNERATION OF HOUSE APPOINTMENTS

SIR,—I read with strong approval "House-Surgeon's" letter (August 13th, p. 285) urging that higher remuneration should be given to resident officers in hospitals.

When a houseman is appointed he has usually, as a student and after qualifying, devoted at least three years to clinical work, and is frequently a very competent medical man in spite of his lack of experience. He has been through an extremely long training which has, as often as not, drained the family finances.

It seems extremely unjust that a man with no financial backing should, when he has qualified, have to accept the appointment which offers him the most nearly adequate salary rather than that for which he is most suited, and which offers the best chance of his becoming a really skilled practitioner.

The less competent men quite rightly do not get appointments, and the remainder are often asked to accept only then keep in exchange for their whole-time services. Not only does the houseman agree to give up his whole time to the service of the hospital, but, with rare exceptions, he also identifies himself most loyally and wholeheartedly with the interests of the hospital. In many cases he does much routine and clerical work, which is of no profit to him professionally. Admittedly a resident officer is gaining experience. But so should any professional man at any time in his career, and still deserve more adequate remuneration than is given to the majority of housemen at present.

A scale with £150 a year as a minimum for a resident appointment seems to me reasonable.

I should further like to join with your correspondent in protesting against the pernicious practice of asking a large number of candidates to call—as it seems to me unnecessarily, and often at considerable expense—upon the honorary staff of a hospital—I am, etc.,

August 12th

HOUSE-PHYSICIAN

SIR,—From "House-Surgeon's" letter it is apparent either that he is very young indeed in his medical career or that he has overstrained his time in hospitals. He has yet to learn that the newly appointed house officer has gained a position of inestimable value to himself at a time when his actual value in knowledge and experience is in no way comparable with the theoretical value of his diploma.

A year in hospital is as indispensable as any year of his student life, and yet, instead of being called on for the payment of fees, he is provided with free board and lodging and often an additional £50 or £100. The apparent inconsistency of a larger salary being offered by a small hospital is simply an expression of the law of supply and demand, for the larger and more important hospital provides a wider experience and a recognized status in the application for further appointments. Furthermore, the mere provision of board and lodging is certainly not a negligible asset, as your correspondent will eventually find when he passes out into the hard, cold world.

The necessity for interviewing candidates in all hospitals not attached to medical schools is so obvious as to need no elaboration. Its recognition by your correspondent must be only a matter of time. The British Medical Association has already done the hospital resident a noble service by securing the payment of fees for attendance at inquiries. The regulation of salaries, however, is of much greater importance from two to ten years after qualification, and this fact has been recognized and is being acted upon by the Association. I am, etc.,

August 13th

MB

#### "BLOOD PRESSURE"

SIR,—Over twenty years ago I purchased a sphygmomanometer. My colleagues looked on me as a fiddler. I regularly took blood pressures, and mentally condemned some of my patients to an early grave. Most of them are alive and well to day. Nowadays every doctor goes about with a manometer in his kit. A good part of my time is spent in trying to undo the links in mentality brought about by patients being told by one doctor or another that they had "blood pressure." I rarely produce my

instruments now, practically one can tell by the finger on the pulse whether the pressure is high or not. The hard whiplike feeling of the renal pulse is characteristic, and also the arterio-chronic but there is a large number of high pressure cases which are "benign," to quote a word used by Professor Lamb of Philadelphia in a letter to me about a patient of mine who had been under his care when she was on a visit to the United States.

A physician's aim in life is surely to diminish the sum total of human misery mental as well as physical and I think it is highly wise that we stored up our sphygmomanometers and refrained from exciting pain in our patients' minds—I am, etc.,

WES KIRBY, M.D.

ADAM MOSES

### MEDICAL CONFIDENCE

SIR,—The question of what is called medical secrecy is dealt with in a leading article in the *JOURNAL* of July 30th, p. 178 and I would like to put the matter in a rather different light.

This is not a question of medical privilege: it is fundamentally a question of medical honour and it is this point that seems to be lost sight of.

It is essential for the benefit of the patient that what he confides to his doctor should be kept inviolate: it is upon this assumption that he confides in his doctor, and the relation between doctor and patient is based upon the trust of the patient in his doctor. It can never be right for that trust to be betrayed. The amount of pressure has nothing to do with it, no pressure, however great, can excuse a dishonourable action.

The penitent confesses to the priest for the saving of his soul: the patient confides in his doctor for the healing of his body. To my mind the trust is as sacred in the one case as the other. If the priest accepts and keeps inviolate the trust the doctor can do no less. In the case of the confessional the problem was decided by the refusal of the priest to reveal in a court of law anything told to him in the confession. There was no legal sanction for this, there is no legal sanction to-day, but the courts learned by experience that by no threat or compulsion could a priest be forced to reveal what he deemed himself bound in honour to conceal.

I suggest that in proposing to seek legislation on this point we are approaching the problem from the wrong direction: for one reason, legislation would probably not give us what we want, for another, as the problem has nothing to do with votes, Parliament would never find time for it.

The only way to ensure that our patients' confidences are not betrayed is to refuse to reveal them without the consent of the patient: that is to say, we must fight exactly as the Catholic Church fought. No judge should be able to compel a doctor to do a dishonourable act. It is a dishonourable act to betray a trust and no words of any judge can make honourable that which is dishonourable. If a doctor is ordered to betray the trust of his patient he should refuse. It is possible or probable that he will be committed or fined for contempt of court: it is better to be so committed than to do a dishonourable action—I am, etc.,

Brighton Aug. 11

ALAN C. GEMMELL

### THE TUBERCULIN DISPENSARY BENVOIENT SOCIETY

SIR,—I should be grateful if you would enable me through the medium of your columns, to bring to the notice of members of the profession the fact that the Tuberculin Dispensary is now carrying on its work at 32 Fitzroy Street W.1. Patients may be sent for consultation and treatment on Tue-days and Fridays at 2.30 p.m.

Medical men who are interested and would care to see the work for themselves are invited to attend full facilities for seeing the patients and their records will be gladly afforded them—I am, etc.,

W. CAMAC WILKINSON, M.D.

August 15th.

### Obituary

**THE LATE DR. C. W. DANIEL.**—Dr. P. Manson Bahr has sent us the following, per mail tribute, to Dr. C. W. Daniel, of whom an obituary notice was published in our last issue (p. 287). At the death of Dr. C. W. Daniels we number of the pioneers of tropical medicine has been lost to the cause. Daniels is to be considered as a pioneer, not so much by reason of outstanding research but as guide, philosopher and friend of the London School of Tropical Medicine in the days of its infancy. It is as a teacher with a peculiarly clear, perspicuous yet practical mind that he will be remembered by his pupils now to be numbered by their thousands. As a research worker Daniels will rank as a close colleague and fellow worker with Sir Patrick Manson, an association which led to the discovery of the adult forms of *Filaria bancrofti* and *F. imarum*; those elusive nematodes which though isolated by his patient search have never been rediscovered since his original specimens were procured in British Cameroons in 1897. Daniels was not one who rushed into print and his published works, *Laboratory Studies in Tropical Medicine* (with Dr. H. B. Newham) and his *Tropical Medicine and Hygiene* (published first in 1909), both bear the imprint of long considered thought and practical experience. Daniels was a modest and retiring personality, and on this account probably was not generally estimated at his true worth, but he was a loyal, steadfast friend full of true courage and sterling devotion and never did he display these characteristics more fully than during the last eight years of suffering and gradual debilitation from a most distressing malady.

Dr. ALBERT DAVIES EDWARDS who died on July 16th at the age of 48 at his residence in Boscombe is owed his medical education at University College, Cardiff, and the London Hospital. He graduated M.B. M.S. Lond. in 1906 and in the following year obtained the diploma D.P.H. After holding public health posts in East London, Cardiff and Newport (Mon.) he was appointed assistant medical officer of health and school medical officer to Bournemouth in 1938 and medical officer of health two years later. Dr. Edwards held the special appointment of consulting medical officer of health to the Royal Victoria and West Hants Hospital. He was chairman of the Bournemouth Division of the Dorset and West Hants Branch of the British Medical Association from 1926 to 1927 and had been president of the Bournemouth Medical Society. A colleague writes Dr. Edwards was not only an able administrator, but a keen clinician, and especially a diagnostician, he read much and formed his own conclusions which were not always those most generally accepted. He was a good speaker, and always interesting. He was very fond of children as is clearly shown in his book *Children of the Poor* (reviewed in the *JOURNAL* of August 26th 1909, p. 554). His work as school medical officer and his charge of the Sanitary Hospital brought him much in contact with them and added to his happiness. In his life, however, there was much suffering and for many years his sensitive nature had to struggle against the handicap of frequent pain. To this was added fear of the return of the malady which had entailed a very severe operation eleven years before his death. Anxiety with regard to his work was often present, thus the possibility of small-pox in the town going undetected was latterly a source of much worry, inasmuch that he personally examined every case of chicken pox notified during the last few years. This anxiety coupled with increasing pain led eventually to his death.

Mr. FELIX CORLEON VINACE died at Birmingham on July 26th at the age of 69. He was educated at King Edward's Grammar School and at Queen's College, Birmingham. He graduated M.D. M.Ch. in the National University of Ireland in 1881, and became F.R.C.S. Eng. in 1886. After holding various house appointments at the Queen's Hospital, Birmingham, and the Hospital for

Women, Soho Square, London, Mr Vinnice settled in Birmingham, where his father had been a general practitioner, later he was appointed surgeon to the Birmingham and Midland Skin and Venereal Hospital. In 1897 he founded St Paul's Hospital for Skin and Genito-Urinary Diseases in Endell Street, Holborn. His interest in this hospital, of which he remained senior surgeon until his death, was very great, and he made large contributions to its support. Mr Vinnice was a prominent Freemason in Warwickshire. He was unmarried.

## The Services.

### ROYAL NAVAL MEDICAL SERVICE

An Order in Council, dated July 25th, has been issued (*London Gazette*, August 5th) directing that the number of specialist allowances shall be increased and paid at a higher rate, that the number of surgeon captains shall be increased, and certain other changes made.

**Specialist Allowances.**—The number of specialist allowances is to be increased from 46 to 60, and the subjects extended to include medicine, surgery, radiology, and hygiene in addition to those specified in the Order in Council, June 28th 1920. The rate of allowance is to be increased from 2s 6d to 5s a day, and is to be paid also to surgeon commanders holding the appointment of naval health officer.

**Charge Pay.**—Medical officers in charge of hospitals and sick quarters are granted charge pay at the discretion of the Admiralty, as follows: Surgeon rear admirals and surgeon captains 10s a day, surgeon commanders 5s a day.

**Establishment of Surgeon Captains.**—The number of surgeon captains is to be increased from 16 to 20.

**Previous Hospital Service.**—An officer who enters the service on or after July 1st, 1926, who has held for not less than one year a resident appointment as medical or surgical officer in a civil hospital recognized by the Admiralty, will be eligible to have his seniority antedated by not more than one year. This concession will not ordinarily be granted when the interval between the termination of the hospital appointment and date of entry into the service exceeds six months, a period of not more than six months spent in a non-resident appointment recognized by the Admiralty may count as part of the period of a resident appointment. The time concerned will reckon for increase of full, unemployed, and half pay while on the active list, and retired pay or gratuity on retirement or withdrawal. A temporary officer, or an officer entered for short service if transferred to the permanent list, may be granted the above concession except that the time will not count for gratuity on retirement or withdrawal. The concession may also be extended to officers entered for short service who had transferred to the permanent list before July 1st, 1926. It will be limited, however, to such an ante date of seniority as will preserve their position on the seniority list in relation to officers transferred on or after that date. Any increase in seniority thus granted will count for purposes of increments of full, half, and unemployed pay, and for promotion, but not for retired pay or gratuity.

### INDIAN MEDICAL SERVICE

The Secretary of State for India in Council on June 21st made the following amendment to the Superior Civil Services (Revision of Pay, Passage, and Pension) Rules 1924—namely: In Schedule I to the said rules, at the end of the entry relating to the Indian Medical Service (Civil) the following shall be inserted—namely: "No officer employed as agency surgeon whose basic pay exceeds Rs 1250 shall be entitled to draw the allowance authorized for proficiency in the Pashto or Baluchi language." The said rules shall have effect, and shall be deemed always to have had effect, as if they had been enacted as so amended.

### TERRITORIAL DECORATION

The Territorial Decoration has been conferred upon the following officers of the R.A.M.C. (T.F.): Lieut Colonel A. Johnstone Brown, Major H. Neville Burroughes, D.S.O. (ret.), and Major R. Ogier Waid, D.S.O., M.C.

### DEATHS IN THE SERVICES

We regret to have to record the death of Lieut Colonel Thomas Samuel Beauchamp Williams, I.M.S. (ret.). An inquest was held at Holborn on July 9th, when it was stated that he had been found a few days previously dead in his chambers in Cursthorpe Street, Chancery Lane. He was lying on the hearth, in his pyjamas, under a quilt, and near his head was a gas ring with the tap turned on. A brother gave evidence that he was unmarried, that he had no financial worries but had suffered from malaria and typhoid fever during the war and had also had a sunstroke. A verdict of *suicide* was returned, and the body was retained by the coroner. Lieut Colonel Williams was a son of the late Venerable Thomas Williams, with whom many of the members of the Society were acquainted. He was born on May 20th in New South Wales at Edinburgh, where he lived until 1891, and then moved to Australia, and near Hobart in 1901. He entered the Indian Medical Service in 1902, he received a D.S.O. in June, 1917, became a Major in July, 1921, and retired, with the rank of Lieutenant Colonel, on July 7th 1922. Most of his life was spent in political employment as an agency surgeon

in various native States, being for some years stationed at Bikanir, in Rajputana. He reverted to military duty after the war broke out, and served in Mesopotamia in 1916-18, being mentioned in dispatches in August, 1917, and being promoted as above stated, to a brevet lieutenant colonelcy. After his retirement he took up politics, and contested the Bridgwater Division of Somersetshire as a Labour candidate in 1922. On that occasion he received only 1,538 votes as compared with 11,240 for the Conservative, and 11,121 for the Liberal. In 1924 he was returned for the Kennington Division of Lambeth, with 8,292 votes, the Conservative getting 7,782 and the Liberal 5,075, but in the election of the following year lost his seat in a straight fight to the Unionist getting 14,893 votes to his 11,572. In July, 1925, he stood for the Eastbourne division of Sussex, but received only 3,696 votes, the successful Unionist getting 12,741, and the Liberal 5,366. During the Parliament of 1923-24 he was parliamentary private secretary to Mr Sidney Webb, President of the Board of Trade in the Labour Government. He was at one time member of the council of the Metropolitan Counties Branch of the British Medical Association, and had been a member of the executive committee of the Westminster and Holborn Division.

## Medical News.

THE Professional Classes Aid Council, the successor of the Professional Classes War Relief Council, continues to carry on its admirable work on behalf of the now poor and other professional men and women in distress. The British Medical Association is represented on the council by Mr Bishop Harman. The report for the year ending April, 1927, states that 738 applications had been received, and financial help had been given to 163 families. Strong points are made of assisting in education and training. Assistance is also given to tide over periods of illness. The granting of loans has been found unsatisfactory, usually they merely add to a burden of debt which is never discharged. A special appeal, aided by the British Broadcasting Company, helped to place the finances of the council for the year in a satisfactory position, and the criticism formerly made that administrative expenses were somewhat high has been met by the explanation that the staff has necessarily to devote much time to social service.

THE Fellowship of Medicine announces that from August 29th to September 10th an all day course will be provided at the Queen Mary's Hospital, Stratford, with instruction in medicine, surgery, and the specialties. At the Bethlem Royal Hospital there will be lecture demonstrations twice a week, from September 6th till October 1st, and from September 12th to October 1st at the Royal Westminster Ophthalmic Hospital an afternoon course of clinical instruction, operations, and special demonstrations. The Queen's Hospital will hold an all day course for the fortnight following September 12th. From September 19th to October 1st at the Royal National Orthopaedic Hospital there will be daily lecture demonstrations, and a special visit will be paid to Brockley Hill Country Hospital on one Saturday. At the Westminster Hospital there will be a two weeks' course from September 19th to October 1st, including medicine, surgery, and the specialties, with facilities for visiting the mental institutions connected with the hospital. Copies of the syllabus of those courses and particulars of the general course of instruction provided at the associated hospitals may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W 1.

A THREE months' course of lectures and demonstrations on clinical practice and in hospital administration for the diploma in public health will be given at the North Eastern Hospital, St Ann's Road, Tottenham, N 15, by the medical superintendent, Dr T. H. Thomson, on Mondays and Wednesdays at 4.45 p.m., and alternate Saturdays at 11 a.m., commencing on Monday, October 3rd. The fee for the course, which complies with the requirements of the revised regulations of the General Medical Council, is £4 4s. A course under the old regulations may be taken for £3 3s.

THE medical members of the Council of the Chartered Society of Massage and Medical Gymnastics have issued a pamphlet addressed to the medical profession urging the employment in massage and physical treatment of persons entitled to attach the initials C.S.M.M.G. to their names. Such persons have been through a supervised course of training and have passed an examination of a high standard. The pamphlet gives a history of the "profession of massage" in this country from the formation of the Society of Trained Masseuses in 1894 to the present time when over 5,500 Masseuses and masseuses are registered with the Chartered Society. After commenting on the importance of physical measures in modern treatment, the medical signatories to the pamphlet declare that the members of the Chartered Society "constitute as widely spread and as well informed a body of masseuses and masseurs as can be found in any country in the civilized world."



THE annual summer school of the British Social Hygiene Council was held at Oxford at the beginning of August. In attendance included representatives of many interests—scholastic, religious, social, and service—from various parts of the empire, and their contributions added to the practical value of the discussions. Professor J. Arthur Thompson gave a series of five lectures on the biological aspects of modern sociological activities. Dr. Rice expounded the contributions of psychology to the problems of sex education. Mr. F. Willis spoke on the problems of adolescence, and Mrs. Neville Rolfe on the elimination of venereal disease. Educationally and socially the gathering was considered a success, and it is hoped that in future years more medical men and educationists will attend.

LAST year legislative sanction was given in France to the regulation by laws of the *chambres d'allaitement* or day nurseries. Institutions have already been established for working women in many places. Their working has been described by Dr. G. Ichol, professor at the *Ecole des Hautes Etudes Sociales*, Paris, in the *Journal of the Royal Sanitary Institute for July*. It appears that these nurseries are either attached to the factories or established near them; mothers deposit their children in them while they are at work, and nursing mothers leave their work at stated intervals to suckle their infants. The by-laws prescribe the height and air space of the nursery, the lighting, temperature, and general cleanliness, and that a mother when she enters the nursery shall don a special blouse. The establishment is visited at least once a week by a doctor. His fees and the wages of the staff are paid by the owner of the factory, no contribution can be claimed from mothers. It is not quite clear whether it is compulsory on the employers to provide day nurseries, but their number has increased since the decree was promulgated.

THE report of the Lebanon Hospital for Mental Diseases at Asfurich, near Beirut, for the year ending March 31st, 1927, gives an interesting glimpse of the condition of mental treatment in Syria. The medical superintendent of the hospital, Professor H. Watson Smith, states that there was practically no treatment of the insane throughout the region between Constantinople and Cairo except at Asfurich, until the arrival of the British in Palestine, when a small Government hospital of 70 beds was started at Bethlehem. In Iraq and numerous other places the insane were confined in prison, sometimes in chains. The Lebanon Mental Hospital was founded by a Swiss, the late Mr. J. Waldmeier, in 1896, since then 2,877 patients have received treatment in its wards. It has now 150 beds and facilities for clinical study are provided for fourth year students and for post-graduate of the medical school of the American University at Beirut. Arrangements are made also for the holding of resident posts after qualification. The hospital is administered by a general committee in London, of which Dr. E. W. G. Masterman is chairman; there are also committees in Switzerland, Holland, and America. Copies of the annual report may be obtained from the general secretary at the London office of the hospital, 139, Marylebone Road, N.W.1.

THE Permanent International Committee on Occupational Diseases has arranged that the fourth international session shall be held at Lyons in April 1929. The subjects on which reports will be presented are silicosis, cataract of occupational origin, the endocrine system and forms of poisoning, and, if opportunity can be found, statistics of occupational diseases. Further information can be obtained from Professor Etienne Martin, of the Institute of Legal Medicine Lyons, or from the Secretariat of the Committee, Hygiene Service, International Labour Office, Geneva.

THE fifth Congress of French speaking Gynaecologists and Obstetricians will be held at Lyons under the presidency of Professor Villard from September 29th to October 1st. The questions to be discussed are the diagnosis and treatment of sterility of uterine and tubal origin, introduced by MM. Chatillon of Geneva and Donay of Paris, the indications for interruption of pregnancy, introduced by MM. Bronha of Lille and Bue of Lille, and the means of preventing separation of the mother from the newborn, introduced by M. Rhenet of Lyons. Further information can be obtained from Professor Voron, 12, Quai Tolstoy, Lyons.

A SCHOOL of medicine and dentistry has recently been organized in the University of Rochester, New York, which of course, must not be confused with the Mayo Clinic at Rochester, Minnesota. A description of the new school has been published by the Rockefeller Foundation in its seventh series of *Methods and Problems of Medical Education*. The school and hospital plans the animal house and the department of pathology are described by Dr. G. H. Whipple, the professor of pathology, and dean of the medical school, who says that the two main principles constantly kept in mind during the organization of the medical school and the Strong Memorial (University) Hospital were the necessity for the

closest physical contact between the clinics and the laboratories for the basic sciences, and the construction of a part of the highest efficiency combined with extreme simplicity of structure and the strictest economy. The school and the university hospital are close to the new college for men undergraduates, and the municipal hospital has been connected by short corridors with the university hospital. In the department of anatomy neurology is combined with histology, and the latter taught very largely by the study of fresh tissues and experimental methods. Each member of the class is asked to prepare during the first year a paper on a subject chosen by himself. It is noteworthy that lectures are given sparingly, about once a week. Attendance is, of course, voluntary. The dissecting rooms are open till 10 p.m. and the use of dissecting manuals is discouraged, the directions being given by word of mouth. Professor W. O. Tenn, in his account of the department of physiology, mentions that a generous share of the usual course on physiology is under taken by the allied department of vital economics, the activities of which are described by the director, Professor J. R. Murlin, in an article with illustrations of the energy metabolism in laboratory. There is also a department of biochemistry and pharmacology, of which Professor W. R. Bloch provides a detailed description. In his account of the pathological laboratories Professor Whipple mentions that they are open till 10 p.m. on every day in the year and asserts that the mental attitude of the student is of vastly more importance than the accumulation of large numbers of facts. The department of bacteriology includes protozoology and some phases of helminthology, and so, whilst, as Professor S. Byne Jones says, be more appropriately called that of medical microbiology, Professor W. S. McClann is devoted to the teaching of specificities as such in the medical curriculum, and therefore takes neurological and dermatological cases into the ordinary medical clinic. There is, however, a department of pediatrics under Professor S. W. Clouston, and also departments of surgery and of obstetrics and gynaecology.

A PROGRAMME of post graduate courses in Berlin during the autumn has been issued, and may be obtained on application to the Office of the International Post Graduate Courses, Kaiserin Friedrich Haus, Luisenplatz 2-4, Berlin N.W.6.

## Letters, Notes, and Answers.

All communication in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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## QUERIES AND ANSWERS

### ANGIO-NEUROTIC OEDÉMA

A patient asks for hints on the treatment of an *angio-neurotic oedéma*. He has tried dietary and intestinal disinfection, among other measures.

### TREATMENT OF ONYCHIA

WE have received two replies to the question of a correspondent about the treatment of onychia, published on July 3rd. Dr. CHARLES HOLWAY OGDON (Bournemouth) recommends the following method: "Soak the fingers in very hot water then, with an orange stick, such as is used in manicure manipulation,

insert between the cuticle and the root of the nail a little ointment, consisting of equal parts of ammoniated mercury ointment, zinc ointment, and boracic acid ointment. Dr C A P. TRUMAN (Exeter) advises the use of an ointment consisting of equal parts of lead subacetate and vaseline. Dr Truman adds that the late Mr Clinton Dent, from whom he heard of the treatment, said that the more acute the onychia the more certain the remedy, and Dr Truman has found it not so efficacious in the slow creeping variety.

#### INCOME TAX

##### Depreciation Super Tax

"R A H" purchased, before the war, a new 12/18 h p car for £540. He was allowed 15 per cent of that amount, £81, for depreciation for the financial year 1926-27, but the Special Commissioners propose to ignore that allowance in assessing him to super tax for 1927-28. A further income tax allowance of £69 has been made for 1927-28, and recently "R A H" has sold the car for £14, replacing it by a 14 h p car bought secondhand for £418. What should he claim in this connexion?

\* \* \* (1) Section 5 (2) of the Income Tax Act, 1918, provides that "where an assessment to income tax has become final and conclusive for the purposes of income tax for any year, the assessment shall also be final and conclusive for the purposes of super tax for the following year." It appears to follow that the Special Commissioners should allow the £81 as for 1927-28. (2) A claim to obsolescence allowance should be made when the profits for 1927 are computed, and the amount treated as an expense of that year. The sum to be claimed is £540 less the allowances—£81+£69=£150, and also less the £14 received—that is, £540 less £164=£376.

##### Depreciation of Car

A B—One partner claimed renewal allowance for an old car and the other depreciation allowance for a new car. The inspector of taxes refuses the latter claim if the former is granted.

\* \* \* It has been decided in the courts that where the expense of renewing machines, etc., is allowed the depreciation allowance is inadmissible. The Income Tax Acts deal with the profits of a firm as one unit and we are of opinion that there is technical ground for the position taken up by the inspector. At the same time the result is inequitable—at any rate, as regards one partner—and it might be well to place the facts before the Secretary, Inland Revenue, Somerset House, W C 1, with a request that in the special circumstances the inspector might be authorized to modify the demand.

##### Three Years' Average

"M F G" bought A's practice in 1924 and B's practice in July, 1927. In the latter case he did not take over the house, nor an appointment worth £100 a year. Can he claim the three years' average and so obtain the benefit of the rising profits on A's practice and of the deduction of the former expense of running the B practice?

\* \* \* The section which gives the option to the three years' average—Finance Act, 1926, Section 29 (3)—restricts it to persons who were in possession of the source of the income during, at any rate, some part of the six years preceding the three years forming the average for the year 1926-27. As "M F G" does not appear to have been in possession of either practice prior to April, 1924, he is not in a position to claim the three years' average.

#### LETTERS, NOTES, ETC

##### QUADRUPLETS

REPORTS of two cases of quadruplets have recently been received. The first is from Dr J C FORTH RITCHIE (Bairn, Glamorgan shire), the second is from Captain J DUKE, M B (resident surgeon, Eden Hospital, Calcutta). Dr Fotheringham quotes Duke as giving the proportion of quadruplets as 1 in 371,126 births, and Captain Duke quotes J Clifton Edgar as giving it as 1 in 400,000.

Case 1—On July 5th 1926 I received a form from a R N D midwife to attend Mrs H aged 28, a multipara. On arrival I found that the midwife had delivered the patient of four children, one male and three female, all living. The placenta was expelled without difficulty and a hypodermic injection of 1 c.c. of pituitin was given. The children were rubbed over with warm olive oil and wrapped in cotton wool. The patient was up and about on the tenth day. Shortly afterwards she was again pregnant, and recently I delivered her of a male child weighing 12 lb. The quadruplets were perfectly normal and averaged 3½ lb. They were athetically fed, but, after surviving one month, all died within a few days. There is a history of multiple pregnancies in the families of both parents.

Case 2—A Hindu lady, aged 25, was admitted into the Eden Hospital, Calcutta, on May 28th, 1927, for persistent vomiting and rapid loss of weight, amenorrhoea had been present for four months. She had had two children, the younger being 3 years old. The previous pregnancies were normal. She was

extremely emaciated. The fundus of the uterus reached to the level of the umbilicus, the foetal parts and movements could be felt, but no foetal heart sounds could be heard. The urine showed a trace of albumin and marked acetone. She was kept under observation for a week, but her condition grew worse and induction was considered absolutely necessary. The slow method by forceps was adopted. On the third day pains started and four foetuses and two placentas were expelled without any complication. Three of the foetuses were male, with one common placenta, the fourth was female and had a separate placenta. The female foetus, with its placenta, and one of the male foetuses were macerated. The weights of the male foetuses were 2, 2½, and 3½ oz, and their average length was 6 inches. The weight of the female foetus was 1½ oz, and it measured 5 inches. The placenta weighed 5 oz and 3 oz respectively. After delivery the patient had fever for four or five days, but she improved rapidly and left the hospital on the eleventh day. I am grateful to Lieut Colonel V B Green Armytage, M D, F R C P Lond., Surgeon Superintendent of the Eden Hospital, for allowing me to publish this case.

##### THE ESSENTIAL OIL TREATMENT OF CHOLERA

DR JOHN W. TOMB (Mines Board of Health, Asansol, Bengal) has sent us a very long reply to the letter from Lieut Colonel G O F. Seely, I M S., published in our issue of May 28th (p. 955). Dr Tomb states that he has never claimed to be the originator of the use of the essential oils in the treatment of cholera. The prescription, known as "cholera drops," belonged to the medical department of the East Indian Railway; Dr Tomb became acquainted with it while serving as medical officer to the company, and subsequently obtained the exact formula from the then acting medical officer. A similar prescription, as he afterwards learnt, was formerly in use throughout India under the name of "Mist pro diarrhoea"; it contained the oils of aniseed, juniper, and camphor, with alcohol and ether acidified with 1 per cent sulphuric acid. Dr Tomb modified this prescription slightly by substituting oil of cloves for oil of aniseed. The only credit claimed by Dr Tomb in the matter was that he showed how the mixture could be successfully used on a large scale in the mining settlement, both as a remedy and as a preventive. The incidence of cholera in the settlement was reduced to less than 1 per 1,000, which was wholly at variance with all previous experience. Apparently it had been the custom to give the mixture in drops, Dr Tomb's plan was to administer 1 drachm every half hour until 1 oz had been given, followed by 1 drachm every hour until recovery, and as a preventive he gave 1 drachm in water twice or thrice daily. With regard to the correspondence referred to by Lieut Colonel Seely it consisted of the single question whether the 40-minim doses of the mixture mentioned by him were given in water, and his reply that he gave the oils and the pro diarrhoea mixture in half a teaspoonful of sugar.

DR N N. MATHA, of Dadar, Bombay, writing with reference to the employment of the essential oils in cases of cholera and other forms of severe diarrhoea states that an indigenous medicine named amritdhara is in great repute in the treatment of these affections, and that it contains camphor, thymol, menthol, cardamom, and cinnamon. He has found that equally good results can be obtained with the first three of these drugs, given in equal quantities, and mentions a number of cases in which they have been employed with the greatest benefit. His plan is to administer 8 or 10 minims in a gelatine capsule every two hours until the diarrhoea is checked, the interval being then increased to four hours, the diet throughout being restricted to barley water. If the patient will permit it, he also administers an intramuscular injection of 5 or 10 minims of a solution of camphor in ether. Treatment with salines should not be resorted to in the early stages, but with the onset of symptoms of collapse they can with advantage be added to the treatment with essential oils.

##### DEATH CERTIFICATION

DR SIDNEY MATTHEWS (Crawley, Sussex) writes: I am not certain for whose benefit the amended Births and Deaths Registration Act has been passed, so far as the new method of death certification is concerned. During the forty years I have been in practice I have handed the certificates to the relatives of the deceased and the matter ended. I have never had any trouble. On July 30th a patient died. I followed out the new details. On August 1st the relatives arrived to say that they had been seven miles to the registrar and no certificate had arrived. The funeral was fixed for the next day. I was compelled for the first time in my life, to give a duplicate certificate, and the friends repeated the seven miles journey. The local postmaster could only supply that the original letter "had got caught up in a newspaper, as had happened before." I would suggest that the envelopes issued by the local registrars should be marked "registered," to avoid a future extremely unpleasant situation.

##### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, and 39 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 120.

## ALCOHOL AND THE MOTORIST.

### ALCOHOLIC CONCENTRATION IN URINE AS A TEST OF INTOXICATION \*

BY

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As the use of motor traction has become almost universal, it follows as a natural sequence that measures have become necessary to guard the community against reckless driving and especially by persons who are under the influence of alcohol. At first sight it would appear that such cases would be few, because the danger, alike to fellow travellers and pedestrians, under these conditions is so serious that elementary instincts of precaution should operate as an overwhelming deterrent.

For a man to drive a fast-running vehicle on a public highway under present crowded conditions whilst drunk is only a degree less culpable than a drunken man being in charge of a railway engine. Disaster is sure to follow.

Since it became part of my official duties to examine all persons arrested on the charge of being intoxicated whilst in charge of motor vehicles within the city boundaries of Sheffield I have been surprised at the number of cases brought to my notice. If I may take our experience, and I think we can, as an average of conditions prevailing elsewhere, I can only affirm that there is throughout the country much undue indulgence by people in charge of cars.

Punishment after conviction should be exemplary. The Government has taken this view, and the Criminal Justice Act, 1925, does not err on the side of leniency. Indeed, many police court practitioners are of opinion that the penalties are so severe that magistrates should hesitate in finding a verdict of guilty, considering that a conviction carries with it a withdrawal of the licence for a considerable period as well as other penalties.

Personally I think the punishment as well as the penalty fits the crime, but I wish that more uniformity existed in the decisions when evidence is of a conclusive character. On one point I think we shall all agree, and that is, that in framing the Act the use of the word "drunk" was unfortunate, and would not have been used had the matter received proper consideration by Parliament. There is no statutory definition of what constitutes being drunk, and therefore all the legal, versus medical, wrangling hinges upon the interpretation placed upon the abnormalities presented at the time of arrest and subsequent examination. Had the term "under the influence of alcohol" been used many difficulties would have been avoided and the issue materially simplified. The Central Midwives Board, in framing charges, made this change, and all difficulties have since disappeared. Also the term "under the influence of drink" appears in the Children's Act of 1908 and in the Inebriates Act of 1898, and they are good and workable terms.

Safe motoring depends upon a clear and alert mental outlook. Judgement must be poised, nerve cool, and the brain in a position rapidly to assimilate immediate problems, and arrive at quick and accurate decisions. This delicate nerve balance poised as it is on the highest brain centres, is the very first function to become disordered by alcohol and long before the gross inco-ordinations and other symptoms of intoxication develop. Once the latter are in evidence, a person so affected has been running against danger signals for some time, but which his brain has been too dulled to read. In order to satisfy counsel and the magistrates that a man may be unfit to drive a

motor vehicle, even when he has more or less successfully run the gamut of the recognized tests, we have to avoid many possible pitfalls.

As a full and detailed pronouncement upon the tests to be applied, and their clinical significance, have been presented for our guidance by the British Medical Association Committee, it would be a waste of time for me to go into that subject again now. We are all more or less familiar with them, but no doubt some of us place a greater or less significance upon certain of the tests than do others, or does the Committee.

Personally I think the association of congested conjunctiva with quickness of the pulse very significant as a positive test for inebriety, and I place less value upon the smell of alcohol in the breath than does the Committee, because it only shows that some alcohol has been consumed, and not how much. Also, when vomiting has occurred the breath may have only a sour smell replacing the alcoholic odour. Consumption of more than a very small amount, either before or during motoring, is dangerous, and it is only owing to the tolerant way we have come to look upon road problems and dangers that greater re-entment has not been aroused.

As I have said, the initial lowering of the mental alertness and obscuration of judgement must always be present when there are demonstrable signs of alcoholic indulgence, and a person showing these signs is unfit to be in charge of a motor vehicle, and therefore "drunk" within the meaning of the Act.

Intoxication is, of course, a matter of degree, and passes by insensible gradations from one step downward to another. Yet it is only when a man has reached the bottom, in a decidedly mixed up condition, that counsel or bench will adjudge a man drunk. I am glad that the Association's Committee has placed the loss of power of delicate nerve control from indulgence as its definition of being under the influence of alcohol. It is a sound conclusion, and is on parallel lines with the pronouncement of a County Court judge recently given, he stated that "to satisfy him that drunkenness was present in any given case, the skill and judgement normally required in the manipulation of a motor car had been diminished or impaired as a direct result of the consumption of alcohol. The test, so defined, may be difficult to apply, but drivers should realize that even a slight disturbance of judgement and response, negligible perhaps, in social moments, may spell tragedy in the hazardous business of handling a car."

Have we any further methods than the tests we customarily use to guide us to a conclusion?

I hope it may be pardonable for me to speak for a few moments upon some work recently carried out by Dr. Southgate at the Sheffield University, and in which I took a modest part. I refer to the alcoholic concentration in urine as a test of intoxication. In its report the British Medical Association Committee says that it is of opinion that, while this work is of great value from a scientific point of view, tests depending upon examination of the urine are not practicable for the purpose nor under consideration, owing to the conditions limiting their application.

This limitation no doubt refers to difficulties which arise in obtaining and procuring samples, but I think these difficulties may be gradually overcome, and are worth applying in such serious case. An alcoholic secretes a large amount of urine and does not remain long in a police cell without voiding it. All that is necessary is to make sure that he does not pass it down the w.c. A simple mechanical contrivance can secure this, such as I described in our published communication, and to which I shall make a further reference.

It is obvious that if we can recover alcohol from the urine in estimable quantity by a quick and easily applied method we can at least assert that it has been taken by the mouth within a reasonable time prior to its collection. This disproves or the assertion, made by some on being charged either that they are total abstainers, or that they have not partaken of more than the usual couple of glasses of beer during the preceding few hours. No textbook with which I am acquainted has given a satisfactory and

\*The opening paper of a discussion in the Section of Forensic Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927. Owing to the illness of Professor Harry Littlejohn the chair was taken by the Right Hon. Sir L. Russell.

expedient method of performing this analysis, and I would refer those who feel interested in the matter to the paper read by Dr Southgate and myself before the Medico-Legal Society in London and published in the *BRITISH MEDICAL JOURNAL* on March 13th, 1926.

We owe our present position in this matter chiefly to Mellinby and Southgate. The former has done much work on the estimation of alcohol in the blood, and carried it further to the urine, following upon the lines of Widmark and Miles, and proceeded to establish the ratio between the two. It was found that this ratio stood at the figures 1 to 1.34, showing that the renal epithelium has a selective action for alcohol in secretion. The concentration of alcohol in blood is related to symptoms of intoxication of the central nervous system, and the same applies to urine.

A number of men were experimented upon under varying conditions, and the following conclusions arrived at. They found that a man of 11 st weight drinking a solution containing 26 ccm of alcohol in one drink passes urine containing 200 cmm of alcohol in 100 ccm of urine, at its point of maximum concentration. Such a man was moderately intoxicated, and therefore unfit to drive on the road. A concentration of 300 cmm per 100 ccm of urine suggested quite definite intoxication. The results of many subsequent analyses, together with clinical manifestations in each case, were given, and these fully bore out Mellinby and Southgate's figures. Having obtained a sample of urine it should be quickly bottled to prevent alcoholic evaporation, and once it has reached the analyst a definite result can be obtained within thirty minutes—that is, in time for the opening of the courts. I should add that a Fehling's test should first be performed in order to make sure that there be no alcoholic fermentation from a glycosuric specimen.

I do wish that this examination of the urine for quantitative estimation of alcohol were more frequently applied. If those interested in this subject will study Dr Southgate's publication they will see the exact conclusion which can be drawn as regards the probable amount of whisky or beer drunk, the time within which the bulk of it had been consumed, and so materially help the court to a correct decision. I may add that as small a quantity as 30 drops of urine will suffice for the purpose of analysis, and the results are given in cubic millimetres per 100 ccm of urine.

It is advisable, if possible, to obtain two succeeding specimens, noting the interval of time between their being passed, so as to obtain the inclination of the downward curve. From this we can work backward on the chart, and determine the maximum amount that has been present at the material time preceding the arrest.

A simple device for obtaining the specimens is to clamp a receptacle (which can be easily removed) on to the wooden aperture of the waist. Another plan is a small porcelain urinal fitted into the cell wall at a convenient height. The waste pipe passes through the wall into an unoccupied cell, and discharges into a vessel placed beneath for its reception. By this method no entry into the man's cell is necessary, and a second specimen is easily obtained. Very few drunken persons, I find, will provide a specimen of urine by request. They usually make an excuse, or pass it on to the floor of the cell when alone or when the ordinary way is not available.

[Dr Criter exhibited copies of Dr Southgate's charts and commented upon their significance.]

#### DISCUSSION

Dr E. BOCEA (Cincinnati, U.S.A.) referred to the importance of having a quantitative test for drunkenness and described how the alcoholic concentration in the excretions was compared with the findings on clinical examination of 500 persons suspected of drunkenness in the Cincinnati General Hospital. The concentration of alcohol in the breath and urine was tested and compared with the degree of intoxication. The physician was called into court to sustain his evidence. Symptoms of dilated pupils and flushed face were found in less than one-third

of these cases, and were principally noted in the moderate groups, persons in a state of coma showed to a high degree constricted pupils and pallor. It was well known that some individuals were able to drink more than others. This was probably due to the delayed absorption of the alcohol and the slower rate of oxidation in persons not habituated. The concentration of alcohol in the breath was the quickest and easiest test. As soon as the disturbing factor of the alcoholic liquor in the mouth was removed the concentration of alcohol in the breath showed a fairly close relation to that in the blood as it passed through the lungs very easily.

Professor J. T. J. MORRISON (Birmingham) said the work on the subject of alcohol in the urine was of high scientific value. It proved the possibility of estimating the concentration of alcohol in the blood, and since this gave a clue to the quantity of alcohol imbibed it might rebut the plea that too little had been taken to produce the alleged effects. He did not expect that the urinary test would become generally adopted because of two practical difficulties—the obtaining of specimens, and their prompt analysis. Moreover, further investigation was required to determine the modifying effects of renal and other diseases on the excretion of alcohol. It was also a serious question whether information of this character, required without the consent or even the knowledge of a prisoner, would be admissible in all courts as evidence. It was in violation of British law that no person was bound to furnish evidence that would incriminate him. When, however, an accused person denied the charge and submitted willingly to examination the matter was on a different footing. A drawback to the procedure was the variation in the effects of a given quantity of alcohol in different persons, and even in the same person in varying circumstances. There was a wide discrepancy between a moderate drinker (still more an abstemious) and a toper. Again, in the case of the same person, alcoholic effects varied with the percentage of alcohol, with the rate of consumption, and with the degree of fullness of the stomach. In comparing different persons, the body weight was a material factor, even more influential was the degree of tolerance induced by habit. "Drunk" was so elastic a term that a rigid definition was better avoided, it connoted various mental, emotional, and muscular evidences of disturbance of the central nervous system due to alcohol, and there was no single symptom which might not also be caused by disease or trauma. "Under the influence of alcohol" was too vague a phrase for the court. Any quantity had some influence, and a single glass was taken with that purpose in view. The crucial question was how much evidence of disturbance would show the degree of unfitness to be in charge of a motor car which the court would regard as proof of drunkenness. For legal purposes the impairment of functions must be obvious, and only the composite blending of several groups of findings would convince. To determine whether a person had recently taken alcohol the smell of the breath was a ready test, subject to the well known fallacies. In all cases investigation to ascertain whether the signs and symptoms were due, wholly or partly, to trauma, disease, or malformation was essential. In a medical examination of a man accused of being drunk in charge of a motor car close observation would be made of his general appearance, demeanour, odour of breath, signs of muscular inco-ordination, and time sense relating to the previous few hours. This summary embraced many details relating to face, eyes, and dress, evidences of impaired self-control, loquacity, emotional display of shyness, anger, or irrational sentiment, disregard of social conventions, slurring of speech, clumsiness in sitting down and rising, loss of balance in picking up a coin from the floor. It was not uncommon to find that a man who was the worse for drink would be several hours out in his reckoning of the intervals of time between events of the same evening.

Dr A. ALLISON (Glasgow) said a person might be held to be drunk for the purpose of one offence but not for the purposes of another. In the present case the question which had to be decided was, Had the fitness or efficiency of the individual to be in charge of a motor car with

safety to himself and the public been diminished by his consumption of alcohol? The decision rested with the court, and it was unnecessary for the medical witness to formulate a definition of drunkenness. It was well known that certain people were affected by quite small quantities of alcohol, and there was no single clinical sign which was characteristic and which could not be simulated by disease. Each individual sign might be easily demolished during cross-examination. The medical examiner should be able to present a complete picture which would convince the judge or jury that the condition of the accused was due to indulgence in alcohol. It was necessary to eliminate symptoms due to disease, shock, or excitement. In Dr. Allison's experience the shock of an accident or arrest was often sufficient to steady the person, at least temporarily. A symptom to which he attached considerable importance was the readiness with which a person who had over-indulged in alcohol fell asleep soon after being placed in the cell. To find a man sleeping heavily ten minutes after the cell door had closed on him was a contraindication of his having suffered from shock or nervousness, and was confirmatory of signs of drunkenness found during the previous examination. It was also helpful in the cases where the man had succeeded temporarily in pulling himself together when first brought to the police station. His practice was to explain the position to the accused and obtain his consent before putting him through any tests for drunkenness. He was also informed of his right to an independent examination by a doctor of his choice. Chemical tests might give useful confirmation but would never altogether replace clinical evidence.

The CHAIRMAN (Lord Russell) considered the question more from the legal point of view, and discussed the punishment for drunkenness. In a recent debate the motion was passed that the driver's licence should be suspended for twelve months, this was later modified and the driver was allowed to appeal for the suspension to be removed after three months. With regard to tests for drunkenness, whatever evidence could be produced as to the alcoholic contents of the urine or any other tests the general appearance of the accused must also be taken into consideration. He thought the accused should be given an opportunity of having a medical man of his own choice, but that it was not necessary to warn him of the object of the examination.

Professor J. L. W. MacFARLANE (Liverpool) agreed that Dr. Carter's paper was a valuable scientific contribution but thought it hardly practicable from a police surgeon's standpoint, he doubted whether the excretions of an accused person could be tested without his full knowledge and consent. As a police surgeon he knew the difficulty of certifying borderline cases. He found that each examiner had his own tests and was able to interpret the results of his tests and form an opinion as to whether the inco-ordination of thought and action as the result of drinking alcohol interfered with the proper performance of the act involved to such an extent as to produce a condition diagnosable as "drunk." One complication was that the state of the accused was often partly due to alcohol and partly due to excitement. He emphasized the importance of time. On two occasions when examining accused persons and deciding to certify them as "not drunk" he found that after some time both became distinctly incapable of driving efficiently. In one case a man changed from having complete control of himself and became an uproarious inebriate. On the many tests for muscular co-ordination he found the most delicate was to mount a staircase when the least hint of control was indicated by swaying. Perhaps the best test would be for the examiner to be aided even by the accused person.

Dr. CARTER, in reply, said that a man knew why he was arrested and did not need to be warned of the object of the examination but he agreed that he should be allowed to send for his own doctor. He was glad to know that Dr. Bogen's conclusions tallied with those formed in this country.

## RADIOLOGY AND DIAGNOSIS OF INTRA-THORACIC TUBERCULOSIS

### THE IMPORTANCE OF RADIOLOGY IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS

BY

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THE title which has been given me to open this discussion contains two subjects: (1) the importance of radiology in the diagnosis of pulmonary tuberculosis, (2) the importance of this as it affects the specialist and general practitioner. Clearly the first of them has to be dealt with before the second can be considered.

Now the diagnosis of pulmonary tuberculosis is not merely a matter of recognizing the presence of the disease, though the recognition of it and the differential diagnosis are of prime importance and are often matters of great difficulty. Diagnosis must necessarily include in addition to the type of disease, the character of it, whether, that is to say, it is acute or chronic, and to what extent the changes due to the tubercle bacilli predominate, or are complicated by or overshadowed by those due to the secondary organisms, further what part is played by the mechanical changes. Finally it is imperative especially if surgical treatment comes into consideration, to know the anatomical extent of the lesions.

While pulmonary tuberculosis may present itself with all the textbook symptoms and signs in many cases there are problems as to the extent of the activity, the anatomical areas involved, the character of the secondary changes, and the share they take in the picture which are extremely difficult to solve. The symptoms and signs vary in every case: the clinical and the radiological picture of any patient are as individualistic as are the rhinols loop, and composites on the thumb which are used for identification purposes. There may be but one symptom, such as haemoptoe or haemorrhage, there may be no sign other than harsh breath sounds. Symptoms such as cough and sputum may be absent from the picture for years. Pre-exs may be an early or late manifestation. While the symptoms are easy to ascertain but sometimes difficult to interpret, the signs may be difficult in both respects. Some patients seem incapable of using their chest or diaphragm so as to make even the normal breath sounds audible through the stethoscope. When it is remembered, further, that there is practically no symptom and practically no sign that cannot be produced at one time or another by every intrathoracic disease and that, for example, breath sounds can be heard through even a considerable layer of liquid, it is clear that there must be many cases in which it is essential that every means of ascertaining the trouble must be utilized and that it is most important in all cases to check, control and correct the clinical findings by the radiological ones.

Of all methods of investigation the clinical examination is unquestionably the most important but it does not reveal the whole truth and for much that is hidden we must turn to radiology and radiography. There are some few cases even—and they are chiefly those in which the pleural cavity is the seat of the lesion or is involved secondarily to the disease in the lung—in which one has to rely on radiology for the main part of the evidence.

Radiology has taught us a very great deal about pulmonary tuberculosis. It has corrected the one-time impression that tuberculosis starts most commonly in the apex of the lung—an impression error due to error owing to the conduction of the sounds to this region. I have taught us about the limitations of the roentgen elements of the

A paper read in printing a discussion on the Section of Tuberculosis at the Annual Meeting of the British Medical Association in Liverpool, 1917. Dr. S. V. P. Davies, M.D., M.Ch., F.R.C.S., was in the chair.



domes of the diaphragm. It has shown us how frequently the disease is more extensive than the clinical findings suggest, and, conversely, how occasionally the disease is much more limited than is suspected, owing to the widespread changes in the physical signs caused by local changes in the larger bronchi. It has also, however, helped for the time to confuse us by showing us the shadows known as "pleural rings," and those changes at the root of the lung which have given birth to the nomenclature of "hilum tuberculosis." It must be remembered that the science of radiology is still young, and that time is needed to interpret all the mysteries which the x-rays have revealed, and that it is bound to take a long while before the significance of the various shadows can be correlated with the *post-mortem* findings.

The first thing to consider is the importance of radiology in diagnosis and differential diagnosis. The cases that come before us belong to two groups: the one with few symptoms, in which the existence of pulmonary disease has to be determined, and the group with well-marked symptoms and signs, in which the character of the disease must be diagnosed. The great majority of the first group consist of children and young adults, and the commonest symptoms are cough, which has persisted since a cold or an infectious (especially measles and whooping-cough), some lassitude, poor development and dyspnoea, occasionally in the more advanced cases there is cyanosis. The physical signs are usually impaired resistance and resonance, often more on the right than on the left, deficient air entry, and some moist sounds. Quite a number of these cases are labelled hilum (or pulmonary) tuberculosis, some are treated as such, and bear the stigma for the rest of their lives. It is here that radiology has helped it first to confuse us, but will unquestionably, with increasing knowledge, prove of immense benefit.

The great difficulty lies in the inability to establish just when the hilum shadow ceases to be normal, and what are the characteristics of early disease as opposed to chronic irritation. We know that impure atmospheres lead to increase in density of shadows, that chronic irritation causes enlargement of glandular nodes and increased striation, and that in some cases, especially after bronchopneumonia, bronchitis, and also in connexion with chronically enlarged tonsils, these changes may be very striking. Among the considerable number of apparently healthy students I reviewed at University College Hospital sixteen years ago two things struck me in particular—one was the enormous irritation that occurred in the so-called normal subject (one only of these has since developed tubercle, and his original radiogram showed nothing striking), the other was that the traction of the heart to the left with a normal-looking lung and pleura was invariably due to a basal pneumothorax in the past.

In a recent paper Agassiz draws attention to the clinical picture and the radiological findings in children and young people which are the result of a non-tuberculous fibrosis of the lungs following bronchopneumonia and bronchitis, measles, and whooping-cough. He deprecates, and in my opinion rightly, the readiness with which young people with increase of root shadows and irritations therefrom are labelled "hilum tuberculosis." This term has unfortunately come into general use in much the same way as the words "influenza," "gout," and "rheumatism." It is a label attached indiscriminately and occasionally correctly. It satisfies the public because it is a definite term which can be repeated to friends and relations, it conceals the need of further investigations, ending often in uncertainty and in vague nomenclature, and it gives a sense of security, as it is as hard to disprove as to confirm. It is a label that once affixed is hard to remove. It is a term which, having been accepted and put into general use, is hard to abolish. Agassiz states that the x-ray examination "is of the utmost importance in differentiating fibrosis from other affections of the lung." The following is his description of the x-ray findings:

"It is to the shadows at the root and radiating from it that I would direct attention. These may be slightly increased with striation towards the base, or they may be dense, massive shadows extending from the level of the third to the sixth or seventh rib in front with dense striations radiating to the base

in particular, and possibly blurring or obscuring the cardio-phrenic angle or angles and accompanied in some cases by some increase of striation towards the upper lobe. All variations between these two extremes may occur. In other cases the normal reticular formation of the lung may be more evident than normal. In others again the shadows, more particularly round the hilum or upper lobe, have a honeycomb appearance, and in yet others star-shaped shadows occur.

"The diaphragmatic outline is frequently irregular, the irregularity taking the form either of undulations or, more often, of peaking. I believe that these irregularities of the diaphragm are due to other causes than that commonly assigned to them, viz., adhesions."

In the majority of the adult cases the patient comes with symptoms of a more pronounced character, and the presence or absence of disease is less likely to be the stumbling-block, but the character of the disease may be. My experience is doubtless not different from that of others. I have had many cases sent to me as suffering from pulmonary tuberculosis who were suffering from some other disease. By far the commonest mistake is bronchiectasis. Some of these patients have gone about for years, despite the persistence of a negative sputum, labelled as pulmonary tuberculosis. In many the clinical diagnosis is easy, but in some it is extremely difficult until it comes to the radiological examination. This in the majority of the cases will settle the diagnosis, but there are some very old-standing cases where the secondary bronchiectatic changes associated with chronic tuberculosis are so predominant that it is hard to differentiate between them and a non-tuberculous bronchiectasis. Less frequent types of mistake have been the labelling of cases of malignant disease and of syphilis as suffering from tuberculosis. One striking feature of these mistakes is that the cases had not been x-rayed, and, in most instances, had they been, the error would not have occurred. In this connexion three striking cases may be mentioned, even though tuberculosis did not necessarily enter into the differential diagnosis, in each case the diagnosis was made by the x-rays only. One was a case of bronchitis and emphysema in which the x-rays revealed a primary carcinoma of the lung even when found it was impossible to detect it clinically. Another was a case of diaphragmatic hernia treated in hospital for thirty years, the nearest guess made was "basal pneumothorax," until radiology cleared up the diagnosis. The third case was an elderly woman with acute pulmonary symptoms, of whose history forty years previously, when she had acute pleurisy and nearly died, I knew nothing. Not until the acute symptoms had subsided and she could be moved for x-ray examination did I realize that the lung was shrunken to about one-quarter its original size, and was separated from the shrunken chest wall by inspissated pus.

When we turn to the pleural and mediastinal cases the importance of radiology becomes even greater. We may suspect an interlobar effusion, but it is rarely more than a guess until confirmed by the x-rays, even greater is the difficulty in cases of mediastinal effusion.

In the diagnosis of activity of a tuberculous lesion it is the clinical signs and not radiology which must be relied on, though unquestionably information can be obtained from the latter source also. The snow-flake finny shadow of an acute lesion is in striking contrast to the dense, sharply defined outline of the fibrotic lesion. At times there is a great temptation to diagnose on clinical examination the presence of a cavity when the radiogram shows that the signs are due to a dense area of fibrosis juxtaposed to a large bronchus. Occasionally the radiogram will reveal a cavity in the centre of a densely fibrotic area which is unsuspected from clinical examination, the x-rays will, moreover, reveal in a large cavity the efficiency of otherwise of drainage of such a cavity, and the returned sections when present.

When the case under investigation is one with an effusion, or pneumothorax, or a combination of the two, it may be impossible to obtain by clinical examination any idea of the extent of the collapse or the character of the collapsed part of the lung. If on examination a patient is found to have a pleural effusion, it is not sufficient to be content with that as a diagnosis, it is necessary to know the cause of such effusion. It may be failing heart or kidney, trauma, suppuration above or below the diaphragm, an infection, or granuloma inside the pleural

cavity or in the lung. It may be secondary to an inflammatory lesion such as pneumonia or to carcinoma. It may be primary tuberculosis of the pleura, or secondary to pulmonary tuberculosis. The diagnosis can be easy or extremely difficult, especially if the primary lesion is in a collapsed lung surrounded by liquid. But if the liquid is replaced by air and the collapsed lung is partially re-expanded then it becomes possible not by clinical examination but by radiology to see the character of the lesion which is primarily responsible.

Information as to the presence of very small effusions, of interlobar effusions of adhesions their directions, size and number, of the nature of the lung in the region of their attachment to it and of the mediastinal pleurae are cannot be obtained by clinical examination but is revealed in part or in whole by the x rays. Take for example, the case of a basal pneumonia with imperfect resolution, a pleural effusion partly absorbed, thickening of the pleura retraction of the heart dragging up of the dome of the diaphragm and sinking in of the chest wall—a tuberculous lesion may or may not be present. This complex but common type of case can be diagnosed clinically, but as a general picture only. It is the x rays which must contribute the detail and show the relative extent of the various changes. There are two points I would like to call attention to here. I am very sceptical as to the possibility of diagnosing adhesions which exist between an expanded lung and the chest wall, some there are who claim to do this but I have not as yet had a convincing demonstration. Adhesions between the base of the lung and the diaphragm can I maintain be diagnosed if the dome of the muscle is drawn up and distorted, a shriveling lung does not distort the muscle unless adherent to it. This however, also is a controversial matter. The second point is that thickened parietal pleura is much more easily recognized by clinical examination in exceptional cases, and naturally when the seat of calcareous deposits a definite shadow is obtained due to increased opacity to the x rays. As a general rule a density of shadow attributed to thickened pleura can be proved to be due to a thin layer of liquid. The thickened pleura on the lateral surface of a partially collapsed lung can, however be clearly demonstrated.

Usually in considering diagnosis there is the extent of the lesion. It is usually more than is suspected by clinical examination. This is partly due to the fact that while some patients breathe in such a way as to bring the signs into prominence with others all the sounds are damped and muffled. Moreover in a x ray film shows deep seated lesions as clearly as superficial ones, and all the shadows are on the one plane.

Two types of case difficult at times to distinguish clinically are clearly differentiated with the x rays. I refer to patients with deficient expansion increased resistance, poor air entry harsh breath sounds and some prolongation of expiration, with possibly a few moist sounds. This picture may be due to involvement of the larger bronchi at the root, or to scattered small areas of fibrosis throughout the lung substance. I must mention also a particularly interesting case of a patient sent to me with acute laryngeal tuberculosis and the report that both lungs were free of disease. I, too, could find no clinical evidence of any disease, but the x rays revealed acute military tuberculosis of all five lobes. During the next ten weeks I could detect no signs of the disease which I knew to be there.

Occasionally the clinical and radiological evidence is to dilatation of bronchi and of cavities is inadequate. This is particularly the case in bronchiectasis and especially for lesions of the left base which are obscured by the cardiac shadow. In these cases the injection of lipiodol into the trachea and so into the bronchi and bronchioles may add a wealth of valuable information.

Precision in diagnosis is essential for determining prognosis and treatment it is absolutely imperative before any surgical treatment can be considered. To attempt treatment of a case of pulmonary tuberculosis by operative intervention without the most thorough radiological (when such is by any means available) as well as clinical examination is to make the patient run serious and unjustifiable risks. In these cases it is not so much the precise

condition of the more affected side but the character and extent of the lesion in the sound lung which is so important. In my examinations I rely entirely on the clinical examination to determine the presence or absence of active disease in the less affected lung but I turn to radiology for my evidence as to the anatomical extent of the lesion.

The value of a radiogram lies in its clarity and in our power to interpret it. An indifferent radiogram may be not only worthless but a source of danger as we may fail to detect the existence of lesions of importance, and act on the erroneous idea that they are not present. The radiogram taken with the film on the front of the chest is the most useful standard viewpoint but it may be advisable to take one with the film on the back or with the patient in the half lateral position. In some cases as in mediastinal effusions the film must be taken from the front whilst the patient assumes the orthopneic position.

I would urge that during the exposure of the film the patient be in the upright rather than the recumbent position. The former is essential when liquid is present. I would also put in a plea that the patient be screened and saved sitting down as standing may prove very exhausting to one who is sedentary and is at the same time possibly undergoing a new experience, and therefore an ordeal.

A patient should be examined with the screen, as this gives a general impression of the lesion, and information as to the lighting up of the various parts of the lung and as to the movement of the domes of the diaphragm and possibly as to the movements of shadows inside the lung. Also a rough idea can be obtained of the relatively anterior or posterior situation of a particular shadow. Screen examinations unless one waits in the darkened room for about half an hour beforehand fail to give detail and it is for this reason as well as because they afford a permanent record that radiograms should be taken.

The interpretation of the film brings us to one of the difficult problems. The radiologist who handles hundreds of films and is presumably well up in the literature can detect abnormalities and describe the shadows far better than the average medical man. Unfortunately his opportunities for studying the radiogram and the clinical picture side by side and following the development of the case are limited. The physician who specializes in pleuropulmonary diseases has very great experience but it is possibly somewhat less than that of the radiologist. He is also less aware of the allowance to be made for imperfect exposure or development but has the advantage of his knowledge of the clinical side. The general practitioner with the wide range of knowledge required of him cannot be expected to have an extensive grasp of the various subtle and complex guesses in which pulmonary tuberculosis may manifest itself nor a thorough understanding for interpretation of radiograms.

He should therefore in all obscure cases and in all those in which tuberculosis is suspected or might be by the patient and relatives recognize that the first consideration is the welfare of the patient and that to call in a specialist or consultant and a radiologist is not likely to impair his medical prestige nor cause the patient to withdraw his confidence. It is possibly partly for fear of this or of the exposure of his lack of knowledge for the interpretation of radiograms partly also on account of the expense to the patient that many general practitioners do not make greater use of the specialists and of radiology on behalf of their patients. Consequently in many cases because of the indefiniteness of the physical signs or of the difficulty in interpreting them together with the fear of alarming the patients, the general practitioner prevaricates until the progress of the disease puts all doubt out of court, such delay is however, a most serious matter as it increases to a grave degree the time required for treatment and diminishes greatly the chances of arresting the disease.

It is much to be deplored that many patients apply for sanatorium treatment for the first time only when the disease is so advanced that it is extremely difficult, if possible to counteract the spread caused during the delay. Frequently the chance of arresting the disease by medical

or surgical means, which possibly did exist six or twelve months previously, but by the time they present themselves been irretrievably lost. The chief causes of delay are

1 Postponement of treatment by the patient on account of work, finance, or aversion to the idea of entering a sanatorium

2 Non-realization of the seriousness of the condition due (a) to the doctor's opinion (a mistaken one to my way of thinking) that the patient is not equal to facing the situation, (b) to the doctor himself not realizing the extent or the seriousness of the disease. In such cases a radiogram with a report on the findings would frequently alter his conception of the case. A true realization of the state of affairs might then save the precious time and money so often wasted through the advice of "a month or two at the seaside," or "a trip to the South of France." The patient starts off without proper knowledge or guidance how he should live, and recuperates sufficiently to drag through in extra few months of work before he is once more laid low by further extension and activity of the disease.

3 Wrong diagnosis owing to an erroneous interpretation of the physical signs. If an invariable rule was made, that when there had been persistence for more than three months of symptoms which might be due to tuberculosis, the sputum (if any) was examined and a radiogram taken, many doctors would find that they returned the confidence of those patients who owing to the lack of these precautions are doomed to a lingering illness, and are often without mercy in their denunciations of the want of thoroughness in the investigation of their case.

## REFERENCE

1 The Differential Diagnosis of Non-tubercular Fibrosis of the Lungs in Children, *Tubercle*, May, 1927

## DISCUSSION

Dr E RIST (Paris) emphasized the importance of radiological examinations in connecting the clinical findings, he hoped that the time was at hand when a line would no longer be drawn between the physical signs *par excellence* and the radiological findings. X-rays were invaluable in cases with deep-seated cavity near the hilus, where often no definite focus was discoverable by percussion and auscultation, even quite superficial cavities might be overlooked by relying on ordinary physical signs, and their discovery made an enormous difference to prognosis and treatment. Only by x-ray examination had it been established that there could be transmission of abnormal sounds from the diseased to the sound lung, and it alone had given a safe method for deciding on the induction of artificial pneumothorax. In his opinion fluoroscopy was most valuable, it showed, for example, impaired movements, the inspiratory attraction of the whole mediastinum by the fibrotic lung, and the inspiratory distension of the heart shadow in bilateral fibrosis. It should always precede filming, and should be a guide to it as showing the position best adapted to display the particular feature it was desired to study in detail. This would render possible the real use of the film in indicating the minute details in morbid structure, and in obtaining a permanent and indisputable record of the condition at a given date. He pleaded for a further use of the fluoroscope in order to attain correct interpretation of x-ray findings, it ought not to be confined to the exceptional and obscure case. The clinician and the x-ray specialist ought not to communicate by written reports only, they ought to sit side by side before the fluoroscope, or, better still, the two functions should be combined in the same person. The practitioner should have free access to the x-ray room.

Dr J L STEWART (Manchester) said it could not be too strongly stated that the x-ray examination was one item in the clinical examination and did not supersede any part of it. The clinician, not the radiologist, made the diagnosis. He had found radiology of great value in diagnosis, especially in examining contacts, where the earliest definite cases were found, and where very often long-standing quiescent disease was detected by this means in older relatives of active adolescent and juvenile patients. He thought the term "hilum tuberculosis" should be given up. If the disease had reached the lung tissue the case

should be classed as pulmonary tuberculosis, if it was confined to the bronchial glands or interlobar pleura, the patients should be labelled accordingly. He believed that with extended experience, basing the diagnosis on clinical and x-ray evidence, such classification of cases would be possible. The distinction was of great importance from the point of view of prognosis, thus, it did not follow when the glands or pleura were involved, even extensively, that the prognosis was bad, and careful collection of x-ray evidence might aid in revealing the ultimate prospects in such cases. The full value of x-ray examination could be appreciated only if it was used as a routine method.

Dr J M WOODBURN MORISON (Edinburgh) said that radiology was only an extension of one of the methods of examination—that of inspection, he should like to see it included under that heading in all textbooks on diagnosis. No physical examination was complete without x-ray examination, on the other hand, a radiological diagnosis should never be demanded. The radiologist was seldom a skilled physician, and the clinician rarely had an expert knowledge of radiology, only by the close co-operation of the physician and the radiologist could the full benefit of the x-ray examination be obtained. Every young medical practitioner entering the public health service and specializing in tuberculosis should have a full course of instruction in radiology. The speaker then showed some very interesting lantern slides to illustrate the usefulness and limitations of radiology.

Dr C P LAJAGE (Manchester) described an investigation that he and Dr Bythell had carried out at the Manchester Children's Hospital on hilus tuberculosis. Excluding cases with definite physical signs, he found that the distinction between the catarrhal child and the child with early hilus tuberculosis was very difficult, a septic focus in the tonsils or nose gave toxic symptoms like those of early tuberculosis. He classified cases where possible as catarrhotoxic and tuberculotoxic. Aids in diagnosis were the history of infection, the rate of improvement, temperature and pulse tests, and the tone of the skin—especially that between the scapulae. For the treatment of tuberculotoxic cases he advocated the extension of a convalescent school system. The teaching of such patients was important, both mentally and in its effect on the physical well-being. Patients with hilus shadows who showed also symptoms such as headache, rise of temperature, frequent catarrhal infection, and general loss of tone were, if not actually tuberculous, at least potentially tuberculous. The tubercle bacillus, however it obtained entry, was always at hand to infect the site of chronic inflammation in a debilitated child, whether in a cervical gland or a hilus fibrosis.

Dr L D PARSONS (Ceylon) pleaded for the further use of test doses of old tuberculin as an aid in difficult diagnosis.

Dr MORRISTON DAVIES said he would add a final word on the difficulties ahead of those who would overstress the radiological examination as compared with the clinical side.

## THE INTERRELATION OF PHYSICIAN AND SURGEON IN REGARD TO NON-PULMONARY TUBERCULOSIS

BY

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IN these days, when our therapeutics is dominated by the surgical treatment of pulmonary tuberculosis and the conservative treatment of non-pulmonary tuberculosis, the demarcation between the respective spheres of the physician and surgeon seems practically obliterated, and any discussion of their interrelation, therefore, an anachronism.

\* A paper introducing a discussion on this subject in the Section of Tuberculosis at the Annual Meeting of the British Medical Association, Edinburgh 1927.

but closer investigation soon reveals that this fusion of function in non-pulmonary tuberculosis is not nearly so complete as we have a right to expect, and have, in fact, practically achieved on the pulmonary side.

Put briefly, in non-pulmonary tuberculosis, as in pulmonary tuberculosis the physician and surgeon should be one and the same individual, embodied in the person of the tuberculosis officer or his institutional counterpart for all purposes of diagnosis and treatment, except those involving major operations or the performance of a few highly technical and specialized procedures.

To attain this end the tuberculosis officer should seize the opportunities that are now available, and train himself to become a competent surgeon, sufficiently well versed in the technique of his specialty to make a good provisional, and hazard an accurate final diagnosis, to undertake immediate treatment pending admission to an institution and to shoulder the responsibility for the care of the patient after discharge giving the general or orthopaedic surgeon his proper status of operator or final court of appeal.

This he can bring about in two ways—first by looking upon a period of residence in a surgical tuberculosis or orthopaedic hospital as quite as essential a part of his training as residence in a chest hospital or sanatorium and, secondly, by close linking up of his area surgical work with that of an institution and based upon it frequent reciprocal visits and interchange of medical staff being an important part of the scheme.

In this way the conception of pulmonary and non-pulmonary tuberculosis is one and the same disease, of which only the local manifestations vary would be preserved, and the present tendency to divorce tuberculosis of bones and joints from general tuberculosis and attach it as a mere appendage to orthopaedics would be checked, a tendency which I am convinced is not in the best interests of the patient.

Tuberculosis whatever its site is the same pathological process diagnosed by the same procedure and treated on the same principles and the utilization of methods of treatment similar to those of orthopaedics should not blind us to the fact that the essential element in the successful management of each is a sound knowledge of the disease as a whole—knowledge fortified by manual dexterity and reinforced when required, by the operative skill and expert knowledge of the general or orthopaedic surgeon.

In dealing ever with non-pulmonary tuberculosis the practitioner in charge should be first and foremost a physician armed with a surgeon's technique and not a surgeon doomed to practice medicine.

There would be very definite advantages if this unification or closer interrelation could be carried out. For example, some much needed precision would be added to our diagnostic criteria, especially in tuberculosis of glands. Our recommendations for treatment would be based on fact rather than on prophecy. Our results although not so flattering, would make us realize that our former failures should have suggested the possibility of reconsidering our diagnoses before we preened ourselves upon our success.

By refraining from making up our minds (although not necessarily withholding treatment) until reasonable probability of the cause amounted to actual or practical certainty we would obviate in a large proportion of cases the mental trauma we inflict so lightly upon our patients to-day and would avoid the finality of notification with its consequences—those administrative measures which have such serious social and economic results to patients and their dependants.

Let us take, as an instance tuberculous glands. If the tuberculosis officer or his residential colleague became the surgeon officer and cashier, and excised doubtful glands for examination we would clarify our ideas considerably as to the distinction between glands that are tuberculous and glands that are something else although possibly at the cost of losing our touching faith in the numerous therapeutic fads that exist for the treatment of this condition.

We would realize more keenly that although it is broadly true that a tuberculous lesion is the local manifestation of a general infection in cervical adenitis both lesion and infection may be localized accessible and suitable for

eradication, and that eradication is the prerogative of the operating surgeon alone.

It would be for the physician to decide whether the enlarged glands were tuberculous by a rigorous process of exclusion by removing every contributory cause, by, if need save direct examination it would be for him to decide whether the disease was localized by careful clinical examination especially of the chest by determining possibly the type of bacillus present by radiography of the hilus, and, in doubtful cases even by prolonged observation of the effects of hygienic measures upon the general condition and weight curve of the patient.

When radical measure had been decided upon, he would choose his surgeon with discrimination bearing in mind that this operation is difficult, tedious, and unpopular, that too often those who can won't, and those who will can't, that sometime more vigour than care more trauma than gentleness, distinguishes the technique with the undesirable effect of increasing the risks, always present, of general dissemination of direct spread with its complication and of nerve injury with its consequences. He would also see that the cause—the primary source of infection in the tonsils and adenoids or teeth—was removed as well as the consequence—the diseased glands themselves.

If the surgeon in his turn remembered his medicine he would not operate in unsuitable cases—the cases in which a pulmonary lesion co-exists in which the suprarenal gland or villous glands are involved or in which the disease, although still possibly confined to the lymphatic system, has passed beyond the reach of his knife. He could however, teach the physician the value of his methods of immobilization in the treatment of pulmonary disease, for example, by the use of a plaster bed in the treatment of abdominal adenitis by similar means and in the treatment of glands of the neck by such methods as a plaster collar. He could point out the object lessons that may be learnt from the benign course run by pulmonary tuberculosis when associated with tubercle elsewhere due partly at any rate to the more complete rest secured by surgical methods.

In "orthopaedic" tuberculosis it must be admitted that the balance of advantage resulting from a closer association of the medical and surgical sides would be with the tuberculosis officer. He would be reassured by soon finding out that in early cases there is as much difficulty on the surgical side in deciding whether there is definite evidence of tuberculosis or not and if disease is present in stating whether it is active and requires treatment as there is on the medical side while the choice and duration of treatment and the differential diagnosis may be even more baffling although unfortunately the price of error which the patient pays is frequently heavier in loss of time money and opportunities.

Few problems in medicine require nicer judgement or greater patience than to decide in bone and joint cases when the disease is quiescent and treatment can be altered, or when the disease is arrested and treatment can be discontinued.

In early lung involvement the issue is usually clear—namely the presence or absence of tuberculosis in non-pulmonary tuberculosis the issue is complicated by the necessity in addition of differentiating between tuberculosis and a number of conditions which may closely simulate it—conditions which may require treatment, but have a very different prognostic import.

Tuberculosis officers may therefore, take heart of grace when they are puzzled in arriving at a complete diagnosis with the limited facilities they have at hand. Experts themselves with all the diagnostic aids of a well equipped institution at their disposal are sometimes foiled and have to play for safety either by assuming the presence of the graver disease or by containing themselves with an approximate diagnosis which only time and observation will more accurately define.

On most occasions, therefore tuberculosis officers should content themselves with a provisional diagnosis and act upon it. Until tuberculosis officers are physicians and surgeons too we must follow the advice so admirably emphasized by Mr. Girdlestone—namely, the sufficiency of a preliminary provisional, or approximate diagnosis, provided it is followed immediately by such action as

attendance at a clinic or admission to hospital, where the differential diagnosis can be elucidated without detriment to the patient, and where treatment can be initiated without loss of time.<sup>2</sup>

In this respect the interrelation that exists at present between the physician and tuberculosis surgeons is comparable to that which exists between the general physician and general practitioner, and for the same reason—not necessarily because the one has a specialist knowledge compared with the other (it is hoped that that reproach will soon be removed), but because the surgeon has at his command institutional and other facilities which are essential for prompt diagnosis and treatment.

The benefit of closer co-operation or unification would not, however, be entirely on the physician's side. The surgeon would begin to pay more than lip homage to the truth that tuberculosis is one and indivisible, and that bone and joint disease is a secondary manifestation to primary infection elsewhere. He would act more frequently upon the fact that while coincident clinical tuberculosis of these structures is admittedly uncommon, evidence of bony involvement or of pulmonary disease can be found oftener than is generally realized, and that to treat the diseased joint only is not the whole, and may not even be the most important part, of the treatment, which should be threefold—directed towards the patient, the occult primary lesion, as well as to the obvious secondary manifestation.

It would be more generally realized that in associated pulmonary and non-pulmonary disease premature success in arresting the local lesion (especially if the former is the primary manifestation) may over-activate or reactivate the trouble in the lung.<sup>3</sup> It would be remembered also that, while the development of secondary deformities is a reproach, evasion in attempts at preventing or correcting the primary deformity may not be too high a price to pay for life.

The surgeon's association with the tuberculosis officer would enable him to realize more vividly the economic repercussion in adult patients of his occasionally too conservative methods in some lesions of the lower limb. He would also realize that after-care in tuberculosis, as opposed to orthopaedics, is more than a medical problem, and connotes much more than the correct use of appliances, that failure is not necessarily due to indifference or carelessness, but to those social and economic disabilities that exert such a profound effect upon the prognosis of tuberculosis in any form.

In closing, may I express the hope that my colleagues in the tuberculosis service will realize before it is too late the need for proving themselves equal to the new and fascinating demands that are being made upon their adaptability, intelligence, and clinical knowledge.

#### REFERENCES

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- <sup>2</sup> Girdlestone *Diagnosis and Treatment of Tuberculosis of the Hip*
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#### DISCUSSION

Professor J FRASER (Edinburgh) agreed as to the necessity and value of co-operation. The present-day principles underlying the successful treatment of non-pulmonary tuberculosis could be summed up as (1) removing the local infection if reasonably possible, (2) stimulating the general resistance of the patient, (3) putting the affected part at rest, (4) attacking directly the infecting organism—by tuberculin, serums and drugs, and (5) treating the various symptomatic disturbances. So far as treatment directed towards cure of infection was concerned, drugs had been disappointing, a specific chemo-therapeutic agent had still to be discovered. Hoping in the future co-operation of the pharmacologist and the clinician, the laboratory and the ward. He had not been able to obtain a reasoned opinion on the real value of tuberculin in its therapeutics, its method of administration, and the technique of its dosage. He did not doubt that this treatment had some value. He was more convinced than ever of the correctness of surgical intervention in the presence of certain definite indications, such as tuberculous disease of some groups of cervical glands. This infection remained for some time a local disease, infected from a local point of lymphatic absorption.

There was at present no sure method of arresting the disease by conservative and therapeutic means, and the results of surgical treatment justified this procedure. Rest was the basis of local treatment, and it should be as complete as possible, it encouraged fibrosis, which was nature's method of arresting the tuberculous focus. In the ideal result was to be attained there should be no sudden resumption of function, there the physician and surgeon could usefully co-operate in the constant vigilance of apparently cured cases. He was very sceptical of the success of any scheme for the training of a special type of individual—a physician with a surgeon's training—and preferred the collaboration of a physician interested in tuberculosis as a general disease with local manifestations, and a good general surgeon with orthopaedics as his hobby.

Mr G R GIRDLESTONE (Oxford) thought that in the case of badly deformed patients the criticism should be directed against failure in orthopaedic technique during the period of active disease rather than against any excessive conservatism. The division of potential cripples into tuberculous and non-tuberculous would prove to be neither economical nor efficient. The treatment of tuberculous bones was not merely an appendage to orthopaedics. A recent census of the Wingfield Orthopaedic Hospital had shown that of the 134 cripples and potential cripples well over two-thirds were tuberculous. Adolescents and adults presented a much more serious problem than children. To deal with adult tuberculosis was difficult, the best operative facilities and a highly trained surgical team were necessary.

## PROBLEMS OF MALARIA PROPHYLAXIS.

### CONCLUSIONS OF THE MALARIA COMMISSION OF THE LEAGUE OF NATIONS

BY

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THE thirtieth anniversary of the discovery by Sir Ronald Ross that anopheline mosquitoes are hosts and carriers of the malaria parasite falls within a few days of this year's meeting of the British Medical Association. Since the discovery, many antimalarial campaigns based on its teaching have been undertaken in various parts of the world. It seems appropriate, in a discussion on the prophylaxis of malaria at this meeting of the Tropical Section of the Association, to consider what practical conclusions can be drawn from the results of those campaigns, and what general recommendations or suggestions can be made as to the antimalarial measures which appear, from the experience gained, to be most suitable in different circumstances and conditions at the present time.

It happens that, as *rapporteur* to the Malaria Commission of the League of Nations, I have recently assisted in drawing up the Commission's provisional conclusions on that subject, and perhaps those conclusions may serve as a basis for the present discussion. The Commission, as every one knows, is an international group of expert malaria-ologists and public health officers who were appointed by the Health Committee of the League of Nations in May, 1923, with the primary object of pooling experience in order to establish what antimalarial measures are most appropriate in certain European countries which have little money for the purpose, either because of general want of resources or for the reason that the funds available must be used in accordance with the relative importance of malaria as a cause of sickness and death in comparison with the importance of other diseases and conditions which affect the public health. This financial limitation adds greatly to the interest of the subject, but also makes the task of giving advice more difficult. The Commission has studied the problem in various ways, but chiefly by undertaking collective study

\* The opening paper of a discussion in the Section of Tropical Diseases at the Annual Meeting of the British Medical Association, Edinburgh, 1927. Dr Andrew Balfour, President of the Section, was in the chair.



tours in malarious regions of Europe and neighbouring countries, where an endeavour has been made for some years to deal with malaria in the light of existing knowledge and experience. During the journeys observations made by individual members of the Commission are examined by other members and the results are discussed in full session by malariologists belonging to very varied schools of antimalarial practice and opinion. In this way individual views become modified and the Commission as a whole endeavours to arrive at an impartial judgment regarding what may be the wisest course to pursue in different circumstances when due consideration is given to administrative and social and economic as well as to technical difficulties. In most instances of course the final view of the Commission is a whole represents a compromise between opposing tendencies—a compromise which may be called the average opinion. It is believed that these mutual discussions are the first session on which the collective thought of malariologists of different countries and different schools of teaching and practice, has been brought to bear on local problems of malaria prophylaxis studied on the spot.

With this preliminary explanation I propose now to bring to your notice some of the conclusions arrived at. In the time at my disposal I must limit myself to those which seem to be of not importance and I can only summarize very briefly the information and reasons on which the conclusions are based. For further details I would ask those who will take part in the discussion to consult the printed report which has been distributed.

1 One of the first and most important conclusions stated by the Commission is that at the present time in the vast majority of the numerous regions where malaria prevails, antimalarial measure should be limited to an endeavour to reduce the severity and so far as may be possible by the same measures the incidence of the disease. They are of opinion that measures designed to accomplish more than that (and particularly measures aiming at "eradication") are not a wise proposition and can be justified only in very exceptional circumstances. As regards this conclusion it is realized of course, that the limited aim is not entirely satisfactory—first as Professor Gosio has written,

No victory is real that does not overcome the endemicity of the disease and suppress its sources, failing this we can only claim to have scotched an ever-threatening enemy whose reawakening is an ever-present possibility." This is true but in the thousand and one small towns and villages of every affected country the "scotching of the enemy" is all that can be hoped for, and in the present state of knowledge it is all that should be aimed at. The Commission points out that those who are dissatisfied with this limited aim may derive comfort from the knowledge that it is all that has been accomplished even in countries like Finland, Holland and Denmark which geographically, financially and in every other respect are much more favourably situated for obtaining success in the eradication of malaria than is any other affected country.

2 A second conclusion of general interest is that it is not always necessary to deal with malaria by a method arising directly out of the knowledge that the disease is transmitted by mosquitoes. In this connection the Commission cites various regions and localities in which in the past malaria was robbed of its importance as a cause of sickness and death without any knowledge of the etiology of the disease and without any reduction of anophelids having occurred as well as various localities in which the same result is being brought about to-day. The Commission observes that since the advent of the knowledge that malaria is transmitted by mosquitoes there has been a tendency to forget that there are many methods of dealing with the disease and that some of them are effective even without an attempt being made to reduce mosquitoes. Therefore their view of opinion that in certain circumstances it is very desirable for antimalarial workers to throw off the trammels resulting from the general belief that because

mosquitos carry malaria their elimination should be the chief object of concern and expenditure.

3 A result of the Commission's inquiries which is closely related to the conclusion just stated is the recognition that there is not yet any single method of malaria control which can be described as being superior to all others and therefore to be adopted in every country. There are, as has already been said, a number of methods of control, and some of them are constantly being improved. Each or any of them may, either wholly or in part render valuable service in a country if it is a method well suited to the local conditions. This suitability or adaptability to local conditions is one of the most important matters to be considered in a choice of methods, and it is essential to the success of the method chosen. Malaria control is a local problem to a much greater degree than is the case with the control of other infectious diseases. Therefore in every country and very largely in every area there must be preliminary examination to ascertain the local conditions before deciding what method of malaria control is best adapted to them.

4 Omitting the Commission's suggestions for ascertaining the amount and character of malaria in the locality and for ensuring that a continuous record on that subject will be kept I turn now to the actual methods of controlling malaria which the Commission consider it desirable to recommend. First I must say a word on the second question whether it is better to utilize several of the known antimalarial methods at the same time, or to concentrate all available effort on one carefully elected method. This is a specific question which was put to the Commission by the public health authorities of several countries visited. The answer given was that in the opinion of the Commission it is better to limit the action taken to one or two selected methods, which can then be brought to a high degree of perfection. If, after a fair trial, these one or two measures are found to be insufficient to rob the disease of its practical importance from the public health point of view further methods can be systematically added until the desired end is attained.

5 As regards the particular methods of malaria control to be adopted in any country or area the Commission considers that there should be considerable freedom of choice. It deprecates the adoption of measures in a country on the ground that they have been successful in another, where perhaps circumstances and conditions are quite different. Each country and to a more limited extent each locality must work out its own salvation. In this matter, and the suggestion is made that countries and localities should do so in greater degree than has hitherto been the case. On this point the Commission states that in some of the countries which they visited there was evidence of an endeavour to follow too slavishly the antimalarial policy adopted in some other countries without ascertaining its suitability to the local circumstances and conditions and in some instances without interpreting correctly its purpose and without giving full weight to the considerations which determined its adoption. As an example they note that in the world generally, there is a widespread misapprehension regarding Italian antimalarial methods and that, in some countries money, energy and time have been misapplied in the false belief that the Italian example was being followed.

6 It is usual to classify antimalarial measures as direct and indirect. The Commission adopts that classification but defines the terms more strictly than is usual. In the Commission's view there are only two direct antimalarial measures—namely killing the malarial parasite in man, and killing the malarial parasite in infected mosquitoes. In comparison with these two measures, anything else that can be done to control malaria is necessarily indirect. For example no one who has made a particular study of antimalarial campaigns can doubt that general antimalarial measures in the field as usually carried out in practice, are an indirect method of trying to deal with human malaria—that this line of action is concerned with something which is remote from the particular knowledge of the etiology and epidemiology of malaria which we are fortunate enough to possess to-day.

<sup>1</sup> *Principes et méthodes de lutte antipaludique en Europe*. Deuxième rapport fait au Conseil de la Conférence du Paludisme. Publié par le L. I. de l'Union internationale pour l'étude du Paludisme, 1925.

<sup>2</sup> *International Journal of Public Health*, vol. 1, No. 2, September 1926, pages 173.

7 Adopting this restricted definition of direct and indirect means of controlling malaria, the Commission suggests that in every malarious locality certain direct methods, which they term "primary measures" and which are concerned with malaria-infected individuals and the interior of the houses in which they live, are indispensable. As regards measures relating to malaria-infected individuals, the Commission considers that, whatever else it may be possible to do in malarious localities, the first and most important thing to do is to arrange for the treatment of cases of the disease. In rural areas and localities under primitive conditions the State must make these arrangements, according to the means available, but at least an efficient arrangement for the gratuitous supply and effective distribution of quinine is indispensable. The Commission considers that in organized communities satisfactory diagnosis as well as treatment should be arranged for, and suggests that, wherever possible, the services of private medical practitioners already established in the locality should be utilized and paid for by the State for this work.

8 The Commission recognizes that no useful purpose would be served by magnifying unduly the results that may be obtained by those arrangements for ensuring early discovery and effective treatment of cases and carriers. They have ascertained that, in the countries which they visited, nothing is more striking than the mild character of the manifestations of malaria in a locality where there are practising medical men who are fully equipped as to the diagnosis and treatment of the disease, as compared with the severe and often fatal manifestations in a similar locality which is without that expert medical aid, but they realize also that the good results are more apparent in the reduction of severity and mortality than in the reduction of incidence. This is not surprising in view of the knowledge that quinine is not an effective prophylactic for new infections or relapses, and in view of the difficulty of attaining the "minimal effective standard" in the execution of the measures. Regular inspection of school children and of organized classes of the adult population must be part of the system, and an endeavour must be made to follow up all patients in their homes. The officer who is in charge of the measures will need assistants, especially for house-to-house inquiries. In some countries duly qualified female "health visitors" who have received the necessary training may be usefully employed in this work. In small districts the office can be combined with kindred health duties, such as school nurse, tuberculosis visitor, etc.

9 The other "primary measure" which the Commission recommends is the systematic killing of adult female anopheles mosquitos which can be found in the interior of dwelling-houses. It would take too long to describe in this paper the epidemiological and experimental grounds on which the Commission has arrived at the conclusion that this measure, if it could be effectively carried out, would have very remarkable results. As to the manner in which it should be done, the Commission considers that, wherever it may be practicable to persuade householders themselves to undertake it, that arrangement is preferable to an organized management by the authorities for killing mosquitos in houses by periodic fumigation or other means. In the Commission's view the measure should be regarded as an important item in the sanitary education of the inhabitants of malarious areas. The Commission thinks that it should be a duty of the medical men and assistants who visit households to explain to the occupants how malaria is contracted and spread, and to demonstrate to them how to find and kill the adult anopheles mosquitos which are present in the house. It should be explained also how to make the house inhospitable to anopheles by removing cobwebs and dirt, clearing out recesses and dark corners, whitewashing, arranging for more light and air, and other simple means suitable to the particular locality and type of dwelling. Female health visitors and health nurses, who have been properly instructed and trained, can do a great deal of good by instructing householders on these matters. The aim should be to teach the inhabitants to have the same dislike and objection to the presence of goaded and sluggish mosquitos in their houses as cultured people already have to the presence of bed-bugs, lice, and

other harmful and disgusting vermin. If this educational propaganda is successful, it may be hoped that in time the killing of anopheles mosquitos in houses will become a routine part of the housewife's daily task, just as much as other more showy, but less useful, items of sweeping, brushing, and cleaning. The measure has the advantage of costing nothing. It is known, from the results of experimental laboratory work, that one infected mosquito can give malaria to as many as thirty persons, therefore it is difficult to prize too highly any person who succeeds in killing even one of these infected insects.

10 As regards these two primary or direct measures, the Commission is well aware that there is nothing particularly new or original about the idea of endeavouring to combat malaria in the houses of the people themselves rather than in the general environment. They realize also that it is often a difficult matter to get into the houses of the people, to examine all the occupants, to treat those who are found to be infected, and to teach them to catch and kill the mosquitos which may be hidden in inaccessible places. But no novel road or short cut to the prevention of malaria has yet been found. Therefore, in the opinion of the Commission, it is necessary for the present to continue to endeavour to combat the disease itself at its sources in the human and insect hosts.

11 The Commission has carefully considered in what circumstances any other measures than those dealt with should be recommended, and what those measures should be. On this subject reference is made in the first place to the problem of what should be done in regions where the conditions in which the people live and work are so primitive, and their economic position and social status, and culture are so poor, that it is not possible in practice to apply direct antimalarial measures in a manner which enables them to be brought to the "minimal effective standard." Except the free distribution of quinine, no effective antimalarial measure can be applied in these regions until the land has been brought into such a condition that it is worth the while of the inhabitants to settle permanently upon it, and until those permanent settlers have reached a fair standard of housing and living. Nothing is more favourable to a high incidence and severity of malaria than frequent movements of a population hither and thither in search of a better living, and very few things have a greater effect in reducing malaria than the stability of the population which comes when a place where the conditions of life are tolerable is found. Agricultural reclamation of the land, so that people may be settled permanently upon it with a fair prospect of gaining a livelihood, and perhaps a decent house and moderate comfort, is therefore a measure which tends indirectly to produce a great reduction of malaria. In general, the better the agricultural reclamation is carried out from the point of view of increasing its productivity, the quicker will malaria seem to disappear as an important cause of sickness and death—provided always, of course, that the people themselves share in the improved prosperity by being able to adopt a higher standard of housing and living. It is hardly necessary to say that, when reclaimed land is worked by hired labourers who receive only a small daily or weekly wage and live a life of great hardship in temporary huts and hovels, there is no improvement of malaria among them. Indeed, in the tropics (and even in some parts of Europe) highly cultivated areas where these conditions obtain continue to be among the most malarious in the world. This indicates that the actual measures necessary for agricultural reclamation or improvement of the soil (drainage, etc.) are not the factors which cause the health of the people to improve, but that the good result is due to the better conditions of living and housing which the increased productivity of the soil enables the people to obtain. In this connection the Commission notes that the changed conditions of life just referred to, and the subsequent reduction of malarial incidence and severity, have often been brought about in the absence of any measures intentionally based on modern knowledge of the etiology and epidemiology of malaria, and they illustrate this truth by describing a small scheme of "sanitation without antilarval or other intimosquito methods" which was demonstrated to them during their tour in Sicily. The

place is now an example of 'anophelism without malaria' for the one and other reasons the conclusion to which the Commission has come is that of all indirect methods of reducing malaria most importance must be attached to general schemes which aim at improving the economic and social conditions of the people and their general well being and standard of life.

12 The Commission has ascertained that almost everywhere in the countries which they visited terms like "bonification," "reclamation," etc. are misunderstood and misinterpreted except in the particular countries where the term originated. They find also that in some countries the false belief still prevails that the actual measures which are necessary for making land more suitable for cultivation and more fertile are the means by which the reduction of malaria is brought about. In particular the drainage which is necessary for agricultural land reclamation is often credited with being the chief agent concerned. It is assumed that the drainage acts by reducing the breeding places of anophelid mosquitoes. In support of this belief it is often said that even the ancient Greeks knew that drainage reduces malaria and that this antimalarial action of drainage is explained when the role of the mosquito was discovered. One result of the belief is that some countries have adopted drainage on a large scale as their first line of attack against malaria. The Commission does not desire to limit the output of public works of proved utility but having regard to the financial aspect of its mandate they are equally unwilling that countries should continue to believe that the kind of drainage which is necessary for agricultural reclamation of the soil is an important antimosquito measure. For it is now known unquestionably that the open ditches and canals by which swamps and marshy areas are drained for agricultural purposes are often more prolific breeding places of anophelid mosquitoes than were the original swamps themselves. The Italians are well aware of this. They do not regard their "large bonifications" as an antimosquito measure and they know that such a bonification may increase the abundance of anophelid in the area reclaimed. But they know also that in an area where bonification has been completed and where, in consequence, the inhabitants settle permanently in better houses and in all the other circumstances of a moderately good standard of life malaria tends more or less quickly to lose its importance as a cause of sickness and death. This good result more than compensates for an increase in the abundance of anophelid in the general environment. Thus it appears that the measures themselves are only a means to a definite end which is to be pursued despite the knowledge that some of the measures may be of a kind which actually favours the incidence and spread of malaria. Therefore what we learn from the Italian example (and equally from the older and more extensive Dutch example) is that we must not take credit of the actual bonification measures (such as drainage) separately, and utilize it as a single antimalarial measure in another country. If "bonification" is the antimalarial measure which we desire to employ, it must be understood to mean a many-sided process. Our scheme for "bonification" must be comprehensive, it must include particularly the arrangements for settling the people permanently, for raising their standard of life for better housing, better education and general welfare for making scattered homesteads of recess by good roads and canals, for better medical attendance and in general for all the social and public health improvements which are an integral part of a complete bonification scheme in Holland, Italy, and other countries where such schemes have been successful. As I have already mentioned, the essential importance of these items in the scheme is brought home to us by instances in which when the inhabitants of reclaimed and highly cultivated land are not permitted themselves to reap the advantages of the increased productiveness of the soil no improvement in malarial results. Obviously, therefore the sphere of the public health officer and the malariologist in connection with schemes of agricultural land reclamation consists particularly, not in trying to enforce antimalarial measure during the progress and after the completion of the work but in seeing that the agricultural improvement has been

unaccompanied and followed by an equal improvement in the conditions of life of all the people who inhabit the reclaimed area. This change in the conditions of life of the inhabitants is the most important antimalarial factor in bonification schemes.

13 The Commission deals in separate chapters of the report with various other problems of malaria prophylaxis particularly with the organization necessary for the work and with different antimalarial and antimosquito methods—such as quinine treatment and prophylaxis, larvicides, the applicability of antimalarial measure housing, an antimalarial measure, and propaganda. From lack of time I cannot refer to these subjects in the present paper.

14 But there remains a subject which I must not omit to mention. For various reasons which are given in the report, the Commission is unanimously of opinion that the scientific study of malaria must be continuously pursued in the laboratory and the field. They consider that the best prospect of discovering a method of dealing with malaria which can be applied in affected localities with the small amount of money and means that can usually be provided lies in renewed activity in the study of the disease in all its aspects. Therefore they suggest that each Government which has not already done so should establish a small central permanent organization of selected workers who would devote their whole time to malaria research. In this connection they suggest (a) the establishment in one or two malarious areas of each country of an "observational station" where certain routine epidemiological inquiries should be made at regular short intervals for several years, (b) the establishment in each country where malaria is used therapeutically of a laboratory for the cultivation of a pure strain of malaria in mosquitoes to be used, under expert supervision for the purposes of the treatment. The establishment of such a laboratory in a properly organized hospital automatically provides an opportunity of studying the clinical and parasitological features of malaria contracted in the natural way as well as the circumstances governing the infection of anophelid and the persistence of the infective virus in those insects. It also enables a satisfactory study to be made of the action of quinine and other drugs which are used for the treatment of malaria. Examples of each of these institutions are described in the report as well as an example of a station for "experimental malaria control."

#### DISCUSSION

Lieut Colonel F. D. W. HACKETT with the aid of lantern slides outlined the problem of malaria prophylaxis which emerged from his study of certain cases of intentionally induced malaria. He divided his cases as regards susceptibility into (1) refractory and (2) ordinarily susceptible. The difference was very clearly observable but in this series there were none which could be classed as very susceptible. He recalled that James had ascribed resistance to infection to some property of the blood or tissues of the recipient and not to an insufficient dose of sporozoites and he discussed the views of Christophers as to immunity against malaria expressing the opinion that some test which would differentiate good and bad infectors of mosquitoes would be of service for prophylaxis. In his cases the period of latency after infection varied from six to twenty days. Sexual forms of the parasite did not appear until six or seven days after the disease declared itself so that allowing three days which James held to be necessary before gametocytes could infect mosquitoes a patient in a primary attack would not be capable of infecting mosquito until about ten days further had elapsed. Such intentional infections as those described afforded opportunities for study of the parasitological power of drug.

Dr F. W. HACKETT (Rome) described the use of Paris green in the antimalarial measures undertaken by the International Health Board in Italy.

Dr DRPOMAY (Prague) gave an outline of the conditions of occurrence of malaria and the methods used against the disease in Czechoslovakia.

Prof. Dr E. MATTI (Hamburg) feared that the report of the Malaria Commission would be interpreted by

Governments as meaning that by supplying free quinine they could discharge their whole duty regarding malaria. He leaned towards the preventive methods described by Dr Hackett, but he agreed with Colonel James that there was perhaps too great a tendency to adopt mechanically for every country a measure which had anywhere produced good results. For malaria prevention there was no fixed rule, each district required individual consideration. At a place he visited near Astikhin prophylactic quinine was the only measure applicable to local circumstances. Angola was nearly abandoned as the Turkish capital on account of malaria, quinine alone was ineffective, but when this was coupled with well considered drainage the disease was controlled, and anopheles became rare. In Antolia it was the experience of local doctors that apparent resistance to quinine often disappeared when an malarial infection had been eradicated. In his view the cases of so-called spring malaria were nearly always relapses of autumn infections. In Turkey he had acted on this belief as regards his personal prophylactic measures, omitting all precautions up to the end of May even in districts where malaria was endemic, and he had no reason to regret his action.

Dr P H MASON-BARR (London) gave his experience with plasmochin and its compound with quinine in the treatment of malaria. He considered that this new drug, from its action on the gametocytes of tertian and subtertian parasites, would have considerable bearing on the prophylaxis of malaria in the future. All who had used it were agreed as to the phenomenal rapidity of its action upon the crescents of subtertian malaria, which disappeared from the circulation within three days after the exhibition of 0.24 gram of plasmochin. He quoted a striking illustrative case in which the compound was successfully employed after full doses of quinine had proved unavailing, and in which disintegration of the gametocytes was observed microscopically. The drug was well tolerated, and if it were possible to treat a malaria-stricken population daily with small doses, the transmission of infection through the anopheles would soon cease from destruction in the blood stream of the gametocytes. Under the present system of quinine prophylaxis the formation of gametocytes in peripheral blood was rather encouraged than the reverse.

Colonel S P JAMES briefly replied to the discussion.

## ASTHMA AND TUBERCULOSIS IN RELATION TO "CLIMATE ALLERGENS"

BY

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We began about 1919 to investigate the action of various allergens on asthmatics, and found that only about 15 per cent of our cases could be classified as super-sensitive to the four groups of allergens known at that time—namely, pollens of various grasses and flowers, epidermal products, foodstuffs, and bacterial vaccines. We had, however, also noted those asthmatics who could not be classed under one of the four headings mentioned, but had yet to be considered super-sensitive, although we were unable to identify the causative allergens. Among other things we found that more than 90 per cent of asthmatics give a positive skin reaction to an extract of dandruff of human skin, whereas normal persons only react to such an extract in exceptional cases, proving that the skin at least of these patients is super-sensitive.† Thus about 80 per cent of our asthmatics suffered from some form of allergy, but the causative agent of their attacks was unknown.

In our endeavours to find the cause of the attacks in these 80 per cent we utilized the known fact that the environment of the asthmatic patient is, as a rule, of primary importance in determining the intensity and frequency of his attacks. It is known that most asthmatics are free from attacks at high altitudes. Turban and Spengler, who have published statistics for Davos (about 5,000 feet), found that 68 per cent of all asthmatics going to Davos become free from attacks within two or three days, that 25 per cent improve considerably within two or three weeks, and that only 7 per cent remain unimproved. It is also known that residence at the seaside or a sea voyage often improves the condition of asthmatics. This can be observed also in a flat country like Holland, where the health of asthmatics varies greatly in different regions. The character of the soil is also of great importance, sandy soil and a low level ground-water offering much better conditions for asthmatics than clay and peat soil and a high level ground-water. Recently these observations have been confirmed completely for Ost Preussen by Tiefensee, working in the clinic of Matthes in Königsberg, who found that from 1,100 asthmatics living in East Prussia, more than 90 per cent had their houses on clay, moor, or peat soil, and only a very small number on sandy soil.

These observations exclude the known factors of climate, barometric pressure, temperature, humidity of the air, etc., as direct causes for the incidence of asthma, and make it clear that the conditions of the soil are of paramount importance. As will be shown later, humidity may play an important part in making a place "bad" for asthmatics, but it does this by facilitating the growth of certain microorganisms which constitute the determining causes of the asthmatic condition in different regions.

Mainly on the basis of such observations we formulated the hypothesis that the difference between various climates is due to certain allergens in the air, the presence of which is dependent on factors of climate, they may be called climate allergens. These climate allergens must be considered as the principal causes of asthma in all flat countries with a high humidity and a moist soil.

In my monograph on allergic diseases<sup>1</sup> I fully described the results of experiments made to prove the validity of this hypothesis. Among other things it was shown that outside air in a place known as very bad for asthma (Rotterdam) contains water-soluble colloidal substances, which on injection into sensitive persons induce attacks of asthma, and that dust from the floors of private houses gathered in regions where asthma is very frequent contains many more allergens than dust from places which are good for asthma. In Switzerland there is a gradual diminution in the allergen content of house dust corresponding to the height of the place.

A number of allergens which may be considered representatives of groups of climate allergens have been determined. The first examples were found by us as the result of reading a paper by Ancona, who observed an epidemic of asthma in an Italian village, the cause of which was traced to a parasite occurring in grain (*Pedicularis ventricosis*) which formed allergens, to which most of the people who frequently handled this grain became sensitive. We then found that other insects—that is, the common mites which so frequently occur in grain, hay, and straw and picking material—form allergens which may be the exciting cause of asthma in about 20 per cent of our cases. Later we found that common moulds, like *Aspergillus fumigatus*, and other aspergilli, penicillium, mucor, etc.—moulds that are abundant in moist and damp houses—form allergens to which more than 50 per cent of our asthmatics are sensitive.

Since these allergens formed by moulds are to be considered as typical representatives of a group of allergens which is certainly most important for the entire problem of allergy, we will have to study their properties in detail.

### Properties of Mould Allergens

1 Mould allergens are soluble in water and are of colloidal nature, they are not destroyed by heating to 120° C, nor by acid, alkali, or formaldehyde. They are

\* This article is a synopsis of a series of three advanced lectures given at the London University in February, 1927.

† The results have been confirmed by Prof. Dr Rost in Freiburg (Germany).

not soluble in ether or chloroform and are probably not proteins or lipids. They are known to neutralize acid or alkaline and do not act as nephelotogens in guinea pigs or rabbits so that it has not been previously possible to sensitize animals with these allergens.

2 *Skin Reactions on Human Beings*—In about 50 per cent of our asthmatics these mould allergens give positive skin reactions after subcutaneous injection, whereas normal persons are as a rule negative. The reactions are sometimes very intense so that the area for some at the site of injection is swollen, red, and tender, and so remains for two days.

3 *Effect of Subcutaneous Injections on Human Beings*—Subcutaneous injections in normal persons give no reaction. Sensitive people however may react in a peculiar way. Small doses, about 1 in 1,000,000 or less of our standard extracts, often have a decided therapeutic effect in that it repeated at short intervals they serve to desensitize a patient sometimes to a considerable degree. Slightly higher doses—that is 1 in 100,000 or the standard extracts—may cause symptoms of vasomotor rhinitis, headache, rise in temperature, and general malaise. In very sensitive people the 1 in 1,000,000 dilution or even 1 in 10,000,000 dilution may have the same effect. Higher doses or the same dose in a sensitive patient may produce violent attacks of asthma and even be dangerous. The symptoms following the injections of mould extract last two or three days and may be stopped by the injection of a solution of sulphur in oil.

4 We have been able to prove that the serum of patients sensitive to moulds contains substances which may transfer this sensitivity locally to the skin of normal persons. This serum also contains substances which may inhibit the action of the allergens in sensitive persons. Both kinds of substances are strictly specific. The presence of a "transfer substance" is shown by the experiment of Praeger and Kustner. If 0.1 c.c.m. of serum from a patient hypersensitive to a certain mould extract is injected into the skin of the flexor aspect of the left arm and next day 0.1 c.c.m. of mould extract is injected in the same place and 0.1 c.c.m. of the same extract as a control in the right arm the injection in the left arm will produce a large urticarial wheal, but the result of the injection in the right will be negative. This experiment proves beyond doubt the importance of moulds as a factor in allergic disease.

The presence of specific anti-allergens may also easily be shown. If 0.1 c.c.m. of a solution containing a mould extract diluted 1 in 10 with physiological saline is injected intracutaneously on the flexor aspect of the left forearm of a patient hypersensitive to moulds, and in a corresponding place on the right arm a 1 in 10 solution of the same allergen diluted with the patient's own blood is injected, the reaction on the left arm will be positive and on the right arm negative.

Whether these anti-allergens are identical with the "transfer substances" is not certain. The experiment described proves that the moulds investigated form allergens which may induce symptoms of illness in persons hypersensitive to them, and the conclusion is strengthened by the fact that all the moulds used have been cultivated from material occurring in the close vicinity of asthmatics. We have frequently found *Aspergillus fumigatus* growing readily in Lapok, which is used for stuffing mattresses in my country, moulds can be cultivated from house dust, from grain, and from human dandruff—in fact from the most various sources, but all accessible to asthmatic patients. Although we have only investigated the allergic properties of about sixteen moulds, many others may act in the same way as well as some micro-organisms such as bacteria and yeasts. Other climate allergens perhaps more important than these, may yet be found, but so far as we can see at present the relation between mould allergens and allergic diseases is the same in all low-lying countries. Those investigating this subject must not forget that the kind of micro-organisms producing climate allergens may be different in different countries.

So far we have produced evidence for the theory which ascribes the beneficial influence of high mountain climates

for all types to the absence of climate allergens in the air. The final proof can be reached in another way. If the beneficial influence of residence in high altitudes is due to absence of climate allergens, it should be possible to obtain the same improvement in Holland or any other low-lying country provided that conditions could be realized which in respect to the air were identical with those in Switzerland. With the help of W. Linthoven, jun., we have succeeded in constructing an apparatus for investigating this. As this apparatus is installed in a special clinic for allergic diseases, and forms the basis of our work during the last three years, it must be described in some detail.

### The Clinic for Allergic Disease

The clinic is established in two private houses rented for the purpose. The houses are rather badly built, damp, and situated on clay soil in a humid region near a canal. These are favourable experimental conditions since we wish to demonstrate that even in houses otherwise bad for asthmatics it is possible by proper technical arrangements to make them suitable for these patients.

In several rooms of these houses small chambers have been built of cement, a kind of asbestos, and a material on which bacteria or mould cannot grow. The chambers contain an iron bed, an iron chair, and a small iron cupboard. Mattresses, pillows, and other bedding are new and sterilized before use; they are also regularly sterilized every month or six weeks so that the possibility of micro-organisms growing in them and producing allergens is extremely small. Before going to bed the patient undresses in the room but outside the chamber enters and shuts the door of the chamber and stays in it during the whole night. During the first days of the residence in the clinic the patients often stay in the chamber during the daytime also. They are not allowed to take extra pillows, food, or any material which may contain allergens into the chamber. All the chambers in the clinic are ventilated by a large exhaust fan which draws air from the top of an iron tube fixed alongside an iron tower 100 feet high.

The system described is the simplest and for most of our patients it is sufficient. Nevertheless the air with which the chambers are ventilated will contain a certain amount of dust and a certain amount of climatic allergens. Hence, in order to obtain conditions more nearly identical with those in high altitudes the air must be purified—a problem presenting considerable difficulties. So far we have tried three different methods, but only one could be put on an efficient economical basis, that is the air is purified by passage through a refrigerator.

In the clinic for allergic diseases in Leiden there is a refrigerator with a capacity of 6,000 calories an hour and a cooling surface of 120 square feet sufficient to bring the dewpoint of the outside air from 15° C. to 6° C., or from 10° C. to 1° C., or from 5° C. to -5° C. in about 200 cubic feet of air passing through it per minute. This is sufficient to ventilate three chambers for two persons each. The air cooled in this way is to be drawn by a central heating system before it enters the chambers. As a rule the temperature of the chambers is kept at about 70° F., the relative humidity between 20 and 30 per cent. We do not yet know to what extent the dryness of the air influences patients beneficially, but if dryness is an important factor for their conditions in the clinic compare favourably with those at high altitude sanatoriums. It is true that during the winter the relative humidity in a number of places at high altitudes will be lower than 20 per cent, but in spring and part of the summer the figure of most of these places are higher.

We have so far treated about 500 patients in this clinic, and have found that about 75 per cent were completely or almost completely cured within some days about 15 per cent improved materially within some weeks and 10 per cent remained unaltered. In comparing these figures with those published by Turban and Spengler we find almost complete agreement. In our opinion this shows without any doubt that the conception of the influence of climatic allergens on the condition of asthmatics in various climates and at various heights is correct.



### *Application of the Principle of Allergen-free Air Chambers to Other Diseases*

Illnesses dependent on climatic factors are not limited to asthma and the other allergic diseases mentioned. Rheumatism is prevalent in moist and cold climates, and tuberculosis also. Highly interesting and careful investigations by Goidon, which were later confirmed for India by Sir Leonard Rogers, have demonstrated that great differences in the morbidity and mortality of tuberculosis exist between various regions in the same country, often quite near to one another—differences which are ascribed by these authors to the influence of strong rain-bearing winds. Most sufferers from migraine who have visited different places and different countries can tell of places where they are well and places where they always suffer badly. In those regions where the "Föhn" wind prevails its influence is very distinctly recognized by sufferers from migraine and epilepsy. In hot tropical climates there is in the lower regions a peculiar form of disease called "low fever," characterized by malaise and some rise of temperature, this condition is almost immediately cured if the patient moves to the mountains, but it comes back as soon as he returns to lower regions. The cause of this illness is unknown.

We do not suggest that in all these cases factors of climate are to be identified with the presence or absence of climate allergens, but we believe that some of these diseases should be studied from this angle. We ourselves started with tuberculosis, and also had the opportunity of studying five cases of whooping-cough in allergen-proof chambers. Our five patients with whooping-cough had severe attacks of typical coughing every hour or two on the day preceding their admission. They came into the clinic on the sixteenth, tenth, fourteenth, twentieth, and twenty-third day of the illness respectively. They were immediately put in an allergen-proof chamber ventilated with purified air and were not allowed to leave the chamber till their attacks had disappeared completely. As a result not only did the number of attacks of coughing decrease rapidly, but the intensity of the attacks was very much reduced, none of the children had in the clinic any attacks as severe as on the preceding days and nights at home. Although the benefit derived from this treatment is undeniable, we offer no explanation of it. Certainly we do not want to draw the conclusion that whooping-cough is an allergic disease, the subject is a matter for future research.

### *Pulmonary Tuberculosis*

We have elsewhere<sup>1</sup> discussed the reasons which led us to investigate the influence of allergen-free air on tuberculosis. Earlier in our work on moulds we made skin tests with mould extracts in tuberculous cases and found a fairly large number of positive reactions, and this, together with the consideration that high altitudes act beneficially on tuberculosis as well as asthma, suggested taking cases of tuberculosis into our clinic and observing how residence in an allergen-proof chamber would influence them. Although the number of patients so far is limited (16) there is already sufficient evidence that allergen-free air gives about the same results in treatment of tubercle of the lungs as high altitudes. We feel justified in making this statement, in spite of the small number of patients, because the conditions under which our therapeutic experiment was made were such as to exclude most sources of error. All these patients were suffering from severe tuberculosis. Physical and x-ray examination showed characteristic signs of proliferative disease and the sputum contained a great number of tubercle bacilli. Previous to admission they had been treated at home or in hospital in Amsterdam. They had during the preceding months or years spent the greater part of their time in bed, and none had lacked sufficient nourishment. Attention must again be drawn to the fact that the allergen-proof chambers used were built in the rooms of a private house, situated in a very moist and low-lying part, so that the only difference our treatment could make was that the patients were taken from a house in Amsterdam or somewhere else in the country, and brought into another house, certainly not better situated than the one they were in

before, but in which they lived in a small chamber isolated from the rest of the house and ventilated with purified air. Factors of rest, good food, and careful nursing were the same as before, and the patients received no medicines or other treatment, hence, as far as one could see, the only therapeutic measures were fresh air, and in some cases dry air, and protection from climate allergens.

Of the first sixteen cases treated in this way, one was not improved, and curiously enough this was a case which we had considered to be a relatively slight one—a girl of 15 years with tuberculosis of the left apex. One other case, a woman of 26, with a large cavity in the left apex, although gaining considerably in weight and feeling better, did not show much local improvement. A third case also only improved slightly, but all the others improved considerably. After having been in the chambers for one or two days the patients feel better, they breathe more easily, and they cough less. The quantity of sputum may or may not decrease during the first weeks, depending largely upon the presence or absence of a cavity. If no cavity is present the quantity of sputum may decrease quickly, if there are cavities the probability is that sputum will remain abundant and will only diminish very slowly, although in one of our cases with a large cavity (verified by x-ray examination) the patient was free from sputum within a month. The characteristic point, then, is that definite improvement occurs within a few days, and this is precisely what was expected, and is analogous with the improvement in our cases of climate asthma.

Of course, improvements in the patient's condition cannot be expected to show themselves in the physical examination of the chest until after some weeks have elapsed, then we find evidences of exudative processes being replaced by signs of fibrosis. In the cases favourably influenced the temperature settles after three or four weeks, and may remain normal entirely after two or three months. All our patients gained in weight, some of them considerably (15 kg in some months). In two cases the patients went home against advice before they were sufficiently improved, and became worse almost immediately, although all conditions at home, with the sole exception of allergen-proof chamber and purified air, were the same as in the clinic.

Before considering the importance of the results given, I must call attention to the fact that so far I have only spoken of "improvement" and not of "cure" of tuberculosis. In order to appreciate the reason for this it must be remembered that in cases of "asthma" also we do not obtain a cure by keeping the patients in the clinic. Our cases of climate asthma are supersensitive to climate allergens, and consequently they will be subject to attacks in places where these allergens occur, and free from symptoms in places where they are absent. Tuberculous patients suffer from a bacterial infection, and in addition are sensitive to climate allergens. This sensitivity handicaps the patient and forms an additional factor causing the tuberculous process to run a more severe course, it is this additional factor which is absent in our allergen-proof chamber. So the direct influence of this treatment—that is, the degree of improvement—will be mainly dependent upon the degree of sensitization to climate allergens shown by the patient, whereas the final result, including the question of permanent cure, depends on the relation between the violence of the infection and the patient's resistance.

It seems to me that the possibilities suggested by these observations on the influence of climate allergens on tuberculosis are not exhausted here. There is another side of the question which has to be considered. We know that there is a relation between climate and tuberculosis. Why is the mortality and morbidity of tuberculosis high in some regions and low in others? Lack of good food and unfavourable conditions in factories and workshops are important factors, and another is the occurrence of climate allergens in the patients' environment. The knowledge of this factor may be of great help in the treatment of tuberculosis, but it may be of even greater help in prophylaxis. Preventive medicine should take this matter into consideration. If the simple transfer of a patient from one house to another in the same town or region can make all the difference to his

health (as was the case with the patients who came to our allergen proof chambers) it must be realized that one obvious factor in the prevention of tuberculosis is to make the conditions at home similar to those in our clinic.

We feel that for all patients who are free from symptoms of asthma in our clinic, or who, suffering from tuberculosis, are greatly relieved the problem of their health has been reduced for the most part to a problem of technique.

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#### Remarks

OR

### THE EPIDEMIOLOGY OF POLIOMYELITIS\*

BY

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POLIOMYELITIS is an acute specific fever which, in its complete expression presents three distinct clinical and pathological phases. Clinically these are a short lived initial phase of constitutional disturbance, followed by signs of invasion by the virus of the subarachnoid space and finally by signs of involvement of the nervous tissue itself. Each phase has its pathological substratum. In the initial phase the virus obtains lodgement in the liver, spleen and lymphatic structures generally, in all of which lesions are found. The virus then reaches the subarachnoid space and leptomeninges by channels which are not yet fully known and gives rise to a reaction which is manifested by characteristic changes in the cerebrospinal fluid, and finally invading the nervous tissue, it produces there the inflammatory lesions to which the paralysis is due. The intensity of each phase varies as do also the time relations of the first two phases. Further, the infection may die out after the first or the second phase thus giving rise to the so-called abortive cases. When infection dies out after a severe meningeal reaction we speak of a "meningitic" type of the disease.

The initial constitutional phase of poliomyelitis seldom presents sufficiently characteristic symptoms for identification and it may be so mild that the patient continues to go about and thus has ample opportunities of spreading infection since the virus is contained in the nasopharyngeal secretions. Like other infectious diseases it has its own seasonal and age incidence incubation period mode of spread, and susceptibility factor. Since the publication of Wickman's observations<sup>1</sup> it has been generally held that the infection is carried and spread by healthy carriers of the virus and by sufferers from the disease. From the nasopharynx of both groups of individuals a virus has been obtained capable of producing the disease in inoculated monkeys, and Flexner and Amoss<sup>2</sup> concluded that the nasopharyngeal mucosa during the ten days immediately following the initial signs of infection regularly contains the virus.

The two points to which I propose particularly to address myself are the question of non-human carriage of the virus and a view which has recently been advanced to the effect that the sole agent in the spread of poliomyelitis is the healthy human carrier of the virus. Despite the inconclusive results of extensive search for non-human agencies of spread these have not been finally excluded. Recently in a small American outbreak, a strong case has been made out for mill as a possible agent of spread and the whole question has thus been reopened.

An important modification of Wickman's views as to the joint responsibility of healthy carriers and sufferers from poliomyelitis in the spread of the disease has recently been suggested by Collier,<sup>3</sup> who believes that the disease

is spread exclusively by the agency of healthy carriers and that actual sufferers from the disease in any of its phases are non-infective to contact, owing to loss of virulence in the infecting agent immediately the sufferer becomes infected. Elaborating this hypothesis, he states that every epidemic of poliomyelitis is preceded by a "carrier epidemic" in the course of which susceptible contacts are infected and an outbreak of the disease occurs. In any given area the presence of this army of carriers leads to the practically simultaneous mass infection of all available susceptible subjects. Further he states that epidemics of poliomyelitis are characterized by a rapid blaze, high peak and rapid fall, a feature due to the mode of spread he describes. In such semi-isolated communities as country villages or boarding schools this manner of spread implies the universal and simultaneous staining of all susceptible members of the community and precludes the further extension of the disease within the community with the result that all those not initially infected may safely remain within the infected community. The practical bearing of this conception is that all such communities should be kept together on the appearance of poliomyelitis within them and segregated from the surrounding society.

Since this hypothesis raises vitally important questions of public health and departs from the generally accepted body of teaching, it is essential that the data on which it is based should be carefully studied. Briefly, as formulated by Collier, these are (1) the literature of the disease records no authentic example of case-to-case infection. Multiple case within households are rare, and spread from a patient in a hospital ward is unknown. (2) The "rapid blaze, high peak and rapid fall" of epidemics of poliomyelitis can be explained only on the basis of a preceding "carrier epidemic" and does not accord with case-to-case spread. (3) Finally there is the categorical statement, for which no evidence is submitted, that at the moment of infection the virus ceases to be infective, thus rendering case-to-case spread impossible.

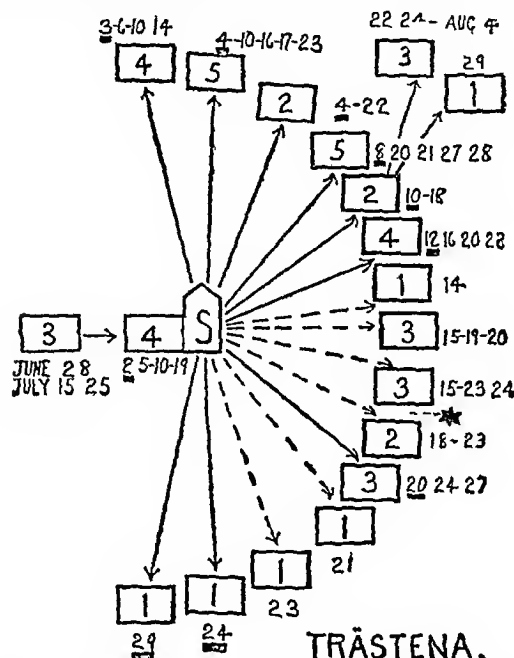
Before proceeding to discuss the first two postulates let us summarily dismiss the third. It has been established by Flexner and Amoss that the nasopharyngeal secretions within the first ten days of onset of the disease contain a virus not less infective for the monkey than is that of a healthy carrier. For this susceptible animal there is then no loss of virulence. In the circumstances it is incredible that there should be a selective loss of virulence for the other susceptible animal man. Throughout the whole range of infective agents pathogenic to man there is no parallel for the state of affairs thus alleged for the virus of poliomyelitis and in the absence of evidence we may dismiss it as a speculation incompatible with the facts.

It is perhaps more difficult to establish unequivocally the occurrence of case-to-case infection despite the strongest indications, it is always easy to maintain that somewhere in the background is the healthy carrier who is in fact responsible for spread and while it may be impossible to demonstrate his existence at the relevant time and place it may be equally impossible to exclude it. Nevertheless we may reasonably object to the invocation of this factor in respect of every epidemic unless there is more substantial evidence of its operation than our inability to prove a negative.

In referring to the literature for examples of case-to-case infection it is essential to go direct to original sources in which all the facts of observation are recorded irrespective of their possible bearing upon the question at issue. For this purpose we cannot do better than turn to Wickman's original monograph on the Swedish epidemic of 1905. Wickman concluded upon evidence which left him no alternative that poliomyelitis tends to spread along the lines of human traffic borne thereon by healthy carriers of the virus and by sufferers from the disease more particularly during its initial phase and in its abortive form. Suspended as he was by the importance of the healthy carrier he drew attention to the equally important role of the infected patient. Amongst the numerous foci of the disease analysed by him those in the parish of Trastena and on the islands of Sirko and Borgo provide clear examples of a state of affairs incapable of explanation on

\* These remarks were made in opening a discussion on the notifiable infection, i.e. of the nervous system at the Annual Congress of the Royal Sanitary Institute, July 1927.

the basis of a preceding "carrier epidemic," and establishing beyond reasonable doubt the preponderant role of case-to-case infection. The accompanying figure is a diagrammatic representation of the Trästen outbreak, modified from Wickman's diagram.



The rectangles represent houses, and the figure included within each is that of the number of cases of poliomyelitis in the house. Beside each house is given the dates of development of each case. Except in respect of the first and last cases the month is July. S = the school and attached schoolhouse. The arrows represent direction of spread, and those with interrupted lines indicate house holds infected by a healthy carrier. In the other house holds the initial case was a child actually attending school. The asterisk indicates the date (July 15th) on which the school was finally closed. (Modified from Wickman's Figure 2)

In 1905 Trästen was a remote woodland village of some 500 inhabitants living in 119 houses, 49 cases of poliomyelitis occurred in nineteen houses, the first case developing on June 28th, and the last thirty-seven days later, on August 4th. The maximum number of cases developing on any single day was 4. Multiple cases in households were the rule, occurring in no fewer than thirteen of the nineteen infected houses. The maximum number of cases in a single house was 5. In the first eight households infected the initial case was a child attending school. The school was infected by the first case in the village, and the schoolhouse was the second household involved, four of the schoolmaster's children developing the disease. From this point household after household was infected, in six instances a school child who remained healthy carrying infection home from school. In nearly every instance an incubation period of three days or over intervened between the appearance of successive cases within a given household. The school was closed on the 15th of the month, and after that the epidemic rapidly declined.

Here we have a characteristic example of gradual spread of the infection within a semi-isolated community, the school being the centre of infection. The day-to-day case incidence both in the village as a whole and within individual households indicates a case-to-case spread, and is incompatible on the basis of a preceding "carrier epidemic" and simultaneous infection of all available susceptible subjects.

In another outbreak cited by Collier himself we find evidence of the same order as that provided by the Swedish epidemic. I refer to the outbreak of poliomyelitis in the Devon village of Stokes Rivers in 1911. At the relevant time this village contained 119 inhabitants living in eighteen houses. There were reported 36 cases of the disease, occurring in fourteen houses. Four houses, containing 8 children, escaped entirely. The main facts of the outbreak are as follows. The thirty-sixth and last case developed a late as forty days after the first, not more than 2 cases developed on any one day, multiple cases occurred in

eleven of the fourteen infected households. In one house 9 cases occurred during a period of twenty-two days, with a definite incubation period between the onset of each. Collier's summary of this outbreak—namely, that it was "a swift scourge, which, lighting upon the little village of Stokes Rivers, could lay low in a few days 45 persons out of a total population of 119," is so out of harmony with the facts as to lend no support to his theory.

Finally, Burrows and Paik<sup>3</sup> have analysed a very interesting small outbreak in a block of flats in an American city which provides further convincing evidence of the important role of case-to-case spread in epidemic poliomyelitis. In this instance 10 children out of a total of 18 were successively infected after exposure to preceding victims in the series.

These outbreaks are characterized by a complete lack of the features held to establish the exclusive role of the healthy carrier and the occurrence of a preceding "carrier epidemic" in the epidemic incidence of poliomyelitis. They show neither a "rapid blaze, high peak, and rapid fall" nor any subsequent immunity of susceptible subjects not infected at the outset. Multiple cases appearing successively within a single household predominated over single cases, while susceptible subjects proved liable to infection, with its attendant risks to life and limb, throughout the whole period of their stay within the infected community and until the epidemic had finally smouldered out.

If we consider the special case of a semi-isolated community of young children, containing in all probability a high proportion of susceptible subjects, there seems no doubt that their retention within an infected community is fraught with considerable risk of infection throughout the entire period of their inclusion.

The theory of the "carrier epidemic" and the exclusive infectivity of the healthy carrier, therefore, falls to the ground, and the practical bearing thereof is that the keeping together of a community in which poliomyelitis has appeared is dangerous to every member of the community in question, and cannot be regarded as a scientific measure of preventive medicine.

We must continue to hold, therefore, that Wickman's theory of case-to-case and carrier infection in poliomyelitis is correct, and must be the basis of procedure when epidemics occur. That there are no published records of the spread of the disease within hospital wards, either by carriers or by sufferers, cannot be interpreted as excluding case-to-case infection without also ruling out carrier infection. In any case the argument lacks force, since there are obvious factors contributing to this lack of hospital examples. For over twenty years poliomyelitis has been generally recognized as a contagious disease, and children admitted to hospital suffering from it in its acute phases are treated with the precautions usual in cases of infective disease, and their opportunities of spreading infection are restricted in consequence.

The question has also been approached from another point of view by Aycock and Eaton,<sup>4</sup> who, making a comparative study of the incubation periods of measles, scarlet fever, and poliomyelitis, find that in each disease incubation periods fall into two distinct groups, a short and a long. The former indicates simultaneous infection from a common source, the latter indicates two secondary cases to case infection. On this basis, although two secondary cases of poliomyelitis are less common than those of the other two diseases, their occurrence seems undoubted.

There remains the question of non-human carriage and spread of the disease. From his analysis of a large series of cases Aycock<sup>1</sup> has come to the conclusion that transmission by human contact appears inadequate to account for some of the features of the epidemic occurrence of poliomyelitis, and that spread may occur in the apparent absence of this factor. He suggests the existence of non-human modes of spread, and indicates milk as one such possible agency for the carriage of the virus. He has subsequently reported, with Knapp and Godfrey,<sup>5</sup> a small outbreak in which there was evidence that milk may act as a vehicle of infection. Of this outbreak of ten cases, these authors remark:

"As to the Cortland outbreak, we would point out that in only cases to occur in a city of 15,000 people subsequent to the

appearances of the disease more than two months previously were with one possible exception in persons who drank milk from one local source older than 3 per cent of the city's total supply that the cases were distributed widely enough to make it improbable that the milk supply to be a mere coincidence of geographic distribution. When to these facts we add that an actual paralytic case of the disease existed on the dairy farm from which most of the milk came that this patient was milking the cows and handling the milk for a period of four days while in the acute stage of the disease and at the time which elapsed between this period and the dates of onset of the subsequent cases were consistent with the generally accepted minimum and maximum incubation periods of poliomyelitis the chain of circumstances is as complete as is found in the majority of milk-borne outbreaks of the disease. While this outbreak point to transmission by milk we are of opinion that this is not the usual mode of spread of poliomyelitis.

In such outbreaks as are characterized by indications of common source or virus infection, therefore, such a non-human mode of spread must be considered. The sudden outbreak of poliomyelitis in a Kent sea-coast town last year comes to mind in this connexion, and suggests the possibility of such a mode of spread. It would indeed be unfortunate if an uncritical acceptance of the hypothesis of a preceding "carrier epidemic" were to lead to any omission to investigate scrupulously every possible means of transmission, non-human as well as human, of this dread disease. One of the most striking dangers of speculations of the kind is that they are apt to make us think that we possess an adequate explanation of phenomena which are, in fact, extremely obscure in their causation, and thus to lead to a slackening of that rigorous and exhaustive search by which alone knowledge is to be gained.

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## Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL

## TWO CASES OF INJURY TO THE CERVICAL VERTEBRÆ

The two following cases of injury to the cervical vertebrae—one of them ending in death—seem worthy of record. There seems little doubt that in the first the nerve symptoms though absolutely symmetrical in the upper limbs did not result from cord injury, as the result of fracture of the sixth cervical vertebra, but from bilateral identical injury to the brachial plexus. All cords were involved, but mainly the inner, the injury to none being sufficient to abolish sensibility. The nature of the injury the method of its production, and the complication of a fracture of the cervical vertebra make the case interesting and unusual.

## Case 1

A man aged 53 whilst fishing fell from a bridge a distance of about 12 feet landing upon his head. He did not lose consciousness.

On admission to Bristol General Hospital on March 21st 1927 he had a scalp wound extending for about 7 inches over the fronto-parietal region with no skull injury. Neck movements he performed with ease but complained of no pain in that region. Both wrists were dropped with complete loss of power. The thumbs were slightly abducted and the fingers held flexed at the inter-phalangeal joints and extended at the metacarpophalangeal joint. His grip was extremely feeble equal—so on both sides. Shoulder and elbow movements were weak and sluggish. Anaesthesia was absent in both hands and arms, the patient being able to appreciate a touch with wool but he complained of a tingling sensation passing from his wrists to his fingers.

Abdominal reflexes were present, the kneejerks were normal and equal on both sides, the plantar reflexes were flexor. There was no loss of function or power in the lower limbs and there were no sensory changes.

The day following admission to hospital his temperature rose to 102° F and his pulse from 64 to 93. He became dull and towards evening he was slightly delirious. The pupils remained unchanged. He had no passed urine. The third day his mental apathy continued, and there was oedema of forehead and cheeks extending down both sides of the neck and affecting most of the posterior triangle. He lay with his arms across his abdomen. He passed urine small and a normal reaction of his bowel had taken place. X-ray examination showed an oblique fracture of

the body of the sixth cervical vertebra with a slight degree of compression.

From the day he commenced to improve. The weakness and stiffness in his arms gradually disappeared. He became able to move the wrists but his grip was still feeble. There were no abnormal urinary or bowel symptoms nor at any time evidence of any affection of the lower limbs. After six weeks in hospital he was discharged as a walking patient wearing a neck plaster, the only remaining symptom was a rather weak hand grip.

## Case 2

A youth aged 21 fell from a roof on to the back of his neck. He was very dazed but not unconscious. On examination in the out-patient department he was found to have a small cut on the back of the head. He was quite conscious and complained of pain in the neck and down the right arm. Movements were free and there were no sensory changes. He refused to remain in hospital.

The following day he walked to the out-patient department but his symptoms having become worse he was admitted to hospital. The pain in his neck and arm was still present but he now held his head stiffly and turned toward the left. Part of the right arm was marked but no sensory change could be elicited. That same evening he suddenly collapsed and died. Post-mortem examination revealed a fracture of the posterior arch of the atlas with some oedema and minute haemorrhages in the cord.

I am indebted to Professor F. W. Hey Croves and to Mr. Danen Wood for permission to publish these cases.

JOHN J. ROSS, M.C. MB, F.R.C.S. Ed.,  
Surgeon in Charge Bristol General Hospital.

## CARCINOMA A COMPLICATION OF PILLS

It is not unusual to see piles the result of carcinoma, but the following case illustrates the reverse condition.

A lady aged 62 had been operated on for piles fifteen years previously but the symptoms recurred about nine months ago. The clinical features were characteristic of external and internal piles which became inflamed and prolapsed at intervals. A light amount of blood and a little mucoid discharge were noted. In addition to the prolapsed internal haemorrhoids several external piles were present but one was larger and firmer than the others. It seemed to be an organized thrombosed pile with considerable inflammatory thickening and slight ulceration of the surface. The inguinal glands were not enlarged.

At operation the possibility of the pile being malignant was considered and its excision with a fairly wide margin of skin and mucosa was carried out in conjunction with the operation for the prolapse. The base was not adherent to the external sphincter.

On section the usual structure of an organized thrombosed pile was seen but in addition the surface skin showed definite malignant changes—squamous-celled carcinoma with cell nests and ingrowth of epithelium and round-celled infiltration. Subsequently bilateral inguinal adenectomy was performed but the glands showed no sign of invasion.

I examined the patient six months after the first operation and found no sign of recurrence.

This case illustrates the importance of submitting to microscopic examination all tissues removed at operation. Without it this condition could not have been diagnosed. More recently I met with a case in which there was advanced leucoplakia of the skin overlying an external pile—presumably a pre-cancerous condition.

I am indebted to Mr. K. W. Monsarrat, surgeon to the Northern Hospital, Liverpool for permission to publish these notes.

PHILIP HAY, M.B., Ch.B. F.R.C.S.,  
Surgeon to the Northern Hospital, Liverpool.

## LONG UMBILICAL CORD COILED ROUND NECK

The following case of an unusually long cord coiled six times round the neck appears worthy of record.

A multipara aged 23 was delivered of a full-term female child weighing 5½ lb. in University College Maternity Hospital on July 17th 1927. Vaginal examination ten minutes previous to the delivery showed the head in a deflexed attitude, the anterior fontanelle being well down. The position was right occipito-anterior. After the head was born one loop of cord was pulled over it before the rest of the child was raised. The precipitous delivery was then very then five more coils round the neck. The length of the cord was 53 inches (147 cm). The insertion of the cord was central and the placenta and membranes were complete. No sign of foetal distress were apparent before delivery and the child commenced breathing quite normally when born.

The average length of cord is given as about 50 cm, and the limits are from a few millimetres to 183 cm. The source of this much quoted figure is Hertel's book *Die Placentar- und Nabelkrankheiten* (1870). De Lee (1913) states that cords over 100 cm in length are very

McCaffrey (1927) has collected five cases in the literature in which there are more than four coils round the neck, the highest number being observed by Gray who in one case found as many as nine. McCaffrey himself found three cases, in a series of 3,000, with four coils. His statistics go to show that coils are more frequent in multiparae and in right-sided positions.

This case, too, is an interesting example of pinning down of the head caused by multiplicity of loops of cord round the neck. Fortunately the small size of the head prevented this from obstructing the normal course of the labour.

I am indebted to Professor F. J. Browne, Director of the Obstetric Unit of the Hospital, for permission to publish the facts of the case.

S. ZUCKERMAN, M.A.

University College Maternity Hospital London

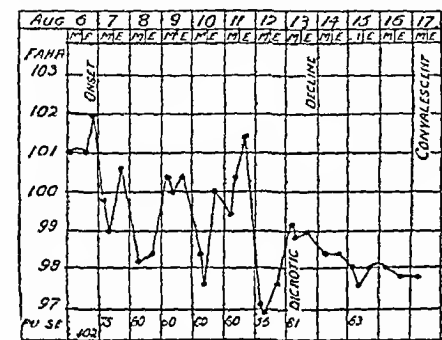
### PYREXIA WITHOUT VISCERAL SIGNS

ATTENTION was called recently by the lay press to the occurrence of a pyrexical illness without involvement of the chest or obvious physical signs.

Late on the evening of August 6th I was called to a public school boy aged 18 who complained of feeling unwell and of headache and feverishness (his temperature was 102°). The bowels had

been open that day, the tongue was very slightly furied, the skin was clammy and moist. There was no abdominal tenderness, and nothing abnormal was detectable in the chest. The respirations were 22, the pulse 102.

He was given two grains of salol and was directed to take a saline draught in the morning. The effect was good. The tongue cleared up, and for the remainder of the time



was moist and rather unusually red. On August 7th he still complained of headache and of feeling generally rotten, and also of occasional very slight joint pains. He was given a simple dia-phoretic mixture and was tepid sponged twice a day. The chest never showed any signs at all, slight tenderness behind the ear the site of old mastoid trouble, was complained of on August 14th and 15th but passed away. From August 10th onwards he had a salicylate mixture (10 grains) and salol (5 grains), both three a day, the course of the disease is shown in the temperature chart. The pulse was dirotic on August 13th. Convalescence was uneventful.

I am rather inclined to view the case as a slight manifestation of intestinal influenza.

Bickley, Kent

CHARLES A. H. FRANKLIN, M.D.

### INVERSION OF THE UTERUS

As inversion of the uterus, though not rare, is still an uncommon accident (Dr. T. W. Eden states that it is only met with in from 1 to 180,000 to 1 in 200,000 labours) it seems worth while to record the following case.

On July 5th 1927 I received a form from a midwife to attend a multipara aged 38 years for retained placenta. On arrival I was given a history of normal labour as far as the end of the second stage when an average female child was delivered. During the third stage the placenta had come away incomplete and the patient had collapsed. Further portions of the placenta and membranes had then come away but the midwife feeling a mass in the vagina and observing the state of the patient, decided to obtain medical assistance.

I found the patient with well marked symptoms of shock and almost pulseless. Haemorrhage was only slight. She was conscious and complained of faintness but there was no pain. A hypodermic injection of 1 ccm. adrenaline was immediately given and brandy and saline by the mouth. On bimanual examination a firm mass was felt low down filling the vagina and abdominally the absence of the hard fundus and body of the uterus and in its place the inversion ring made the diagnosis of almost complete inversion of the uterus apparent.

Under ether anaesthesia an unsuccessful attempt was made to reduce the displacement. The patient was then admitted to the Barry Accident and Surgical Hospital, where she died later in the day from shock. No strenuous efforts were made to expel the placenta and the cord was of average length, so the condition would appear to have been spontaneous probably due to atony of the wall of the fundus uteri.

Barry, Glam.

J. C. GOTHFRINGHAM, M.B. Ch.B. Glam.

## Reviews.

### THE PROBLEM OF PLAGUE IN SOUTH AFRICA

A CONSIDERABLE amount of attention has been directed of late to the subject of plague in South Africa (*BRITISH MEDICAL JOURNAL*, February 26th and May 14th, 1927), and, indeed, it is a question of importance not only for South Africa itself, but for all countries having commercial transactions with it, for the effects of plague, commercially or medically, are always felt beyond the confines of the country where it happens at the time to prevail.

A recent publication<sup>1</sup> (No. XX) of the South African Institute for Medical Research comes most opportunely to bring the whole question again before the medical world. This work is the result of the joint efforts of Dr. MITCHELL, the chief health officer for the Union of South Africa, Dr. HARVEY PHILLIPS, bacteriologist of the Research Division, and Dr. INGRAM, medical entomologist to the Institute. The work forms a complete and up-to-date exposition of the problem from the two aspects of the history of the disease in the country and the reasons for its prevalence. It is divided into eight sections, for all of which, except the first and last, Dr. Harvey Phillips is responsible.

Section I is the most interesting to the generality of people outside South Africa, for it gives a most interesting account of the distribution and prevalence of plague in the Union from the time of its first recorded appearance at the beginning of 1899 (when it was imported from Madagascar to Lourenço Marques and by Delagoa Bay) down to June, 1926. The author of this section, by virtue of his position, put forward in May, 1924, a scheme for a comprehensive investigation involving the organization of a mobile laboratory and a special research staff for work in the field. The results of these investigations are recorded in the remaining sections of the book. Section II contains notes on the various rodents associated with the disease in South Africa, describing their distinctive characters, their ranges of activity, and sketching briefly their habits. Sixteen species of wild rodents are described, of which eight have been found naturally infected. It is the great variety of these that constitutes one of the main difficulties in dealing with the problem. The incidence amongst the human population would doubtless be much more severe than it actually is were it not for the fortunate fact that the species of fleas found on veld rodents very rarely occur on domestic rodents.

In the succeeding section is recorded a series of tests carried out with the view of determining the comparative susceptibilities of the various species of rodents to plague. This is an important piece of work, performed with the care and skill which we have come to expect from the staff of the Research Institute. All proved to be highly susceptible, except the Namaqua gerbille (*Desmodillus auricularis*), a fact which may be of great importance in delaying the spread of plague in the northern and western parts of the Cape Province. The various species of *Komodo* rats, formerly believed to be relatively immune, proved to be as highly susceptible as the rest, the difference in their habits and their ectoparasites is the reason of their diminished liability to plague. The common gerbille (*Tatera lobengulæ*) and the yellow mongoose (*Cynopsis penicillata*) occupy the two extremes, the former constituting the chief reservoir of plague on the veld, the latter being extraordinarily resistant to infection.

The question of plague on the veld and its persistence is next taken up, and it is shown that the disease may die down and become for a time quiescent among the rodents, and that certain fleas could infect as long as four months after leaving an infected host. A bacillus, the "Tiger River bacillus," so named from the place of its discovery, and scientifically denominated by the author *Lysterella hepatolytica* (which may be identical with *Bacterium monocytogenes* discovered previously by E. G.

<sup>1</sup> The Plague Problem in South Africa. History and Entomological Studies. By J. Alexander Mitchell, D.P.H. Cantab., J. H. Harvey Phillips, B.Sc. FRSE and A. Ingram, M.D. Edin. Publication Institute for Medical Research, No. XX, Johannesburg, 1927. (7½ x 10" pp. 152-26, 11 plates.)



Murina at Cambridge) causes a fatal infection among gerbilles, and a certain degree of success is reported from the use of this, on the lines of the Drury virus, for destruction of plague-carrying rodents.

Section VI is of great practical value, in that the results deduced from animal experiments as to the benefits of prophylactic vaccines and serums tend to show that the sense of security engendered by their use on theoretical grounds rests on an unsure foundation. Of particular interest is Dr Pirie's statement that neurochrome proved valueless in his hands for treating plague in guinea pigs.

The final section, by Dr Ingram, on the entomological aspect of plague in South Africa, is a detailed record, mostly of field work carried on during 1925-26. An enormous amount was done, and the account of it is given in several subsections. From a practical point of view the chief subjects were the identification of the numerous species of fleas collected from different rodents; experiments to test longevity, others to test the capability of fleas of conveying plague from one rodent to another, and the seasonal prevalence of the commoner fleas caught on wild rodents and those found on house rats in Johannesburg.

The compilation will be of great service in clearing up past misconceptions and in indicating the lines along which this vast and important problem may best be attacked in the future, and all three authors are to be congratulated on a very fertile piece of team work conscientiously performed.

### PRESSEY'S "MENTAL ABNORMALITY AND DEFICIENCY"

ILLNESS is as social as well as a medical problem. Particularly is this the case with mental illness, and if mental illness is understood to connote not merely definite psychoses but all serious emotional and intellectual maladjustments and deficiencies it is clear that there is room for a book offering a wide and not too technical or detailed survey of these conditions. Such a book is *Mental Abnormality and Deficiency* by Professor SIDNEY L. PRESSEY Ph.D., and LUCILA C. PRESSEY Ph.D. Neither of the authors possesses a medical qualification but both are teachers of psychology in the Ohio State University, and have had a rather unusual range of experience in actual work with abnormal and defective children and adults. They have "attempted a treatment which should be of definite practical value to those interested in various special fields of work in which problems of personality and adjustment are frequently met," and their volume should be found of considerable value by social workers by welfare and business superintendents, by school teachers and administrators and college deans, by police court missionaries and magistrates, and by others who take a more general interest in the special problems dealt with. The newly qualified medical man or woman too should find it of service whether the sphere of work contemplated be general practice or the school medical service.

The method of presentation adopted by the authors is largely the case method. The essentials and pitfalls of history taking and the technique of case study are carefully set out. The various main types of mental disease and defect are described, their causes and the methods of dealing with them are discussed, a suggestive chapter on mental hygiene concludes the volume. The writers justly insist upon the wide extent of the problem of mental deficiency, disorder, and disease even when allowance has been made for that lower average intellectual level and wider variation within the limits of the normal which has come to be recognized in recent years, upon the importance of the "borderland" conditions of the emotionally maladjusted, the emotionally unstable and the mentally queer, upon the necessity for regarding individual personality and character among those who as a group are called "feeble minded" upon the fact that "generalizations in psychiatry are risky and should be applied only with great caution in individual cases" and upon the real possibility of the prevention of mental

illness by careful discipline, training and social adjustment in early life.

Different portions of the book will appear of greater value than others to different classes of readers, and it must be confessed that to the English medical reader the value of the whole seems less than it should be, by reason of its entirely American outlook and the absence of actual experience of medical practice by its authors. For example, the Mental Deficiency Acts in this country give definitions of the different classes of mentally defective persons which are legal guides of great practical value and are not far from being scientifically acceptable. These are entirely ignored in the volume under review, which adopts instead standards which, however carefully applied, are apt to be misleading both in diagnosis and treatment. They do in fact result in apparently contradictory statements in the text, and in an estimate of the influence of heredity in these cases which most English authorities would hesitate to endorse. Again, there is no mention of the mental effects of lethargic encephalitis, which recent medical practice in this country has shown to be of very great interest and importance. Though this book thus serves to emphasize the desirability of a volume covering similar ground and written for a similar class of English reader by writers one of whom, at least, should have actual experience of medical practice, this very fact demonstrates how valuable it still is as 'an introduction to the study of problems of mental health'.

### A GERMAN CYCLOPEDIA OF PHYSIOLOGY AND PATHOLOGY

THE first half of the seventh volume of the *Handbuch der Normalen und Pathologischen Physiologie* contains nineteen articles on the physiology of the heart; they cover a very wide field for they deal with the physiology of the mammalian heart with the comparative physiology of vertebrate and invertebrate hearts with the methods of clinical investigation of the heart, and with heart disease. Certain of the articles are of considerable interest and value. Professor Bethle has written well on the comparative physiology of blood circulation, both in vertebrates and in invertebrates, and Professor Hebe has contributed an article on the variations in size of the vertebrate heart, much of the information in which has been collected for the first time. The article by Professor Weizsäcker, on the metabolism of the heart and on its heat formation is of particular interest as it is very largely based on his own original work. There are articles also on the clinical methods regulating the functional activity of the heart; they include essays by Professor W. Frey, on the apex beat and heart sounds, on the heart size by Professor Hans Dittler, and on fibrillation by Professor H. Winterberg. It is impossible to deal fully with a large volume of reference such as this, but in general it may be said that the articles are of a high standard and that the editors have been fortunate in their choice of contributors.

The eleventh volume of this encyclopedia deals with 'organs of reception.' The editors explain that though the older term 'sense organs' may be suitable for use in writings on human physiology, yet in a book which includes comparative physiology any term which bears a subjective implication is objectionable; they have therefore employed a purely objective nomenclature. The volume deals with the following receptor organs: tangoreceptors (touch), thermo-receptors, pain receptors (taste and smell), phono-receptors (hearing), stato-receptors (vestibular apparatus) and concludes with articles on geotropism in plants and animals and galvanotaxis. Special mention may be made of two articles by Professor R. Magnus of Utrecht on the semicircular canals and otolith apparatus in mammals. The articles have a particular interest and authority because they are very largely founded on the brilliant researches carried out during the last ten years in the author's school.

\* *Handbuch der Normalen und Pathologischen Physiologie*. Herausgegeben von A. Bethle, C. V. Perryman, G. F. Minn, A. Ellinger, F. H. J. Springer. 1936. (Sup. vol. 8). Band VII, 1. pp. x + 825. 40 figures. R. 16s. Band XI, pp. x + 1057. 46 figures. P. 18s. Band XIII, pp. xii + 1193. 40 figures. P. 16s. Band XVII, pp. xi + 1204. 173 figures. 1 M. 84.

- *Mental Abnormality and Deficiency*. By SIDNEY L. PRESSEY Ph.D. and LUCILA C. PRESSEY Ph.D. G. Allen and Unwin Ltd. 1936. (Extra P. 4. 8vo pp. xii + 556. 10s. 6d. net.)

The subjects of reproduction, development and growth are treated together in the first half of the fourteenth volume. The first part of the volume contains a series of articles on the physiology of the gonads, and some of the most interesting are those of Professor Knut Sand on estration, the transplantation of the gonads in vertebrates, and the experimental restitution of the gonads in vertebrates. The author, who has worked on these problems for many years, displays a very sceptical attitude regarding rejuvenation by transplantation of the testicles, and emphasizes the fact that even auto-transplants do not last for more than a few months under the most favourable conditions. He points out that the absorption of grafts made from individuals of a different, even though allied, species proceeds much more rapidly. He is more optimistic regarding Steinhilber's operation (the ligation of the vas deferens), for he states that personal experience for four years of both laboratory and clinical work has greatly modified the position of absolute scepticism which he had at first assumed. He now admits that remarkably beneficial results are undoubtedly produced and even appear to be permanent. The article by Professor Biedl on the action of testicular and ovarian extracts also deserves notice, as he gives a full account of the extensive recent researches on this subject. The editors of this cyclopaedia have in all cases taken a broad view of the subjects to be discussed in it, and hence it is not surprising to find the section on reproduction concluding with a series of articles on sexual psychology. The last quarter of the volume is devoted to the subjects of growth and regeneration of tissues.

Volume XVII deals with correlations within the body, and covers a remarkably wide range of subjects. The first quarter of the book deals with heart regulation and water exchange. Articles of particular interest are those on hibernation, by the late Professor L. Adler, on the physiology of water exchange, by Professor R. Siebeck, and on diabetes insipidus, by Professor E. Meyer. In all these instances the authors have extensive first-hand knowledge of the subject, and include in their articles a certain amount of unpublished original work. The next quarter of the volume deals with the action of radiations, light, heat, rays, and radium, together with the effect of climate on health. This section is followed by a few articles on sleep and hypnosis, that by Professor C. J. Irons, on the pathology of sleep, is of outstanding interest. The rest of the volume is filled by articles on old age, death, and heredity.

On the whole, the articles in this cyclopaedia maintain a high standard, but they are open to the criticism that the authors show an undue tendency to confine their attention to German work. A simple count of about 500 consecutive references from half a dozen different articles indicated that about two-thirds of the references were to German work and only one-third to the original work of all the other nations in the world. The narrowness of outlook thus exposed is betwined in several statements we have noted, for example, on page 518 (vol. XVII) the author states "The ultra-violet rays cure rickets. The manner in which this action is produced is still completely unknown." Apparently the significance of the English and American work on the production of the antirachitic vitamin from cholesterol by means of ultra-violet light is still unknown to German scientists of repute, although it has become popular knowledge in this country. Other similar lapses could be quoted. This tendency to a one-sided view of science is particularly regrettable and will hinder the cyclopaedia becoming a standard international work of reference in physiology.

#### IRREGULAR ACTION OF THE HEART

THE work of the Vienna school on cardiac irregularities is well known in this country, and now Professor WENCKEBACH and Doctor WINTERBERG have produced a very comprehensive textbook on irregular action of the heart.<sup>1</sup> It was planned originally as a second edition of Professor Wenckebach's earlier volume on the subject, but, owing to the great accumulation of fresh material since 1914, it is in reality a new work. The early pages deal shortly with

the special anatomy and physiology, and with the methods now employed for investigating the heart's action in the human subject, particularly the string galvanometer. The remainder of the book is devoted to excellent descriptions of the nature, diagnosis, prognosis, and treatment of the various cardiac irregularities. While full reference is made to the observations of other workers the bulk of the material is drawn from the authors' own experience. The teaching does not depart in any essential from that current in this country, the descriptions are clear and detailed, and the numerous good examples of polygraphic and galvanometric tracings are published in a separate small volume.

It is a good book and should prove very useful, not only to those already acquainted with the subject, but also to those who would enter this interesting and important field of clinical medicine.

#### KITCHEN CHEMISTRY

THE second volume of *Applied Chemistry* continues on similar lines the studies begun in vol. I. The contents deal with a variety of foods, including milk, fats, carbohydrates, meat extracts, and various beverages, there is a chapter on cooking and another on the caloric value of foods.

The book is designed for students taking the degree of B.Sc. in household and social science. The reason for the choice of title is apparently that applied chemistry is the name given to a scheduled course of study for that degree, but the title is something of a usurpation, for those engaged in chemistry as applied to agriculture, brewing, ceramics, or dyeing have an equal claim to it, to say nothing of manufacturers of chemicals. It appears further that chemistry as applied to household science is not what we had thought. We had expected to learn something of the chemical changes that occur in culinary operations, how these may be brought to the most desirable pitch, and by what mismanagement they may be ruined. Very meagre, however, are the references to information of this kind, most of the text is occupied with methods for the discovery of adulteration which properly belong to the laboratory where foods are analysed.

In the chapter on cow's milk little more than a page is given to the detail of what milk is, while more than twenty pages are filled with methods for its analytical examination. We would not demur to this scheme if it appeared to be the best way of teaching the nature of the components of milk, but of that we are not convinced. It may be true—we suspect it is—that not much is known of the chemical laws which govern the transformations in our food, perhaps even the distinction between beef tea and chicken broth is too subtle for chemical discussion. But something, we believe, is known of the constituents of the tea leaf and coffee seed, here surely was a chance to explain chemically what has happened when a cup of tea or coffee is made well or is spoiled.

The chapter on the cooking of food does, we agree, introduce the reader to a consideration of the subject on the lines advocated by us, and perhaps something may yet be evolved from this book as a beginning which shall go further in the direction of real domestic chemistry. For the labour bestowed on the book we have nothing but praise. It contains much useful information on a variety of matters connected with the preparation and manufacture of foodstuffs, and if food analysis is to be a subject for the university degree in household science, the book is just what the student needs.

#### NOTES ON BOOKS

DR. TIPPER, who has spent many years in tropical Africa, where he served in the West African Medical Service, has written a little book (its preface is dated from Hong Kong, in the beginning of this year) in which he describes some of the attractions of the great delta of the Niger River. His book, which has for its title *The Cradle of the World and Cancer*, and *A Disease of Civilization*,<sup>2</sup> is the unfolding of a bold speculation. These speculations especially that relating to

<sup>1</sup> *Applied Chemistry*. By C. Kenneth Tipper. D.Sc. F.R.C. and Hon. Member. P.S.C. Vol. II. Foods. London: Crosby, Lockwood and Son (Demy 8vo pp. xi + 276, 20 figures, 2 plates, 15 net).

<sup>2</sup> *The Cradle of the World and Cancer. A Disease of Civilization*. By F. H. Tipp. M.P.C.S. Eng. L.R.C.P. Lond. London: Charles Murray 1927. (Cr. 8vo, pp. 142, 5s. net).

<sup>1</sup> *Die Unregelmässige Herztätigkeit*. Von K. J. Wenckebach und H. Winterberg. Leipzig: W. Engelmann 1927. (Sup. roy. 8vo. Textband, pp. vii + 635, 63 figures, Tafelband, 447 figures, 184 plates. M. 78.)

can't see how this new bit Dr. Tipper contrives to give it a different local colour. He has been much surprised at the order of the great Niger river and its tributaries in the north of its drainage. He counts this as a mistake that this river valley was the cradle of the world and that all the world of men would have been there if only the rest had not been sandered by fire which destroyed the forests and had a waste of the Sahara between the cradle and the outer world. Through that severance he thinks we have lost touch with the first principles of the world and have found a different order since. His original idea is to be such as is easily attainable with the simple agricultural use of a rich tropic valley—vegetables and palm oil and palm wine. But where would the unfortunate native of the high Arctic get these fine vegetable fats or even the inhabitants of the poles of Europe in a fresh and native state? In that valley there is no constipation and no cancer except in rare cases where the people have abandoned their natural food for the flesh pots of the benighted white man. But there is hope even for us—We can at Brighton become copper coloured at the Canaries and if our impoverished blood permits of it and we become acclimatized after a few generations at the Equator we too should be black—and perhaps amely. But in that happy valley there is some use for patients despite the perfect diet. Ancient plants glare at him around him, and need but to pinch off a bit of the fleshy vine growing by the roadside to effect a remedy. So it is certain one of the plagues of civilization cannot exist in that Eden—the patent pill vendor.

After recovering from an unnecessary chilling preamble stating that the London County Council accepts no responsibility for the author's opinions or conclusions, the reader will find that Mr. Deely in his small book on *Industries and Occupations for the Mentally Defective* enumerates some forty five occupations in which he considers the mentally defective can become efficient under trained instructors. They range from simple processes in the making of envelopes, paper bags and needle work to weaving, dyeing, spinning and cement kerling. A short description is written round each, most of them being devoted to manufacturing, shoemaking and weaving. The intention seems to be that all the work should serve the needs of the particular institution or of others controlled by public bodies. The limitations in respect of dangerous processes as in guillotine cutting of paper or cloth in the butchers shop and in tin smiths work are left rather too much to the reader to search out in the descriptions. The medical superintendent of The Manor Epom where the work is carried on says in a foreword that if money could be spent freely on providing suitable work and accommodation and staff there is no limit to the mental occupations of many mental defectives in some direction or other. The book might usefully be read by persons in charge of other institutions than those for which precisely it is primarily intended.

The seventh monograph in the French series of volumes on biological problems deals with aspects of the physiology of the myocardium. The author, Prof. or Henri FREDERICQ, restricts himself to those questions in which he himself has been interested and in five chapters reviews recent work on the origin and propagation of the excitation wave and its electrical manifestations in the vertebrate—especially the mammalian—heart. The book consists chiefly of summaries of the observations and views of the many writers quoted most of which are already known to English workers in the field. A list of nearly 600 bibliographical references is appended.

We have received a copy of *The Insects of Australia and New Zealand* by Dr. R. J. TILLYARD who is entomologist and chief of the Biological Department of the Cawthron Institute, Nelson, N.Z. The work which is intended primarily as a textbook for students of entomology in Australia and New Zealand and secondarily for those who have a general interest in the insect life of these countries, contains thirty chapters. The first four which are introductory deal with the classification and census, external morphology, internal morphology and life history of insects in general. The bulk of the volume is concerned with the various order of insects including sections dealing with morphology, life history, distribution, fossil history, economics and classification followed by keys to the

suborders, superfamilies and families and accounts of all the families in each order. In the penultimate chapter the food, order and origin of the Australian and New Zealand insects are discussed and in the last chapter a brief account is offered of the more important methods for collecting and preserving and for the scientific study of insects. A glossary of biological and entomological terms is appended. The text is freely interspersed with figures 203 of which are coloured.

An English edition of *The Early Embryology of the Chick*, by BRIDGES M. PATTY, has been published in London by John Murray at the price of 1s. The American edition was reviewed in our issue of November 21st, 1926, p. 957.

The Woodward was the first officer under the Lord Warden, and his duty was to inspect the woods. In this capacity Mr. Marcus Woodward in his *Year 1 of Trees* declines, with Oliver Wendell Holmes to hold forth in a scientific way about his tree loves. Instead he tries to bring out the character and expressions of trees and to glean the folklore which has gathered round them. Consequently he divides trees according to the locality in which they grow—woodland, hedge, row, park and seaside and riverside trees with a separate chapter for conifers. The Londoner may be surprised to find the hornbeam of his Epping Forest described amongst hedge row trees. Yet as Mr. Woodward says no tree other than evergreens makes a better hedge plant. Of the maple we learn that Evelyn in describing the value set upon the wood by luxurious Romans for their tables explained that when husbands reproached their wives for extravagance in pearls the wives were wont to retort and turn the tables. Some golfers may not know that the crab apple was once the wood of woods for club-heads though it has now been displaced by the American persimmon. Probably few doctors know that pears were considered an antidote to poisonous mushrooms, a reputation which pears still holds. For each tree there is much anecdote and lore in the book, and the text is sprinkled with quotations from the poets and pleasing wood engravings by Mr. Dillon McGurl. Each chapter is prefaced with a short description of the tree.

*The Year 1 of Trees* by Marcus Woodward, London, A. M. Hughes, L. 1. 1925. (Ditto 8vo pp. 370, illustrated 12. 6d. net.)

## PREPARATIONS AND APPLIANCES

### Temporary Airtight Cases

A simple contrivance for covering cups, mill bottles and small basins temporarily has been sent to us by Acto Ltd. Tudor Works, East Twickenham. It consists of a sheet of thin rubber supported by a metal ring, when placed over the top of the vessel and its centre depressed by the finger it adheres but can easily be moved. It keeps out dust effectively and is likely to be of use in the laboratory as well as the larder. The cost of these vacuum covers which seems to be rather too high varies from 6d. to 1s. according to size.

## ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee forty nine cases were considered and £770 10s. 8d. voted to forty three applicants. The following is a summary of some of the cases relieved.

L.R.C.S. Edin. 1833, aged 72. Three children all health applicants and his wife have had to live upon their savings which are now reduced to £51. They have no children. He has an Epson pen 10s. 6d. and an old age pension of £25. Pent and rates £25. Voted £40 in quarterly payments.

Daughter, aged 56 of M.P.C.S. Eng. who died in 1837. Has a temporary allowance from brother-in-law of 5 guineas a month and pays £4 8s. to board and room to a widowed sister and helps in domestic duties. She is now recovering from a severe operation and a financial help towards convalescence is voted £13.

Widow, aged 71 of M.P.C.S. Eng. who died in 1837. She has £75 from investments and pays £2 a week for board and lodging. A £1 for help to meet incidental expenses. Voted £15 in quarterly instalments.

Widow, aged 57 of M.D. who died in 1824. Her son trained at horticultural college has purchased a holding and bungalow and she was voted £10 towards its furnishing.

Wife, aged 62, of L.R.C.P. who has been in a mental hospital for twenty four years. Has to support herself by cooking and pay £1 a week towards the board of her invalid daughter who lives with married sister. The Fund has paid the husband a life insurance premium for the past two years. This grant of £9 5s. 8d. has been renewed and £12 has been voted to the applicant for her own expenses.

Widow, aged 66 of L.P.C.P. who died in 1837. She and her niece have a boarding house, but owing to the bad weather have been unable to be and are no in arrears for rates. Voted £13 as a special grant.

Subscriptions may be sent to the Honorary Treasurer, Sir Charles Scrimgeour at 11 Chandos Street, Cavendish Square, London W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing especially for coats and skirts for ladies and girls holding secretarial posts and suits for working boys. The Guild appeal for second hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 53, Great Marlborough Street W.1.

*Industries and Occupations for the Mentally Defective* by R. P. J. Deely. M.H. A.R.S.L. Epson, Burch and Whittington, 1927. (Cr. 8vo pp. xv + 112, 1 plate, 6d. net.)

*Atropa Atropa de la Phylogenie du Myocardium* (Part 1re Serie) Par Henri Fredericq. Les Presses Universitaires de France, 1927. (Gr. 8vo pp. viii + 393, 2 figures.)

*The Insects of Australia and New Zealand* by R. P. J. Tillyard, M.A. Sc.D. Camb. D.Sc. Sydney, F.R.S. etc. Sydney, Angus and Robertson Ltd. London, The Australian Book Co. 1926. (6 x 9 1/2 pp. xvi + 599 illus. rated.)

# British Medical Journal.

SATURDAY, AUGUST 27TH, 1927

## ALCOHOL AND THE MOTORIST

DURING recent years the influence of alcohol on the driving capacity of the motorist has compelled the serious attention of the medical and legal professions, and has brought into prominence the initial difficulty of devising a sound scientific procedure for establishing the presence and defining the degree of intoxication. The British Medical Association, in October, 1925, appointed a special committee "to consider and report on the present tests for 'drunkenness,' with recommendations as to their modification or improvement." The report of this committee, which was published in the SUPPLEMENT of February 19th, 1927, included an account of the practices and regulations in certain foreign countries, and an examination of the tests in common use in Great Britain to determine the presence of drunkenness, a definition of which was suggested. The committee gave careful consideration to the pioneer work of Dr. Godfrey Carter and Herbert W. Southgate, whose joint paper on the excretion of alcohol in the urine as a guide to alcoholic intoxication was published in our issue of March 13th 1926 (p. 463). The subject was further discussed by the Section of Forensic Medicine at the Annual Meeting of the British Medical Association at Edinburgh, and a report of the views there expressed appears at page 333. Dr. Godfrey Carter, in the opening paper, called attention to the prevailing lack of uniformity in the judicial decisions in cases of motorists accused of being "drunk," and referred to the attempts of Mellanby and Southgate to find a method of determining the amount of alcohol in the system with a view to guiding courts to correct decisions.

The problem is not new, and ought to give little trouble to the medical witness, many of the so-called difficulties arise from the misunderstanding of the question by medical practitioners. The first stumbling-block is, undoubtedly, the vague use of the word "drunk." The man who is drunk—using the word in the lay sense—presents no difficulty, his condition is obvious, and he is usually arrested before he has caused any damage. In fact accidents caused by such drivers may almost be neglected in considering this subject from the point of view of medical evidence. The dangerous driver is the man who has dined well with some friends, he is usually a good if not an expert driver who, owing to his exuberance, takes unnecessary risks. Such a man cannot be said to be drunk in the lay sense—indeed, he may only have had a small amount of alcohol, yet he is drunk in the legal sense. A medical witness using the term

"drunk" is immediately asked to explain what he understands by it, and is generally unable to give any description which will conform with a jury's conception of a drunken man. To avoid this pitfall many employ the phrase, "under the influence of alcohol," which is also bad, since anyone who has taken any alcohol is under its influence. The difficulty vanishes when it is realized that in this connection a man is drunk within the legal meaning of the term when he has become so affected by alcohol that his judgement as a driver has become impaired. It makes no difference

if, owing to some nervous or other disease, it only required half a glass of whisky to produce this effect or whether half a bottle was consumed; the man is drunk within the legal meaning. It is a matter of common knowledge that it is not merely the amount of alcohol that has been consumed, but also the circumstances, the individual and the environment, the time since the accident, and many other factors, which determine the diagnosis of drunkenness. Such a decision can only be an expression of the personal opinion of the medical practitioner, founded on a general clinical examination and his previous experience of such cases. It is for the court to decide the weight to be attached to any particular doctor's evidence. Not realising this many medical witnesses create for themselves further difficulties by elaborating tests, such as walking along a straight line, standing on one foot, or repeating some difficult phrase—facts which some sober persons cannot perform. Anything in the nature of a test can, in almost every case, be ridiculed in cross-examination, after which the evidence of the witness ceases to be of much value to the court.

Conclusions based on determinations of the proportion of alcohol in the blood and urine, to which Dr. Carter's opening paper was largely devoted, are likewise open to serious criticism. Apart from the possible illegality, mentioned by Professor J. T. J. Morrison, of obtaining specimens of urine for examination without the consent, or even without the knowledge, of the accused person, it is undeniable that certain types of individuals give fallacious results. There is the difficulty of obtaining the specimen, and the fact that, even if an analysis should indicate the amount of alcohol consumed, the effects on different persons vary to such an enormous extent with the individual and the environment, both in the amount of alcohol required and in the type of effect produced, that little can be deduced from such an examination other than that a definite amount of alcohol has been imbibed—a fact which may be discovered more readily by other means. The speed with which a man can react to a stimulus, such as the sight of an approaching obstacle, and the celerity of his response, are admittedly variable in different persons, and in the same man at different times, it is not likely that the modification of this response by alcoholic poisoning of slight degree is constant for humanity as a whole. It would seem to follow that the percentage of alcohol in the body fluids is not necessarily a reliable index of the resulting degree of intoxication.

The offence of driving a car while the judgement is affected by alcohol, whether or no the contributing factor of disease is present, is a serious one, and merits severe punishment. In Denmark the question has been carefully studied, details of the medical examination made in that country were published in an appendix to the report of the committee of the British Medical Association. Briefly, it may be said that this examination lasts about three-quarters of an hour, and practically consists of a general clinical examination, urine and blood tests have been considered and discarded. The accused person is described as intoxicated, slightly under the influence of liquor, or sober. On conviction a driver forfeits his licence for life. This punishment is very drastic, and with a penalty so severe there must be a tendency on the part of the court to hesitate to convict. Although this question of punishment is beyond our province, it serves to emphasize the responsibilities of the medical practitioner in these cases, and is a reminder that a diagnosis of drunkenness must not be given lightly.

## A TREATMENT FOR ASTHMA

THE work of Icken in St. Mary's on the cutaneous reactions obtained with extracts of pollen in patients subject to hay fever had received comparatively little notice when Walker of Boston began his investigations on the similar reactions obtained with other proteins in asthmatics. The early expectations that a new era in the investigation and treatment of asthma had dawned were not fulfilled as with very few exceptions later investigators failed to confirm Walker's results. Amongst the visitors to his laboratory in the summer of 1919 was Professor Storm van Leeuwen. He also, when he tested the principle clinically, was able to obtain the positive results claimed by Walker only in a very small percentage of cases. Recognizing however the importance of the theoretical basis of Walker's work, he continued it in other directions. It is the result of these investigations which he has summarized in his article in this issue (p. 344).

There can be no doubt that he has discovered a very important exciting cause of asthma in the moulds which occur so extensively in house dust and elsewhere. A curious contradiction, however, presents itself for explanation. Whereas Mr. Frank Cole, almost the only writer in England who still has an unimpaired faith in the value of cutaneous reactions, advises the use of duck in pillows to replace the feathers to which he believes many asthmatics are sensitive, Professor Storm van Leeuwen finds that *Claviceps purpurea*, which flourishes extensively in kelp, is one of the chief causes of asthma in Holland where the majority of mattresses are stuffed with this material. As, however, in the Swiss mountains where almost all asthmatics are free from symptoms, both feather and kelp pillows can be used with impunity, a doubt whether either is really of any importance as an exciting cause of asthma seems not unreasonable.

The results of the practical application of Professor Storm van Leeuwen's views in the form of his allergen-free chambers requires careful consideration. The fact that exactly the only places which can live in rooms of this kind makes one wonder if after all the atmosphere can be a healthy one for human beings whether asthmatic or not. Moreover it is the experience of every physician that the large majority of asthmatics get well directly they are admitted to hospital; the proportion cannot be much different from that given by Professor Storm van Leeuwen for patients admitted to his clinic. There is nothing peculiar about a hospital in this connection as any change—sometimes even a transient one long ago pointed out to another house in the same street—may be enough to give temporary freedom from attacks to most people suffering from asthma.

Still more important is the fact that the freedom from attacks which follows almost any form of treatment—be it the cauterization of the nose (Francis), desensitization to certain proteins (Walker, Cole), diet (Allen), or care at Mont Dore, a visit to the Alps, or allergen-free rooms (Storm van Leeuwen)—is very different from a cure. The asthmatic constitution remains, and with it the tendency to asthma.

Still any means of avoiding attacks is welcome for as has been said the only cure for asthma is not to get it, and if Professor Storm van Leeuwen's investigations prove that the moulds in house dust are yet another factor which can be dealt with he will have earned the gratitude of every asthmatic.

As will be seen, Professor Storm van Leeuwen is sanguine that his method may be of use in the treatment of pulmonary tuberculosis. The clinical facts he has to present are few in number, although no doubt carefully observed and recorded, and the theory by which he would account for the improvement he has observed in a certain number of cases is not very clearly expressed. Apparently he would attribute it to the removal of the seasonal irritation due to the climatic allergens.

## APPROVED SOCIETIES AND CLINICS

THE actions of approved societies in connexion with those additional benefits under the National Health Insurance Acts which are commonly known as the treatment benefits require to be carefully watched. It is important to note that these benefits consist not in the provision of treatment services or appliances, but in the payment of the whole or part of their cost. The legal position is held to be that so long as any additional benefit involves mere payment of money it is not in the nature of medical benefit and may therefore be administered by an approved society, but that if anything beyond this mere money payment is involved (such as the provision of particular doctors or the establishment or administration of a service) then the benefit would become in the nature of medical benefit and statutorily would have to be administered by Insurance Committees or whatever bodies may be made responsible for the administration of medical benefit. It is clearly a departure from the spirit of the Acts, and even yet it may possibly be held to be contradictory to their meaning, that when these contributions of money go directly to secure service of a medical nature they should nevertheless be administered by the approved societies. The dividing line may with some uncertainty and care be respected in words, but in practice it may very easily be obliterated or overstepped. In these circumstances certain of the approved societies, in order to secure for themselves more freedom and power and having no doubt honestly persuaded themselves that it was in the interest of their members, adopted what may, without offence, be called the dodge of creating a new society purporting to be a charitable institution, under their own auspices and controlled by their own officials, to which they could make money payments but which might be free to do what the societies as such could not do—namely, appoint and dismiss doctors, set up clinics, or provide treatment for their members in any way that might seem to them fit. There is grave doubt whether such a society is in law, a charitable institution, and whether it can legally perform the functions assigned to it. Indeed so grave is the doubt and so important the issue that a legal decision on the matter ought to be secured without delay, the issue of securing it upon private societies and private funds. It may even yet become essential to secure such decision but the necessity would be avoided if the policy desired and assured it by the medical profession and endorsed by the Royal Commission on National Health Insurance were adopted—the thing of these treatment benefits out of the category of additional benefits altogether and transforming them into normal statutory benefits. This would be accomplished by setting up a consultant and specialist service with laboratory facilities, as strongly recommended by the Royal Commission and urged by the British Medical Association. The



idea of establishing such a service has, however, been abandoned by the Government owing to the persistent objection and obstruction of approved societies.

It is not unnatural, therefore, that recent announcements and indications of the action of approved societies, whether open or camouflaged in the way described, should be viewed with a certain amount of suspicion. It is stated, for instance, that "arrangements have been made by some of the largest of the approved societies to establish a central dental clinic in London, and it is hoped that this institution will be opened before the end of the year. The societies have no power to expend their funds on the building and equipment of a dental clinic, but an organization with which the societies are associated has made itself responsible for the undertaking." The plan of establishing one large clinic for the whole of a place like London is certainly open to criticism on several grounds, the auspices under which it is to be established are not the most desirable in the public interest, and the arrangements in accordance with which it is to be organized and conducted are of the first importance professionally. These things are primarily the concern of the dental profession, but a desire to place medical experience in matters not wholly irrelevant at the disposal of others, and the possibility of the establishment of conditions medically undesirable, which hereafter may by some be held to be applicable to clinics other than dental, justify a word of warning.

The nearest analogue is that which is known as "ophthalmic benefit." The arrangements with regard to this benefit have not been working with complete satisfaction. On the one hand some of the approved societies have been finding it expensive, and on the other insurance practitioners can never consent to cover the unqualified practice of opticians, mainly because this may constitute a grave danger to their patients. These objections should be sympathetically considered on both sides. We believe the seriousness of the latter is recognized by the majority of the larger approved societies and certainly the medical profession should do whatever it can to meet the former. The British Medical Association has always held that these treatment benefits should be conducted as far as possible on the lines of private practice, that the general practitioner should recommend, that there should be choice of consultant or specialist, and that the consultation should take place either at the rooms of the specialist or, if necessary, at the home of the patient. So far as the profession is concerned, these are the arrangements at present authorized for ophthalmic benefit, a reduced fee being charged to insured persons. It is not beyond the bounds of possibility that this reduced fee might be further modified in some way in order to meet the point of cost, but it is not unlikely that in certain circumstances some arrangement on the lines of a clinic might be found economical and convenient. A few ophthalmic clinics have been set up by "an organization with which the societies are associated" and an extension of these is talked of. The Representative Body at Edinburgh, on the recommendation of the Council, approved "the principle of providing ophthalmic benefit through clinics in large centres" (that is, of population) "as an arrangement auxiliary to the existing scheme of attendance by ophthalmic surgeons privately, subject to the arrangements under which such clinics are established being approved by the Council." The qualifying phrases of this resolution are important—*ie*, indeed, of the essence of the matter. The present arrangement is not to be aban-

doned but helped, and the conditions under which the auxiliary clinics may be established are to be the subject of careful consideration before they can be approved. Such consideration will no doubt be given at an early date by the Committee advising the Council of the Association, and by the Council itself. The matter is one of some difficulty, but it is clear that neither the auspices under which, nor the conditions in accordance with which, the London dental clinic is to be established can be taken as applying to any ophthalmic clinics which may be in contemplation.

#### THE FINANCIAL AMNESIA OF MOTORISTS

A somewhat complicated discussion has been carried on lately in the correspondence columns of the *Times* under the heading "Motorists and doctors' fees." The ball was opened by a medical man who signed himself "Hire-worthiness", he complained that private practitioners hardly ever received a fee for their services in rendering aid to persons injured in motor accidents. He made the ingenious suggestion that every motorist should be compelled, when paying his licence, to purchase a voucher for a guinea. In the event of injury while driving, the motorist would hand over the voucher to the doctor who attended him or his passenger, and the doctor would subsequently cash the voucher at the post office, while the motorist would purchase another. Unfortunately, "Hire-worthiness" proceeded to enlarge this simple proposition by raising the question whether a guinea would be sufficient recompense for treatment at a voluntary hospital, so that the discussion became discursive. Another writer revived the old proposal that every motorist should be compelled to insure against accidents, and that the insurance company should pay all medical fees. A third correspondent, Mr. Graham W. Thompson, was shocked to learn that motorists, as a class, habitually failed to pay for medical services, although in most cases medical charges were recouped up to a certain amount by the insurance companies. The facts of the matter seem to be as follows. The majority of motorists have motor policies. The majority of insurance companies include medical expenses in their policies without additional premium, and the driver may claim medical expenses for himself or for any passenger carried in the car. The amount allowed as medical expenses varies with different companies—from ten guineas to twenty, or even twenty-five guineas. Consequently in a large number of cases all the doctor could to a motor accident has to do is to send in a bill to the owner of the car and see that it is paid. His fee will be part of the claim made by the motorist on his insurance company. In a minority of cases the motorist may be uninsured. The question of compulsory insurance against injury sustained through motor vehicles has, we believe, been before the Ministry of Transport. Two arguments have been used against the proposal. The first is that compulsory insurance may tend to make the motorist less careful. The second, and perhaps more important, reason is that compulsory insurance for the motorist implies that someone must be compelled to insure him, however undesirable he may be. At present a company can refuse to renew a policy. It remains to be seen whether the arguments can be disposed of, and some scheme of insurance evolved which will neither force undesirables on the insurance companies nor necessitate the State undertaking insurance. This leads up to the consideration of the question of what should be done about injury to a third party—the worst case, when the motorist is neither driving nor is a passenger in the motor car. No insurance company takes cognizance of such a person unless he is able to establish legally a claim for damages against the motorist. There is no doubt that compen-

tion is sometimes paid without definite evidence of liability on the part of the motorist. The insurance companies may consider that, as a purely commercial proposition it may be cheaper to pay a reasonable amount than to defend a claim possibly unsuccessfully, and if successful find even the costs not recoverable. If however an action is brought against the driver, and the injured person fails to prove negligence, the doctor who renders aid must trust to the honour of the third party for his fees or else sue him. It seems that at present the only way in which the medical practitioner can be more certain of receiving remuneration for his services in motor accidents is by collecting his fee on the spot. The alternative of relying on insurance companies to pay the doctor direct whenever they admit liability for medical charges, might be raised with the companies but would probably be regarded by them as unacceptable.

### THE CONSTITUTIONAL FACTOR IN DISEASE.

No two men are exactly alike however similar they may appear to be. On the other hand a man may display some marked predilection, in which case we regard him as having a particular "constitution." As to what such a constitution is apart from its pathological manifestations, and how it varies is generally regarded as obscure. It suffices to know that a man with a "gouty constitution," though not suffering from gout is liable to do so. But it is worth while knowing what constitution itself is, and the subject has recently been discussed in our pages with all his customary lucidity by Dr. A. F. Hurst but a monograph published this year by Professor O. Naegele on the doctrine of constitution<sup>1</sup> is helpful although it takes a great many pages to show how recent advances in biological science have enlarged our knowledge of the subject. These advances have in the main been in the domains of botany and zoology, and Professor Naegele takes occasion to deplore the continued divorce of medicine from these sciences as hindering progress in this particular line. The possession of a distinctive constitution counts as a variation from the average, and the study of constitution involves a classification of the different types of variability and the discovery of their causes. Naegele expounds the subject on these lines. He in the first place separates spurious from true variation, many species reckoned apart under the Linnæan system of classification are now considered to be in reality groups of distinct species differing by comparatively small details formerly regarded as variations only. Small-pox affords an example of spurious variation. An epidemic of small-pox occurred in Canton Zurich in 1921 which was characterized by its extreme mildness; the symptoms though typical in the main, were slight and the mortality was almost nothing. Some constitutional variation, either in the patient or the virus, might have been named to account for the character of the epidemic. Investigation, however, revealed certain differences—in the blood cells, for example. The epidemic, Naegele thinks, started in Brazil, and travelled by way of the United States and England to Switzerland, retaining its characters under the varying conditions. For it he proposes yet another new name "varior nova," and thinks it is probably a species distinct from true small-pox, with its own virus that is as it may be—time alone will prove. Of true variation Naegele recognizes two classes—modification and mutation. Of the former, which is usually the result of some change in the external conditions, he finds a good example in the gradual change of physiognomy exhibited by Europeans after their settlement in America. Pathological thus affords many instances such as the immunity conferred by infective diseases. Mutation on the other hand is the sudden appearance of a new character in the

organism independent of external conditions and transmissible to the offspring. No better example could be given than that of the copper beech. In Switzerland and South Germany all trees showing this variation are derived from one which made its appearance for the first time in the year 1180 the colour being at the time attributed to the blood of a murdered knight. Of pathological examples Naegele gives a long list—leucophthalmia, Friedreich's disease, alkaptonuria, hyperostosis, Huntington's chorea, achondroplasia, multiple exostosis, and many others. In addition to these two types of true variation we have also to reckon with the innumerable particularities of form and constitution which may result from the mixture of races through hybridization and further the modifications of the organism arising from influences exerted directly on the ovum by germinal induction. As an example of the latter the thyroid gland is quoted. Observations made in goitrous districts were held to show that the thyroid glands of newborn children contained no colloid and this was erroneously supposed to be the normal condition. Apparently, however, all of these glands were abnormal, since by the adoption of a suitable iodine the rapid colloid was found present at birth. For many years the direct causes of disease have chiefly attracted attention to the comparative neglect of the study of constitution but the latter is again arousing interest and Professor Naegele in his monograph helps us to see how the subject should be approached.

### MYELOTOXIC SERUMS

Leucocytic serum has already been made the subject of study by Bunting, Huxer, Besredka, and others and more recently Gustaf Lindström has taken up their investigation with a view to obtaining a more potent serum and of testing their effect in cases of leukaemia in the human subject. His results are recorded in Supplement XXII of the *Acta Medica Scandinavica* in a paper written in English, and entitled "An experimental study of myelotoxic sera." He experimented with three different serums: (1) obtained by immunizing the pig with an extract of rabbit leucocytes, (2) by using washed leucocytes instead of an extract and (3) by immunizing rabbits with rabbit leucocytes. The potency increased in this order and with the size of the dose administered serum (1) was discarded as being too inactive. Small and moderate doses of serum (2) caused an immediate reduction of the leucocytes followed by a marked rise and a repetition of the dose produced a further fall followed by a rise. If now a large dose were given a more definite reduction occurred, the polymorphonuclear cells disappeared from the blood stream, the mononuclear cells remaining unaffected. A similar experiment with serum (3) showed a very powerful effect, the leucocytes normally 8000 per cubic millimetre being reduced to 50 here again the remaining cells were almost all polymorphonuclear. On 11 experiments were carried out to show the effect of repeated small doses. In the experiments on man an animal rabbit serum was employed. The antigen was obtained by allowing off blood from a leukaemic patient into a solution of sodium citrate the separated blood corpuscles were repeatedly centrifuged and washed and the leucocytes separated from the red cells by sedimentation. The leucocytes were then injected into rabbits intraperitoneally. Ten cases of myeloid leukaemia were operated upon and the technique results of the injections, symptoms and course of the disease are set out at length. The general theoretical results may be gathered from the following summaries. In Case 1 leukaemia was fully developed with moderate anaemia it was treated for about twenty months with some relief from x-rays and arsenic when this failed to produce any effect two serum injections were given, and were followed by a complete remission lasting several months, the patient, however,

<sup>1</sup> Naegele eine Konstitution und ihre Vererbung. Von O. Naegele. Berlin J. Springer 1926. (64 x 9 1/2 in. 118 1/2 figures. Pp. 466.)

died at the end of thirty-four months. Case II, after being under observation for three weeks, appeared to be almost moribund, an injection given at this time caused a marked remission, so that within a fortnight the patient was apparently well, the improvement was not maintained, and in spite of two further injections and treatment with x rays and arsenic, death occurred within three months. Case III was an ordinary case of leukaemia with good general condition, treated, apparently with some relief, with x rays and seven injections of serum during a period of over two years, towards the end there were signs of failing strength, but the general condition was good when the patient passed out of observation. Case IV was a typical example of leukaemia with good general condition, and was considerably benefited by a course of x rays, later, however, severe anaemia developed, three injections of serum failed to relieve, and death occurred within six months from the onset of treatment. Case V was only under observation for five months, but during that time considerable improvement under serum injections and x rays was noted. Case VI was an instance of leukaemia in a relatively favourable stage, considerable benefit followed x-ray treatment (and a single injection), and continued off and on for two years and a half, when its efficacy failed, the patient's condition became unsatisfactory, and a serum injection was followed by signs of intoxication and death. Case VII, with fully developed leukaemia, was under observation for nearly two years, a high leucocyte count was markedly reduced under the combined influence of serum and x rays, and with alternate courses of x rays and injections the condition remained stationary up to the time of discharge. Case VIII was that of a patient who was in a relatively good condition in April, but seriously worse in October, when two injections were given, the second of which caused death from intoxication. In Case IX the patient was not in a satisfactory condition, a serum injection rendered matters worse, and a second injection a week later caused death from intoxication. The serum used in Case X appears to have been too weak to produce any definite effect.

#### SARCOMA OF BONE

In 1920 the American College of Surgeons established a registry, under the charge of Dr. E. A. Codman, to make a collective study of the primary and malignant bone tumours, and to accumulate data whereby the pathology of these conditions might be defined and the value of various therapeutic measures estimated. The April issue of *Surgery, Gynecology, and Obstetrics*, which is the official journal of the American College of Surgeons, appears in two parts, the first of these is entirely devoted to a report by Dr. A. Kolodny, of Iowa University, of a personal study of 700 cases of bone sarcoma collected by the registry, together with a critical analysis of a classification suggested by the registry committee. Eight main groups of bone lesions were formed: (1) metastatic tumours primary in tissues other than bone, (2) periosteal fibrosarcoma, (3) benign and malignant osteogenic tumours, (4) inflammatory conditions, (5) benign giant-cell tumours, (6) benign and malignant angiomas, (7) Ewing's tumour, and (8) myeloma. Kolodny considers that it would be preferable to place all primary malignant bone tumours in four groups—namely, osteogenic sarcoma, Ewing's sarcoma, myeloma, and a small collection of unclassified sarcoma. He thinks that at present further subdivision of these four groups is unwise and that the proposed classification supplies sufficient aid in the recognition of the nature of any bony neoplasm, and the decision as to the extent of surgical intervention which may be required. The registry classification recognizes four anatomical types of osteogenic sarcoma—namely, the periosteal, the medullary and subperiosteal, the

scloerosing, and the telangiectatic. Codman doubts the advisability of this differentiation, but Ewing approves it on the ground that these types appear to differ from each other as regards their gross anatomy, histology, and clinical course. The main part of Kolodny's essay, however, consists of a close detailed examination of the four groups of malignant bone tumours defined by him. The term "osteogenic sarcoma," suggested by Ewing, includes mainly the lesions hitherto known as periosteal bone sarcoma, a description which ignores or denies the reputed origin of this growth from the precursors of the osteoblasts. Kolodny does not agree with the more recently expressed French view that these tumours are sarcomata of the cellular elements of the connective tissue in the bone and marrow. He also objects to basing subdivision of osteogenic sarcoma on the character of the malignant cells. He denies that round cells occur, and states that the cell most frequently encountered is small and spindle shaped, with a hyperchromatic nucleus. The chief morphological difference between osteogenic sarcoma and other malignant tumours is said to be its intercellular substance, which may be hyaline, osseoid, cartilaginous, myxomatous, or osseous. The most striking feature in the history and clinical course of Ewing's sarcoma is its appearance in young persons (less than 21 years old) as a consequence of trauma, so that osteomyelitis is suspected at first. Metastasis to other bones is common, and this, together with the response, usually rapid, to radiation, distinguishes it from osteogenic sarcoma, it, however, tends to recur, and gradually becomes refractory to further radiation. Myeloma is a bone-marrow tumour characterized by its incidence after the age of 40, multiplicity of involvement, rarity of pulmonary metastases and suitability for the ribs, sternum, vertebrae, and spine. It is seldom recognized before extreme skeletal involvement occurs, owing to its infrequency and the difficulty in early diagnosis. Local growths disappear rapidly under radiation, but no permanent recovery is recorded as having followed this treatment. The unclassified group includes angioendothelioma and extra-osteal sarcoma.

#### METABOLISM OF NERVES

The recent work of Downing, Gerard, and Hill, amplified by Gerard in the *Journal of Physiology*, dealing with metabolic changes accompanying the passage of impulses along peripheral nerve, has removed some of the mystery attached to the activity of nervous tissue. It has long been realized that the nerve is not an entirely passive agent in the transmission of an impulse, since an electrical change (action current) occurs in the nerve when it is stimulated, a nerve killed by asphyxia no longer conducts an impulse. Definite evidence of gaseous exchange, and particularly of any heat production as the result of activity, has proved exceedingly difficult to obtain. This is due largely to the difficulty of making small enough measurements. The work of Tishiro, Puikel, and others showed that peripheral nerve produced carbon dioxide, particularly during activity. By the use of very sensitive apparatus, in which the minute amount of heat produced by the nerve is magnified by a thermal relay, Gerard, Hill, and their co-workers have now been able to show that heat is indeed produced when a nervous impulse passes, and that during ten to fifteen minutes after the impulse has passed recovery of some description takes place, accompanied by a further and much larger heat production, this production is ten times as large. In order that the heat produced may be measurably great, it is necessary to stimulate many times a second, but by calculation it can be found that the amount of heat produced by one impulse is one millionth of a calorie per gram of nerve. We are thus faced with the extraordinary fact that the energy used by the contracting muscle is about one million times as

and it is that involved in the nervous impulse which causes the contraction. These observations tend to prove that, in some respects, the metabolism of nervous tissue is far more like that of other tissues than was at one time believed. For in times of careful examination of the oxygen uptake show that more oxygen is needed when the nerve is active than when it is at rest and in calculation it is found that the ordinary foodstuffs of the body—fat, protein and carbohydrate—are used by peripheral nerves. The utilization of glucose has also been demonstrated by chemical estimations. The facts we have endeavored to set out in this paragraph are highly technical but they have been noted because it seems likely that in the long run they will prove most important to the neurologist and they deal with the fundamental facts of nervous activity.

### LIFE EXTENSION IN AMERICA

That a periodic overhaul of the middle-aged is like the regular visit to the dentist a wise measure of preventive medicine is too obvious to need much argument. With the spirit of practical application which is characteristic of the New World this method of prolonging life has been put on a basis of mass production in America and in his address on "Lengthening of human life in retrospect and prospect," a documented argument in favour of the plan has been put forward by Irving Fisher, professor of economics at Yale. In 1914 the Life Extension Institute was established with the co-operation of the late General W. C. Clegg, ex-President Taft and others one of its objects being to "bring to the profit-making motive of the life insurance companies with the risk of lengthening human life." The experience of the Metropolitan Life Insurance Company in providing their clients with medical services was so remarkable that it evoked incredulity from its medical and statistical departments but careful investigation proved that after spending 60,000 dollars on the medical examination of 6,000 of their insured persons in six years the company had gained 120,000 dollars through the premiums of insured persons whose lives had been prolonged. In other words the company had made 100 per cent profit on the investment of 60,000 dollars. One of the chief points brought out by the Life Extension Institute was the enormous extent of unmet need, or, as it has been called, "silent sickness," thus, in an attempt to ascertain the influence of focal infections examination of many thousands of insured persons showed it to be so prevalent that it was not possible to obtain a group of non-infected persons as controls. The effect of the periodic examinations has been to stimulate and guide the half million examined in the paths of personal hygiene. For example, many found to be over weight had succeeded in correcting this by the next visit. The favourable results obtained by the Metropolitan Life have been confirmed by those of the Guardian Life and Postal Life Companies. That persons thus examined are thereby benefited is beyond doubt, but it is open to question whether or not the Life Extension Institute is the best machinery for making these examinations. No doubt it makes for consistency, but it lacks the knowledge of the individual which the regular medical attendant can alone supply.

### TRIAL BY BATTEL

The case of Abraham Thornton, heard in 1817 was remarkable in several respects, and led to an alteration of the law, a certain curious interest therefore attaches to the full report which has been published in the series of *Notable British Trials*. It was the last case in this

country in which a man who had previously been pronounced "Not guilty" by a jury was retried on the same charge, and it was the last in which the defence in such an appeal consisted of the assertion of the right to decide the question by personal combat. In addition the case has several peculiarities of interest and is a striking example of the ability of a jury, when directed by a sound judge, to disregard the violent prejudices of the countryside and to return a verdict in accordance with the evidence. Thornton was accused of rape and murder. He pleaded "Not guilty" to both charges but he admitted having had carnal knowledge of the deceased during a night spent in the fields with her after a rustic ball, but he alleged that it was with her consent. The evidence showed that she was seen well and cheerful at a later hour than any at which he could have been in her company. The girl's body was found in a deep pool into which she might by accident have slipped. According to ancient law the last of the "all-red" murdered person could lodge an appeal of murder within a year and a day of the completion of his felony by the death, and the plea of *autrefois acquit* or *autrefois convict* was no bar to the prosecuting or such an appeal. Unless the evidence of guilt was so overwhelming the accused person could demand trial *de novo*. This is what Thornton did. Drawing one of a pair of specially made fingerless gloves on his left hand he swung a fellow on the floor of the court, saying "Not guilty, and I am ready to defend the same with my sword." As Thornton was a strong man and the appellant a weakling the fight was not taken up and as there was no strong case against him he was allowed to plead his previous acquittal and was discharged. Popular feeling was, however, in his favour, and he was so persecuted that he thought it best to leave the country. Even this proved difficult according to *Arms Buntingham* (a little the other passengers in the ship *Indefatigable*, bound for New York, refused to go in the same vessel with him, but he managed to cross the Atlantic in another ship. In 1819 an Act of Parliament was passed abolishing trials by battle and appeals of murder and henceforward no one in this country could be tried a second time on a charge of which a jury had already acquitted him.

### AWARD OF THE LUCIAN HOWE MEDAL TO MR PRIESTLEY SMITH

The American Ophthalmological Society, the oldest in America at its origin in Quebec unanimously awarded the Lucian Howe Medal to Mr Priestley Smith and commissioned Dr W. H. Wilder to present it personally. On August 18th Dr Wilder visited Mr Priestley Smith at Birmingham and gave him the beautiful gold cross. He spent some time with our distinguished colleague, examining his wonderful injections of the eye of the ox, and studying the apparatus with which Mr Priestley Smith is carrying on his investigations regarding the circulation of the eye. The Lucian Howe Medal is awarded at infrequent intervals and has not been given four times. The first recipient was Dr Knapp of Vienna who introduced the use of cocaine into the surgery of the eye. The second was Professor Fuchs of Vienna and the third Dr Edward Jackson, one of the most inspiring teachers in America. We congratulate Mr Priestley Smith upon receiving the greatest honour which the American Ophthalmological Society can bestow.

As mentioned last week that Mr Alban Doran F.P.C.S., had recently undergone an operation for glaucoma and was a patient in St Bartholomew's Hospital. We regret now to have to announce that he died on August 23rd, he was in his 78th year.

<sup>1</sup> *Fish, I. (Lancet Public Health) January 1927*  
*Trial of Abraham Thornton* Edited by Sir John Hall D. Noble  
British Trials—Edinburgh and London: William Hodge and Co. Ltd  
1926. 2s. 6d. net.

## THE YEAR'S WORK OF THE METROPOLITAN ASYLUMS BOARD

THE Metropolitan Asylums Board is a body with large functions of which the general public has only a vague idea. Many people imagine from its title that its main work is in connexion with mental cases, whereas that is only one branch, and not the largest, of its activities. The Board serves an area of over 120 square miles and a population of 4,500,000. From its annual report for 1926-27, a volume of more than 400 pages, it appears that its own daily population of patients and other dependants and staff throughout the year averages about 28,000, and its property, exclusive of its nine casual wards, covers close upon 2,000 acres, or about the area of Richmond Park. It has 15 hospitals for cases of infectious disease, 10 institutions for tuberculosis, 6 for mental cases, 5 for sick or convalescent children, not to speak of its provision for the destitute poor or of its ambulance service, with 150 vehicles, which last year covered more than a million miles in the conveyance of the sick. The Board's medical and dispensing staff consists of 161 permanent and 13 temporary officers, and its nursing staff numbers 4,300. Its annual expenditure amounts to £2,213,000, of which £647,000 is spent on the care of imbeciles and the feeble-minded, and £888,000 on the treatment and control of infectious diseases.

### Infectious Diseases

The number of cases of infectious disease admitted to the Board's hospitals during 1926 was 30,403, higher by some 1,500 than the year before, but the number of deaths was smaller (1,036, as compared with 1,061). The following table has been extracted from the multitude of figures furnished.

Diseases	Remaining Jan 1926	Admissions, 1926	Discharged Recovered	Deaths 1926	Admissions 1925	Deaths 1925
Diphtheria	1902	10,527	9,854	510	9,247	458
Diphtheria (bacteriological)	130	1,108	1,074	14	1,004	4
Enteric fever	19	178	186	3	137	13
Measles	640	2,959	3,364	223	1,932	121
Scarlet fever	2,003	10,553	10,761	88	10,508	111
Whooping cough	53	775	448	59	1,483	219

The case mortality from diphtheria (4.88 per cent), and also from scarlet fever (0.8 per cent), was the lowest recorded. The question of the accommodation to be assigned respectively to measles and scarlet fever has been exercising the mind of the Board, and it has now been agreed that, in view of the higher mortality from measles (6.81 per cent) and its greater destructive effect on child life, the practice hitherto followed of always admitting scarlet fever cases in preference to measles should be given up, and that there should be a definite allocation of beds to these two diseases. So long as an ample margin of beds remains, cases of scarlet fever or of measles will be admitted as at present on doctors' certificates, but if a shortage of beds becomes imminent, any person desiring the admission of a case either of scarlet fever or measles will be referred to the medical officer of health, who will select the cases which in his opinion should be admitted, having regard to all the circumstances, especially the age and home conditions of the patient. The chief medical officer of the Infectious Hospitals Service, Dr F. H. Thomson, points out that although scarlet fever is now very mild in this and in many countries, it is not so in all. In Poland and Roumania the case mortality is over 10 per cent, and in Bulgaria over 18 per cent. Moreover, the history of scarlet fever shows that there have been great variations in respect to mortality. It is true that the case mortality in the hospitals of the Board has been under 5 per cent for more than thirty years, and 2 per cent or under for the last sixteen years, but scarlet fever, according to the accounts of Bietonneru in Franco and Graves in Ireland, was a mild disease in the early part of the nineteenth century, and so

remained for twenty-five years or more, after which it again assumed a grave form.

Of other diseases for which the Board makes provision in the infectious diseases hospitals, cerebrospinal fever accounted for only 17 admissions (9 deaths) in 1926, encephalitis lethargica for 21 admissions (7 deaths), poliomyelitis for 13 admissions (1 death), puerperal pyrexia and puerperal fever for 140 admissions (19 deaths), and zymotic enteritis for 12 admissions (2 deaths). There appears to be no reference to the experiment started in 1925 of concentrating puerperal fever patients in two or three hospitals and appointing a visiting obstetric consultant. In the last annual report the hope was expressed that after another year's work much information with regard to the infecting organisms and other matters might be elicited. Small-pox was the cause of only 5 admissions to the special hospitals in 1926, and there was 1 death. The infection was brought from Paris to London on two occasions during the year. The patient who died was a chamberman employed in a hotel at which one of the visitors from Paris had been staying. Two other members of the hotel staff were infected. During the last twenty years there have been only 340 admissions for small-pox, with 54 deaths, 23 of the deaths occurred in one year, 1922.

### Research and Pathological Work

We gave an account (*JOURNAL*, May 14th, 1927, p. 882) of the Board's southern group laboratory on the occasion of its opening by the Minister of Health. This laboratory is intended for research work into the primary causes of the diseases from which the inmates of the Board's institutions are suffering. All the institutions send to this laboratory their material for special investigations, and certain of them use it for routine work also. The number of bottles of diphtheria antitoxin supplied from the Board's antitoxin establishment during 1926 was 75,127, each bottle containing 4,000 units. The demand for serum culture tubes and throat swabs has largely exceeded that of any previous year.

An interesting account is given of an investigation carried out at Levensden Mental Hospital to elucidate the origin of an outbreak of typhoid fever which occurred last summer, with 24 cases and 6 deaths. It was arranged to examine the urine and faeces of every inmate and, as far as possible, every member of the staff, so as to identify any carriers. The 2,051 inmates were duly examined, and 10 new carriers, all males, were found, and the existence of one old carrier was confirmed. No carriers were found outside the wards in which typhoid fever had occurred, and in one of the wards affected no carrier could be found even on repeated examination. No female carriers were found at all, even in wards in which typhoid cases had occurred. Members of the staff to the number of 454 were examined—12 refusing—and no carrier was found among them.

The conclusion drawn by Dr J. E. McCartney and Dr W. C. Harvey from an examination of 234 diphtheria carriers is that the cause of the carrier state is a pathological process in the upper respiratory tract preventing the normal elimination of the bacilli during convalescence. The organism does not appear to be existing on living tissue, but on products of inflammatory reaction, and thus leads an extra-corporeal existence. The removal of the pathological condition when found will result in cure. Pure throat carriers are promptly treated by tonsillectomy.

Many contributions by officers of the Board appear in this section of the report. Dr W. Gunn reviews the present position of scarlet fever from the serological and clinical standpoints. Dr Alexander Joo gives a short survey of diphtheria prevention work in Edinburgh, where he formerly worked, and Dr W. Kelleher of similar work on the training ship *Hamouth*, where the Board trains boys for sea service. Dr H. Carter writes on the prophylactic value of alkaline therapy in scarlatinal nephritis. Dr J. V. Armstrong describes the use of the carbon arc in infectious fever practice, his most definite conclusion, after the treatment of 10 cases of whooping-cough, 5 of measles, and 4 of other complaints, is that there were hardly any striking successes to record, and that where definite improvement occurred it was difficult to say how much was due



to careful nursing and feeding and how much to specific light therapy. There was improvement in the general condition, but no rapid disappearance of the special symptoms of the disease.

#### Mental Diseases and Abnormalities

The Board has in its various hospitals and colonies provision for 10 000 mental cases. For a long time the only cases received were under the Lunacy Acts (chronic and harmless certified), but the number of these cases has declined in recent years, there has been an increase of cases certified under the Mental Deficiency Act, as well as of three groups of uncertified persons—namely, sane epileptics, feeble minded persons according to the definitions of the Local Government Board, and aged poor who by reason of mental infirmity need institutional care. Some anxiety is expressed by the Board at the number of feeble-minded persons who, after committing offences against the law, are remitted to the care of the Board from the police courts. The reception of these persons tends to accentuate the difficulties of managing the various branches of a certifying institution.

Another special class of mentally abnormal persons with which the Board has been concerned in recent years is that of persons suffering from the after-effects of encephalitis lethargica. The cases cut across the scheme of classification which the Board has adopted in mental cases, for some of them are certified under the Lunacy Acts, some under the Mental Deficiency Act, and others are not certified at all. Whatever their mode of entry, the practical effect is the addition of a number of particularly troublesome and turbulent individuals for whom the available accommodation is not very suitable. An experimental scheme under which the Board provided 100 beds at one of its institutions for the treatment of children so afflicted is the subject of a report after a year's work. Out of 133 cases in residence during the year, 12 have been discharged as much improved, 6 others in such a condition that further treatment was considered unlikely to improve them, 4 as unsuitable and 18 at the request of the parents, who desired to have their children home. It has been decided to continue the experiment for another year, and a stricter selection is to govern the admissions. Dr G. A. Borthwick contributes a very long and interesting report detailing his observations on the children, but beyond showing what an overwhelming amount of clinical material they present, and what problems of classification they bring in their train, he does not attempt to draw any conclusions. Dr T. H. Whittington, visiting oculist, states that the ocular signs commonly present at the onset and during the acute stage of the disease are comparatively rare during the post-encephalitic stage. What was most notable was the number of children with a tendency to divergence of the eyes.

There are detailed reports from each of the mental hospitals and a specially lengthy one from the Darent training colony, where there is a population of between 600 and 700, many of whom are being trained industrially.

#### Other Medical Work of the Board

The number of patients admitted to the Board's institutions for pulmonary tuberculosis during 1926 was 3 837. As the number of tuberculous sick is undoubtedly diminishing, and as there is not a corresponding diminution in the Board's figures, it is inferred that sufferers from this condition are resorting increasingly to hospital treatment, a circumstance particularly to be welcomed as the segregation of advanced cases of lung disease cannot but help to reduce gross infection of other members of the family. Of the 1,008 patients discharged from two sanatoriums for adults during the year, 72 per cent were classed as fit for full work or light work, and in 35 per cent the disease was described as quiescent. Dr Blith-Brooke has investigated the after-history of many patients treated in a sanatorium, and suggests that in the prognosis, while temperature charts and records of any hæmorrhage may be passed over quickly, pathological reports on the sputum should be carefully followed. His statistics show that diminution of the number of bacilli in the sputum during treatment is a favourable sign.

The expansion of St Mary's Hospital, Carshalton, by 350 beds for the accommodation of children suffering from subacute rheumatism, the later stages of acute rheumatism, rheumatic chorea, and rheumatic carditis, was determined upon a year ago, but the work which has to be done before a report can usefully be made is still considerable. At the same hospital 515 non-tuberculous orthopaedic cases were completed last year.

Among reports by officers and consultants is one from Mr Treacher Collins, stating that the establishment by the Board twenty-four years ago of a school at Swanley for the isolation of contagious eye disease has served to stamp out trachoma from the Poor Law schools of London. In 1911 the number of cases admitted from such schools was 103, last year there were only seven cases, five of which came from Poplar, where, in all probability, they had contracted the disease in connexion with the large outbreak of trachoma which occurred in the London County Council schools in that borough in 1925. The institutions of the Board received 3,928 sick children in 1926.

Other matters contained in the report include the inquiry into the conditions of the nursing service which has been proceeding under a committee of the Board. The Board complains of sweeping and general statements which have been made in support of the excellent movement for the provision of hostels for women. It has been said that hundreds of women tramp the streets of London nightly looking for shelter, a thing which, if true, would imply neglect of duty by the authorities. But in fact, during the last five years, a census of homeless women—taken usually during a night in February—has shown an average of only 27 and a maximum of 42 on the streets, while the number of vacant beds in common lodging houses on those nights was from 300 to 500. Any destitute person could be applying at the Board's night office, have been provided with a bed, either through the voluntary agencies or, as a last resort, in the casual ward.

## New Zealand.

[FROM OUR CORRESPONDENT]

#### RESEARCH WORK

FOLLOWING upon the epidemic of poliomyelitis in 1925, the New Zealand Branch of the British Medical Association induced the Government to undertake a research into the causes and prevention of this disease, the work being undertaken in the Otago Medical School. There have been delays in obtaining supplies of monkeys for experimentation, and difficulties of technique, but the research so far has served to confirm the conclusions of other observers, no definite result can be claimed as an addition to our knowledge of the disease. Another inquiry is being made at Dunedin into the nature of rheumatoid arthritis and allied rheumatic conditions. Laborious complement fixation tests as elaborated by certain investigators in America have been made in Dunedin, with the result that the claims of the workers in regard to the diagnosis and treatment of rheumatoid arthritis by serological methods have been sustained. In cancer research information is at present being obtained from the hospitals throughout the country and the results collected as a preliminary to further investigation. Tuberculosis in school children has been investigated by making tests of children in school in town and country. Positive reactors are again examined radiologically and by tuberculous speciality, and such children are sent to sanatoriums or followed up in their homes, advice being given to their parents.

#### GOITRE REMEDIES

Regulations issued by the Health Department, which come into force immediately, require that every bottle of goitre remedy shall bear a description of its active ingredients, and also a prominent warning that the remedy should not be taken save under the advice of a medical man. Since the public has learned of iodine treatment there is reason to believe that an increase has occurred in the number of cases of exophthalmic goitre, and these regulations are the outcome. The public has failed to

appreciate that, while a small amount of iodine is necessary for the proper functioning of the thyroid gland, large amounts cannot be taken without serious risk. The view of the Health Department is that iodized salt can safely be used for household purposes, and its use is authorized in breadmaking. The proportion of potassium iodide in this salt is 1 in 250,000. The primary purpose of this iodized salt is to prevent goitre from developing, though cases have occurred where goitre has lessened in size or even disappeared through its use. Seeing that regulations may be used to restrict the ill effects of proprietary and patent goitre cures, it would appear possible that more restrictions can be placed upon the indiscriminate sale of quick remedies in the interest of public health.

#### COST OF HOSPITALS

Hospital accommodation provided in New Zealand is, according to a statement made by the Director-General of Health, five beds per 1,000 of population, whereas the United Kingdom provides one bed per 1,000. Expenditure in New Zealand on hospitals is a serious drain on the finances of the country and is increasing, 73 per cent of the Revenue of all the hospital boards is derived from public funds, levies on local authorities, and subsidies contributed by the Government. The cost of hospital treatment averaged 15s 3d a head daily. The capitation charge averages 9s a day, but of this only 3s 6d is collected. The contributions from public funds, levies, and subsidies has risen from £443,000 in 1914-15 to £1,238,000 for 1925-26 and the expenditure per head of population from 7s 9d to 20s 5d. During this period of ten years no fewer than forty new hospitals have been opened, in addition to extensions of existing institutions. Mr. Love, director of charities in Victoria, a recent visitor to New Zealand, stated that the New Zealand system of hospital finance does not provide a sufficient check upon extravagance, and leads to waste and inefficiency.

## India.

#### LEPROSY IN INDIA

INDIA is one of the countries most favourably placed for the development of anti-leprosy work. Recently the Mission to Lepers has formulated a practical scheme for coping with the leper problem, and the British Empire Leprosy Relief Association has been actively engaged in stimulating interest in leprosy, as the result of an appeal of the Viceroy £150,000 has been subscribed for leprosy work. An additional research worker has been appointed at Calcutta, and it is hoped that within a short period well trained men of the assistant surgeon grade will be placed in all districts of Assam, Bengal, and the Central Provinces. One or two first-class practitioners are being allocated for leprosy work, and out-patient dispensaries are being started in all big cities. By linking this scheme with leprosy hospitals in the provinces when they are established a complete anti-leprosy service for the whole of India would be brought into being. As a preliminary to the organization of such a service a survey of the present institutions is the first essential, and this has been ably supplied by Dr. R. G. Cochrane, medical adviser to the Mission to Lepers, in a pamphlet of twenty-two pages, entitled *Leprosy in India: a Survey*,<sup>1</sup> which Sir Leonard Rogers, in a prefatory note, states should prove invaluable to the authorities of that country. The survey is the result of a visit to India in 1924 of a deputation sent by the Mission to Lepers. Dr. Cochrane accompanied this deputation, and a reference to its general report appeared in our issue of November 6th, 1926 (p. 845). The census of 1921 estimates the total number of lepers in India at 120,000, the returns, however, are known to be very unreliable, in many cases being sent in by ignorant villagers, and the author considers that if

the census figures were multiplied by eight or ten a better realization of the true number of lepers would be obtained. The pamphlet deals with each province separately, stating the number of lepers and their distribution in the area, the facilities for leprosy work, the clinics and other centres for educating manual men in the work, the hospitals, homes, and other institutions for the treatment of lepers, and their accommodation and organization, an excellent map, giving some of the above details at a glance, is appended. During the last decade much more precise practical knowledge of the stages of the disease has been attained. Three practically important types of case are now recognized: early cases, later infective cases, and chronic, uninfected, crippled nerve cases. Formerly there was no effective treatment for any stage, but it is now known that most of the first class lose all signs of the disease under treatment, and are thus prevented from going on to the infective stage, reduction of the prevalence of leprosy depends on the possibility of bringing these cases under treatment. For the later infective cases isolation is the essential measure. The crippled nerve patients could be sent to their homes without danger and with much saving of expense, this has been done in South Africa, but in India the patients are apt to be turned adrift by their relatives, and look to the various missions and Government asylums for relief, which, however, does nothing in this case to reduce the incidence of leprosy.

#### AMBULANCE AND HYGIENE TRAINING

The annual general meeting of the St. John Ambulance Association and the Indian Red Cross Society was held on June 24th, with the Viceroy in the chair. The annual report of the St. John Ambulance Association stated that 1,130 courses of instruction had been held at 316 stations, and that there had been an increase of about 42 per cent in the number of persons trained in first aid, as compared with 1925, gratifying progress had been made also in extending knowledge of home nursing, hygiene, and sanitation. Ambulance training was now being recognized more widely as a valuable part of education, in twelve provinces it had been introduced into the curriculum of the police force, and the Railway Board was considering a proposal to adopt it for its men. All-India ambulance competitions were becoming widely popular. The report of the Indian Red Cross Society contained a reference to the new scheme for supervising soldiers included out of the Indian Army. The society appealed for an increase in membership, it was mentioned that in 1926 it had only five thousand members, as compared with two and a half million in Japan. Provincial branches were invited to establish travelling dispensaries for service in rural areas. A striking illustration was given of the valuable work rendered to pilgrims by the opening of a fully equipped hospital at Haidar. This institution, with its forty beds, received a large number of patients, in it numerous operations were performed, and stretcher-bearers were provided for emergencies.

#### THE PARASITOLOGY OF PLAGUE

The account given by Dr. L. Fabian Hust in the *Ceylon Journal of Science* of the result of his researches in the City Microbiological Laboratory, Colombo, from 1912 to the present day has been reprinted in a volume.<sup>1</sup> Part I, with an introduction, deals with the transmission of plague by the blood-sucking ectoparasites of rats and the haemorrhagic and biting powers of rat fleas, their identification and distribution, Part II, with the flea species factor and other considerations governing the spread of plague, regional studies in the parasitology of this disease, and the relation of parasitology to plague prevention. At the time when Glen Liston and the British Indian Plague Commission (1905-12) established the rat flea theory of transmission on a firm basis, many striking anomalies in the spread of plague in India, including the causes of the comparative

<sup>1</sup> *Leprosy in India: a Survey*. By Robert G. Cochrane. M.B. Ch.B., M.P.C.I. (Lond.) D.T.M. and H. London: World Dominion Press, 1927 (6 x 9 1/2 pp. 22, 1 map, 2s.).

<sup>1</sup> *Researches on the Parasitology of Plague*. By L. Fabian Hust. M.D. (Lond.) Colombo Municipality Department of Health, Colombo, 1927. London: The Times of Ceylon Co., Ltd. 1927 (Gr. 4to pp. 155, illustrated).

fic dom of large areas, remained unexplained. Whether all species of flea readily biting rats were equally efficient as vectors of plague between rat and rat was unknown and little attention had been paid to the relative possibility of the various species of rat fleas for the spread of epidemic as opposed to epidemic plague. To the elucidation of such problems Hirst has devoted himself, and his general conclusions may be quoted.

The spread of bubonic plague among rats throughout the world primarily depends on the [Xenopsylla] flea population of the invaded region. The population is a function of both the flea index and the average number of fleas per rat and the rat population commonly gauged by rats trapped per 100 traps.

The magnitude of the flea index depends primarily upon the effect of climate on flea reproduction and secondarily upon the nature and contents of the premises in which the flea is reproduced. The rat population depends primarily upon the available food supply.

The constant relation between flea distribution, plague prevalence among rats and human beings, and the distribution of imported grain is emphasized and the practical issue involved by full recognition of these discoveries become obvious. The study of the history of the spread of plague in Colombo is associated with the history of a particular flea as interesting reading as the history of the migrations of a human race.

#### PUBLIC HEALTH IN AGRA AND OUDH

In the United Provinces of Agra and Oudh there was during 1925 a satisfactory decline in all diseases and causes of death except smallpox and injuries. Lieut. Colonel C. L. Dunn, I.M.S., director of public health in the United Provinces, states in his annual report that no regular smallpox hospitals exist, patients being treated in temporary buildings or general hospitals for infectious cases. It has often been very difficult to isolate the patients satisfactorily, owing to the lack of compulsory measures, and much still remains to be done as regards vaccination. He comments also on the difficulty of obtaining from the district authorities notifications of primary outbreaks of cholera without considerable delay. In some cases the epidemic had actually subsided before information was received of its having begun. The Indian Research Fund Association during the year made a financial grant towards cholera research. Antimalarial activities were intensified in various places, particularly in the Sarai Canal area where a complete system of drainage has been constructed despite considerable difficulty, the results of quinine prophylaxis were particularly good. Plague outbreaks continued to be mild on the whole though the south-eastern and some western districts experienced severe epidemics. Prophylactic inoculation was usually welcomed by the inhabitants, and no difficulty was experienced in securing the vaccination of infected villages. The plague staff consisted of four special health officers and forty-two travelling dispensaries. Active research was carried on into the transmission of this disease by the two chief vectors of fleas encountered. It is suggested that the present mildness of epidemics may be an indication of a decline of plague in severe epidemic form. The thirty-six public health travelling dispensaries which are engaged in general medical work are becoming increasingly popular and proved most valuable in the control of epidemics of various kinds during the year under review. Over 240,000 patients were treated by them, and more than 4,000 operations were performed. For special emergencies twelve additional travelling dispensaries were temporarily mobilized and treated some 12,000 patients. Education in the prevention of disease continued energetically, and was a useful feature of the work of these dispensaries. A hygiene publicity bureau was established in the province and extensive educational tours were made for the purpose of lanterns being used. In response to the growing public demand for more facilities of this kind additional lanterns and more booklets and posters are to be provided. Grants in aid were received from the Government, various district and municipal authorities, and the Indian Red Cross Society.

## England and Wales.

### SOME PROBLEMS OF MENTAL HOSPITAL ADMINISTRATION

INCREASE in the number of patients admitted during 1926 to the Stafford Mental Hospital has compelled attention to the growing difficulty of accommodation. It has been found necessary to devote the twenty beds in the isolation hospital to convalescent male patients, but it is obvious that should an epidemic occur the necessary accommodation of this building would cause very severe congestion in the main ward. An annex containing ten beds for tuberculous male patients, nearing completion, but additional accommodation for uncomplicated mental cases will be required at an early date. Dr. B. H. Shaw, medical superintendent of the hospital in his annual report for the year ending March 31st, 1927 suggests that relief of overcrowding can be effected only by making use of the vacant accommodation in Poor Law institutions for the reception of certain cases, and by special provision for idiots, imbeciles and other patients with definite mental deficiencies becoming manifest at an early age and requiring institutional treatment. He considers that to associate together the imbecile type and persons suffering from simple mental breakdown is most undesirable. Among other objections to the treatment of cases of early mental disorders in general hospitals Dr. Shaw includes the fact that the conditions are usually situated in industrial centres where there is little possibility of securing the quiet outdoor environment and special amenities necessary for the successful treatment of mental breakdown. Moreover, the training of general hospital nurses does not meet the requirements in dealing with early mental cases, since the rigid discipline necessary in dealing with physical illness is out of place in the treatment of the extreme temperamental sensitiveness associated with mental disorder. Dr. Shaw considers that the establishment of clinics for early cases is unlikely to have very much effect unless arrangements are made to remove the patients from their home surroundings. He is driven to the conclusion that any measures to relieve the existing congestion, other than the erection of additional buildings, can only be considered palliative, he mentions that the erection of a separate building for acute and newly admitted cases has been prevented hitherto by financial considerations. The question of 'boarding out' patients has been considered and this policy may have to be adopted, though, in Dr. Shaw's opinion it has little to commend it except expediency.

### THE ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE

DURING 1926 the number of in-patients admitted to the Royal Victoria Infirmary, Newcastle-upon-Tyne (13,922), established a record for this institution additions being made to the beds in the Infirmary and thirty beds being provided in the Innes Hopkins Home at Ryton, which was taken over as an auxiliary hospital. On many occasions extra beds had to be placed in the wards. In the annual report of this institution for 1926 it is stated that much of this expansion was rendered necessary by motor accidents, which reached the figure of 980, 432 persons had to be admitted as in-patients. These figures are double those of the previous year. 54 patients died, equivalent to a mortality due to motor accidents of over one a week. Since many of these patients were in a very grave condition on admission preference had to be given them over those on the waiting list, the number upon which at the end of the year was 2,100. During 1926 accidents of all kinds were responsible for the admission of 2,119 patients, as compared with 2,036 in the previous year and this in spite of the closure of many collieries and much diminished employment in various other industries. The Infirmary committee is therefore compelled to give serious consideration to the problems created by these conditions. Moreover, in the out-patient departments there was an increase of 8,000 new cases, and the number of operations rose from 13,225 in 1925 to 14,409 in 1926. The general expenditure of the Infirmary exceeded the income by nearly £10,000. The fact that voluntary subscriptions declined by

only £11,703 is considered to be a matter for congratulation in view of the wide spread distress consequent on the industrial situation. There was also a reduction in the contributions by patients but it is believed that when employment becomes better a great increase in the donations may be expected. Promises have already been received to the effect that an attempt will be made during the current year to compensate in some measure for the deficiency of 1926.

#### ST BARTHOLOMEW'S HOSPITAL

St Bartholomew's Hospital is in the happy and unusual position of having an income in excess of its expenditure. The explanation is that it receives over £120,000 from invested property. It has in hand a scheme for erecting an operation theatre block, a new surgical ward block, and reception rooms for nurses at a cost of about £200,000. It now has 688 beds, and 666 were in constant use during the past year, when £18,000 was spent on renewals and repairs, it paid £4,800 in rates and taxes. It received 2,972 persons suffering from street accidents or illness brought to it by motor ambulances belonging to the Corporation of the City of London or the London County Council.

## Ireland.

#### PROMOTION OF MEDICAL OFFICERS

ARISING out of representations made on behalf of the profession to the Minister for Local Government and Public Health (Free State) with regard to Section 5 of the Local Authorities (Officers and Employees) Act, 1926, in connexion with the promotion of medical officers by boards of health the Minister has addressed an important circular letter to each local authority. The Minister's approval for the transfer or promotion of an existing medical officer is necessary under Section 5 of the Act and he clearly defines the conditions to be fulfilled by the local authorities in order to get his approval of appointments made by them by way of promotion.

The Departmental Secretary states that he is directed by the Minister for Local Government and Public Health to refer to Section 5 of the Local Authorities (Officers and Employees) Act, 1926, under which, subject to the sanction of the Minister, local authorities are empowered to make appointments to offices to which the Act applies (as defined in Section 2 thereof) from amongst persons holding pensionable offices under local authorities or in receipt of superannuation allowances from local authorities and who are performing or had performed duties the same as or similar to those of the office to which it may be proposed to make an appointment. It is stated that the Minister has had under consideration the procedure which should be followed by him in giving or withholding his sanction to a local authority proceeding to make an appointment under the section, and has decided that in future he will not give his sanction to the making of an appointment thereunder unless he is satisfied that a suitable and properly qualified person is available for appointment. In giving or withholding his sanction to the making of an appointment under the section, the Minister will be influenced solely by the merits of the case. Accordingly a local authority should in the interests of efficient local administration carefully consider the qualifications, training, experience, age, character and length of service of the persons available for appointment. Due weight should be given, other things being equal, to seniority, since one of the objects of the section is to facilitate the promotion of existing officers of local authorities on grounds of ability and length of service. In future therefore an application for the Minister's sanction should be accompanied by a clear statement of the grounds on which the application is made.

#### TUBERCULOSIS IN BELFAST

In his annual report for the year ending December 31st, 1926, Dr Andrew Trimble, chief tuberculosis officer for the county borough of Belfast, states that the attendance at the tuberculosis institutes for examination and treatment numbered 34,040. Of these, 1,904 were new patients, among whom 1,054 were diagnosed as tuberculous, 115 as "suspect," and 856 definitely non-tuberculous, 121 having been transferred from the "suspect" list of 1925. The report showed that 64 fewer patients were found to be suffering from or suspected of tuberculosis than during the previous year, this decrease, though small, is gratifying in view of the prevailing industrial distress and housing shortage. In addition to the above, 220 old patients, unable to travel, were re-examined in their houses, and 44 at the

Belfast Infirmary, 822 patients on domiciliary treatment were also examined, of whom 254 were apparently cured, no signs of active disease being found. If this result can be attained under domiciliary treatment, with its attendant disadvantages of overcrowding and bad hygienic arrangements, how much more, it is asked, could be accomplished if housing and social conditions were bettered, and patients could and would carry out their instructions to greater advantage? The ratio of pulmonary tuberculosis to other forms of the disease varies only slightly from year to year, about 71 per cent of cases being pulmonary, the incidence among males and females, calculated on the ratio of their respective numbers in the population, was almost equal, in former years females were the greater sufferers. Dr Trimble draws attention to the social conditions favouring infection by contact, and notes that, after making every allowance for inadequate housing, unemployment, and distress, many patients still have to share bed rooms and beds with other members of their families, only 14.5 per cent of patients occupy single beds. The number of x-ray films exposed during the year was 225, and valuable work has been done in the dental department. The sputum was examined in 902 instances, and 238 other bacteriological examinations were made. Dr Trimble states that from an investigation of 1,691 cases of non-pulmonary tuberculosis it was found that 43 per cent had been in association with pulmonary forms, he therefore considers it fair to assume that the 57 per cent who had no such association were infected through milk. He draws attention to the unsatisfactory state of the local milk supply and notes that, of 17 samples found to contain tubercle bacilli, 15 were from milk produced outside the city boundary, and therefore outside the jurisdiction of the local authority. He advocates one governmental central authority for milk inspection and also an extension of the regulation (in force in Great Britain, but not yet applicable to Northern Ireland) which prohibits persons suffering from pulmonary tuberculosis from handling milk for sale. In addition to the ordinary methods of diagnosis and treatment by hygienic measures and medicines, the Belfast Insurance Committee gave a sum of £80 for the purchase of an interferometer, to investigate the possibility of earlier diagnosis. The use of sanocycin has been continued, Dr Trimble is of the opinion that this drug marks a distinct therapeutic advance in certain types of cases. Towards the end of the year a trial of Ruppel's serum was begun, but no opinion on its efficacy can yet be expressed. Lectures given during the year obtained wide circulation in the press. As to the value of the tuberculosis scheme in Belfast, Dr Trimble says that the death rate from all forms of the disease, as compared with 1914, has fallen by 38.5 per cent, and that of the pulmonary forms by 34 per cent. In the five years 1914-18 the number of children under 10 years dying from tuberculosis was 298, while in the five years 1922-26 the number was 109, a reduction of 63.5 per cent. It should be thought that this result is due to a general improvement in the health of the people, he states that, whereas the general death rate, exclusive of tuberculosis, has fallen 20 per cent between the five-year period mentioned, the death rate from tuberculosis has fallen 39 per cent—that is, almost twice as rapidly—and for these reasons Dr Trimble feels justified in saying that the scheme has, up to the present, fulfilled its object.

#### VITAL STATISTICS FOR NORTHERN IRELAND

During the quarter ending June 30th, 1927, 7,298 births were registered in the twenty-seven superintendent registrars' districts in Northern Ireland, this was equivalent to an annual birth rate of 23.3 per 1,000 of the estimated population, as compared with the corresponding figures of 17.6 for England and Wales, and 20.6 for Scotland. The deaths registered during the quarter numbered 4,979, representing an annual rate of 15.9 per 1,000, as compared with 11.0 for England and Wales, and 12.9 for Scotland. The birth rate was 0.4 below the rate for the corresponding quarter of 1926, and 1.2 below the average rate for the second quarters of the ten years 1917-26. The death rate was 0.7 below the rate for the corresponding quarter of 1926, and 1.3 below the average for the second quarters of the previous ten years. Of the 4,979 deaths registered,

914 in 1884, occurred in public institutions, and 445 or 88 per cent. were uncertified, there having been neither a medical attendant during the last illness nor an inquest held by a coroner. The number of successful primary vaccinations registered in Northern Ireland in the quarter under review was 7,128. The birth rate for county boroughs and urban districts, which contain more than one half of the total population of Northern Ireland, was 25.8 per 1,000 of the population, the birth rate for the remainder of Northern Ireland was 20.6 per 1,000. The mortality in the county boroughs and urban districts was 14.1 per 1,000 of the population, and the corresponding rate for the remainder of Northern Ireland was 17.7 per 1,000. The urban mortality from the principal epidemic diseases recorded during the quarter was equivalent to an annual rate of 0.8 per 1,000 of the population, the death rate from these diseases for the remainder of Northern Ireland being 0.4 per 1,000.

## Scotland.

### A TRIAL FOR MURDER IN 1728

At the annual meeting of the Forfarshire Medical Association the presidential address was delivered by Dr R. C. Buist of Dundee, who took for his subject 'A trial for murder in Forfarshire nearly two hundred years ago.' In 1728, Dr Buist said, the provost of Forfar was, like Provost Lawson of today, a doctor. He was the first medical witness in a trial for murder which must have attracted a great deal of attention, for the dead man was Lord Strathmore and the persons concerned in the trial which led to his death were all local notabilities. On May 9th a daughter of Carnegie of Lour had been buried and after the funeral the gentlemen, having dined and drunk a good deal of wine, adjourned to an inn in Forfar, where they drank more wine. Lord Strathmore then went to call on Lady Auchterhouse, widow of a relative, and sister of Carnegie of Finhaven who followed him to her home, accompanied by Lyon of Bridgeton. An altercation took place about a proposed matrimonial alliance, Lyon became violent and hammered Carnegie's head on the table. The dispute was continued in the street and Lyon upset Carnegie into the gutter, which was a very muddy gutter, and filled his top boots. Carnegie was helped out and saving that 'his was unbearable' drew his sword and made after Lyon. The Earl of Strathmore interposed, Carnegie lunged forward, was impaled on the sword and died in two days. Three months later Carnegie was tried for murder. A Dr John Kinloch of Dundee who had graduated M.D. at Rheims in 1712 and had studied at Leyden, testified that at the funeral the two contestants had been quite courteous to each other, supporting the plea of the defence that the tragedy was not purposeful and that there was no element of malice in it. William Douglas, late provost and a chirurgion-apothecary in Forfar, gave evidence that he had "pinned" the earl, and had advised that physicians should be summoned from Dundee. He noticed that the momentum had been pulled through the wound and deduced therefrom a nick in the sword such a nick was found in Carnegie's weapon. Thomas Crichton, a surgeon-apothecary in Dundee, said that the sword had entered the front of the abdomen and passed through the back, the earl had expressed the opinion that the thrust was not intended for him. It may be noted in passing that in the rising of 1745 Crichton was surgeon to the second battalion of Lord Ogilvie's regiment, and passed the rest of his life on his brother's estate at Ruthven. A Dr John Wedderburn of Dundee, who had studied at Leyden in 1700 and graduated M.D. of Utrecht in 1703, testified that he had been present at the necropsy on the earl and that the sword had passed through the caul, the gut-colon and the plexus m. entericus. A Dr Charles Fotheringham of Dundee, who also had studied at Leyden in 1722 and graduated M.D. at St Andrews three years later, agreed with the evidence of Thomas Crichton. Dr Buist stated that the jury, by a plurality of votes, brought in a verdict of 'not guilty.' At the dinner after the meeting the president was supported by the Earl of Strathmore and

Dr J. Tawson provost of Forfar. The president proposed the toast of 'The County of Forfar,' and Lord Strathmore responded. The toast of 'The Cuests' was proposed by Dr T. P. Dewar, who had been elected to succeed Dr Buist as president for 1927-28, and acknowledged by Provost Lawson. The toast of 'The Forfarshire Medical Association' was proposed by the Rev. W. G. Donaldson, parish minister of Forfar, and Dr J. Cable replied.

## Correspondence.

### AN OPERATING THEATRE OUTFIT

Sir.—Opinions seem divergent as to how the ideal operating room should be constituted. Some proclaim the advantage derivable from artificial ventilation and calefaction, while others, including myself, prefer a theatre which receives a share of any sun that is going as they consider any room uninhabitable—a tubercle haunt—if its atmosphere is denied disinfection by sun rays, and reject artificial ventilation in favour of ordinary fresh air through open window, with some windows at the level of ceiling to eliminate vitiated air.

I am in complete accord with Mr. Rowlands and Mr. Hamilton Whiteford as to the irrational practice of working in a stifling atmosphere, detrimental alike to patient and operator. Experience derived from the great war accentuates the necessity to adopt measures to keep the patient warm during operation—this cannot be effected by a superheated atmosphere and a cold slab, but by some special heating of the operating table for which fixation of an electric resistance in the latter has been found extremely convenient and efficacious, in combination with an insulating mattress (covered by rubber) to prevent burn the body of the patient above and below the operating field should be kept warm by wrapping in wool with mackintosh superimposed—all fixed in position by strong safety pins.

Keeping a patient warm during operation is analogous to keeping warm in bed during winter—namely, plenty of covering with an open window to provide the fit and fresh feeling in the morning. Possibly this may be a personal idiosyncrasy, and open to correction by those who not only sleep with window shut, but cover mouth, nose, and the rest beneath the same sheets. This is especially apropos to the context as it simulates the condition of the patient under anaesthesia in a close room, asphyxiated in exhalation and gas.

In my theatre a free supply of fresh air is provided during hot weather by four large lateral windows which are kept wide open and two long narrow windows level with the ceiling which are open in all seasons. Currents of air which might affect exposed viscera are avoided by closing the corresponding lateral windows.

From the beginning (1894) it has been my custom to wear clothing which will afford the light and airy feeling during operation so desirable, short hair and nails and healthy, clean teeth help to obviate the necessity for a beardgear rivaling the immaculate combination of a Turkish madonna and a French clerk, not to add "plus fours" a light sterilized gown over a light mackintosh apron comprise the outfit.

While a believer in the employment of sterilized rubber gloves by assistants and dressers—and personally in optic cases—I should as soon think, before entering the drawing-room after a post-prandial wash of hands, of confiding the adjustment of buttons to gloved fingers, as to trust the latter to separate adhesions—out of sight—in an abdomen, or palpating, for a foreign body or tumour in the brain. Physiologists who have made various studies of organic tactile sense declare that even with the interposition of the most delicate foreign membrane between living parts acuity of perception becomes diminished, and stimulation to cellular response appreciably lessened.

Sand-bags and sand-pillows are employed to secure the patient's position, except for the Trendelenburg which is effected by means of a Dwyer table, with similar artificial heating in its central compartment.

<sup>1</sup> *Annals of Surgery*, January 1923, author.

<sup>2</sup> *BRITISH MEDICAL JOURNAL*, February 24, 1922, author.



For use on dull days and at night two 1,000-candle-power electric lamps—one over each table—are suspended from the ceiling. During winter or other cold period three calefacturs standing out from the wall heat the interior. The walls of the theatre are lined with stucco, and are rounded off at the level of floor and ceiling. They are painted annually—the lower half reseda green and the upper section, and ceiling, white—I am, etc.,

Buenos Aires, May 31st

JOHN O'CONNOR, K B E, M D

### "PEINE FORTE ET DURE"

SIR—The very fascinating article by Mr R R James in your issue of August 6th (p 230), entitled "Hanged, Drawn, and Quartered," raises many points of considerable interest. Torture has not been recognized by the common law of England, though it was carried out frequently in the Middle Ages. But there was one form which could be ordered by a judge, not to obtain evidence, but to compel a prisoner who "stood mute" to plead, or to punish him if he did not do so. Before the infliction of this form, the *peine forte et dure*, the prisoner was warned three times, and the dreadful penalty explained to him, he was then given a few hours to think the matter over. If the accused were still obdurate, the judgement of perjury was pronounced and carried out. The sentence was not left to the discretion of the judge, for he was, by law, compelled to pass it in cases where an accused person refused to plead. The wording of the terrible judgement was as follows:

"That you be taken back to the prison whence you came, to a low dungeon into which no light can enter that you be laid on your back on the bare floor with a cloth round your loins, but elsewhere naked that there be set upon your body a weight of iron as great as you can bear and greater that you have no sustenance save on the first day three morsels of the coarsest bread on the second day three draughts of stagnant water from the pool nearest to the prison door on the third day again three morsels of bread as before and such water alternately from day to day till you die."

There are many recorded instances in which this was carried out. One of the most remarkable is that of Major Stringer. In 1685 he was accused of the murder of his brother-in-law. He refused to plead, and this meant he could not be tried, and therefore his lands would be preserved for his heirs. He was sent to endure the *peine forte et dure*. Major Stringer was pressed to death, the executioners mercifully hastening the ending out of the sentence by adding the weight of their own bodies to the mass of iron, and thus saving the prisoner the rest of the tortoise.

The barbarous law was repealed in the reign of George III. Before that reign many offences were punishable by hanging—for instance, arson, rape, forgery, house breaking, and horse-stealing. Juries, moved by feelings of pity, over and over again refused to convict even in the most obvious cases, for they considered the punishment too terrible for the offence committed. In 1808 the law was so altered that murder and treason were practically the only offences for which the death penalty remained.

Previous to the passing of the Acts in the reign of George III public opinion allowed even young children to be executed. In 1791 a boy of 8 who had set fire to a barn was hanged. It was only in 1908, when the Children Act became law, that the death penalty was abolished for young people under 16.

Mr James refers to death by boiling. At one time this was the punishment for poisoning, and was in a few instances actually carried out, but the law was repealed in the reign of Edward VI. There are a very great number of points in connexion with this question of brutal punishment to which I should like to refer, but I am afraid I have already occupied too much space—I am, etc.,

Hove, Aug 8th

L A PARRY

### ORTHOPAEDIC TREATMENT

SIR,—In view of the somewhat pessimistic tone of the discussion on orthopaedic treatment at the last Representative Meeting (reported in your SUPPLEMENT of July 23rd, 1927, p 43) it may interest your readers to hear of the lines on which the Bath, Somerset, and Wilts orthopaedic

scheme is organized, as the conditions appear to meet admirably the recommendations of the British Medical Association Council.

In the area there are, in addition to the Bath City Clinic, ten major (surgeon's) county clinics, as well as various minor ones (attended by orthopaedic sister only). At these clinics no case is seen except on the recommendation of either the family doctor or the school doctor, in the latter case the family doctor's permission is first obtained, and he is invited to attend the clinic. A number of local practitioners avail themselves of this invitation and always receive a warm welcome. Some are regular attendants and even kindly transport cases to the clinics, where they often stay to watch the routine working, as well as to see the treatment of their own cases. Unfortunately the demands on the busy practitioner's time do not allow him to stay sufficiently long to gain a thorough knowledge of the working of a clinic, nor do as many practitioners make the effort to attend as the clinic authorities would wish.

In this area a great deal of work in the clinics is done by detachments of V A D nurses, and among such voluntary workers the wives of local practitioners play a conspicuous part, which provides another link between the doctors and the clinics.

Narrowness of outlook ought not to be a danger in this area, as the surgeon in charge of the clinics, though now restricting practice to orthopaedic consulting work, had previously many years' training in general surgery and at one time had a large general practice.

Patients found to require dental, ophthalmic, or throat treatment are referred to local special clinics, provided that the parent declines to consult the family doctor. Other non-orthopaedic conditions are referred to general practitioners. It would be anything but kindness to force upon the family doctor the unremunerative type of case which forms the majority at the rural clinics—for example, the numerous progeny of an ill-paid farm labourer. As many neurological cases reach the clinics, an invitation is given from time to time to the neurologist attached to the central hospital to see groups of these at the various clinics.

As regards the staffing of the central hospital the beds are shared equally by two general surgeons and the orthopaedic surgeon, who runs the clinics, while the neurologist physician, above referred to, is also attached to it.

Finally, as to general principles the orthopaedic cases which represent the greatest cost in time and money are the very ones that general practitioners and even the local surgeons have been coping with for years, the initial lack of success being largely due to administrative and financial difficulties, which would never have been overcome but for the co-operation of the public health authorities.

As long as the conditions of general practice remain what they have been in the past the probability is remote that the general practitioner would have more success with the cases in the future than he has had hitherto. What these obstacles are has been pointed out in many recent speeches and articles—I am, etc.,

M FOURFSTER-BROWN, M S, M D Lond,  
Surgeon, Bath, Somerset and Wilts Central Children's  
Orthopaedic Hospital

August 15th

### TONSILS AND RHEUMATISM

SIR,—With regard to Sir George Newman's recent dictum that enlarged or inflamed tonsils are a cause (or the cause?) of rheumatism in children, may I, in all diffidence but with a past of thirty years' constant experience of clinical work, make a conflicting suggestion?

Is it not a fact that the enlarged tonsils may be, not a cause, but in many cases a result of rheumatism? I think it is now fairly well established that many, if not most, cases of follicular tonsillitis are rheumatic in origin. That, I take it, means that the rheumatism was the cause of the tonsillitis, not vice versa.

I have had the chance of observing a number of cases in which, after the tonsils had been removed, the rheumatism has persisted. Many other cases of rheumatism in children I have observed where there never were any sign or symptoms of tonsillitis, at any time.

The tonsils, surely, are only aggregated masses of adenoid

the use, and only become permanent foci of infection when materials of tractive to the pharynx, and when there is fibrous induration.

All the adenoid tissue in the nasopharynx is a possible cause of infection, even if we remove the tonsils, but does not all this tissue collect and kill many times more poisons (whether germs or otherwise) than it passes on.

The appendix is now having some justice done to it by pathologists. How many appendices have been successfully and brilliantly removed (in a healthy condition) for a flapping flaccid circum? Endocrine glands are coming into their own even the epiphysis and hypophysis cerebri.

When I was a house-surgeon we were taught to remove tuberculous cervical glands early. More recently, I believe especially by the practice and teaching of the late Treves at Margate, it has been found that general constitutional treatment without removal of glands (except when they suppurate) gives much better results.

I think it is a fact well established by clinical observation that enlarged tonsils where there is a fairly good airway and not much if any permanent fibrous change will often yield to general medical and hygienic treatment—especially, as regards drugs, to a mixture containing iodine. In my small experience I have used an alkaline potash solution containing tincture of iodine which I believe, has a local effect and changing in the stomach to free iodine, iodide, and iodate, has a very important general effect.

What I wish to maintain is that (where there is a good airway, or nose breathing can be maintained or developed) removal of a bit or two of adenoid tissue (the tonsils) which are surrounded by masses of adenoid tissue throughout the whole nasopharynx is in many cases at least, not radical or curative. May I add what seems to me one of the most important single points in this subject—that is, that rheumatism in children so often takes its first or for a long time, merely the form of "growing pains," which may very readily be overlooked—I am, etc.,

G D PARKER  
Fleckwell Hill Bucks Aug 18

### LATE RESULTS OF TONSIL AND ADENOID OPERATIONS

SIR,—A great deal is written on the technique of this operation, and figures are quoted—often running into thousands—of patients on whom it has been performed. It is always tacitly assumed that if the operation is satisfactorily performed (which goes without saying if the particular technique described is followed) the patient will be very much benefited but in clinical practice, where we see our patients over a number of years the result is not always so gratifying. It is one thing to be able to demonstrate the intact capsule of a tonsil which has been removed but another thing to demonstrate patients before and after the operation. My own figures are too small to be worthy of quoting, but I have noticed the following end results:

1. Marked improvement of general health and rapid growth following the operation.

2. No particular effect. This is sometimes very disappointing. For example a boy aged 5 was a mouth breather rather deaf, eunited thin and had the adenoid facies, the tonsils were constantly studded with white creamy exudate. After a course of gargles and throat painting I enucleated the tonsil and removed the adenoids. He developed acute otitis media for which I incised the drum. A year later the boy is still rather stunted rather deaf but a nose breather and is still very thin.

3. Child made very nervous. I have known this happen twice. In one case a little girl aged 5 frequently had white spots on her tonsils and a furred tongue and was generally out of sorts. I enucleated the tonsils after which she became very nervous and for more than a year was subject to bad dreams and night terrors after that I lost sight of her as the parents took her to another doctor.

Complications sometimes occur, of which I suppose, otitis media is the chief. I have been fortunate in only meeting with it once in private, but in hospital it used to be fairly frequent.

I had one case of a child aged 4, who had been operated on in London. She must I think have had acute tonsillitis at the time she developed septicaemia. I saw her two months later, and she was in a pitiful condition of extreme marasmus and pains in all the joints with slight pyrexia and pulse over 140. She had had various abscesses before I saw her and was removed from hospital as the parents preferred her to die at home. She

eventually recovered completely except for the right hip joint, which fifteen months later shows marked changes on x-ray examination although it is quite painless and freely movable.

Another disappointment was in a boy aged 17 who had two peritonitis abscesses in four months. I prepared him with gargles and paints for a month and then removed the tonsils satisfactorily as I thought. Put a month later he developed another abscess and the empty tonsillar fossa could be seen behind it. That was four years ago and he has grown considerably and has not been troubled with his throat since.

A child aged 6 had his tonsils and adenoids removed elsewhere for frequent colds. There is not a scrap of tonsil to be seen although he is a mouth breather. Since the operation he has had cold summer and winter alike almost continuously. He is said to have thickening in one maxillary antrum.

Is it possible to know beforehand whether a child with enlarged tonsils will be benefited by operation, or whether it would be better simply to administer thyroid or some other remedy. I am convinced that the operation cannot be judged solely on the appearance of the tonsils after removal or of the throat from which they came.

I should like to see carefully compiled figures from a school medical officer, spread over a number of years mentioning indications for tonsillectomy whether there were general symptoms or whether the tonsils were removed simply on account of their bulk, weight curve before and after operation opinion of the teachers and parents on the effect of the operation.

After confession of so many failures perhaps I may be excused for signing myself

August 8th

NEWELL

### ACUTE RHEUMATISM IN CHILDREN

SIR,—Your interesting review of the report by the Ministry of Health on Acute rheumatism in children its relation to heart disease in the JOURNAL of July 30th (pp 187-188) suggests one or two points perhaps worth more than a passing thought.

We read in the second paragraph "The prevention of its (rheumatism's) disastrous cardiac sequelae is a question of ways and means. The children must be received into suitable institutions. Poor homes, not the poor, but of children attending the public elementary schools" need reforming. Such reform involves questions of general culture, education, the standard of living, and kindred subjects, and its consideration would afford useful employment for our politicians.

With regard to suitable institutions, and all which that involves it is by no means so unquestioned that the results of the national treatment of tuberculous are commensurate with the expenditure that we should be ready to launch out into similar institutional expenditure for another disease which our present knowledge suggests, invades certain types of homes and avoids other types?

Who should carry out the investigation of the questions suggested, and others, in the homes of the school children. Possibly at once the thought comes that the medical inspector of school children (school doctor) with the school nurse and health visitor, are the very persons to do this work. Do their several occupations their knowledge of these homes and their breadth of outlook on social matters generally, make them most suited for such an investigation?

Who visits these homes so frequently, who knows so much about the standard of living who would be so interested that the children of his patients should be sound and healthy as the general practitioner attending one or both parents and probably the children also—as members of a juvenile club.

Government and public health medical officers, accustomed as they are to devising efficient schemes for any useful purpose could surely present some plan to interest the general practitioner and to try his knowledge and experience on this matter for the public good. It would need to be a plan which aroused his interest did not involve much clerical work and was recompensed by a suitable fee.

Further, the association of some general practitioners working under the National Health Insurance Acts with the official medical officers would result in a more useful scheme than if they were left out. In addition, it would be a practical example of the value of the private practitioner in matters of public health—I am, etc.,

Cambridge Well Aug 12

E A STARLING

## THE LUNACY LAW AND MENTAL DISORDERS COMMITTEE

SIR,—In your leading article of August 6th (p 221) you surmise that the non-acceptance of this committee's Memorandum by the recent Representative Meeting seems "to have been due in the main to a feeling that members had not had sufficient time" to consider the document. What motive determined the attitude of the silent members of the meeting no one, of course, can pretend to know, but those who criticized the Memorandum in speech produced reasons for their opposition other than the one which you present. That a Memorandum on so important a topic was submitted in so hurried a fashion might well excite comment, but the opposition also found place for serious criticism within the four corners of the document itself.—I am, etc.,

London, W 1 Aug 20th

C O HAWTHORNE

## THERAPEUTIC ABORTION

SIR,—In view of biochemical investigations and clinical observations published during recent years it is surprising to find that Dr H S Davidson (as reported in the BRITISH MEDICAL JOURNAL of August 20th, p 308) still advocates the practice of therapeutic abortion in certain cases of hyperemesis gravidarum.

Surely it has been conclusively demonstrated that the ill effects of pregnancy vomiting are essentially due to starvation (carbohydrate depletion) and, in the more severe degrees, to dehydration. These two factors adequately account not only for the usual ketosis and associated biochemical deviations from the normal, but also for the prurience, oliguria, and albuminuria which may characterize cases that have been allowed to pass from bad to worse. Obviously we must further take into consideration the effects of physical strain and increased abdominal pressure, but it is entirely unnecessary to assume the influence of a mysterious "pregnancy toxin," and for that reason to destroy and remove the embryo.

The aims of treatment are perfectly definite, and merely involve the introduction of carbohydrates and fluids into the patient's system by one means or another. Admittedly this is not always easy, but in the vast majority of cases these objects are attainable by simple measures of suggestion and persuasion, and even artificial feeding is very rarely indicated.

To terminate the pregnancy represents a complete confession of failure.—I am, etc.,

London W 1 Aug 21st

FRANK COOK

## CLINICAL VARIATIONS IN DISEASE FROM THE HISTORICAL POINT OF VIEW

SIR,—Sir Humphry Rolleston, in his magisterial address on this subject, when discussing the question of encephalitis lethargica (BRITISH MEDICAL JOURNAL, August 6th, p 208) mentions Tricot-Royer's interesting discovery of a contemporary poem relating an epidemic of hiccup in Flanders in 1413.

The importance of this lies in the fact that epidemiologists have always admitted the prevalence of "influenza" of the "knock-out" type in France and Italy in January and February, 1414. Those who see in epidemic hiccup a *forme fruste* of encephalitis lethargica must then at least agree that the geographical and temporal relation between epidemics of hiccup and of influenza recently noted did so obtain in 1414—five hundred years ago.

The point is further stressed when we realize that the epidemic of influenza mentioned by Hirsch as having occurred in 1411 was none other than the epidemic that did occur in 1414. As I have shown in *Influenza: Essays by Several Authors* (p 71), Pasquier—the sole authority given by Hirsch for the 1411 affair—was evidently misled by the error of someone who transcribed part of the account given of the 1414 epidemic in the *Journal d'un Bourgeois de Paris*.—I am, etc.,

London W 1 Aug 21st

F G CROOKSHANK

## RESISTANCE TO TUBERCULOSIS

SIR,—In your summarized report (April 2nd p 624) of a paper of mine on "Tuberculous lesions found in 800 Australian necropsies," read at the Australasian Medical Congress in Dunedin, New Zealand, in February, an error has crept in, owing to the line "No tuberculous foci detected" being mistaken for the words "Number of (No of) tuberculous foci detected." The correct figures are as follows. In 800 records the results were: No tuberculous foci detected, 527 (66 per cent); slight lesions present, possibly tuberculous, 43; tuberculous lesions present, 230 (28.7 per cent).

The account is printed reads: Number of tuberculous foci detected 527, instead of no tuberculous foci detected. If this remains uncorrected it may give a very erroneous idea of the prevalence of tuberculous lesions in Australia.—I am, etc.,

J B CIRLAND

Department of Pathology, The University of Auckland  
Auckland, July 12th

## BRITISH DOCTORS IN MADRID

SIR,—I practised in Portugal from 1920 to 1922, and during that time had only cordial relations with my Portuguese confreres. I therefore feel that it is for me to correct the biased evidence which has apparently been given before the General Medical Council by someone, acting on behalf of the British Embassy, who is either hopelessly incompetent to give this information or has made intentionally incorrect statements.

On looking up the regulations in the Year Book of the Faculty of Medicine of Oporto, published in 1920, I see that the fees payable on taking the examination for the degree of Doctor of Medicine amount to 300 escudos, not 3,000 as you state, equivalent to between £3 and £4, not £300 as you state. The escudo is at present worth 2½d.

Fees charged by English doctors are out of all proportion to those charged by Portuguese, and I can well understand the indignation of the latter, who have to work hard for a mere pittance, and who see English doctors practising in their midst among wealthy patients and making what to them appear to be fabulous incomes. These English doctors are of course, looked upon as unqualified, and cannot give death certificates. Until I took my degree in 1922 in Oporto I, too, was unable to give death certificates, and had to get a Portuguese doctor to cover me.

If the General Medical Council wishes to legalize the position of English doctors in Madrid, the equitable way would be for the Council to seek reciprocity with the Portuguese Government in the matter of registering medical qualifications.—I am, etc.,

ST GEORGE B DEFEIS GRAY,  
M D Oporto, M B, B S Lond

Mové Aug 22nd

\*\* Dr Dehisc Gray will find the full text of the correspondence between the Privy Council and the General Medical Council in the minutes of the Executive Committee of the latter body of July 25th, 1927. The fee for the degree of Doctor is there given as escudos 3,000, but the error of stating this to be equivalent to £300 was ours.

## Universities and Colleges.

### SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

**SURGERY**—G C Phipps Jones E H Waller J L M Wood  
**MEDICINE**—L J Lawrie B Rosenzweig S B S Smith V P Smith  
**FORENSIC MEDICINE**—K F Clarke W H Collins I W Craik  
Holland T C Lausdale T Miller V B Smith  
**MIDWIFERY**—L Ashkenza T M Beattie A F J Darcy J Milner  
N S J Roberts J L M Wood

The diploma of the Society has been granted to Messrs L Ashkenza, T M Beattie, W H Collins, T C Lausdale, L J Lawrie, S B S Smith, E H Waller.

## Obituary

HARVEY LITTLEJOHN, M.B., C.M., B.Sc. (Ed.),  
F.P.C.S. (Lond.)

Professor of Forensic Medicine in the University of Edinburgh. We announced last week with deep regret which will be shared by all his old students as well as by everyone who had the privilege of his acquaintance the death of Professor Harvey Littlejohn. He had occupied the chair of forensic medicine in the University of Edinburgh since 1906.

We may well begin our short account of his life by quoting what has been written for us by the President of the Royal College of Physicians of Edinburgh for several years better than he or had ampler opportunities

of appreciating his great qualities. Those who did not know him personally will find at a glance in the characteristic portrait here reproduced physical evidence of what Professor Robert Carswell with regard to Littlejohn's high and energetic personality and his acute and penetrating intellect.

The death of Professor Harvey Littlejohn creates a greater social gap in medical and academic circles in Edinburgh than would be caused by the loss of any other medical man for his energetic, witty and attractive personality made its presence felt in every company. His figure was slim, agile and graceful, his intellect was alert and piercing, his disposition was human, sociable, and humorous, and with these qualities he combined soundness of judgement, feeling of responsibility, and a sense of justice. It is not surprising that he was asked to fill many important posts for he was without doubt one of the greatest personalities in Edinburgh and one of its best and most useful citizens.

He possessed the gift of eloquence, and was unsurpassed as a lecturer. Fortune seems to have lavished every qualification on him with a generous hand for this purpose. He possessed the knowledge and had acquired the experience which is a *quæ non*, he had the faculty of presenting the dry facts of his subject in an attractive form. He was a born raconteur with dramatic talents of the highest order. He could illustrate his points liberally with apt and interesting reminiscences which held the attention of his audience and, needless to say, the principles which he desired to drive home were never forgotten by his class and the process of instruction was a pure joy. He shone at his brightest at the meetings of the Faculty of Medicine, and he was the greatest dean we have had in our lifetime. His breadth of view, his grasp of affairs, his clearness of exposition, his accuracy of judgement, and his lightning-like intuition were remarkable. No other member, no other half a dozen member, carried the same weight. The note he made of his wit at one time to overcome irascible opposition, at another to smooth and obliterate ruffled feelings, was a delight to watch in operation.

"He took the deepest personal interest in the welfare of the medical students. When he discovered that anyone had been neglecting his work, the culprit had to appear before the dean and explain the reason why. This was an innovation and not popular with all, but Professor Littlejohn's high sense of duty would allow nothing to stand in its way. In the end he came to it that all incorrigible 'chronics' (amusing characters, many of them) were removed. He has not received full credit for this useful reform for the class of student was a slur on the university and a source of contamination."

"Like his father before him, Professor Littlejohn was acknowledged to be one of our greatest experts in medical jurisprudence. He gave his evidence simply, clearly, and directly, and it was always impressive. With

his forensic gift he was a most dangerous man to cross-examine, if he chose to do so. He has ever enjoyed a reputation in Parliament House (the Scottish Courts) which is one of the greatest tributes to his character of being moderate, just, and fair in his evidence on any examination."

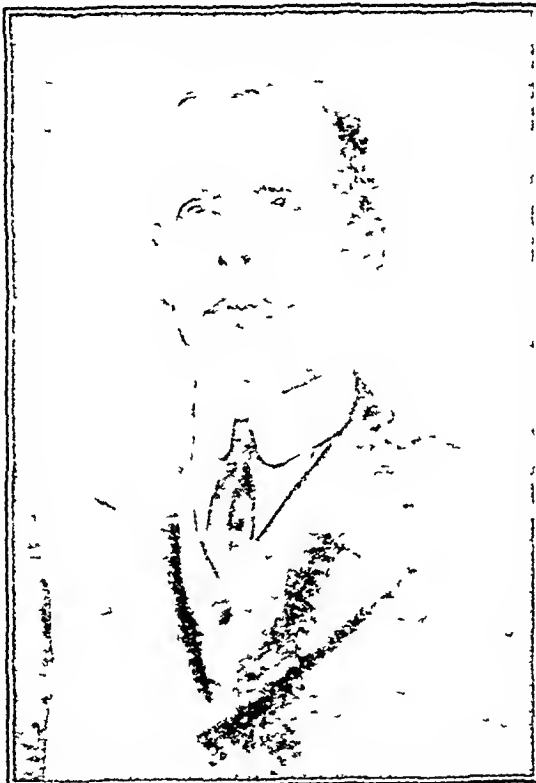
Professor Littlejohn was police surgeon and adviser to the Crown on all criminal matters. The secrets that were revealed in his room may be imagined and many of the problems on which his advice was asked must have been of a very serious nature, affecting reputation and life. It is certain that no more humane, more just or wiser counsellor could have been found. His father, Sir Henry Littlejohn, a medical officer of health for Edinburgh, made a reputation before him, of which he was very proud, but he has added to the laurels of the family.

This is a true picture and may help to explain the admiration with which he was regarded and the affection in which he was held.

Henry Harvey Littlejohn was born in 1862 and educated at the Edinburgh Academy and the University of Edinburgh. After taking the degree of M.A. he commenced the study of medicine and graduated M.B., Ch.B. at Edinburgh in 1886. With the intention of following the practice of which his father the late Sir Henry

Littlejohn was a distinguished representative he immediately proceeded to study public health, and graduated B.Sc. in that department in 1888. At this period also, shortly after graduation, he spent some time as resident physician at the Marston Hospital under the late Sir Halliday Croom. After a period of study at the medical schools of Vienna, Berlin, and Paris he took the L.P.C.S. in 1889 and proceeded in the following year to the Fellowship of the Royal College of Surgeons of Edinburgh. He had been a Senior President of the Royal Medical Society, in which he took a lifelong interest. At a later date he became a Fellow of the Royal Society of Edinburgh.

For some years after graduating in public health he acted as assistant to his father, Sir Henry Littlejohn, in the latter's class of medical jurisprudence, and at the same time helped him in the duties of the medical officer



*John B. Cunningham*  
*Henry Harvey Littlejohn*

of health for the city of Edinburgh. In 1891 he was himself appointed medical officer of health to the city of Sheffield, a post he held until 1897, when he returned to Edinburgh and commenced to lecture in medical jurisprudence at Surgeons' Hall, and at the Edinburgh School of Medicine for Women. He continued to act in these capacities until 1906, when he succeeded his father in the chair of medical jurisprudence in the University. At this time the University chair, which had hitherto embraced the two subjects of medical jurisprudence and public health, was divided by the appointment of a professor of public health. As a lecturer Littlejohn had a great gift for presenting the facts of his subject in a concise, lucid, and at the same time attractive form. The important points in his lectures were made to stand out by the striking manner in which he presented them, and by a great wealth of interesting reminiscence with which he was able to illustrate them; his lectures were not only interesting and amusing at the time of their delivery, but remained a permanent memory with his students.

In 1906, also, Harvey Littlejohn was appointed chief police surgeon in Edinburgh, and thus brought him into association with the Crown authorities, so that he virtually succeeded Sir Henry Littlejohn as a frequent witness for the Crown in criminal cases in the High Court. Sir Henry Littlejohn had gained a great reputation as a medico-legal witness, and this was speedily equalled by his son. He was generally recognized as an expert witness who gave his evidence with great lucidity and conciseness, and at the same time was distinguished by his reasonableness and fairness under cross-examination.

Harvey Littlejohn was a clear, concise, and incisive a writer as a speaker, but he could not often be induced to contribute to current medical literature. He wrote an article on post-mortem examinations for medico-legal purposes in the *Quarterly Journal of Medicine*, 1902, and another on post-mortem appearances in the drowned in the *Edinburgh Medical Journal* in 1903. He contributed an article on medical jurisprudence to the *Encyclopaedia Medica*, and about two years ago published a book on *Forensic Medicine*, remarkable for the number of instructive illustrations it contained. He thus carried out the principle by which his teaching was always guided—that the subject must be taught objectively. In concluding our review we said of the volume that it was worthy of the distinguished author and the great school to which he belonged. He had inherited from his father a fine museum of forensic medicine, and had himself added to it many most interesting specimens; the collection is probably the most complete in Great Britain, and one of the finest in Europe.

Many addresses were delivered by him to the various societies of which he was a member, these included the Epidemiological Society, the Medico-Legal Society, the Society of Medical Officers of Health, and the Society for the Study of Inebriety. At the last International Medical Congress held in 1913 he was President of the Section of Forensic Medicine.

He was for many years a member of the British Medical Association and its very good friend, as also of its *Journal*. Though friendly, he was a candid critic, and a conversation with him about the conduct of the *Journal* was a tonic. He was secretary of the Section of Public Health when the Association met in Montreal in 1897, president of the Section of Public Health and Forensic Medicine in Sheffield in 1918, and for some years treasurer of the Edinburgh Branch, he had been elected president of the Section of Forensic Medicine at the Annual Meeting in Edinburgh this year, but owing to rapidly failing health was unable to take his place.

During part of the twenty-one years through which he held the chair of forensic medicine at Edinburgh University, Professor Littlejohn acted as dean of the Medical Faculty. He interpreted the duties of this post as carrying with them great responsibility in regard to the welfare of students, and, as Professor Robertson has said above, he did not shrink the duty of administering a fatherly admonition to students slack in their work and, if necessary, did not hesitate to remove from the University a number of "chronics" who exercised an unsatisfactory influence upon their younger fellow students. Professor Littlejohn was for

several years a member of the Board of Managers of the Royal Infirmary. He was for a time Commandant of the Medical Unit of the Officers' Training Corps in the University, holding the rank of Major R.A.M.C.(T). When, in 1915, the University of Edinburgh appointed him to be its representative on the General Medical Council, he quickly made his mark. He did not speak very often, but when he did what he had to say was to the point, and his influence with the Council was therefore very considerable. He was much interested in its work, and had served as a member of its Public Health Committee since 1916, and of its Education Committee since 1920. He was a diligent attendant, and always managed to fit in with the meetings of the Council the winter holiday he was in the habit of taking in the hope of mitigating the bronchitis and asthma to which he was a martyr.

Professor Littlejohn was very sociable and witty, and the vision of his alert and graceful figure in an Edinburgh street was always the prelude to an amusing and cheerful meeting with any friend he happened to encounter. His death will be a great loss both to the city and University of Edinburgh, as well as to the many organizations in which he took an active interest.

He was unmarried. The interment, subsequent to cremation, took place on August 19th, at the Dean Cemetery, and was attended by a large number of professional colleagues, including representatives from the town council, the University, the Royal College of Surgeons, and the Board of Management of the Royal Infirmary.

Dr J. S. C. Haslam (Assistant Director, Bureau of Hygiene and Tropical Diseases, London) sends the following tribute:

Others are more able and more fitted than myself to pay tribute to Professor Littlejohn's renown as a medical jurist. First numbers of Edinburgh graduates will never forget his lecturing, with its dramatic power, originality of gesture and characteristic mannerisms. Perhaps, too, many will remember him as dean of the Faculty of Medicine, dispensing counsel and correction to such as had deviated from the paths of academic rectitude. It was characteristic of Littlejohn that he had his real kindness behind a certain brusqueness of manner. As University assistant and as friend I had the privilege of getting behind what most students called his "pepperness," and of knowing a side of the man little known to the great numbers who passed through his class. One August Bank Holiday three ragged children carrying a bottle of milk and a few bins were walking a little wearily, for it was hot—along George IV Bridge. Professor Littlejohn stopped them, asked where they were going, and on being told "To Granton for a picnic," provided the tram fares for the party and a sixpence for further refreshments. The staff of the Edinburgh Children's Shelter could tell of many kindnesses to the little waif residents—of surreptitious pennies, and of tricks by Sam, the cocker spaniel. These are small things perhaps, but they illustrate the human side of Littlejohn which made him the friend and chief he was, a side which he seemed almost at pains to conceal, but which to those who knew it, seemed the mainspring of his personality.

[The photograph reproduced is by Mr. A. Swan Watson, F.R.P.S., Edinburgh.]

Dr T. P. Greenwood, who died suddenly on August 15th, while getting into his motor car in response to an urgent call, was born in November, 1853, and received his medical education at University College Hospital. He obtained the diplomas M.R.C.S. Eng. in 1875 and L.R.C.P. Ed. and L.M. in 1878. After holding the appointments of junior house-surgeon to the Derbyshire General Infirmary and house-surgeon to Stamford Infirmary, he became assistant, and later partner, to the late Dr. Roth in Stamford, and eventually succeeded him. He was senior surgeon to the Stamford Infirmary, surgeon to Browne's Hospital and Tuesdale Hospital, Stamford, and medical officer of health to the Stamford Rural District, in which capacity he put in excellent work, especially in regard to housing the provision of scavenging, and the building of a small pest hospital. He was largely responsible for the erection and equipment of a maternity and children's ward at the Stamford Infirmary. He gave active support to the British Medical Association, and was vice-president of the Midland Branch in 1899, and president in 1903 and 1925. He was vice-chairman of the Kesteven Division in 1915 and 1923, and chairman in 1922; he was also an associate member of the Lincoln Division. He is survived by his widow and



three daughters. A colleague writes: Dr Greenwood was one of the few survivors of the old type of general practitioner. His chief aim in life was his professional work, and he succeeded in building up a very large general practice in and around Stamford. His colleagues had a very high opinion of his skill, and he was often called in consultation with his professional brethren for miles around Stamford. His principal amusement was fishing and he scarcely ever missed seeing the Ipeom classie in fact it was his one holiday in the year. He belonged to the Badminton Club. In politics he was a strong Conservative, and a vice-president of the Stamford and Rutland Conservative Association. His death has caused a great gap in the medical world of South Lincolnshire and Rutland which it will not be easy to fill.

Dr HORACE CLEWTON NIXON, who died on July 15th, at the age of 50 was born in Staffordshire, and received his medical education at Edinburgh, Dublin, and St Bartholomew's Hospital. He graduated M.B., Ch.B. in 1900, and proceeded M.D. four years later. After holding the post of hon. physician at the North Staffordshire Infirmary and Eye Hospital, and senior house-surgeon at Huddersfield Infirmary he practised for some years in Harrogate. During the war he held a commission as temporary surgeon in the Royal Navy and was later medical officer in charge of outpatients at Farnham Military Hospital. After the war he became medical superintendent of the Ministry of Pensions Hospital at Harrogate when it was closed he commenced practice in Bath and held the appointments of physician to the Royal Mineral Water Hospital and medical officer in charge of the physiotherapy department of the Royal United Hospital. He was a member of the British Medical Association, of the Bath Clinical Society, of the Bristol Medical-Chirurgical Society, and of the Three Arts Club at Harrogate. He composed many songs and performed music which were published under the name of Horace Clewton.

Dr EDWARD COLBY SHARPIN, who died at his residence in Bedford on August 4th was the eldest son of the late Mr Henry Wilson Sharpin, F.R.C.S. and was born in Bedford in 1859. He received his medical education at St Bartholomew's Hospital, he obtained the diploma of M.P.C.S. Eng. in 1882, and in the following year the L.P.C.P. Ed. and I.M. After holding the post of hon. surgeon at the Lincoln County Hospital he joined his cousin in practice in Bedford, and was appointed surgeon and later consulting surgeon to the Bedford County Hospital, consulting surgeon to the Bedford Central Provident Dispensary and senior physician and referee to the Royal Home for Incurables at Ixington. He was a member of the British Medical Association and served on the South Midland Branch Council 1886-7. Apart from his practice Dr Sharpin took great interest in gardening, he exhibited successfully in many parts of England and won the Royal Botanic Society's silver medal for carnations and pinks. He was also a keen sportsman and a good shot. For some years he was a member of the Bedford Town Council.

The following well known foreign medical men have recently died: Dr HENRI KOHLER of New York aged 68, attending paediatricist to Mount Sinai Hospital who discovered the buccal spots of measles, to which his name is attached, Dr ARTHUR ZIEGLER, professor of clinical paediatrics at the New York Polyclinic who played a prominent part in immunization of children against diphtheria and scarlet fever, died from accidental asphyxiation in a laboratory at the age of 45. Professor M. GROSSMAN, a Viennese otologist, aged 78. Professor C. ERICH FRITSCH of Berlin, who collaborated with Hitzig in the experimental physiology of the brain, aged 69. Professor P. KERN, a Budapest gynaecologist, of ropexy during an operation, aged 57. Professor WERMEL, director of the physiatric institute at Moscow, Dr V. V. VITKOV, professor of clinical surgery at the Nancy Faculty of Medicine, Dr ROBERT

PIQUET, professor of anatomy at the Bourdon faculty of medicine and a pioneer in the surgery of aviation, aged 50, in an airplane accident. Dr OTTONE BARNICCI, professor of morbid anatomy and director of the medical faculty at Sassari, aged 66, and Dr FRANCESCO DE PAOLI, professor of Surgery at Perugia.

## Medical News.

THE third revised report of the recommendations of the X-Ray and Radium Protection Committee has been issued by the National Physical Laboratory. Some slight alterations in detail have been made but in the main the requirements for efficient protection remain unaltered. Although some may think the conditions onerous, and the protection overdone it is at any rate wise to err on the side of safety, especially in view of the large number of x-ray and radium deaths and injuries. The danger of ultra violet therapy and the precautions to be observed are also dealt with. No hospital authorities medical or lay can afford to overlook the advice contained in the report, and this applies not only to buildings and apparatus but also to the suggestions as regards the working staff. Copies can be obtained on application to the Secretary British Institute of Radiology, 32 Vellie Street London, W.1.

A connection with the meeting in December at Cairo, of the congress entitled the *Journées Médicales d'Égypte* of which a preliminary notice appeared in our issue of April 30th (p. 820), it is now stated that promises of support have been received from the University of Egypt and the Society of Egyptian Medicine. The arrangements it was found, had gone too far to make it convenient to combine this congress with another proposed to be held late in 1928 in commemoration of the centenary of the death of *Ami* Hospital in Cairo.

A sum of £30,000 is required to repair the damage to the hospital of the Order of St John at Jerusalem and to bring the accommodation and equipment up to present requirements. It may be recalled that reference to the destruction of this hospital appeared in our issue of April 23rd, 1927 (p. 771).

THE Fellowship of Medicine announces that a fortnight's course will start on September 12th at the Queen's Hospital for Children including lectures operations and demonstrations and on the same date a three weeks course will begin at the Royal Westminster Ophthalmic Hospital. For a fortnight from September 19th the Royal National Orthopaedic Hospital will hold a special all day course with lecture demonstrations in the mornings and operations and out patient work in the afternoons. During the same period there will be another all day course in medicine surgery and the specialties at the Westminster Hospital. During October courses will be given in internal treatment at the Royal Free Hospital, cardiology at the National Hospital for Diseases of the Heart, diseases of children at the Victoria Hospital and Paddington Green Hospital, diseases of the throat, nose and ear at the Central London Throat, Nose, and Ear Hospital, electrotherapy at the Royal Free Hospital, gynaecology at the Chelsea Hospital, ophthalmology at the Royal Eye Hospital, tropical medicine at the London School of Hygiene and Tropical Medicine and neurology at the National Hospital, Queen Square. The Fellowship of Medicine has also arranged a series of lectures on practical hints on medicine surgery and the allied specialties. The first of the series will be delivered on October 17th by Sir Humphry Rolleston who will be followed on succeeding Mondays until Christmas by other physicians and surgeons. There will also be a series of weekly clinical demonstrations in medicine in surgery, and in ophthalmology given at various hospitals, free to medical practitioners. Copies of the syllabuses for all these courses may be obtained from the Secretary of the Fellowship 1 Wimpole Street W.1.

A. E. DEAN and CO. Holborn London have issued a new catalogue of apparatus required for deep seated radiation by means of x-rays. Special attention is drawn to the Isometric Group two sets of which have been supplied to the General Infirmary Leeds and have stood the test of time. The catalogue is well illustrated and the letterpress gives good descriptions of the main and accessory apparatus. The part dealing with the different methods of measuring dosage should be useful.

THE German Paediatric Society will hold its thirty eighth annual meeting at Badgastein from September 11th to 15th under the presidency of Professor Schloßmann of Düsseldorf.

Dr EMIL DE GRÖSZ of Budapest has published a sym pathetic address on Lister and Semmelweis in the Hungarian journal *Orvostudományok* for June 25th illustrated with portraits and accompanied by an abstract in English.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

**ORIGINAL ARTICLES** and **LETTERS** forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

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All communications with reference to **ADVERTISEMENTS**, as well as orders for copies of the **JOURNAL** should be addressed to the **Financial Secretary and Business Manager**.

The **TELEPHONE NUMBERS** of the **British Medical Association** and the **British Medical Journal** are **MUSUM 9561 9562 9563**, and **9564** (internal exchange four lines).

The **TELEGRAPHIC ADDRESSES** are

**EDITOR** of the **British Medical Journal**, *Anthology Westcent, London*

**FINANCIAL SECRETARY AND BUSINESS MANAGER**

(Advertisements, etc.), *Articulate Westcent London*

**MEDICAL SECRETARY** *Medivocia Westcent London*

The address of the **Irish Office** of the **British Medical Association** is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin), and of the **Scottish Office**, 6 Drumsheugh Gardens Edinburgh (telegrams *Associate Edinburgh* telephone 4361 Central).

### QUERIES AND ANSWERS

#### SMUGA

"S" wishes to know whether, after complete circumcision in infancy, the secretion of smegma is diminished or suppressed.

#### HYPERIDROSIS

"THORICUS" who writes from the West Coast of Africa, asks for advice in the treatment of hyperidrosis of the palms and soles in a man aged 35. He has suffered from boyhood but the condition has grown worse during the last few years. While in the tropics, where he has spent most of the last five years, the condition disappears but reappears as soon as he reaches a cold climate. Stout leather shoes are saturated in an hour and the wearing of gloves is impossible, otherwise he enjoys good health. Various remedies, but not rays, have been tried without success.

#### TREATMENT OF GONORRHOEA

**Dr P C P INGRAM** (Newport Mon) writes **Dr R Cock**, in your issue of August 13th (p 267), asks for opinions as to the treatment of gonorrhoea by injections of hydrogen peroxide. It does not appear to be much in vogue. The only reference I can find is in **LAVIS** *Gonorrhoea* (Doesters' translation, second edition, London 1917), where it is mentioned last in a list of seventeen drugs that can be used. **Harrison** does not mention it in his book (Oxford Medical Publications, London 1919), nor in his article on the routine treatment of gonorrhoea (*British Journal of Venereal Diseases* vol 2 p 30) nor does **Hoffmann** (*ibid* p 233) or **Indassolin** (*ibid*, vol 3 p 160) in accounts of their methods. I think he will find that the most generally accepted opinion is that irrigation with potassium permanganate by Janet's method is superior to any form of injection, and its continued use in almost all the venereal disease clinics in this country appears to show that it is standing the test of time. While it is agreed that the best method of cure is to 'get the gonococci' early, more harm than good may be done by 'treating them roughly,' as the delicate mucous membrane of the urethra may have to share in that method with unsatisfactory results. Regarding the case he quotes were any of the recognized tests for cure tried after the discharge had ceased?

#### INCOME TAX

##### Subscriptions and Rent Proportion

"M M" inquires as to the admissibility of payments made in the form of subscription and asks whether the circumstances stated do not justify the deduction of more than half the rent, rates, etc. paid in respect of the premises used for private and professional purposes.

"\* \* \* Most of the refused 'subscriptions' are really payments for professional literature reasonably necessary for the work carried on, and the claim should be put forward on that basis. With regard to the premises the amount of accommodation used professionally—including that occupied by the professional staff—is abnormal, and *prima facie* two thirds would be reasonable. It is sometimes helpful to compare the personal accommodation with the balance of the rent etc., cost to see what is reasonable from that point of view. There is no statutory maximum or

minimum. 'M M' has a right of appeal to the District Commissioners or to the Special Commissioners, both bodies being of course, quite independent of the revenue department in such matters.

#### Motor Car Allowances

"L B S" elected to take wear and tear—that is, depreciation—allowance in respect of his car for 1926-27. The inspector of taxes has refused on that ground to grant any 'replacement' or 'obsolescence' allowance in respect of that car. The amount of the claim is £110 loss (£65+£45)—that is, £26.

"\* \* \* We suggest that 'L B S' should refer the inspector to Rule 7 applying to Cases I and II, Schedule D, Income Tax Act, 1918, which, as amended by the Finance Act, 1925, provides that "in estimating the profits there shall be allowed to be deducted so much of any amount expended in that year in replacing any plant or machinery which has become obsolete as is equivalent to the cost of the plant or machinery replaced after deducting from that cost the total amount of any allowances made on account of the wear and tear of that plant and machinery and any sum realized by the sale of that machinery or plant." The authority of the Caledonian Railway case is against the simultaneous allowance of "cost of renewals" and depreciation, but does not affect the right to the obsolescence allowance, which appears clearly to be due to our correspondent under the above quoted section.

#### Replacement of Car

"INQUIRER" bought a 16-h.p. car in 1913 for £200, he has been allowed £77 for depreciation and will sell the car this year for £15. He has bought (also this year) a secondhand 18-h.p. car for £75. What allowance should he claim?

"\* \* \* If 'Inquirer' will refer to the reply to 'L B S' printed above he will see the limitations under which an obsolescence claim can be made. In his case the result of deducting the depreciation allowances from the cost of replacing the old car is to reduce it to nil, and he can therefore claim nothing under that section. He might ask the inspector of taxes to continue to allow depreciation on the written down value of the old car, less the £15 received—that is on the £108, we understand that this is sometimes done in cases of hardship.

### LETTERS, NOTES, ETC.

#### CLINICAL VARIATIONS IN DISLASI FROM THE HISTORICAL POINT OF VIEW

**DR T. GEFALD GARRI** (Montecatini Italy) writes **Sir Humphry Rolleston's** instinctive paper (*JOURNAL*, August 6th, p 203) should be carefully read and digested. I doubt very much, however, if much accurate information can be obtained concerning disease by the pathological study of *Egyptian mummies*. This was shown recently in the case of *Tutankh Amen*. Nothing remains of the original but 'skin and bones' well pickled, the same applies to the viscera which undergoes various processes. About the existence of certain diseases—such, for instance as aneurysm—there can be no doubt, but the existence of such conditions as, for example, arterio-sclerosis and rheumatoid arthritis (always a rare entity in *Egypt*) is questionable. From a study of the symptoms described in the papyri—a fairly reliable method although there appears to be no unanimity concerning even the name of the heart—over two hundred different diseases can be differentiated and, generally speaking, the incidence of such morbid conditions has not materially changed among the present inhabitants of *Egypt*. As in ancient times, diseases of the eye, skin, intestines, bladder and urinary tract figure prominently. It is a pity that there should be so much exaggeration concerning the "wonderful knowledge" of medicine possessed by the Egyptians. Authorities like **Maspero** and **Reisner** it was not worth considering. The basis was not disturbed by normal function, but was not disturbed by any in violence, which could only be met by ordering a prescription for "expelling or terrifying such a disease," caused by them.

#### CAUTION

ON April 3rd 1926 (p 640), members receiving begging letters from a Mrs E M Etheridge were advised that before giving assistance they should communicate with the Secretary of the Charity Organization Society, Denison House, 296, Vauxhall Bridge Road, S W 1. From information recently received it appears that Mrs Etheridge is continuing her appeals, but from an address different from that used last year.

#### VACANCIES

**NOTIFICATIONS** of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33, 34, 35, and 36 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 35 and 37. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 124.

THE  
**British Medical Journal.**

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

LONDON SATURDAY SEPTEMBER 3RD, 1927

**EDUCATIONAL NUMBER SESSION 1927-28**

**An Address.**

OF

**AMERICAN METHODS IN MEDICAL EDUCATION**

DELIVERED TO THE CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS  
IN THE HOTEL DIEU, MONTREAL, OCTOBER, 29TH, 1926,

BY

SIR ANDREW MACPHAIL, KT OBE BA MD, CM, LL D, MRCS, FPSC  
PROFESSOR OF THE HISTORY OF MEDICINE MCGILL UNIVERSITY

MONSIEUR LE PRESIDENT ET MADAME LA REVERENDE MERE SUPERIEURE Dans cet Hotel Dieu cet hospital de Dieu, le foyer de la medecine au Canada, il y a trois siecles, sanctifie par la devotion de vos sœurs et par la memoire de Jeanne Mance, il peut se faire que l'esprit de ce milieu descende sur nous. Sous l'influence de cet esprit nous pourrions decouvrir que la nature n'est qu'une expression de la volonte divine que l'etre ideal suit l'ordre de la nature et vit en accord avec cette volonte que la nature a faite—corps et ame. Tout ce moderne titonnement s'utilise pour trouver l'effet de l'ame malade sur le corps malade n'est que l'effort pour decouvrir le secret que vous n'avez jamais perdu, le pouvoir de la religion. C'est un effort pour répondre à la question du Maître. Quid facimus est dicere. Dimittuntur tibi precolo tua in dicere Surge ambula. Peut-être au moins apprendrions-nous en ce milieu, l'humilité d'Ambroise Paré. Je l'ai parvenu Dieu le garant. Cela est la science définitive.

Gentlemen I was merely saying a few words to the Reverend Mother Superior, who has left her cloister to honour us with her presence.

The principles of surgery I learned from a pupil of Lister. Operative surgery I observed under the hand of that first of modern English surgeons, at the time when he was perfecting the operation for perityphlitis is the term by which in those days appendicitis was described. In the intervening years surgical principles have not changed. Surgical procedure has developed, and change is one of natural growth. But education in those principles and in the methods of practice in surgery and medicine have so changed that we are now in a new world.

To restrict my theme within the compass of an hour I have chosen to examine American methods alone. As I am speaking to the American College of Surgeons I shall further restrict my scheme mainly to surgery and as you honour me with your meeting in Montreal I shall consider those methods only in so far as they affect the development of our own education. To appraise the effect upon ourselves would be an impertinence. Your institutions are sacred to you and not to be touched by an alien hand. The fate of Uzza shall be my warning.

Those methods invade this country by four routes. The American Medical Association through the Council on Medical Education and Hospitals, inspects and classifies our medical schools, the inference drawn from that inspection has been published at irregular intervals. The Association of American Medical Colleges inspects all schools, retains its membership. Most schools have eagerly

sought, or accepted, an invitation to come within the circle. Few schools have had the hardihood to decline that jurisdiction, willing to wear the invidious distinction of standing alone. The Boards of many States will grant licenses only to graduates of schools specified by the American Medical Association. Finally, the American College of Surgeons inspects and grades our hospitals, and so the influence is complete. There yet remains, however, the less official operation of the Carnegie Foundation for the Advancement of Teaching, and the Rockefeller Foundation, but these are not of pressing importance to our theme. They have spent vast sums of money upon us, but no further expenditure seems to be imminent, and never at any time did they seek to exercise sequential control.

Proceeding still further with these self-denying restrictions I shall define the modern period as beginning in 1876 the year in which Johns Hopkins was founded and more especially with the year 1910 in which the Carnegie Foundation brought us face to face with the revival of medical education in the United States. Up to that time we had been left free to develop our own inherited methods in native obscurity. In these sixteen years our medical education has been profoundly altered and it is of this period I shall continue to speak.

In the year 1910, the beginning of this modern era, an exhaustive survey of medical education in the United States which had been undertaken five years earlier for the Carnegie Foundation by extremely competent observers, was complete. Their researches were extended into Canada and the results were published in Bulletin Number Four by Abraham Flexner with an introduction by Henry S. Pritchett the President.

The necessity for such a survey in the United States was apparent. The President declared that certain facts were revealed—namely that there was in that country an enormous overproduction of uneducated and ill-trained medical practitioners that there was a very large number of commercial schools sustained in many cases by advertising methods, through which a mass of unprepared youth was drawn into the study of medicine. With those conditions we in Canada were not especially concerned, but we are entitled to believe from a second report that they have been much altered for the better. We are even yet vitally concerned with the impressions formed upon the minds of those trained investigators by conditions in Canada.

According to their own account (p. 326) the high quality of instruction offered by McGill and Toronto "proves that

our trouble in the United States has been at bottom not less one of low ideals than of low standards. Indeed, "they add in general terms, 'where ideals are low' [in the United States] 'there is no standard, and where ideals are high' [as in Canada] 'the standard, even though low, is at any rate so definite that it furnishes a sure starting-point towards a clearly apprehended goal. The low-standard school in the United States has had no such starting-point and no such goal'."

With every desire to be polite, it is useless to pretend that the detailed appraisal of medical education in Canada met with universal acceptance. In so far as it assumed to describe conditions in the Maritime Provinces, the Medical Society of Nova Scotia declared formally that the Report was "prejudiced, inaccurate, and misleading." The answer is to be found in "the good standing and success of the practitioners who received their education" in the school that was condemned.

Without entering too closely into this controversy, it may be observed that when two sets of men, both equally disinterested and sincere, are in profound disagreement, they are thinking in different terms and dealing with different categories. To those American investigators a school meant buildings, equipment, and machinery, or "plant" as they themselves would say. To the medical profession of Nova Scotia a medical school derived its virtue from the quality of the human beings who taught and learned in the school.

This divergence of opinion is disclosed by the procedure of the examiners. They arrived in Halifax at about one o'clock of a Saturday morning by a train which in those days was punctually late. We are not informed what hotel they went to, but anyone who has had a similar experience in Halifax will readily understand that they must have been in a peevish mood. They were determined to leave by the only train shortly after noon. Otherwise they would be compelled to remain in Halifax over the Sabbath. In four hours they visited a university, a medical school, and two hospitals. Their research could not have been very profound, no officer of the school ever saw the delegates, or even knew of their arrival until after they were gone.

Then escape from Queen's University in Kingston was not so easy. Their complaint is that its location "on an inconvenient branch-line greatly aggravates the difficulties due to the smallness of the community." They dealt with externals. Their especial grievance against the London medical school was that the janitor carried the key of the library, but they did not specify by whom, in their opinion, the key should be carried.

The contrary view that virtue lies not in plant alone was fully enforced by Dr. John Stewart at the meeting of the Nova Scotia Medical Society, when the Bulletin was under discussion. He was at that time, and is happily yet, the professor of surgery in Dalhousie, in peace and was the perfect physician, "a pattern" in the old Hippocratic sense. He brought comfort to his colleagues by reminding them that "it is the man more than the laboratory that is essential, that there were no pathological laboratories when Lister developed antiseptic surgery, Koch, a country practitioner in a lonely Prussian village, had no laboratory but what he could construct for himself, Trudeau, alone in the Adirondacks, demonstrated the main facts in our knowledge of tuberculosis." This same John Stewart had learned his surgery from the very Lister himself. We need not wonder that he refused the stigma "mercenary."

How, then, shall we account for those ideals in Canada, which the Bulletin commends, and their absence at that time from the United States, which the Bulletin deplored? We did not create those ideals, we required them by inheritance. They were brought by the military surgeons, French and English, who implanted them in our hospitals and schools, primitive as those institutions were. There they were nourished. They yet exist and grow.

Those surgeons in turn inherited them from the schools of Edinburgh, Dublin, and London, and by a collateral inheritance from Leyden, Vienna, and Paris. Those who are cautious may trace the stream backward through the French and Italian Renaissance, to Montpellier, Padua, Bologna, and Salerno, even to Alexandria and finally to

the ultimate Kos and Knidos, where those ideals for all time were enunciated by Hippocrates himself.

In the United States, on the contrary, the thread of history was broken in 1776, when those communities cut themselves off from European civilization. For exactly a century the tradition of medicine was lost. It was revived in 1876 by the founders of Johns Hopkins, and was enriched by influences emanating from this country. By the year 1910 these old ideals had so increased in strength in the United States that their new possessors were eager to bring them back in a modified form to us, who had never lost the originals.

They came to us with the demand that we accept the methods equally with the ideals themselves—and most of them arrived by way of Toronto. This dogma might be stated in alternative terms. The conditions were set forth, we were left free to accept or refuse. But the choice was a hard one. Refusal meant the exclusion of our graduates from those rich fields. From that comparatively recent date, 1910, American methods have dominated medical education in Canada, but those methods changed so swiftly that we found ourselves in possession of many of them after they had been abandoned as impracticable by their originators. Many of these American discoveries in medical education are not discoveries at all. Some were discovered long ago, and abandoned as fallacies, others are yet in common use. The out-call service for senior medical students discovered in Nebraska has been a compulsory part of the medical curriculum in Edinburgh for nearly three years.

Again, the system of preliminary education in the two countries was different. In Canada there were few universities, but many colleges and grammar schools. In the United States there were many universities and few schools leading up to them. In those Canadian colleges, and even in some grammar schools, the teaching was quite as good and quite as comprehensive as in the first year of many universities, American or Canadian either. In the laudable effort to enforce some standard of entrance two years in a university were specified, and we were compelled to conform, else our graduates would be denied admission to practice in many of the States.

As a partial result the course in the Canadian medical schools fell into utter confusion, and many of the calendars still defy analysis or understanding. This confusion was due also to the impossible policy of making the medical faculty responsible for the preparation of students to enter the medical course. This policy has now been abandoned by all Canadian universities except one. I am bound to confess, however, that our obedience to these alien regulations is not so perfect as might appear from our calendars, but we had not far to go for a lesson in the evasion of those laws that do not meet with general approval.

In the best schools for forty years the course was four years in length, whilst in the American schools three years was the exception and two the rule. At McGill the course has never been less than four years for the last hundred years. In the effort to stretch out the course to conform with the new American standard, years called "pre-medical" and "post-medical" were added. The essential of these pre-medical years was that no medicine should be taught. For our students in those days, with their sound preliminary education already acquired in schools and colleges, these years were not so necessary.

For some time the two years in a college or Arts faculty was not absolute. The saving clause "or its equivalent" mitigated the rigour. That saving clause drops out, and a prospective student who wishes to graduate is faced with seven, or at least six years of college and university life. In Dalhousie a student entered the first year in Arts in 1924, last year he was a freshman in medicine, by these changing courses he is again a freshman for the third time. The boy has had no failures, and he does not play football, now he defies the faculty to find another first year for him, but his father gravely fears that technical academic ingenuity has not yet been exhausted. Even after seven years the student has not become a scientist, his aptitude for practice is dulled, his enthusiasm vanished. He has missed the training of a medical corporal, or a

boy scout and the priceless experience of a nurse. When he begins practice he is too old to learn those homely arts. He is shy of the gift of healing lest he might fall into the category of irregular practitioners. He thinks his duty done when he gives to the disease a name. According to returns from fifty two American schools 59 per cent of the graduates in 1915 were from 35 to 39 years of age, none were under 30. In 1920 the number between 30 and 34 years of age was 59 per cent, but the average age was even higher.

In the United States it has been found necessary to erect certain barriers and to segregate sections of the community according to colour race and religion. This practice is not new. In England Catholics and Presbyterians alike were at one time debarred from the universities, but all those restrictions were swept away nearly a hundred years ago. In Canada also the medical schools are free to all. As the American schools raise the bars the surplus falls upon us and it falls so suddenly that we find some of our classes largely filled with American students—not the average of American students but many who are deliberately excluded from their own schools.

For four years Dalhousie had not a single American student. In the next year more than half the students came from the United States, and if one can judge by their names they are precisely those who have been excluded from the American schools. Toronto is a Government institution and may quite properly restrict its students to the province by which it is supported. McGill is a private corporation and has no such obvious means of defence. In the medical faculty more than a third of our time and revenue is devoted to American students, who return to their own country as soon as they graduate.

On occasion students are exported wholesale into our schools. The General Medical College of Chicago was compelled to close six years ago. Through the good offices of the Council of the American Medical Association students were exported in bulk to Dalhousie where they were gladly received. They graduate this year and form one-half of the class.

This large number of applicants creates in us a false sense of prosperity. At McGill we limit a year to 100, whilst 500 apply, but the same applicants may apply to several schools as pass engers will put down their names for a berth with several railway companies and in the end choose the one they think the most convenient. More than half the American students accepted this year had applied to other schools. In the meantime under this influx the fees are raised to our own students also for the university treasurer is human. It now costs a student eight thousand dollars before he begins to practice. That eliminates nearly all but the rich, for the heroic self-supporting student yet remains it eliminates the son of the general practitioner it eliminates finally the general practitioner himself for a graduate who has spent that sum and seven years will not be content with a laborious life and a meagre return.

In the United States the medical school have diminished from 162 to 79 in the last twenty years the annual graduates from 5,747 to 3,862, the enrolment of students is 33 per cent less. A study of 283 rural counties in 41 States by Dr. W. A. Pusey shows the average age of physicians to be 52 years, only 9 per cent were graduates of the last ten years, no recent graduate has gone into those counties in that period. And the same authority discloses that in 162 of these 283 rural counties 431 non-medical practitioners have settled as against 197 physicians. This striving after an abstract ideal has imposed a choice between a moderately qualified physician and a practitioner with no qualifications whatever.

Few teachers in Canadian schools teach for pay. They are impelled to hand down the tradition of medicine unimpaired and enriched to those who are worthy to receive and willing to transmit that truth in their turn. We do not feel so strongly impelled to pass that tradition to strangers who from lack of background are unqualified to receive it who come to us not for love of the Art but for love of gain, and leave the country with what they have won.

This migration is controlled from the United States, and

various self-constituted bodies assume that control. They attempt to control our education by specifying what and how much we shall teach, under penalty of excluding our own graduates if we are recalcitrant. Up to the present year the control was even more specific. Inspectors were sent to our schools to ascertain that they complied with those regulations. They classified our schools. When they had filled the schools of the highest class, they raised another to first rank and that school was promptly sought. If a school refused to be inspected it was given no standing. American students would not come to it, since their future employment in their own country depended upon the inclusion of their place of graduation upon a technical list. Our own students would deliberate before joining that school since they would be forever debarred from practice in the United States.

Happily this control has been relaxed and the inspection is at an end. Categories of Canadian schools are no longer published. All are presumed to be in the highest class. The event is now only of historical interest, and it is recorded merely as a warning against the future. This happy result I surmise, is due to the persistence with which our own Dean has represented to you the impropriety of the procedure, and your willingness to apprehend a situation when it is fairly presented. Possibly the excellence of the Canadian schools is now taken for granted and the increasing excellence of the smaller schools may in a measure be due to some good in that inspection no matter how distasteful it was at the time.

The pressing demand by Canadian students makes foreign classification a matter of less concern. One Canadian school always seemed to do very well without membership in our American association without foreign classification without American students. Queen's classes are full to the limit with Canadian students alone. The Dean affects not to know in what category the school is placed and his unconcern is so marked that he does not take the trouble to inquire. He surmises however that Queen's has been placed in the highest class since this year he received application from one hundred American students mainly from the city of New York. He accepted one only on the ground that his grandfather had been born in Ontario.

The final weapon in your hands is your law that the graduates of Canadian schools which do not accept your methods will be denied the right to practice in the United States. Reprisal is dangerous but we must if we cherish our ideals face that threat and proceed to examine its implications. In that event we would be left free to bestow our education upon our own students. You would be compelled to educate your own. To educate your students is of no advantage to us. Each student costs us two thousand dollars more than he pays. And if our graduates are restricted to practice in our own country, in our own Empire in the world at large to which they have now free access we shall be the losers. It is conceivable, too, that your people will come to us for surgical treatment. They are already coming in vast numbers for treatment of a much more trivial kind. From its special situation McGill remains free to all students, provided only that they come with a natural aptitude, industry, and love of the Art.

The value of an inspection depends upon the nature of the inspection and the persons who inspect. The inspectors of our hospitals are young persons without other experience. They have never taught never operated, never come into living contact with the sick. They are in the precise category of employees of a commercial agency which gives a rating to commercial firms. They have their printed questions their routes their daily routine. They must report every night their whereabouts and their doings for the day. They are sharply checked by telegraph if there is any omission. "Accept organization"—that is their cry with the fanaticism of a trade unionist or the fervour of an evangelist preaching salvation.

These inspectors will enter the Royal Victoria Hospital, for example, and demand that all the medical records be exposed to their view. And that great institution complies with the demand. Still more, these young persons undertake to inspect institutions and comment upon records conducted and written in a language which they do not



understand. From this it will be an easy step, in the name of uniformity, forbidding us to teach and record in French.

We in Canada have nothing to conceal. Our medical teaching and practice, English and French, is, and has been for a hundred years, equal to the best in the world. We never descended to the degradation of issuing diplomas for money. Those who desired such were compelled to go to the United States. We never had proprietary schools, save in the sense that the teachers taught without reward, and at the end of each year paid the deficit. But these schools have long since become an integral part of the universities as medical faculties—McGill in 1829, Trinity and Toronto in 1905, and Queen's in 1892. It was a settled policy to appoint professors who gave their full time to special subjects. Prior to 1910 McGill had nine such heads of departments, Queen's had a full-time professor of physiology in 1892, of pathology in 1894, of anatomy in 1903. The progress in other schools was equally marked, and therefore we might properly demand that inspection be performed under our own sanction and not by alien assumption. A man of honour will not object to having his house searched, but the search must be conducted under the warrant of law, and that law must be of his own making.

So that nothing be left unsaid, there is one thing more. The Council of the American Medical Association in Chicago maintains a register of all matriculated students. Each year they send to all American and Canadian schools a form upon which the record of every student is to be given. When these returns were first made the students received a generous supply of advertising "literature" from the United States. The system is now more perfect; the names of rejected applicants also are inquired for. Business enterprise may go too far.

Our existence as a profession, peculiarly protected by law, depends upon our service to the public at large, not alone to the rich, and the indigent who fill the hospitals. To honest men medical service has become a luxury. They are already doing without or drawing help from irregular channels. Partly as a result of professional propaganda, to the sick the proprietary purveyor is denied, to the aged the comfort of alcohol, and to those dying in pain the solace of opium. In the end, they may sweep away those privileges with which we have surrounded ourselves, medical practice will be left free to all who care to engage in it, subject only to the restrictions of the common law, the public left equally free to choose the best they can afford. That is the remedy against the theoretically standardized hospital and medical school, and against any profession when it becomes a hereditary caste. It is an outworn convention that a profession is empowered solely in the public interest.

I am well aware that American inspectors are making a resolute effort to enter upon our farms, dairies, and factories to report upon costs and results. Upon their report will depend the duties to be levied on that part of their product entering the United States. Education, learning, and skill are not so easily assessed.

In the United States the supreme law is their own prosperity, and their people are under the delusion that their prosperity means the prosperity of the whole world. No man can live for himself alone, no nation either. Isolated though they are, their domestic legislation concerns the whole world. One of their domestic prohibitions bred a race of native smugglers who, in pursuit of their profession, broke our revenue laws, corrupted some of our officials, directly destroyed our Government, and precipitated a constitutional issue which gravely affects the whole Empire.

To meet the necessity of the moment, you framed certain medical regulations. The need passed. A new situation arose. But the rules in the meantime had become embedded in State or Federal law, and you were powerless to change them. We abandon our regulations when they have fulfilled their purpose, or when we discover we were mistaken. If we find too much difficulty in changing our laws, we change our Government. Last summer we had three successive Governments in eighty-five days. We refuse to be enslaved by laws which we ourselves have made. You must not, therefore, be surprised if we should change the regulations

and laws by which our medical education and practice is governed. Still less need you be surprised if that change should not conform with the methods you have devised for us.

The American method in surgery is an application of the American method in business—uniformity, a single standard, mass production. The desired end is "efficiency." That also is our aim, but we do not believe that the terms of business are valid in the realm of mind and heart. We believe that success in surgery must come through individual freedom, fresh observation, natural aptitude, flexibility of technique, and adherence not to methods but to principles alone. This mechanical method would be, and now is, fatal to us. In the end it will prove fatal to surgery in the United States as well. It was method destroyed medicine in Alexandria, in the Byzantine Empire, in Arabia. The Galenic method lay like an incubus upon the world for a thousand years, until the surgeons of the Italian and French Renaissance discovered anew the principles of Hippocrates. It was finally destroyed by our own Harvey and Sydenham.

The simple answer to my protest is the value of team work. It is proper to affirm that the value of a team depends upon the driver and the consent of the team to be driven. It also depends upon the foothold. I have watched a team of twenty-two mules struggling with a gun. The more they pulled, the further they sank in the mud—and the gun never stirred.

Under this inhuman system a new kind of physician and a new kind of surgeon have been developed. The physician studies only a part of the patient, the patient is to him nothing more than a series of microscopic slides or chemical solutions. The surgeon knows the patient merely as an arrangement of typewritten cards. He sees him for the first time unconscious on the table, when he comes like a masked executioner to complete the sentence of the judge. Physician and surgeon become sheer empirics, working upon a narrow experimental basis, without philosophical conceptions or even a scientific hypothesis of disease. In pernicious anaemia they will remove the spleen merely because the removal of the spleen appeared to give relief in other cases diagnosed as pernicious anaemia. This practice is far removed from the old injunction to place the patient, and his friends, and *παρά τα ἔσθαι* in train for his recovery. Surgery and medicine, science and practice, can exist only in one mind. When these are divorced, they become, as Mr. Squigg said in another sphere, scientific mules condemned to a stupid sterility.

This domination of the Art by science is not new. Before the protest in Paris in the latter half of the fifteenth century, there was a powerful body of *medicus reclus*, who would not visit or see their patients. The scientists contented themselves with an examination of the patients' excreta, brought by a servant, and sent the proper prescription. They feared lest a look upon the sick man might disturb their diagnosis.

It may be true that "treatment can be logically based only on an accurate knowledge of the nature and cause of the disease," but disease has a logic of its own that is deeper than the mind of the laboratory. It is a physician, not a logician, the patient demands. The clinical laboratory mind stops short when a manufactured name is given to a disease. The patient is not interested in diagnosis. There is not a drug in the Pharmacopoeia nor a method of treatment in all therapy which was not freely and successfully employed before modern methods of diagnosis were imagined. Artificial immunization, the destruction of one organism by another, the use of vaccine against trypanosomes, was practised by races which had not yet emerged from a condition of savagery. Diagnosis is merely a preliminary intellectual process in the mind of the attendant. Prognosis and cure is what the patient demands, and in the field of prognosis the quack beats us on our own ground. The *Prognostics* of Hippocrates demanded seventy editions in medieval times, the important work of Sir James Mackenzie in heart disease had to do not with the past or even with the present condition of the patient, but with his future career. Our own James Stewart possibly went too far in his teaching never make a diagnosis unless you are compelled to. Professor

Oertel says the same thing when he suggests that the diagnosis be left to him, after he has finished his work at the *post mortem* table and that the physician concern himself with the cure.

An ideal may be transplanted, a system cannot. The one may grow, the other will perish on alien soil. And these two countries are alien the one to the other. The resemblance is obvious but superficial; the difference is profound. We both speak a language which is so similar that we understand each other when we converse, unlike indeed we speak French, which one-third of us do. The difference is as profound as this: we are Europeans, you are Americans.

There is a Canadian surgery. For five years we put it to the test on European fields. In virtue of its flexibility it adapted itself to every need. Standard surgery is a civil surgery. It demands a wound made by the surgeon himself at his own point of election upon a surface which he perceives in circumstances which he controls. When it becomes too much it hurls itself down utterly at the first touch of war. It hurls down equally when surgical aid is demanded by the dweller in the country at the hands of the general practitioner.

Then the standard of measure varies with the thing to be measured. A microscopist uses the micro-millimeter, a land surveyor uses the link and chain. Our surgeons have surveyed the field of war and the infinitely little field of the laboratory. They have operated in the shining theatre with more than Icarian scrupulosity; they have performed the most delicate and profound surgery in field ambulance and casualty clearing stations upon trestles in huts or open tents with only the heat from a brazier and not even running water. Their results were admirable for all the world to see.

Those surgeons trained by reality are to be found in every village in Canada. Their virtue is within them. They bend their means to their needs. They have erected little surgical centres where the surgery is or the first rate because it is done by a surgeon who is himself of the first rate. Suddenly he discovers that some outside power has decreed that his hospital is only of the third rank and this decree is published to the world. He then in the public mind has become a third class surgeon. Persons who can afford an operation can afford to travel. They slip across the border, especially in the West to an

A hospital. This surgeon himself finding his practice destroyed migrates to an 'A hospital' when he becomes first class once more and drives in a closed car.

In the first place even from Montreal patients slip quietly across the border for treatment but for quite a different reason. The American method is one of publicity. We have forgotten the Hippocratic injunction that things seen and heard at the bedside shall not be disclosed. We have become garrulous; the private concerns of a patient are now a matter of common gossip. A sick person is entitled to his own reticences. If he seeks surgical relief for a trivial ailment, the details are published on the bulletin board of the operating room for all the world to see and hear. A rich man is not now sure that the old confidence of a private consultation will be respected. Even a rich man may have creditors. Next morning his blood pressure, the diagnosis and prognosis are discussed in his bank and by his associates and subordinates who may have designs upon his place. He cannot afford this publicity. He seeks advice where he is protected by the obscurity of a strange place.

Such obscurity will soon be difficult to obtain. Every standard hospital is in the way of being equipped with a machine for recording each stage of the operation and doubtless a "clo-cup" of the operator as well. At this moment the main body of the American College of Surgeons is hearing how that may be done from Will H. Hays who is described ecstatically as the mogul the czar the dynamo of the moving picture world.

Those little centres had their medical societies which continued to form district meetings which by further conurbation formed provincial societies, and these in turn a Canadian Medical Association. This blow at the small hospital a blow struck merely on account of its smallness strikes at the foundation of our whole medical fabric. This

is a new reading of the old fable: a well meaning elephant who insists in the hatching of eggs in more familiar terms, a vital child overlain by a stupefied nurse.

It has always been in the individual teacher, usually in the small school, in the small hospital that medicine has sought refuge from the dead hand of a system. Boerhaave in a ward of only twelve beds at Leiden established modern clinical medicine in Europe. In addition he gave four lectures a day on botany, chemistry and the institutes of medicine. He was not a generalist. Sydenham was content with the simplest form of practice, he belonged to no faculty and was lit in no school.

It would be easy to imagine your president, W. W. Chipman taking up his residence in Kentville—an equally famous surgeon has retired to that charming place. According to your method of reasoning he would automatically become lower than a third rate surgeon. Indeed, Clarence Webster at one time assistant professor of obstetrics in Edinburgh afterwards professor at McGill, and again in Chicago had the good sense to retire to Shediac. Your instructors would be compelled by your own rules to classify him with the local midwife. And if Sydenham came to practice amongst us he would be refused a licence, although Hippocrates might be admitted to study on the ground that he had a preliminary qualification in Creel. Sir William Osler once congratulated himself on being admitted to Johns Hopkins as a prof. He could never he said, have gained admittance as a student.

The inherent fallacy in the American method is the assumption that all graduates from certain schools are qualified for the highest posts and that all graduates from certain other schools are equally disqualified. The relative classification of those schools by the present method of mechanical inspection is and must be defective. It is fatal. Therefore the system must break down. It has broken down. Appraisalment there must be but that appraisalment must extend beyond the school to the student possibly even to the teacher and it is the student himself who must make that preliminary estimate. In the same school there are students of varying capacity depending upon their natures physique training breeding manners and culture. They should be left free and encouraged to choose the field in which they will practice.

In every school the true aim must be up to the level demanded by the needs of the student who aspires to general practice. If it stops at that the school is a poor school. It must rise to heights which can be reached only by the rarer spirits. That level can be maintained and those heights disclosed by the same teacher in the same lecture—if he is a real teacher. Each student will follow as far as he can and be so insulated by those who can go the furthest. I pause long enough to repeat a remark of your president—that every practitioner will confess that he has no aptitude for certain forms of practice but is never heard to confess that he has no aptitude for teaching.

In England there is no entrance into the general field of practice. From that field various paths arise and each path is barred by a rigorous and just examination. Here we hold all graduates of certain schools to be equally qualified. There is no further mark unless it be the letters F.A.C.S. appended to one's name but I have not sufficiently investigated the process by which that distinction is achieved.

The most modern scientist I suppose will admit that a medical school has something to do with qualifying young men for the practice of medicine. The right of decision has long since been withdrawn from the medical schools. For Canada that right has been conferred upon the Dominion Medical Council. Their examiners are experienced in every department of practice and teaching. From their last report it appears that the largest percentage of graduate considered to be qualified—that is not a menace to the community—came from the four schools to which first class rank had been denied. The order of merit was in the inverse ratio to the equipment and size of the school.

In this race for magnitude and pomp the hospital, too, is erected from its foundation, a place where simple charity is dispensed and the recipient properly compelled to bear the stigma of charity. To avoid that stigma is the greatest

incentive to providence, prevision, and self-reliance. The improvident poor and some of the parsimonious rich now demand free hospital treatment as a natural right. The profession is exploited, the stream of charity fails, the poor will suffer, it is the poor who always suffer in the end from new taxes, such as those which are now so glibly demanded for these elaborate hospitals. Those who imagine the "efficiency" of a "standard" hospital have never witnessed the real efficiency of an aid-post, a field ambulance, or a private dispensary.

This is the efficiency prescribed by W. G. M. Byers in his protest (*BRITISH MEDICAL JOURNAL*, July 1st, 1922), that a graduate must be able to do a certain number of things before he is let loose in the community. His fitness is to be judged by what he can do, not alone by what he can write or say. And he must complete the thing, fifty per cent is not enough. What those things shall be does not pass the wit of a faculty of practitioners to specify. Beyond this limit, he may do and know as much as he can master. That is medical education.

We have developed a new dogma, *Ex hospitalis nulla salus*—no corporeal salvation without the hospital, not even for the parturient woman, who is persuaded that conception is a calamity and parturition a disease. The general practitioner has fallen into desuetude, especially those admirable physicians rationally qualified and trained by experience, whose dispensaries were free to all for a fee that was within the means of every self-respecting person. They detected disease at its very first onset. The patient who has fought his way into the wards is already dead. We have forgotten our humble, though lawful, progenitors, the battle surgeons.

Last year, in the Montreal General Hospital, the first hospital in America to admit students into the wards, the daily average number of patients was 329, the daily cost of each public patient was 3.68 dollars. If the items of taxes, rent, depreciation, and medical attendance were added, the cost to the community would be ten dollars. To serve these patients and those attending the outdoor department, a medical staff of 160 persons and 175 nurses is required. These public patients paid more than one-third the cost of their maintenance. In the Hotel-Dieu the cost was less, in the Royal Victoria it was more.

In other days the pride of a hospital was in the number of indigent who were relieved, now the boast is of the amount of money that is extracted from them by a band of paid inquisitors, known as social workers. It does not appear from the last annual report of the Montreal General Hospital what was the daily average of beds occupied by patients from which the hospital received nothing from any source. The number is so small in every hospital that the idea of charity has practically disappeared. And if the claim is made that the hospital is now "run on a business basis," it is fair to remark that a business which expends upon salaries and wages the sum of 205 thousand dollars out of a total "turnover" of 607 thousand dollars, with an operating deficit of 235 thousand dollars, is a badly managed business.

I am not saying that this hospital is unique. It is merely one of those that have been standardized to American methods. There are not enough people in Canada to support this expenditure either by private charity or by public tax. In the United States it may be different—they have sources of revenue denied to us. We must return once more to the simple way of charity unless we are willing to assume these inflated hospitals as once we assumed the equally bankrupt railways.

There is between us a conflict deeper still, the ancient Conflict of Studies. The American method of teaching is the experimental. It assumes that the student can understand nothing he hears with his ears. He must be shown a picture of a thing, as if he were a deaf-mute. I speak with knowledge, for in the past ten years I was present, as a spectator, at four lectures. I shall give a summary of each.

The first was upon the structure of the Universe. The eminent physicist, when he had occasion to mention the term "water," held up a glass. As water is transparent, I was compelled to take his word for it after all. The second lecture was upon "Relativity." When the eminent

mathematician had occasion to mention "the man in the railway train," he drew a rectangle on the board with an upright line inside. At the end of an hour he had not come to the explanation, and I went home to read a book for myself. The third lecture was upon "Cults rival to Christianity." The eminent classicist had occasion to mention a place in Persia, but it was beyond the limit of his science, and he pointed to a spot in the black void. At the fourth lecture the eminent astronomer came provided with the model of a planet, but he neglected to take it out of his pocket.

"Show me, not tell me," is the "slogan" of the experimentalists. This is the old and vulgar demand for a miracle. If students will not hear their prophets, neither will they be persuaded though one rise from the dead. Or, in the more homely words of Isaac Todhunter, from whose books I learned what mathematics I know: "If a student does not believe the statements of his tutor, probably a clergyman of mature knowledge, recognized ability, and blameless character, his suspicion is irrational, and manifests a want of the power of appreciating evidence, a want fatal to his success in that branch of science, which he is supposed to be cultivating." Under this experimental system it is folly to read, an offence to remember.

A real experiment is a valuable product of the human mind, requiring knowledge to invent and ingenuity in performing it. When Augustus Waller demonstrated at McGill for the first time that electrical currents are present in the skin of a dead codfish, he performed an experiment. The thing was done once and for all time. The teacher who repeats the operation before his class is making not an experiment but a repetition of an observation made a thousand times before. It is now pretty well understood that the air exercises pressure. To allow a student to work the handle of the air pump would impress his mind to watch a professor work it is not so convincing. I doubt the educational value of the performance. The student may take more interest, he would take more interest in football, but the extent of his interest is no true measure of value.

For the true place of experiment let us ask of the mathematicians again. The marvellous power of modern computation depends upon a machine, known as logarithms, invented by Napier in 1614. Four years later, Gunter designed a still more mechanical "line of numbers." Improvise, Oughtred pushed the device to its present point of perfection. It is known as the "slide-rule." Of the machines for avoiding mental labour in computation no other is of equal value. And yet the inventor used it in secret for ten years. When he was finally reproached by a friend and pupil for concealing so useful an invention, he enunciated for all time the true relation between the machine and the mind: "That the true way of Art is not by Instruments but by Demonstration, and that it is a pernicious course of vulgar teachers to begin with Instruments and not with the Sciences, and so instead of Artists to make their Scholars only doers of tricks, and as it were Juglers, to the despising of Art, losse of precious time, and betraying of willing and industrious wits into ignorance and idleness, that the use of instruments is indeed excellent, if a man be an artist, but contemptible being set and opposed to Art. And lastly, that he merit to commend to me the skill of Instruments but first he would have me well instructed in the Sciences."

The first claim on behalf of routine experiments is that they save labour. The real reason for their employment is that they save thought, and mental exercise is the severest form of work. But the student who has been taught to rely upon experiments alone becomes the practitioner who relies blindly upon instruments. He allows his mind to atrophy, and is helpless without them. He has become a mere mechanic, useless without his tools.

And yet this is the occupation in which students are compelled to spend two precious years in institutes, colleges, and even in some universities, watching routine experiments in physics, chemistry, and biology, performed by young instructors who may be only a little less illiterate than themselves, peering into microscopes, when the large world of nature lies outspread. They would be better occupied

in their own homes in contact with the great minds revealed in books, especially with the great minds of medicine from Hippocrates to Osler.

With this reserve, I am careful to add full praise to that large class who learned from Harrington and Ruttan, pathology from Johnston and Adams, geology from the rocks, and botany from the plants of the field, as taught by Sir William Dawson and Frank Adams, and in Toronto by Sir Daniel Wilson, whose very whiskers suggested the immensity of his theme.

In this audience there are exquisite physicians and masters of surgery, yet I doubt if there is anyone here pre- or excepting myself, who can write on the board the formula for a simple substance as phenolphthalein who can say if the sun goes around the earth or the earth goes around the sun, or can explain why the moon varies in appearance on successive nights. Why, then, should students be expected to know so much before they begin the study of medicine?

The next precept is, "Let the student solve his own problems." That was the way of Pasteur and Harvey—no hired man for all but the chosen few, it means the abnegation of the professor. Is teaching then, of no value? And if a student is to solve his own problems, he can solve them at home without spending seven years in the university.

In the *Bulletins of the Association of American Medical Colleges* although you will find in them strange form of procedure, and, as Maurice Hutton says of Plato, every kind of educational non sense you will find also a deep distrust of the rigid and uniform requirements of the pre-medical years. They are looked upon as "order," a nuisance, a penalty, a "barren stretch of wilderness" imposed upon the aspirants to the study of medicine. They are regarded also as "a failure to motivate prospective medical students."

In the *Bulletin* for July a resolution passed unanimously at the Christ Church meeting of 1925 is quoted with approval. According to that resolution, the Association and the State licensing boards are to be asked to permit as an experiment "for a medical school to modify the curriculum in any way they think desirable, in order to get free from the bonds which now bind and hamper them." My plea is that Canadian schools be permitted to undertake that experiment. No one knows who it was that constructed this rigid curriculum. No one pretends that it is best for either country. The utmost claim is that it is identical for both. One may say of it, as Henri de Mondeville said of Galen, "I do not suppose God exhausted His power in creating it." The wisest of the Americans are also in revolt. That revolt began with us. My desire is to give to it duee on and force.

Pushed to a conclusion, the advocates of the experimental method would content themselves by pointing out the professors and assigning their names as they walk in the university grounds. The experimental method may be mental labour. That is not the end of education. To a stupid person an experiment is as conclusive as a lecture or a book.

These various American foundations, colleges, and universities by their very fluctuations performed a task of incalculable good in their own country. They destroyed the mercenary school and many other evils that were disclosed in the survey of twenty years ago. It is for them to decide when their work is done. It may well be that the time has come for them to take off their whips and restore freedom to the universities. In Canada too their operation has been of some advantage. They have freed us from our complacency but the time is such come when we must be left free to build according to our own needs.

Canadian medical schools suffer in turn from the various provincial boards. Their rules and regulations are really identical in respect of time and course of study. They imitate and copy one another until they have produced a mass of legislation in which no one believes which not only approves. By a process of evolution and accretion they have created a fossil, which might be correctly labelled "unreassuring arbitrary ultimate." And that is the dead hand under which the medical school and the medical student lie. This rigid curriculum is the death warrant

for any vital aspiration in the medical student or teacher. It emerged from the chaos of the scientific mind.

The origin of evil has always been a perplexing problem. The first instinct is to assign it a place without one's own borders. After yielding full credit to the United States as a possible nidus, let us inquire in how far it has arisen de novo amongst ourselves, or is the result of a universal cause. Let us begin with the valid experience that all practice has its origin in a pre-existing theory.

The theory of the macrocosm and microcosm devised by the Greeks, developed by the Arabians, and reaffirmed by Dante, was the central dogma of medicine so long as Graeco-Arabist influence prevailed. Even Darwin, when he attempted to assign a general term to the human body, could find no better term than "microcosm." The Arabist treatment of wounds by inactive compounds and caustics survived all the masters of surgery: Bruno, Huh of Lucca, Theodoric, Henry of Mondeville, even Pare himself, and finally came to an end in the practice of Lister.

Parallel with this, from an even greater antiquity ran the doctrine of the four elements, each composed of four primary qualities which had their corresponding qualities in the humours of the microcosm. Medical study then became an affair of rhetoric rather than logic, physiology, and pathology. Even Vesalius could not free himself from those influences. He failed to discover the Galenic vessels between the vertebrae of the heart. He was not bold enough to do what the existence he described him as "invisible." Harvey made no such compromise. He followed where sound argument and ocular demonstration led.

In such more modern time, alternative and equally binding doctrines came into force. Governed by Newton's laws, a man University was constructed like a model in the patent office or a glorified United States. Man himself becomes an automaton or at best an internal combustion engine run by compressed animal spirits. This Cartesian man was too simple. With the new chemistry a chemical man was created approaching very close to the modern concept of a phenotype gradually developed from the protozoon by mutation of ids and genes but still composed of atoms dissolved in water. One who now aspires to write on medicine must learn the jargon in which medicine is written.

By the premature application of such partial principles a few and scientific medicine is always built up, but medicine, just as it is at the point of becoming scientific, falls into ruin. On one occasion Sidenham's was the hand that cast it down. "You cannot imagine how far a little observation carefully made by a man not tied up to the four humours, or to sulphur and mercury or to acid and alkali will carry a man in the curing of disease." Sidenham began where Hippocrates stopped. He was not a scientist. He was a physician. The one is the antithesis of the other. He abandoned hypothesis. He was less concerned with experiments than with facts that arose from actual observation of the processes in health and disease.

Once more and in our own time, the teaching of medicine has fallen into the hands of the scientists who are so dominated by the doctrine of evolution that they have little thought for the thing that has been evolved and less still for the process of development which is known to physicians as disease. In their own sphere they have attained neither to fixity of principle nor to permanence of indecision. They vacillate from moment to moment like a cow walking. They cannot teach because their boast is that they do not know, that they are still learning. Their aim is to convert their students into agnostics like themselves. These are the men who construct the curriculum for medical schools. Their mind is one. The result is the same. That is the ultimate origin of the evil. The laboratory is the temple and the one who sits in the temple soon comes to show themelves as gods.

In our own time, happily, teachers and practitioners have arisen who are strong enough to break those bonds and bend the sciences to their needs. They did not disdain tradition and learning like Porcarius who began his career by burning his books and declaring that Galen was less to him than his shoe-buckles. Sir William Osler as a teacher,

and Sir James Mackenzie as a practitioner, will serve as examples of this new courage. Mackenzie, like Sydenham, fell back upon unaided observation, and disclosed heart disease in the strong light of experience. Nor did his courage go unrewarded. After twenty years of Bunley porridge, he sat turtle at the Athenæum, clutched his cup in Harley Street, he himself had fished the murex up.

Looking more closely at the problem, the evil lies within our own Faculties. The scientist has gained too much control. In the intervals between the repetition of experiments, made by original investigators, to prove what every one knows, he has ample leisure to enforce his methods upon medical teaching. The physician is preoccupied with the sick and dying. The surgeon is devoted to his technique, and in the work of his hands forgets to employ his mind. Both are meticulous. They allow the scientists of the laboratory and of the clinic to dominate the course, and the student falls into the gulf that lies between science and practice. In lucid moments the laboratory mind is assailed by doubt of the possibility or wisdom of attempting to convert the medical student into an abstract scientist. It then falls back upon the "cultural value" of the process, but further doubt must be created by personal introspection into the recesses of that mind itself. Life is too short, the Art too long. The student is wasting his time upon preliminary sciences, as a carpenter would be wasting his time upon the botany of the wood he employs, as a chemist or a physicist might be wasting his upon the further antecedent sciences of alchemy and astrology.

The theme of the present thesis is a plea that the power of these associations, boards, faculties, laboratories, and elective colleges be broken, that freedom of teaching be restored to the universities and to teachers who have the precious gift of teaching, that the present curriculum be examined with that freshness of mind which, according to the scientists themselves, should be applied to all sacred writings. This is merely their own plea for experience in the face of authority.

But the authority of these various provincial boards is already shaken from within. The Canada Medical Act permits the provincial boards to dispense with examinations. One province, British Columbia, has eliminated the

local board, and depends upon the Dominion Council. Another province, without any formal self-denying ordinance, but unselfishly and for the general good, is sending medical graduates in increasing numbers direct to the Dominion Council for licence to practice. That body is growing in favour by reason of its professional strength and freedom from technical influences. It is a new creation, it is not entrenched, it is close to the wide scrutiny of Parliament, which has never been impressed by pedagogic assumptions. This Council may in time become an instrument of freedom to the universities.

The winning of my old master was "Hesitate before you begin an operation, once you have begun you must not stop your hand." I am newly done. You have borne in patience, without the anaesthesia of flattery. All nations are admirable in their own environment, they develop ideals and create methods which are inevitable for themselves alone. Their culture is powerful only so long as it remains free to the world. The attempt to enforce that culture, those ideals, those methods over their own borders creates hostility, always ends in disaster to themselves, and frequently in disaster to their neighbours. That was the fatal error into which the Germans fell—a lack of sensibility to the feelings, emotions, beliefs, and prejudices of other peoples—they themselves being like you, so naive, so amiable, so ingenious, so convinced, and sincere.

Respect for boundaries, national, physical, social, and intellectual, is the prime condition of peace between friends, families, and nations. The more closely these units are related the more scrupulously must that respect be observed. Therefore, I beseech you, do not press upon us too closely American methods in our medical education.

And yet, it does so often happen that the evil we deplore never comes to pass. Nothing is so bad—or so good—as we expect. A pine tree does not grow up to the sky, nor a man's whiskers to the ground. Your president this year is a Canadian. Since I came into this room, I am informed that your president-elect is George Stewart, a Canadian too—that is, if for the purpose of my theme, and following immemorial usage, I may ascribe the glory of the Maritime Provinces to Canada at large. It may therefore be that after all nothing will happen, or, indeed, that we shall persuade and enable you to accept not our methods but those ideals which we have inherited.

## The Profession of Medicine.

### INTRODUCTORY

THE main object of this Educational Number of the BRITISH MEDICAL JOURNAL is to be of assistance to prospective students and their parents. It is largely a guide to the steps that must be taken and the studies that must be pursued in order to become a registered medical practitioner. It contains also a section on post-graduate medical teaching in Great Britain and other sections addressed more particularly to those who have just qualified and are considering what path in medicine they should follow. The details given are founded for the most part on official information, and are mingled among the customary lines. As in past years we take occasion in this introductory article to review some aspects of medical study and practice to-day, in order to put the situation before those who think of devoting themselves to medicine, and thus help them to gauge their fitness for the calling and the prospects it holds out.

Our opening article this year is an address on American methods of medical education, delivered in Montreal last autumn by Sir ANDREW MACFARLANE, Professor of the History of Medicine in McGill University. While his outspoken criticisms apply for the most part to conditions in Canada and the United States, much of what he says has to do with medical education everywhere, and his words can hardly fail to stimulate thought among the wider audience to whom we now present them. His thesis, in effect, is

a plea for greater freedom in teaching and for a thorough examination of the curriculum in the light of modern requirements and ideals. The problems of medical education are not quite the same on each side of the Atlantic, but it may be that we, too, would be the better for a few home truths about the "dead hand," and need a warning against "efficiency" and "standardization" when these are imposed upon a country from outside.

The intending student will find in subsequent pages an account of the course of training required of him, the places where it can be obtained, and the universities and other licensing bodies which test the knowledge gained and confer degrees or diplomas entitling successful candidates to become legally qualified medical practitioners.

### THE GROUNDWORK OF MEDICAL STUDY

"Three principles of all professional education seem to be fundamental," wrote Sir Clifford Allbutt. "First to secure a good general education, secondly, a good scientific education, thirdly, a good technical education." Upon the first of these the second and third largely depend. As for the second, no one can overstress the value to a doctor of a thorough grounding in the basic principles of science, for medicine is in its foundation on science. The temptation to take short views and short cuts is very

<sup>1</sup> The Training of the Medical Student. BRITISH MEDICAL JOURNAL, September 2nd, 1922, p. 407.



strong in the early years of the medical curriculum, but no greater can be made than to work at any branch of preliminary study as though it were something to be thrown aside and forgotten when the examination immediately ahead has been passed. The student of good intelligence who makes it his aim to grasp the principles of each of the fundamental sciences need have little dread of examiners. In mastering the principles he will find that the larger details take on new meanings and a new interest, and so are fixed in his memory. Moreover, the preliminary sciences give a drilling in exact methods, in precise manipulations, and in vigorous reasoning which will bear immediate fruit in the later clinical part of the curriculum and prove of lasting benefit throughout professional life. The purpose of medical education is to build up on scientific principles a solid structure of practical knowledge. Students who keep this in mind will look upon "exam work" as a weakness in the foundations, and therefore as a hidden danger to the superstructure. The great anatomist John Hunter, as Sir Arthur Keith reminded us in last year's Educational Number "studied anatomy and physiology to get help in diagnosing and treating his patients. He studied dead things to understand the living and observed living things to understand the dead." A knowledge of how this body is made and how it works must provide the basis for all the more practical subjects of medicine."

#### PORTALS OF THE PROFESSION

The goal of every student is the entry of his name in the *Medical Register*, which is the official statutory list of qualified medical practitioners kept by the General Medical Council. Those who are not familiar with the system of medical teaching and examination in these islands, and with the history of our professional institutions may feel bewildered at first sight by the number and variety of ways in which admission may be obtained to the *Register*. They will see in the table of contents to this Educational Number that there are twenty-seven bodies—eighteen universities and nine corporations—which either separately or jointly issue registrable qualifications, and the number of teaching institutions is even larger. Nevertheless, although we have no single State examination in medicine—no "one portal," as it has been termed—the medical courses of the various universities and schools in Great Britain and Ireland run on parallel lines and the obligatory curriculum is much the same for all students. As, however, the individual teaching and examining bodies have different standards and requirements, the choice should be made early so that a definite plan may be followed. It is therefore important to gain some idea of the value in different walks of medical life, of the various degrees and diplomas and of the comparative difficulties they present.

All who wish to enter the profession must comply with certain conditions. These are regulated by the General Medical Council, which is a statutory body set up under the Medical Acts, a summary of its requirements is given at page 385. Many changes have lately been made in the medical and pre-medical curriculum, and this section, as well as the article on Professional Study and Examination, should be studied with care. It is the business of the General Medical Council, so far as possible to see that a suitable kind of training and the requisite degree of knowledge are secured to the student and it is the business of the medical schools and examining bodies to give the training and test the knowledge in accordance with the requirements of that Council. Every student, after passing examinations in the subjects of general education and in the preliminary sciences, must take a course of training at a recognized medical school, covering a period of at least five years, but usually extended to six years or more.

Examination of candidates as to their fitness to practise medicine, surgery, and obstetrics is left to the licensing bodies, which are of two kinds—the universities, and certain medical corporations in England, Scotland, and Ireland. The requirements of these licensing bodies are summarized elsewhere under separate headings. One of the functions of the General Medical Council, besides that of keeping the *Medical Register* and maintaining discipline within the profession is to make sure that the tests at each stage do not fall below a certain standard, and that the students examined have undergone prescribed courses at approved institutions. Successful candidates eventually receive either degrees in the case of a university or diplomas or licences in the case of a corporation, the qualifications entitle them to claim insertion of their names in the *Medical Register*. Every student as soon as he obtains his qualification to practise should at once register otherwise he cannot hold a public medical appointment, or sign any certificate required from a legally qualified practitioner (such as a death certificate), or recover professional fees in a court of law.

Holders of diplomas and licences once made up the great majority of all medical men especially in England and Wales. But universities have greatly multiplied and so many practitioners are now graduates in medicine that a student at the threshold of his career will do well to aim at a degree, though it may be desirable to take also a diploma or licence. The medical degrees (M.B., M.D. etc.) granted by the universities in Great Britain and Ireland are mentioned among the particulars relating to each university printed elsewhere in this issue.

#### COST OF MEDICAL EDUCATION

The first thing to be said under this heading is that the cost of a medical education varies within wide limits. Besides differences in the charges made for instruction, there are differences in examination fees, as well as in the fees for certificates of qualification and those who seek the higher degrees and diplomas must expect to pay more for the additional courses and tests and certificates. Again not all students, however industrious have the knack of imparting what they know to an examiner, and every setback due to failure in the examination room or to illness means added expense. School and examination fees together with the cost of board lodging clothes, and recreation, form the largest items of expenditure and to these must be added the money spent on books, microscope, instruments and so forth. Since professional education must in any case continue for five years at least (a period exceeded by the vast majority) and since the cost of living in different parts of the country varies much while personal expenditure varies still more, it can only be said in a general way that anyone who thinks of entering the profession should be prepared for an outlay of at least £1500. Something between two-thirds and three-quarters of the whole amount would probably be spent on maintenance, and the rest in fees etc., for tuition and examination. On the other hand more scholarships and money prizes are offered now than in the past at the Scottish universities bursaries are numerous and the Carnegie Trust (whose regulations are summarized at page 397) gives financial help to many Scottish students. The main thing to bear in mind is that as compared with other professions the period of training in medicine is long, and for most students costly. Further guidance on this matter will be found in the recently issued memorandum, drawn up by the Registrar of the General Medical Council, on the procedure to be followed in order

to enter the profession. This pamphlet gives much useful information, concisely arranged, including a comparative table of the cost of study and examination at the various institutions.

Medical students are not commonly the sons or daughters of wealthy parents, very often their education puts a heavy strain on a slender family purse. Hence, before setting out upon this long and exacting course of study, it is usual to weigh, not only the cost, but also the prospects. An overcrowded curriculum would be hard to face if all that could be discerned at the end of it were an overcrowded profession. Without forgetting the adage, "there is always room at the top," the youth and the girl of to-day, when reckoning up their chances in any calling, will wish to know the probable numbers of their competitors for the work that is waiting to be done.

#### THE NUMBERS OF MEDICAL STUDENTS

One effect of the war was a great increase in the number of medical students, both men and women, but especially women. The climax was reached immediately after the Armistice. The following brief survey of the position should be read in conjunction with the note and tables printed at page 385 on the numbers of registered practitioners. More new students mean more new doctors five or six years later.

In the thirteen years before the war the annual entry of medical students in Great Britain and Ireland averaged about 1,400, during the war period, although many left to serve with the forces, the whole number studying in the schools grew steadily larger. In 1914 the entries rose to 1,600, and in 1915 to 1,918, in 1916 they were 1,875, in 1917 they rose again to 2,150, and in 1918 to 2,253, and in the following year, when demobilization was in active progress, as many as 3,420 new students were registered. After 1919 the number of entries rapidly fell. They were 2,531 in 1920, 1,808 in 1921, and 1,933 in 1922. In 1923 the entries dropped to 545, and the reasons were discussed by Sir Donald MacLister in his presidential address to the General Medical Council. He suggested that the sudden falling off was more apparent than real, and attributed it to the introduction of a pre-registration test in elementary physics and chemistry. This has been borne out by the figures for the three following years. In 1924 the entries were 1,043, in 1925 they were 1,070, and in 1926 they rose to 1,260.

The recent decline is an advantage, because excessive entries of students, if they go on long enough, lead to overstocking of the profession. In the past five years the numbers of new practitioners have greatly exceeded the usual pre-war figure of eleven hundred or so. Registrations in 1922 numbered 1,963, they rose to 2,482 in 1923, and to 2,796 in 1924, in 1925 they were 2,570, and last year 2,120. The large additions to the profession in recent years brought the total number of names in the *Medical Register* up to 52,614 at the end of 1926. This is ten thousand more than the figure for 1914, and the ratio of doctors to population is now considerably higher than at any previous time. It is true that the scope of medical practice has widened, and fresh openings for functional work have appeared, but there must be limits to demand, and the supply of new practitioners ought to outstrip the medical needs of the community. The regulations of the General Medical Council, which came into force in 1923, were drawn up for another purpose, namely, they should incidentally do something to keep the entire profession within manageable bounds. On the whole, it may be said that, with these of good average intelligence who are not afraid of work, the prospect in medicine to-day is quite favourable.

#### CHOICE OF A CAREER IN MEDICINE

The student, having passed all his tests and placed his name on the *Medical Register*, becomes a member of the profession and assumes the privileges and responsibilities that go with legal qualification. But the final examination is only the gateway into a wider field of training and experience. Education must continue throughout his career, a good doctor remains always a student. As an introduction to practice of whatever kind, nothing is so useful as a year or more spent in junior hospital appointments, and all who can afford the time should look upon the holding of such posts as a most profitable investment. If his mind has not been made up already the young practitioner has now to consider in which branch of the profession he can best exercise his abilities. The choice is very wide. Among the great variety of paths open to men of different tastes and talents are general practice in town or country, Government service at home or abroad, including, of course, the medical branches of the Navy and Army and Air Force, and the I.M.S., public health appointments and other administrative or official posts, institutional work, such as that of the asylum service, and special work in scientific research and teaching, or in one of the many subdivisions of clinical medicine and surgery. Most of these careers are discussed in some detail in the later sections of our present issue, but a few words may be said here about general practice and the work of a consultant or specialist.

Useful information and advice on such matters will be found in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association. This comprises articles on the main openings for members of the profession, on some practical aspects of medical work, especially the legal and ethical aspects, on registration and the privileges of practitioners, on medical work under the National Insurance Acts, on post-graduation study and special diplomas, on specialization and consulting practice, on the fellowships, scholarships, studentships, prizes, and research grants open to students and practitioners, and on the important subject of individual medical defence. The section on practical aspects of medical work, specially prepared for the second edition, will be found of much value to all members of the profession. It embodies a great deal of advice on professional conduct in general, on medico-legal difficulties of common occurrence, and on the relations between doctor and patient and one doctor and another.

#### GENERAL MEDICAL PRACTICE

This field of medical work has hitherto been, and still is, the destination of the great bulk of students—perhaps as many as 75 per cent. The life is onerous and the pay too often inadequate, but there are compensations, and many of the very best students—men of broad humanity with high intellectual gifts—choose family practice as their career. Their work is of the utmost value to the public and the profession, because it sets a standard for the branch of medicine in which the generality of students sooner or later become absorbed.

General practice is usually entered upon in one of three ways. The newcomer may take a house and wait for work to come to him, he may purchase the goodwill of a practice rendered vacant by retirement or death, or he may become a partner in an established firm. The first is more risky than the second, and the second than the third. A well managed partnership of three or more has this advantage over single-handed practice, that it allows each partner leisure for recreation and for keeping up with the progress

<sup>1</sup> *Handbook for Recently Qualified Medical Practitioners* 1926. British Medical Association, Tavistock Square, W.C.1. (3 6d net, 10 11s 3d 5d)

of medicine. Success in private practice demands a great deal of knowledge other than that gained at the medical schools, and hence a man is more likely to be accepted as a partner, or to do well on his own account if he has already some experience as an assistant or deputy. A considerable proportion of general practitioners, therefore, begin their work as assistants, and of these there are few who afterwards find cause to regret the time spent in learning the ropes under the eye of an experienced senior. As the conditions of general practice vary much in different parts of the country and even in the same district, it is usually best to undergo this post-graduate apprenticeship in circumstances resembling those to be encountered later.

An all-round knowledge of practical medicine, surgery, and obstetrics should, if possible, be supplemented by skill in some particular branch of work. Moreover what has been said about the advantage of having held one or more resident hospital posts applies with special force to general practice, for those who have been thus trained acquire a confidence and an experience not easily to be obtained elsewhere. The value of house appointments has been well put by Mr. I. B. Turner in an address to senior students and new graduates, which contained many hints and cautions about private practice and the work of the family physician.

The fundamental importance of the work done by the general practitioner is better appreciated now than in the past and it is more fully recognized that an efficient medical service for the community must be based upon the skill and devotion of the family medical attendant, working in close touch with the aims and methods of preventive medicine. Private practitioners to-day take a wider view of their duty towards the environment and the habits of their patients. The centre of gravity is shifting away from disease and towards health. The doctor of the future will come more and more to study early disturbances of function—the threshold of disease—and the maintenance of bodily and mental health.

While this is all to the good it cannot be denied that insidious inroads on private medical practice are continually being made under the auspices of the State and of voluntary bodies. This speaking generally, is not only against the interests of individual members of the medical profession, but, in the long run, against the public interest too. Furthermore, increasing contact with public authorities brings with it new and often irksome demands and the multiplication of official requirements and administrative checks has a tendency to cramp the doctor's independence of action. The national insurance system now more than fifteen years old, has already had a profound influence upon private medical practice. The Insurance Medical Service now comprises more than 14,000 doctors, some doing much work among insured persons, others little. In so far as they undertake these duties they are in effect part-time civil servants. But while the freedom and the individualism of the doctor have been restricted by the Insurance Acts and Regulations, there is a general belief (borne out by the findings of the recent Royal Commission) that the panel system has provided a better service than existed under the old 'club' arrangements, though it is by no means as complete or as effective as it might be made. Some of its worst faults have been removed through the efforts of the Insurance Acts Committee or the British Medical Association, which represents the interests of insurance practitioners in all negotiations with the Government.

One further remark should be made before leaving this subject. The strain of busy general practice is so heavy and often so continuous that only men and women of sound physique can expect to last the

course. Everything, therefore, should be done to promote bodily and mental fitness when work is slack and Mr. Turner's advice on the cultivation of outdoor sport and hobbies is very much to the point. Night duty, irregular meals, and long winter drives during epidemics will tax the strength of the strongest. One of the drawbacks of a single-handed practitioner's life is that, failing one arrangement with a neighbouring colleague, he is on duty twenty-four hours a day and seven days a week, and must be ready to answer a call as soon as it comes and however unfit for a fresh task he may feel.

#### CONSULTANTS AND SPECIALISTS

Where specialism begins and consulting practice ends would be hard to define, but the latter term may be said to cover in ordinary usage the work of the general medical consultant or 'pure physician' and that of the general surgical consultant or operating surgeon. Most general consultants, whether medical or surgical, are specialists in some branch of their practice and most if not all, specialists are consultants in the sense that their work largely comes to them through the recommendation of other practitioners with whom they act (or should act) in a consultative capacity. In any case whoever holds him self out as one or the other or both must be assumed to have knowledge and skill above the ordinary.

To be a competent specialist, as Mr. Turner says a man should have a comprehensive knowledge both of medicine and surgery and if possible should practice some years before starting on his own line of work. Intensive study is required of those who aim at becoming consultants or specialists and they should look upon hospital posts, especially where there are students to be taught, as a vital part of their own higher education. They must recognize too, that for them, as for practitioners of all branches, success will depend in the long run, not only upon mental gifts, special experience, and capacity for hard work, but on the possession of those qualities which inspire confidence both in patients and in colleagues. In the practice of medicine personal tact and character are as important as scientific equipment. Moreover, since the consultant or the specialist can scarcely hope at first to pay his way by consulting work or by the exercise of his specialty he must either have the means to support himself for an uncertain period, or be prepared by teaching or in other ways, to make ends meet. If while in preparation for his life work he can undertake some piece of research bearing upon his clinical studies this is strongly to be recommended.

Additional degrees and diplomas are important factors in securing election to the visiting staff of a hospital, and a few generalizations about them may be made here. Beyond the qualifications such as Bachelor or Licentiate, which admit to the *Medical Register* most of the licensing bodies bestow higher titles such as Doctor, Master or Fellow, after further tests. A considerable number of those who have graduated M.B. including many general practitioners, proceed later to the doctorate and the possession of an M.D. degree is certainly advantageous to anyone in consulting medical practice. When applying for the post of physician to a hospital it is always useful and may be obligatory to hold also the Membership of one of the three Royal Colleges of Physicians according to the part of the British Isles in which the hospital is situated. So too, the Fellowship of one of the three Royal Colleges of Surgeons should be obtained by those seeking surgical appointments and the degree of Master of Surgery is an added distinction. There are also diplomas in a growing number of special branches of work—public health, tropical medicine, ophthalmology, laryngology, radiology, tuberculosis, and psychological medicine—which are superfluous for most practitioners, but useful or even indispensable for those who

and tend to devote themselves to one or other of these subjects. Information about the several diplomas open to qualified practitioners, and about higher degrees, will be found elsewhere in this issue.

#### FINANCIAL AND SOCIAL CONSIDERATIONS

It is no easier now than in the past to assess the attractions of medicine as a means of livelihood. On the financial aspect of our profession two or three remarks only need be made, and those of the nature of truisms. Medicine is not to be regarded as a path to fortune, and anyone who enters it with the sole idea of making money has mistaken his calling. The competent practitioner can always make a living, but the main reward of the medical life is the knowledge of good work well done. Whatever the branch of medical work chosen, there are few doctors who become what a business man would consider even moderately rich by the practice of their profession. In this centenary year of Lord Lister's birth some words he addressed to new graduates in 1878 may well be quoted. "If we had nothing" (he said) "but pecuniary rewards and worldly honours to look to, our profession would not be one to be desired. Put in its practice you will find it to be attended with peculiar privileges, second to none in intense interest and pure pleasures."

If medicine, from the financial point of view, offers to the majority little more than the means of livelihood, in its social and intellectual aspects the prospect is far brighter. The culture which once belonged to the physician alone has spread into all ranks of the profession. The great improvement in the education, general as well as technical, of the practitioner has added much to his influence with the public, and has been a large factor in raising his social status during the sixty-nine years that have passed since the General Medical Council was constituted under the first Medical Act. A family doctor of the kind that is well styled "the backbone of the profession" occupies an excellent position among his neighbours, and is the friend and confidant as well as the medical adviser of many of his patients. Many men go further, and take a leading part in the public life of their district. How much good work of this kind can be accomplished during a long and arduous professional career may be found at the close of an interesting article published in these columns eight months ago.<sup>1</sup>

#### PROFESSIONAL ORGANIZATION

The spirit of comradeship, which adds so much to the value and happiness of undergraduate medical study, is at least as great a boon to the qualified practitioner. It should be preserved, both for its own sake and because in these days no doctor, whatever his position or the nature of his work, can safely stand aside from his fellows. Individuals and isolated bodies of practitioners are always handicapped when they attempt to defend their own interests, unsupported by their fellows, against organized bodies, whether these are Government departments, local authorities, or bodies of workmen. While in ordinary circumstances the individual doctor is quite able to deal with the individual patient and the patient's friends, he cannot hope to engage successfully in single combat with outside organizations.

Medical men and women must, therefore, band themselves together for their common protection, and the first step after registration should be to become an active member of the British Medical Association. Besides having behind him the machinery and the influence of a world-wide professional body, a young practitioner will find in the meetings of his local Division, and in the Annual Meetings of the Association, held in large medical

centres, many opportunities of keeping up with the progress of medicine and of friendly intercourse with colleagues. One other thing that no graduate should fail to do is to join immediately one of the professional societies which for a small yearly sum undertake individual legal defence of their members.

The British Medical Association was founded in 1852 to promote the medical sciences and to maintain the honour and interests of the profession. A brief note on its constitution and activities will be found at page 437. The Association, with Branches throughout the British Empire and a membership of more than 33,000, is the only body that can act for the profession as a whole and speak in its name. The record of ninety-five years' work shows that professional organization, wisely governed, can combine service for its members with service for the public. Much remains to be done in each direction, and the rising generation of doctors must not merely consolidate the ground won, but press forward. Every medical man and woman should cultivate a wide interest in the welfare of our profession, and try to take some share in the various movements, scientific or social or political, with which the Association has identified itself.

### PROFESSIONAL STUDY AND EXAMINATION.

#### A NOTE ON THE REVISED SCHEME

IN the year 1922 the General Medical Council prescribed a readjustment of the medical curriculum, to come into force at the beginning of the following year. In this readjustment, among other things, increased emphasis was placed upon sufficient opportunity being afforded for the study, both theoretical and clinical, of those subjects which are now so essential in connexion with the treatment centres of a local authority, such as ophthalmology, venereal diseases, orthopaedics and mechanical therapeutics, infectious fevers, anaesthetics, ante-natal conditions, and infant welfare. In the article at page 386 on the functions and requirements of the General Medical Council there will be found an account of the resolutions and recommendations of the Council which have applied since the beginning of 1923. We summarize below the leading features of the revised scheme of professional study and examination, and indicate the importance attached by the Council to the pre-graduate aspects of medicine. It must be remembered that no qualifying examination based upon this readjusted curriculum can take place until next year. Time has now been given for the universities, schools, and examining bodies to adjust themselves to these requirements, and we understand that an inquiry by the General Medical Council as to how far this has been done is now completed. It is expected that the results of this inquiry will be made public either in November next or early next year.

#### The Revised Curriculum

The minimum age for registration as a medical student is now 17 years. Formally, the length of the medical curriculum is not added to, practically it is, by referring to preliminary study and examination the subjects of elementary physics and chemistry in their purely scientific aspects. In the applications to the professional courses—as in biophysics, biochemistry, and pharmacological chemistry, appropriate instruction is to continue throughout the curriculum, and is to be tested by examination, so that the student shall no longer be able to put behind him as past and done with the knowledge which he acquired as a preliminary. If he has had no facilities at a secondary school or otherwise for obtaining what is necessary for the preliminary examination in these subjects, then he can come for it to the university or college, but study there will not count for the medical curriculum. In biology comparatively few secondary schools are equipped for elementary tuition, but the Council has suggested an arrangement for utilizing the work of such schools as are qualified for the purpose. The examination will not be "pre-curriculum," but the instruction may be so, and a

<sup>1</sup> Arthur C. J. Wilson, *Fifty Years in a Moorland Practice*. *British Medical Journal*, January 21, 1927, p. 30.

licensing body can allow students who so desire to sit for the examination immediately after matriculation. Heretofore, however, the applications of biology to medicine, surgery and midwifery will continue to receive attention throughout the course.

Besides the resolutions of the General Medical Council in regard to professional education and examination printed elsewhere a series of additional resolutions was adopted in 1922, as follows:

(a) That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of medicine;

(b) That each Licensing Body should make adequate arrangements for the effective correlation of the several subjects of study throughout its curriculum;

(c) That the teaching of anatomy and physiology should include as a regular part of the courses the demonstration on the living human body of structure and function;

(d) That the curriculum should be so arranged that a minimum period of three years shall in every case be available for study after the completion by the student of the Professional Examinations in Anatomy and Physiology held at the close of the second year;

(e) That the curriculum should be so framed as to afford sufficient opportunities for the study during the last three years of the course of Physics, Chemistry, Biology, Anatomy, and Physiology in their practical application to Medicine, Surgery and Midwifery and that the student's knowledge of these applications should be subject to test in the Final Examination;

(f) That before the student is admitted to his clinical appointments he should have received practical instruction in clinical methods and in the recognition and interpretation of physical signs;

(g) That instruction should be given, in the course of Forensic Medicine and Public Health or otherwise on the duties which devolve upon practitioners in their relation to the State and on the generally recognized rules of medical ethics. Attention should be called to all notices on these subjects issued by the General Medical Council.

The Council, it will be noted attaches great importance to the reservation of sufficient time for the later subjects of study, free from all worries about passing the examinations of the earlier parts. To that end it recommends what is practically a block system. A minimum of three years should be available, not merely after the courses of anatomy and physiology have been taken, but after the examinations in these subjects have been passed.

#### Examination Reform

Another notable feature is that in assessing marks in the several examinations account may be taken of "duly attested records of the work done by the candidate throughout his course of study" in the subject. This is an effort to meet the long felt difficulty that a man's mental agility, or the want of it counts far too much in the examination room. The difficulty is real, but the remedy is not easy and the Council has been wise in the cautious approach it makes towards a solution. Where as in the examinations for the various conjoint diplomas, a student will only by chance come before his own teacher as an examiner, absolute impartiality in the attested records will be necessary. On the other hand, at the universities, where the teacher is almost always one of the examiners, no personal like or dislike of a student must influence the report of the internal to the external examiner. The class records should, of course, be available, but the scheme will put a serious ethical obligation on all concerned and the Council will doubtless watch its operation with keen and critical interest.

#### Training in Preventive Medicine

The first of the resolutions quoted above should be borne in mind by every teacher throughout the whole curriculum, and not merely in the clinical subjects. All the earlier subjects—physics, chemistry, biology, physiology, anatomy, and of course, pathology, bacteriology and therapeutics—should afford opportunities from the very beginning for instilling into the mind of the student the necessity for his keeping constantly in view in all the advice and

treatment he may give throughout his professional life, the primary importance of promoting the general health of those who entrust themselves to his care, and of preventing trivial ailments from developing into definite disease.

## THE NUMBERS OF THE MEDICAL PROFESSION.

### A REVIEW OF FIFTY YEARS

SINCE the year 1876 the General Medical Council has kept an analytical record of the number of names entered in, added to or removed from the *Medical Register* in each twelve months. The *Medical Register* has been published annually since the Council was constituted under the first Medical Act of 1858, but before 1876 no such data as these were ascertained or preserved.

In order to gain a general view of the numerical strength of the medical profession during the past fifty years we have extracted from the tables and set down below in parallel columns the total number of names in the *Medical Register* on December 31st of each year and the numbers added annually by registration between 1877 and 1926.

Numerical State of the Medical Register					
Year	Names added in Year	Total No. on Dec 31	Year	Names added in Year	Total No. on Dec 31
1877	940	22 841	1902	1 275	37,232
1878	936	22 600	1903	1 233	37 878
1879	996	22 516	1904	1 168	38 492
1880	1 123	22 930	1805	1 2 0	39 060
1881	1 053	23 275	1906	1 197	39 529
1882	1 171	23 801	1907	1 221	39 827
1883	1 304	24 517	1908	1 157	40 257
1884	1 338	25 321	1909	1 143	39 818
1885	1 377	25 933	1910	1 062	40 483
1886	1 431	26 452	1911	1 042	40 913
1887	1 531	27 246	1912	1 157	41 339
1888	1 184	27 939	1913	1 163	41 940
1889	1 306	28 548	1914	1 433	42 378
1890	1 258	29 163	1915	1 526	43 225
1891	1 345	29 555	1916	1 202	43 481
1892	1 513	30 590	1917	1 134	43 819
1893	1 579	31 644	1918	1 077	43 926
1894	1 426	32 637	1919	1 322	44 510
1895	1 445	33 601	1920	1 457	44 761
1896	1 385	34 478	1921	1 760	45 463
1897	1 259	34 602	1922	1 493	46 476
1898	1 210	35 057	1923	2 192	48 140
1899	1 351	35 836	1924	2 796	50 035
1900	1 345	36 355	1925	2 570	51 738
1901	1 318	36 912	1926	2 120	52 614

The following table indicates the varying proportion of registered medical practitioners to population during the period under review. It gives the population of the British Isles at each decennial census since 1881, and the number of names on the *Medical Register* in the same year, also the corresponding totals in 1925 that for the general population being in estimate.

#### Proportion of Practitioners to Population

Year	Registered Practitioners	Population British Isles
1881	23,275	35,241,482
1891	29,565	38,104,975
1901	36,912	41,976,827
1911	40,913	45,370,530
1921	45,463	47,145,506
1925	51,738	48,025,090

These figures show a tendency towards an increase in the ratio of doctors to population. The number of registered practitioners at the end of 1921 was almost exactly double the number at the end of 1876, but the population of Great Britain and Ireland within that period only increased by about 50 per cent. During the year 1926 the new medical registrations numbered 2,120 and there was a net increase of 876 names. Owing to the large increases during recent years reflecting the excessive entries of students immediately after the war there is now more than one name in the *Medical Register* to every thousand of population. In the United States of America, according to an estimate by the *Journal of the American Medical Association* there is at the present time one medical practitioner to every 753 people. Next to the United States the British Isles appear to have the highest proportion of practitioners to population.



## THE GENERAL MEDICAL COUNCIL

THE General Medical Council was established by the Medical Act, 1858, in order "that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." It consists of eighteen members appointed by the Universities in the United Kingdom having medical faculties of nine members appointed by the Medical Corporations, such as the Royal Colleges of Physicians and Surgeons, of five members appointed by His Majesty in Council, and of six members directly elected in members of the profession as a whole—a total of thirty-eight. To these are added three dentists who are members of the Dental Board, and are appointed for dental business. Although the eighteen members appointed by the Universities and the five members appointed by His Majesty in Council may all be laymen, only one layman has so far been appointed and that was by the Privy Council in 1926.

The Council's offices are at 44, Hillman Street, Portland Place, London, W 1, and it has Branch Offices at 20, Queen Street, Edinburgh, and 35, Dawson Street, Dublin.

The Council exists for the protection of the public and not of the profession. Its principal duties are, first, to see that no person obtains a qualification without a proper course of study and examination, secondly, to keep the *Medical Register*, and thirdly, to publish the *British Pharmacopoeia*. It is the appearance of a name upon the *Medical Register*, and not the possession of a degree or diploma, that constitutes a person a duly or legally qualified practitioner of medicine.

The Council has no power to make rules in regard to the medical curriculum or examination, but it can pass resolutions and make recommendations relating thereto, and if any of these were ignored by the licensing bodies, it would be open to the Council to make representations to the Privy Council, which if it thought fit might order that the qualifications obtained from such bodies should not be registrable.

The name of any medical practitioner who has been convicted of felony or misdemeanour, or who is proved before the Council itself to have been guilty of "infamous conduct in a professional respect," may be erased from the *Medical Register*.

The Medical Acts prohibit attempts being made to impose restriction as to the theory of medicine or surgery, and, once a practitioner has been trained and tested in the knowledge essential for public safety, he may adopt any "theory" of medicine or surgery in which he honestly believes. The Medical Acts do not prohibit the practice of medicine by unregistered persons, but if they "wilfully and falsely" assume any title implying registration they are liable to prosecution. In this respect the Medical Acts differ from the Midwives and the Dentists Acts, which entirely preclude the practice of midwifery or dentistry by unregistered persons. Unregistered medical practitioners, however, are under certain disabilities, for they cannot recover charges for medical or surgical attendance, etc., in a court of law, they cannot hold an appointment as a medical officer in the Military or Naval Services, or on ships, they cannot give any valid certificate which is required by any Act from a medical practitioner—for example, certificate of death, and they cannot obtain dangerous drugs.

An account of the recommendations that the Council has drawn up in respect of the education of medical students here follows.

### REGISTRATION OF MEDICAL STUDENTS

The Council recommends that every intending student of medicine should be registered as such at one of its three offices, whose addresses are given overleaf.

Candidates must produce evidence (a) that they have attained the age of 17 years, (b) that they have passed an examination in general education which is accepted for matriculation or entrance to the Faculties of Arts or Pure Science in a university in the United Kingdom, (c) and in addition thereto that they have passed in examination in elementary chemistry and elementary physics conducted or recognized by one of the licensing bodies.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from one of the offices of the General Medical Council itself or from one of the various licensing bodies and medical schools.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupils with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

### PROFESSIONAL EDUCATION

The rule is that it is only from the date which appears against his name in the *Students Register* that the medical student's career officially begins, thereafter five years at least must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts, but to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. In any case, the period of five years must be one of bona-fide study, and in every course the following subjects should be included:

- (i) Elements of General Biology, including an introduction to Embryology. This course if the Licensing Bodies permit, may be taken before registration and the examination may be passed immediately after registration.
- (ii) Chemistry, Physics, and Biology in their application to Medicine.
- (iii) Human Anatomy and Physiology including Histology, Elements of Embryology, Biochemistry, and Biophysics.
- (iv) Elementary Bacteriology, prior to regular clinical appointments.
- (v) Pathology, general, special, and clinical, and Morbid Anatomy.
- (vi) Pharmacology and Materia Medica, to be taken concurrently with clinical instruction.
- (vii) Forensic Medicine, Hygiene, and Public Health.
- (viii) Medicine including Applied Anatomy and Physiology, Clinical Pathology and Therapeutics, Children's Diseases, Acute Infectious Diseases, Tuberculosis, Mental Disorders, Skin Diseases and Vaccination.
- (ix) Surgery, including Applied Anatomy and Physiology and Clinical Pathology, Anaesthetics, Diseases of the Eye, Ear, Throat, Venereal Diseases and Orthopaedics.
- (x) Diseases of Women, including ante-natal hygiene.

The Council recommends that during the last three of the five academic years clinical subjects shall be studied.

The first two years must be passed at a university, or at a school of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858, and the remainder must be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

### SPECIAL CONSIDERATIONS

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order:

- (1) Pass an examination in arts,
- (2) Pass an examination conducted or recognized by a licensing body in elementary physics and elementary chemistry,
- (3) Enter himself at a university or at a medical school recognized by one of the licensing bodies,
- (4) Obtain registration as a medical student,
- (5) Study for a minimum of five years certain prescribed subjects,
- (6) Meanwhile pass sundry intermediate examinations, and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a legal authority to practise.

**The Minimum Period.**—It must be remembered that the period of five years is a minimum, more is often required even by the man of good abilities and reasonable industry, and some of the universities prescribe a longer period. Besides these qualities a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck, in other words, he must keep in good health throughout.

In speaking of the minimum period it is to be remembered also that that time is only sufficient to obtain a respectable qualification such as a Bachelorship of Medicine, a Surgery or the diploma of the Royal College. Those who wish to take a higher qualification—for instance the F.R.C.S. Eng.—must prolong their work for another year or more. So too must in some cases, those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, the student's career proper may be considered perhaps to have ended when he obtains his first registrable qualification for while preparing him self for any further tests he even usually does hold some junior appointment which more or less covers his expense.

Follow-up memorandum has been drafted and

The requirement for the registration of medical and dental students is the same and every intending student should in his own interest register as soon as he commences his professional education.

The requirement of the preliminary examination is generally education being satisfied it is then necessary for the student to pass a further or Pre Registration Examination (theoretical and practical) in Elementary Chemistry and Elementary Physics which is conducted or recognized by one of the licensing bodies. *These subjects may be pre-taken by a university or by a corporation. These subjects may be pre-taken in addition to those included in the preliminary examination—for example chemistry taken as one of the foundation required subjects in the preliminary examination cannot also count as one of the subjects of the Pre Registration Examination. These subjects may be studied at a university or medical school.*

The two examinations (in general education and in physics and chemistry) having been passed and the student having attained the age of 17 years, he should apply to one of the universities or one of the medical schools for admission to its course of medical study. When medical study has been begun, he should apply to the Dean of the school or to the Registrar of one of the branches of the General Medical Council for a form of application for registration. A student should have it completed and sent in to one of the Branch Councils as soon as possible. There is no fee for this registration. The medical curriculum will extend for at least five years, and the dental curriculum for at least four years from the date of registration as a student.

A dental student may continue his curriculum if he so desires as a pupil in dental mechanics of a registered dental practitioner but study at a dental school is to be preferred. If however he is apprenticed to a dental practitioner I will have to devote twice as much time to instruction in dental mechanics as he would if he had taken the subjects in a school as will have been the case in lengthening the curriculum. In any case a student can only obtain a certification of twelve months out of the four year curriculum.

Governing Local Council 44 Hallam Street Portland Place  
London W1  
Scottish Branch Council 20 Queen Street Edinburgh  
Irish Branch Council 30 Davern Street Dublin

Following is a list of the officials of the examining

held at the University of Belfast, Belfast (Matriculation)  
 Lecturer, The University of Birmingham, Birmingham (Matriculation)  
 Lecturer, The University of Bristol (Matriculation School Certificate of  
 Bristol School Certificate)  
 Assistant Lecturer, The University of Cambridge (Previous)  
 Lecturer, Cambridge Local Examinations Board, Cambridge (Synthetic Building, Cambridge  
 School Certificate or High School Certificate)  
 Medical Registrar, University of Dublin School of Physic, Dublin  
 (Junior Fellowship, Special Prizewinner, Junior Exhibition of  
 Examination for first, second, third, and fourth year in Arts)  
 Registrar, University of Durham College of Science, Durham (School  
 Certificate, Higher School Certificate)  
 Registrar, Irish Compartment, Irish Local College, Surveyor, Dublin  
 (Technical Examination)  
 Registrar, National University of Ireland, Dublin (Matriculation)  
 Joint Committee, Ireland to Elect a President of Ireland, 1911

Secretary, North Carolina State Joint Marine Licensure Board, 215 Old  
Post Office Building, Raleigh, N. C. 27601, for Higher School Certificate

Secretary, Oxford Local Examinations, University Press, Oxford. (School or High School Certificate.)  
Secretary, College of Preceptors, Marlborough Square, London, W.C.2.

Secretary South African Education Department 14 Queen Street, Edinburgh  
(Leaving Certificate)

Clark Central Welsh Board Cardiff (School or Higher School Certificate)

*The many Boilers*

of the officials of

Secretary English Conjoint Board 8 Queen Square Bloomsbury W.C.1  
 Club Society of Antiquaries Place St Martin's E.C.

Principal Officer University of London South Kensington, SW 7

Registrar The University Liverpool  
Registrar The University London  
Registrar The University Sheffield

Secretary Scottish Conjoint Board 4<sup>th</sup> Lauriston Place Edinburgh

Dean of the Faculty of Medicine The University, Edinburgh  
Registrar The University, Glasgow  
Registrar Royal Faculty of Physicians and Surgeons Glasgow (Dental)  
Secretary of the Medical Faculty The University, Aberdeen  
Secretary The University, St Andrews  
Secretary, Irish Conjoint Board Royal College of Surgeons Dublin  
Registrar Apothecaries Hall of Ireland 95 Merrion Square Dublin  
Medical Registrar The University, Dublin  
Registrar National University of Ireland, Dublin  
Registrar, Queen's University, Belfast

#### Medical Schools

The following is a list of medical schools (other than universities) and their officials

Registrar College of Medicine, Newcastle on Tyne  
Dean of the Medical College, St Bartholomew's Hospital London, EC1  
Dean of the Medical School, Charing Cross Hospital S W 1  
Dean of the Medical School St George's Hospital S W 1  
Dean of the Medical School, Guy's Hospital, SE1  
Dean of the Medical School, King's College, Strand, W C 1  
Dean of the Medical School, King's College, Hospital, SE5  
Dean of the Medical College, London Hospital, E 1  
Dean of the Medical School St Mary's Hospital W 2  
Dean of the Medical School, Middlesex Hospital W 1  
Dean of the Medical School St Thomas's Hospital, S E 1  
Dean of the Medical School University College Hospital, W C 1  
Dean of the Medical School Westminster Hospital S W 1  
Dean of the School of Medicine for Women, 8, Hunter Street, W C 1  
\*Registrar, University College, Aberystwyth  
\*Registrar, University College, Bangor  
\*Registrar, University College, Cardiff  
Dean of the Medical School Welsh National School of Medicine Cardiff  
Dean of the Medical School University College, Swansea  
Dean of the Medical School, University College, Dundee  
Dean School of Medicine of the Royal Colleges, Surgeons Hall, Edinburgh  
Dean St Mungo's College Glasgow  
Dean Anderson's College of Medicine, Glasgow  
Misses, Queen Margaret College Glasgow  
Medical Registrar, University of Dublin, Trinity College, Dublin  
Registrar, University College, Cork  
Registrar University College, Dublin  
Secretary, School of Medicine, Royal College of Surgeons, Dublin  
Registrar, University College Galway  
\* First year only

#### Dental Schools

The following is a list of dental schools and their officials in Great Britain and Ireland

BELFAST Dean of the Medical Faculty Queen's University  
BIRMINGHAM Dean of the Dental Hospital 132, Great Charles Street  
BRISTOL Dean of the Medical Faculty, The University  
DUBLIN  
Medical Registrar, University of Dublin, Trinity College  
Registrar, Schools of Surgery, Royal College of Surgeons in Ireland  
DUNDEE Dean of the Dental School 27, Tay Street  
EDINBURGH Dean of the Dental School, 31, Chambers Street  
GLASGOW Dean, Incorporated Dental Hospital and School Dalhousie Street  
IRELAND Dean of the Medical Faculty, The University  
LIVERPOOL Director of Dental Education, School of Dental Surgery, Boundary Place  
LONDON  
Dean of the Dental School Guy's Hospital, London Bridge, SE1  
Dean of the Medical School, King's College Hospital Denmark Hill SE5  
Dean of the Dental School, London Hospital, Turner Street, Mile End E 1  
Dean Royal Dental Hospital Leicester Square W C 2  
Sub Dean for Dental Students, University College Hospital Medical School University Street Covent Street, W C 1  
MANCHESTER Dean of the Dental School, Oxford Road  
NEWCASTLE Dean of the Dental School, Handyside Buildings, Percy Street  
SHEFFIELD Secretary, Board of Dental Studies, The University

#### PROFESSIONAL EXAMINATION

##### The Council's Recommendations

The following recommendations of the General Medical Council in regard to professional examinations for medical and surgical qualifications were adopted in May, 1922

1 In order to secure due continuity and sequence in medical study, two or more Professional Examinations in the earlier subjects should be held antecedently to the Final Examination in Medicine, Surgery, and Midwifery

2 Three years at least should intervene between the date of passing the Professional Examination in Anatomy and Physiology and that of admission to the Final Examination in Medicine, Surgery, and Midwifery

3 A candidate remitted in any subject of a Professional Examination should, before he is readmitted to examination therein, be required to produce satisfactory evidence that he has, during the interval of remission, pursued the study of the subject in which he was rejected. Candidates who obtain less than 30 per cent of the marks in any subject should be remitted for a longer period than three months

4 In all the Professional Examinations sufficient time should be assigned to practical work, in order to test the thoroughness of the candidate's knowledge and to encourage practical methods of study

5 Candidates in all their examination work should be carefully supervised

6 Two examiners should always participate in the oral examination of a candidate, except in subordinate parts of practical examinations

7 In all written examinations the questions in each subject should be submitted for the approval of all the examiners in that subject

8 In all written examinations an average of at least half an hour should be allowed for a candidate to answer each question

9 It is desirable that examiners, and in particular those for the Final Examination in Medicine, Surgery, and Midwifery, should be appointed or re-elected for at least three consecutive years

10 Whatever may be the system of marking, the percentage for a pass in each subject should not be less than 50

11 In the regulations for the several examinations it should be provided that examiners, in assessing marks, be empowered to take into account the duly attested records of the work done by the candidate throughout his course of study in the subject of the examination

12 The Final Examination in Medicine, Surgery, and Midwifery, with the exception of the Clinical and Practical Examination in Midwifery and Gynaecology, must not be passed before the close of the fifth academic year of medical study

13 The three portions of the Final Examination in Medicine, Surgery, and Midwifery should not be further subdivided into sections which may be entered for or passed separately

14 Compensation in respect of marks is between the three different portions of the Final or Qualifying Examination—namely, Medicine, Surgery, and Midwifery—is contrary to the intention of the Medical Act (1886)

15 The Final Examination should include clinical and practical examinations in Midwifery and Gynaecology

16 The clinical examination in Medicine, Surgery, and Midwifery should be held in properly equipped hospitals or examination halls well provided with suitable patients

17 In the examinations in clinical medicine at least one hour and in clinical surgery at least half an hour, should be allowed to the candidate for the examination of, and report on, his principal case

18 In Medicine, in Surgery, and in Midwifery, no candidate should be allowed to pass who fails to obtain 50 per cent of the aggregate marks assigned to the whole examination, or who fails to obtain 50 per cent of the marks assigned to the clinical examination, or who fails to obtain 40 per cent of the aggregate of the marks assigned to the written and oral examination. In Midwifery, where a clinical examination is not held, the duly attested records of the work done by the candidate in clinical midwifery must be presented to the examiners for assessment in the Final Examination, and no candidate should be allowed to pass who fails to obtain 50 per cent of the aggregate marks assigned to Clinical and Practical Midwifery and Gynaecology

19 The Final Examination should include the examination of secretions, the testing of urine, clinical microscopy, and prescription writing, and there should always be an oral examination in Medicine, Surgery, and Midwifery, which should include an examination on pathological specimens

20 At the Final Examination each candidate should be submitted to a practical and oral examination in Pathology (macroscopic and microscopic), unless this has been included in a Professional Examination preceding the Final Examination

21 Whatever be the method of entry for the Final Examination all candidates should be required to complete the three portions of the Final Examination within a period of nineteen months

This section of the Educational Number would be incomplete without brief mention of the memorandum, lately drawn up by the Registrar of the General Medical Council, on the procedure to be followed by those who desire to enter the profession of medicine to which reference is made in the introductory article at page 381. This pamphlet (price 1s post free) sets out in plain language the information for which the Registrar is often asked by prospective medical students or their guardians

## The English Universities.

THREE are eleven universities in England and Wales, and some account of each of them follows. They all have now fully developed medical faculties. Until recently the only exception was the University of Wales, whose constituent colleges are those of Aberystwyth, Bangor, Cardiff, and Swansea. This university grants degrees, and has laid down a six years' curriculum for candidates for the M.B. and B.Ch. degrees, and it now provides, at the Welsh National School of Medicine at Cardiff (see page 395), "the subjects of the medical curriculum"

## UNIVERSITY OF OXFORD

The professional degrees conferred by the university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a Diploma in Public Health and a Diploma in Ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean disform of professional study for that period for the subjects chosen for the arts course may be the same as those in which examinations would in any case have to be passed for the medical degree.

In accordance with a statute which came into force on October 7th, 1920, women may be matriculated and admitted to degrees in the university. The statute is retrospective under certain conditions. Before matriculation a woman must have been admitted as a member of one of the five societies of women students (Lady Margaret Hall, Somerville College, St. Hugh's College, St. Hilda's Hall, or the Society of Oxford Home Students). Women members of the university are admitted to all degrees except the divinity under the same conditions as those laid down for men in regard to examinations, courses of study, and fees and under corresponding conditions as to residence at the university. Among the university diplomas open to women are those in anthropology, ophthalmology and public health.

There are numerous avenues to the B.A. degree, but that which constitutes the normal course for medical students is the following. By passing Responsions (or one of the examinations which are accepted as equivalent) the Scripture examination, so one of the preliminary examinations in the Natural Science School, in the first public examination, and one of the final honour examinations in the Final Honour School of Natural Science—Physiology being that usually taken.

Responsions and the preliminary examinations in Natural Science may be passed before a candidate is a member of the university. A final honour school may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively. The preliminary examinations of the Natural Science School may be taken as soon as Responsions has been passed or exemption obtained.

## PROFESSIONAL DEGREES

To obtain the B.M. or B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. The first takes place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the First B.M. is examined in human anatomy in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pierces in pathology, forensic medicine and hygiene, materia medica and pharmacology (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery and midwifery—until the eighteenth term from the day of his matriculation unless he be already a registered medical practitioner, and not until a period of at least thirty-three months has elapsed from the date of his passing the first examination, and he must pass in all the three subjects at one and the same time.

<sup>1</sup> The first subject of the medical preliminary examinations are four of the subjects in the natural science preliminary and can be commenced directly after passing Responsions.

<sup>2</sup> Membership is constituted by matriculation and by becoming either a member of a College or a Hall or a non-collegiate student.

Before admission to the Second B.M. examination the student must produce certificates of instruction from a medical school recognized by the university of having acted as clinical clerk and dresser, each for six months, and as post-mortem clerk for three months of attendance in labours of instruction in infectious and mental disease and ophthalmology and of proficiency in vaccination and the administration of anaesthetics. He must also produce certificates of attendance in laboratory courses in pathology, bacteriology and pharmacology either in Oxford or in a recognized medical school.

## D.M. AND M.Ch. DEGREES

A Bachelor of Medicine who wishes to proceed to the D.M. must have entered his fourth term and must present a dissertation for approval by the appointed examiners on a subject previously approved by the Regius Professor of Medicine. If a candidate for the M.Ch. he must have entered his twenty-first term and must pass an examination, which is held in June.

## D.P.H. AND D.O.

Examinations for the Diploma in Public Health are held in Trinity and Michaelmas terms, that for the Diploma in Ophthalmology is held annually in March. For the Diploma in Ophthalmology attendance on a twelve months course of clinical ophthalmology in hospitals or institutions recognized for the purpose by the Board of the Faculty of Medicine and on a course of instruction in Oxford lasting two months is obligatory. Candidates must have their names on the Medical Register of the United Kingdom, unless being Bachelors or Doctors of Medicine of universities outside the United Kingdom, they have obtained special permission from the Board of the Faculty of Medicine.

## TEACHING

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition the university provides certain courses of instruction including lectures, demonstrations, and practical work which cover all the subjects of the Preliminary Examination and First B.M. and those of the Final Examination.

## SCHOLARSHIPS

Most colleges grant scholarships open to intending medical students of the maximum value of £100 a year, tenable for four years in natural science, chemistry, physics and biology. Exhibitions of varying value are also awarded in these subjects. At two colleges (University and Pembroke) there are medical entrance scholarships of £100 a year. Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges from the principals of whom details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £300 a year, tenable for two years, is conferred annually; candidate must have taken the B.M. degree. A Scherstein Research Fellowship of £200 a year for two years is awarded biennially. The Fellow must engage in research in one of the Medical Departments of the University. A George Herbert Hunt Travelling Scholarship of about £100 is awarded biennially to enable a young medical graduate to spend three months abroad in medical study. A Philip Walker Scholarship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Rolles on Memorial Prize and the Padellie Prize (£250) for research in natural science (including pathology) and the three Theodore Williams Scholarships in Anatomy, Physiology and Pathology of the value of £50 each, tenable for two years. A Radcliffe Scholarship in Pharmacology of £50 for one year open to the University is awarded annually by the Master and Fellows of University College. A Burney Teo King College Hospital Scholarship of £80 is awarded annually.

## FEES

An annual fee of £1 10s. is paid to the university for the first four years being reduced to £1 when the B.A. has been taken. For the degree the fees are the B.A. £7 10s. the B.M. and B.Ch. £14, the D.M. £25, the M.Ch. £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £40 or for women not less than £1-0.

For further information application may be made to Dr. F. W. Ainslie Walker, Dean of the School of Medicine, University of Oxford.

<sup>3</sup> For the certificates that will be required from candidates are applicable to the new Regulations of the General Medical Council, Examination Statute, Clarification Press, Oxford, 1925 edition.

## UNIVERSITY OF CAMBRIDGE

The professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Ch.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants Diplomas in Tropical Medicine, in Public Health, in Hygiene, and in Medical Radiology and Electrology to medical practitioners, not necessarily graduates of the university. Information regarding these diplomas will be found in later sections under the headings Tropical Medicine, Public Health, and Radiology. A candidate for the M.B., B.Ch. degrees need not possess a degree in arts, it is sufficient if he has passed the Previous examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B.A. degree, preferably by obtaining honours in the Natural Science Tripos at the end of their third year. Under the new regulations the attainment of a sufficient standard in chemistry or in physiology in this Tripos will secure exemption from the corresponding tests in the First and Second M.B. examinations. Women students, members of Girton College or Newnham College, are now admitted to the M.B. examinations.

## PROFESSIONAL EXAMINATIONS

To obtain the M.B. degree the candidate must pass three examinations, those who are finally successful may receive the B.Ch. degree (which is a complete registrable qualification) without further examination.

*First M.B.*—This comprises (1) general and inorganic chemistry, (2) mechanics, (3) physics, (4) elementary biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the Previous examination and have paid the registration fee. Certain exemptions from the First M.B. Examination are allowed, the regulations may be obtained from the Registrar. The complete examination is held twice a year—in October and June, an additional examination, in Parts 2 and 4, is held in December.

*Second M.B.*—This examination comprises Part I, organic chemistry, Part II, human anatomy and physiology, Part III, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No student is admitted to the first part of the second examination until he has passed the first part of the First Examination. No student is admitted to the second part of the Second Examination until he has passed all parts of the first examination. No student shall be admitted to the third part of the Second Examination until he has passed the first and second parts of the Second Examination. The candidate must be signed up in all three subjects and have dissected for one academic year. The examinations for Part I and II are held in December and June, that for Part III in October and April.

*Third M.B.*—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with the principles and practice of surgery (including surgical pathology) and midwifery and diseases peculiar to women, must have completed five years of medical study and be signed up in these subjects and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study, and be duly signed up in all subjects and have completed three years of hospital practice. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council. The examination is in the principles and practice of physic (including diseases of children, mental diseases and medical jurisprudence), pathology (including hygiene and preventive medicine) and pharmacology (including therapeutics and toxicology). The Third M.B. examinations are held twice a year—in June and December.

*Act for the M.B.*—Before receiving his M.B. degree a

candidate who has been successful at the final M.B. examinations has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence by those living abroad, the candidate sending to the Regius Professor of Physic a dissertation, which is laid before the Degree Committee.

## THE HIGHER DEGREES

The M.D. degree may be taken by a Bachelor of Medicine of three years' standing (and a Master of Arts of four years' standing who has completed the course required for M.B.) after writing a thesis approved by the M.D. Degree Committee, and keeping a further Act, at which he reads his thesis and is examined thereon. Previously to the Act being kept a topic taken from the general subject of his thesis (whether it be physiology, pathology, pharmacology, practice of medicine, State medicine, or the history of medicine) is submitted to the candidate, on which he is required to write an extempore essay.

The M.Ch. degree may be granted to a candidate who has qualified for the B.Ch. at least two years previously, he is then examined in pathology, surgery, surgical anatomy, and surgical operations. The tests are partly in writing, partly oral, and partly practical; they include the writing of an extempore essay.

**FEES**  
In addition to college fees, tuition fees, and the expense of living, the following examination fees are payable: First M.B. £5 5s., Second M.B. £6 6s., Third M.B. £10 10s. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registry, Cambridge.

## UNIVERSITY OF LONDON

Under the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in four branches, and Doctor of Medicine in six different branches. The university has its own matriculation examination and this is of so peculiar a kind that candidates should obtain and carefully study the booklets relating to it. The matriculation examination is open to any person, of either sex, who has attained the age of 16. It is held in January, June, and September, and lasts four days: the first two take place both in London and in certain provincial centres, the September examination is held in London only.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some other way, and, unless they are already registered medical practitioners of a certain age and standing, all medical students must pass not less than five and a half years of professional study subsequent to matriculation, of which the last three years must be spent at a school of advanced medical studies.

## PROFESSIONAL EXAMINATIONS

*M.B., B.S.*—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination (held in July and December) covers inorganic chemistry, general biology, and physic, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself.

The Second Examination is held in March and July. Part I cannot be passed within six months of the passing of the First Examination. It covers organic chemistry, the candidate's knowledge being tested as in the oral examination. It is a pass examination, but a mark of distinction may be won. Candidates for Part II must have passed the First Examination at least eighteen months



previously besides having completed Part I of the Second Examination on The subjects are anatomy, physiology, and pharmacology the tests being written, oral, and practical. Candidates who fail in one subject may sit for re-examination in that subject alone if the examiners think fit.

No candidate is admitted to the Third M.B. B.S. Examination within three academic years from the date of his completing the Second Examination. The subjects are medicine (including mental diseases), pathology, forensic medicine and hygiene, surgery, and obstetrics and gynaecology. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and obstetrics and gynaecology. Either group may be taken first at the option of the candidate or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates are divided into an honours list and a pass list and a university medal may be awarded the candidate who has most distinguished himself in the whole examination.

#### THE HIGHER DEGREES

**M.D.**—An examination for the M.D. is held twice yearly—in December and July. Every candidate must have passed the examination for the M.B. B.S. unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine, and if he wishes, may pass also in another branch at a subsequent examination.

The period that must elapse between acquiring the M.B. and sitting for the M.D. in any branch varies between one and two years, according to the nature of the candidate's previous work and in all cases evidence must be afforded of special study of the subject chosen. Both written and practical examinations must be passed though exemptions can be obtained from the former in exceptional circumstances. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example medicine in the case of branch (4) pathology in branch (2)—an essay on one of two suggested topics connected with the special subject and a clinical or other practical test. In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

**M.S.**—The regulations with regard to the Mastership in Surgery are of a corresponding kind but there are four branches in which it may be obtained—General Surgery, Dental Surgery, Ophthalmology and Laryngology, Otolaryngology and Rhinology.

#### FEES.

For Matriculation 2l guineas for each entry. For Examination 5 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination Part I 3 guineas for the first and each subsequent entry. Second Examination Part II 9 guineas for each entry to the whole examination. For re-examination in one subject the fee is 4 guineas. M.B. B.S. Examination 12 guineas for each entry to the whole examination and 6 guineas for examination or re-examination in either group. M.D. and M.S. Examinations 20 guineas and 10 guineas on re-examination.

Inquiries should be addressed to the Academic Registrar, the University of London, South Kensington, S.W. 7.

#### UNIVERSITY OF BIRMINGHAM

THIS university confers medical and surgical degrees—namely, M.B. Ch.B., M.D., and Ch.M.—and also diplomas and degrees in State medicine and dentistry. It has a plan too by which extending his study to six instead of five years the M.B. Ch.B. candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M.B. (Part I) those who have passed elsewhere an examination

considered to be its equivalent. A degree of Ph.D. is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognized university.

Students entering the Medical Faculty for the M.B. Ch.B. degrees must have passed—

(1) Either (a) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield and Birmingham or (b) some other examination recognized as equivalent to the matriculation. Candidates for medical degrees are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination, although these subjects are no longer compulsory. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315 Oxford Road, Manchester.

(2) A recognized pre-medical examination in the subjects of chemistry and physics—for example the Higher School Certificate of the Joint Matriculation Board—or a candidate may attend courses for pre-medical year in the university, October to June, taking chemistry and physics, and biology (optional).

For and after the session 1929-30 the passing of an examination in elementary biology will be compulsory before a student reads for the M.B. Ch.B. Birmingham or for any medical or dental degree or diploma in which an examination has to be passed in this subject, can enter the Faculty of Medicine.

#### PROFESSIONAL EXAMINATIONS

The candidate for the M.B. Ch.B. degrees has five examinations to pass. In the Second and Final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M.B. (Part I) deals with elementary biology, and physical and organic chemistry. The First M.B. (Part II) deals with anatomy and physiology, and the student must pass in both simultaneously. The Second M.B. deals with pathology and bacteriology, materia medica and pharmacy. The Third M.B. takes place at the end of the fourth year, the subjects being forensic medicine, toxicology, public health and pharmacology and therapeutics.

**Final M.B.**—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a post-mortem clerk for three months and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, ophthalmology, children's diseases, venereal diseases, ear and throat and skin diseases, etc. In respect to ophthalmology he must show that he has learnt refraction work. He also has to present to the examiners at the time of his examination a short written commentary on a gynaecological subject or case investigated during the period of gynaecological clerkship and certificate, drawn up by himself regarding four actual cases of lunacy and notes on two others.

**M.D.**—An ordinary candidate for this degree must be a M.B. Ch.B. of not less than one year's standing. He presents an original thesis for approval and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B. Ch.B.

#### FEES

The fee for matriculation is £2 (payable to Joint Matriculation Board), £2 10s. for pre-medical examination (if taken in University) and £2 10s. for each of the first four professional examinations. M.B. Ch.B. degree fee £10. M.D. and Ch.M. examinations, £12 10s. each. For further particulars application should be made to the Dean of the Medical Faculty, University of Birmingham.

## UNIVERSITY OF BRISTOL

In the Faculty of Medicine the following degrees are conferred Bachelor of Medicine and Bachelor of Surgery (M B and Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M), Bachelor of Dental Surgery (B D S), and Master of Dental Surgery (M D S). There are also the following diplomas diploma in public health (D P H), diploma in dental surgery (L D S), and diploma in veterinary State medicine. All candidates for degrees in medicine, surgery, and dentistry are required to reach matriculation standard in the School Certificate Examination, or to pass such examination as may be regarded as equivalent by the Senate. All courses, degrees, and diplomas are open to men and women alike.

**Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery**—Candidates must be not less than 21 years of age and have pursued the courses prescribed by university regulations during not less than five years after passing the first examination in chemistry and physics, of which three shall have been spent in the university, and two of these three subsequent to passing the second examination. All candidates for the degrees of M B, Ch B are required to satisfy the examiners in the several subjects of three examinations.

**The First Examination**—The subjects of examination are chemistry (inorganic), physics, and biology, the courses pursued being those for the time being approved for the intermediate part of the B Sc curriculum. This part of the curriculum shall extend over one year. (Candidates who have passed the Higher School Certificate approved by the Board of Education in these subjects will not be required to sit for the First Examination and will be regarded as having completed one year of study.)

**The Second Examination**—The subjects of examination are organic chemistry and elementary anatomy (Part I) and advanced anatomy and physiology (Part II). Parts I and II may be passed separately or together.

**The Final Examination**—The subjects of examination are internal medicine and pharmacy, pharmacology and therapeutics, general pathology, morbid anatomy, and bacteriology (Part I), special pathology, forensic medicine, toxicology, and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative, including ophthalmology and oto-rhino-laryngology), medicine (systematic, clinical, and practical, including mental diseases) (Part II). The subjects included in Part II may be taken in two groups—namely, Group I surgery and obstetrics, Group II medicine, public health, special pathology, forensic medicine, and toxicology. Candidates may pass Parts I and II together or separately, and the two groups of Part II may likewise be taken together or separately, but no student can obtain honours who elects to take the two groups of Part II separately. Forensic medicine and toxicology may be taken either with Part I or with Group II of Part II.

**Degree of Doctor of Medicine**—Candidates must be Bachelors of the university of not less than two years' standing as such, and may elect either (1) to pass an examination in general medicine, or (2) to pass an examination in State medicine, or (3) to present a dissertation. The candidate who elects to pass the examination in State medicine must hold a diploma in public health of some university or college, and the candidate who elects to present a dissertation may be examined in the subject thereof.

**Degree of Master of Surgery**—Candidates shall be Bachelors of not less than two years' standing as such, during which period they shall have attended the surgical practice of an institution approved for the purpose. They shall pass an examination in surgical anatomy, pathology, and bacteriology, and operative, clinical, and general surgery, and present to the university a dissertation on some subject of surgery. The degree may be taken also in general surgery, and a special subject—for example, oto-rhino-laryngology, ophthalmology, and gynaecology.

**Diploma in Public Health**—Candidates must be at least 23 years of age, be fully registered medical practitioners of not less than two years' standing as such, and have passed the examination prescribed by regulation. The examination is divided into two parts.

## UNIVERSITY OF DURHAM

To its own undergraduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M B, B S), and Doctor of Medicine (M D), Master of Surgery and Doctor of Surgery (M S and D Ch), Bachelor of Hygiene, Doctor of Hygiene, and Bachelor of Dental Surgery and Master of Dental Surgery (B D S and M D S), it also grants diplomas in public health, psychiatry, and dental surgery. The university accepts the Durham University School Certificate Examination (if the required subjects are passed with credit) for matriculation purposes, but also accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application. In addition to satisfying the matriculation requirements of the university, every student must (1) pass a pre-registration examination in physics and inorganic chemistry conducted or recognized by the university, and (2) be registered on the books of the General Medical Council. To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, Newcastle-upon-Tyne, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while the student works elsewhere.

## PROFESSIONAL EXAMINATIONS

There are four professional examinations for the M B, B S degrees. The First, Second, and Third Examinations are held in March, June, and December, and the Final Examination in June and December. The first deals with biology and organic chemistry, the second with anatomy and physiology, the third with pathology, bacteriology, materia medica, pharmacology, general principles of therapeutics, and pharmacy, medical jurisprudence, and public health. At the Final M B, B S the candidate is examined in medicine, clinical medicine and therapeutics, surgery and clinical surgery, midwifery and diseases of women and children, clinical and practical midwifery and gynaecology, and clinically in psychological medicine, diseases of the throat, nose, and ear, diseases of the skin, diseases of the eye, and diseases of children.

**M D**—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine. If the candidate is not an M B of the university, he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests. (See under Degrees for Practitioners, p. 416).

**M S**—Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming M B, B S Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

**D Ch**—The university grants also the degree of Doctor of Surgery. Candidates for this degree must be registered medical practitioners, not less than 24 years of age. They must devote three years, subsequent to obtaining a registrable qualification, to the study of surgery and medical subjects, one at least of the three years must be spent in the university. The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of the Faculty of Medicine.

One year must be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked. Not less than six months of another year must be spent as a resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre. Not less than six months of one of the three years must be spent in surgical study abroad.

**Degree of Bachelor of Hygiene and the D P H**  
No candidate is admitted to the final examination for the degree of B Hy unless he is a Bachelor of Medicine and Surgery of not less than two years' standing, of a recognized university.

No candidate is admitted to the final examination for the DPH unless he is a registered medical practitioner or not less than two years' standing.

The course of study for the B.H. and DPH extend over a period of not less than twelve calendar months subsequent to the attainment of a preliminary qualification. Candidates for the B.H. must attend the course at the University of Durham or at any medical school or institution which is recognized by the university.

The examination for the diploma or degree consists of Part I and Part II each of which extend over not less than two days, and is conducted by examiners specially qualified. A candidate must pass in all the subjects of Part I before being admitted to examination for Part II. In Part I and also in Part II, a candidate must pass in all the specified subjects at one time.

The examination for Part I is practical, written and oral and includes the following subjects: bacteriology and parasitology (including medical entomology), chemistry and physics and meteorology and climatology in relation to public health. Candidates are not admitted to examination for Part I until after they have completed the prescribed courses of instruction in the subjects thereof.

The examination for Part II includes the following subjects: hygiene and sanitation (including sanitary construction), epidemiology and infectious diseases, sanitary law and vital statistics, public health administration. The examination is written and oral and includes practical examinations in infectious diseases, food inspection, inspection of premises—dwellings, factories, work-houses, schools, etc. Candidates are not admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof.

#### Doctor of Hygiene

Candidates for the degree of Doctor of Hygiene must be Bachelors of Hygiene of two years' standing and are required to satisfy the examiners that they have conducted original research in the subject of public health.

#### Diploma in Psychiatry

Candidates must be registered medical practitioners and unless qualified before January 1st 1911 must have attended subsequent to passing their qualifying examination course of instruction in (a) anatomy, (b) physiology, (c) pathology, (d) bacteriology, (e) psychology and experimental psychology, (f) clinical neurology, (g) psychiatry, (h) clinical psychiatry. The examination consists of two parts, namely: (1) anatomy, physiology, pathology and bacteriology, (2) psychology and experimental psychology, neurology, and psychiatry (systematic and clinical) and candidates may present themselves for the whole examination or for either part separately.

#### Licence and Degrees in Dental Surgery

**L.D.S.**—Every dental student must at the commencement of his studenthip be registered in the manner and under the conditions prescribed for medical students.

The First Examination consists of three parts which may be passed separately. Part I organic chemistry, Part 2 biology, Part 3 theoretical dental mechanics, dental metallurgy (theoretical and practical). Second Examination Anatomy, physiology (including biochemistry and histology), dental anatomy and dental histology. Third Examination Pathology and bacteriology, practical dental mechanics, dental materia medica and therapeutics. Final Examination Medicine, surgery, dental surgery and pathology, orthodontics, operative dental surgery and dental prosthetics and anaesthetics.

A candidate before presenting himself for examination is required to furnish certificates of instruction in the required subjects attended after registration as a dental student at recognized colleges or medical schools.

**Degree of Bachelor of Dental Surgery**—1—Students taking their complete course of instruction in the university must pass the same matriculation tests as medical students and the same pre-registration examination in inorganic chemistry and physics. After registration students must spend five years in the university. They must attend the practice of the Newcastle-upon-Tyne Dental Hospital for not less than two and a half years, six months of this time must be devoted to the study of the higher branches of dental science. There are four examinations. The subjects of the examinations are as follows: *First* Biology, organic chemistry and dental mechanics and metallurgy. *Second* Anatomy, physiology, dental anatomy and histology. *Third* Pathology and bacteriology, dental materia medica and therapeutics, and practical and dental mechanics. *Final* Medicine, surgery, dental surgery and pathology, orthodontics and operative dental surgery. In this subject knowledge of a much higher standard and more advanced practical work are required than for the Licence in Dental Surgery.

2—Candidates possessing a Licence in Dental Surgery of a British university must study for at least one year in the university. During such year they must (a) attend a course of instruction in pathology and bacteriology and (b) spend at least six months in the Newcastle-upon-Tyne Dental Hospital in the study and practice of the higher branches of dental science. They must also pass the third and final examination for the degree of Bachelor of Dental Surgery.

**Degree of Master of Dental Surgery**—Every candidate for this degree must be a Bachelor of Dental Surgery of the university of not less than two years' standing and present a essay embodying original work and research in some subject connected with dentistry. He must also perform to the satisfaction of the

examiners a piece of special dental work demanding a high degree of skill and experience.

The examinations are held concurrently with the medical examinations.

The practical examination in dentistry are conducted at the Newcastle-upon-Tyne Dental Hospital.

#### FEES

The following fees are payable: Matriculation £2. Examination—First Second and Third M.B. B.S. each £5. Final M.B. B.S. £15. M.D. and M.S. each £5. B.H. D.H. and D.P. each £10. 10s. and D.H. and D.Ch. each £20. First Second and Third L.D.S. each £5. 10s. and Final L.D.S. £5. First Second and Third B.D.S. each £5. Final B.D.S. £8. and M.D.S. £5. For degrees and diplomas: M.B. B.S. B.H. and B.D.S. each £8. 6s. plus the sum of 10s. if it is the initial degree taken in the university. M.S. and M.D.S. each £8. 6s. M.D. D.Ch. and D.H. each £10. D.H. D.I.S. and L.D.S. each £5.

Further information may be obtained from the Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.

#### UNIVERSITY OF LEEDS

The degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M.B. and Ch.B.) and Bachelor of Dental Surgery (B.Ch.D.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.) and Master of Dental Surgery (M.Ch.D.). It also gives diplomas in public health, in psychology, in dental surgery, and in nursing.

Candidates for the M.B. must have attended course of instruction approved by the university for not less than five years, two at least of such years having been passed in the university at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in

- I. Full English Composition and English Literature or English Composition and History.
- II. Full Mathematics or Latin.
- III. Three other subjects not already taken under I and II above.
- IV. Chosen from the following list:

1. English Literature	9. Mathematics
2. History	10. Mechanics
3. Geography	11. Physics
	12. Chemistry
4. Greek	13. General Experimental Science
5. Latin	14. Natural History
6. French	15. Botany
7. German	
8. Some other language approved by the Board	

*Provided that* (a) candidates who take Mathematics and Latin must include one of the subjects 1-8. (b) candidates who take Latin under II above must include one of the subjects 9-15. In all cases Mathematics is a compulsory subject for admission to the Faculty of Medicine.

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

#### PROFESSIONAL EXAMINATIONS

The examinations for the M.B., Ch.B. number three. The first deals with (1) Physics and Chemistry, (2) Biology. In each subject laboratory work is included but the two parts can be taken separately. For a further can the candidate present himself until after matriculation and a period of approved work in the respective subject.

**The Second Examination**—The Second Examination consists of Part I, Organic Chemistry, Part II, Materia Medica and Practical Pharmacology, Part III, Anatomy and Physiology, Part IV, Pharmacology. Candidates will be allowed to pass any parts separately.

**The Final Examination**—The Final Examination consists of Part I, Pathology and Bacteriology, Part II, Medicine, Surgery, Obstetric Gynaecology and Clinical Pathology, Part III, Forensic Medicine, Public Health and Therapeutics. Part I may be taken at the end of the second clinical year and must be passed before Parts II and III are taken. Parts II and III may be taken at the end of the third clinical year but not before the completion of the fifth year of medical study. It is taken separately Part II must be passed before Part III.

**M.D.**—A candidate for this degree must be a M.B., Ch.B. of the university or at least one year's standing. He presents a dissertation embodying the results of personal

of original research, and, if this is approved, he may be required to write a short extempore essay on some topic connected with medicine, and may be examined orally on the dissertation or other work submitted.

**Ch M**—The candidate for this degree must have been admitted to the M B, Ch B of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on ophthalmology and one on bacteriology, he is then examined on the subject of surgery in all its branches.

#### FEES

The matriculation fee is £2, and on readmission £1 10s. For each of the other examinations £6 and £8 on readmission, Ch M £10 and same on readmission, M D £10. On conferment of the degree of Ch M £5 is payable, and £5 for the M D degree.

### UNIVERSITY OF LIVERPOOL

THIS university, besides granting degrees in medicine (M B and M D) and in surgery (Ch B, M Ch Orth, and Ch M), gives degrees in dental surgery (B D S and M D S), a degree in hygiene (M H), and degrees in veterinary science (B V Sc, M V Sc, and D V Sc). Diplomas are awarded in dental surgery (L D S), tropical medicine (D T M), tropical hygiene (D T H), public health (D P H), veterinary hygiene (D V H), and medical radiology and electiology (D M R E). The degree of Doctor of Philosophy (Ph D) may also be taken in the Faculty of Medicine.

#### MATRICULATION

The Matriculation Examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts, under certain conditions, the tests of several other bodies as its equivalent. Chemistry and physics are essential pre-registration subjects.

#### PROFESSIONAL EXAMINATIONS

Candidates for the M B, Ch B degrees have three examinations to pass, the first including (1) chemistry, (2) physics, (3) biology (zoology and botany).

**Second M B**—This test covers (a) (1) anatomy, (2) physiology, including physiological chemistry and histology, and (b) (3) elementary bacteriology, (4) clinical chemistry, (5) general pathology. Candidates may present themselves in (a) and (b) separately.

**Final M B**—The subjects of the Final Examination are—(a) (1) special pathology and morbid anatomy, (2) forensic medicine and toxicology, (3) public health, (4) pharmacology and general therapeutics, (b) (5) obstetrics and diseases of women, (6) surgery—systematic, clinical, operative, and practical—including ophthalmology, (7) medicine—systematic and clinical—including therapeutics, mental diseases, and diseases of children. Candidates may take Parts (a) and (b) separately, but Part (b) may not be taken until five years of study have been completed.

**M D and Ch M**—Candidates for these degrees must have received the M B and Ch B at least two years previously. Students holding equivalent degrees of other approved universities may become candidates for the M D degree after two years' study in the university or clinical school of the university. The M D candidate submits for approval

thesis covering original work in some branch of medicine or some science directly relative to medicine, together with, if desired, copies of published work, if the thesis is not judged to be of special merit an examination in either Medicine or some subject connected with the thesis is required. The M Ch candidate undergoes an examination. Other information concerning the diplomas of this university and its medical school will be found on page 409.

#### FELLOWSHIPS, SCHOLARSHIPS AND EXHIBITIONS

The university awards Fellowships annually to students of distinguished merit as follows:

(1) John Franklin Fellowships in Anatomy, two, each of the value of £120 tenable for two years. (2) Ethel Boyce Fellowship in Pharmacology, value £100 and tenable for one year, open to fully qualified medical students of either sex. (3) John W. Garrett Ingham Fellowship in Bacteriology, value £100 and tenable for one year. (4) J. B. ... Fellowship in Human Anatomy, value £100 and tenable for one year. (5) Holt Fellowships in Physiology and Pathology, two in number, value £150 each and tenable for one year. (6) Johnston Colonial Fellowship in Biochemistry, value £100 and tenable for one year. (7) Thelwall Thomas Fellowship in Surgical Pathology, value £150 and tenable for one year. (8) Lady Jones Fellowship in Orthopaedic Surgery, one value £200, offered every two years.

There are in addition, scholarships and exhibitions open to medical students.

### VICTORIA UNIVERSITY OF MANCHESTER

THIS university grants the four ordinary degrees in medicine and surgery—M B and Ch B and M D and Ch M, a degree and diploma in dental surgery, a diploma in public health, a certificate in factory and in school hygiene, a diploma in psychological medicine, and a diploma in bacteriology. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof, see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the six years' curriculum, subsequent to the passing of the First M B Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history, (4) mechanics, (5) one subject at choice is approved by the Joint Board. It is held in July and September.

#### PROFESSIONAL EXAMINATIONS

**M B, Ch B**—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The First M B is divided into Part I, chemistry and physics, Part 2, biology—(a) botany, (b) zoology. The parts may be taken separately or together. At the Second M B the candidate is examined in anatomy (including histology) and physiology, at the third in pathology and pharmacology (including materia medica and practical pharmacy). The final Examination, under new regulations, is divided into two parts, which may be taken separately. Part I consists of (a) forensic medicine and toxicology, and (b) hygiene and preventive medicine. Part II consists of (a) medicine, including dermatology, diseases of children, and mental diseases, (b) surgery, surgical pathology, and diseases of the ear, nose, and throat, (c) obstetrics and gynaecology.

**M D**—A candidate for this degree must be a bachelor of medicine of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject selected by himself.

**Ch M**—A candidate must have held, since becoming Ch B, and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired. The examination in Branch I comprises the general field of surgery, Branch II, obstetrics and gynaecology, Branch III, ophthalmology, Branch IV, otology, laryngology, and rhinology.

**B Sc and M Sc**—The ordinary degree of B Sc in the Schools of Anatomy and Physiology may be obtained by students in medicine who in their third year of study for the degree of M B, Ch B complete the additional courses in these subjects prescribed for this degree. Candidates for the Honours degree of B Sc in Anatomy or Physiology who are students in medicine are required to attend courses in advanced anatomy and physiology for four terms after passing the Second Examination for the degrees of M B, Ch B. Graduates in science of this university, of not less than one year's standing from the date of their graduation as Bachelors, may proceed to the degree of M Sc by the presentation of an approved thesis on some subject coming within the scope of the Faculty of Science.

#### FEES

The following examination fees are payable. Matriculation, £2 on readmission £2. Each M B examination, £3 8s on readmission, £3 3s. M D, including the conferring of the degree, £15 15s. Ch M, £10 for the examination and £10 10s for conferring of degree. Application for further information should be addressed to the Dean of the Medical School.

## UNIVERSITY OF SHEFFIELD

The degree of this university (M.B., Ch.B., M.D. and Ch.M., B.D.S., and M.D.S.), the diploma in public health, and the diploma in licentiate in dental surgery, are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose, and have passed the further examination in chemistry and physics.

## PROFESSIONAL EXAMINATIONS

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 22 years by the day of graduation, that he has pursued the course of study required by the university regulations during not less than five years subsequent to the date of his matriculation or exemption from matriculation and the passing of the further examination in chemistry and physics three of such years at least having been passed in the university, one at least being subsequent to the passing of the First Examination. The following examinations must be passed in due order.

**First Examination.**—The subjects are chemistry, physics, and biology. Candidates who have passed the Intermediate Examination of the Faculty of Pure Science in any or all of the subjects of the First M.B. Examination will on payment of the fee for the latter examination be deemed to have passed it when they have passed in such subjects as they did not take for the Intermediate B.Sc. Examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction after matriculation and the passing of the further examination in physics and chemistry, in (i) chemistry, inorganic and organic; (ii) physics; (iii) biology.

**Second Examination.**—The subjects are anatomy and physiology. The candidate must have completed the second year of professional study must have passed the First Examination and must have attended (1) courses on anatomy including lectures and practical anatomy, during one year; (2) courses on physiology including lectures and practical physiology during one year.

**Third Examination.**—The subjects are pathology and pharmacology, anatomy and physiology. Candidates must have completed the last term of the fourth year of medical study and the requisite courses in these subjects, including post-mortem clerkship for three months.

**Final Examination.**—The subjects are Part I forensic medicine and public health; Part II medicine (including mental diseases and diseases of children); surgery; obstetrics (including gynaecology). Candidates for Part I must have completed Michaelmas term of the fifth year of study; candidates for Part II must have completed the fifth year of study.

**M.D.**—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least one year previously must present a thesis embodying observations in some subject approved by the Professor of Medicine and must pass an examination in the principles and practice of medicine.

**Ch.M.**—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic clinical and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

## UNIVERSITY OF WALES

The Charter and statutes of the University of Wales provide *inter alia* for a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M.B.), Bachelor in Surgery (B.Ch.), Master in Surgery (M.Ch.), and Doctor in Medicine (M.D.).

A candidate for the M.B., B.Ch. is required to pursue a

course of study of not less than six academic years subsequent to matriculation in the university, and of these years at least three must have been passed in one of the constituent colleges of the university. These are the University College of Wales, Aberystwyth, University College of North Wales, Bangor, University College of South Wales and Monmouthshire, Cardiff, and University College, Swansea. He must also hold an arts or science degree of the University of Wales or of some other university approved for this purpose. Certain of the courses of study pursued for a B.Sc. or a B.A. degree may be counted as courses required for the degrees in the Medical Faculty.

The courses for the M.B., B.Ch. are divided into two sections, of which the first includes the preliminary subjects—physics, chemistry, botany, zoology, and the ancillary subjects—organic chemistry, human anatomy and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year; study of physiology and anatomy must extend over at least two academic years, the first section of the course must occupy not less than three years. The second section includes courses in pathology, bacteriology, pharmacology, hygiene and forensic medicine, medicine, surgery, and obstetrics and gynaecology, and cannot be commenced except in the case of pharmacology until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in all the subjects are held in June of each year.

The university also offers courses of study in public health and in tuberculosis. Candidates for the Diploma in Public Health (D.P.H.) and for the Tuberculous Diseases Diploma (T.D.D.) must possess a medical qualification registrable for practice in Great Britain and Ireland and must have completed courses of study as prescribed by the regulations either at the Welsh National School of Medicine, Cardiff or at another institution approved by the university.

## WELSH NATIONAL SCHOOL OF MEDICINE

Students can complete the whole of their curriculum at the Welsh National School of Medicine, which is an integral part of the University College of South Wales and Monmouthshire, and qualify for the degrees of M.B., Ch.B. in the university.

Further information may be obtained from the Registrar, the University Registry, Cathays Park, Cardiff.

## English Medical Corporations.

There are in England three medical corporations which grant licences to practise—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the Conjoint Board in England. Details concerning this body, its component Colleges and the third licensing body here follow.

## THE CONJOINT BOARD

This body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study and recommends those who pass the required examinations for the Licence and for the diploma of Member respectively. The successful candidate is then entitled to register as L.P.C.P. (London) or M.R.C.S. (England). It performs the same task in connexion with diplomas in public health, tropical diseases, ophthalmic medicine and surgery, psychological medicine and laryngology and otology—jointly issued by the two Colleges in question. Under the new regulations which apply to all students who have not passed the required preliminary tests of general education before January 1st 1923, every candidate for the L.R.C.P. and M.P.C.S. must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical



examination in chemistry and physics, (2) comply with the regulations, which may be had from the Secretary, Examination Hall, Queen Square, London, W C 1, and (3) pass the two professional examinations of which particulars appear below. The old regulations for the Conjoint diploma, of which an account is given in the Educational Number for 1922, still apply to students who passed their preliminary examination in general education before January 1st, 1923.

#### NEW REGULATIONS FOR THE CONJOINT DIPLOMA

The following is an outline of the regulations applicable to candidates for the L R C P Lond and M R C S Eng who passed the required Preliminary Examination in general education on or after January 1st, 1923. The full regulations and synopses and forms of certificate may be obtained from the Secretary.

#### PRE MEDICAL EXAMINATION

Students are required to pass a Pre Medical Examination in Chemistry and Physics conducted by the Conjoint Examining Board before commencing the five years' curriculum of professional study or some other examination recognized by the Board—namely, the examination in Chemistry and Physics for the degree in Medicine of any university recognized by the Board, the Higher School Certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the Higher Certificates of London, Bristol, Durham Universities, the Joint Matriculation Board of the Northern Universities, the Central Welsh Board Higher Certificate, or the Pre Medical Examination in Chemistry and Physics conducted by any of the Qualifying Bodies whose Degrees or Diplomas are registrable on the Medical Register.

A candidate must enter for Chemistry and Physics together and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required Preliminary Examination in General Education and of having received instruction during 180 hours in Chemistry and 120 hours in Physics to the satisfaction of his teachers. These courses may be commenced or attended before the required Preliminary Examination in General Education is passed.

The examination is partly written, partly oral and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months, and he must produce evidence of further instruction in the subject or subjects of failure.

#### PROFESSIONAL EXAMINATIONS

There are two Professional Examinations, called the First and Final Examinations. The courses of study for the First Examination may be commenced before the Pre-Medical Examination in Chemistry and Physics or some equivalent examination has been passed provided three terms of study of anatomy and physiology are completed after passing such examination.

**First Professional Examination**—The subjects of this are Section I, (a) Anatomy including Histology and Embryology, (b) Physiology, including Biochemistry. Section II, Pharmacology, Practical Pharmacy, and Materia Medica. A candidate must have attended a School course of instruction in anatomy and physiology during five terms, during which he must have attended a body, courses of instruction in Physiology including General Biology, Biochemistry, and Bio-physics during five terms, courses of instruction in Pharmacology, Practical Pharmacy, and Materia Medica. A candidate may present himself for the two sections together or separately, but he must take parts (a) and (b) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part. Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination. A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects.

**Final Professional Examination**—The subjects of this are Section I Pathology (including Morbid Anatomy, Morbid Histology, and Clinical Pathology), and Bacteriology. Section II, Part I Medicine including Medical Anatomy, Forensic Medicine, and Public Health. Part II, Surgery, including Surgical Anatomy and the use of Surgical Appliances. Part III, Midwifery and Gynaecology. The examination is partly written, partly practical, partly clinical and partly oral. A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately or may take the whole examination together. He will be required to produce the certificates prescribed by the regulations before being admitted to the respective parts of the examination. A candidate who produces evidence of having passed an examination for a degree in Medicine in the subjects of Pathology and Bacteriology at a university recognized by the Board is exempted from Section I.

#### FEES

The fee for the *Pre Medical Examination* is three guineas, for re-examination in Chemistry two guineas, and for re-examination in Physics one guinea. The fee for the *First Professional Examination*

is ten guineas, for re-examination after rejection in Section I six guineas, for re-examination after rejection in either part of Section I three guineas, for re-examination after rejection in Section II three guineas. The fee for admission to Section I of the *Final Professional Examination* is four guineas for admission to Section II, Part I, ten guineas. Part II ten guineas, Part III six guineas, and the re-examination fees are respectively three guineas, six guineas, and four guineas.

#### ROYAL COLLEGE OF PHYSICIANS OF LONDON

This College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership is only granted to those who have passed the final examinations for the Licence, or those who are registered practitioners and graduates of a recognized university, in any case they must be persons over 23 years of age. Candidates are examined in pathology and the practice of physic, partly in writing and partly *viva voce*, they are also examined in Latin, Greek, French, and German. The languages are not compulsory, but credit is given to those who show a knowledge of them. The fee for the Membership is £42, or in the case of a Licentiate £21. There is a fee of £8 8s, payable before entrance to the examination, which in the case of successful candidates is reckoned as part of the Membership fee. The body of Fellows is maintained by election from among the Members.

#### ROYAL COLLEGE OF SURGEONS OF ENGLAND

This College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the first in anatomy and physiology, which may be passed after the third winter session, the second, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose, who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees.

**Fees**—At first examination, £8 8s, for re-examination £5 5s. At second examination, £12 12s. Admission fee £10 10s for members, £31 10s for non members.

#### SOCIETY OF APOTHECARIES OF LONDON

This body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L M S S A (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations.

**Primary Examination**—This is divided into two parts, of which Part I includes chemistry, clinical physics, practical chemistry, and materia medica and pharmacy. Part II includes anatomy, physiology, and histology, and is not passed before the completion of twelve months' practical anatomy with demonstrations. Candidates will be examined in any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

**Final Examination**—This is divided into three parts. Part I includes clinical surgery, the principles and practice of surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances. Part II includes clinical medicine (a) the principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), pathology, and morbid histology, (b) forensic medicine, hygiene, theory and practice of vaccination, and

mental diseases. Part III includes midwifery, gynaecology, and diseases of newborn children, obstetric instruments and appliances.

The fee for the primary examination is £5 5s. for the final £15 15s. The regulations and synopsis relating to the several examinations and other information may be obtained from the Secretary, Court of Examiners, Apothecaries Hall, Blackfriars, E.C.4.

## The Scottish Universities.

There are in Scotland four universities each possessing a faculty of medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of Edinburgh, Glasgow, Aberdeen and St. Andrews. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland, here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not obtainable one apart from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh as also diplomas in preventive public health and radiology. As for public health registrable degrees in this subject are granted by the University of Glasgow while diplomas in public health may be obtained from the universities of St. Andrews and Aberdeen.

The conditions for admission of graduating students of medicine are the same as those in the faculties of Arts or Science (for degree in pure science).

As from January 1st 1923 prospective medical students are also required to pass a pre-registration examination in chemistry and physics.

### PROFESSIONAL EDUCATION.

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and in addition necessitate definite study for stated periods or disposes of children of the larynx, ear and nose of the skin of ophthalmology and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly but has duly performed the work of the class. Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March and the other from the middle of April to the beginning of July.

### PROFESSIONAL EXAMINATIONS.

The distinctive feature of the Scottish curriculum is that though nominally there are only four examinations each of these may be, and habitually is split up by the student into sections. Hence a student may complete some stage of his career during the course of nearly every session. Thus by the end of the first winter session the student may pass in zoology and chemistry. At the end of the first summer session he can finish with botany and physics and with anatomy and physiology at the end of the second. Pathology and either a medical or a surgical subject at the end of the third year and so on until the final examination in midwifery, surgery and medicine and the corresponding clinical subjects, at the end of the fifth year of study. At each examination the candidate may pass "with distinction" and a record is kept of the merit displayed so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as

graduating with honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry, the second with anatomy and physiology, the third with materia medica and pathology, the fourth with medicine and surgery (clinical and systematic), midwifery, clinical midwifery, and clinical gynaecology, and forensic medicine and public health. The first three examinations are held three times a year, the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed in arts, science, or medical degree examination in its subjects at any recognized university. When a candidate presents himself for an examination in several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has already been approved.

### THE HIGHER DEGREES.

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory or in the Naval or Military Medical Services or have been at least two years in general practice and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character a period of surgical work in a hospital or elsewhere being substituted for medical work and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

### FEES.

It is estimated that the class examination and other fees for the M.B., Ch.B. come altogether to about £225 the separate examination fees included in this calculation being as follows:

	£	s.	d.
First Professional	9	9	0
Second Professional	7	7	0
Third Professional	6	6	0
Final	11	11	0

Entry in any subject in which the candidate has failed entails a fresh payment of £11s. Candidates for the M.D. and Ch.M. pay £21 and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d which is published by Mr. Thun, 55 South Bridge, Edinburgh or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews information can be obtained either from the Secretary or the University or, alternatively, the Secretary of the United College, St. Andrews or the Secretary of University College, Dundee the latter being the two constituent colleges of the University of St. Andrews.

Finally it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships some information as to which will be found in the article on Medical Schools.

### THE CAMBIE TRUST.

The following is a summary of the regulations made by the Cambie Trust for the Universities of St. Andrews and for a scheme in the payment of class fees in the universities and extra-mural colleges of Scotland.

Applicants must be over 16 years of age, they must be of Scottish birth or extraction or have attended for two years after the age of 14 at a school or institution under inspection of the Scottish Education Department. Applicants so qualified who have been pupils of a school under the Scottish Education Department will be eligible for a remission in the payment of class fees if they have obtained the leaving certificate of the Department provided that it bears evidence of such preliminary education as is required by the universities for their graduating curricula or that it has

been supplemented by such passes either in the Scottish Universities or by other examination as will satisfy the above requirement of the universities. Where applicants have not been pupils of schools under the Scottish Education Department, or where other good ground for not having obtained the leaving certificate can be shown, the Executive Committee has power to accept instead what it deems equivalent evidence of attainments.

Applicants in the Faculties of Arts and Science must have had their course of study for each academic year approved by the University Adversary of Studies, and they must have passed the graduation examinations belonging to the previous stage of their curriculum before becoming eligible for assistance in the payment of fees of classes belonging to a further stage. Beneficiaries must submit to the Executive Committee at the end of each session particulars as to their attendance and work and distinctions gained, and any graduation examinations passed.

The annual allowance towards payment of class fees offered to beneficiaries by the Trust in the Faculty of Medicine is £19 for four years in all £76. Any unexpended part of a grant will be carried forward to the succeeding year. In combinations of Faculties the allowances available for beneficiaries are Arts and Medicine—two Arts grants of £8 and four Medicine grants of £19, in all £92. Science and Medicine—two Science grants of £17 and four Medicine grants of £19, in all £110.

Applicants, in writing for application forms, must name the university and faculty in which they intend to study, and state whether they have previously obtained the benefits of the Trust. Applications must be lodged not later than October 25th for the winter session, or May 10th for the summer session. Payments are made by means of fee coupons and fees already paid are not refunded.

## The Scottish Corporations.

THERE are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

### THE CONJOINT BOARD IN SCOTLAND

THIS body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the titles denoting the Licences of the three bodies concerned—namely, L R C P Edin, L R C S Edin and L R F P S Glas. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an Arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

#### *Professional Curriculum for Candidates registered as Medical Students prior to January 1st, 1923*

Subsequent to registration is a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held twice in Edinburgh and twice in Glasgow during the next period it is open to candidates to present themselves for examination at either place. The first examination deals with physics, chemistry, and elementary biology, the second with anatomy and physiology, including histology, the

third with pathology and materia medica, including pharmacy, and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine, (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes, (3) midwifery and diseases of women and of newborn children, including clinical gynaecology and practical midwifery, and, if it has not been passed previously, (4) medical jurisprudence and hygiene. Candidates will also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of these subjects. He can present himself in any single subject of the first three examinations. As regards the final examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects, but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

All candidates for the Final Examination must complete the pass in the three portions (medicine, surgery, and midwifery) within a period of nineteen months.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own, but all candidates for the Conjoint licence must sit for the Final Examination and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

#### *Professional Curriculum for Candidates registered as Medical Students after January 1st, 1923*

The curriculum has been extended to meet the recommendations of the General Medical Council. Candidates, when applying for copies of regulations, should state date of medical registration.

#### FEES

It is estimated that the total cost of lectures and fees for the Conjoint licence is about £152. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final £15. On re-entry for any of the first three examinations £3 and on re-entry for the Final, £5. If the re-entry is only in one or two subjects of the First, Second, or Third Examinations the fees are smaller.

Information concerning this Board should be sought either from Mr D. L. Fyvie, 49, Leamington Place, Edinburgh, or from Mr Walter Hurst, Faculty Hall, 242, St Vincent Street, Glasgow.

### ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

THIS College has three grades—Licentiate, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiate have already been generally indicated. If desirous of receiving it apart from those of the other two corporations they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examination takes place monthly on the first Wednesday and Thursday, except in September and October. Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, also on one or more departments

of medicine specially professed and approved by the Council, in which a high standard of proficiency will be expected. The fee to be paid by a candidate for the Membership is £36 15s. The examination is held quarterly and application for admission to it must be made a month previous to its date. For the Fellowship the candidate must have been a Member of the College for at least three years and if accepted, pay fees including £25 stipend duty amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

### ROYAL COLLEGE OF SURGEONS OF EDINBURGH

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

#### Licence

As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board but as an additional qualification it can be obtained by those already possessed of a registrable or equivalent qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s. of which £10 10s. is returned to unsuccessful candidates. Or on the candidate being shown a special examination may be granted the fee being £20 of which £10 is returned to a candidate if he is not approved.

#### Fellowship

Candidates for the Fellowship must be not less than 25 years of age and have been in the practice or study of their profession subsequent to registration for at least two years and must hold either a surgical degree from a university recognized for that purpose by the College or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (a) the principles and practice of surgery including surgical anatomy, (b) clinical surgery, and (c) one optional subject which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology, and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice. His application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh or in default by testimonials specially obtained for the purpose. Candidates are not allowed to appear more than three times at the examinations.

Licentiates of the College pay £35 and others £45. For further information application should be made to the Clerk of the College Mr D. L. Eadie, 49 Lauriston Place, Edinburgh.

### ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

This body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s. and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. The Faculty can also elect four Fellows annually without previous submission to examination provided they "have highly distinguished themselves in medical science or practice." They must be of not less than ten years' standing and 40 years of age.

The fee for the Fellowship is £50. Further information can be obtained from Mr Walter Hurst, Faculty Hall, 242 St Vincent Street, Glasgow.

## Irish Universities and Corporations.

### MEDICAL REGISTRATION IN THE IRISH FREE STATE

THE Medical Practitioners Act 1927 (Irish Free State) provides for the establishment of a Medical Registration Council for the Irish Free State. The main functions of the Council will be (1) to keep a register of medical practitioners who may desire to practise permanently or temporarily in the Irish Free State, and (2) to exercise disciplinary power with regard to all medical practitioners who are on the register and engaged in practice in the Irish Free State. The first schedule of the Act contains the agreement between Great Britain, the Irish Free State, and Northern Ireland. This agreement provides for the nomination of a member of the General Medical Council formerly made for Ireland by His Majesty on the advice of the Privy Council to be made henceforth by His Majesty in Council on the recommendation of the Governor of Northern Ireland. The nominations of members of the General Medical Council by universities and medical corporations in Ireland and the election of a member of the General Medical Council by registered medical practitioners in Ireland will be in all respects the same as heretofore. The constitution of the General Medical Council and of the several Branch Councils as formerly existing under the Medical Acts and the powers of holding qualifying examinations and granting diplomas for the purpose of registration in the general Register formerly vested in certain universities and medical corporations in Ireland are not affected by the establishment of the Irish Free State or of Northern Ireland and for the purpose of the preparation and keeping of the general Register the General Medical Council and the Branch Council for Ireland shall have the same powers and jurisdictions under the Medical Acts as they exercised formerly. The agreement provides also that any person who is or shall be registered in the general Register shall be entitled on the payment of a prescribed fee to be registered in the Irish Free State Register but this fee will not be payable by any person who on the date of the establishment of the Irish Free State Medical Register, is registered on the general Register. Then follow provisions with regard to the erasure from the Register of the name of a person on account of misconduct.

### THE IRISH UNIVERSITIES

There are three universities in Ireland, each with a medical faculty. These are in the Irish Free State the University of Dublin (usually known as Trinity College, Dublin) and the National University of Ireland, and in Northern Ireland, the Queen's University of Belfast.

### UNIVERSITY OF DUBLIN TRINITY COLLEGE

This university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.) and a post-graduate diploma in public health. It also grants post-graduate diplomas in gynaecology and obstetrics for which nine months' study is required and in psychological medicine, for which twelve months' study is required. The degrees are granted to those who having passed the Professional Examination, have also graduated in arts.

#### PROFESSIONAL EXAMINATIONS

A candidate for the Final Examination for the M.B., B.Ch. and B.A.O. degrees must be a matriculated student of at least five years' standing. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to any of these examinations students must have completed the course of study in the subjects involved.

Preliminary Scientific—This covers (a) chemistry, (b) physics, (c) botany and zoology; the three divisions may be taken together or at different times.

**Intermediate Medical**—This is divided into two parts (a) anatomy, physiology, organic chemistry, and histology, (b) applied anatomy and applied physiology. The two parts may be taken separately or together.

**Final Examination**—Part I Hygiene and medical jurisprudence, pathology and bacteriology, materia medica and therapeutics. Part II (a) Midwifery and gynaecology, (b) medicine and mental diseases, (c) surgery in all branches including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed and the Final Examination cannot be completed before the end of the fifth year.

**M D**—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B A three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and may also examine him *viva voce* on other medical subjects of a more general nature.

**M Ch**—The candidate must be a B Ch of not less than three years' standing, and have been engaged in practice for two years.

**M I O**—The candidate must be a B A O of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

### QUEEN'S UNIVERSITY, BELFAST

The degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M B), Bachelor of Surgery (B Ch), Bachelor of Obstetrics (B A O), Doctor of Medicine (M D), Master of Surgery (M Ch), Master of Obstetrics (M A O). The university also confers a Diploma in Public Health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B D S and M D S) are conferred by the university, and also a diploma in dental surgery (L D S).

#### PROFESSIONAL EXAMINATIONS

The examinations for the M B, B Ch, B A O are four in number. The first deals with (1) inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology (both theoretical and practical), and may be taken at the end of the second year of the student's career. The Third Examination includes (1) pathology and practical pathology, (2) materia medica, pharmacology, and therapeutics, (3) medical jurisprudence, and (4) hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done after the Second Examination has been passed.

The Final Examination includes (1) medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) systematic, (2) clinical, practical, and oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year, but students invariably take both parts at the end of their course. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

#### THE HIGHER DEGREES

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (a) after a formal examination, or (b) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and *viva voce* examination, and (4) a written paper and clinical or practical and *viva voce* examination on a subject chosen from the following list: (a) human anatomy, including embryology, (b) physiology, (c) pathology, (d) pharmacology and therapeutics, (e) sanitary science and public health, (f) forensic medicine and toxicology, (g) mental diseases. The regulations for the degrees of M Ch and M A O are of the same general nature.

### NATIONAL UNIVERSITY OF IRELAND

The National University of Ireland carries on most of its educational work through three constituent colleges—one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the Board of Studies of the university. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as Diplomas in Public Health, in Mental Diseases, and in Tropical Medicine.

Application for other information may be made to the Registrar, National University of Ireland, Dublin.

### THE IRISH CORPORATIONS

There are, in the Irish Free State, three licensing bodies other than the Medical Faculties of the universities, and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and in Apothecaries' Hall. In Dublin, as in London and in Edinburgh, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately.

#### THE CONJOINT BOARD IN IRELAND

This body requires of candidates the passage either of its own preliminary examination in the subjects of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the Pre-Registration Examinations in Chemistry and Physics and Biology.

#### PROFESSIONAL EXAMINATIONS

There are three professional examinations, the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the deficient subjects in practice and theory for the requisite



periods certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first examination deals with (a) anatomy and (b) physiology and histology. The second examination deals with (a) pathology, (b) materia medica, pharmacy and therapeutics and ophthalmology, and may be taken separately.

**Final Examination.**—This is divided into three divisions which cannot be completed until at least five years have passed in medical studies other than those for the Pre-Registration Examinations and five years at least since the beginning of the curriculum. The divisions are (a) medicine including fevers, mental diseases and diseases of children, (b) surgery including operative surgery, (c) midwifery including diseases of women and newborn children and the theory and practice of vaccination.

**Fees.**—Preliminary Examination £2 2s. Re-examination £2 2s. Pre-Registration Examination £3 3s. Re-examination in Chemistry £2 2s. in Physics £1 1s. First Professional Examination £26 5s. Second £15 15s. Final £6 6s. Re-examination fee is £2 2s. for each division.

### Diploma in Psychological Medicine

There are two examinations in connexion with this diploma. Part I consists of (a) anatomy and physiology of the nervous system, (b) psychology. Part II—(a) neurology, including clinical and pathological neurology, (b) psychological medicine including its legal relationships.

**Fees.**—£3 3s. for each part.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St. Stephen's Green, Dublin.

### ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND

#### The Diploma in Public Health

Every candidate for the Diploma in Public Health must observe the following rules:

**Rule 1.** A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine, Surgery, and Midwifery and his admission to the final Examination for a Diploma in Public Health.

**Rule 2.** The curriculum for the Diploma in Public Health shall extend over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification.

**Rule 3.** Every candidate shall produce evidence of having attended during a period of not less than five months at an institution approved by the Licentiate Board granting the Diploma, practical instruction in—  
(a) Bacteriology and Parasitology (including Medical Entomology) especially in their relation to diseases of man and to those diseases of the lower animals which are transmissible to man;  
(b) Chemistry and Physics in relation to Public Health;  
(c) Meteorology and Climatology in relation to Public Health.

At least 120 hours must be devoted to Course (a) of which not less than 150 hours shall be occupied in practical laboratory work.  
At least 60 hours must be devoted to Course (b) of which not less than 70 hours shall be occupied in practical laboratory work.  
At least 10 hours must be devoted to Course (c).

**Rule 4.** Every candidate shall produce evidence of having received during not less than 20 hours at an institution or from teachers approved by the Licentiate Board granting the Diploma practical instruction in the following subjects:

- The Principles of Public Health and Sanitation (40)
- Epidemiology and Vital Statistics (20)
- Sanitary Law and Administration (including Public Medical Service) (20)
- Sanitary Construction and Planning (10).

(The numbers indicate the normal proportion of time to be given to each subject.)

**Rule 5.** Every candidate shall produce evidence that he has attended for three months on the clinical practice of a recognized hospital for infectious diseases and has received therein instruction in the method of administration. At least thirty daily attendances of not less than two hours in each week shall be required.

**Rule 6.** Every candidate shall produce evidence that he has during a period of not less than six months been engaged in acquiring a practical knowledge of the duties routine and special of Public Health Administration under the supervision of a Medical Officer of Health who shall certify that the candidate has received from this Officer or other competent Medical Officer during not less than three hours on each of six working days practical instruction in these duties and also those relating to—

- Maternity and Child Welfare Service
- Health Service for Children of School Age
- Veneral Diseases Service
- Tuberculosis Service
- Isolation Hygiene
- Inspection and Control of Food including meat and milk

Candidates of having received the prescribed instruction in Public Health Administration must be given by a Medical Officer of Health who lives his whole time to Public Health work or by the Medical Officer of Health of a Sanitary Area having a population of not less than 50,000 or in Ireland the Medical Superintendent Officer of Health of a Sanitary or County Borough having a population of not less than 50,000.

**Rule 7.** The examination for the Diploma shall be divided into two parts Part I and Part II.

**Rule 8.** The examination for Part I shall include the following subjects:

- Bacteriology and Parasitology (including Medical Entomology)
- Chemistry and Physics and Meteorology and Climatology in relation to Public Health

**Rule 9.** The examination for Part II shall include the following subjects:

- Hygiene and Sanitation (including Sanitary Construction)
- Epidemiology and Infectious Diseases
- Sanitary Law and Vital Statistics
- Public Health Administration

The examination shall be written and oral and shall include practical examinations in Infectious Diseases Food in relation Inspection of premises—dwellings factories workshop etc.

### ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Those whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College, and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated questions on midwifery hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and Licentiates in medicine of the Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows are elected, by vote, from among the Members of the College.

**Fees.**—For the Licence in Medicine 15 guineas. Special Examination £21. For the Licence in Midwifery 8 guineas. Special Examination 16 guineas. For the Membership 20 guineas to a Licentiate of the College 30 guineas to others a special examination costs 10 guineas extra. The Fellowship £35 in addition to stamp duty £25.

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

### ROYAL COLLEGE OF SURGEONS IN IRELAND

This body besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship and on certain conditions. Its Licence is usually granted conjointly with that of the College of Physicians but it is given separately to holders of a registrable qualification in medicine provided the College is satisfied that adequate course of study have been pursued and provided its own provisional examination is passed. This examination is held on its behalf by the Conjoint Board and is identical with the ordinary surgical portion of the examination imposed by that body.

**The Fellowship.**—Candidates for the Fellowship must pass two examinations of which the first is in anatomy (including dissections) physiology and histology and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written partly practical and partly viva voce while the final examination includes the performance of operations. All subjects of either examination must be passed at one time and in neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy physiology and histology held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register*. However the candidate's name is on the Colonial or Foreign List in the *Medical Register* at the discretion of the Council. Candidates for the final examination must be over 25 years of age produce a certificate of general good conduct signed by two or more Fellows of the College and if successful must make a declaration before admission to the effect that they do not conduct unwholesome practices, and will not do so as long as they are Fellows.

**Fees.**—Candidates for the Licence pay 5 guineas for examination which sum if they pass is counted as part of the fee payable on admission to the Licence this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination on the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates and 40 guineas in the case of others.

## APOTHECARIES' HALL OF IRELAND

A diploma is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Women candidates are eligible.

**Fees**—Primary Examination (Parts I and II) £21; Final Examination £21. Subjects of examination: Primary, Part I, Anatomy and Physiology, Primary, Part II, Materia Medica, including Pharmacy, Medical Jurisprudence and Hygiene, Pathology. Final Examination: Medicine, Surgery, and Midwifery. Candidates must enter for and pass at the one time in Anatomy and Physiology. They are at liberty to enter for the subjects of the Final Examination at separate times, but the final examination cannot be completed until a period of three years has elapsed from the date of passing Primary Examination, Part II.

Application for other information should be made to the Registrar, 95, Merrion Square, Dublin.

## MEDICAL SCHOOLS AND COLLEGES.

## LONDON

INFORMATION as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge, and are seeking the medical degrees of those universities.

## CHARING CROSS HOSPITAL

THIS school, with its hospital, is situated in the centre of London, and is easily accessible. Primary and intermediate students attend lectures and practical work at King's College. The final studies are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for the qualifying examinations. Departments are also available for the other final subjects of bacteriology, clinical pathology, biochemistry, materia medica, public health, operative surgery, and for research work. An Institute of Pathology, with a whole-time staff of scientific workers and fully equipped laboratories, has been established in the school. Students receive their training in preventive medicine, pathology, and bacteriology here, and are encouraged to undertake research.

Women students are admitted to the school and hospital upon the same terms and conditions as men, and after qualification are eligible for resident hospital appointments.

**Fees**—The fees are as follows:—Entrance, Primary and Intermediate 10 guineas; Final, 8 guineas; Annual, £40.

Further information may be obtained on application to the Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

## GUY'S HOSPITAL

THE hospital contains 642 beds in constant occupation. Twenty-six beds are set apart for diseases of the eye, and 45 for the most urgent and infammatory medical cases, which form the subjects of case after the Second Lectures. There are special provision of cases of

The final Examination includes (1) midwifery. Beds given, (3) midwifery, (4) ophthalmology and appointments, the student may pass in all subjects at once at the dermatology, fifth year, or he may divide the examination of the genito-urinary—namely, (1) systematic, (2) clinical, and there are oral. The first part may be taken at the end of the year, but for the second part the candidate may not hospital, himself until the end of his fifth year, but students may usually take both parts at the end of their course. No general rule in regard to the study of the subjects of this examination will be valid unless the work was done subsequently passing in all the subjects of the Second Examination. In

the

Wills Library, the departments of chemistry, physics, pathology, and pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research, and provide the full curriculum for a medical qualification. New departments of anatomy, physics, and biology have recently been completed. They are equipped on modern lines, and provide ample accommodation for teaching and research. Special classes are held for the First and Second Examinations for medical degrees of the University of London, for the Pre-Medical Examination, and for the First and Final F.R.C.S. Eng. Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology.

**Appointments**—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, twenty assistant house-surgeons, eight house-surgeons, four ophthalmic house-surgeons, two genito-urinary house-surgeons, two house-physicians (children's department), and nine resident obstetric assistants are appointed annually. The house-physicians and house-surgeons, obstetric residents, ophthalmic house-surgeons, and genito-urinary house-surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, actinotherapeutics, anaesthetics, dentistry, orthopaedics, vaccine, tuberculosis, fractures, and genito-urinary and venereal disease, clinical assistantships in the various special departments are open to post-graduates.

**Scholarships, Prizes, etc.**—The following scholarships in Arts and Science are awarded: A Open Junior Science Scholarship (1) An Arts Scholarship of the value of £100, (2) A Science Scholarship of the value of £100, these are awarded annually in June or July. (3) A War Memorial Scholarship of the value of £200, awarded alternately in Arts and Science. This scholarship is open every other year; the next award will be made in July, 1928. (4) A Confine Scholarship in Science. A Junior Science Scholarship of the value of £100 is offered for competition annually in June or July to candidates who have attended the preliminary science classes at this school. Candidates for these scholarships (male students only) must not be under 20 years of age on August 1st of the year of the competition. C Open Senior Science Scholarships: (1) A War Memorial Scholarship of the value of £100, (2) An Open Scholarship of the value of £80, both of these are awarded annually in September. Full particulars as to the scholarships may be obtained from the Dean of the Medical School. Junior prizes for general proficiency, £20, £15, £10, Hilton prize for Dissection, £5, Michael Harris prize for Anatomy, £10, Sands Cox Scholarship for Physiology, £15 for three years, Woodrigo Memorial prize for Pathology, £10, Berney prize for Pathology, £34, Tiersmet's gold medal in Medicine, Treasurer's gold medal in Surgery, and the Golding Bird gold medal and scholarship for Bacteriology (£20), are awarded annually after competitive examination. The Gull Studentship in Pathology of the value of £250 per annum, the Berney Scholarship in Materia Medica of the annual value of about £50, and the Anderson Demonstratorship in Clinical Chemistry, value £150 per annum, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially. The Griffiths Demonstratorship in Pathology of the value of £320 per annum, and the Hilder and Ronald Poulton Fellowship, value £150 per annum, are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E.1.

## KING'S COLLEGE HOSPITAL

THE medical school of this hospital, which is situated at Denmark Hill, deals with the final examination subjects of the medical curriculum. The hospital was opened in 1917 and is one of the most modern and best equipped in England. The number of attendances in the casualty and out-patient departments during the year 1926 amounted to 223,053. In the education at the hospital a special feature has always been the individual attention given to each student. The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors.

There are special departments for diseases of women and children, nervous diseases, ophthalmology, otology, laryngology and rhinology, dermatology, radiology and physical treatment. The laboratory and pathological department are especially noteworthy.

**Appointments.**—Sixteen resident medical and surgical officers are appointed half-yearly as well as dressers and clerks in the wards, out-patient departments, *post mortem* rooms, and special departments. Each of the special departments has several clinical assistants. There are three registrars and four tutors, all of whom receive salaries. The Clubs and Societies (I mean combines, athletic, music, and other societies connected with the school) and provide also a common room.

Scholarship, etc.—At entrance Science Scholarship £50 At commencement of Final Studies Anatomy and Physiology Scholarship £50 Pathology and Pharmacology Scholarship £50 Two Merit and 40 Scholarship each £50 a year for 10 years Two Merit and 10 Scholarship each £50 (Oxford and Cambridge student) £50 Coll. Ges. Scholarship £50 Senior Scholarship £10 Todd Prize Tanner Prize—Class Prizes and Medals

Entrance fee of 10 guineas includes membership of the Club and Section Union.

**New Dental School**—This school was opened in October 1923 and provides complete courses for dental degrees and diplomas. The director of dental studies is Dr. A. Livingston, M.B., Ch.B., M.D.S., I.D.S.

The calendar of the school can be obtained on application to the Dean H. Willoughby, Lyle MD JPC or to the Secretary of the West Hill School S C Ranner MA King's College Hospital Denmark Hill SE5

THE LONDON HOSPITAL

This hospital, with its medical college and dental school, is situated in the Mile End Road 1-1. The hospital contains 849 beds, which are in constant use. During 1956 18,077 patients passed through the wards and 129,247 out patient received treatment. Of the latter number, 42,478 received treatment in the departments for diseases of the eye, nose, throat, ear, skin, and teeth and in the pediatric orthopedic, general radiological, electro- and physiotherapeutic and immunization departments. The number of major operations which were performed amounted to 7,873.

The hospital presents therefore a large field for clinical instruction and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

A clinical unit in medicine, under the charge of a whole-time doctor assisted by an assistant director, two assistants and two house physicians, provides for the more elaborate methods of diagnosis and treatment and takes a leading part in the initiation and co-ordination of medical research. To each medical and surgical firm throughout the hospital there is attached a first assistant who is responsible for instructing the clerks or dressers of the firm in elementary medicine and surgery, and who assists the honorary members of the firm in the preparation of their demonstrations. In the department of obstetrics and gynaecology there are two assistants and two resident accoucheurs. Special courses of lectures and demonstrations are arranged in medicine and surgery and in their ancillary subjects. Opportunities for research are provided under the supervision of the staff.

All the departments are modern and adapted for the teaching of all subjects in the various curricula. Special courses of instruction are held in preparation for the examinations of the University of London for the Fellowship of the Royal College of Surgeons and for the Membership of the Royal College of Physicians. Special entries can be made for the medical and surgical practice of the hospital. To a resident he is provided for the convenience of students. Recent additions to hospital and college buildings include the Dunn Clinical Laboratories, the Beaumont Clinical Theatre, the Barnard Baron Pathological Institute, and a hostel for resident medical officers providing accommodation for forty residents. The athletic ground, of over thirteen acres, is at Hammersmith Park and is open to all members of the Clubs Union.

**Appointments.**—The salaried appointments open to past students of the hospital are those of assistants to the medical unit, first assistants to the medical and surgical firms, obstetric registrar, assistants to the department of obstetrics and gynaecology, medical, surgical, and obstetric tutors, clinical assistants in the medical, surgical, ophthalmic, auril, light and skin, orthopaedic and electrical departments and in the Pathological Institute. There are appointed annually 4 resident physicians, 14 resident house-physicians and 22 resident house-surgeons, 14 resident receiving-room officer, 8 resident emergency officers, 8 clinical assistants to the medical out-patient department, and 16 clinical assistants to the surgical out-patient department, also paid and unpaid clinical assistants in the various special departments. In addition there are numerous assistantship clerkships, and dressership in the departments of medicine, surgery, gynaecology and obstetrics.

**Scholarships and Prizes**—The following is a list of scholarships and prizes: At Entrance: Entrance Scholarship £100; Entrance Scholar ship open to student of Oxford and Cambridge Universities (1) £75 Anatomy and Physiology (2) £100 Pathology Entrance Scholarship in Science £50 Up on Scholarship First Medical Education After Entrance: Buxton Prize in Anatomy and Physiology £0 Leoboly Prize in Organic Chemistry and Medical Pathology £25 Prizes in Clinical Medicine Surgery and Obstetrics and Gynaecology £20 each Duckworth Medal in Clinical Medicine and Surgery £10 Hutchinson Medal in Clinical Surgery £20 Treves Prize in Clinical Surgery £15 Sutton Prize in Pathology £20 A. E. D. Payne Research Scholarship in Pathology £20 Sir Andrew Clark Prize in Clinical Medicine and Pathology £14 T. A. M. Potts (pro re) Prize in Clinical Medicine and Pathology £10 L. Anderson Prize in Elementary Clinical Medicine £20 Dressers Prizes £40 Practical Anatomy Prizes £10 Arnold Thompson Prize in Medical and Surgical Diseases of Children £15 Iddle Prize £120 Francis Farmer Scholarship in Dental Surgery £25 Harold Fink Prize in Dental Surgery £8 £s The London prizes in Dental Surgery and Pathology £5 £s and in Dental Prosthetics £5 5s Seven extra examination prizes each of the value of £3 3s are offered for competition at the end of the courses of lectures in the dental curricula. Funds to the value of over £90 000 permit of financial assistance being given to students and graduates engaged in medical research.

*Fees*—Entrance fee 20 or 15 guineas according to examinations passed annual fee 40 guineas

Full information may be obtained from the Dean at the London Hospital Medical College Mile End E.1

THE MIDDLESBROUGH HOSPITAL

This school and hospital are in Mortimer Street W1 close to Oxford Circus, Goodge Street and Great Portland Street stations. There are a gymnasium, common rooms and restaurant within the hospital premises, and an athletic ground within easy reach. The hospital contains over 450 beds including a wing containing 62 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases for mental cases for cases of venereal disease and for diseases of children and of the skin and eye.

The medical school which includes the Bland Sutton Institute of Pathology and the cancer research laboratories is completely equipped for teaching the entire medical curriculum including the pre-clinical subjects chemistry, physics and biology. The Bland Sutton Institute under the charge of the Professor of Pathology contains large pathological and public health laboratories, a separate department of biochemistry and smaller rooms for original investigation as well as a pathological and anatomical museum. Bacteriological, clinical and microscopic examinations of material from the wards, operating theatres and out-patient departments are carried out in the laboratories and senior students are eligible for clerkships in connection with this work. Junior assistants in the pathological and bacteriological laboratories are elected annually from recently qualified students. Facilities are given for original research. The cancer research laboratories offer unparalleled opportunities for the study of this disease in both its clinical and pathological aspects.

**Appointments.**—Twenty-two resident appointments are open annually for competition among students of the hospital. The officers sit at and board in the residential college free of expense. Two casual medical and two casual surgical officer and two resident officers to the special departments, are appointed annually. Eight house-

surgeons are appointed every year at intervals of two months, after examination six house-physicians are also appointed annually at similar intervals. In obstetric and general medical house-surgeon is appointed every six months. Nine registrars are appointed annually. In the out-patient departments the appointments are clerk and dresser to the physicians and surgeons to out-patients, clerk in the departments for diseases of the skin and venereal diseases, dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, and to the dental surgeon. Extern midwives, clerks and post-mortem clerks are also appointed. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Students must have held an out-patient clerkship and dressership before holding in-patient clerkships or dresserships. Non-resident qualified clinical assistants are appointed in the medical, surgical, skin, neurological, ophthalmic, throat and ear, odontological, children's and electro-therapeutic out-patient departments.

**Scholarships.**—There are two Entrance Scholarships, value £100 each. Two annual Entrance Scholarships, of the value of £90 and £60 respectively, are open to students of the universities of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in, anatomy and physiology. Students joining the school in the previous April are eligible. The Peter Lucas Scholarship is annually awarded on the nomination of the headmaster to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships, there are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Brodrip Scholarships, value £60 and £40. Lyell Gold Medal and Scholarship, value £55 5s., Freeman Scholarship, value £30, John Murray Gold Medal and Scholarship, value £25, Hetley Clinical Prize, value £25, Leopold Hudson Prize, value 11 guineas, and the Second Year's Exhibition, value 10 guineas.

The rebuilding of the hospital is being carried out without the loss of a single bed, or any disorganization of its clinics.

**Fees.**—(a) For medical students. For one year or less, £21. (b) Students who have completed the Preliminary Science course. Entrance fee, 25 guineas, five annual fees of £45. The annual fee for further attendance at the medical school if a registrable qualification has not been obtained, is £25. Three quarters, one half, or one quarter of the first annual fee may, at the discretion of the School Council, be returned if the student obtains a registrable qualification within three six, or nine months of the annual payment becoming due. (c) Oxford and Cambridge and other students who have completed the Intermediate course. Entrance fee, 15 guineas, two annual fees of £45, five annual fees as above. These fees are inclusive and cover the cost of instruction in vaccination, fevers etc. and also the subscription to the amalgamated clubs and hospital journal.

Further information may be obtained from the Dean or the School Secretary.

### ST BARTHOLOMEW'S HOSPITAL

THIS institution fills one side of Smithfield and Giltspur Street, covering the greater part of a large island of ground separated practically from all other buildings, it is on the edge of the City, and easily reached from all parts of London. The hospital contains 757 beds. Extensive buildings, opened in July, 1907, occupy part of the ground required from the old Bluecoat School, and these mutually enhance the attractions of the hospital as a place of medical study. The medical school buildings, including the library, the museum, and the chemical, biological, and anatomical departments, have now at their side a very large building, which includes club rooms for the Students' Union, a visiting room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to an extensive post-mortem room, large and well equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. A further large block in Giltspur Street was required in 1923, and has been equipped by the construction of new lecture theatres and extensive laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology. The Students' Union owns grounds of some ten acres in

extent for recreative purposes at Wynchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B., M.D. of the Universities of Oxford, Cambridge, and London, and for the higher surgical degrees at the same universities, including the M.Ch. Oxon., M.Ch. Cantab., M.S. Lond., and F.R.C.S. Eng.

**Clinical Units.**—Special clinical units have been established in medicine and surgery, each under the charge of a professor and director who devotes the whole of his time to the purpose of hospital practice, teaching, and research. In each unit there are an assistant director and four assistants, for whom special laboratory accommodation has been provided by a gift from the Sir William Dunn Trustees. The appointments of clerks and dressers are open to all students in these departments, and arrangements are made for all students to study in these units during a part of their clinical course.

**Appointments.**—Clinical clerks to the physicians and to the physician-reconneur, and dressers to the surgeons and in the casualty department, are chosen from the students, clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (ophthalmic, othopredic, gynecological, children's, laryngological, urological, dermatological, venereal, electrical and dental, and in the post-mortem room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "junior" house-physicians and house-surgeons and receive a salary of £80 a year. During their second six months they become "senior" house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house-surgeon, a house-surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anaesthetics are appointed—the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum—and all are provided with board and rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year.

**Scholarships.**—Four Entrance Scholarships are annually awarded after examinations held in September. The subjects of examination and conditions of eligibility for these scholarships are: (1) One scholarship, value £75, in not fewer than two and not more than three of the following subjects: chemistry, physics, botany, zoology, physiology, pathology, and anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One scholarship, value £100, in not fewer than three of the following subjects: chemistry, physics, botany, zoology, and physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) An entrance scholarship in arts, of the value of £100, in Mathematics, Latin or Greek, or French or German, a second language or Chemistry or Physics. (4) The Jefferson Exhibition in the same subjects as No. 3—of the value of £50. Candidates for Nos. 3 and 4 must be under 19 years of age. The total value of the scholarships and prizes is over £1,200 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical College, St Bartholomew's Hospital, E.C.1.

### ST GEORGE'S HOSPITAL

THIS school is at Hyde Park Corner, and is carried on in connexion with St George's Hospital, an institution having a service of 426 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centre of London University established at King's College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of universities and all other examinations receive careful attention. The St George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital

promote and offer students alike with an athletic ground at Wimbledon. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited practitioners and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean.

**Appointments.**—Two house-physicians, two house-surgeons and two casualty officers are appointed every two months. The house officers reside and board in the hospital free of expense. The casualty officers are non-resident, and receive salaries at the rate of £100 per annum. After the student has held a house appointment the following are, among others, open to him: assistant resident physician at £350 per annum, assistant resident surgeon at £350 per annum, medical officer to the Atkinson Morley Convalescent Hospital at £300 per annum, medical registrarship at £200 per annum, surgical registrarship at £200 per annum, medical officer to the biochemical department at £100 per annum, assistant curatorship of the museum, £100 per annum, obituary assistantship, resident at £50 per annum, the post of resident anaesthetist at £100 per annum, the posts (three) of junior anaesthetist, each at £50 per annum.

**Scholarships.**—The following Entrance Scholarships and Exhibitions in anatomy and physiology and in general pathology are awarded in July to candidates who have passed the second M.B. London or corresponding examination: Senior William Brown Exhibition of the value of £150, Senior Scholarship of the value of 90 guineas, Junior William Brown Exhibition of the value of £50, Junior Scholarship of the value of £70, David Pendlebury Scholarship of the value of £50 and Exhibitions each of the value of £40 and up to six in number. Other prizes to the value of £200 are awarded annually to the students of the hospital.

**Fees.**—First year (First M.B. or pre-medical course) £36 15s. second and third years £42 each. For the course of clinical study in the fourth and subsequent years entrance fee £10 10s. annual composition fee £42. No entrance fee payable by St. George's students who have studied at King's College.

Further information may be obtained from the Dean of the Medical School.

#### ST MARY'S HOSPITAL

This hospital and medical school are situated close to Paddington Station (G.W.R.), lying on one side a poor district of 500,000 persons, and on the other side the residential district of Kensington and Bayswater. The hospital contains 283 beds, and extensions at present in progress will raise this number to 334 and provide two new operating theatres. By a scheme of affiliation, for teaching purposes, of several neighbouring hospitals the teaching facilities extend over 1,000 beds. By arrangement with the Lock Hospital, students take the course of instruction in venereal diseases there. The athletic ground (ten acres) is situated at Fembles, and can be reached in twenty minutes by a constant service of trains.

**Clinical Facilities.**—Clinical units in medicine and surgery were established in 1920, and have now been formally recognized by the University Grants Committee. St. Mary's being one of the six medical schools in London which enjoy this privilege. In addition to the king in beds at St. Mary's every student attends a short course at Queen Charlotte's Maternity Hospital (which is situated near to St. Mary's) before holding a post on the maternity district of the hospital.

**Institute of Pathology and Research.**—Students specially interested in pathology and bacteriology have singular advantages at St. Mary's. The Institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F.R.S. Research scholarships of £200 each are awarded annually to students working in the departments of the Institute and research beds are provided. Clerkships in pathology and bacteriology and chemical pathology, lasting for a period of three months are open to students of the fifth year and enable them to carry out the pathological and bacteriological investigations of the wards, and learn the necessary technique under supervision. Seventy-two of these posts are available annually. Numerous appointments are open to newly qualified members of the medical school including ten elevated posts, with salaries varying from £200 to £750 per annum.

**Complete Curriculum.**—The medical school provides complete courses of instruction, and students can join at once

on passing a Preliminary Examination in Arts. Terms begin in October, January, and April.

**Entrance Scholarships.**—Two Entrance Scholarships of £210 each and one of £25 5s. are awarded annually in July by nomination on the lines of the Rhodes Scholarship. The Geraldine Harmsworth Scholarship (£200) and one or more University Scholarships of £200 are awarded annually in July.

**Fees.**—Composition fees for entire curriculum (5½ years) £200 in one sum or £210 by five annual instalments. Composition fee for clinical curriculum (2½ years) 90 guineas in one sum or 55 guineas by two annual instalments. As an alternative students may pay an annual fee of 40 guineas with an entrance fee of 10 guineas.

#### ST THOMAS'S HOSPITAL

This school and hospital are situated in Lambeth on the south bank of the Thames, facing the Houses of Parliament and form one of the well-known architectural features of London.

The school buildings which are separated from the hospital by a quadrangle comprise lecture theatres, laboratories, and classrooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m., on Saturday to 1 p.m. St. Thomas's House, the new Students' Club recently opened comprises spacious dining and club rooms, etc., and provides accommodation for some sixty resident students. The terrace affords facilities for exercise and recreation. The sports ground of more than nine acres in extent is at Chiswick. It can be reached in forty minutes from the hospital, it is admirably adapted for football, cricket, lawn tennis, and athletic sports.

The hospital proper contains 644 beds. In addition to the ordinary provisions of a great hospital there are connected with the out-patient department physicians' and surgeons' rooms provided with ample sitting accommodation, so that students are enabled to follow closely the practice and teaching of the out-patient staff. There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students. There is a clinical theatre centrally situated so as to facilitate the illustration of lectures by patients from the wards and out-patient room, it is arranged also for lantern demonstrations. The maternity ward contains 21 beds gives students full facilities for maternity training under supervision within the precincts of the hospital. This overrules any necessity for supplementary instruction elsewhere and fully prepares the student for the external maternity practice of the hospital district. The revised regulations of the examining bodies can thus be fully complied with.

**Appointments.**—All hospital appointments are open to students without charge. A resident physician, a resident assistant surgeon and a resident anaesthetist are appointed annually at a salary of £265 each per annum. Two hospital registrarships (medical and surgical) at an annual salary of £250 each are appointed annually. The tenure of these offices may be renewed for a term not exceeding two years. A pathological registrar to the department of obstetrics and gynaecology (at an annual salary of £250), an ophthalmic registrar (at an annual salary of £50) and an orthopaedic registrar (unpaid) are appointed yearly. Ten resident casualty officers and anaesthetists (including two senior) are appointed every six months. Six house-physicians (including two obstetric house-physicians and one house-physician to the department of diseases of children) and nine house-surgeons (including two ophthalmic house-surgeons, one orthopaedic house-surgeon, and two house-surgeons to the ear, nose and throat department) are appointed every six months. Thirty-six or more clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

**Scholarships.**—There are five Entrance Scholarships, two in arts giving one year's free tuition, one of £150 and one of £50 in chemistry, physics and biology for students who have no received instruction in anatomy or physiology, one of £100 in any two of the following subjects: anatomy, physiology, chemistry or



pathology for students who have completed their examinations in anatomy and physiology for a medical degree in any of the universities of the United Kingdom or the Colonies and have not entered as clinical students in any London medical school. The money value and subjects of examination of the remainder are as follows: (a) William Tite Scholarship for second year students, £25; (b) and (c) Musgrove Scholarship or (alternately) Perceval Scholarship each for third year students and tenable for two years £35 each; (d) Merd Medal Medicine, Pathology, and Hygiene; (e) Wainwright Prize, Medicine; (f) Toller Prize, Medicine; (g) Cheselden Medal Surgery and Anatomy; (h) Clutton Memorial Medal in Clinical Surgery, biennial; (i) Bennet Scholarship £50 biennially Surgery and Surgical Pathology; (j) Solly Medal and Prize, biennially, Reports of Cases; (k) Sutton Sims Prize biennially, Reports of Cases; (l) Bristowe Medal, Pathology and Morbid Anatomy; (m) Hadden Prize Pathology and Morbid Anatomy; (n) Granger Testimonial Prize, £31 10s Anatomy and Physiology; (o) Louis Jenner Research Scholarship tenable for two years £60 annually, Pathology; (p) School Council Research Scholarship £250 per annum; (q) John and Temple Research Scholarship value £450 per annum (children).

**Fees**—The annual fees are: For each year of study, £50. These fees cover all tutorial classes, but do not include instruction in infectious fever, pharmacy and vaccination. A limited number of qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the Medical Secretary.

Special courses of instruction are given for various examinations, and a register of lodgings is kept at the school. Further information may be obtained from the Medical Secretary of the School, St. Thomas's Hospital, Albert Embankment, S.E.1.

#### UNIVERSITY COLLEGE HOSPITAL

The school, which forms part of the corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine, surgery, midwifery and gynaecology, pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, radiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electrotherapeutics, and skiagraphy. The Hospital and School have acquired the National Dental Hospital and College as their dental department thus providing every facility for the study of dental subjects. The Royal Eye Hospital has also been amalgamated with the Eye, Nose, and Throat Department, and a new hospital for in- and out-patients, close to University College Hospital, is completed.

The school thus provides the final course of study for the degrees of the Universities of Oxford, Cambridge, London, Durham, and other British universities, and for the diplomas of the Royal Colleges of Physicians and Surgeons in Medicine and Dental Surgery and the Licentiate of the Society of Apothecaries. Special bacteriological classes are also held in preparation for the various diplomas in public health. Each department is also equipped for more advanced work, and provides facilities for research.

Clinical units in medicine, surgery, and obstetric medicine are now in operation. The whole-time directors of the units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the hospital.

The new buildings of the obstetric hospital of 60 beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for 30 residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are now finished and in full occupation.

**Appointments**—The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, medical registrar, surgical registrar, obstetric registrar, Haiker Smith and junior registrar, ophthalmic registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, skin and venereal diseases departments, and house anaesthetists.

**Scholarship**—The following scholarships and prizes are open to competition. Two entrance Exhibitions of 112 guineas each, awarded after a competitive examination in Anatomy or Physiology or General Pathology. Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £220. The Graham Scholarship in pathology of a sum not exceeding £400 per annum,

Leslie Pearce Gould Research Scholarship in surgery for one year, value about £200. The Atkinson Moyley Scholarship of £45 a year for three years, awarded after examination in the theory and practice of surgery, the Atkinson Scholarship of £55 a year for two years for general proficiency in medical studies. The Magrath Clinical Scholarship, value about £150. The Illiter Exhibition in pathology of £30. The Percival Allyn Prize for the advancement of surgery by research, value about £75. The Graham Gold Medal for research work, four Fellows Medals in clinical medicine, four Medals in clinical surgery, the Bruce Medal in pathology, and surgery, two Tuke Medals in pathology, and the Irichen Prize for practical surgery.

**Fees**—The fee for the full course of final studies at the school is 112 guineas if paid in one sum, or 115 guineas if paid in two instalments. Fees for vaccination, fevers and pharmacy not included.

Patricians of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

#### WESTMINSTER HOSPITAL

This school, with its hospital, situate in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College. The rest of the work is done in the school buildings near the hospital. The number of in-patients averages 3,500 and out-patients upwards of 30,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery.

**Appointments**—A medical and surgical registrar are appointed annually, each with a salary of £150, and an obstetric registrar with a salary of £50. A senior resident and casualty officer, salary £104 per annum and board, appointed for six months, may be extended for a further period of six months. Three house-physicians, three house-surgeons, three assistant house-physicians, three assistant house-surgeons, and a resident obstetric assistant are appointed after examination, and are provided with rooms, commons, and salary of £52 per annum, except the assistant house-physicians and the assistant house-surgeons, who are provided with commons only. The assistant house-physicians, after three months' service, become house-physicians for a further period of six months, and the assistant house-surgeons, after three months' service, become house-surgeons for a further period of six months. Two house-anaesthetists are appointed for three months, non-resident, salary £50 per annum. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among the qualified students. Every student must perform the duties of out-patient dresser for three months and afterwards hold the office of in-patient dresser for three months. He is also required to serve two terms of three months each as medical clinical clerk to the in-patient physician and one term as gynaecological clinical clerk. Two pathological clerks are appointed every three months to assist in the post-mortem room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships.

The governors of the hospital have now completed the extensive improvements and alterations to the hospital, which render it a still more efficient teaching institution, with an increased number of beds.

The athletic ground is situated at Tooting, and can be reached in twenty minutes from the hospital.

**Scholarships**—The following open scholarship are offered for competition during the year 1927-28. In the winter session 1927-28 scholarships in anatomy and physiology £75 each. In the spring two scholarships in anatomy and physiology £75 each. A certain number of scholarships have been allotted to universities of England, Wales and the Colonies, and to public schools. These scholarships are awarded entirely on the nomination of the Principal of the university or school.

**Fees**—The annual composition fee is £40. An entrance fee of 10 guineas is payable by all students—namely primary and intermediate students £10 10s. Students entering for the final year £8 8s. These fees include subscriptions for membership of the Clubs Union.

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital, Westminster S.W.1.

LONDON (ROYAL LIRIC HOSPITAL) SCHOOL OF MEDICINE  
FOR WOMEN

The school is situated at 8 Hunter Street Binswick Square W.C.1 close to the Royal Free Hospital. It is like all the other London schools which have so far been mentioned one of the constituent schools of London University. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons. Research laboratories are attached to all departments. A large well equipped library, common room, union room and refectory are provided for the use of students. Resident accommodation for 60 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1 has 245 beds, all of which are available for clinical instruction. A new block contains the obstetrical and gynaecological unit which controls 68 beds. A large maternity district is served from the unit with a separate maternity hostel in the Essex Road, Islington. There are separate departments for diseases of the eye, ear, and skin, children and infant welfare, venereal diseases, orthopaedic surgery, massage, light electrical and x-ray work, dentistry and casualty. The instruction given covers the full curriculum for the M.B. B.S. degrees of the University of London, including first medical courses. Students attend the practice of one of the fever hospitals of the Metropolitan Asylums Board and receive special instruction in lunacy at Bethlem Hospital; they are also admitted to the practice of a number of special hospitals, and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, the National Hospital for Nervous Diseases, the South London Hospital and the Royal Ophthalmic Hospital. The work of the school includes preparation for the Primary Fellowship examination, and also for the Medical School and general hospital course for dental students.

**Appointments**—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical gynaecological and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, shrinker, and clinical assistants and demonstrators in various subjects.

*Scholarships*.—The Isabel Thorne Entrance Scholarship value £30 the St Dunstan's Medical Exhibition value £60 a year for three years which may be extended to five years; the Alfred Langton Scholarship of £50 a year for two years; the Flora Murray Bursary of £50 and the Mabel Sharmman Crawford Scholarship value £20 a year for four years are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years; the Mr George J Smutts Scholarship of the value of £50 a year for three years which may be extended to five years; the Dr Margaret Todd Scholarship of the value of £57 10s. a year for four years; and the Sarah Holborn Scholarship of the value of £20 a year for three years which may be extended to five years are awarded in alternate years. The School Jubilee Bursary of £59 a year or three years is offered every third year. The Boeckel Scholarship value £50 a year for two or four years is awarded by the Reid Trust Co., on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alexander Lewis Memorial scholarships of the value of £25 a year for ten years is awarded every fourth year. The John Byron Bursary of £28 a year for two years; the Julia Anne Hornblower Cook Prize of £60 the Helen Pridaux Prize of £60 the Mabel Webb Pearce Scholarship of £30 for two years; the Fanny Butler Scholarship of £16 a year for four years together with many other scholarships and prize are offered on sundry conditions.

The Dr Edith ...uate Scholarship of £100 is awarded annually to offer women who wish to go to India and other countries as medical missionaries.

**Fees**—Courses for the University of London degrees and the diplomas of the Conjoint Board in England and other qualifications £2.0 payable in five instalments. These sums include library and laboratory fees.

The Students Union exists to promote corporate action of the student on matters of common interest to promote and maintain athletic and other clubs and to issue a school magazine. All students are required to become members of the Union. The students sports ground which consists of a freehold property of seven and a half acres is situated at Sudbury.

Further information can be obtained from the Warden and Secretary

## KING'S COLLEGE

In the result of Medical Science instruction is given in the preliminary and intermediate subjects of the first and second examinations leading to the degree of M.B., B.S. of the University of London of the corresponding examinations of other universities and of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons, including the primary examination for the I.R.C.S. Eng. The courses are open to women students on the same terms as to men.

Regular students who have completed their preliminary and intermediate examinations proceed to hospital to pursue their studies for the final examinations. The hospitals associated with King's College are King's College Hospital, Darnley Hill S15 Westnminster Hospital & W1 St George's Hospital Hyde Park Corner, SW1 and Charing Cross Hospital Strand W C2

A course for the degree of the University of London and for the Diploma of the Royal College of Surgeons in dental surgery in conjunction with King's College Hospital Medical School has been arranged.

*Scholarships*.—The entrance Scholarships are (1) Two Warneford Scholarships each £50 for four years subjects—selected from mathematics classics divinity and science (2) One Sambrook Scholarship of £30 for three years subjects of examination selected from mathematics classics and science. The holders of the preceding awards must proceed to Kings College Hospital (3) Worsley £100 paid in five annual instalments (4) Rabbeth Scholarships value £30 and £15 in July for the best student of the first year (5) Second years scholarship value £20 for the best student of the second year (6) Daniell Scholarship £40 awarded on the results of the University Honours Examination (7) The Layton and Berridge Studentships each £150 per annum and (8) numerous prizes.

Full information as to admission fees and scholarships can be obtained from the Dean of the Faculty of Medical Science  
King's College Strand W C2

## UNIVERSITY COLLEGE

This institution one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology, and also the intermediate medical science—namely, anatomy, physiology, and pharmacology. The new anatomy building provided by the munificent gift of the Rockefeller Foundation of New York, was opened on May 31st, 1923 by His Majesty the King. This building forms part of the block which includes physiology and pharmacology. The department of hygiene and public health prepares for the diplomas in public health of the Royal Colleges and of the various universities. Research work is undertaken in all the above named departments. The College undertakes the education of students in all the subjects mentioned leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degree of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. Women students are admitted to all courses on the same terms as men. The general arrangements for the benefit of students include membership of the Union Society or the Women's Union Society with the College gymnasium and the athletic grounds. There is also a collegiate residence for about fifty-five men students at Ealing and for about seventy women students at Byng Place, Gordon Square.

**Scholarships**—The scholar hips and exhibition obtainable include the Bue' mill Scholarship value £150 gun a in chemistry, physics botany and zoology (the successful student must complete his work at University College Hospital Medical School) two entrance exhibitions in the same subjects each of the value of 55 guineas and a Faculty of Medical Sciences Entrance Scholarship value £30 a year for three years

**Fees.**—The fees for the courses covering the work of the First Examination for medical degree of the University of London, and in both parts of the Second Examination amount to 115 guinea. The fees for the courses covering the corresponding examinations



with the salary will be at the rate of £160 per annum, with board apartments and laundry. From the resident medical officers a senior resident medical officer is appointed at a salary of £200 per annum. At the Bristol General Hospital a senior resident medical officer, £250 per annum, resident house-physician, £80 per annum, two house-physicians £80 per annum, house-surgeon £80 per annum, resident obstetric officer, £80 per annum, house-surgeon to special department, £60 per annum, dental house-surgeon (non-resident) £50 per annum. All these appointments are for six months, except that of senior resident medical officer which is for two years.

**Scholarships**—The following are among the scholarships and other awards open to students of the school: The Ashworth Hallett Scholarship value £40 open to women on the two Martin Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize value 7 guineas for proficiency in practical surgery; the Committee's Gold and Silver Medals for fifth year students for general proficiency; the Augustin Richard Prize value about 6 guineas for proficiency in anatomy; the Henry Clark Prize value 11 guineas for proficiency in gynaecology; the Croxby Leonard Prize value 6 guineas for proficiency in surgery; the Supple Surgical Prize a gold medal and 7 guineas; the Supple Medical Prize a gold medal and 7 guineas; the Henry Marshall Prize value £12 for dressers; the H. M. Clarke Scholarship value £15 for proficiency in surgery; the Sanders Scholarship value £22 10s for general proficiency; the Barrett-Rouse Scholarship for proficiency in diseases of the nose, throat and ear; or skin value £17; Lady Hafield Scholarship value about 25 guineas; Phyllis Siepmann Prize for proficiency in diseases of children value £25; Bristol City Senior Scholarships and the Senior Scholarship offered by the counties of Gloucestershire, Somerset, Wilts, Devon etc. are tenable in the university.

Son of the Fellows' ps awarded by the Colston Research Society for research in the university are allotted to the Faculty of Medicine.

**Fees**—The fee for all the course required for the medical curriculum including hospital practice is 205 guineas paid by annual instalment.

#### UNIVERSITY OF DURHAM COLLEGE OF MEDICINE

THIS, the Medical School of the Faculty of Medicine of the University of Durham is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees (other than Hygiene) which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College also part of the university, and their clinical work in the Royal Victoria Infirmary, an institution with more than 550 beds and special accommodation for the benefit of students. Students do their practical midwifery at the Princess Mary Maternity Hospital, which contains 80 beds, thoroughly up to date, and there is an annual indoor and outdoor attendance on 3,000 cases. In a Heath wing of the school itself there is the department of physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union. A new bacteriological department has been erected adjacent to Armstrong College.

**Post-Graduate Instruction**—A comprehensive series of post-graduate courses has been arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study which are afforded by the College, the Royal Victoria Infirmary, and other associated hospitals and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer session as well as an intensive course in the summer vacation.

**Students' Union**—Students' Union Buildings have been erected and furnished at a cost of over £40,000 and are now in daily use. Separate accommodation (non-residential) is provided for men and women students.

**Appointments**—Pathological assistants, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months.

**Scholarships**—University of Durham Entrance Scholarship £25 a year for four years; Pease Entrance Scholarship £20 a year for three years (awarded every third year); Province of Durham Masonic (Entrance) Scholarship £20; Heath Scholarship for surgery £200 available every second year; Petherford Memorial Surgical Scholarship £120 available every third year.

The following scholarships are tenable for one year—namely: Tulloch Scholarship for elementary biology and organic chemistry; £20 Dickinson Scholarship for medicine surgery midwifery and

pathology; Gold Medal and £20 Clariton Scholarship for medicine; £25 Gibb Scholarship for surgery; £25 Luke Armstrong Scholarship for co-surgery; £25 Scott Scholarship for highest marks in Gordon Memorial Scholarship for clinical medicine and clinical surgery interspersed on £225 Gibb on Prize for midwifery and diseases of women and children; £10 Turnbull Prize and Silver Medal for surgery anatomy; Outram Wood Prize for psychological medicine; £10 and Sewell Memorial Prize and Silver Medal for clinical pathology. At the end of each session a prize of books is awarded in each of the regular classes.

**Fees**—The composition fee for lectures at the college is £1-0. Composition fee for hospital practice, £16 plus £2 2s yearly for three years payable to the Committee of the Royal Victoria Infirmary. Other information should be sought from the Registrar of the College of Medicine at Newcastle.

#### LIVERPOOL

THE School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1884 and contain excellent dissecting rooms, well arranged laboratories for physiology, pathology and bacteriology, three lecture theatres and several similar classrooms. In addition there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by common rooms and a refectory in which they can take meals. The General Infirmary has 632 beds and includes gynaecological and ophthalmic wards, a special children's ward and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge attached to the infirmary, have 88 beds. The West Riding Mental Hospital at Wakefield is open for the study of mental diseases. Students can in addition attend the practice of the Leeds Public Dispensary, the Hospital for Women and Children, and the Leeds Maternity Hospital, where the obstetric work is done.

**Appointments**—Surgical dressers are appointed every six months; physicians' clerks, clerks in the children's department, orthopaedic dressers, ophthalmic and aural dressers, gynaecological ward clerks, maternity clerks, assistant physicians' clerk, dermatological clerks, assistant surgeons' dressers, dressers in the casualty room, post-mortem clerks, laboratory assistants and dressers in the venereal clinic every three months. After graduation there are a considerable number of residential and other appointments available in the Leeds General Infirmary, Leeds Public Dispensary, Hospital for Women and Children, West Riding Mental Hospital etc. occupying periods of from six to twelve months at rates varying from £20 to £150 per annum.

**Scholarship**—The university awards annually a scholarship in the form of a free admission to the lectures and classes given in the university which are covered by the composition fee. The university also awards a scholarship on the results of the first examination of the value of £28 in the form of a free admission to the clinical teaching of the infirmary.

**Fees**—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £324 plus of course the expenses of living during the five years covered by the curriculum. The composition fee for the course for the first, second and third examination and for the clinical work at the infirmary is £237. The composition and clinical fee for those who have passed the second examination is £150.

Further information can be obtained from the Academic Subdean or Clinical Subdean, School of Medicine, Leeds.

#### LIVERPOOL

THE Medical School of this city is part of the university and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories as well as with ordinary spacious and well equipped classrooms and laboratories for the instruction of students proceeding to medical degrees, and diplomas in special and ordinary subjects. All the laboratory and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals of which an account is given overleaf, have amalgamated to form the clinical school of the university.

**Appointments.** The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

**Scholarships.**—The awards made each year to successful students total over £1,500. They include the following: Two Holt Fellowships, one in Pathology, the other in Physiology; a Robert Gee Fellowship in Anatomy; two John Rankin Fellowships in Anatomy; a John W. Garrett International Fellowship in Bacteriology; a Johnston Colonial Fellowship in Biochemistry; an Ethel Boyce Fellowship in Gynaecology; and a Thelwall Thomas Fellowship in Surgical Pathology; one Lady Jones Fellowship in Orthopaedic Surgery (value of fellowships, one at £200, three at £150, two at £120, four at £100); a University Scholarship of £50 awarded on the results of the Final M.B. (Part A) Examinations; a Scholarship in Mechanical Dentistry of £20; two Lyon Jones Scholarships of the annual value of £21 each for two years, one for the junior and the other for the senior students; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize, the Tor Gold Medal in Anatomy; John Rankin Exhibition in Practical Anatomy, £25; the George Holt Medal in Physiology; the Kankhake Medal in Pathology; Mitchell Banks Medal in Anatomy; the Robert Gee Prize of £5 5s in Children's Diseases; Mary Buell Davies Memorial Scholarship (women), £60 per annum for four years; Robert Gee Entrance Scholarship (men), value of £40 per annum for four years; Dental Operating Prizes (four); Orthodontic Prizes (two); Samuels Memorial Scholarships, three at £20 each; one Thomas H. Bickerton Prize in Anatomy; Dr N. E. Robert Prize in Zymoic Diseases; Ash's Prize in Dental Surgery, value £2 2s; Gilmour Medal; and other entrance scholarships. In addition, a number of gold and silver medals have recently been instituted in the following subjects: Pharmacology, Surgery, Forensic Medicine and Toxicology, Public Health, Medicine, Obstetrics and Gynaecology, Orthopaedic Surgery, and Laryngology and Otolaryngology.

**Fees.**—Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

#### The Clinical School

As many as ten hospitals have combined to form the clinical school of the university, these being: The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, the Stanley Hospital, the Royal Liverpool Children's Hospital, the Hospital for Women (with the Summit Hospital), the Liverpool Maternity Hospital, the Peto and Peto Infirmary, St Paul's Eye Hospital, and St George's Hospital for Diseases of the Skin. Between them they provide over 1,445 beds.

#### MANCHESTER

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains 668 beds, and has associated with it a large convalescent home (132 beds) and a Central Branch Hospital (54 beds). The courses in mental diseases are partly taken in the County Mental Hospitals at Prestwich and Macclesfield. Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St Mary's Hospitals.

**Appointments.**—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: One surgical registrar, at £150 per annum; two pathological registrars, at £100 and £50 per annum; one medical registrar, at £150 per annum; a cardiological registrar, at £150 per annum; a surgical tutor, at £30 per annum; a director of the clinical laboratory, at £400 per annum; and two assistants, at £350; three assistant medical officers and three assistant surgical officers, each at £35 per annum; assistant surgical officer, rural department, at £35 per annum; seven anesthetists, from £75 to £100 per annum each; one resident medical officer, one year, £200 per annum; ditto at the Royal Lunatic Asylum, Cheddle, one year, £300 per annum; one resident surgical officer, one year, £200 per annum; three resident medical officers for Central Branch, one at £200 and two at £100 per annum; one assistant resident surgical officer, £150 per annum; one resident medical officer at the Convalescent Hospital at Cheddle, £250 per annum; two assistant medical officers to radiological department, £150 and £105 per annum; medical officer, physio-therapeutic department, £150 per annum; assistant surgical officer, gynaecological department, £35 per annum; assistant to the dermatologist, £20

per annum; and three assistant surgical officers for Central Branch, £75 per annum, ten senior and ten junior house-surgeons and ten house-physicians, appointed during the year for periods of six months, at a salary of £50 for the first six months, and £100 for the second six months. Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months. Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months. Non-resident clinical assistantships for qualified medical women, tenable for six months, at an honorarium of £35.

**Entrance and other Scholarships.**—The following are among the scholarships obtainable by students of the school: Rogers and Sention Scholarships in Arts (in alternate years), £40 per annum, tenable for two years; Three Hulme Scholarships, tenable for three years of £35, one being awarded annually for proficiency in subjects of general education; Two James Gaskill Scholarships of £35, tenable for two years, one being awarded annually for proficiency in the branches of mechanics and chemistry; A Dora Muir Scholarship, £30 per annum, tenable for three years and open to the competition of women students only. This is awarded triennially; Sir J. P. Kay Shuttleworth Scholarship, £30 per annum, tenable for three years, awarded triennially, open to the competition of scholars from Sedburgh School, Giggleswick School, and Burnley Grammar School; subjects—mathematics, chemistry, and mechanics; Dreschfeld Memorial Scholarship, value £20, tenable for two years and awarded triennially on the result of the Entrance Examination; John Russell Medical Entrance Scholarship, awarded annually, value £45; Two Dunlop Junior Medical Scholarships, value £50 each, tenable for one year for candidates who have not commenced the second year of study leading to a medical qualification; subjects—zoology, botany, and chemistry; One Dunlop Senior Medical Scholarship, £50 for one year, awarded on results of second M.B. Examination; Two Entrance Scholarships in Medicine, value 160 guineas, awarded annually for proficiency in arts or science respectively; Tom Jones Exhibition in Anatomy, £25, offered annually; A Robert Platt Physiological Scholarship of £90, tenable for one year; A Leach Fellowship of £100 for original research after graduation; Graduate Prize in Medicine, £5 annually; A Graduate Research Scholarship in Medicine, value £70, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination, open to Graduate Prizemen; A Dunville Surgical Prize, value £15, awarded annually at graduation; The Tom Jones Memorial Surgical Fellowship, value £105, tenable for one year, usually awarded annually; The Turner Medical Prize, value £20, awarded annually for proficiency in certain subjects of the Final M.B. Examination; The John Henry Agnew Prize of £30, awarded annually for proficiency in the Diseases of Children; The Ashby Memorial Scholarship, tenable for one year (£100), for research in the Diseases of Children; offered triennially; Sidney Renshaw Prize in Physiology, one offered annually (£15); The John Henry Agnew Fellowship in Diseases of Children, £10; The John Henry Agnew Fellowship, £10; Post Graduate Medical offered triennially; Eliza Maple Holt Post Graduate Medical Scholarship for Women, £60 for one year, offered biennially; The details and regulations of the Dickinson Scholarships—(1) for Anatomy, (2) for Pathology, (3) Research Scholarship in Surgery, and (4) Travelling Scholarship in Medicine—may be obtained from the Secretary to the Trustees. The Morrison Watson Fellowship for research in Anatomy is offered annually, value £150; also the Sheridan Delepine Fellowship in Preventive Medicine, value £300, is offered biennially. The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum, tenable for not more than four years, to women students who have passed the First M.B. Examination, the conditions can be obtained from the Registrar. The Knight Prize of £50 for original research in the psychological factors in the causation of mental disorder—open to holders of the Diploma in Psychological Medicine or medical practitioners who have been registered in the university as candidates for that diploma.

**Fees.**—The composition fee for the university course in medicine is 110 guineas, payable in four instalments of 27½ guineas, but the sum does not include the fee to cover the work required for the First M.B. Examination. This is £42, payable in one instalment. Hospital fees are additional, and usually amount to about 77 guineas.

A prospectus and further information about the school and its scholarships may be obtained from the Registrar.

**Clinical Work.**—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well known Hospital for Children at Pendlebury, and St Mary's Hospitals for Women and Children, the Manchester Hospital for Diseases of the Ear, the Christie Cancer Hospital, the Hospital for Consumption and Diseases of the Throat and Chest, the Ancoats Hospital, and the Salford Royal Hospital make arrangements for the instruction of students.

#### SUFFRIDGE

In this city the medical school is one of the departments of the university, being conducted and controlled by the Medical Faculty, and occupying practically the entire wing of the quadrangle of the university buildings.



looking. We ton Park. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely chemistry, physics, biology, anatomy, and physiology—are both as regards structural arrangement and scientific equipment on the most modern and complete line.

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work and a large pathological museum which is open daily. In addition there is a large library and reading room. There are a number of recreation athletic and other societies all under the management of an annual elected students' representative council and large and comfortable common rooms both for men and women students. There are also two student unions—one for men and one for women students. In the university buildings there is a refectory open to all students of the school and a university journal is published fortnightly. The ordinary curricular work of the school is done at the Royal Infirmary and Royal Hospital which have amalgamated for the purpose of clinical instruction and provide over 800 beds for medical, surgical, and special cases, including diseases of the eye.

In addition, the Royal Infirmary has special departments for the treatment of diseases of the skin and ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for diseases of the throat, ear, skin, orthopaedics, and mental diseases. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the post-mortem examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fever are given at the City Fever Hospital and on mental diseases at the South Yorkshire Mental Hospital.

**Appointments.**—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) casualty dressership, (2) surgical dressership, (3) medical clerkships, (4) pathological clerkship, (5) ophthalmic clerkships, (6) clerk to the skin department etc. These appointments are made for three months commencing on the first day of October, January, April, and July.

**Scholarships.**—Entrance Medical Scholarship value about £170 open to both sexes. Six Edgar Allen Scholarship of £125 a year for three years may be held by students taking the degree course in medicine. Two Town Trustees' Scholarship each of the value of £50 (tenable for three years for boys or girls under the age of 19 years who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination). Four Town Trustees' Scholarship value £50 for boys or girls under 19 years of age educated in any school in Sheffield secondary or otherwise. Town Trustees' Fellowship value £75 tenable for one year. Mechanics' Institute Fellowship value £50 (with remission of fees) tenable for one year and renewable for a second year. The Frederick Clifford Scholarship value about £50 tenable for two years. Hays Scholarship for proficiency in anatomy and physiology. Gold and bronze medals are also awarded for proficiency in various subjects.

**Fees.**—Students in the Faculty taking their complete medical course in the university pay an inclusive composition fee of £38 for each of the five years. The composition fee for the dental courses are as follows: for BDS first and third year £75, second, fourth and fifth years £25 for LDS first and second years £75, third and fourth years £25. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

## UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE

### WELSH NATIONAL SCHOOL OF MEDICINE, CARLIFF

The next session opens on October 4th. The courses of instruction are open to both men and women students and qualify for the degrees in medicine and surgery of the University of Wales, and for the degrees and diplomas of other examining bodies. Hospital instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, and at other recognized institutions. The Cardiff Royal Infirmary, together with its auxiliary, has 489 beds and

is well equipped in all general and special departments, giving facilities for every branch of study. Medical practitioners wishing to prepare for the Diploma in Public Health or for the Tuberculous Diseases Diploma of the University of Wales can attend complete courses of instruction in the school. Profectus can be obtained on application to the Dean of the Faculty of Medicine, or to the Secretary, Welsh National School of Medicine, Newport Road, Cardiff.

## SCOTT AND

As will be gathered from the following paragraphs the facilities for acquiring a medical education in Scotland are very ample whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is now added an account of hospitals which either play an official part in the education given to students or yet unqualified or offer valuable opportunities for post-graduation work.

## GENERAL

The school is conducted by the Faculty of Medicine. This comprises thirteen chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics (ordinary and pre-registration), chemistry (ordinary and pre-registration), anatomy, physiology, materia medica, pathology, bacteriology, forensic medicine, surgery, medicine, and midwifery. Courses of instruction in public health and infectious diseases, tropical medicine, medical ethics, and tuberculosis are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 335 patients), the Royal Mental Hospital (800 patients), the Sick Children's Hospital (85 patients), the City Fever Hospital (350 patients), the General Dispensary, Maternity and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (3,000 patients annually). Courses of practical instruction are given in diseases of children at the Sick Children's Hospital, in fevers at the City Fever Hospital, in mental diseases at the Royal Mental Hospital, in diseases of the ear, nose, and throat at the Infirmary and Dispensary, in diseases of the eye at the Infirmary and Eye Institution, in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Surgery and Bachelor of Medicine (M.B. Ch.B.). A Diploma in Public Health is conferred after examination on graduates in medicine of any university of the United Kingdom.

The degree of Ph.D. is also granted in this faculty.

Bursaries, scholarships, and fellowships to the number of fifty and of the annual value of £120 may be held by students of medicine in this university. They range from £8 to £100 per annum and are tenable in most cases for two or three years. The winter session begins on October 11th, 1927, the summer session on April 17th, 1928.

**Fees.**—An income tax fee of 12s 6d is payable for instruction within the university and the fee for the degrees of M.B. Ch.B. is 33 guineas. The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £236.

## EDINBURGH

THESE are two Schools of Medicine, the School of the University and the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh.

**THE UNIVERSITY SCHOOL.**—This school in addition to other resources of the university has the following means of affording practical instruction: Royal Botanic Garden, Herbarium and Museum, Zoological Laboratory and Museum of Science and Art, Physical Laboratory, Chemical Laboratories, Dissection Room, Bone Room, and Anatomical Museum, Physiological Laboratory, Medical Jurisprudence Laboratories, John Usher Institute of Public Health, Materia Medica Museum and Laboratory, Post-mortem

Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory, Tutorial Classes of Practice of Physics, of Clinical Medicine, and Clinical Surgery, Surgery and Midwifery, and the practice of certain other hospitals

**Fees**—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s. each. Physics, botany, zoology, forensic medicine, and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, clinical midwifery, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, operative surgery, clinical surgery (per term), clinical medicine (per term), and experimental pharmacology, £3 3s. Practical anatomy (winter), £6 10s. 6d. Practical chemistry, £4 14s. 6d. Regional anatomy, chemical physiology, surgical pathology, and infectious diseases, £1 11s. 6d. Tuberculosis, diseases of children, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin, and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynecology and applied anatomy, £2 2s.

**Scholarships**—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition, there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself. No other university is in a better, even if as good, position to smooth the financial path of earnest students.

**THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES**—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi*, for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board consisting of five members elected by the Royal College of Physicians, five members elected by the Royal College of Surgeons, and five members elected by the lecturers in the school. This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street, (2) New School, Bristo Street, (3) Nicolson Square, (4) Marshall Street, and other places. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £180. The Calendar, giving full information regarding classes and fees, can be obtained (price 6d.) on application to the Dean of the School, Surgeons' Hall, Edinburgh.

**WOMEN STUDENTS IN EDINBURGH**—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women. Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges. In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed. In clinical medicine and clinical surgery, however, while the lectures are attended by mixed classes, the women students are restricted to the wards of one charge. The particular wards are changed every term, each of the physicians and surgeons to the infirmary taking the women students in rotation. With few exceptions, prizes, scholarships, bursaries, and similar distinctions are open to women under the same conditions as for men. The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extra-mural classes taught by the lecturers of the School of Medicine of the Royal Colleges. Most of the Students' Societies are open

to women, with the exception of the University Union and the Royal Medical Society. Their place is taken by the Women Students' Union and the Women's Medical Society. There is also a Women's Athletic Club, with playing fields gifted to it by the university. The membership of the Royal College of Physicians and Fellowships of the two Royal Colleges are also open to women. Information on matters connected with women's studies may be obtained from the Lady Warden, University New Buildings, Edinburgh.

#### GLASGOW

**THE UNIVERSITY SCHOOL FOR MEN**—The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments: Pathology, Public Health, Pharmacology, Physiology, Surgery, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum (Pathology) are also open to students. Well equipped new buildings have been provided for botany, zoology, practical anatomy, and operative surgery, as well as for pathology, the very large additions made a number of years ago to the chemical laboratory render it one of the most extensive in Scotland. The classrooms and laboratories for the departments of Physics, Physiology, Pharmacology, Materia Medica, Medical Jurisprudence, and Public Health are also of recent erection, and are elaborately equipped. Four additional chairs of Medicine, Surgery, Obstetrics, and Pathology have been recently established, the professors being specially attached to the Royal Infirmary, and a number of university lectureships in Clinical Medicine, Clinical Surgery, Venereal Diseases, Laryngology, Dermatology, Otolaryngology, Tuberculosis, and the Hygienic Diet. Five other chairs have been founded at the university, in Bacteriology, Organic Chemistry, Physiological Chemistry, Applied Physics, Public Health, and Pediatrics. There are also lectureships on the Surgical and Medical Diseases of Children and on Electrical Diagnosis and Therapeutics. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage post-graduation and research work. A Diploma in Public Health is now also granted. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached, the Royal Infirmary (623 beds), and the Victoria Infirmary (380 beds), while the Royal Mental Hospital, Gartnavel (500 beds), the Royal Hospital for Sick Children (275 beds), the Royal Maternity and Women's Hospital (114 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospital at Belvidere (680 beds) and Ruchill (249 beds), and other institutions afford facilities for the practical study of special branches. The large general hospitals of the parish council are now also available for clinical instruction in medicine and surgery. Information regarding post-graduate study will be found at page 419.

**Bursaries**—Bursaries confined to the Medical Faculty amount in annual value to about £1,000, while bursaries in any faculty amounting to about the same annual sum, may be held by students of medicine, a number of both being open to women. Several valuable scholarships may be held by medical students who have graduated in arts.

The following bursaries are open to undergraduates of both sexes. The Gibson Bursary, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland, and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. The Arbuthnot Bursary, annual value £40, tenable for three years, is awarded by the Senate, on the recommendation of the Faculty of Medicine, to the student who is of the highest merit among the candidates as shown by their class records and their performances in the First and Second Professional Examinations. One Logan Bursary, annual value £16, tenable for four years, appointment by the Senate. Six Lorimer Bursaries (£20 and tenable for one year) are awarded to the best students in each of the following classes: botany, zoology, physics, chemistry, anatomy, physiology. The Macintosh Mental Science Bursary (£20 and tenable for one year) is awarded to the best student in the Mental Science class.

medicine of the value of £31 is awarded annually to the student of either sex attending the class of insanity who stands first in an examination in that subject the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The Gardiner Bursary, annual value £14 tenable for two years will be awarded after the autumn professional examination to the candidate who has passed in physiology at the Second Professional Examination and who has aggregate of marks in that subject and in chemistry and physics of the First Professional Examination is the highest. Of the eight James A. Paterson Bursaries two are awarded each year, they are of the value of £50 and £20 respectively and are tenable for four years, examination in mathematics and natural philosophy in June for students entering the first and second years of medical study. The following are tenable in any faculty: Four Wilson Bursaries (each £75 and tenable for four years), two Pratt Bursaries (each £20 and tenable for four years) and two Taylor Bursaries (each £10 and tenable for four years). Andrew and Bethia Stewart Bursaries (£50 each tenable for three years) candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine Glasgow Highland Society's Bursaries for students of Highland descent of the annual value of £25 and tenable for five years, two vacant each year.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction under conditions given in the *University Calendar* and summarized at page 367 of this issue. The Dobbie Smith Gold Medal is awarded for the best essay on a prescribed subject within the science of botany. The Brunton Memorial Prize of £20 is awarded annually to the most distinguished graduate in medicine of the year, and the West of Scotland P.A.M.C. Memorial Prize to the candidate for the degrees of M.B. Ch.B. who obtains the highest aggregate marks in medicine, surgery, and midwifery in the Final Examinations. The University Commissioners have issued an ordinance to make regulations for the admission of women to certain bursaries, scholarship and fellowships. Scholarship and fellowship are offered by the Carnegie Trust in science and medicine for post-graduation study. There are also four McCunn Medical Research Scholarship (two of £200 and two of £400), for graduates in medicine of the Scottish universities, one Foulds Fellowship for Research in Medical Science of approximately £200 for three years, and one Strang Steel Scholarship value £160 for one year. There is, in addition, The Captain H. S. Rankin V.C. Memorial Prize in Pathology.

**Fees.**—The matriculation fee for each year is £2 2s. In most cases the fee for each university class is £5 5s. but in some cases it is £4 4s. For hospital attendance in the Western Infirmary students pay £12 12s. for a perpetual ticket or £1 11 6d. for a single term ticket with an additional fee of £5 5s. for each winter and £2 12 6d. for each summer clinic attendance. The fee for the same at the Royal Infirmary. The university fees for the four professional examinations total £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance and professional examinations amount to about £250.

For further information apply to the Registrar, Glasgow University.

**QUEEN MARGARET COLLEGE.**—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings with classrooms, reading rooms, library, etc. They are taught in some classes apart from male students, in others, together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, the Western Infirmary and the Victoria Infirmary, also *inter alia* in the Royal Hospital for Sick Children, the Glasgow Lying-in Hospital, the Royal Asylum, Gartnavel Hospital, the Ophthalmic Institution, the City of Glasgow Lying-in Hospital, Belvidere and Ruchill and the Glasgow Royal Maternity and Women's Hospital.

**Scholarships.**—The Arthur Scholarship, annual value £20 tenable for three years. Open to competition by medical students of first year at the First Professional Examination on October 1928. This scholarship is restricted to women medical students.

Full information can be obtained from the Misses, Queen Margaret College, Glasgow.

**Board for Students.**—Universities houses of residence for women students, Queen Margaret Hall and Roberton Hall are situated near the College. The cost of board and residence is from 32s. 6d. to 42s. a week according to accommodation. Applications to be made to the Wardens. Another hostel near the College is South Park House, Ann Street, belonging to the Student Christian Movement and open to women students of all colleges in Glasgow. Cost of board is from 28s. to 30s. weekly. Applications to be made to the Warden.

**St. Mungo's College.**—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The Infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part

of the city. St. Mungo's College is in the Infirmary grounds, and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The Infirmary has (including the ophthalmic department) over 700 beds. There are special beds and wards for diseases of women of the throat, nose and ear, venereal diseases, burns, and septic cases. In the out-patient department in 1925 over 51,000 patients were treated. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion with the latest and most improved apparatus for diagnosis and treatment.

**Appointments.**—1151 house-physicians and eleven house-surgeons who must be fully qualified, are appointed every six months and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

**Fees.**—The average class fee is £3 3s. for summer classes and £4 4s. for winter classes. The fees for all the lectures, practical classes and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £120. The classes are open to male and female students.

A habus of classes can be obtained on application to the Secretary to the Medical Faculty, St. Mungo's College, 55 Castle Street.

**THE ANDERSON COLLEGE OF MEDICINE.**—This school provides education in all subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary, pathology in the Western or Royal Infirmary, vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the school Calendar). The courses (lectures and laboratory) in public health are recognized by the Scottish Licensing Board, the Universities of Oxford, Cambridge, and London, and the London and Irish Colleges.

**Fees.**—The fees for all lectures and practical work required by ordinary students, range between 2 and 5 guineas a session. In the Public Health Department the fee for a six months course is £14 14s. The Carnegie Trust pays the fees of students at Anderson College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W., who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, Glasgow, with 160 beds, offers facilities for clinical instruction in the diseases peculiar to women. A university lectureship—the Royal Samaritan Lectureship in Gynaecology, is associated with the hospital. The lecturer is Dr. David Stannard. Particulars may be obtained from Mr. T. Macdonald Macquarrie, M.A. Secretary, 149 St. Vincent Street, Glasgow.

#### ST. ANDREWS AND DUNDEE

The medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews but admit other students as well. In the former city the United College provides education in all subjects for the first two years. In Dundee University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s. to £5 12s. 6d. for systematic classes, and from £4 14s. 6d. to £4 4s. for practical classes. The hospital ticket is £1 8s. for three months, £4 4s. a year, or perpetual, £13 6s. 8d. in one sum. The inclusive or

composition fee for the curriculum is £182. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St. Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

#### Clinical Work

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given thereat being recognized for purposes of graduation by all the Scottish universities, the University of Cambridge, the University of London, the National University of Ireland, and by the Royal Colleges of England and Scotland.

### IRELAND

THERE is a choice of six schools for those pursuing their medical studies in Ireland. For clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

#### DUBLIN

##### School of Physic

THIS school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians of Ireland, the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at St. Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students, whether they belong to the university or not.

##### The Schools of Surgery

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the College's own school combined with two famous old medical schools—Carmichael and Ledwich, they are attached to the College by charter. Its buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College.

**Prizes.**—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.), the Carmichael Scholarship (£15), the Marine Scholarship (£8), the Gold Medal in Surgery, the Stoney Memorial Gold Medal in Anatomy, the H. Mienoughton Jones Gold Medal for Midwifery and Gynecology, class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

##### University College, Dublin

THIS is one of the constituent colleges of the National University of Ireland. The arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. Applications for other information may be addressed to the Secretary and Bursar, University College, Dublin.

#### Clinical Work

There are numerous well arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the British Isles. Among them are the Mater Misericordiae Hospital, with 345 beds, Dr. Steevens's Hospital at Kingsbridge, with 150, Meath Hospital and County Dublin Infirmary, with 160, Meicler's Hospital, close to Trinity College, with 120, the Royal City of Dublin Hospital, with 124, the Adelaide Hospital, with 140, the Royal Victoria Eye and Ear Hospital, with 100 beds, Sir Patrick Dun's, which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 220 beds.

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynecological hospital in the British Isles. It receives nearly 3,000 patients every year, and apart from ordinary out-patient work of a gynecological order, annually attends some 2,000 women at their own homes during their confinement. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality.

Two other important obstetric and gynecological hospitals in Dublin are the Coombe Lying-in Hospital and the National Maternity Hospital. During the year ending December 31st, 1926, the number of cases dealt with in the Coombe Lying-in Hospital were as follows: Intern maternity department, total admissions, 962; intern maternity department, total deliveries, 927; extern maternity department, total cases treated, 1,552; gynecological department, number of operations, 294. The practice of the hospital is attended by large numbers of students, post-graduates, and nurses.

At the National Maternity Hospital, Holles Street, Dublin, during the year ending March 31st, 1927, there were admitted to the maternity department 952 patients, and to the gynecological department 356, 744 cases were received in the extern obstetrical service, 848 patients were delivered in the hospital, and 664 in their homes, 323 operations were performed. During the year 67 students and post-graduates and 30 nurses availed themselves of the teaching facilities of the hospital.

#### BRISTOL

THE Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of bacteriology, biochemistry, biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a students' union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 360 beds, and the Mater Infirmary Hospital, which has 120 beds. Other hospitals open to the students of the university are the Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Bann Ulster Eye, Ear and Throat Hospital, the Union Infirmary and Fever Hospital, the Fever Hospital, Poydsburn, the District Lunatic Asylum, the Samaritan Hospital, Foister Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

**Scholarships.**—(1) Eight, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year, (2) fourteen Professional Scholarships, value from £15 to £40 each, (3) one Hutchinson Stewart Scholarship, £12, in mental diseases, (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially, (5) Isabella Tol Memorial Scholarship, tenable for three years, awarded triennially to a woman student, (6) Magiath Clinical Scholarship, awarded annually, value about £112, (7) two Musgrave Studentships of £200 in Physiology and Pathology. There is also a post-graduate research fund, open to all graduates of not more than three years' standing. Gold medals are awarded at the M.D. examination.

**Fees.**—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is approximately £200. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmary Hospital, and fees for the special hospital. The course for the Conjoint Board costs about the same amount.

The Regulations of the Medical Faculty, containing full information, can be obtained on application to the Secretary, Queen's University, Belfast, price 4d.

#### UNIVERSITY COLLEGE, COVENTRY

THIS institution, formerly known as Queen's College, Coventry, is one of the constituent colleges of the National University of Ireland. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the

National University, but students proceeding for the examinations of the Conjoint Board of England, Scotland, or Ireland, the Society of Apothecaries of London or the Apothecaries' Hall of Ireland or London University can arrange the courses of lectures which they attend and the order in which they attend them to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmarys (each 100 beds) and at the Cork Union Hospital (1200 beds). Students can also attend the Meier Hospital (120 beds) the County and City of Cork Living Hospital, the Maternity Hospital for Diseases of Women and Children the Fiver Hospital the Ophthalmic and Aural Hospital and the Linton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well equipped dental hospital in connexion with the school.

**Scholarships.**—About £3000 is available annually for scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

**Fees.**—The fees for the lectures and hospital attendances required by the National University of Ireland course including examination fee come to about £170.

Further information can be found in the Calendar or obtained on application to the Registrar.

#### UNIVERSITY COLLEGE GALWAY

This institution is one of the constituent colleges of the National University of Ireland and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated and contain dissecting rooms, anatomical theatre and laboratories for the study of physiology, chemistry, physics and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it and there are many arrangements such as a library, a college union, and an athletic union for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching which is recognized as qualifying not only for the degrees of the National University but for those of London University and the diplomas of the various colleges in the three kingdoms is carried on at the Galway Central Hospital and the Galway Tuberculosis Hospital. The Galway Central Hospital is a general hospital, and at the two hospitals students have ample opportunities of studying zymotic and chronic diseases. The Central Hospital has a special ward for diseases of children. Every year the governing body offers about £1500 and the County Councils of Connaught offer about £3500 in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar and to the Secretaries of the Connaught County Councils.

#### CLINICAL HOSPITALS IN ENGLAND

Many hospitals in Great Britain and Ireland though not connected with any medical school, open their doors either to those who have yet to be qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition they all have to offer at shorter or longer intervals appointments for resident medical officers, house physicians, and house-surgeons. These are usually paid offices which may be held for periods varying from six months to a year. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland have already been mentioned in speaking of the medical schools in these localities, but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience

can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary Bradford, the Royal Sussex County Hospital Brighton, the Royal United Hospital Bath, the Kent and Canterbury Hospital the Derbyshire Royal Infirmary, South Devon and East Cornwall Hospital Plymouth, the Royal Albert Hospital and Eye Infirmary Devonport, the Royal Devon and Exeter Hospital the West of England Eye Infirmary Exeter, the Gloucestershire Royal Infirmary and Eye Institution the Royal Infirmary Leicester, the County Hospital, Lincoln, the General Hospital Northampton, the Norfolk and Norwich Hospital, the General Hospital, Nottingham, the Royal Portsmouth Hospital, the Royal Berks Hospital Reading, the Royal South Hants and Southampton Hospital, the Staffordshire General Infirmary, Stafford, the North Staffordshire Infirmary at Hartsill, the Royal Hants County Hospital Winchester, the Wolverhampton and Staffordshire General Hospital the County Hospital York and the Coventry and Warwickshire Hospital.

#### London Clinical Hospitals

As for the hospitals in the metropolis so many of these take a share in the giving of clinical instruction that it is worth while to classify them.

**Children's Hospitals.**—There are at least seven of these the leader among them being the Hospital for Sick Children Great Ormond Street which has 240 beds. There are also the East London Hospital for Children Shadwell with 124 beds the Queen's Hospital for Children Bethnal Green with 134 the Victoria Hospital for Children Chelsea with 104 the Belgrave Hospital for Children which has a considerable out-patient department but in-patient accommodation for only 40 children the Paddington Green Children's Hospital an institution of about the same size and the Evelina Hospital for Sick Children Southwark Bridge Road with 75 beds. The largest and the oldest of the hospitals for both women and children is the Royal Waterloo Hospital for Children and Women Waterloo Road S.E.1.

**Hospitals for Women.**—Queen Charlotte's Maternity Hospital Marylebone Road with 70 beds and a residential college for students and practitioners specializes in the teaching of midwifery. The Samaritan Hospital for Women Marylebone Road admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments; the fees—payable in advance—being £3 3s. for three months. Full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women Solio Square whose teaching is confined to post-graduates in limited numbers, the Chelsea Hospital for Women Arthur Street Chelsea and the Elizabeth Garrett Anderson Hospital for Women in Euston Road the latter being in the nature of a general hospital so far as concerns the class of case treated.

**Eye Hospitals.**—The largest of these is the Royal London Ophthalmic Hospital (Moorgate) City Road. At this hospital two complete courses of instruction are given during the year—October to February and March to July—comprising the following subjects: anatomy, physiology and optics, ophthalmic medicine and surgery—(1) external diseases (2) motor anomalies and squint (3) ophthalmoscopic conditions (weekly classes) (4) pathology practical refraction classes methods of examination (practical) operative surgery practical pathology practical bacteriology x-ray and radiotherapy clinical lectures discussion classes. A fee of 24 guineas entitles the holder to one full five months' course (with the exception of practical pathology and practical bacteriology) together with a permanent ticket for the practice of the hospital. Fee for the practice of the hospital (permanent) £5 5s. for three or six months £3 3s. for two months £2 2s. for one month £1 1s. Gentlemen are eligible under certain conditions for the posts of chief clinical assistant, clinical assistant and junior assistant. Clinical work takes place every morning at 9 o'clock, and operations at 10. An additional special course in the preliminary subject (namely anatomy, physiology and optics) for the D.O.M.S. and other examinations in ophthalmology will be held immediately preceding the date of the examination. The fees for this course will be 12 guineas or £5 5s. for any subject separately. Further particulars may be obtained from the Dean of the Medical School. Other eye hospitals are the Royal Westminster Ophthalmic Hospital near Charing Cross, the Royal Eye Hospital Southwark and the Central London Ophthalmic Hospital Judd Street W.C.1 each with about 50 beds.

**Fever Hospitals.**—The Metropolitan Asylums Board has under its control a good many institutions in and around London for the treatment of the more serious zymotic disorders; it makes special arrangements for the instruction of students in this subject and grants certificates at the end of the courses. Detailed information should be sought from the Clerk to the Board Victoria Embankment E.C.4.

**Chest Hospital.**—The largest of these is the Brompton Hospital for Consumption which has 333 beds and a large sanatorium at Framley with 150 beds. There is also the City of London Hospital for Diseases of the Chest Victoria Park with 125 beds and the Pora Hospital for Diseases of the Chest City Road, now amalgamated with the Pora Northern Hospital Holloway Road.



*Neck, Throat, and Ear Hospitals*—The institutions which confine their work to disorders of the throat, nose and ear all make special arrangements for the benefit of senior and post graduate students. They are the Metropolitan Ear, Nose, and Throat Hospital, Fitzroy Square; the Royal Ear Hospital, Dean Street; the Central London Throat, Nose and Ear Hospital, Gray's Inn Road; and the Hospital for Diseases of the Throat, Golden Square—the last which possesses 75 beds, being the largest of the four institutions.

*Miscellaneous Special Hospitals*—Among these are the Bethlem Royal Hospital, St. George's Fields, S.E.1, which (like the Maudsley Hospital) confines its work to the treatment of mental diseases and includes a department for nervous and early mental disorders; West End Hospital for Nervous Diseases, 13, Welbeck Street, W.1; St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden; St. Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum, including cancer and fistula; the National Hospital for Diseases of the Heart in Westmoreland Street, W.1; St. John's Hospital for Diseases of the Skin in Leicester Square; the Hospital for Diseases of the Skin, Stamford Street, Blackfriars; and the National Hospital, Queen Square, W.C.1, an institution possessing 200 beds and a world wide reputation.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries.

## WOMEN IN MEDICINE

The regulations of the General Medical Council and of the various universities and colleges set out in previous sections apply to women as to men.

### Examinations

Women are admitted to all the medical examinations of the following qualifying bodies: the Royal College of Physicians, London; the Royal College of Surgeons of England; the Society of Apothecaries of London; the Conjoint Boards in Scotland and in Ireland; and all the universities of Great Britain and Ireland. The Royal College of Physicians now allows women to be eligible for election as Fellows.

### Medical Education

The London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London, is the sole school for medical education which admits women only. All the resident appointments at the Royal Free Hospital, of which there are twenty-seven yearly, are held by women. Arrangements are made for students of the school to obtain clinical instruction at the National Hospital for Nervous Diseases, the Royal London Ophthalmic Hospital (Moorgate), the Elizabeth Garrett Anderson Hospital, the South London Hospital for Women, and the Cancer Hospital. During the past year a large children's department under a physician for diseases of children has been added to the hospital. There is also a special orthopaedic department. Further particulars with regard to the London School of Medicine for Women will be found on page 407.

Women are also admitted to the following men's schools in London: University College Hospital (a limited number only), King's College Hospital, Charing Cross Hospital, and the Westminster Hospital. Further particulars about these schools will be found in the article on London Medical Schools at page 402 et seq. The medical schools of Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle, and Sheffield admit women. In Scotland, the medical schools of Aberdeen, St. Andrews, Edinburgh, and Glasgow admit women, although they do not in every case afford them equal facilities with men. The Irish universities and colleges are open to women.

### Openings for Medical Women

The London School of Medicine for Women celebrated its jubilee in October 1924. During the fifty-three years of its existence over 1,500 women have graduated from this school. At the present time most of them are engaged in active medical work. Unemployment is apparent in all professions and applies to both sexes; it is asserted that in legal women are rather more fortunate in this respect than women in other professions. In private practice they do increasingly well and are reported to be in greater demand as locumtenents for medical men and women.

The Public Health Service and especially its department of Maternity and Child Welfare, provides openings for women. In addition nearly all the voluntary welfare centres in the country are officiated by medical women. The rapid growth in recent years of maternity and child welfare centres has given women, to whom such work is peculiarly suited, an opportunity of participating in this important branch of preventive medicine. Under the Board of Education there are appointments for women as medical advisers and school medical inspectors. The London County Council has medical women as lecturers and examiners on the care of children, home nursing, health, and first aid. Many of the venereal disease clinics have at least one medical woman on the staff. A certain number of appointments as tuberculosis officers are held by women. Appointments are held by women as residents in general hospitals, hospitals for women and children, sanatoriums, infirmaries, fever hospitals, and asylums.

Particulars of the Colonial appointments which may be held by women in British West Africa and the Malay States can be obtained from the Medical Branch of the Colonial Office. Information regarding the women's medical service for India may be obtained from the honorary secretary, United Kingdom Branch of the Countess of Dufferin's Fund, c/o General J. B. Smith, India Office, Whitehall, S.W.1. Missionary societies also offer employment to medical women. Further particulars can, we understand, be obtained from Dr. Webb Anderson, Medical Missionary Association, 49, Highbury Park, London, N.5.

### Equal Pay for Equal Work

The British Medical Association was the first of all professional organizations to lay down the principle that no distinction should be made on the ground of sex as regards the emoluments to women members of the profession. Attempts are continually being made by public authorities to obtain the services of women doctors at lower salaries than those paid to men, and the Association looks to all medical women to help it in resisting such attacks upon the solidarity of the profession. In its constant efforts to maintain this principle the Association works in close co-operation with the Medical Women's Federation (9, Clifford Street, New Bond Street, W.1). In defence of the principle the British Medical Association has at various times fought—usually with success—Government departments and local authorities of all kinds. Where the authorities concerned have declined to recognize the justice of the claim that equal pay should be given for equal work the machinery, local and central, of the Association has been put into operation, and as a result the authority has generally been fit to drop the proposed distinction between men and women practitioners or given up the attempt to fill the post. It is hardly necessary to add that the British Medical Association can only be successful in carrying out this policy if it receives the loyal support of all medical women.

## DEGREES FOR PRACTITIONERS

At one time it was almost the universal custom for medical students educated in London and aiming at general practice not to seek a university degree, and as that custom still prevails to a considerable extent a large proportion of medical men in England possess diplomas or licences to practise but not degrees in medicine. This is a fact which they sometimes find reason to regret, and to such practitioners the following paragraphs may be of interest. It should be noted that the M.D. Brux. diploma, if obtained subsequently to June, 1886, is not registrable, and that the University of Brussels no longer holds special examinations for foreign medical practitioners.

### UNIVERSITY OF DURHAM

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than five years' standing who have been qualified and in practice at that period, upon the following conditions, without fee:—The candidate must be 40 years of age and must produce a certificate of moral character from three registered medical practitioners. Should he not have practised

in examination in arts previous to the professional examination in virtue of which his name was placed on the Register, he is examined in classics and mathematics, if otherwise, he is required to translate into English passages from any one of the following Latin authors: Cæsar, De Bello Gallico (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books). Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

**Professional Examination.**—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene, and therapeutics, (ii) principles and practice of surgery, (iii) midwifery and diseases of women and children, (iv) pathology, medical and surgical, (v) anatomy, medical and surgical, (vi) medical jurisprudence and toxicology. Candidates are examined by means of written papers, clinically, and *vis a voce* at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

The examinations are held twice a year, in June and December. Notice, accompanied by the fee and certificates, must be sent to the Registrar of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

**Fees.**—The fee is 50 guineas which includes the degree fee; a candidate fails to pass 20 guineas are retained but if he present himself again 40 guineas only are required.

#### UNIVERSITY OF EDINBURGH

At a meeting of the Edinburgh University Court on March 21st 1927, a regulation for the examination for the degree of M.D. was adopted on the recommendation of the Senatus. The object of this new regulation is to provide an examination suitable for testing either persons who have been in general practice or those who have been occupying their time in research work. The examination is to consist of two parts—a major and minor. For those who have been doing clinical work the major part will be an examination in clinical medicine, including a practical and oral examination and a written paper in medicine and therapeutics. While the minor part will be a special branch of medical science or practice professed by the candidate and to be approved by the Faculty of Medicine. For those who have been doing research work or engaged in some special employment, the major part will consist of a special branch of medical science or practice professed by the candidate and approved by the Faculty, and the examination will include a practical and oral examination and a written paper in the subject proposed. The minor part for these persons will be an examination in clinical medicine.

#### THE SWISS UNIVERSITIES

The Universities of Lausanne and Berne have arrangements which permit British practitioners to proceed to the M.D. degree. At Lausanne which has a large Medical Faculty, the British practitioner has to produce (1) a certificate of matriculation in a British university or of having passed a preliminary examination recognized by the General Medical Council for the purposes of registration as a medical student, (2) a certificate of a degree or diploma qualifying for practice in the United Kingdom and the certificate of registration as a medical practitioner in the United Kingdom. He must then undergo a *vis a voce* examination in any three subjects of the final medical examination which he may select. Next he must present a thesis for the doctorate prepared and completed in one of the Lausanne clinics under the direction of one of the professors of the Faculty of Medicine. Residence for a student (October to March or April to July) is obligatory. The fees are on matriculation 20 francs, on inscription for the *vis a voce* examination 50 francs, on presentation of the thesis 200 francs, for diploma and graduation 25 francs, for courses of lectures and laboratory instruction 80 francs, the printing of the thesis costs from £7 to £12. Applications for admission should be made to the Dean of the Medical

Faculty, Ecole de Médecine, Place de l'Ours, Lausanne. An official publication (*Guide de l'Étudiant*) is issued in October and April, and may be obtained (price 50 centimes) from M. F. Heschel Dufer 3, Rue Centrale, Lausanne. The university degree of M.D. (Lausanne or Berne) alone does not confer the right to practice in Switzerland, for which the possession of the State or Federal Diploma is necessary. Neither degree is registrable in this country. Dr. C. A. H. Franklin (56, Southborough Road, Bickley, Kent), honorary secretary of the Franco Medical Graduates, will supply further information.

## POST-GRADUATION STUDY

THERE has not hitherto been in this country any large and fully organized centre for post-graduate instruction; the situation has been materially changed by the statement made by the Minister of Health in the House of Commons on June 25th. Some six years ago the then Minister of Health (Dr. Christopher Addison) appointed a committee under the chairmanship of the Earl of Athlone, to investigate the needs of medical practitioners for further educational facilities in London. That committee made two recommendations: the first was that such a school attached to a hospital centrally situated in London should be devoted solely to post-graduate medical education, and that it should be a school of the University. The second recommendation was that an institute or school of State medicine should be established in London and should receive substantial financial assistance from the Treasury. The second recommendation was quickly realized, and the School of Hygiene and Tropical Medicine was brought into existence, with a Treasury guarantee for its maintenance. The Rockefeller Foundation made generous contributions for the erection of a fine building, the situation of which is now rising in the University quarter of London. Dr. Andrew Balfour is the director, and appointments to the professorial staff are being made. Further particulars about this school will be found at page 420. No steps, however, were taken to carry out the first recommendation of the committee until about a couple of years ago, when the Minister of Health appointed a departmental committee to draw up a practicable scheme of post-graduate medical education centred in London. This committee has not yet reported, but in his statement to the House of Commons Mr. Neville Chamberlain made it clear that in his own mind it was practically settled that the school should be organized in connexion with the West London Hospital at Hammermith where a post-graduate college has existed on a comparatively small scale for a number of years. The new scheme contemplates a hospital containing about 400 beds, with the necessary lecture rooms and laboratories.

London already possesses several institutions which seek to provide for the wants of graduates who desire refresher classes, instruction and experience in special subjects, or, being in a service have to prepare themselves for examinations to obtain promotion. In addition many of the undergraduate schools will give facilities for attending classes and demonstrations, but they are for the most part utilized only by their own old students. It is generally agreed, however, that instruction for post-graduates cannot conveniently be provided on any large scale in an institution primarily established for the teaching of undergraduates.

At some hospitals in London—and this applies in particular to the special hospitals—it is possible to obtain clinical assistance. Such appointments are peculiarly at the more famous institutions are eagerly sought after, and those whose ambitions lie that way commonly find it advisable to seek an association with the hospital by becoming a regular student as is often possible.

The Fellowship of Medicine founded in 1913, and amalgamated with the Post-graduate Medical Association in 1919, has an office generously placed at its disposal in the Royal Society of Medicine (1 Wimpole Street, W. 1). Courses of instruction at various hospitals scattered through London are organized and a list of hospitals which welcome post-graduates, together with the names of

the teachers, is kept. Permanent schools for those who desire to revise or increase their medical knowledge exist in the West London Post-Graduate College and the North-East London Post-Graduate College. In the provinces the Universities of Oxford, Birmingham, Bristol, Manchester, and Sheffield have organized courses. At Manchester it is hoped to start a central scheme of training, taking the form perhaps, of a definite post-graduate school. In Scotland considerable progress has been made. Edinburgh receives graduates from many schools in the Dominion, as well as in this country. At Glasgow teaching is provided under three schemes: a general course of four weeks in August and September, special courses and clinical assistantships for periods of three months. In the University of Aberdeen the Faculty of Medicine has approved a three months' course from April to June, and in relation with the University of St. Andrews courses are given by the staff of the James Mackenzie Institute for Clinical Research.

#### FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

The Fellowship of Medicine has arranged regular courses in general medicine and surgery, including special departments, each lasting two weeks, the fee for each course is 3 to 5 guineas. Courses in diseases of chest, children, heart, nervous system, throat, nose and ear, dermatology, electrotherapy, gynaecology, proctology, psychological medicine, tropical medicine, urology and venereal diseases are given from time to time at the special hospitals in association with the Fellowship of Medicine. The Fellowship Programme contains a diary of the arrangements available for post-graduates in various general and special hospitals in London. Practical courses in obstetrics and child welfare are arranged throughout the year, the duration of each course is one week. The programme for the immediate future includes a two weeks' course in general medicine and surgery, from September 19th to October 1st, at the Westminster Hospital. There will also be special courses in diseases of children at the Queen's Hospital from September 12 to 24th in ophthalmology at the Royal Westminster Ophthalmic Hospital from September 12th to October 1st, in psychological medicine at the Bethlem Royal Hospital from September 6th to October 1st, and a course in orthopaedics at the Royal National Orthopaedic Hospital from September 19th to October 1st. The offices of the Fellowship are, in kind permission of the Royal Society of Medicine, at No. 1, Wimpole Street, W.1 (telephone, MAYfair 2235). The secretary is in attendance daily from 10 a.m. to 5 p.m., excepting Saturday. The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association has been fixed at a minimum of 10s.

The Fellowship arranges during the autumn and winter sessions a series of lectures. Special clinical demonstrations in medicine, surgery, and ophthalmology are arranged also weekly from October onwards. Syllabuses will be sent regularly on application.

#### WEST LONDON POST-GRADUATE COLLEGE

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895, it is provided with lecture, reading, writing and class rooms, and accommodation of all sorts for the convenience of post-graduate students. The work of the college is eminently suitable for men in general practice and officers in the services who wish to revise their general clinical knowledge.

As for ward work the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2 p.m. This department is large and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months, no charge being made. Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal diseases, tropical diseases, retinoscopy,

ophthalmic operative surgery, and, when material is available, in operative surgery. The size of the classes is limited. A special clinic for the treatment of venereal diseases (male and female) is held every evening (Saturdays included) at 5.30. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session. The pathological laboratory is in charge of a pathologist who attends every day.

Demonstrations are ordinarily given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars.

*Fees*—Hospital practice, including all ordinary demonstrations and lectures, £1 11s. 6d. for one week, £4 4s. for one month, £7 7s. for two months, £9 9s. for three months, £15 15s. for six months, £23 12s. 6d. for one year, and £45 for a life ticket. Instruction in the administration of anaesthetics is given at the rate of £3 3s. a month.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees). A prospectus can be obtained on application to the Dean.

#### NORTH-EAST LONDON POST-GRADUATE COLLEGE

The headquarters of this post-graduate school are situated at the Prince of Wales's General Hospital, Tottenham N. 15, in the midst of this densely populated North London district. It contains 200 beds, and is within a few minutes' walk of South Tottenham station, on the London, Midland, and Scottish Railway, and Seven Sisters and Tottenham Hale stations, on the London and North-Eastern Railway. It is readily accessible by electric tram from Finsbury Park and Highbury, and from Dalston, Edmonton, and other parts of North London.

The college is in association with the Fellowship of Medicine and Post-Graduate Medical Association and is recognized by the Admiralty and India Office for the purpose of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees, the course of practical teaching of bacteriology is approved by the University of Cambridge for its Diploma in Public Health, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital is a whole affords excellent facilities for qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff. Operations are performed every afternoon of the week except Saturday. Special vacation or intensive courses are held at intervals throughout the year, each lasting two weeks, clinical instruction being arranged for each hour of each day.

*Fees*—Two guineas for a three months' course of study in any one department which may be begun at any time, a fee of 5 guineas admits to the whole practice of the hospital for a similar term (one month 2 guineas, and one year 10 guineas) and a perpetual ticket for the practice of the hospital may be obtained for 15 guineas.

The winter session will be opened about the middle of October as regards clinical lectures, but the clinical work of the hospital is carried on continuously.

Additional information can be obtained from the Dean of the Post-Graduate College, at the hospital.

#### MANCHESTER POST-GRADUATE COURSES

The Faculty of Medicine of the University of Manchester has arranged courses in preparation for the diplomas in psychological medicine, in public health, bacteriology, and

**MANCHESTER.** *State medicine.* There are classes also for technicians in factory and school hygiene and in venereal diseases. The Faculty of Medicine has also instituted courses to meet the requirements of graduates desiring to refresh their knowledge or to pursue further their studies in various special branches. The arrangements are in the hands of a committee consisting of certain members of the faculty of representatives of hospitals and of the medical officer of health for Manchester. Full particulars can be obtained from the Dean of the Medical School the University Manchester. A whole-time intensive course in general medicine and surgery will begin on September 12th, and continue until September 30th. An intensive course in obstetrics and gynaecology will be given from October 1st to October 8th and an advanced course in diseases of the digestive system from October 10th to December 16th. Part-time courses in certain subjects have also been arranged including tuberculosis and diseases of the ear, nose, and throat. A limited number of clinical assistantships are offered in the medical, surgical and special departments of the Manchester Royal Infirmary, the Ancoats Hospital and certain special hospitals for one, two, or three months, or longer.

#### COURSES FOR MEDICAL GRADUATES AT BRISTOL

The University of Bristol provides courses of post-graduate study for practitioners. Details of its course at the Royal Infirmary and General Hospital are announced locally. In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more.

The university also holds courses of demonstrations in outlying centres in the West of England. Resident practitioners form themselves into a committee and consider the type and extent of demonstrations required. The university furnishes the lecturers and makes all the necessary arrangements. All inquiries should be addressed to the Director of Post-Graduate Studies, Pathological Department, Bristol University.

**Daily Post-Graduate Study.**—For those who are able to devote several hours each day to hospital practice the university offers special facilities for post-graduate work. Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months. They may act as assistants, if times permit in more than one department and in any of the hospitals during their period of study. They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments including operations, post-graduate and ordinary clinical demonstrations and post-mortem examinations.

**Post-Graduate Clinical Work.**—Demonstration courses with weekly lectures are held during May, June and July. All inquiries and applications for admission should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol, who can be seen on any day by appointment at the Pathological Department.

Further information as to scholarship, curricula and fees can be obtained from the Dean of the Faculty of Medicine or the Registrar of the University, Bristol.

#### NEWCASTLE-ON-TYNE

For the year 1927-28 the following post-graduate courses have been arranged by the College of Medicine, Newcastle-on-Tyne (University of Durham):

1. General courses in clinical medicine, surgery and pathology at the Royal Victoria Infirmary meeting once weekly for ten weeks. One course will be held from October to December and one from April to June.

2. Special courses of clinical instruction meeting once weekly for ten weeks in the following subjects: Gynaecology, diseases of the ear, diseases of the throat, nose and ear, diseases of the kin, venereal diseases, neurology.

Special course in midwifery will be held at the Princess Mary Maternity Hospital.

3. An intensive course of fourteen days duration in the early part of the Summer Vacation 1928.

4. In addition to the regular post-graduate courses practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary for specified periods.

#### FINANCIAL POST GRADUATE COURSES

In connection with the University and Royal Colleges post-graduate courses are arranged every year from about the middle of July to about the middle of September, comprising: (a) a course in obstetrics and gynaecology, generally held from about the middle of July, this year a restricted course only in clinical obstetrics is being given; (b) a course on diseases of children, this year a restricted course only is being given during the period of the general courses; (c) a general practitioners' course; (d) a general surgical course. Courses (c) and (d) extended for four weeks from August 15th to September 10th. Similar courses are held each year.

The course in obstetrics and gynaecology comprises instruction in clinical midwifery and clinical gynaecology, obstetrics and gynaecological pathology, child welfare and ante-natal clinics, etc.

The course on diseases of children comprises clinical demonstrations and systematic lectures dealing with the diagnosis and treatment of the common and important diseases met with in medical practice and including the dieting of infants and children. The general practitioners' course includes lecture demonstrations, and, where possible, practical instruction on medical anatomy, medical side-room work, examination of the blood, x-ray and electrical therapy, morbid anatomy, and post-mortem examinations. Clinical instruction in medicine, surgery, gynaecology, diseases of children, diseases of the skin, and infectious diseases and special instruction in the diseases and methods of examination of the nervous, circulatory, respiratory, alimentary, and renal systems and in diseases of the ductless glands. The general surgical course includes lecture demonstrations on surgical anatomy, surgical pathology, and surgical x-ray diagnosis. Clinical instruction in surgery at the Royal Infirmary and Royal Hospital for Sick Children, clinical instruction in venereal diseases, surgical out-patients, surgical and gynaecological operations and special instruction in abdominal and genito-urinary and other branches of surgery.

A series of special lectures open to all graduates, is delivered thrice weekly on subjects of general medical and surgical interest including recent advances in treatment. Among the special courses also arranged are examination of the blood, vaccine therapy, clinical chemistry, diseases of the ear, nose and throat and venereal diseases.

Particulars regarding the courses, dates of commencing, fees, etc., may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

#### POST-GRADUATE MEDICAL TEACHING IN GLASGOW

Organized post-graduate medical teaching is available in Glasgow under the auspices of the Post-Graduate Medical Association. This association is composed of practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction and its business is managed by a board elected periodically by them. The chairman of the board is Principal Sir Donald MacAlister, B.Sc., and the vice-chairman Sir Hector C. Cameron. During the winter months special courses in various subjects are conducted and from November till May there is a series of weekly demonstrations specially designed for local practitioners. A comprehensive scheme of clinical courses is carried out during the summer months from June till October, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year. As such they work under the direct supervision of the physician or surgeon in charge and carry out such detailed investigations as directed.

A general medical and surgical course is now held each year during the last two weeks of August and the first two weeks of September which is arranged to include most of the subjects of interest to the general practitioner. This year the course is being conducted from August 16th to September 11th. The forenoons are occupied with general medicine and surgical diagnosis and minor surgery, in the Victoria Infirmary and in the Western Infirmary.

In the afternoons special subjects are dealt with in the special hospitals, and in the special departments of the general hospitals, two subjects being considered each afternoon. On the four Saturday forenoons tuberculosis and infectious fevers are demonstrated at Rushall Fever Hospital.

Further information may be had on application to Dr. James Crislaw, Secretary, Post-Graduate Medical Association, 6, Woodside Crescent, Glasgow, C 3.

#### AUSTRALIAN AND NEW ZEALAND MEDICAL ASSOCIATION

The Australian and New Zealand Medical Association gives information and advice to medical visitors from the Commonwealth and Dominions with regard especially to attendance at special clinics, post-graduate work, and facilities for preparing for examinations such as the M.R.C.P., F.R.C.S. (England and Edinburgh) and the D.P.H., and also as to house appointments and clinical assistantships in London and the provinces. Information will also be given as to lodgings, sports, and social opportunities. All medical graduates or undergraduates born in Australia or New Zealand and resident in or visiting England are eligible to become members. The fee is one payment of 5s. Further information can be obtained from the joint honorary secretaries, Mr. E. T. C. Milligan, F.R.C.S., and Mr. Bedford Russell, F.R.C.S., 86, Harley Street, London, W 1.

## TROPICAL MEDICINE

There are large and important schools of Tropical Medicine in London and Liverpool, and several universities and other examining bodies have instituted diplomas or degrees in the subject. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

#### DIPLOMAS AND DEGREES

**LONDON UNIVERSITY**—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. The regulations relating to the curriculum and examination correspond to those applying to the other branches.

**LONDON CONJOINT BOARD**—This body grants a diploma in tropical medicine and hygiene to candidates after an examination held in the months of February and July. Candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine, in an institution recognized for this purpose, during not less than five months, (2) the clinical practice of a hospital recognized for the study of tropical diseases during not less than five months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries. The fee for admission to the examination is £9 9s. The Board also grants diplomas in public health, in psychological medicine, in ophthalmic medicine and surgery, and in laryngology and otology. Candidates must hold a medical qualification registrable in the United Kingdom, or be graduates in medicine of a recognized Indian, Colonial, or foreign university. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, London, W C 1.

**UNIVERSITY OF LIVERPOOL**—A diploma in tropical medicine is given by this university to students who have attended the courses provided by the Liverpool School of Tropical Medicine and have passed the examination held twice a year by the university examiners. The subjects of examination are (a) tropical pathology and parasitology, (b) entomology, (c) tropical medicine, including etiology, symptoms, diagnosis and treatment of tropical diseases. Fee for the course, £21. A diploma in tropical hygiene

(D.T.H.), open to the holders of the D.T.M., has recently been established. The subjects of examination are bacteriology, chemistry (including meteorology and climatology), entomology, protozoology and helminthology, tropical sanitation (including sanitary engineering), practical sanitation. Fee for the course, £10 10s. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

**UNIVERSITY OF CAMBRIDGE**—This university grants a diploma in tropical medicine and hygiene to any person whose name has been on the *Medical Register* for not less than a year provided that he passes the examinations of the university in this subject. Candidates for Part I are examined in the same subjects as candidates for Part II for the Diploma in Public Health. Before admission to Part II, the subjects for which are medicine, surgery, and hygiene in their relation to tropical diseases, candidates must have passed Part I. An examination for Part I is held in April and for Part II in July. The fee for each part of the examination is 10 guineas. Application for further information should be made to Mr. J. L. Purvis, Public Health Chemical Laboratory, Medical School, Cambridge.

**UNIVERSITY OF EDINBURGH**—Candidates for the Diploma in Tropical Medicine and Hygiene granted by the University of Edinburgh must be graduates in medicine and surgery of that university, or hold corresponding registrable degrees or qualifications of some other licensing body. The examinations are written, oral, and practical, and are held twice a year (June and December). Candidates are required on the first occasion of presenting themselves for examination to appear for all the subjects. Those who fail to pass the entire examination within a period of twelve months after first appearance are required to reappear for all the subjects. Full particulars can be obtained from the Dean of the Faculty of Medicine, Edinburgh.

#### SCHOOLS

##### LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE (UNIVERSITY OF LONDON)

The London School of Hygiene and Tropical Medicine is a school of the University in so far as its active departments are concerned—namely, the Department of Bacteriology and Immunology, the Department of Lepidology and Vital Statistics, and the Departments concerned with the teaching of Tropical Medicine and Hygiene. An advanced course of study for the diploma in bacteriology, intended for a limited number of post-graduate students and lasting for one academic year, will commence on October 4th, 1927, and courses of instruction (minimum period three months) in the application of statistical methods to the problems of Epidemiology and Public Health Administration will also be instituted on October 4th. The work which prior to August 1st, 1923, was carried on by the London School of Tropical Medicine continues for the present in the building occupied by the Hospital for Tropical Diseases at Endelburgh Gardens, W C 1, where the specially equipped laboratories, museum, library, and clinical facilities afford excellent opportunities to those who may be desirous of studying diseases incidental to tropical climates before entering the services or going abroad. In the wards of the Hospital for Tropical Diseases it is to be found cases such as may be met with in actual practice in the tropics. There are two courses in the year, each lasting twenty weeks, beginning October 3rd, 1927, and March 12th, 1928, respectively. The course is so arranged as to equip men for the D.T.M. and H.Camb. Clinical instruction is also provided for the second part of the D.T.M. and H.Camb. Tropical medicine is a sixth alternative subject for the M.D. of the University of London, and the school curriculum is adapted to afford facilities for candidates desirous of taking the M.D. in this subject. The course in Tropical Hygiene may be taken separately, if desired. Research studentships and scholarships are available. Further information



may be obtained from the Secretary, London School of Hygiene and Tropical Medicine, 23, 1 and Leigh Gardens, London, W C 1

#### THE UNIVERSITY OF EDINBURGH

A course of instruction for the diploma is given during the autumn term (October to December), and includes tropical hygiene, bacteriology, entomology, and parasitology, and diseases of tropical climates (systemic and clinical). The University is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers of all Colonial Medical Services on first appointment or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine.

#### LIVERPOOL SCHOOL OF TROPICAL MEDICINE

This school is affiliated with the University of Liverpool. The University now grants diplomas in tropical medicine (D.T.M.) and in tropical hygiene (D.T.H.).

Two full courses of instruction, each lasting about eleven weeks, are given every year for the D.T.M., commencing respectively October 1st (Autumn term) and January 7th (Lent term), and two courses for the D.T.H., beginning on January 7th and April 22nd (Summer term). The D.T.H. can only be taken by those who have obtained the D.T.M. Students who do not desire to take the diploma examinations held by the University at the end of each term are given a certificate if attendance has been satisfactory.

Fees—(1) For the D.T.M. course, 20 guineas; for the D.T.H. course, 10 guineas. (2) For the diploma examinations, 5 guineas. An extra charge of one guinea is made for the use of a microscope required.

The new laboratories of the school adjoin the University and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 feet in maximum length by 84 feet in width. In addition to the basement in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has (1) lecture theatre, with accommodation for about seventy students, (2) library, (3) a spacious museum with preparation room adjoining. The first floor has twelve rooms in which are housed the Departments of Tropical Medicine and Entomology. The second floor has the main clinical laboratory, 69 feet by 58 feet, excellently lighted, and three other rooms devoted to the Department of Parasitology. The third floor has a large research laboratory and two research rooms. On the roof is an insectorium, a mosquito-proof house and other accommodation.

Since its foundation the school has dispatched to the tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by the staff has been published in twenty-one special memoirs—in the *Annals of Tropical Medicine and Parasitology* issued by the school and in numerous articles in the scientific press.

The school has also two laboratories in the tropics, the Manaus Research Laboratory in Brazil and the Sir Alfred Lewis Jones Tropical Laboratory in Sierra Leone, which was opened on January 10th, 1922, and is staffed by the school. Further information may be obtained from the Honorary Dean, School of Tropical Medicine, Pembroke Place, Liverpool.

## PSYCHOLOGICAL MEDICINE

It cannot be impressed too strongly upon the medical student that a knowledge of mental disorder is just as essential as a knowledge of the other forms of disease which he will be called upon to treat in the routine of general practice. It must be understood that by the term "mental disorder" is not only meant those severe forms which are to be found in asylums, but the term also includes mental defects of all grades, nervous, difficult and backward children, the mild and often unrecognized psychoses and also the various types of psychoneurosis. Such disorders provide the general practitioner with a large proportion of his most difficult cases, and he will find a good knowledge of mental disorder invaluable in his work. Apart from general practice, the student who proposes to take up a

career in the prison service or, still more importantly, the school medical service, will find a knowledge of psychological medicine an almost essential part of his equipment.

#### Instruction

Though at the present time the instruction given to the student is far from adequate to supply the knowledge or mental disorder requisite for the needs of the general practitioner, the facilities for the study of psychological medicine in the general hospitals are now much greater than in former years. Thus many of the teaching hospitals have out-patient departments for the treatment of mental cases, and in some of these hospitals special lectures are given on psychopathology. The facilities need not be utilized by the student, however, and the compulsory part of the curriculum is confined to formal lectures and a few attendances at some mental hospital. Here the student is apt to see mainly the terminal states of mental disease, and he is also apt to gain the impression that mental disorder is necessarily related to segregation and custody. We would therefore impress upon him the importance of attending the out-patient department for mental disorders where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice.

A scheme is now in actual operation at the Maudsley Hospital in which a small number of mental cases are treated in the hospital as inpatients. This is an important move from the teaching point of view because the student will gain true insight into the relation between mental disorder and medicine as a whole and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines.

In London post-graduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital and at Bethlem Hospital, and at the National Hospital, Queen Square. Courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases. Courses in mental deficiency are arranged by the University of London. There are also post-graduate courses at the Universities of Glasgow, Cambridge, Edinburgh, Birmingham, Leeds, Manchester, Durham, and elsewhere.

#### Diplomas

Those who are taking up psychiatry as a career will find it desirable to obtain a diploma in psychological medicine. Such a diploma is not at present compulsory for a permanent position on the staff of all mental hospitals, but it will probably become so in course of time, just as it is now essential to obtain the D.P.H. if a career in public health is contemplated. Psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up and, in addition, diplomas in psychological medicine to which reference has been made can be obtained from the Universities of Cambridge, London, Edinburgh, Durham, Leeds, Manchester, Dublin and the National University of Ireland and from the Conjoint Board in England and The Medico-Psychological Association of Great Britain and Ireland also grants certificates of proficiency after examination, and encourages the study of psychiatry by the offer of prizes for original and research work.

The requirements for a diploma differ to some extent in the various universities and colleges, but the following model scheme suggested by the Medico-Psychological Association and already adopted by the Royal College of Physicians of Ireland will give an indication of the scope of the examination for a diploma.

#### Model Scheme for a Diploma in Psychological Medicine

- 1 The candidate must be already a registered medical practitioner.
- 2 The candidate must present himself for examination on the subject detailed under Part I of the curriculum (see para 3) immediately he has concluded the prescribed courses of instruction or can produce such other evidence of diligent study as the subject to be examined upon as may be demanded by Part I. He must have been by special permission at least three months prior to entering for examination on Part II of the curriculum.
- 3 The candidate must not present himself for examination on the subjects detailed under Part II of the curriculum (see para 4) until he has been a registered medical practitioner for not less than two years. He must subsequently to his qualification have been in the practice of an approved mental hospital for not less

than two years or have attended for six months at a hospital ment or general for clinical instruction in psychological medicine and subsequently held a resident appointment at an approved mental institution or mental wards of a general hospital for not less than six months. In both cases he must produce a certificate from a recognized source that he can apply his theoretical knowledge and his practical acquaintance with and is well and adequately versed in the current clinical methods of examination and treatment of nervous and mental disorders. In the case of mental deficiency the certificate should include a practical knowledge of the various intelligence tests and other methods of ascertaining the degree of mental defect. He must also produce evidence of having attended, subequently to qualification, courses of lectures, demonstrations or other evidence of diligent study of the subjects upon which he presents himself for Part II of the examination, as may be demanded.

4. Curriculum. Part I—(a) Anatomy, histology and physiology of the nervous system including the autonomic system, anatomy and physiology of the endocrine glands, chemistry and cytology of the cerebrospinal fluid. (b) Psychology, systematic and experimental. Part II—(a) Mental anatomy, histology and pathology of the systems mentioned under Part I, (a) *post mortem* and laboratory technique. (b) Neurology and clinical neurology. (c) Psychiatry (including the psychoses), clinical psychiatry and the medico-legal aspects of mental disorders and mental deficiency. In addition the candidate for Part II will need to show special knowledge of any one subject, to be selected by him from the subjects comprising Part I or Part II, or may choose to be examined in any one of the following subjects: (d) Mental deficiency and the mental disorder of childhood and adolescence, and the duties of school medical officers in relation thereto. (e) Pathology as applied to mental and nervous disease. (f) Psychopathology and psychotherapy. (g) The principles of diet, vitamins and basal metabolism and their application. (h) Eugenics and vital statistics. (i) Criminology and the jurisprudence of criminal responsibility.

5. The diploma by request may be endorsed that special knowledge has been shown in the subject selected.

6. It is suggested that any compulsory attendance at lectures or demonstrations and clinical courses should be limited to the subject detailed for Part II and that the course for Part I or Part II should not exceed eight weeks.

#### Mental Hospital Appointments

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical staff are allowed to live out if invited the medical staff are resident officers, having board lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £300 to £400 per annum and senior assistant medical officers about £500 to £700, in both cases with board lodging, laundry, etc. In addition, if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different asylums. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital and draw various allowances.

Since the passing of the Asylum Officers' Superannuation Act of 1909 all officers and others of the established staff of a public (county or borough asylum) mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fifth for every year served, paying as contribution 3 per cent of the value of their appointments annually. This is a favourable prospect may not appeal to junior practitioners joining the services, but will eventually prove to be a valuable asset.

#### Prospects in the Public Service

Appointments to the public mental hospitals are made by the visiting committees, and in most cases only the junior posts are open to those who have not had previous experience in psychiatry. Since the public mental hospital service is a local and except indirectly not an imperial one, the promotion tends to be slow and uncertain, and the higher positions are not always advertised and thus thrown open to competition. For this and other reasons mental hospital work has undoubtedly not been in favour with newly qualified men in years past, but the general conditions of service have tended to show a progressive improvement and will in all probability continue to do so in the future.

Both the British Medical Association and the Medical Psychological Association are working separately and together to improve present conditions of service and

have, for example, already removed the "cebracy" objection to the service. The salaries have also been considerably increased, especially in the junior rank, and contrast favourably with those which were paid before the war. During the last few years considerable progress has been made in the conditions under which the insane are treated. The asylums are developing an atmosphere approximating more closely to that of the general hospitals. As a result of these developments the mental hospital service is becoming more attractive, and now affords great opportunities for the medical graduate who proposes to specialize in psychiatry.

While routine, administrative, and clerical work bulk largely in mental hospital duties, as they do in other public medical services, there is ample material, time, and scope for purely medical work and research—difficult as the subject may be—in psychiatry as one of the branches of medicine open to young graduates. Most mental hospitals are now equipped with efficient clinical laboratories, moreover, those who wish to undertake research are afforded every opportunity of doing so in the pathological department of the Maudsley Hospital and also in various other centres in England and Scotland. A change in the law, in which power is given to local authorities to make provision for the treatment of early and acute cases of mental disorder without certification, would do much to make psychiatric work more attractive to medical men. If the alteration in the law were made hospital either in the precincts or the grounds of the county or borough mental hospitals or in adjacent towns, would be erected in the course of time, or wards in general hospitals might be utilized for the same purpose. Such changes would render appointments in mental hospitals more attractive because the work would be entirely free from the custodial aspect of mental disorder, and attention could be given by the physician to purely medical problems without undue legal restrictions.

#### MAUDSLEY HOSPITAL, DENMARK HILL

A number of courses of instruction for the Diploma in Psychological Medicine have been given at the Maudsley Hospital, the details of the last course being as follows. The course consisted of two parts. In the first part lectures on the anatomy and physiology of the nervous system were given by Dr. Goll, with practical instruction in biochemistry by Captain Mann and in anatomy by Mr. C. Gray. A course on special histology of the nervous system was given by the late Dr. Di Fano, and a course on theoretical and practical psychology by Dr. Bayne. For the second part of the course lectures on normal psychology and psychiatry were given by Dr. Molyneux, on the psychoses by Dr. Bernard Hart, on the epilepsies by Dr. Petrie, on general pathology by Dr. Goll and Mr. C. Gray, and on pathological chemistry by Captain Mann. Dr. Bond lectured on the legal relationships of insanity, Dr. Shrubsole on mental deficiency and Dr. Lister on criminal insanity. Dr. Goll and Dr. Walshe gave instruction on clinical neurology, and Mr. Foster Moore on changes as applied to psychiatry. The fee for the whole course (Part I and Part II) was 15 guineas, or for either part separately 10 guineas, for one single series of lectures in Part I the fee was 4 guineas, and in Part II 2 guineas. Inquiries as to lecture, etc., should be addressed to the Director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E. 5.

#### BETHLEM ROYAL HOSPITAL

A course will be held at Bethlem Royal Hospital, commencing on September 12th of lectures and practical instruction for the Diploma in Psychological Medicine. It is proposed in future to give two courses each year: a autumn session of intensive character, commencing in September, and completed in early December, and a spring session, commencing in the middle of January and completed in the middle of April. Each course consists of two parts. Part A includes lectures and demonstration on the anatomy, histology and physiology of the nervous system with lectures on psychology and demonstration on experimental psychology. Part B comprises lectures and clinical demonstrations in psychology, including lectures

and demonstrations in the morbid anatomy of the nervous system a series of lectures with clinical demonstrations on different branches of psychological medicine, and lectures with clinical demonstrations, on mental deficiency. Entrants for the course who pay a composition fee of 15 guineas may, if due notice is given, attend either Part A or Part B of one course and postpone the other part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital on payment of 5 guineas for six months or 10 guineas for one year, but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable post-graduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the physician superintendent, Bethlehem Royal Hospital, S E 1.

#### NATIONAL HOSPITAL QUEEN SQUARE

A post-graduate course which fulfilled the requirements of the regulations for the Diploma in Psychological Medicine in regard to instruction in nervous diseases was held at the National Hospital, Queen Square, Bloomsbury W C 1 in May and June and other courses will be duly announced. Lectures on the pathology of the nervous system and various clinical lectures were delivered and demonstrations were given and out-patient clinics were held at the hospital on the afternoons of Mondays, Tuesdays, Thursdays and Fridays. An inclusive fee of 9 guineas was charged for the whole course but any part of the course could be taken separately at a special fee. A special arrangement was made for those unable to attend the whole course and for details applications should be made to the dean of the medical school. Similar courses are held three times a year—namely February, May and October. Special arrangements are made throughout the year for work in the laboratory. Fees are payable to the secretary of the hospital on entering for the course.

#### THE TWISTOCK CLINIC FOR FUNCTIONAL NERVE CASES

Courses in modern psychotropic methods for the treatment of nervous breakdowns can be obtained at the Twistock Clinic, 51 Twistock Square W C 1 and those who want to specialize in this treatment can obtain clinical assistance. The methods of the clinic comprise a full and sympathetic investigation of the patient's history, sometimes dream analysis, suggestion and mental exercises where necessary, and re-education of the patient to fit him to deal with his difficulties. The director of the clinic is Dr H. Crichton Miller, the deputy director Dr J. R. Rees and there is a children's department under the directorship of Dr W. A. Potts.

## THE PUBLIC HEALTH MEDICAL SERVICES

The central authority to secure the adoption of effective carrying out and co-ordination of measures conducive to the health of the people, and to promote research work and the proper training of persons for health services, is the Ministry of Health.

For the purpose of local public health administration the whole of England and Wales is divided into counties, county boroughs, boroughs and urban and rural sanitary districts. The Administrative Council of London, exclusive of the City of London is divided into twenty-eight metropolitan boroughs.

The public health medical services for Great Britain embrace between three and four thousand medical men and women who give whole-time services and in addition a large number who give part-time services. The medical officers appointed for these services may be either medical officers of the Ministry of Health for England or of the corresponding Boards of Health for Scotland and Wales, or

—and these form the large majority—those may be medical officers appointed by the many local public health authorities. The latter appointments include medical officers of health, tuberculosis medical officer, maternity and child welfare medical officer, venereal diseases medical officers, and school medical officers—for the education authorities must now be included as health authorities in respect to the health interests of the school child. By the larger public health authorities assistant medical officers are also appointed and these posts often serve as stepping stones to the higher offices a vacancy which are required to be advertised, occur.

#### THE MEDICAL SERVICES OF THE CENTRAL AUTHORITY

The Medical Department of the Ministry of Health for England has been organized under the control of a chief medical officer. It contains six sections with a chief medical officer at the head of each and about fifty medical officers. The sections deal with general health and epidemiology, maternity and child welfare, tuberculosis and venereal diseases, the supervision of food supplies, and sanitary administration in relation to infectious diseases. There is in addition a section concerned with insurance practitioners. Appointments to these posts are not as a rule open to public competition they are made by the Minister of Health. They are civil service appointments and come under the civil service superannuation scheme. Medical officers are also employed by the corresponding Boards of Health for Scotland and Wales.

#### MEDICAL OFFICERS OF HEALTH

The duties of the medical officer of health are to inform himself upon all influences affecting or threatening to affect injuriously the public health within his district, to advise his sanitary authority upon all matters relating to health and to perform all the duties imposed upon him by statutes, by laws and regulations. He must prepare and submit to his local authority special and annual reports and immediately inform them to the Ministry of Health of any serious outbreak of disease and subject to the instruction of his sanitary authority he shall direct or superintend the work of sanitary inspection.

By the Sanitary Officers Order 1926 no person is qualified to be hereafter appointed or reappointed as a medical officer of health of any district or combination of districts unless, in addition to the qualification prescribed by statute he is also either registered in the Medical Register as the holder of a Diploma in Public Health, Sanitary Science or State Medicine or has had not less than three years previous experience of the duties of a medical officer of health.

The Public Health (Officers) Act 1921 which was promoted by the British Medical Association provides that a whole-time medical officer of health of a county borough or urban and rural district in England and Wales a part of whose salary is contributed by the Exchequer shall not be appointed for a limited period and shall not be removed from his office except by or with the consent of the Minister of Health. A similar security of tenure also applies to the medical officers of health of county councils and of London boroughs.

Under the Sanitary Officers Order 1926 a medical officer of health who does not devote his whole time to the duties of his office but a portion of whose salary is obtained from Exchequer grant may be appointed without limit of time in which case he cannot be removed from office without the consent of the Minister. If he is appointed for a specified term say one year he continues to hold office from year to year unless the Minister consents to his removal. Where the electing body pays the whole of the salary of a medical officer of health he may be dismissed from office without reference to the Minister of Health.

A considerable number of authorities have now adopted the Local Government and Other Officers Superannuation Act 1922. Under this Act if an officer is incapacitated by ill health after ten years or more or if he has reached 65 years of age he is entitled to superannuation on the following scale: after ten years is 50 per cent of the average salary which he received during the last five years of employment, after eleven years, 11/63 and so on up

to a maximum of 40/50 after forty years or more of service. The Act, however, remains permissive, and it fails to make due allowance, in computing service for purposes of superannuation, for the more advanced age, as compared with other officers, at which the medical officer of health can enter the public service. In these two respects the position reached falls short of that for which the British Medical Association has been working for many years.

In Scotland the position is different in some respects. The central authority is the Board of Health, with a staff of medical officers for insurance work. Under the Public Health (Scotland) Act, 1897, no one can be appointed as medical officer of health for any area unless he possesses the Diploma in Public Health. No medical officer can be removed from office except with the sanction of the Board of Health. A "proper" salary must be paid, and the local authority may not bring about the resignation of the officer by indirect means, such as reducing the salary or attaching conditions to the appointment. The Act says nothing about superannuation or the age of retirement.

#### SCHOOL MEDICAL OFFICERS

School medical officers are appointed by local education authorities. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard education, and to inform their parents of its existence. Most approved schemes of medical inspection include arrangements which facilitate the task of parents in obtaining for their children the necessary treatment, check the results of this treatment, and keep each defective child under skilled observation both at home and at school until it has passed altogether out of the education authorities' hands. Indeed, it is now the practice for the education authorities themselves to provide for certain remedial work, notably the prescription of glasses where necessary, dental treatment, the removal of adenoids and tonsils, and treatment in connexion with certain diseases of the skin. The general object of all schemes alike is to make the inspection imposed by law of benefit, not merely to the individual child, but to the community at large, by preventing the development of conditions which lead to the existence of a large proportion of inefficient citizens among the adult population. The work is so related to that of medical officers of health that, as a rule, the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole- or part-time assistants. A Diploma in Public Health is almost always required of those entering the school medical service.

In Scotland, while the statutory authority for the work of the school medical service is different, the effect is broadly the same.

#### TUBERCULOSIS MEDICAL OFFICERS

A tuberculosis medical officer is a whole-time officer with special training and experience in tuberculosis work and of a suitable age and attainments to command general confidence. In England and Wales such officers are appointed by county councils and county borough councils, and their duties are to carry out the work of diagnosis of tuberculosis to advise as to treatment and to take charge of the work of tuberculosis dispensaries and sanatoriums where these are in operation. The work under tuberculosis schemes is co-ordinated with the general public health work of local authorities, and so the medical officer of health is often appointed as the chief tuberculosis officer when a special tuberculosis officer is on the staff of the local authority. The arrangements in Scotland are very similar.

#### MATERNITY AND CHILD WELFARE MEDICAL OFFICERS

Any public health local authority, however small, may make arrangements for maternity and child welfare work within its area, although very generally the smaller local authorities are embraced in county council schemes. For the schemes of the smaller local authorities the services of a part-time medical officer are obtained when the medical officer of health does not himself undertake the duties, but for the larger schemes special whole-time appointments are

made. The maternity and child welfare medical officer is responsible for the work at the centres provided and for directing the home visitations, and the whole of this work is closely co-ordinated with the other branches of public health work directed by the medical officer of health.

Much of this work was commenced in different parts of the country by voluntary organizations, some of it still remains in their hands, and is only loosely linked up with the public health local authority, but the tendency is for the whole of it to be undertaken by the local authorities. A large number of women medical officers have been appointed to these posts during recent years.

#### VENEREAL DISEASES

Schemes for the diagnosis and treatment of venereal diseases are provided and administered by county councils and county borough councils. In some cases the officer is on the whole-time public health staff, and in others he is a part-time official. Special knowledge and practical experience in the treatment of venereal diseases are essential. The officer appointed for either whole-time or part-time service works at one or more clinics, and also gives instructions and assistance in the treatment of venereal diseases to general practitioners, who are allowed to attend the clinics.

#### REMUNERATION FOR SERVICES

If we are to have skilled and highly trained medical officers of public authorities it is of course essential that they should receive salaries commensurate with their attainments and bearing a reasonable relation to the amount of time and money expended in fitting them for their important and responsible duties. At present, no standard scale of remuneration for whole-time services has been adopted by public health authorities, although the British Medical Association and the Society of Medical Officers of Health—and more recently the Ministry of Health—have endeavoured to bring this about.

The present-day rate of remuneration for the whole-time services of a medical officer of health may be said to vary from £700 to £2,000 per annum, according to the dimension of the population served and the officer's experience, while the maximum salaries of the principal medical officers of departments of public health work are somewhat lower. The whole-time medical officer working under a senior medical officer in most cases receives a commencing salary of £600 per annum, with bonus in some cases.

There are good prospects of the general adoption in the near future of a recognized scale of remuneration, which will provide a minimum commencing salary of £800 for a whole-time medical officer of health, of £750 for chief medical officers of departments, and of £600 for all medical officers working under chief medical officers—when they are not resident in an institution provided by the local public health authority and when they give whole-time services.

#### THE REGULATIONS FOR THE DIPLOMA IN PUBLIC HEALTH

##### The Examination

By the Regulations or Rules of the General Medical Council, which came into force on January 1st, 1924, the examination for the D.P.H. is divided into two parts, and no candidate is allowed to sit for the final part of the examination until two years have elapsed since a respectable qualification was obtained. The object of this two years' interval is "to provide opportunity for a candidate for the Diploma or Degree in Sanitary Science, Public Health, or State Medicine, to pass from the state of pupilage to that of responsible practitioner, to give proper consideration to the obligations and duties involved in the work of the Public Health Service, and to acquire direct experience of medical work in a responsible capacity either in practice or in hospital or laboratory appointments."

The examination is both written and oral, and includes practical examination in bacteriology and chemistry (Part I) and in infectious diseases, food inspection, inspection of premises, dwellings, factories, workhouses, schools, etc. (Part II).

Any candidate from the Dominions who possesses qualifications registrable in this country is eligible as a candidate for the examination given that he has received such a course of training as that defined by the Regulations at an institution which is approved by the General Medical Council.

#### *The Curriculum for the Diploma in Public Health*

The curriculum must extend over a period of twelve months and a candidate is admitted to either part of the examination after he has completed the prescribed course of instruction in the subjects thereof. At least five months must be given to practical laboratory instruction in an institution approved by the licensing body, in the subjects

(1) Bacteriology and parasitology including entomology especially in relation to diseases of man and to those diseases transmissible to man from the lower animals (180 hours of such instruction is required).

(2) Chemistry and physics in relation to public health (90 hours of such instruction is required).

(3) Meteorology and climatology (10 hours of such instruction is required).

Therefore at least 260 hours of practical instruction extending over a period of at least five months, is demanded before a candidate is eligible for Part I of the examination.

For a candidate to become eligible for Part II of the examination he must first receive instruction in

(1) Principles of public health and sanitation (for approximately 30 hours).

(2) Epidemiology and vital statistics (approximately 20 hours).

(3) Sanitary law and administration including public medical services (approximately 20 hours).

(4) Sanitary construction and planning (approximately 10 hours).

(5) Every candidate must also have made thirty attendances, of not less than two hours in each week of a three-month period, at the clinical practice of a recognized hospital for infectious diseases, and he must have received instruction in methods of administration.

(6) Every candidate must produce evidence that he has during a period of not less than six months been engaged in acquiring a practical knowledge of the duties routine and special of public health administration under the supervision of a medical officer of health who shall certify that the candidate has received from this officer or a competent medical officer during not less than three hours on each of six working days practical instruction in these duties and the one relating to

(a) Maternity and child welfare service

(b) Health service for children of school age,

(c) Venereal diseases service,

(d) Tuberculosis service,

(e) Industrial hygiene,

(f) Inspection and control of food including meat and milk.

Certificates of having received the prescribed instruction in public health administration must be given by a medical officer of health who devotes his whole time to public health work, or by the medical officer of health of a sanitary area having a population of not less than 50,000 or in Ireland by the medical superintendent officer of health of a county or county borough having a population of not less than 50,000.

#### *TRAINING CENTRES FOR THE DIPLOMA IN PUBLIC HEALTH*

Most of the universities of Great Britain and Ireland are training centres for the Diploma in Public Health. The University of London provides an M.D. in State Medicine for its own M.B., B.S. graduates.

In London at the present time there are fewer training centres for the D.P.H. than formerly. Candidates who desire to train in London can do so at University College and the Royal Institute of Public Health, and also at the Medical Schools of St. George's and Middlesex Hospitals when a sufficient number of candidates apply for the training. It is expected that in less than two years the post-graduate teaching and training in Public Health, in London, will be provided at one centre only—the London School of Hygiene and Tropical Medicine, which is in process of erection.

The University of Manchester has a well equipped department of bacteriology and preventive medicine, where candidates preparing for the examinations of the various

universities and examining boards for the Diploma in Public Health can obtain instruction. It also prepares candidates for the Diploma in Bacteriology and in Veterinary State Medicine, granted by the University, and for its Certificates in Factory Hygiene and School Hygiene. Full particulars can be obtained from the Dean of the Medical School, the University, Manchester.

The University of Edinburgh, which grants a Diploma in Public Health, makes provision for instruction in all the subjects. Further particulars can be obtained from the Dean of the Faculty of Medicine, Edinburgh.

## THE NAVY, ARMY, AIR FORCE, AND INDIAN MEDICAL SERVICES

The Medical Departments of the Royal Navy, of the Army, and the Indian Government normally employed between them before the war some 3,000 medical men, and vacancies in the ranks of these services were filled by offering commissions for competition once or more each year. In the abnormal circumstances arising out of the war and the period following it the usual regulations for recruiting the permanent medical staff of these services were, for the most part, in abeyance, and the newly formed Royal Air Force Medical Service also has depended largely upon short-service commissions for the maintenance of its medical personnel.

Meanwhile recruitment for the Royal Naval Medical Service and for the Royal Army Medical Corps was seriously prejudiced by disadvantageous terms and conditions of service generally, and in particular by hardships inflicted under new regulations upon certain groups of senior officers. Continued representations were made by the British Medical Association but without avail, and it is only lately that its efforts on behalf of these services have begun to bear fruit in the manner indicated below. The often repeated refusal to remedy grievances imposed upon the Association the distasteful duty of issuing warnings to newly qualified practitioners, but now that the Government has changed its attitude the Association is using every endeavour to assist the Admiralty and the War Office in obtaining the candidates they need. In securing the improved terms which it has pressed upon the authorities the Association gained a very notable success.

#### *Improved Terms and Conditions*

As a result of the recommendations of the Interdepartmental Committee on the Medical Branches of the Fighting Services, before whom the British Medical Association gave evidence early last year, substantial increases in the rates and pay and remuneration, gratuities and improved conditions of recruitment for officers of the Royal Army Medical Corps were embodied in a Royal Warrant issued by the War Office on June 29th, 1926. Simultaneously the Air Ministry announced improvements in the conditions of service and emoluments of medical officers of the Royal Air Force. The Admiralty also issued an Admiralty Fleet Order prescribing improved terms and conditions of service for medical officers P.N., and the India Office followed with revised terms of special recruitment for officers of the Indian Medical Service.

The changes generally took effect from July 1st, 1926, or (in the case of naval officers) as soon afterwards as the necessary arrangements could be made.

The British Medical Association, after examination of the revised terms, is satisfied with the new rates of pay and conditions of service for the P.N.M.S., the R.A.M.C., and the R.A.F.M.S., and in fulfilment of its desire to assist in recruiting these services we publish below the full particulars of each which have been supplied at our request by the Admiralty, the War Office and the Air Ministry.

In regard to R.A.M.C. officers whose particular difficulties have engaged the special attention of the Association during recent years, the increases in the rates of pay and retiring gratuities are substantial as will be seen



if the new rates are compared with the old rates promulgated by Royal Warrant after the war. But the new rates, like the old, are subject to a 6 per cent reduction owing to the decrease in the cost of living. The increases in the pay of R.A.M.C. officers do not begin until after six years' commissioned service, but from that time onwards, especially in the rank of major, very much has been done to make the service more attractive. One of the chief grievances was the fact that a major, after three years in that rank, or fifteen years' commissioned service, got no increase of pay until he was promoted lieutenant-colonel, a promotion which might possibly not take place until he had as much as twenty-four years of service. The new Warrant gives him a steady increase of pay, not only after fifteen years' service, but also after eighteen or twenty years' service. The ranks senior to that of major also participate in very substantial concessions. The retiring gratuities of a major after three and six years' service are now perhaps so great as to induce officers to retire before they become eligible for a pension, but in that case it is hoped that they will only make room for a large influx of junior officers to carry on the duties that are now being performed by those more senior in the service. The British Medical Association held out strongly for the removal of a serious grievance in regard to the retiring pension of an officer after twenty years' service, and it pointed out that it was possible in the future for a major to have to retire on a less pension than £1 a day, which had been granted to him from time immemorial. The new Warrant relieves him of anxiety in this respect, and explicitly states that his pension cannot be reduced below that amount. Another important point should be noted—namely, the concession by which a newly qualified medical man can hold a hospital appointment for one year before entering the service, counting it as a year of service towards promotion and retirement. Previously this concession was only given after the officer had entered the service. This was one of the points that were strongly brought forward in the evidence submitted by the Association to the interdepartmental committee, and should give special satisfaction to members of the medical profession. It will be seen that both the Royal Navy and Royal Air Force Medical Services have also benefited considerably by the recommendations of the committee. A further gain has been obtained for the Royal Army Medical Corps by the grant of marriage allowance for officers serving in India, an allowance that had been withheld from the R.A.M.C. officer while conceded to officers of other branches of the service. There is still, however, considerable difficulty in getting a sufficient number of young medical officers, but there is no reason why young men recently qualified should not enter the services, the prospects in which both financially and professionally are good.

### ROYAL NAVAL MEDICAL SERVICE

An Admiralty Fleet Order, issued in July 1926, announced changes in the terms and conditions of service for naval medical officers. The improvements include an increase in the establishment of Surgeon Captains from 16 to 20, and also in the number and remuneration of specialist appointments open to medical officers. These appointments comprise specialist posts in medicine, surgery, pathology, and hygiene, and the allowance payable to holders of them has been increased from 2s 6d to 5s a day. As soon as possible courses of instruction in clinical medicine, surgery, and allied subjects are to be provided once in every four years for all officers below the rank of Surgeon Captain. Courses for those selected to hold specialist appointments will be arranged in connexion with civil hospitals in London or other teaching centres. Medical officers entering the Navy on or after July 1st 1926, will be eligible, at the discretion of the Admiralty, to have their seniority antedated up to a limit of one year if they have held previously a resident appointment in a civil hospital for not less than this period. Such an appointment must be one recognized by the Admiralty for this purpose and must not have terminated more than six months before entry into the service.

Examinations for direct entry into the Medical Service are at present in abeyance. Entries are made by means of the short-service scheme, and the regulations provide for the transfer to the permanent service of desirable short-service officers. A short-service surgeon lieutenant, after six months' service, may be considered for transfer to the permanent service and would be permitted to count his seniority from the date of entry for short service for purposes of promotion, increment of full pay, and for retired pay.

#### General Conditions

A candidate must be registered, must be under 30 years of age and must be recommended by the dean of his school. Unmarried candidates will be preferred. A candidate will be interviewed by the Medical Director General, R.N., and will undergo a physical examination. If considered eligible by the Medical Director General his name will be submitted to the Board of Admiralty and he may be appointed "surgeon lieutenant for short service." A candidate must engage for three years, with the option of continuing for a further period of twelve months if his services are still required. The rate of pay is £1 4s 10d a day or £453 4s 2d a year, with the same allowances as are payable to permanent officers of their rank. Lodging money at the rate of £80 a year is usually allowed when employed on shore, without quarters in the United Kingdom, and £56 10s a year in lieu of rations when not victualled in kind. On joining an allowance of £50 for uniform will be made. When the previous rates of pay were fixed it was decided that 20 per cent should be considered as due to the then high cost of living. The rates set out above represent a reduction of approximately 6 per cent owing to the decrease in the cost of living. The whole 20 per cent is to be regarded as variable and subject to change on July 1st, 1930, and triennially thereafter either upwards or downwards according as the cost of living rises or falls.

An officer engaged for three years is entitled to receive two months' notice of his services being no longer required. A gratuity of £8 6s 8d will be payable to officers for each completed month of service on completion of their period of service, or to any who are invalided for causes not within their own control before the completion of the prescribed period.

Surgeon lieutenants R.N. for short service intending to apply for transfer to the permanent list must have been under 28 years of age at the time of their entry into the Royal Naval Medical Service.

#### MEDICAL OFFICERS R.N.

##### Full Pay

	Current Rate per annum.
	£ s d
Surgeon Lieutenant on entry	410 12 6
After 3 years	498 16 8
(Surgeon Lieutenants usually receive promotion after 6 years' service)	
Surgeon Lieutenant Commander on promotion	599 4 2
After 3 years	675 14 2
(Surgeon Lieutenant Commanders usually receive promotion after 12 years' total service)	
Surgeon Commander on promotion	772 11 8
After 3 years	839 10 0
After 6 years	909 9 2
After 9 years	976 7 6
Surgeon Captain on promotion (promotion is by selection)	1,116 5 10
After 3 years	1,201 9 2
After 6 years	1,285 12 6
Surgeon Rear Admiral (promotion is by selection)	1,780 13 4
Medical Director General (Surgeon Vice Admiral)	2,350 0 0

The current rates set out above are payable from July 1st, 1927, and represent a deduction of 6 per cent from the standard rates. 20 per cent of the standard rate is regarded as variable as the cost of living rises or falls. The next revision will be on July 1st, 1930.

#### Gratuities on Withdrawal

The following gratuities are payable if an officer of the permanent list is permitted to retire voluntarily.

	£
After 4 years' full pay service	500
" 8 "	1,000
" 12 "	1,500
" 16 "	2,250

Surgeon lieutenants for short service, transferred to the permanent list, will only be allowed to withdraw with a gratuity after four years' full pay service from the date of such transfer.

#### Maximum Retired Pay (Approximate current rate)

	£
Surgeon Vice-Admiral	1,125
Surgeon Rear Admiral	650
Surgeon Captain	250
Surgeon Commander	200
Surgeon Lieutenant Commander and Surgeon Lieutenant	125

Full particulars and a form of declaration can be obtained from the Medical Director-General, Admiralty, Queen Anne's Chambers, Tothill Street, London, S.W. 1.

# ARMY MEDICAL SERVICE

During the last two years, and in fact since the war, candidates have practically ceased to apply for commissions in the Royal Army Medical Corps. While the cause of this must to a great extent be attributed to the war, a still more potent cause hitherto has been an accumulation of grievances of a character which led the British Medical Association to refrain from recommending the army as a career for newly qualified medical men. This attitude was not now able to abandon wholeheartedly owing to the issue of a Royal Warrant last year removing practically all the grievances from which the R.A.M.C. officers were suffering.

Entrance to the corps, either by competitive examination or by selection, as decided by the Army Council, will take place half yearly, in January and July. The examinations in medicine and surgery are entirely of a clinical and practical character, partly written and partly oral. The regulations for admission, giving full details can be obtained from the Under Secretary of State (A.M.D.), War Office Whitehall, London, S.W. 1, and should be carefully studied. A personal interview with a representative of the Director General, Army Medical Services, is readily obtainable. The rates of pay and allowances are good, the opportunities of post graduate study are generous, and the work is varied, responsible, and interesting. The gratuities after certain periods of service enable an officer should he so desire to leave the service with a capital sum large enough to go a long way towards re-establishing himself in civil life and, further, the knowledge of the world and the comradeship of his fellow officers that he has gained in the army will be of no small value to him.

New entrants are commissioned in the rank of lieutenant and the first six months of service are spent on probation during which time they undergo in addition to their military training at the Royal Army Medical Corps depot at Aldershot a probationary course at the Royal Army Medical College in London in hygiene, pathology, tropical medicine, military surgery, recruiting, the prevention and treatment of venereal disease and the elements of army administration. At the end of this course and after qualifying at the necessary examinations their commissions are confirmed and they take their places in seniority according to the total marks obtained at all examinations up to that date. Officers Training Corps service with possession of certificate A or B (medical) carry a definite value in marks in this total.

An entrant who is holding or about to hold at the time of the entrance examination a resident house appointment at an approved civil hospital may be seconded while holding such an appointment up to a maximum period of twelve months. A candidate who has held such an appointment within six months of entry may be granted an antedate up to twelve months in respect of the period the appointment was held. This antedate and antedate counts in all respects as commissioned service, except that pay will not be issued for that period.

After a total period of one year's service at home the young officer goes abroad, probably to India, for his first tour of foreign service. Here he gains his first practical experience of tropical disease and tropical hygiene and possibly his first experience of active service on the frontiers of India. His tour abroad lasts five years with probably six months leave home during that time. On returning home the R.A.M.C. officer has the opportunity to decide whether he will remain in the corps or accept the gratuity of £1,000 after seven years' service and try his fortune in civil life. If he elects to remain he will between his eighth and twelfth year of service undergo a course of post graduate study at the Royal Army Medical College and the London hospitals of five months' duration followed by a course of study of a special subject selected by himself provided he has shown special aptitude in the post graduate course or during his previous service. During this period of study he remains on full pay and the fees of the courses are paid by the State. When qualified in his special subject the officer becomes entitled to specialist pay at 5s. a day when holding a specialist appointment. After this post graduate course the officer probably proceeds abroad again and promotion to major rapidly ensues and from that time onward the officer receives regular successive increases of pay and is eligible for additional and charge pay as well. The directorates of hygiene and pathology and the appointment of two serving officers as consultants in medicine and surgery have been instituted and have proved a marked success. All these appointments are of the rank of colonel or major general and were devised to permit specially selected officers to rise through all ranks to that of major general on the strength of their professional or purely scientific work. This side of the work of Royal Army Medical Corps officers is carefully watched by these directorates and consultants and not only ensures the maintenance of a high standard but enables the good professional work of individuals to be brought to notice.

Under these conditions the possibilities for good workers are very great in the Royal Army Medical Corps. There is scope for original research in tropical disease, in preventive medicine, and in bacteriology, as well as in the

large chemical field open to the specialist in medicine, surgery, or gynaecology, in venereal disease, and in ophthalmology. Child welfare is also undertaken systematically by officers of the Royal Army Medical Corps. At the same time, instruction in administration is continuous. The Royal Army Medical Corps is essentially organized for war, and one of the lessons of the great war was that trained administrators must exist to enable the fullest benefit to be obtained from professional talent. Many appointments carrying administrative responsibility are open to those officers who display capacity for this duty. All officers must be prepared to undertake command and to have a knowledge of army administration, especially in war. Equally important is the technical training of the non-commissioned officers and men of the corps in such "trades" as trained nurse, nursing orderly, masseur, radiographer, operating room assistant, laboratory assistant, hospital cook, dispenser, etc. This training is carried out by the officers and nursing sisters, and opens a large field for those who have ability in lecturing and teaching as well as the power of influencing men.

## Promotion

Promotion takes place automatically to captain after three and a half years' and to major after twelve years' service, provided the officer is qualified and recommended for promotion. Promotion to the higher ranks is by selection from those senior in the rank below but special promotion by brevet or otherwise is open to officers of the Royal Army Medical Corps.

## Pay and Allowances

The rates of pay and allowances are given in the accompanying Table A (see p. 428), they compare favourably with those that obtained before the late war.

## Additional Pay and Charge Pay for Officers of the P.A.M.C.

An officer not above the rank of lieutenant-colonel who is acting as a specialist receives up to 5s. a day according to subject or group of subject. An officer in charge of a hospital receives charge pay the daily amounts being: in excess of 50 beds 2s. 6d. in excess of 150 beds 5s. in excess of 300 beds 7s. 6d. in excess of 500 beds 10s. An officer in charge of a medical or surgical division of a general hospital with more than 300 beds receives half these rates. Senior medical officer Royal Arsenal not exceeding 10s. daily. Officer in command of the depot P.A.M.C. 5s. daily. The senior officer of the Army Medical Services with an army in the field a rate to be fixed by the Army Council according to the magnitude of the charge. The officer if under the substantive rank of colonel holding the appointment of senior medical officer in a command abroad or of a consultant director of medical services if the number of soldiers is 1,500 or upwards 5s. daily. Adjutant P.A.M.C. depot 5s. daily. Adjutant R.A.M.C. (T.A.) 2s. 6d. Further an officer graded as a specialist and appointed to the charge of a medical or surgical division of a general hospital may be allowed to retain his additional pay and to draw the rate of charge pay laid down for the officer in charge of a medical or surgical division of a general hospital provided that the total of additional and charge pay so drawn does not exceed the rate of charge pay drawn by the officer in charge of the hospital. With this exception charge pay and additional pay as specialist will not be payable concurrently.

## Retirement and Retired Pay

Retired pay will consist of two parts: (a) a service element based on the officer's total service; (b) a rank element for the rank from which the officer retires. An officer with less than twenty complete years' service will not be eligible for retired pay. The scale subject to the reduction of 6 per cent referred to below is for the service element £15 a year for each completed year of service as a medical officer. For the rank element the scale is as follows:

Rank from which Retired	After Completing 1 Year's Service in the Rank	After Completing each Additional Year's Service	Maximum Rank.
Major	£ 12	£ 12	£ 120
Lieutenant-Colonel	150	30	250
Colonel	200	50	350
Major-General	440	50	550
Lieutenant-General	600	50	650

The retired pay of an officer retiring with less than one complete year's service in the rank from which he retires will be assessed as though he had retired from the rank below.

TABLE A—Pay and Allowance

Rank	Pay per Diem*	Rations†	Servant	Married			Unmarried			Approximate Units Total		Approximate Yearly Total	
				Lodging	Fuel and Light (Average)	Furniture Allowance	Lodging	Fuel and Light (Average)		Married	Unmarried	Married	Unmarried
Lieutenant	£ s d 1 0 8	1 6	2 0	3 6	1 5	2 0	2 3	1 2		£ s d 1 11 1	£ s d 1 7 7	£ 567	£ 503
Captain	1 5 4	1 6	2 0	4 6	3 0	2 0	3 0	1 8		1 18 4	1 13 6	700	611
Captain after 8 years commissioned service	1 8 2	1 6	2 0	4 6	3 0	2 0	3 0	1 8		2 1 2	1 16 4	751	663
Captain after 10 years commissioned service	1 10 6	1 6	2 0	4 6	3 0	2 0	3 0	1 8		2 3 6	1 18 8	791	706
Major	1 15 4	1 6	2 0	4 6	3 0	2 0	4 0	2 3		2 8 4	2 5 1	882	823
Major after 15 years commissioned service	2 0 0	1 6	2 0	4 6	3 0	2 0	4 0	2 3		2 13 0	2 9 9	957	903
Major after 18 years commissioned service	2 2 4	1 6	2 0	4 6	3 0	2 0	4 0	2 3		2 15 4	2 12 1	1010	951
Major after 20 years commissioned service	2 7 0	1 6	2 0	4 6	3 0	2 0	4 0	2 3		3 0 0	2 16 9	1093	1036
Lieutenant Colonel	2 14 0	1 6	2 0	4 6	3 0	2 0	4 6	2 3		3 7 0	3 4 3	1273	1173
Lieutenant Colonel after 3 years commissioned service as such	2 18 10	1 6	2 0	4 6	3 0	2 0	4 6	2 3		3 11 10	3 9 1	1311	1251
Colonel	3 5 10	1 6	2 0	5 6	4 1	2 0	5 6	2 9		4 0 11	3 17 7	1477	1416
Major General	4 9 4	1 6	4 0	11 0	5 2	2 0	11 0	3 8		5 13 0	5 9 6	2052	1973

\* Pay Warrant rates as amended by Army Order 195/26 less 6 per cent from July 1st 1927 (vide Army Order 1 of 1927). The Pay Warrant rates are subject to revision to an extent not exceeding 20 per cent according to variation in the cost of living. The next revision may take place with effect from July 1st 1930.

† Rates of Allowances vary from time to time and issues are subject to conditions laid down in the Allowance Regulations.

The maximum rates of retired pay are as follows:

Captain and Subaltern	£300
Major	£450
Lieutenant Colonel	£600
Colonel	£800
Major General	£1,050
Lieutenant General	£1,200

The above rates are those laid down in the Pay Warrant. They have been reduced by 6 per cent as from July 1st, 1927. Further revision may take place triennially to an extent not exceeding 20 per cent, according to variation in the cost of living.

Officers with seven and less than twenty years service as medical officers may be permitted to retire with a gratuity in accordance with the following scale:

After 7 years service as a medical officer	£1,000
After 3 years service as a medical officer in the rank of major	£2,800
After 6 years service as a medical officer in the rank of major	£3,500

#### Seconded Service

An officer may be permitted to accept employment in the Foreign or Colonial Offices when so seconded he is not eligible for pay or allowances from army funds but his service continues to reckon towards promotion and under certain conditions, towards increase of pay, pension, or gratuity.

#### Service on the West Coast of Africa

Officers for service in West Africa are usually taken from a list of volunteers for such service. An officer at present receives, while actually serving in West Africa (which service may include ordinary leave not exceeding sixty-one days in a year and any time spent at Madeira or the Canary Islands on sick leave), additional pay at the following daily rates: lieutenant-colonel 12s, major 9s, captain 7s 6d, lieutenant 6s. Service on the West Coast of Africa also counts double towards voluntary retirement and the service element of retired pay under certain conditions, and also entitles to leave at home of one day for every two days' service after twelve months continuous service on the coast up to a maximum of 365 days leave. Continuous service includes the ordinary sixty-one days leave and any time spent in Madeira or the Canary Islands on sick leave for this purpose.

#### THE ARMY DENTAL CORPS

The corps is administered by the Director-General, Army Medical Services. It is a joint service for the Army and Royal Air Force, and the personnel is required to serve under either force and be interchangeable. Officers and other ranks posted for duty with the Royal Air Force will perform their duties under the regulations of the Royal Air Force for the employment of dental personnel, but the conditions in the following tables apply equally in either force. Promotion is carried out on one general list. The regulations for admission to the Army Dental Corps should be obtained from the Under Secretary of State, War Office, and carefully studied.

#### Officers' Appointment and Promotion

1 Commissions as lieutenants in the Army Dental Corps may be given to persons duly qualified under regulations approved by the Army Council.

2 An officer shall be eligible for promotion to the rank of captain on completion of three and a half years' service and to the rank of major on completion of twelve years' service in the corps provided he has previously qualified in such manner as may be prescribed by the Army Council.

3 Promotion to the rank of lieutenant colonel and colonel in fill the establishments laid down from time to time for those ranks shall be made by selection of the Army Council provided the officer has previously qualified for promotion to those ranks in such manner as may be prescribed by the Army Council.

4 Appointments are in the rank of lieutenant, except in cases where service of three and a half years or more has been given as a temporary dental officer, when the rank of captain will be given, provided the officer has qualified for promotion to that rank. Service as a temporary dental officer will count towards the three and a half years for promotion to captain, and the twelve years for promotion to major.

#### Pay

The following are the rates for officers of the Army Dental Corps:

	Per diem £ s d
Lieutenant	0 18 10
Captain	1 3 6
Captain after 8 years' total service	1 6 4
Captain after 10 "	1 8 2
Major	1 12 10
Major, after 15 years' total service	1 17 8
Major, after 18 "	2 0 0
Major after 20 "	2 4 8
Lieutenant Colonel	2 11 8
Lieutenant Colonel after 3 years' service as such	2 16 4
Colonel	3 3 6

These rates are 6 per cent below those shown in the Pay Warrant 1926, as amended by Army Order 195/26. The rates are subject to revision to an extent not exceeding 20 per cent according to variation in the cost of living. The next revision may take place with effect from July 1st, 1930.

#### Charge Pay and Allowances

The officer in charge of the Dental Laboratories Aldershot receives charge pay at the rate of 5s a day if holding the rank of captain or 2s 6d a day if holding the rank of major. The allowances for officers of the Army Dental Corps are at the same rates as for officers of the Royal Army Medical Corps.

#### Petirement and Retired Pay or Gratuity

The rates of retired pay will be the same as for officer of the Royal Army Medical Corps. Voluntary retirement on retired pay will not be allowed until after twenty years' service. Early retirement on gratuity may be allowed as follows: After eight and a half years' service as a dental officer gratuity of £1,000; after fifteen years' service £2,000; after eighteen years' service £3,000. Retirement will be compulsory at the age of 55 years. A dental officer who does not qualify for promotion within three and a half years' service in the corps will be retired, and a captain who fails to qualify for promotion to major within twelve years' service in the corps will be retired on any gratuity for which he may be eligible.

## ROYAL AIR FORCE MEDICAL BRANCH

The Air Council attaches great importance to attracting into the R.A.F.M.S. the best type of medical man. Success on the capacity of the medical service depends in a peculiar degree on the safety and efficiency of the Royal Air Force. The duties of these medical officers include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service are liable, but the special study of the mental and physical stresses imposed on the airman in diverse circumstances and climates—a new branch of medicine which still provides considerable scope for research.

As promotion to the higher ranks of the service is by selection from officers who are eligible by reason of length of service, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits initiative and energy in scientific research as well as for those who develop a talent for administration. The work to be done therefore has a high professional interest which combined with good rates of pay and allowances offers a career for medical men which should prove both attractive and interesting. The life is one which is certain to appeal to the man of wide outlook who desires opportunities for travel, sport and games and can find interest and enjoyment in aviation. His duties will be a matter of course give him flying experience as a pilot, which is necessary for the proper study of the medical problems of aviation and for gaining first-hand knowledge of the conditions under which his comrades serve.

## COMMISSION

The establishment will consist partly of permanent and partly of short service officers.

An officer will on first entry be granted a short service commission for a period of three years on the active list (which may be extended to five years at the discretion of the Air Council) if the officer so wishes, on the recommendation of the Director of Medical Services) and of four years in the Reserve of Air Force Officers. Selections for permanent commissions will be made from officers holding short service commissions, and those who are not selected will be transferred to the Reserve at the expiration of their period of service on the active list.

For those entrants who desire it the prospect of obtaining a permanent commission is approximately an even one. Experience has so far shown that the officers selected have included the great majority of the desirous and suitable for retention in the service, owing to the fact that the short service commission with its gratuity after three or five years is in itself an attraction to many entrants who desire to enlarge their experience and outlook from the point of view of subequently entering private practice or who on entry have not made up their minds to the adoption of a permanent career in the service and subsequently find that they would prefer to return to civil life.

Medical officers may be allowed to count as service their time spent in resident appointments in civil hospitals under the following conditions:

(1) An officer granted a short service commission on or after July 1, 1923 who at the time of application for the commission holds or is about to hold a resident appointment in a recognized civil hospital may be seconded for the period not exceeding one year from the date when the commission is granted during which the appointment is held. If the applicant already holds the appointment when the commission is granted the commission may be antedated to the date on which the appointment was first held provided (a) that the appointment is held for not less than one year (b) that the period of secondment and the period of antedate shall not together exceed one year and (c) that the antedate shall not be made until the officer has joined for actual R.A.F. duty.

(2) An officer granted a short service commission on or after July 1, 1923 who has previously held a resident appointment in a recognized civil hospital for a period not less than one year may provided the commission is granted not more than six months after the termination of the hospital appointment be granted an antedate of the commission equal to the period of the appointment up to a maximum of one year.

(3) The term resident appointment as used at (1) and (2) may be held to include a period of not more than six months in a non-resident appointment immediately preceding or following a resident appointment.

(4) If necessary the ordinary maximum age for appointment to a commission may be increased by a period equal to any antedate granted under (1) and (2).

(5) An officer who has been seconded or whose commission has been antedated as above will be required to serve for a minimum period of three years on the active list from the date of joining for actual R.A.F. duty.

(6) Pay and allowances for period of secondment or antedate will not be allowable and such period will not be reckoned in the payment of gratuity payable to short service officers. Subject to (5) however such period will be reckoned as commission service in the Royal Air Force for purposes of seniority and promotion and in the case of permanent officer of retirement retired pay and retirement gratuity.

Officers who have been selected for permanent commissions may be permitted to attend for a period not exceeding nine months a postgraduate course in general medicine and surgery, tropical and preventive medicine and other special subjects. Such permission may be granted at any time when the exigencies of the service permit during the first sixteen years of service and when attending these courses officers will receive full pay and allowances.

All entrants in the R.A.F.M.S. will be commissioned as Flight Officers (Medical) and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service. Officers selected for permanent commissions will normally be promoted to the rank of Squadron Leader after ten years' total service. Accelerated promotion may be granted in a limited number of cases to officers who show exceptional ability after the completion of eight years' service. Promotion within a flight lieutenant to the rank of Wing Commander will be by election at any period after sixteen years' total service and to that of Group Captain by election at any period after twenty-two years' service.

There will be no competitive examination on entry. Candidates must be under 23 years of age. British subjects, the sons of British subjects, and of our Empire descent and will be interviewed personally by the Director of Medical Services, Royal Air Force, before acceptance. Each candidate must produce:

1. Birth certificate
2. Medical registration certificate
3. A declaration containing the following information:
  - (a) Age and place of birth.
  - (b) That he is a British subject, the son of a British subject, and of pure European descent.
  - (c) That he is ready to engage for general service at home or abroad as required.
  - (d) The qualifications he is possessed of and what medical or other appointments he has held (if any).
  - (e) That he is willing to fly as a pilot or engineer when so called upon to do so.

Each candidate will be required before acceptance to pass a medical examination to ensure that he labours under no constitutional or mental disease or diseases or weakness, nor any imperfection or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate, in peace or war.

On appointment entrants will undergo an initial course of eight weeks during which they will be given instruction in the special medical aspects of aviation, the organization and administration of the Royal Air Force, and the general and special duties to be performed by officers in the Medical Branch. In order to avoid the necessity for further examinations the position of entrants in order of seniority in the Air Force List will be determined at the end of the initial course by a system of marking and reports on the actual work done during their instruction.

## UNIFORM AND EQUIPMENT

Medical officers are required to provide themselves with the uniform service dress and mess dress of their rank and with the distinguishing badges of the Royal Air Force Medical Branch. The provision of full dress is entirely optional at present. An allowance of £2.0 towards the cost of uniform is made on joining to candidates who have not had previous commissioned service in H.M. Forces.

## PAY AND ALLOWANCES

The emoluments of medical officers of the Royal Air Force are given in outline below. The standard rates of pay and retired pay were drawn up on the basis of the high cost of living in 1919 and 20 per cent of each of the standard rate is detachable and subject to alteration either upwards or downwards as the cost of living rises or falls. Under this provision the current rates now in force represent a reduction of approximately 6 per cent on the standard rates. The next revision will take effect from July 1st 1930 and subsequent revisions will be made at intervals of three years.

## PETER D. PAY

The minimum period of service qualifying for retirement on retired pay is twenty years. Standard rates of retired pay are as follows:

**For Officers**—Air Vice Marshal, £780 to £1,010 per annum, Air Commodore, £650 to £950 per annum.

## Royal Air Force Medical Branch Rates of Pay and Allowances

Rank	Pay *			Cash Allowances at Home Rates in lieu of Quarters 1 a ions and Servant if not available in India (per annum) †		Pay plus Allowance (per annum)	
	Daily Rates		Per Annum (Current Rates)	Married	Unmarried	Married	Unmarried
	Standard	Current					
Flying Officer	£ s d 1 4 0	£ s d 1 2 6	£ s d 410 12 6	£ s d 155 12 11	£ s d 141 8 9	£ s d 567 5 5	£ s d 552 1 3
Flight Lieutenant	1 6 0	1 4 6	447 2 6	205 16 8	159 13 9	653 19 2	606 16 3
Ditto after 2 years as such	1 8 0	1 6 4	480 11 8	206 15 8	159 13 9	687 8 4	610 5 5
Ditto after 4 years as such	1 10 0	1 8 2	514 0 10	206 16 8	159 13 9	720 17 6	673 14 7
Squadron Leader	1 14 0	1 12 0	581 0 0	205 16 8	171 17 1	790 16 8	755 17 1
Ditto after 2 years as such	1 18 0	1 15 8	650 18 4	206 16 8	171 17 1	857 15 0	812 15 5
Ditto after 4 years as such	2 0 0	1 17 8	687 8 4	205 16 8	171 17 1	891 5 0	859 5 5
Ditto after 6 years as such	2 4 0	2 1 4	754 6 8	205 16 8	171 17 1	961 3 4	925 3 9
Ditto after 8 years as such	2 8 0	2 5 2	821 5 10	205 15 8	171 17 1	1031 2 6	996 2 11
Ditto after 10 years as such	2 10 0	2 7 0	857 15 0	205 16 8	171 17 1	1064 11 8	1029 12 1
Wing Commander	2 15 0	2 11 8	912 18 4	205 15 8	184 0 5	1143 15 0	1125 18 9
Ditto after 2 years as such	2 17 0	2 13 6	970 7 6	206 16 8	184 0 5	1183 4 2	1165 7 11
Ditto after 4 years as such	3 3 0	2 19 2	1079 15 10	206 15 8	184 0 5	1286 12 6	1263 16 3
Group Captain	3 10 0	3 5 10	1201 9 2	232 17 6	255 10 0	1481 6 8	1456 19 0
Air Commodore	4 0 0	3 15 2	1371 15 10	337 12 6	310 5 0	1709 8 4	1682 0 10
Air Vice Marshal	5 0 0	4 14 0	1715 10 0	405 1 3	375 12 11	2191 11 3	2091 2 11

\* Except for periods of service under Indian administration. For such periods officers receive pay and allowances at rates and subject to conditions authorized from time to time by the Government of India.

† These allowances are issued only when accommodation, fuel and light ratings and personal attendance are not available in kind. Normally provision in this is available for junior officers. Married rates of allowances are payable only to married officers who have reached the age of 30 or the rank of squadron leader. A colonial allowance is granted in certain commands abroad.

The rates and general scheme of allowances are liable to revision as circumstances may require.

## Officers Below in Rank

Age on Retirement	Yearly Rate of Retired Pay	Years of Service	Addition for each extra Year of Service *	Deduction for each Deficient Year of Service *
40	£ 300	17	£ 15	£ 15
41	337	17	15	15
42	375	18	15	15
43	412	18	15	15
44	450	19	15	15
45	487	19	15	15
46	525	20	15	15
47	562	20	15	15
48	600	21	15	15
49	637	21	15	15
50	675	22	15	15
51	697	22	22	15
52	720	23	22	15
53	742	23	22	15
54	765	24	22	15
55	790	24	22	15

\* Limited to five years.

The maximum standard rates of retired pay and the compulsory retiring ages for the several ranks are

Rank	Yearly Rate of Retired Pay	Compulsory Retiring Age
Air Vice Marshal	£ 1010	69
Air Commodore	950	57
Group Captain	900	55
Wing Commander	600	51
Squadron Leader	500	48

## Gratuities

A permanent officer allowed to retire before having qualified for retired pay may be granted a gratuity provided he has not less than ten years' commissioned service—namely, £1,500 if he has ten but less than fifteen years' commissioned service, £2,500 after fifteen or more than fifteen years'.

Short service officers will be eligible on passing to the Reserve for gratuities on the following scale: £100 for each of the first two complete years of service, £150 for each of the third and fourth complete years, and £200 for the fifth complete year, that is, for three years' service on the active list £350, for five years £700.

These gratuities will not be payable to officers granted permanent commissions, but their service on a short service commission will count towards retired pay.

Further particulars may be obtained on application to the Secretary, Air Ministry (DMS), Adastral House, Kingsway W C 2.

## INDIAN MEDICAL SERVICE

THE Lee Commission, which visited India to inquire into the prospects and remuneration of the European Services, made certain recommendations with regard to the Indian Medical Service in its report issued in May, 1924. The recommendations received careful consideration by the Government of India and the Secretary of State, and the result the Secretary of State announced in the House of Lords that he had come to the conclusion that the recommendation of the Lee Commission that the military side of the Indian Medical Service should be absorbed in the R A M C would raise more difficulties than it would solve. He had therefore decided that the Indian Medical Service must be maintained as essential in a military service constituted on the same broad lines as at present.

In order to maintain the necessary war reserve for the Indian Medical Service, and also to provide European medical attendance for European officers of the army in civil services and their families, as recommended by the Lee Commission, a stated number of I M S officers will be lent to Provincial Governments for employment in posts, and the Provincial Governments will be required to employ them in addition to the officers of the Provincial Civil Medical Services, which are now to be constituted. The control of and recruitment for these Provincial Medical Services will be in the hands of the Provincial Governments.



ments but this will not of course affect a certain line of service of the I.M.S. officers but to them.

These are the broad outlines of the future organization of the medical services in India which have been announced but certain details of the scheme are understood to be still under consideration by the Secretary of State. It is expected that the final decision will be taken before very long.

In the meantime the Secretary of State is continuing to recruit for the Indian Medical Service on the system which has been in force since the last open competitive examination in July, 1915. Appointments are made by nomination and to assist him in making them the Secretary of State has constituted a Selection Committee, which summons and interviews such applicants as appear to be *prima facie* suitable, and makes recommendations for appointment. A similar committee has been appointed in India to investigate applications from candidates in India and to forward recommendations to the Secretary of State. All appointments are made under the special terms which are set out below.

#### Special Recruitment

The Secretary of State has announced his intention of appointing a certain number of medical men of British descent in the near future to permanent commission in the Indian Medical Service on the special terms set out below. Candidates must be well qualified medical practitioners over 24 and under 32 years of age. Appointment will be his nomination on the recommendation of a Selection Committee before whom candidates will have to appear in person. The special terms are as follows:

(a) On completing either six or twelve years' active service in India an officer so appointed may claim to retire on a gratuity of £1,000 or £250 respectively provided that he has given notice of his intention twelve months in advance. If he does not do so he will continue in the service on the ordinary pensionable footing. If an officer applies and is permitted to retire at any time between the completion of his sixth and twelfth years of service, or between the completion of his twelfth and seventeenth years of service, he will be eligible for a gratuity of £1,000 only or £250 only respectively. In addition to actual service only privilege leave (that is leave on full pay for six days in each year) will be allowed to count towards the period of six or twelve years required for the gratuity and no ordinary furlough or sick leave.

(b) Officers so appointed will be eligible for the concessions set forth in the Provisional Regulations except that no concession of passage will be granted before the completion of five years' service and then only if the officer has not given notice to retire in accordance with the preceding sub-paragraph. Otherwise he will be provided with a free passage for himself and his family to the United Kingdom or to any port in the British Empire to which he may wish to proceed on the completion of 12 years' service. Similarly on the completion of eleven years' service an officer will become eligible for a second concession of passage if he has not given notice as above or he will receive free passages to the United Kingdom or any port in the British Empire if he retires on completion of twelve years' service. Passages granted on retirement must be claimed within three months of the date of retirement. An officer invalided home on sick leave during his first twelve years of service will be granted a free passage but any such passages granted to him will count against any concession of passage or passages to which he may be entitled. But if he retires otherwise than on account of ill health before becoming entitled to benefits under the passage rules he will be required to refund the cost of the passages granted for sick leave.

In view of the reorganization of the Indian Medical Service which is now under consideration only military employment can be guaranteed to officers entering the I.M.S. at the present time. They will however be eligible for the benefits of any conditions regarding civil employment which may be made applicable to officers in future appointed to the I.M.S. as the result of decisions taken on the Lee Commission Report.

In all other respects the ordinary rules and conditions set forth in Regulations for the Appointment of Candidates to Commissions in the I.M.S. will apply. Officers retiring on a gratuity after twelve years' service will be liable equally with those retiring on pension to recall to military duty in case of emergency up to 55 years of age. They would only be recalled to duty in the event of an emergency which exhausts the capacity of the reserves permanently maintained in civil employ in India.

The officers appointed will sail for India early next year. It is hoped to arrange for them to attend a course of instruction before doing so.

Application forms and any further particulars desired may be obtained from the Secretary Military Department India Office, Whitehall, S.W.1. Envelopes should be marked Medical Recruitment.

#### PRISON MEDICAL SERVICE

Candidates for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is Mr. M. J. W. C. B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission Home Office London S.W.1.

In the smaller prisons the medical officer is usually a local practitioner but in the larger the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

In February, 1923, the then Home Secretary appointed a committee to report on what changes if any, should be made in the remuneration or other conditions of service of officers at the prisons and Borstal institutions in England and Scotland and at Broadmoor Criminal Institute Asylum. Evidence was given on behalf of the British Medical Association by the Medical Secretary who pointed out that the salary offered to Class II medical officers—namely, a basic salary of £300 rising by annual increments—was even when the allowance and bonus was added, less than the £500 a year the Association held upon as the minimum commencing salary which should be given to a whole time medical man holding such a responsible office. The committee issued its report in November 1923. It recommended that officers of both classes should receive an additional £50 a year, and from a communication received from the Prison Commission we understand that the pay of the whole-time prison medical staff is: Medical officer Class II £350, rising by annual increments of £20 to £600; medical officer Class I £650 rising by annual increments of £25 to £800. Unfurnished quarters are provided or an allowance in lieu is made. The civil service bonus is paid on the salary. There are 15 medical officers Class II and 12 medical officers Class I and 23 part-time medical officers.

The number of vacancies is never large, and promotion is slow.

#### MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES

Medical Acts have now been passed in almost all places forming part of the British Empire beyond the seas and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are always admissible merely on payment of a registration fee providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom as the local requirement may be. The only exception in this statement that need be made relates to the Dominion of Canada. Each of its provinces acts as a medical or an independent State. The result has been that reciprocity of practice has in the past been established between this country and all the provinces of Canada except British Columbia where certain obstacles still remain to be overcome. It has however to be recorded that reciprocity with Saskatchewan and New Brunswick has recently been brought to an end by those provinces and the arrangement with Quebec is also likely to be ended shortly owing to their action. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar stating what degrees or diplomas he holds and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register. The Licence of the Dominion Council which can only be obtained after examination entitles its holder to practise in any of the provinces of Canada though in regard to Quebec there is a proviso that he must have been registered in the province five years prior to the application for the recognition of the Dominion Licence. In order to sit for the examination for the Dominion Licence it is necessary to obtain a licence from one of the provinces but this can be obtained from one of those with whom reciprocity has been established.

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established though there are other countries which grant a limited recognition to British qualifications. Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. The same obligation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations governing medical practice, and all of them require the holder of a British qualification to submit to an examination. The States of New York and Indiana require an applicant to be naturalized.

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practice abroad can be obtained from the office of the General Medical Council, 44, Hallam Street, Portland Place, London W.1 price 2s. 6d. or 2s. 9d. post free in the United Kingdom. Practitioners who think of going abroad to practice will find therein much useful information, including the name of the official in each country to whom requests for further particulars should be addressed. A new edition in which all the information has been brought up to date has just been published (1927).

### MEDICAL APPOINTMENTS IN THE COLONIES AND MANDATED TERRITORIES

Medical appointments in the self-governing Dominions and the territories under their control, and in Southern Rhodesia, are made by the Governments concerned, and are not in general open to candidates in the United Kingdom. Appointments to the medical services of the colonies and other territories under the administrative direction of the Colonial Office are, apart from those in Ceylon, Mauritius, Jamaica, Barbados, the Bahamas, Bermuda, and Malta, which are filled locally, made by the Secretary of State for the Colonies in this country. Such appointments are to a given colony or colonies for there is no unified service directly administered from the Colonial Office. It follows that conditions of service and superannuation are in the main determined by the economic resources and general public health policy of the individual colony and its local Government and vary almost as widely as do conditions of climate. Moreover, the extent of the control exercised by the Colonial Office varies according to the constitutional forms of the particular colony, and the detailed information available centrally is not always either up to date or complete. The intending candidate, therefore, should make exhaustive inquiries as to local conditions, and particularly as to facilities for private practice where this is included in the terms of appointment. He will also do well to supplement official information by reference to the central office of the British Medical Association where reports obtained from time to time from the local Branches are available. This is the more necessary because facilities for transfer from the Medical Service of one colony to that of another are as yet practically non-existent except in connexion with a few specialist and senior appointments; thus sets strict limits upon the opportunities for promotion.

To the physically and mentally suited for the climatic and social conditions peculiar to the various colonies the Colonial Medical Services should, and in some cases do, offer a field of professional activity rich in interest and in opportunity for pioneer work. The scope for research is wide and facilities for its prosecution are beginning however tardily to be provided. An increasing number of specialist posts is becoming available in the larger services, and the general policy is to fill them by promotion of suitably qualified junior officers. The potentialities of sanitation are beginning to be appreciated by local administrations, however vaguely. But all these advantages have to be weighed against the fact that in the Colonial Medical Services the opportunities for promotion are limited. In some instances indeed they are almost entirely absent. Hence the necessity for a full inquiry before accepting appointment. It is

true that the post-war economic stringency to which the delay of essential reform was usually attributed is giving place to more favourable conditions. There are also signs of increasing parliamentary and departmental interest in the development of a sound health policy. Amongst these the most significant is perhaps the recent appointment by the Secretary of State in consultation with the Medical Research Council, of a Committee "to advise the Secretary of State and the Medical Research Council upon the initiation and promotion of medical research in the interests of the Colonial Empire, upon the recruitment and conditions of service of the necessary personnel, and upon the management and allocation of any funds available for the purposes." The appointment of a chief medical adviser to the Secretary of State for the Colonies has also had its effect. We are confident that the work of this officer will contribute greatly to the establishment of conditions making for efficiency and well-being in the Colonial Medical Services. Meanwhile, those services are too often hampered by conditions which make efficiency unattainable. At the worst they are in some colonies starved of material resources in the name of economy, underpaid, and underpaid, with inadequate facilities for study leave and at the mercy of an administration in which the nominal head of the service has no effective voice. Hence the urgent necessity for making careful and sufficient inquiry as to the position in any given service before appointment is accepted.

The medical services recruited in this country by the Secretary of State for the Colonies include those of West Africa, East Africa, Malaya, Hong-Kong, the West Indies, Fiji and the Western Pacific Colonies, and Palestine, besides a number of small services offering individually one or two appointments at an inadequate remuneration and with no prospects of promotion. The recent revision of the conditions of the Fiji Medical Service shows a distinct improvement in this colony. The basic salary of the district medical officers is £500 by £25 to £725, and although this is below the £600 minimum recommended as adequate by the British Medical Association this fact is offset by the concession of allowances of from £175 to £275 in five of the districts, the value of private practice in the remaining seven being estimated at from £200 to £600 a year. The services in the West Indies and some of the smaller colonies have not yet conceded the £600 minimum commencing salary, and whilst facilities for remuneration in private practice, general conditions of service, and a relatively low cost of living must in some instances be taken into consideration, these compensations are by no means universal. The services in the Leeward and Windward Islands are in a condition which requires special notice in a way of warning.

In general, candidates for these services must be between the ages of 23 and 35, although these limits are not at the moment absolute. A candidate over 35 years of age if accepted for appointment, may be required to serve on a temporary and non-pensionable footing, regular appointments are, subject to a varying period of probation, for the most part classed as permanent and pensionable. There is no entrance examination, but prior to selection for appointment must obtain a certificate of physical fitness from one of the Medical Advisers of the Colonial Office. Post-graduate experience in the medical services is desirable, and in some cases special allowances are conceded to the holders of a D.P.H. or other additional qualifications. Since 1914 candidates for the West African Medical Staff, the East African Medical Service, and the Malayan Services are, in general required to undergo an approved course of instruction in tropical medicine. The cost of this subject to a minimum of £100 of service being performed, is met by the Colonial administrations.

The bulk of the appointments made by the Secretary of State in this country are to the West African Medical Staff, the East African Medical Service, and the Malayan Services in Malaya. There are the stated that the services numerically, and therefore offer room for advancement. The better prospects of promotion and of specialist appointments than in the smaller services.

## WEST AFRICAN MEDICAL STAFF

This is amongst the best organized and best paid of the Colonial Services, though at present it appears to be undervalued. The territories covered by the service include Nigeria, the Gold Coast, Sierra Leone and the Cameroons. Climatic conditions vary considerably over this area but they are in general admittedly trying. This fact is at present recognized by the provision of more frequent leave periods than are usual elsewhere. The growing opinion that conditions are less adverse than they have been in the past is marked by a proposal to extend the tours of service. This proposal has not however found favour with the authorities for the time being. The rate of pay for a medical officer is £660 on appointment rising by annual increments to £860. There are in addition certain seniority and duty allowances, and there are a number of specialist and administrative posts carrying relatively high salaries. The pension after 18 years' service is £570. Gratuities of £1,000 or £1,250 may be drawn on retirement after 9 or 12 years' service. Members of the West African Medical Staff are not permitted to take their wives or young children to the West Coast until they have acquired experience of the conditions of life and have obtained the sanction of the Governor. In the case of young children this is only exceptionally given.

## EAST AFRICAN MEDICAL SERVICE

This service includes Kenya, Uganda, Tanganyika Territory, Nyasaland, Zanzibar, and British Somaliland. In East Africa there is very wide scope for clinical work, both medical and surgical, as well as for research and for preventive medicine and sanitation. The service as a whole is fully alive to its responsibilities and opportunities, individual initiative is encouraged, and the career of a medical officer depends, not on seniority alone, but to a large extent on his own capability. As a rule it is preferable that medical officers on first appointment should not be married, although in all but a few stations conditions allow a medical officer's wife to accompany him. The service includes a medical and a sanitary division. The former is open to those holding ordinary medical and surgical qualifications, post-graduate experience in a hospital appointment being an advantage; posts in the sanitary division will as far as possible be filled by those holding a Diploma in Public Health. Climatic conditions vary considerably. In the greater part of Kenya they approximate more to the temperate than the tropical zone, but there are some areas in the East African Dependencies where conditions more closely resemble those in West Africa. The rate of pay for a medical officer is from £600 on appointment, rising by annual increment of £30 to £840, and thereafter subject to an efficiency bar at the point, by £40 to £920. Holders of the D.P.H. receive a special concession of two increments on appointment thus reaching the maximum of the grade two years earlier than they would otherwise do. Private practice may be permitted in certain circumstances, but there is no right to private practice even in those stations where opportunity for such practice may exist.

Whilst a candidate can only apply for appointment to the East African Medical Service in general and is liable to transfer between the several dependencies he may express his preference for any particular colony and his wishes will be informed by him as far as possible. As a rule transfer only takes place on promotion or at an officer's own request. The gratuities payable on retirement after nine or twelve years' service are similar to those for the West African Medical Staff. An officer retiring after twenty years' service at the maximum of the grade of medical officer receives a pension of £923 a year.

## MEDICAL SERVICES IN MALAYA

These services cover the Straits Settlements, the Federated Malay States, and some of the unfederated States. Certain reforms have recently been effected in the Malayan Services, and whilst that in the Federated Malay States still suffers from the inclusion of the Medical Department in the general decentralization of administration carried out since the war the commencing salary of 500 dollars a month, plus an allowance of 10 per cent for single and 20 per cent for married officers is generally

considered adequate. A non-pensionable allowance of 100 dollars a month is paid to officers holding the Diploma in Public Health. The service would now offer considerable scope to suitable candidates.

## SUDAN MEDICAL SERVICE

This service is a department of the Sudan Government, and includes a number of Sudanese medical officers and a number of assistant medical officers who are natives of the Sudan. The British medical inspectors are from the outset senior to all other medical officers. The Sudan is entering on a period of rapid development and expansion to which the medical services of the country must necessarily make an important contribution. The service offers ample opportunities for specialization and for research as well as for general medical and surgical work. The ordinary duties of a medical inspector may be summarized as follows:

- (1) To act as a consulting surgeon and obstetrician in all cases submitted to him by his medical staff. This necessitates considerable surgical experience.
- (2) To initiate, organize, and supervise all medical and sanitary work in his province. This includes extensive antimalarial work and often the supervision of large irrigated areas.
- (3) To carry out the medical supervision of schools and the examination of candidates for Government service and pension.
- (4) To train assistant medical officers and native sanitary overseers and to advise and direct medical officers in the carrying out of their duties.

(5) Probably, at a later date, to take part in teaching at the School of Medicine at Khartoum.

The climate varies, but is not in general unfavourable though hot. In the northern desert the nights are cool, even in the summer, in the central there is a rainy season of about four months, during which large areas become malarious. The southern area is more tropical in character, and mosquito-protected houses, nets and protective quinine are essential during the greater part of the year though the winter months are cool and pleasant. It is not considered desirable for medical inspectors to be accompanied by their wives until they have gained some knowledge of the language and the general conditions of life.

The commencing pay of a medical inspector is £1,720. On confirmation of appointment and success in the requisite examinations in Arabic the salary is increased by periodic increments to £1,200. There are four senior administrative posts carrying higher salaries. There is a compulsory contribution of 5 per cent of pay towards pension, which for a medical inspector, amounts after twenty years' service to £1,500 a year.

## PALESTINE

A few of the senior posts in the Health Department of the Government of Palestine are recruited in this country. The scales of pay vary between £1,550-25-750 for an assistant senior medical officer and £1,120 for the director.

## OFFICIAL SOURCES OF INFORMATION

All inquiries in connexion with medical appointments in the self-governing Dominions and their dependencies should be addressed to the High Commissioners or Agents General for the Dominions. Intending applicants are also recommended to consult the Colonial Office List which may be seen at the Colonial Office Library or at the central office of the British Medical Association of 220, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. Available and the Professional Handbook (price 9d.) issued by the Overseas Settlements Office, Caxton House, Tenthill Street, London S.W.1.

Recent developments seem to suggest the possibility of a few appointments becoming available under the Egyptian Government. Questions about any such appointments should be addressed to the Director General, Public Health Department, Cairo.

Inquiries as to vacancies and conditions in the Sudan Medical Service should be addressed in the first instance to Dr. T. D. Acland, 19, Brimston Square, London, W.1.

All inquiries in connexion with Colonial medical appointments made by the Secretary of State for the Colonies, or

£E=£1 0s 6d sterling. This figure represents exchange value, no other currencies.

such vacancies as may occur in Iraq, Palestine, or Aden, should be addressed to the Private Secretary (Appointments) Colonial Office, 38, Old Queen Street, London, S.W. 1.

There is a number of medical appointments made by mining companies and other commercial undertakings in various parts of the tropics. Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny. Advice in this connexion should always be sought from the Medical Secretary's Department of the British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

## MEDICAL RADIOLOGY AND ELECTROLOGY

### THE CAMBRIDGE DIPLOMA

A DIPLOMA in Medical Radiology and Electriology is granted by the University of Cambridge. The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult, and which is outside the ordinary medical curriculum. The diploma is open only to those who hold a medical qualification, and includes a course of lectures and practical work in Physics (Part I) and in Radiology and Electriology (Part II). Attendance at the necessary courses of lectures in both subjects, and in addition six months' clinical experience in an adequately equipped hospital recognized by the Diploma Committee, is essential. The whole course of study takes six months, the lectures, practical work, and hospital attendance running concurrently.

The courses carried out by the University of Cambridge are at present arranged to begin early in January. Three months are spent at Cambridge doing the lectures and practical work in Part I, and attending the systematic lectures in Part II and the practice of Addenbrooke's Hospital, where there is a fully equipped and up-to-date x-ray and electriological department. The remaining three months can be completed at any hospital recognized by the Diploma Committee for this purpose, a list of which can be obtained, but special arrangements are made for students to continue their studies in London, where demonstrations in various hospitals are arranged, in order to give a wide experience.

In addition an independent six months' course is arranged by the British Institute of Radiology. This course is held entirely in London, but is recognized by the University as qualifying for the examination, it begins early in October.

Further particulars as to the Cambridge courses can be obtained from C. Stead, M.A., Cavendish Laboratory, Cambridge, and of the London courses from Stanley McKillop, M.D., at the Offices of the British Institute of Radiology, 32, Welbeck Street, London, W.1.

### THE FORTHWORTH DIPLOMA

Candidates for the Diploma must be graduates in medicine and surgery of the University of Edinburgh, or hold corresponding registrable degrees or qualification from some other licensing body. Candidates are not admitted to the examination for the Diploma until after the lapse of not less than one year from obtaining a registrable qualification, which qualification must be registered before admission to the examination.

The course of study begins in October and extends over a period of not less than three terms. The examination, which is written, oral and practical, is in two parts: (a) Physics and (b) Radiology. The examination is held twice yearly—namely July and October. Full particulars may be obtained from the Dean of the Faculty of Medicine.

## MEDICAL MISSIONARIES

MISSIONARY SOCIETIES are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and to enable them to take advantage of fresh opportunities. To the suitably endowed the mission field offers unique opportunities for interesting work and the development of native medical schools, as training hospitals in connexion with some of the larger mission

hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach. It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing.

As for scientific and other qualifications for the work, medical missionaries, in addition to being physically capable of sustaining a life which makes a great demand upon their strength, should be thoroughly well trained physicians and surgeons. It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases. Useful information can be obtained from the secretaries of the various Missionary Societies, or from Thomas Cochrane, M.B., C.M. Honorary Secretary, British Advisory Board on Medical Missions, 1, Tudor Street, London, E.C.4.

## Dental Surgery.

UNTIL the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactment very closely similar to those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice; and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles. This Act also provided (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters, implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20, and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation attended or advised. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—and these did not operate to the same extent in the case of dentistry, hence, unqualified practice was far more prevalent in dentistry than in medicine, and increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

### THE DENTISTS ACT, 1921

This unsatisfactory position has now been remedied by the passing into law of the Dentists Act, 1921. Its provisions are based largely on the recommendations of a departmental committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." Since November 30th, 1922, no person has been permitted to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* provided for by the Dentists Act, 1878. The practice of dentistry defined as including, "the performance of an such operation and the giving of an such treatment attended or advised, as is usually performed or given by dentists, and the performing of any operation or the giving of treatment, advice, or attendance on or to any person, which is preparatory to or for the purpose of or in connection with the fitting insertion, or fixing of artificial teeth." The maximum penalty incurred by an offence is £100 for each offence. There are, however, important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists Register*, and a person

pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anæsthetic further any person may carry out minor dental work in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

Certain persons other than those qualified by examination were entitled to be registered under the new Act. They had to be of good personal character and 25 years of age before July 28th 1921 (the commencement of the Act) and to have been engaged for five of the seven years preceding that date as their principal means of livelihood in the practice of dentistry in the British Isles or have been admitted to membership of the Incorporated Dental Society not less than one year before the commencement of the Act. The passing of the prescribed examination in dentistry within two years of the commencement of the Act was considered as equivalent to practising for five years and a registered pharmaceutical chemist or a chemist and druggist who immediately before the commencement of the Act had a substantial practice as a dentist including all dental operations was treated as though he had practised for five years. A dental mechanic who for the five years had been carrying on his work as such and has secured the entry of his name on the list of candidates for examination can be registered provided within ten years of the commencement of the Act he passes the prescribed examination. The Board however has no power now to consider any further applications under this Act.

Dentistry may be carried on by a corporate body provided the majority of the directors and all the operating staff are registered dentists and that no business other than dentistry or only some business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions provided that the name of the company as well as the names of the directors have been entered in a list kept by the Registrar for that purpose. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge and the court may in addition to a fine order that the name of any director convicted shall be removed from the list of directors aforesaid.

A subsequent Act passed in 1923 made provision for the registration of persons who were 21 in November 1921 who had served during the late war in His Majesty's Forces and were on that date engaged as their principal means of livelihood in the practice of dentistry in the British Isles. The Board however has no power now to consider any further applications under this Act.

#### THE DENTAL BOARD

The Dental Board of the United Kingdom was established for the purpose of administering the new Act. The first members of the Board, who held office for three years, were all appointed but their term has now come to an end. The Board consists of the chairman appointed by the Privy Council, three members appointed by the General Medical Council who must be members of the Branch Councils for England, Ireland, and Scotland respectively, three persons who are neither medical practitioners nor dentists, appointed to represent England, Scotland and Ireland, and six elected members, one of whom represents the qualified dentists in England and Wales, one those in Scotland, and one those in Northern Ireland and two all the dentists registered under the Acts of 1921 and 1923.

On the establishment of the Dental Board in 1921 certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* is made by the Board which reports its findings to the General Medical Council the order directing the erasure being made by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purpose connected with dentistry. The office of the Dental Board is at 44, Hallam Street, London, W. 1.

The *Dentists Register* for 1927 contains the names of 14,355 persons, of whom less than a half are registered with

qualifications, 7,626 names having been registered under the provisions of the Dentists Acts 1878, 1921 and 1923, and 6,469 with medical surgical or dental qualifications.

#### DENTAL EDUCATION AND EXAMINATION

The preliminary examination in arts is the same for medical and dental students and the early stages of their education embrace much the same subjects and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory though it is to be advised as convenient as affording proof of the commencement of professional education and it is required by most of the licensing bodies all of whom insist upon a curriculum covering four academic years.

Degrees in dentistry are granted by the Universities of Bristol, Durham, Leeds, Liverpool, Sheffield, Queen's University Belfast and the National University of Ireland as will be found cited in the articles on these universities. Licences in dentistry entitling the holder to be registered on the *Dentists Register* are granted by the Universities of Birmingham, Bristol, Durham, Leeds and Belfast, and by the Royal Colleges of Surgeons of England and Edinburgh and of Ireland and by the Royal Faculty of Physicians and Surgeons of Glasgow.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square, the National Dental Hospital, now the University College Hospital (Dental School), Great Portland Street, Guy's Hospital, King's College Hospital and the London Hospital. In the provinces there are the Birmingham Dental Hospital, the Royal Infirmary and the General Hospital, Bristol, the Dental Hospital and the Public Dispensary, Leeds, the Dental Hospital, Liverpool, the Dental Hospital, Manchester, the Dental Hospital and School, Newcastle-on-Tyne, the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee, the Incorporated Dental Hospital and School, Edinburgh and the Incorporated Dental Hospital, Glasgow, and in Ireland the Incorporated Dental Hospital of Ireland and the Royal College of Surgeons in Ireland. A list of dental schools and their officials will be found in the article on the General Medical Council at page 358.

There are considerable variations in the order in which the different licensing bodies require the various subjects of the curriculum to be taken up and every prospective dental student should study not only the regulations of the General Medical Council but also those of the body whose licence he hopes to obtain. This is the more important as in the case of some licensing bodies changes in the curriculum have been made or are contemplated.

All who think of becoming dentists may be advised to study a Memorandum lately drawn up for their guidance by the Registrar of the Dental Board setting out in convenient form and in untechnical language information for which request is frequently made to the Board.<sup>1</sup> It will be seen from this pamphlet that in order to assist suitable students the Dental Board has instituted a system of bursaries to pay the fees of those who have not the financial means to qualify and in some cases maintenance is given as well. Detailed information regarding these exceptional facilities may be had from the Registrar of the Board at the address given above. The passing of the Dentists Act, 1921, together with the disciplinary and other action taken by the Dental Board have already much enhanced the status of dentistry which is now taking its proper place among the learned professions. In these circumstances a large increase in the number of dental students is desirable. The prospects are bright for those who take up their studies in the near future. The importance of dentistry to health is being more realized every day and in consequence an increasing demand for the services of dentists may be confidently anticipated.

#### Recommendations of the General Medical Council

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications.

The following recommendations as to the course of study

<sup>1</sup> See the Registrar's Memorandum on Students' Preparation printed in the article on the General Medical Council at page 287.

<sup>2</sup> Memorandum by the Registrar on the Procedure to be Adopted by Those who Desire to Enter the Profession of Dentistry with Notes on Costs and Prospects, 1927. Dental Board of the United Kingdom, 4, Hallam Street, W. 1. Price 1s. post free.



and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council on May 27th, 1922

#### *Preliminary Examination and Registration*

1 That every dental student shall, at the commencement of his studentship be registered in the manner and under the conditions prescribed for medical students

2 That before registration in the *Dental Students Register* every applicant shall be required to have passed, in addition to the examination in general education, which shall be the same as that required for medical students, an examination in Elementary Physics and Elementary Chemistry, conducted or recognized by one of the licensing bodies which shall also be the same as that required for medical students

3 That before registration as a dental student every applicant shall produce evidence that he has attained the age of 17 years

#### *Professional Study*

4 That every candidate for a degree or licence in dentistry or dental surgery shall be required before admission to the final or qualifying examination to produce certificates showing

(i) That he is at least 21 years of age

(ii) That he has been registered as a dental student

(iii) That he has, subsequently to the date of registration as a dental student, been engaged in professional study for at least four years, of which three years at least shall be spent at a school or schools recognized for professional study by one of the licensing bodies

(iv) That, subsequently to the date of registration as a dental student, he has attended at a recognized medical school courses of instruction, which shall be the same as those required for medical students, in the following subjects: (a) Chemistry and (b) Physics, in their application to medicine, (c) Elementary Biology. That he has attended at a recognized medical school courses of instruction in the following subjects: (d) Human Anatomy (with dissections and demonstrations) for three academic terms, (e) Physiology (with laboratory instruction, including Practical Histology) for two academic terms, (f) General Pathology (including Bacteriology) for two academic terms, (g) Medicine for two academic terms, (h) Surgery for two academic terms. (i) the practice of a recognized general hospital or hospital of not less than eighty beds, with certified instruction in Clinical Medicine and Clinical Surgery, for four academic terms

(v) That he has attended at a recognized dental school courses of instruction in the following special subjects: (a) Dental Anatomy and Physiology, human and comparative. The course should comprise a minimum of twenty meetings of the class. (b) Practical Dental Histology and Morbid Histology. The course should comprise a minimum of sixteen meetings of the class. (c) Dental Pathology and Surgery. The course should comprise a minimum of twenty meetings of the class. (d) Dental Materia Medica and Therapeutics. The course should comprise a minimum of sixteen meetings of the class. (e) Dental Metallurgy (with practical work and demonstrations). The course should comprise a minimum of twenty meetings of the class. (f) Dental Mechanics (with practical work and demonstrations). The course should comprise a minimum of twenty meetings and twenty demonstrations. (g) A course of instruction in the use of Anaesthetics, general and local employed in dental practice. (h) A course of instruction in Radiology as applied to dentistry

(vi) That he has for at least twenty four calendar months attended, during the ordinary academic terms the practice of a recognized dental hospital or of the recognized dental department of a general hospital

(vii) That he has received for not less than twenty four calendar months, or for 2,000 hours, practical instruction in dental mechanics

#### *Professional Examinations*

5 That the examination for a degree or licence in dentistry or dental surgery shall be partly written, partly oral, and partly practical and shall include the following subjects: (a) Chemistry, Physics, and Biology, in their bearing on Medicine and Dentistry, (b) Human Anatomy and Physiology, (c) General Pathology, including Bacteriology, (d) Medicine and Surgery, (e) Dental Anatomy and Physiology, Dental Pathology, Dental Surgery (including Orthodontics), Dental Materia Medica and Therapeutics, and Dental Mechanics and Dental Metallurgy, (f) Practical Examination in Dental Surgery, (g) Practical Examination in Dental Mechanics and Metallurgy, (h) Anaesthetics, general and local employed in dental practice

6 That the prescribed subjects of examination may be combined or distributed at the discretion of the licensing bodies, and may be taken at two or more successive stages during the course of professional study provided that no candidate shall be admitted to any final examination in dental surgery and dental mechanics until he shall have completed the required four years' course of study

### ACKNOWLEDGEMENT

In detailed information published in this Educational Number of the *BRITISH MEDICAL JOURNAL* for the benefit of intending students of medicine and newly qualified practitioners has been revised throughout with the co-operation of the deans and secretaries of the medical schools and kindred institutions and of officials in the several public services, to all of whom we wish to acknowledge our indebtedness

### DEATH REGISTRATION

THE Births and Deaths Registration Act, 1926, which came into force on July 1st last, makes alterations in the manner of certification of deaths and the disposal of bodies. The new provisions were fully explained in an article published in this *JOURNAL* of June 18th (p. 1118). We shall here refer only to the medical practitioner's duty in respect of the delivery of the death certificate.

Under the Births and Deaths Registration Act of 1874 a registered medical practitioner was required, in the case of the death of any person who had been attended by him during the person's last illness, to give a certificate stating to the best of his knowledge and belief the cause of death. Hitherto the custom has been for the certifying medical practitioner to hand the certificate to a person liable to act as informant of the death for registration purposes, usually a relative or friend of the deceased. The difference in this respect made by the new Act is that henceforth it will be the duty of the medical practitioner to give such person only a written notice that he has signed the death certificate. The words of the Act are, that every such certificate

"shall be delivered forthwith by the registered medical practitioner by whom the certificate is signed to the registrar, and the registered medical practitioner, on signing a certificate as aforesaid, shall give in the prescribed form to some person required by the Births and Deaths Registration Acts, 1836 to 1901, to give information concerning the death, notice in writing of the signing of the certificate, and that person shall, except where an inquest is held on the body of the deceased person, deliver the said notice to the registrar."

The practitioner appears to have two alternative modes of fulfilling the obligation to deliver the certificate to the local registrar: direct, he may himself hand it to the registrar or he may post it in an official franked envelope supplied to him by the registrar. Posting is recognized in other connexions as a legal means of delivery.

With regard to cases in which the medical practitioner considers it proper that the facts should be referred to the coroner, it has been the custom of many medical men to refrain from giving a death certificate. Probably this was never in accord with the law, but the point is now made quite clear by the insertion on the back of the death certificate form of a statement, which in an appropriate case the practitioner must initial, stating, for the information of the registrar, that he has reported the case to the coroner. The reporting of a case to the coroner does not justify the omission to give a certificate of the cause of death and to deliver it to the registrar. On receipt of a death certificate endorsed with the statement initialed by the practitioner that he has reported the case to the coroner, it will be the duty of the registrar to suspend the registration of the death until he learns from the coroner whether an inquest is or is not to be held.

MEMBERSHIP of the Guild of St. Luke is open to all students and practitioners of medicine—both men and women—who are members of the Church of England, the clergy of which are eligible as clerical associates. The Guild was started in London by a few medical students, over sixty years ago, and there are also now in London a Women's Ward and a Students' Branch, as well as a Midland Counties Ward and a Cambridge Branch. The Chapter of the Guild meets in each month of the academic year, and a festival service is held annually at St. Luke's tide, either at St. Paul's or Westminster Abbey. This year the service will be at the Abbey. Particulars of the objects and activities of the Guild and forms of application for membership can be obtained from the Secretary of the Guild of St. Luke, Room B B, King's College, Strand, W.C. 2.

THE winter session of the Post Graduate College attached to the West London Hospital reopens on October 3rd, when the dean, Sir Henry Simpson, K.C.V.O., will read a paper on post graduate education in obstetrics. Further information will be found in our advertisement columns.

THE Gilbert Blane medal for this year has been awarded to Surgeon Lieutenant Commander A. W. McKerr, M.B. This medal, founded in memory of Sir Gilbert Blane, is given annually to the medical officer who obtains the highest aggregate marks at the examination for promotion to the rank of surgeon lieutenant commander.

# The British Medical Association:

## ITS AIMS, WORK, AND CONSTITUTION

THE British Medical Association, as stated in our introductory article on the Profession of Medicine, was founded in 1852 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and to foster a feeling of friendship among its members. To its constitution there is added a periodical of meetings for the discussion both of medical and scientific subjects and of professional affairs. It publishes the *British Medical Journal*, it maintains a reference and lending library, it has instituted lectures and scholarships and grants for research. It thus concerns itself with every side of medical work—science, clinical medicine, public health, and the material interests of professional life. The British Medical Association, with a membership now of more than 35,000, is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. It has recently acquired a fine building, in Tavistock Square, London, for its headquarters, providing ample accommodation for immediate needs and provision for future development. These new premises, designed by Sir Edwin Lutyens, R.A., were formally opened in 1925 by His Majesty the King, accompanied by the Queen and the beautiful wrought-iron gates erected as a memorial to the 574 members who fell in the war, by which the quadrangle is completed, were dedicated on that occasion by the Archbishop of Canterbury. The need for larger accommodation had become insistent owing to the remarkable growth in the central work of the Association during recent years which had far outstripped the capacity of the premises in the Strand which have now been acquired by the Government of New Zealand for its London offices.



The British Medical Association House, Tavistock Square, London.

### Constitution and Administration

The Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies and Dependencies. The Divisions are arranged territorially, and number in all 286. For certain purposes of administration or of scientific and clinical work the Divisions are combined into 93 Branches. Members of Divisions elect representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical Services elected by the Representative Body. The Representative Body and Council elect standing committees to take charge of different subjects. Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health and Naval and Military Committees. There are Committees also for the Dominions, Scotland, Ireland and Wales and for the working machinery of the Association such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is financed by the Association. It is the recognized executive and mouthpiece of the insurance practitioners of Great Britain.

### Privileges of Members

A member of the Association has the right—

- 1 To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
- 2 To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body and also in the election of members of the Council.
- 3 To receive by post the *British Medical Journal*, published weekly, which is a full record with commentary of progress in clinical and scientific medicine and of medico-political affairs throughout the British Empire.
- 4 To receive the help and advice of the central office in any professional difficulty.
- 5 To use the library as a reading room and to borrow current medical or scientific books on payment of postage. Books modern works and periodical medical literature—foreign as well as English—the library contains many books of historic interest.

The full benefits of the Association can only be secured by the co-operation of large numbers of the medical profession, for the greater the membership and the funds the more

efficient and influential the organization. The Association during the past ninety-five years has been the direct means of benefiting every class of medical men and medical women. In asking for new members it looks not only to the older practitioners but also and especially to those recently qualified. To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the work of the Association in improving the conditions under which they may hold appointments in the public service or in civil life. The Association's work for the Service is well known.

It feels a special responsibility towards those members of the profession who by reason of their position are precluded from taking common action and the events of this year have proved again its capacity to further their interests.

### Subscriptions and Applications for Membership

The ordinary subscription to the *British Medical Association* is 3 guineas a year for members resident in the British Isles, but this is subject to various exceptions. Thus, newly qualified practitioners elected within two years of registration pay half this sum up to the end of the fourth year after registration. Medical officers on the active list of the R.N., R.A.F., R.A.M.C. (Regular), and I.M.S. pay 2 guineas. Concessions are made also to members (in the British Isles) of forty years' standing and to members of ten years' standing who have retired from practice to medical married couples residing together, and to whole time teachers and research workers. The ordinary subscription for members living abroad is 1½ guineas, but some Branches have special local subscriptions. A member elected after June 30th pays half the subscription for that year.

All duly qualified British medical practitioners are eligible for election. Full particulars can be obtained from the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1, the Scottish Medical Secretary, 6 Drumhugh Gardens, Edinburgh, or the Irish Medical Secretary, 16, South Frederick Street, Dublin.

## Association Notices

### BRANCH AND DIVISION MEETINGS TO BE HELD

**SUSSEX BRANCH BRIGHTON DIVISION**—A clinical meeting of the Brighton Division will be held at the Heritage, Chaley, on the afternoon of Saturday, September 24th. Members are invited to bring their wives, who will be conducted over the Heritage during the meeting. By the kindness of Mrs Kimmins tea will be provided. A detailed programme will be announced later. Members intending to be present are requested to inform the honorary secretary as early as possible, also any members desiring to be taken by car are requested to write to the secretary, as there are plenty of seats available.

### Meetings of Branches and Divisions.

#### CAPE MIDLAND BRANCH

The meeting of the Cape Midland Branch on July 23rd was the first medical gathering ever held in Humansdorp.

Dr HANS GREFF read a paper on bone grafting, which was illustrated by skiagrams. Dr NORMAN WILSON, in a paper on diphtheria, laid special stress on the value of the Schick reaction as an indication of susceptibility or otherwise. A general discussion followed.

Dr HANS GREFF then demonstrated a urethral phosphatic calculus, a piece of articular cartilage which he had removed from the head of the radius, following an injury to the elbow joint, a portion of a stomach which he had excised—the condition was one of ulcer of the lesser curvature. Dr J J COULTON moved a vote of thanks to the readers of the papers and Dr Gordon ROSSON, on behalf of the visiting members, cordially thanked Drs Coulton and Shanks for their hospitality.

A most enjoyable meeting was terminated by the visiting members dining at the Royal Hotel as the guests of Drs Coulton and Shanks.

### VACANCIES

**AIR COUNCIL HOSPITAL**—Senior and Junior House Surgeons (males). Salaries at the rate of £100, and £80 rising to £100, per annum respectively.

**BATH CITY**—Assistant Medical Officer. Salary £600 per annum.

**BATH ROYAL UNITED HOSPITAL**—(1) House Physician. (2) Assistant House Surgeon. Salary £120 and £100 per annum respectively.

**BIRMINGHAM CITY**—Medical Officer of Health. Salary £1800 per annum.

**BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL**—(1) Junior House Surgeon. (2) Third House Surgeon. Non resident. Salary at the rate of £200 per annum each.

**BIRMINGHAM AND MIDLAND EYE HOSPITAL**—Junior House Surgeon. Salary £110 per annum.

**BRISTOL ROYAL INFIRMARY**—Senior Resident Medical Officer. Salary at the rate of £200 per annum.

**CARDIFF CITY MENTAL HOSPITAL, Whitechurch, near Cardiff**—Senior Assistant Medical Officer (male). Salary £550 per annum, rising to £600, or to a married man £700.

**DARLINGTON GENERAL HOSPITAL**—House Surgeon (male). Salary £125 per annum.

**DEPFWSHIRE EDUCATION COMMITTEE**—Assistant School Medical Officer (male). Salary £600 per annum rising to £700.

**HOSPITAL OF ST JOHN AND ST ELIZABETH, Grove End Road, N W 8**—Resident House Physician (male). Salary at the rate of £100 per annum.

**LEFDS PUBLIC DISPENSARY**—Honorary Dental Surgeon.

**LIVERPOOL INSTITUTE OF PREVENTIVE MEDICINE, S W 1**—Research Fellowship in Bacteriology. £500 per annum.

**LONDON FEMALE LOCK HOSPITAL, 203, Harrow Road, W 9**—House Surgeon. Salary at the rate of £150 per annum.

**LONDON HOSPITAL, E 1**—(1) Physician. (2) Surgeon.

**LONDON LOCK HOSPITAL, 91 Dean Street, W 1**—(1) Surgical Registrar. Honorarium £100 per annum. (2) House Surgeon at the Male Lock Hospital. Salary at the rate of £200 per annum.

**LORN MAJOR TRELOAR CRIPPLES HOSPITAL, Alton and Hayling Island**—Assistant Resident Medical Officer (male). Salary £300 per annum.

**MANCHESTER ANCOATS HOSPITAL**—House Surgeon (male). Salary at the rate of £100 per annum.

**MANCHESTER BABIES HOSPITAL**—(1) Resident Medical Officer. (2) Junior Resident Medical Officer. Salaries at the rate of £125 and £50 per annum respectively.

**MANCHESTER ROYAL MANCHESTER CHILDREN'S HOSPITAL, Pendlebury**—(1) Resident Medical and Surgical Officers (unmarried). Salary £125 per annum. (2) Two Assistant Medical Officers (non resident) for Out patients Department, Garfield Street. Salary £150 per annum.

**NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W 1**—(1) Resident Medical Officer. (2) Outpatient Medical Officer (non resident). Males. Salary at the rate of £150 and £125 per annum respectively.

**NEWCASTLE ON TYNE ROYAL VICTORIA INFIRMARY**—Resident Medical Officer (male). Salary £360 per annum, rising to £350.

**NORTHAMPTON GENERAL HOSPITAL**—Two House Surgeons. Salary at the rate of £150 per annum each.

**NOTTINGHAM GENERAL DISPENSARY**—Resident Surgeon (male). Salary £250 rising to £300.

**OXFORD RADCLIFFE INFIRMARY AND COUNTY HOSPITAL**—(1) House Physician. (2) Casualty House Surgeon. Salary at the rate of £120 per annum each.

**PRESTON AND COUNTY OF LANCASTER ROYAL INFIRMARY**—House Physician. Salary £190 per annum.

**QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E 2**—House Surgeon. Salary at the rate of £100 per annum.

**ROYAL GWENT HOSPITAL, Newport, Mon**—House Surgeon. Salary at the rate of £125 per annum.

**ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W 1**—House Surgeon. Salary £150 a year.

**ST PETER'S HOSPITAL FOR STONE ETC, Henrietta Street, W C 2**—House Surgeon. Salary at the rate of £75 per annum.

**SUMMITTAN FREE HOSPITAL FOR WOMEN, Marblebone Road, N W**—Anaesthetist, twice weekly. Honorarium £30 per annum.

**SLAMEN'S HOSPITAL SOCIETY**—(1) House Physician at the Hospital for Tropical Diseases Endsleigh Gardens, W C (male). (2) House Physician and House Surgeon at the Dreadnought Hospital Greenwich. (3) House Surgeon at the Albert Dock Hospital. Salary at the rate of £110 per annum each.

**SHEFFIELD ROYAL HOSPITAL**—Resident Anaesthetist (male). Salary £83 per annum.

**STAFFORDSHIRE EDUCATION COMMITTEE**—Assistant School Medical Inspector (male). Salary £600, rising to £800.

**TUNBRIDGE WELLS EYE AND EAR HOSPITAL**—House Surgeon (male). Salary £150 per annum.

**WARRINGTON INFIRMARY AND DISPENSARY**—Senior House Surgeon (male). Salary £250 per annum.

**WEST LONDON HOSPITAL, Hammersmith Road, W 6**—(1) House Physician. (2) Two House Surgeons (males). Salary at the rate of £100 per annum.

**WILDESDEN GENERAL HOSPITAL, Harlesden Road, N W 10**—Chemical Assistant to the Outpatient Medical Department.

**WOLFRHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY**—House Surgeon. Salary £200 per annum.

**CERTIFYING FACTORY SURGEONS**—The following vacant appointments are announced: Stamford (Lincoln) and Llanelly (Carmarthen). Applications to the Chief Inspector of Factories Home Office Whitehall S W 1.

**MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT 1925** for Districts of Chepstow, Newport, and Pontypool County Courts (Circuit No 24). Applications to the Private Secretary, Home Office, Whitehall, S W, by September 17th.

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

### APPOINTMENTS

**BURRILL JONES, H S L S A L M S S A, D P H O xon**, Registrar at the Ear and Throat Hospital, Golden Square.

**CHILL, Lieut Colonel R J, D S O M B, B Ch**, additional Medical Referee under the Workmen's Compensation Act, 1925, for the Districts of the Chester, and Nantwich and Crewe County Courts (Circuit No 7).

**HENNESSY, Robert F M B, B Ch**, House Surgeon at the Armagh County Infirmary.

**JONES, Norman A, F R C S**, Surgeon to the Ear, Nose, and Throat Department of the Royal Northern Hospital, Holloway Road, London.

### British Medical Association OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQUARE W C 1

#### Departments

**SUBSCRIPTIONS AND ADVERTISEMENTS** (Financial Secretary and Business Manager: Telegrams Articulate Westcent London).

**ADMINISTRATIVE SECRETARY** (Telegrams Mediscera Westcent London).

**EDITOR, British Medical Journal** (Telegrams Vitalogy Westcent London).

Telephone numbers of British Medical Association and British Medical Journal Museum 9951 9952 4603 and 4654 (internal exchange four lines).

**SCOTTISH MEDICAL SECRETARY** 6 Drumshengh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 461 Central).

**IRISH MEDICAL SECRETARY** 16, South Frederick Street Dublin (Telegrams Baecillus, Dublin Tel 4737 Dublin).

#### Diary of the Association

**SEPTEMBER**

13 Tues	London	Central Ethical Committee 2 p.m.
15 Thurs	London	Insurance Acts Committee, 12 noon
16 Fri	London	Public Health Committee, 2.30 p.m.
20 Tues	London	Organization Committee
21 Wed	London	Medical Political Committee, 2.30 p.m.
22 Thurs	London	Journal Committee, 2.30 p.m.
24 Sat	Brighton	Division Clinical Afternoon The Heritage, Chaley
27 Tues	London	Hospitals Committee, 2.30 p.m.
28 Wed	London	Finance Committee 2.30 p.m.

**OCTOBER**

5 Wed London Arrangements Committee Meeting of Council Members, 11 a.m. Full Committee, with the Cardiff Members, 2.30 p.m.

### BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

#### BIRTHS

**LUTHERLAND**—At Milton Lodge, Wigan, on August 28th to Dr Doris Lutherland (née Knowles) wife of Dr Henry Lutherland a son.

**McROBERT**—At Maymyo, Upper Burma on August 23rd to the wife of Captain Ronald McRobert, I.M.S., a daughter.

**WEBSTER**—At Baroda, India on August 7th, 1927, to Janet wife of Captain W J Webster, Indian Medical Service, a daughter.

#### MARRIAGES

**GILLIES-PREECE**—At St Paul's, Porth Rhondda on August 25th Dugald Richard, M.B., Ch.B. St Andrews son of the late Hugh Gillies, J.P., to Hilda Mary, youngest daughter of John Preece, Mnesyrth, Porth.

**ROSS-WRAY**—At Kisumu, Kenya Colony, on July 20th by the Rev. H. Hitchen, Percy Ross, M.B., Ch.B. Aberd. younger son of Mr. A. I. Mrs. J. Ross, Brora, Scotland, to Mercia Anne, eldest daughter of Mr. and Mrs. R. W. Wray, Tamarama Bay, Sydney, Australia.

#### DEATHS

**DRURY**—At Landon House, Halifax, Yorkshire, on August 22nd Arthur Drury, M.B., Ch.M. Ed., aged 65 years.

**ELLIOTT**—Suddenly at 113, Grove Road, Waltham town, on August 25, Frank Percy Elliott M.B., Ch.M., aged 57 years.

[The present issue being the Annual Educational Number, much current material is held over, and neither the "Supplement" nor the "Epitome of Current Medical Literature" is published this week.]

# An Address ON DARWIN'S THEORY OF MAN'S DESCENT AS IT STANDS TO-DAY

DELIVERED TO THE BRITISH ASSOCIATION\*  
BY THE PRESIDENT,

PROFESSOR SIR ARTHUR KILPIN, M.D., F.R.S.,  
CONSERVATOR OF THE MUSEUM OF THE ROYAL COLLEGE OF  
SURGEONS OF ENGLAND

IN tracing the course of events which led up to our present conception of Man's origin, no place could serve as a historical starting-point so well as Leeds. In this city was fired the first verbal shot of that long and bitter strife which ended in the overthrow of those who defended the Biblical account of Man's creation and in a victory for Darwin. When the British Association assembled in this city in 1858 Sir Richard Owen, the first anatomist of his age, was its president. In a long address he reviewed the whole realm of Science. During its course he cited evidence which suggested a much earlier date for the appearance of Man on earth than was sanctioned by Biblical records, but poured scorn on the idea that Man was merely a transmuted ape. He declared that the differences between Man and ape were so great that it was necessary to assign mankind to an altogether separate Order in the animal kingdom. As this statement fell from the President's lips there was at least one man in the audience who a spirit of opposition was roused—Thomas Henry Huxley—Owen's young and rising antagonist. I have picked out Huxley because it is necessary, for the development of my theme, that we should give him our attention for a moment. The Leeds meeting passed off amicably, but two years later in 1860, when this Association met in Oxford, Owen in the course of a discussion, repeated the statement made at Leeds as to Man's separate position, claiming that the human brain had certain structural features never seen in the brain of anthropoid apes. Huxley's reply was a brief and emphatic denial, with a promise to produce evidence in due course—which was faithfully kept. This opening passage of arms was followed two days later by that spectacular fight in which the Bishop of Oxford, the representative of Owen and of Orthodoxy, left his scalp in Huxley's hands. To make his victory decisive and abiding Huxley published, early in 1863 *The Evidence of Man's Place in Nature*, a book which settled for all time that Man's rightful position is among the primates, and that as we anatomists weigh evidence, his nearest living kin are the anthropoid apes.

My aim is to make clear the foundations on which rest our present-day conception of Man's origin, but I must turn to another issue, which, though it was merely touched upon by Sir Richard Owen, is of supreme interest to us now. Earlier in that year Sir Charles Lyell and Sir Joseph Hooker left with the Linnean Society what appeared to be an ordinary roll of manuscript, but what in reality was a parcel charged with high explosives, prepared by two very innocent-looking men—Alfred Russel Wallace and Charles Darwin. It must be admitted that these two men were well aware of the deadly nature of its contents, but Owen examined them and came to the conclusion that they were not dangerous, at least, he manifested no sign of alarm in his Presidential Address.

## *The Transformation of our Outlook on Man's Origin*

I cannot help marvelling over the difference of outlook between my audience and that which Sir Richard Owen had in this city sixty-nine years ago. The vast assemblage which confronted him was convinced almost without a dissentient that Man had appeared on earth by a special act of creation, the audience I address, and that larger congregation which the wonders of wireless bring within the reach of my voice if not convinced Darwinists are yet

prepared to believe, when full proofs are forthcoming that Man began his career as a humble primate animal, and has reached his present estate by the action and reaction of biological forces which have been and are ever at work within his body and brain.

## *Darwin's Generalship*

This transformation of outlook on Man's origin is one of the marvels of the nineteenth century, and to see how it was effected we must turn our attention for a little while to the village of Down in the Kentish uplands and note what Charles Darwin was doing on the very day that Sir Richard Owen was delivering his address. He sat in his study struggling with the first chapter of a new book but no one for a moment, Owen least of all, that the publication of the completed book, *The Origin of Species*, fifteen months later (1859), was to effect a sweeping revolution in our way of looking at living things and to initiate a new period in human thought—the Darwinian Period—in which we still are. Without knowing it Darwin was a consummate general. He did not launch his first campaign until he had spent twenty-two years in stocking his arsenal with ample stores of tested and assorted facts. Having won territory with *The Origin of Species* he set to work to consolidate his gains by the publication in 1868 of another book, *The Variation of Animals and Plants under Domestication*—a great and valuable treasury of biological observation. Having thus established an advanced base, he moved forwards on his final objective—the problem of human beginnings—by the publication of *The Descent of Man* (1871), and that citadel capitulated to him. To make victory doubly certain he issued in the following year—1872—*The Expression of the Emotions in Man and Animals*. Man a soldier of truth had attempted this citadel before Darwin's day, but they failed because they had neither his generalship nor his artillery.

## *History as Written by Darwin*

Will Darwin's victory endure? Before attempting to answer this question, let us look at what kind of book *The Descent of Man* is. It is a book of history—the history of Man, written in a new way—the way discovered by Charles Darwin. I will illustrate the Darwinian way of writing history. If a history of the modern bicycle had to be written in the orthodox way, we should search dated records until every stage was found which linked the two-wheeled hobby horse, bestrode by tall hatted men at the beginning of the nineteenth century, to the modern "jeopardy" which now flashes past us in country lanes. But suppose there were no dated records—only a jumble of antiquated machines stored in the cellar of a museum. We should then have to adopt Darwin's way of writing history. By an exact and systematic comparison of one machine with another we could infer the relationship of one to another and tell the order of their appearance, but as to the date at which each type appeared and the length of time it remained in fashion we could say very little. It was by adopting this circumstantial method that Darwin succeeded in writing the history of Man. He gathered historical documents from the body and behaviour of Man and compared them with observations made on the body and behaviour of every animal which showed the least resemblance to Man. He studied all that was known in his day of Man's embryological history and noted resemblances and differences in the corresponding histories of other animals. He took into consideration the manner in which the living tissues of Man react to disease, to drugs, and to environment, he had to account for the existence of diverse races of mankind. By a logical analysis of his facts Darwin reconstructed the history of Man.

## *Darwin's Position has become Impregnable*

Fifty-six years have come and gone since that history was written, an enormous body of new evidence has poured in upon us. We are now able to fill in many pages which Darwin had to leave blank and we have found it necessary to alter details in his narrative, but the fundamentals of Darwin's outline of Man's history remain unshaken. Nay, so strong has his position become that I am convinced that it never can be shaken.

\*The address has been slightly shortened by the omission of a few sentences. (See also page 438)

*The Evidence of Fossil Remains*

I say confidently that Darwin's position has become impregnable because since his death in 1882 we have succeeded in tracing Man by means of his fossil remains and by his stone implements backwards to the very beginning of that period of the earth's history to which the name Pleistocene is given. We thus reach a point in history which is distant from us at least 200,000 years, perhaps three times that amount. Nay, we have gone further, and traced him into the older and longer period which preceded the Pleistocene—the Pliocene. It was in this period that a stream in Java during the later part of the Pliocene period that Dr. Eugen Dubois found, ten years after Darwin's death, the fossil remains of that remarkable representative of primitive humanity to which he gave the name *Pithecanthropus*, or Ape-man, from Pliocene deposits of East Anglia Mr. Reid Moss has recovered rude stone implements. If Darwin was right, then as we trace Man backwards in the scale of time he should have become more bestial in form—nearer to the ape. That is what we have found. But if we regard *Pithecanthropus* with his small and simple human brain as a fair representative of the men of the Pliocene period, then evolution must have proceeded at an unexpectedly rapid rate to culminate to-day in the higher races of mankind.

*Man's Descent has not been in a Straight Line*

The evidence of Man's evolution from an ape-like being, obtained from a study of fossil remains, is definite and irrefutable, but the process has been infinitely more complex than was suspected in Darwin's time. Our older and discarded conception of Man's transformation was depicted in a well known diagram which showed a single file of skeletons, the gibbon at one end and Man at the other. In our original simplicity we expected, as we traced Man backwards in time, that we should encounter a graded series of fossil forms which would carry him along a straight path to an anthropoid ancestor. We should not have made this fatal mistake if we had remembered that the guide to the world of the past is the world of the present. In our time Man is represented not by one but by many and diverse races—black, brown, yellow and white, some of these are rapidly expanding, others are as rapidly disappearing. Our searches have shown that in remote times the world was peopled, sparsely it is true, with races showing even a greater diversity than those of to-day, and that even then the same process of replacement was at work. We have to thread our way, not along the links of a chain, but amongst the meshes of a complicated network.

*Diversity of Form in Ancient Times*

We committed a still further blunder. Seeing that in our search for Man's ancestry we expected to reach an age when the beings we would have to deal with would be human rather than human, we ought to have marked the conditions which prevail amongst living anthropoid apes. We ought to have been prepared to find, as we approached a distant point in the geological horizon, that the forms encountered would be as widely different as are the gorilla, chimpanzee, and orang, and confined as these great anthropoids now are, to limited parts of the earth's surface. That is what we are now realizing, as we go backwards in time we discover that mankind becomes broken up, not into separate races as in the world of to-day, but into numerous and separate species. When we go into a still more remote past they become so unlike that we have to regard them not as belonging to separate species but different genera. It is amongst this welter of extinct fossil forms which strew the ancient world that we have to trace the zigzag line of Man's descent.

*Discordant Evolution*

We made another mistake when we set out on the search for Man's ancestry, indeed, some of us are still making it. We expected that Man's evolution would pursue not only an orderly file of stages, but that every part of his body—skull, brain, jaws, teeth, skin, body, arms, and legs—would at each stage become a little less ape-like, a little more Man-like. Our searches have shown us that Man's evolu-

tion has not proceeded in this manner. In some extinct races, while one part of the body has moved forward, another part has lagged behind. We now know that, as Darwin sat in his study at Down, there lay hidden at Piltdown, in Sussex, not thirty miles distant from him, sealed up in a bed of gravel, a fossil human skull and jaw. In 1912, thirty years after Darwin's death, Mr. Charles Dawson discovered this skull, and my friend Sir Arthur Smith Woodward described it, and rightly recognized that skull and jaw were parts of the same individual, and that this individual had lived, as was determined by geological and other evidence, in the opening phase of the Pleistocene period. We may confidently presume that this individual was representative of the people who inhabited England at this remote date. The skull, although deeply mouldered and thick-walled, might well have been the rude forerunner of a modern skull, but the lower jaw was so ape-like that some experts denied that it went with the human fossil skull at all, and supposed it to be the lower jaw of some extinct kind of chimpanzee. This mistake would never have been made if those concerned had studied the comparative anatomy of anthropoid apes, for then they would have been prepared to meet with the discordances of evolution. The same irregularity in the progression of parts is evident in the anatomy of *Pithecanthropus*, the oldest and most primitive form of humanity so far discovered. The thigh-bone might easily be that of modern man, the skull cap that of an ape, but the brain within that cap, as we now know, had passed well beyond an anthropoid status. If merely a lower jaw had been found at Piltdown in ancient Englishman would have been wrongly labelled "Higher anthropoid ape" if only the thigh-bone of *Pithecanthropus* had come to light in Java, then an ancient Javanese, almost deserving the title of anthropoid, would have passed muster as a man.

*Man's Still Remain in the Geological Record*

Such examples illustrate the difficulties which beset the task of unravelling Man's ancestry, and there are others, there still remain great blanks in the geological record of Man's evolution, as our search proceeds these blanks will be filled in. By the discovery of fossil remains we have followed Man backwards to the close of the Pliocene period, which endured at least for a quarter of a million years, but we have not yet succeeded in tracing him through this period. It is true that we have found fossil teeth in Pliocene deposits which may be those of an ape-like man or of a man-like ape until we find other parts of their bodies we cannot tell. When we pass into the still older Miocene period—one which was certainly twice as long as the Pliocene—we are in the heyday of anthropoid history. Thanks to the labours of Dr. Guy E. Pilgrim, of the Indian Geological Survey, we know already of a dozen different kinds of great anthropoids which lived in Himalayan jungles during middle and later Miocene times, we know of at least three other kinds of great anthropoid apes which lived in the contemporary jungles of Europe. Unfortunately we have found as yet only the most resistant parts of their bodies—teeth and fragments of jaw. Do some of these fragments represent an ancestor of man? We cannot decide until a lucky chance brings to light a limb-bone or a piece of skull, but no one can compare the teeth of these Miocene anthropoids with those of primitive man, as has been done so thoroughly by Professor William K. Gregory, and escape the conviction that in the dentitions of the extinct anthropoids of the Miocene jungles we have the ancestral forms of human teeth.

*Date of Man's Emergence*

It is useless to go to still older than the Miocene in search of Man's emergence, in such strata we have found only fossil traces of emerging anthropoids. All the evidence now at our disposal supports the conclusion that Man has arisen, as Lamarck and Darwin suspected, from an anthropoid ape not higher in the zoological scale than a chimpanzee, and that the date at which human and anthropoid lines of descent began to diverge lies near the beginning of the Miocene period. On our modest scale of reckoning that gives Man the respectable antiquity of about one million years.



*Proofs of Our Anthropoid Inheritance*

Our geological search has not produced so far the final and conclusive evidence of Man's anthropoid origin, we have not found as yet the human *homo* emerging from its anthropoid environment. Why then do modern anthropologists share the conviction that there has been an anthropoid stage in our ancestry? They are not blind to the degree of difference which separates Man and ape in structure in appearance and in behaviour. I must touch on the sources of this conviction only in a passing manner. Early in the present century Professor C. H. D. Atchall of Cambridge University discovered a trustworthy and exact method of determining the affinity of one species of animal to another by comparing the reaction of their blood. He found that the blood of Man and that of the great anthropoid apes gave almost the same reaction. That biologists find that the living anthropoid body possesses almost the same susceptibilities to infections and transmits the same reaction, as does the body of Man. So also are the brains of Man and anthropoid in their structural organization that surface and physiological traits for experimental observation pass from the one to the other. When the human embryo is fully formed in the womb it throws out structures of a most complex nature to effect a connexion with the maternal body. We now know that exactly the same elaborate processes occur in the anthropoid world and in no other. We find the same vascular structure—the same evolutionary pattern—in the bodies of Man and anthropoid. The anthropoid mother fondles, nurses and suckles her young in the human manner. This last is a title of the striking and intimate points in which Man resembles the anthropoid ape. In what other way can such a myriad of coincidences be explained except by presuming a common ancestry for both.

*The Evolution of Man's Brain*

The crucial chapters in Darwin's *Descent of Man* are those in which he seeks to give an historical account of the rise of Man's brain and of the varied functions it subserves. Darwin was not a professional anatomist and therefore accepted Huxley's statement that there was no structure in the human brain that was not already present in that of the anthropoid. In Huxley's opinion the human brain was but a richly annotated edition of the simpler and older anthropoid book and that this edition in turn was but the expanded issue of the still older original primate publication. Since this statement was made thousands of anatomists and physiologists have studied and compared the brain of Man and ape, only a few months ago Professor G. Elliot Smith summarized the result of this intensive inquiry as follows:

No structure found in the brain of an ape is lacking in the human brain and on the other hand the human brain reveals no formation of any sort that is not present in the brain of the gorilla or chimpanzee. The only distinctive feature of the human brain is a quantitative one.

Though the difference is only quantitative its importance cannot be exaggerated. In the anthropoid brain are to be recognized all the parts which have become so enormous in the human brain. It is just these expansions which have given Man his powers of feeling, understanding, acting, speaking and learning.

*The Evidence of Psychology*

Darwin himself approached this problem not as an anatomist but as a psychologist and after many years of painstaking and exact observation convinced himself that,

immeasurable as are the differences between the mentality of Man and ape, they are of degree not of kind. Prolonged researches made by modern psychologists have verified and extended Darwin's conclusions. No matter what line of evidence we select to follow—evidence gathered by anatomists, by embryologists, by physiologists or by psychologists—we reach the conviction that Man's brain has been evolved from that of an anthropoid ape and that in the process no new structure has been introduced and no new or strange faculty interpolated.

*Unexplained Problems*

But hardly is it in sight, our inquiries are but begun. Will the day ever come when we can explain why the brain of man has made such great progress while that of his cousin the gorilla has fallen so far behind? Can we explain why inherited ability falls to one family and not to another or why in the matter of cerebral endowment one race of mankind has fared so much better than another? We have as yet no explanation to offer but an observation in half a century ago by one on whom Nature has not rested her gifts—the former President of this Association and the doyen of British science, Sir J. Payk, I make the following quotation on this connection:

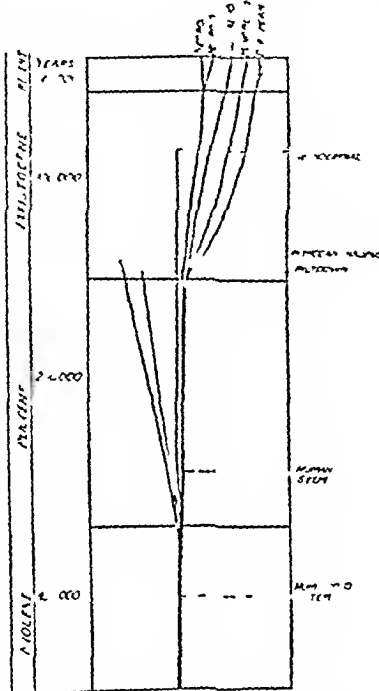
The leading feature in the development of Man from other animals is undoubtably the relative enormous size of the brain in Man and the corresponding increase in its activities and capacities. It is a striking fact that it was not in the ancestors of Man alone that this increase in the size of the brain took place at the same period—the Miocene. Other great mammals of the early Tertiary period were in the same case.

When primates made their first appearance in the geological record they were one and all small brained.

*Darwin's Conception of Evolution Illustrated*

I have spoken of Darwin as an historian. I did so because events and to give the order of their occurrence is the essential part of an historian's task, his most difficult, begin when he seeks to interpret the happenings of history and detect the causes which produced them. Up to this point I have been considering only the materials for Man's history, and placing them so far as our scanty

information allows in the order of their sequence, but now we have to select out the biological processes and controlling influences which have shaped the evolutionary histories of Man and ape. It will repay us to use the evolution of new types of motor cars as an illustration. In the evolution of motor vehicles Darwin's law of Selection has prevailed: there has been severe competition and the types which have answered best to the needs and tastes of the public have survived. The public has selected on two grounds—first for utility thus illustrating Darwin's law of Natural Selection—and secondly because of appearance's sake for as most people know a new car has to satisfy not only the utilitarian demands of its prospective master but also the æsthetic tastes of its prospective mistress, thereby illustrating Darwin's second law—the law of Sexual Selection. The public has selected types of car but it has had no direct hand in designing and producing modifications and improvements which have appeared year after year. To understand how such modifications are produced the inquirer must enter a factory and not only watch artisans shaping and fitting parts together but also visit the designer's office. In this way he will obtain a glimpse of the evolution of motor cars. If we are to understand the machinery which underlies the evolution of Man and of ape, we have to enter the "factories" where they are



This diagram illustrates the relation between the brain size of various primates over geological time. It is based on the data provided in the text, showing the progression of brain size from 2,000 MYA to 500 MYA for three different groups of primates.

produced—look within the womb and see the ovum being transformed into an embryo, the embryo into a foetus, and the foetus into a babe. After birth we may note infancy passing into childhood, childhood into adolescence, adolescence into maturity, and maturity into old age. Merely to register the stages of change is not enough, to understand the controlling machinery we have to search out and uncover the processes which are at work within developing and growing things and the influences which co-ordinate and control all the processes of development and of growth. When we have discovered the machinery of development and of growth we shall also know the machinery of Evolution, for they are the same.

If the simile I have used would have sounded strange in Darwin's ear, the underlying meaning would have been familiar to him. Over and over again he declared that he did not know how "variations" were produced, favourable or otherwise, nor could he have known, for in his time hormones were undreamed of and experimental embryology scarcely born. With these recent discoveries new vistas opened for students of Evolution. When we compare the evolutionary machinery in a motor factory with that which regulates the development of an embryo within the womb, we realize how different the two processes are. Let us imagine for a moment what changes would be necessary were we to introduce "embryological processes" into a car factory. We have to conceive a workshop teeming with clustering swarms of microscopic artisans, mere specks of living matter. As we pass along we note that every part of a car is in process of manufacture, each part being the business of a particular brigade of microscopic workmen. There is no apprenticeship in this factory, every employee is born, just as a hive-bee is, with his skill already fully developed. No plans or patterns are supplied, every workman has the needed design in his head from birth. There is neither manager, overseer, nor foreman to direct and co-ordinate the activities of the vast artisan armies. And yet if parts are to fit when assembled, if pinions are to mesh and engines run smoothly, there must be some method of co-ordination. It has to be a method plastic enough to permit difficulties to be overcome and the introduction of advantageous modifications when these are needed. A modern works manager would be hard put to it were he asked to devise an automatic system of control for such a factory, yet it is just such a system that we are now obtaining glimpses of in Nature's living workshops.

#### *The Machinery of Development and Growth*

I have employed a crude simile to give an inkling of what happens in that factory where the most complicated of machines are forged—the human body and brain. The fertilized ovum divides and redivides, one brood of microscopic living units succeeds another, and as each is produced the units group themselves to form the "parts" of an embryo. Each "part" is a living society, the embryo is a huge congeries of interdependent societies. How are their respective needs regulated, their freedoms protected, and their activities timed? Experimental embryologists have begun to explore and discover the machinery of regulation. We know enough to realize that it will take many generations of investigators to work over the great and new field which is thus opening. When this is done we shall be in a better position to discuss the cause of "variation" and the machinery of Evolution.

If we know only a little concerning the system of government which prevails in the developing embryo we can claim that the system which prevails in the growing body, as it passes from infancy to maturity, is becoming better known every year. The influence of the sex glands on the growth of the body has been known since ancient times, their removal in youth leads to a transformation in the growth of every part of the body, altering at the same time the reactions and temperament of the brain. In more recent years it has been observed that characteristic alterations in the appearance and constitution of the human body can be produced by the action of other glands—the pituitary, thyroid, parathyroid, and adrenals. Under the disorderly action of one or other of these glands individuals may, in the course of a few years, become so changed in appearance that the differences between them

and their fellows become as great as, or even greater than, those which separate one race of mankind from another. The physical characters which are thus altered are just those which mark one race off from another. How such effects are produced we did not know until 1904, when the late Professor E. H. Starling, a leader amongst the great physiologists of our time, laid bare in ancient and fundamental law in the living animal body—his law of hormones. I have pictured the body of a growing child as an immense society made up of myriads of microscopic living units, ever increasing in numbers. One of the ways—probably the oldest and most important way—by which the activities of the communities of the body are co-ordinated and regulated is by the postal system discovered by Starling, wherein the messengers are hormones—chemical substances in ultra-microscopic amounts, dispatched from one community to another in the circulating blood. Clearly the discovery of this ancient and intricate system opens up fresh vistas to the student of Man's evolution. How Darwin would have welcomed this discovery! It would have given him a rational explanation to so many of his unsolved puzzles, including that of "correlated variations." Nor can I in this connexion forbear to mention the name of one who presided so ably over the affairs of this Association fifteen years ago—Sir E. Sharpey-Schiff. He was the pioneer who opened up this field of investigation and has done more than anyone to place our knowledge of the nature and action of the glands of internal secretion on a precise basis of experimental observation. With such sources of knowledge being ever extended and others of great importance, such as the study of heredity, which I have left unmentioned, we are justified in the hope that Man will be able in due time not only to write his own history but to explain how and why events took the course they did.

I have attempted to answer a question of momentous importance—What is Man's origin? Was Darwin right when he said that Man, under the action of biological forces which can be observed and measured, has been raised from a place amongst anthropoid apes to that which he now occupies? The answer is Yes! and in returning this verdict I speak but as foreman of the jury—a jury which has been empanelled from men who have devoted a lifetime to weighing the evidence. To the best of my ability I have avoided, in stating the evidence on which our verdict was found, the role of special pleading, being content to follow Darwin's own example—Let the Truth speak for itself.

## DISCUSSION ON THE HYGIENE OF MENSTRUATION IN ADOLESCENTS

### I—DEVELOPMENTAL CHANGES DURING ADOLESCENCE

BY

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I WELCOME the opportunity of opening this discussion on the hygiene of menstruation in adolescents. The subject is a most important one and, as it is a matter which falls peculiarly within the province of the confidential family physician, there could be no more suitable gathering than this in which to discuss it. Few matters in regard to feminine hygiene have a more profoundly far-reaching importance. The wise management of a girl's life at the period of adolescence gives the functions of her reproductive organs a good start, and if these behave normally to begin with there is the more likelihood that they will continue to do so. The converse is equally but not more true, although it is much more frequently brought to our

\* Report of a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association at Edinburgh. Dr J. Haig Ferguson, President of the Section, was in the chair.

professional notice—namely, that mismanagement of a girl's health at this time only too often spells suffering, unhappiness and disappointment which may throw a shadow over her whole subsequent life.

In our present purpose the period of adolescence which is variously defined by different writers may be taken to extend from the time when the changes of puberty begin to that time when the function of menstruation has become regularly established. The secondary sex characters have become fully developed and the girl has practically reached her full physical stature. Generally speaking, this phase extends in the girls of our own race to about 12½ to 17 or 18 years, varying within limits in each individual. The change occurring in the anatomy and physiology of the body during the years are the most important of the whole life time. The almost sexual child begins to develop definitely and rapidly for all more and more complete femininity. The anatomical changes pass from the angular awkward tomboy to the rounded girl with her soft rounded curves and graceful dignity of a woman. The change is familiar to all. The psychological change is no less familiar with its characteristic increase in nobility and reserve and a tendency to romanticism. A whole new world of thought and emotion is opening up before the girl's mind during this period and if her emotional nature is apt to be a little unstable at this time it is scarcely to be wondered at. The underlying physiological changes are even more profound and of them the most obvious and arresting is the beginning of the menstrual function.

It is no part of my intention to examine these changes in detail but it is essential to emphasize that the development from bud to flower takes time and that even the regular establishment of menstruation does not of itself indicate anything like complete physiological or anatomical maturity. The bony pelvis, for example, probably does not reach its full size and width until about 22 or 23 years, when the young woman may be said to have reached the age of nubility and can with safety become a mother. Long before this however the external and internal organs of generation have acquired their adult character and functions and maternity is possible. The uterus, tubes and vagina have lost their infantile size and shape, and developed to more mature proportion. The ovaries have likewise increased in size and the regular ripening of follicles, the discharge of ova, and the subsequent development of corpora lutea have begun. Along with these changes there are other more or less physiological changes such as alterations in the blood and lymph balance and in the biochemistry of the body which I am not competent to discuss. But the great point which we require to keep ever before us is that the girl's entire organism is concerned in the changes of puberty and adolescence. The old belief that the development of the secondary sex characters was due wholly to the internal secretions of the ovaries, has had to be modified as a result of modern research and we now have reason to believe that all the glands of internal secretion are concerned in the process. It is on account of "the totality of her internal secretions"—to use Blair Bell's words—that a woman becomes what she is and even this dictum we must not preface with the impetus towards femininity given at the moment of conception by the fertilization of the ovum by a particular variety of spermatozoon. The periodic premenstrual enlargement of the thyroid is perhaps the only one of the changes in the endocrine glands which is easily observable but the very fact that the changes in the other ductless gland are going on behind the scenes as it were must put us on our guard against any failure to take them into account. It is obvious therefore, that puberty and early adolescence must form a critical period when unhygienic methods of living may easily produce disastrous results affecting both body and mind.

It is not necessary to enter with any fullness upon the complex subject of the actual cause of menstruation. Suffice it to say that the best supported modern view—admittedly incomplete in many details—indicates that it is due to an internal secretion of the ovary, probably of the corpus luteum, but that the ovary cannot function normally unless its functions are harmoniously related to those

of the other members of the endocrine system particularly the thyroid and pituitary glands. Ovation, occurring about a fortnight after the beginning of a menstrual period is followed by the preparation of the endometrium for the nidation of a fertilized ovum. If this is not forthcoming the corpus luteum begins to degenerate and the menstrual decidual as the endometrium at this stage may be described disintegrates with consequent haemorrhage into the uterine cavity and so to the exterior. Regeneration of the uterine mucosa then occurs and in due course the whole of this process is regularly repeated until ultimately fertilization of an ovum occurs when the full sex cycle accomplishes itself in the phenomena of pregnancy, parturition, the puerperium and the period of lactation.

But to return to the phase of adolescence there is no doubt that although the development of the reproductive organ and the commencement of their functioning are accompanied by the manifold physiological changes to which I have referred yet the reproductive organs themselves are the star performers in the drama of puberty and the parts taken by the other organs are subordinated to the full working out of their destiny. Despite any arguments to the contrary reproduction is the greatest function of womanhood, and certainly it is the only one in which Mother Nature takes any special interest. She is almost obsessed with the one idea—reproduction of the species; she has no interest in intellectual developments and indeed where these are extreme she not infrequently makes the individual pay dearly for them. In other words the reproductive organs during this phase of life call for a specially good supply of healthy blood and nerve energy and if these are diverted to any great extent, either to the muscular system or to the intellectual centres, the proper development and early functioning of the reproductive organs are liable to suffer. This is I believe, in its simplest terms the explanation of many of the disorders of menstruation and the reproductive functions which we meet with—amenorrhoea, menorrhagia, dysmenorrhoea and in later life sterility.

While there is then no doubt that puberty and adolescence form one of the critical periods of a woman's life, yet the changes which occur during it and the function of menstruation with which we are particularly concerned are all perfectly natural phenomena. A natural mode of life is accordingly the ideal to be aimed at and since we cannot prescribe a return to nature in the strict sense I would interpret a natural life in terms of our civilization as one that is characterized by "moderation in all things" and one that avoids extremes in any direction. Too strenuous or laborious a life, too much physical or too much brain work, too frivolous an existence or one that is seriously irregular in any respect may do irreparable harm to the girl as regards her reproductive functions.

But almost as much damage alike to the reproductive functions and to the nervous system and the girl's whole mental outlook may be brought about by so treating her that she grows up with the idea that she is a subject of a very special physical delicacy at these periods. This tendency to regard the menstrual function as one of really unnatural delicacy is a relic of the past and to understand it we must look backwards for a moment. It is only within the last thirty years or so that the function of menstruation has been studied in anything like a scientific way. Previous to that time it was of all the obvious physiological functions of the human body perhaps the least understood. From time immemorial it has been considered to be a function imbued with mystery and it was always regarded in the earlier days with an interest which was respectful and frequently not devoid of fear. This element of mystery has had great practical significance because not only did it on the one hand prevent any intelligent study of the function but on the other hand, it fostered the growth of an enormous volume of superstition and baseless speculation round it. Researches into the folk lore of all nations and tongues show that this feeling was universal.

Time does not permit that I should dwell on the erroneous and often fantastic views that have been held concerning menstruation, but a very brief reference to this

aspect of the matter is essential. From prehistoric days the function of menstruation has been very variously regarded, but the most generally prevalent notion was that it was a cathartic or cleansing process, a periodic ridding of the female system of some obscure impurities. As a result of this view the menstrual discharge was regarded as having peculiarly noxious properties, and the menstruating woman as being impure. This idea appears throughout all early literatures, and is familiar to us in the Mosiac law as well as in the early religious laws of Gentile nations. It has persisted in one form or another through all the ages, and customs based upon it are still legally extant amongst orthodox Jews as well as amongst many primitive peoples. It is not ten years since a cook in my own household refused on a certain day to make jam, and it eventually appeared that her reason was that she was menstruating, and that she believed that if she made jam in such circumstances it would become mouldy.

From this belief, which with innumerable variations in picturesque and frequently lurid detail prevailed universally for untold centuries, arose the equally universal custom of regarding the menstruating woman as a person to be segregated and forbidden to take part in the ordinary social and religious life of the people. From this extreme view in turn there evolved, as civilization increased, the belief, still so prevalent, that the function of menstruation produces temporarily a condition of peculiar bodily delicacy, which ought to debar the woman from, and certainly tends to unfit her for any very active exercise or concentrated mental work.

Again, while such ideas and customs prevailed in regard to the ordinary menstruation of the adult woman, the dangers from every point of view were held to be greatly enhanced at the commencement of the menstrual function in the adolescent girl. As a natural consequence of this an atmosphere of peculiar reticence and mystery has long surrounded the adolescent female in this respect, and a popular view of her special physical delicacy at this time has descended to us. Such popular views, even when based on ignorance and superstition, generally have some truth in them, derived from the accumulated experience of ages, and this last view certainly points in much the same direction as our modern physiological observations.

One other point of some practical importance seems to me to have a distinct connexion with those old traditional views of the nature of menstruation, and that is the almost universal employment of euphemisms and numerous more or less fanciful periphrases in speaking of menstruation. I am inclined to think that if we could trace this custom far enough back we should find that it originated in a superstitious fear of mentioning the menstrual function by name, lest some evil should befall the owner of such an unguarded tongue. Furthermore, I would ask you to recall to mind how many of our modern periphrases have a distinct pathological suggestion about them. We ask a woman when she was "unwell" last, or when her last "monthly illness" occurred, or when she was last "poorly," and so forth. In itself this terminological point may be a small one, but I submit that it is only one of many more or less intangible and indefinable influences which in the last generation or two have tended more by the force of suggestion than by any specific teaching to foster amongst women the idea of undue bodily delicacy at the menstrual epochs. This impression is liable to be passed on from mother to daughter—again perhaps more by the forces of suggestion and example than by precept.

The mothers of the present younger generation are, it seems to me, only slowly emerging from the influence of the traditions which used to regard a day or two in bed or on the sofa, with the comfort of a hot-water bag and the stimulus of a bottle of smelling salts, as the normal and wise mode of life for a young woman at her menstrual periods. We have, as a profession, to dispel the lingering relics of such morbid tradition, and if we can do so now the next generation of girls will suffer less from dysmenorrhoea, for we are all familiar with the vitally important part which the psychology and the mental outlook of the patient play in regard to that particular symptom. This is one of the points which the war brought home to me. I have had many patients who have told me that before the

war they suffered regularly and severely from dysmenorrhoea, but that when they were employed in the hard work of nursing or driving ambulances in France—work which brooked no interruption on account of anything but absolute physical disability—their dysmenorrhoea entirely disappeared. In some cases it began again after the return to normal existence with its opportunities for greater self-indulgence.

The other side of the picture shows the baleful influence of overwork, either physical or mental, to which I have already referred, and our business in each individual case is to try to strike the happy medium, and to inculcate in our adolescent girls a sane, healthy understanding of the function of menstruation as a natural physiological function, during which a moderate amount of wholesome exercise, which will promote the circulation through the pelvic organs and prevent constipation, is actively beneficial.

This brings me to my last point—namely, the necessity of explaining the significance of the menstrual function to girls as they reach puberty. I believe that this is best done individually rather than by class instruction, and the girl's own mother is, or ought to be, the best teacher. If the mother be devoid of the necessary wisdom, knowledge, or tact, then it may well devolve upon the school teacher, or even upon the family physician. But in every case some degree of simple teaching is, in my opinion, desirable. For the mother or responsible guardian to shirk or avoid what is always a difficult and delicate duty, and to leave the girl unprotected to absorb distorted and possibly evil teaching from her older companions, is to expose the child to the risk of shock and fear which may easily have a pronouncedly bad effect upon both body and mind, and may insidiously taint her whole outlook upon the great and vital mysteries of sex.

## II—INFLUENCE OF THE GENERAL HEALTH ON MENSTRUATION

BY

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MENSTRUATION usually commences about the age of 13 or 14 in healthy girls, and is commonly believed to become established as a painless and regular function after some months. The subject for discussion includes all measures (whether in childhood, at the commencement of puberty, or during the years succeeding its onset) which favourably influence the process, either by promoting general health or by directly affecting the menstrual function.

(a) A high level of general health, attained before puberty and maintained after it, is undoubtedly the chief agent in securing normal menstruation.

(b) Measures taken during the menstrual period itself—which is but one phase in a continuous cycle of changes—are of less consequence. The regime practised during the pre-menstrual phase is probably of greater importance than that carried out during the stage of haemorrhage.

The standards by which the effect of any plan of regulation can be judged during school years are the presence or absence of pain or other morbidities and the regularity and quantity of the flow, though the final test of the efficiency of the function is child-bearing capacity when adult life is attained. The health of girls has been greatly improved since the introduction of regular games into school curricula. A high standard of physical and mental fitness is thus assured when the changes of puberty appear. With the supervision of menstruation it becomes necessary to decide whether retro games should be continued during the period or not. It is undoubtedly true that retro games may be continued by many persons during menstruation without harm and perhaps with benefit. In view of this some authorities advocate this practice in schools and assert that it results in a lowered incidence of dysmenorrhoea.<sup>3,4</sup> My experience leads me to question the validity of this conclusion and to doubt the wisdom of encouraging the habit as a school rule. I base this view upon the

results obtained in St Andrews School for Girls. I inherited from my distinguished predecessor, Dr John Moor, the rule that games, gymnastics, Swedish drill, and dancing are stopped during the first three days of the menstrual period though walking exercise is continued except by those who are definitely incapacitated. So satisfactory are the results that I have seen no reason to make any change. The girls of this school are drawn from the well-to-do classes of society. The diet, housing, and school buildings are good and the standard of health is high. I have excluded from my figures all cases in which the note were incomplete.

#### Frequency of Dysmenorrhoea

The cases of dysmenorrhoea are divided into those who suffer regularly at the "period" and those who suffer occasionally. In each group the heading "severe" includes any girl who has to lie down at these times if only for an hour or two, even when this is necessitated by faintness only. Each girl is questioned by me at her medical examination on admission to school—that is to say, as soon after the onset of her catamenia as I have the opportunity of seeing her. I do not repeat the inquiry except in case of illness. I have, however, obtained from the housemistresses information about all girls in school in April, 1927.

In the interpretation of statistical data upon such a subject the personal equation of the examiner must be taken into account while the known variations in susceptibility to painful stimuli, the influence of suggestion and the effect of intercourse it is almost an axiom influence the results.

Table I shows the frequency of dysmenorrhoea among the 78 girls questioned for the first time.

TABLE I—Girls (78) Questioned for the First Time

No pain	78.3 per cent.
Occasional pain	
Slight	8.3
Moderate	1.5
Severe	2.3
Regular pain	
Slight	5.4
Moderate	3.6
Severe	0.26
	92 per cent.

#### Ages of Girls Questioned

12 years	2	16 years	53
13	52	17	47
14	131	18	13
15	84	Not noted	2

Excluding occasional dysmenorrhoea, the percentage free from regular pain is 90.4, a figure practically identical with that given by Mrs. Clow in 1924 (89.2 per cent) for girls who played games throughout the period. As the regime adopted in the two schools differs widely it is evident that the uniform low rate in each is due to some common cause, unconnected with habit during the period.

In corroboration of my results I add a table of 253 observations made independently by the housemistresses, which agrees closely with the figures already given if due allowance is made for the improvement that undoubtedly occurs as age advances.

TABLE II—Observations by Housemistresses (253 Girls)

No pain	88.5 per cent.
Occasional pain	
Slight	10.03 per cent.
Moderate	0.77
Severe	2.3
Regular pain	
Slight	3.8 per cent.
Moderate	4.2
Severe	0.3

#### Ages of the 253 Girls

13 years	4	17 years	74
14	28	18	21
15	59	19	2
16	70		

Concerning improvement with advancing age, the only reliable data are to be got by a comparison between the symptoms of the same individual at different ages. The following table gives the results in 149 girls questioned by me on their admission to school on the first occasion, and by the housemistresses in 1927 on the second occasion.

TABLE III

	Questioned by me	Later by Housemistresses
No pain	75.1 per cent.	75.8 per cent.
Occasional pain		
Slight	10.0 per cent.	10.7 per cent.
Moderate	0.6	2.6
Severe	2.0	0.6
Regular pain		
Slight	6.0 per cent.	3.3 per cent.
Moderate	5.3	4.0
Severe	0.6	2.6

The intervals between the first and second examinations are shown below.

Years in school	No. of Girls	Years since Admission	No. of Girls
Under 1 year	33	4 to 5 years	5
1 to 2 years	41	5 years	1
2 to 3	23	Not noted	1
3 to 4	20		

The conclusion which I would suggest from these figures, when taken in association with those published by Mrs. Clow, is that the low incidence of dysmenorrhoea is attributable to a good standard of general health incident to the playing of active games, but that the continuance of games during the menstrual period is not necessary in order to obtain a low incidence of dysmenorrhoea. Is it then advisable?

In healthy individuals there is no need for any restriction of activity at the menstrual period, but the problem in school differs from that in private practice. The element of competition, to which the Medical Women's Federation has drawn attention, enters largely into the spirit of school games with the result that there is a tendency for girls to attempt to play in matches and to persist in playing hard even when suffering from some disability. Another factor in the life of the modern boarding school affects this question. The daily routine represents a continuous strenuous effort from the beginning of each term to its end. The housemistresses are all agreed that the three days' reprieve from games, etc., during the menstrual period is of great value in providing relaxation and recovery of energy. Under our present system the absence of girls from games excites no comment, and, though in many instances the prohibition is at first resented, the "three days' periodic rest" is of undoubted advantage.

#### Regularity of Menstruation

It is generally assumed that though the first few periods may occur at irregular intervals, a regular rhythm is established within a few months. Thus the following statement is made: "In healthy well-developed women between the ages of 14 and 44 menstruation occurs once a month." This is certainly not so in the school from which my figures are drawn in which for example among 78 girls questioned at the age of 17 only 43 experienced regular menstruation. Table IV shows the percentage of regularity at different ages.

TABLE IV—Percentage of Regularity of Menstruation

Age	Percentage
14-5	20.5 per cent.
13 and 14	5.8
15 and 16	62.1
17 and 19	

Intermittent amenorrhoea is the type of irregularity present. If the common belief is true it is impossible to view the figures without alarm since they indicate a persistent deficiency of ovarian secretion in a large proportion of the potential mothers of the future. Upon inquiry it is commonly found that a normal period occurs during the holidays in girls who are amenorrhoeic during the school term. In my opinion the cause of this defect is to be looked for in the long hours of continuous effort, mental and physical, imposed upon the adolescent girl by the modern school curriculum. Munro Kerr makes the following statement:

It is an interesting fact that the very athletic and the who a occupation involves great physical and mental strain have in many instances a relatively poor menstrual discharge.

Professor McIlroy writes

When girls at puberty are urged to work for examinations the first danger signal is often amenorrhoea or irregular scanty menstruation, and she urges that great care must be taken to find out if the individual is of a normal standard of health before permitting strenuous games or strain of study.



Rosenau<sup>7</sup> makes some statements which are of interest in this connection

"The effect of overwork upon fecundity and upon infant mortality is impressive. Biaggi states that of 172,365 Italian women between the ages of 15 and 54 years who were employed in industrial occupations the average child bearing coefficient was only about one third of the general fertility of Italian women."

I direct your attention to this matter as of prime importance in connection with menstrual health and one upon which this Association might collect information and provide authoritative guidance to school authorities. Many of these exact from girls under their care an amount of daily effort, mental and physical, which few adults could undertake. The result of this, coupled with the anxiety associated with competitive examinations and games, is, I believe, reflected in the figures which I have just quoted.

I have been unable to find in the available literature data upon which this question can be decided. Comparative tables in regard to the frequency of regularity among girls leading sheltered, moderately strenuous, and fully strenuous lives would be most informative.

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### III—THE PREVENTION OF MENSTRUAL TROUBLES.

BY

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My observations on the matter under discussion have been made during a period of fifteen years of general practice, including fourteen years' experience of medical inspection at a large school for girls and of seven years' medical attendance at a training college for teachers. The school-girls, except in a few instances, are not my own patients, but are referred for treatment to the medical men attending the boarding houses. I have excluded from consideration all cases in which there is disease of the pelvic organs, my remarks refer only to girls in good health.

#### Age of Onset of the Catamenia

One of the most striking things in studying the normal menstrual function is the variation in the age of onset of the catamenia in girls of normal development. In my experience it has varied from 8 to 19 years.

The accompanying list gives the percentage of the various ages of onset obtained from the girls at the school and the training college.

Age of onset.	School (1137 girls)	Training College (300 girls)
8	0.08 per cent	0.00 per cent
9	0.08 "	0.00 "
10	1.05 "	0.33 "
11	4.92 "	0.33 "
12	16.79 "	8.33 "
13	34.12 "	21.66 "
14	26.82 "	37.33 "
15	11.08 "	22.00 "
16	4.41 "	8.00 "
17	0.35 "	2.00 "
18	0.17 "	0.00 "
Before 14	57.04 per cent	30.65 per cent

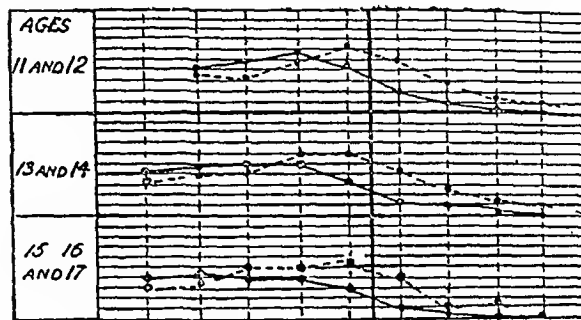
The figures show that the age of onset was, on the whole, earlier in the schoolgirls, where 13 was the most usual age, than in the college students, in most of whom it was 14. It will be noted that over half of the former (57 per cent) began to menstruate before they were 14, whereas less than a third of the latter (30 per cent) began before that age.

The schoolgirls are the children of educated parents in easy financial circumstances. The college students come from humbler, though not necessitous, homes from various parts of the country, and in most cases began their education in elementary schools. Although the standard of health among the latter is good, the schoolgirls are, on the whole, of better physique. It would seem, therefore, that earlier development of the generative organs is asso-

ciated with physical fitness. It must be noted that, whereas the number of schoolgirls from which these figures are obtained is over 1,100, my experience in the case of the students has, so far, been limited to 300.

A difficult, but very important, question to decide is, When does the delay in the onset of the catamenia become pathological, and how soon should treatment, if any, be begun? Most parents become anxious if the menses have not appeared before the fifteenth birthday. In searching for an answer to this question, I have tabulated the annual increase in height and weight of these girls who have been at the school for several years before and after the onset of the catamenia. In order to show the relation between the rate of growth and the age of onset I have divided the figures into three groups, according to the age at which the menses appeared, as follows:

	Ages	
Group I	11 and 12	50 girls
Group II	13 and 14	188 "
Group III	15, 16, and 17	60 "



— = INCREASE IN HEIGHT (UNIT = 1/2 INCH)  
----- = INCREASE IN WEIGHT (UNIT = 2 LBS)

The graphs represent the average rate of increase in height and weight in the three respective groups; therefore, until they touch the base line growth is continuing. The thick vertical line indicates the year during which the onset of the catamenia occurred. The vertical spaces represent the four years preceding and the four years subsequent to the year of onset.

The following facts are brought out by the charts in all these groups:

- 1 The maximum growth occurred during the second and third years preceding the onset of the catamenia, followed a year later, by the maximum increase in weight.
- 2 During the year in which the menses appeared there was a definite fall in the rate of growth in both height and weight.
- 3 Growth in both respects continued for at least two years after the onset of the catamenia.
- 4 Notwithstanding the difference in age in Groups I and III there is a marked similarity in the curves.

In studying the actual figures one was struck by the facts:

- 1 That there was no exception to the rule that growth in height and weight took place, but at a reduced rate, after menstruation had begun.
- 2 That, although the majority of girls had ceased to grow at 16, and many had by that time begun to lose weight (the normal occurrence in girls soon after growth is completed), nevertheless, those in whom the onset of menstruation was delayed until 16 or 17 years continued to grow until they were 18 or 19, whereas those who began to menstruate early ceased growth correspondingly early.

These facts incline me to the view that we are not justified in regarding a case as one of primary amenorrhoea, or in attempting to interfere with the natural course of events, so long as growth in height and weight continues.

The cases which give cause for anxiety are those in which the secondary sexual characteristics have not begun to develop by the age of 15, especially if the rate of growth in height and weight has begun to diminish. After the age of 17 this must be a rare condition. I have only come across two cases in the 2,600 girls I have examined, and two adult cases in my own practice. Both of the girls, now adult, have remained sexually undeveloped in spite of treatment from the age of 14. Endocrine therapy had no apparent effect.

#### Interruption of the Regular Periodicity

Of the three types of secondary amenorrhoea which I have noted as peculiar to adolescence, one only is of serious import, and belongs to the realm of medicine rather

tion of hygiene. I have found irregularity of periodicity in the majority of girls (54.5 per cent.) during the first two years of menstrual life. The cases of amenorrhoea are more numerous among the boarders than the day girls; they are usually associated with any disturbance in health and in my opinion, seldom call for medical treatment.

#### Sanction Associated with the Menstrual Period in Young Girls

I can state with certainty that menstruation can be, and therefore should be, free from suffering of any kind. This was the case in 89.2 per cent of the schoolgirls at their last review and in 94 per cent of students on leaving the training college. We can consequently take it as a fact that when menstruation is normal the girl is free from any pain, headache, sickness or feeling of discomfort. This is the state of affairs we have to aim at for every girl in the country. It would help to bring this about if inquiry into the menstrual function were recognized as an integral part of the medical inspection of girl in school and university. It seems that the existence of the menstrual function has been ignored by school doctor in the past. The keeping of records would not only provide us with valuable information, but would give patient requiring aid the opportunity of receiving attention early enough to prevent the onset of serious trouble.

It is very rare for any symptoms to occur during the first few months of a girl's menstrual life, as far as I can ascertain it occurs in only about 2 in 1000 cases. This fact is worthy of thought, especially when it is coupled with the fact that when I first began my work at the school I found that 220 in 1000 cases had developed some menstrual trouble within four years of the onset of the period. If a girl is allowed to be guided by nature as to her behaviour during the period she will, in nearly every case, carry on as usual. The desire for activity whether it be in games or work is no more diminished than is her desire for food or sleep.

Most educated mothers teach their daughters that they must not expect to feel well at these times and that they must modify their habits of life accordingly. They are told that it is dangerous to have a bath or even to wash, especially the feet. They must give up their games and drilling at school and all avoidable exercise and, if possible, spend part of the day lying down. Every year I come across scores of girls who have received this teaching and in nearly every case there is a spontaneous expression of pleasure when I tell them that provided they obtain consent from home they may have their warm baths and even join in such games as hockey and tennis and do drilling and gymnastics as usual. I lay special stress on the importance of taking this exercise on the first and second days of the period.

The result of this instruction which has been given for the last thirteen years to each individual girl who has arrived at the age of puberty, is that the proportion of those who suffer at the period has been reduced from 40.7 per cent to 10.8 per cent. The 10.8 per cent of sufferers consist mostly of those who do not succeed in getting permission from home to take the necessary exercise. Given free scope we could I believe abolish practically all menstrual suffering in healthy girls under 18 years and if the habits with regard to exercise acquired by that age were continued into adult life suffering at the period would I believe, be a rare complaint. I have already published figures and cases in support of these statements, and have referred before to the leaflet *Advice to Girls Concerning the Monthly Period* issued by the Medical Officer of Schools Association in which the continuance of baths and vigorous exercise throughout the period is recommended. Many thousands of these and of similar leaflets published by the Medical Women's Federation have been distributed to schools and factories and I look forward to the time when all healthy girls will be brought up in accordance with the hygienic measures therein advocated.

Girls engaged in sedentary or standing occupations are the greatest sufferers from dysmenorrhoea. This will continue until employers of women workers realize, as some already have to their own advantage, that this disability, and consequent loss of work, can be stopped by giving opportunities for daily exercise, such as could be obtained by fifteen minutes drilling preferably in the open air.

There is no doubt that the neurotic disturbances connected with menstruation are generally produced by undue suggestion and example and that the cure lies in inculcating sound views with regard to the menstrual function, resulting in healthy activity of mind and body during menstruation as at other times.

The prevention of menstrual troubles lies with the parent, the schoolmistress, the school doctor and the employer of women workers. With healthy conditions and influence in the home, the school and the factory I believe that there would be but little call for treatment of menstrual disorders in otherwise healthy girls.

Presented at the Meeting of the British Medical Association, 1917, 2nd July, at the Royal Albert Hall, London, 1917, 2nd July, 1917.

#### Discussion

Mrs. ITHUR VACHAN SAWAY (London) said that menstruation might be regarded as a vigorous pregnancy; it should be painful and should not interfere with the ordinary activities of life. Normally the only concomitants should be a certain lassitude and some increase of nervous tension. She was firmly of opinion that there was a close connexion between dysmenorrhoea and the toxæmias, particularly the exanthems of childhood, like scarlet fever and measles. In many cases of dysmenorrhoea there were associated septic tonsils. Just as the fevers caused a weakening of the musculature of the heart so did they affect the uterine muscle. The occurrence of anteversion and more rarely of retroflexion, might be traced to softening of the muscles produced by one or other of the diseases of childhood. At one time it was quite common to meet with severe cases of salpingo-oophoritis following a severe attack of enteric fever. In regard to the question of hygiene she advocated daily warm baths but was opposed to cold baths and sea bathing during the period. She thought that moderate exercise was undoubtedly beneficial, but strenuous game might be rather too much.

Dr. C. L. STANLEY (Cardiff) dealt with the mental aspect of the hygiene of menstruation as seen in the practice of a mental hospital. From a study of about 200 mental patients he had found not in whom the onset of insanity could be definitely attributed to the onset of menstruation. In cases where menstruation was influenced in mental disease it was usually in the direction of excess, and he had found no justification for the textbook statement that insanity was usually accompanied by amenorrhoea. Before puberty girls should be informed of the coming event and should be impressed that it was quite natural during uncomplicated menstruation in absolutely normal life should be led with regular exercise and bathing. Irregularities in the first few years were seldom important and might be disregarded.

Prof. G. GIBSON FITZGIBSON (Dublin) said that schoolgirls were generally brought to see a gynaecologist on account of amenorrhoea very rarely for dysmenorrhoea. He thought that the cases of severe disabling dysmenorrhoea at the age of 20 to 25 were nearly all acquired dysmenorrhoea in which no trouble had been experienced in the earlier years. The cause required further investigation. In the case of girls with dysmenorrhoea dating from the onset there was commonly some definite pelvic disease, which might quite probably be traced to the acute infections of childhood.

Prof. J. J. McILROY (London) agreed that every healthy girl should regard menstruation as a normal function, cases of dysmenorrhoea were rare before the age of 18. Girls without occupation suffered most frequently from dysmenorrhoea, having nothing to do, their attention was focused on their sexual functions, and not infrequently

To be obtained from the honorary editor of *Sci. Hygiene and Prev. Education*, Cropthorne, King's Norton (2s. per 100; 1s. 6d. per 50 free).

It is obtained from the Secretary, Medical Women's Federation, 4 Clarendon Road, Brixton, S.W. (1s. 8d. per 100; 7d. free).

they were cured by marriage. In factory girls the incidence of dysmenorrhoea was very low and was confined, as a rule, in this class to clerks and those whose occupations necessitated sitting all day. She did not regard dilating and curetting in these cases or occupational dysmenorrhoea as of any value, the only remedy was to advise exercise, dancing being one of the best forms. She was convinced that vigorous games had nothing to do with sterility, whereas mental stress might be held responsible.

Dr. CATHERINE CHISHOLM (Manchester) stated that her figures, obtained from schoolgirls of a different type from those studied by the openers of the discussion—namely, the industrial type—were nevertheless remarkably similar. The incidence of dysmenorrhoea was much higher in active working women than among schoolgirls. She thought that the nervous strain of examinations or overwork was a potent cause from the failure of the general health arising therefrom. Similarly in sedentary workers it was the impairment of general health which resulted in dysmenorrhoea. It was very important, especially in day schools, that games should be made part of the curriculum, not added to an already overcrowded programme.

Dr. MABEL L. RAMSAY (Plymouth) said that though she had charge of a school of 200 girls the only cases of dysmenorrhoea she ever saw occurred at about the ages of 20 to 25. The economic aspect of bettering the working girl's condition was of supreme importance. Dysmenorrhoea was generally associated with some error of bodily growth. She strongly deprecated the wholesale removal of tonsils, and said that the public were becoming seriously alarmed in this matter. She agreed that the specific fevers, especially mumps, might often give rise to pelvic troubles. She did not approve of too many hot baths, but preferred to continue with cold baths and sea bathing.

Dr. FARQUHAR MURRAY (Newcastle) had seen a large number of girls, aged 18 or 19, who had never menstruated, and examination showed a definite lack of development of the uterus. Cases with very scant menstruation were often associated with dysmenorrhoea. To stimulate the development of an infantile uterus treatment must be begun early, and endocrine therapy should not be delayed until they thought that bodily growth was complete. Profuse menorrhagia in adolescents was sometimes a very difficult problem. He deprecated hysterectomy in young girls, while a rays and radium generally damaged tissues with which they came in contact.

Dr. LILIAS M. JEFFRIES (Brighton) did not agree that violent exercise should be forbidden. She advocated leaving it to the housemistress to decide which girls should be permitted to play games. She thought that there was an insufficient provision against the occurrence of constipation in schools. Hockey was no more vigorous than Swedish exercises, but she disapproved of sea bathing. She denied that fecundity was adversely affected by vigorous games and exercises.

Professor J. HENDRY (Glasgow) maintained that it was of even more importance to attend to the general health during the intervening twenty-eight days than during the actual period of the flow. He favoured vigorous exercise during the whole month, such as tennis and badminton, and not merely walking. He did not think that modern dancing was vigorous enough to serve this object. In hospital practice the difficulty was to get patients to carry out the advice given to them, and it was in this connexion that they must look for improvement by the establishment of welfare centres.

The PRESIDENT commented upon the much diminished frequency of anaemia nowadays compared with thirty years ago, but thought that this caused a later commencement of dysmenorrhoea. He referred to the great improvement in conditions in the elementary schools where girls were no longer forced through various standards regardless of all considerations of health.

Dr. W. F. T. HAULTAIN (Edinburgh) thought that constipation had a great deal to do with dysmenorrhoea in girls about the age of 18, and suggested that girls should

be encouraged to drink more water. It was particularly necessary to treat the constipation which occurred during the week prior to menstruation, since of the constipation often relieved dysmenorrhoea. Cold baths should not be allowed as they tended to stop the flow, whereas hot baths and exercises increased it. He thought the association between dysmenorrhoea and the specific fevers was too vague to be relied upon.

Dr. B. M. SUTHERLAND (Australia) thought that the big factor in diminishing the occurrence of dysmenorrhoea was the great increase in open-air exercises for girls in these days. He urged the necessity of treating every case individually and not by applying a general routine to all regardless of individual peculiarities. He warned them that the statistics of chosen schools could not be applied indiscriminately to the general public. He spoke favourably of shower baths instead of plunge baths and strongly opposed sea bathing during the flow.

Professor JOHNSTONE, in replying, said that there was an enormous amount of evil done by suggestion, whether unconscious or otherwise. He agreed that in regard to hygiene the pre-menstrual days were if anything of more importance than the actual period. The question of constipation was of great moment, miracles could be performed with the aid of magnesium sulphate. General principles being agreed upon, every case must be treated on its merits.

Dr. PAVOV defended the rule against violent exercise by pointing out that though some girls might suffer as the results of it, others would be saved from the suggestion of invalidism from which they could not escape if they were singled out as individuals. He had always thought that constipation had a very important bearing on dysmenorrhoea, but on investigation he was surprised to find among his limited numbers that there was no apparent connexion. They were not in the habit of taking any special precautions at the first menstruation, and no harm had resulted so far as he knew. He was disappointed at not hearing more about persisting irregularities.

Dr. ALICE CROW had found no dysmenorrhoea or amenorrhoea among girls working for examinations. It was very rare for a girl to leave after a strenuous course at the training college with any menstrual trouble at all. She thought it lamentable that even 10 per cent of dysmenorrhoea occurred, and she believed this could be wiped out by exercise, suggestion, and so forth. Dilating and curetting were quite unjustifiable.

## THE POLICE SURGEON IN RELATION TO FORENSIC MEDICINE.

### THE TEACHING OF FORENSIC MEDICINE

BY

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THE duration of the course and the range of teaching of the subject of forensic medicine to students of medicine have long occupied the attention of teachers as well as of the General Medical Council.

For many years the subject has been a compulsory part of the examination for degrees and diplomas, and consequently of the medical curriculum of study. Owing to its character it is one of the final year classes, inasmuch as it is expected to deal with the previous subjects of the curriculum which may have a bearing on the law of the country, in accordance with the definition of forensic medicine, which is—that subject which correlates medical knowledge to the purposes of the law.

If one makes a general survey of the medical curriculum

\* A paper read in opening a discussion in the Section of Forensic Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

it will be apparent that many if not indeed most of the subjects which are treated in forensic medicine are practical and of the nature of the things which are done in the hospital.

The student of anatomy has to spend much time in the anatomical laboratory and also the student of physiology the student of surgery and of medicine spends some years in the wards of the hospitals acquiring practical acquaintance with the various phases and kinds of disease and their method of cure in addition to some laboratory work in operative surgery and in the practical aspects of medicine in midwifery he has to be certified as a witness at and so many cases of childbirth and to show some knowledge of general pathology in chemistry the amount of knowledge which he can absorb in the time allotted for his study although inclusive of some laboratory work at the best periods of but a very circumscribed sphere of knowledge, in no way his requirement must be reckoned as elementary although he has opportunities of distinguishing between plants and fruits which are poisonous from those which are non-toxic in pathology he may gain some knowledge regarding these lost topics of life which play such important parts in the production of the diseases of animals and of man, in materia medica he is made more familiar with poisons and drugs for curative purposes and in pathology he is brought face to face with the pathological aspects of diseased organs as contrasted with those in health and he is supposed to pay sufficient visits to the post-mortem room as will enable him when called upon to conduct effectively a post-mortem examination for medico-legal purposes. But all of these in addition form the subjects of didactic lectures which the student is bound to attend. Comprehended within such knowledge which he so requires as or ought to be his facility of applying that knowledge to practical medico-legal work.

It may be said that while in the hospital wards, he may be able on occasion to see odd cases of poisoning—such opportunities are relatively rare and that in the outpatient department he can see the results of injuries from many and different causes. All this undoubtedly ought to be helpful to the student, but he has to keep in mind that sooner or later, when he becomes a duly qualified registered medical practitioner he is likely to be called upon to deal with very many problems, occasionally some of them especially difficult, which will compel his attendance as a witness in courts of law. Hence the more purely legal aspects of forensic medicine come into prominence and the class of forensic medicine is the only opportunity of becoming acquainted with these, in addition to his reading.

From the nature of the subject itself forensic medicine is, therefore, apt to be one of the few subjects which are not capable of being readily applied with practical tuition in all their phases.

From his profession the practitioner is expected to render assistance to cure and if possible to save the lives of his patients, but he can never rid himself of the likelihood that the doing of this may involve his appearance in the witness-box as a skilled witness whose object ought to be to assist the court in arriving at an intelligent knowledge of the medical aspects of the case for the elucidation of some of which careful observation and logical thinking are always much needed. Two things are essential in medico-legal work, first, careful observation and record of the facts of a case and, secondly, logical inferences or deductions from these facts. It has been truly observed that the differences in medical testimony not infrequently witnessed and heard in law courts emerge more frequently not so much from the facts of a case as from the inferences or deductions made therefrom. The value of a witness to be of assistance to a court will therefore much depend upon his scrupulous consideration of both of the elements.

It has sometimes been urged that instruction in forensic medicine as in some other subjects may as well be obtained from books as from lectures. While there may perhaps be something to be said for this view, the value of lectures will largely depend, if not almost entirely upon the practitioner's experience of the lecturer. This goes without saying, but there is a great difference of value between the lectures given by a teacher who is in constant and immediate touch with the practical aspects of forensic medicine

and those given by one whose knowledge is chiefly theoretical and obtained from books. Over an experience of for five years as a teacher of this subject to students of medicine and of law the foregoing observation has impressed itself more and more on my mind.

That leads to the question whether forensic medicine courses could be better arranged than at present so as to afford the student a more active and practical acquaintance with the subject.

I think it can be said with truth and appositeness that in Scotland the universities and colleges have taken the teaching of this subject as an important item in the curriculum of the general practitioner. Chairs have long been founded in three of the universities and a lecture ship in the fourth the length of the course being determined by the university ordinances and the regulations of the General Medical Council. Examination papers are set for that subject at each final degree examination and thereafter each student is examined orally and practically. In the Scottish colleges the subject for diploma purposes is largely treated with public health two questions in each subject are set for answer and an oral examination follows.

Is there any feasible and workable plan by which the average student might acquire more practical knowledge than hitherto he has been able to gain or is obtaining at present?

It has been suggested that during the curriculum the attention of the student might be directed to the medico-legal aspect of each subject in medicine for example to the differences in behaviour of acute and chronic exanthemata and diseases and the acute and chronic forms of irritant poisons; in surgery to the significance of wounds and wounding from the point of view of conviction in relation to how common plants and fruits are poisonous and which non-poisonous in pathology not merely to see that the student has attended so many post-mortem examinations but that he has actually assisted in making or has himself performed at least one complete dissection. While that is not impossible the retort comes that no teacher has sufficient time to teach even the subject with which he is charged without traversing other fields. But even on the supposition that this were possible it must be obvious that there are many departments of forensic medicine comprehended in criminal charges which the student cannot observe in his ordinary curriculum. For example he is hardly likely to see a case of infanticide or criminal abortion or to have seen carried out in detail the lines of investigation regarding promotion of crime in the form of suspicious stains for blood on garments or weapons, or for semen in charges of rape or of stains in cases of throwing of vitriol or other corrosives. Taking however more ordinary things first such as making a proper post-mortem examination for medico-legal purposes it seems to me that the average young practitioner at present has had little if any experience. But he may be called upon in England on the summons of a coroner to make or assist in making such an examination. In Scotland on the other hand the duty of appointing the medical practitioners to perform this work is in the hands of the procurator fiscal of the county in which the examination has to be made, and only once then when a warrant of the sheriff has been issued in set terms incorporating the names of the practitioners who are to conduct the examination. This duty in Scotland is made to devolve on experienced practitioners only because very important issues may emerge from their examination respecting the cause of death, if such as is commonly the case be a culpable cause.

There are in Scotland two classes of medical practitioners who are more or less constantly faced with medico-legal questions. These are (1) police casualty surgeons, and (2) medico-legal examiners appointed by the Crown for that purpose.

The police casualty surgeon obtains his appointment from the magistrate and town council as in Glasgow Edinburgh, Dundee and other places. The range of his duties embraces the examination of persons alleged to be "drunk" or intoxicated from alcohol the examination on first-aid treatment of persons alleged to have been injured or assaulted the examination of the bodies by inspection only of those who have died suddenly or under suspicious

circumstances, examination of children alleged to be the subjects of neglect and ill-treatment by parents or guardians, the examination of the mental condition of alleged insane persons found wandering in the streets or behaving there in an insane manner, and the examination of children and young persons alleged to have been criminally assaulted. These, perhaps, comprise the main duties of his office. In some instances, however, his duties may involve medical attendance on members of the police force, although in some places, as in Glasgow, these are not included.

The medico-legal examiner has a different range of work to pursue if and when called upon. He will be expected to perform all *post-mortem* examinations of the bodies of persons with respect to whose deaths there is alleged to be suspicion of or actual culpability, and to make reports of the results to the procurator fiscal, from whom their warrant comes from the sheriff, and to make examinations of productions regarding the nature of certain suspicions stains thereon, connected with a criminal charge against a person apprehended or still at large, by laboratory methods. All these investigations—and they are of varied character—demand the most exacting care and attention to secure accuracy of results, since from these and the inferences therefrom the release of a prisoner or an indictment for a crime of a serious kind may depend. It is obvious that such examinations as the foregoing cannot be entrusted to the hands of a novice or inexperienced person. In charges of murder, for example, it is likely to be that the same medico-legal examiners who make the *post-mortem* dissection will also have the duty of examining such productions as the Crown may deem necessary. In the examination for blood-stains, for example, much time and painstaking work must be devoted in order to ensure accurate results, and especially, as more frequently happens nowadays, the examiner is expected to be able to prove whether the blood, if found, is that of a human being or not. When the investigation involves toxicological search, the medico-legal examiner will likely be associated with an expert chemist, and thus the Crown will receive a joint report. In the foregoing, therefore, are fields worthy of cultivation, which might be utilized for the purposes of practical teaching in forensic medicine.

In the light of what has preceded we now approach an answer to the question. What scheme, if any, might be evolved for the better practical teaching of the student in forensic medicine?

Experience indicates that the first essential of likely success in teaching this subject will be that the teacher should himself be actively engaged in a branch of the profession which deals largely with medico-legal problems, either in the capacity of a police casualty surgeon or as a medico-legal examiner. Such positions afford material ready to the hand of the teacher whereby he may illustrate many points of his teaching, while the medico-legal examiner as teacher, by utilizing the services of a few students at a time as assistants in examination of cadavers, will afford them opportunities of observing how to act and how to frame reports. Such a class of teacher has, moreover, an excellent chance to collect photographs of cases which, shown as lantern slides in the lecture room, will pictorially illustrate to an entire class several points of interest. Laboratory investigations may also be given to classes of students either in the lecture room or in the laboratory itself, and demonstrations of microscopic objects and museum jar specimens can similarly be exhibited. All of the foregoing methods I have combined for many years past. The formation of a class museum of illustrative specimens is a valuable adjunct.

The more definitely legal aspects of the subject must in the main be treated didactically by lectures. The law has to be expounded in an easy manner to induce attention, for it is my experience that the average student fights shy of law, not realizing that such a knowledge is likely to conduce later to his comfort and assurance in doing medico-legal work. There must be a simple exposition of the laws of evidence, of the functions of the General Medical Council and its powers of discipline on those registered as medical practitioners, the penal offences constituting "infamous conduct in a professional respect", some things must be

said respecting the law of infanticide, etc., as to nullity of marriage, as to sexual crimes, and to insanity with respect to responsibility for crime, and several others. The subjects having medico-legal importance to the profession have, however, increased in later years—such, for example, as the National Health Insurance Acts, Workmen's Compensation Acts, Notification Acts, the Cremation Act, Death Certification, etc. The student will benefit by some instruction on these subjects, for to many young practitioners the quickest avenue to general professional work is the acquirement of a panel of patients, and sooner or later he may receive an appointment as a certifying surgeon, and become eventually, perhaps, a medical referee under the Compensation Acts. Judges have on occasion expressed the view that there are no witnesses so difficult to be heard or so difficult to be understood as medical witnesses—difficult to be heard from want of audible speech in giving evidence, and difficult to comprehend because of the nature of their evidence. The medical witness in a court of law must remember that medical language is not understood by an ordinary jury, however much better it may be by counsel and judge, hence he must avoid the use of technical medical language.

A visit of a student to a court of law during a trial is worth much, in so far as it enables him to see the surroundings, hear witnesses being examined-in-chief and cross-examined, and to observe the conduct in these of members of the Bar. I have found it an excellent plan to recommend students to attend the sittings of sheriff and jury courts, and of the High Court of Justice when available, while trying criminal cases. Such opportunities commonly occur during the progress of a teaching term, and courts, as I have found, are most willing to give students facilities for being present.

Some such scheme, broadly sketched and as has been carried out, may be reckoned to make the course of teaching forensic medicine not only more interesting during the student's career, but also further calculated to turn him out after graduation or qualification a better equipped man for the medico-legal side of his work.

#### DISCUSSION

Professor J. E. W. McFALL (Liverpool) considered that the teacher should be one who had gained experience by being in touch with the problems involved, for that he should hold in appointment as police surgeon. He should also be an efficient pathologist in order to gain the confidence of the coroner. In England the subject was taken too early in the student's course, and should be left to the final year. The actual forensic investigations should be organized into a service since it present so much depended on the inclination or prejudices of individual coroners.

Professor SYDNEY SMITH (Cardo) considered it necessary to provide means for the education, not only of the student, but also of the medical practitioner, in the subject of forensic medicine. The course of lectures and practical training of the student was comparatively easy to arrange, and was not of the same order of importance as the instruction of the practitioner. In this country there appeared to be no definite status for the medico-legal expert and any medical practitioner might (and did) perform *post-mortem* and other examinations in medico-legal cases and give evidence thereon. When it was considered that the medical evidence in a criminal case might result in the loss of life or liberty of an individual, it seemed most improper to allow evidence to be given except by a person with special training in the particular subject. There must be quite a considerable amount of crime undetected or unsuspected on account of the want of special knowledge of the examiners. The training of specialists in the subject of forensic medicine must include practical experience in a medico-legal department, and such a department could exist only by obtaining all the medico-legal cases for definite districts. It would also give the legal authorities a definite place to which they could send all their material for opinion, and where the investigating authority could obtain advice and assistance in cases where technical knowledge was required. The beginning of some



such a form was advocated some time ago when the Medical-Legal Society in London decided to urge the formation of a medico-legal institute. It should be possible to establish such institutes not only in London but in other centres so arranged that the whole of the medico-legal work of the country could be under expert supervision. The speaker instructed the conditions in Egypt, where all medico-legal cases of any importance came automatically under the notice of the Medico-Legal Department of the Ministry of Justice. This department, which consisted of whole-time medical officers, chemists, and other officials was attached to the Parquet as investigating authority. All cases of poisoning in whatever part of the country they occurred, all examinations of blood and other fluids and in fact all technical examinations, were carried out in the central laboratories at Cairo, while experts were available for advice and assistance in the different centres. A similar scheme could readily be inaugurated in this country and the cost would almost certainly be less than the cost of the present haphazard system of payment to different local practitioners. The speaker gave actual figures for his own department which showed that if the work done had been paid for by the case the cost to the country would have been about four times as much.

Dr A. ALLISON (Glasgow) regretted that students and most practitioners had to rely on accounts of cases. The average man was only rarely called to court, and if he had a special interest in medical jurisprudence it was difficult for him to obtain the necessary post-graduate instruction. If the teaching of forensic medicine was to be improved three things were required: (1) increased opportunities for personal observation on the part of both undergraduate and post-graduate students; (2) opportunities of gaining experience in laboratory investigations; (3) opportunities for the discussion of medico-legal problems, preferably in a mixed society of doctors, lawyers, and other interested persons. Much might be done by organization to satisfy these three conditions. In towns having a medical school a centre for *post-mortem* examinations might be provided by the local authority, but it would probably be better if an arrangement could be made with the pathological department of a hospital. It would be an advantage if all cases of poisoning admitted to hospital were collected into one ward. In any big hospital there would be enough cases annually to demonstrate the effects of the commoner accidental and suicidal poisons, and laboratory work could be easily arranged. For the post-graduate student intending to follow the special work of forensic medicine full facilities ought to be provided. The only medico-legal society in Great Britain held its meetings in London, yet in all large centres there were many doctors and lawyers interested in medico-legal problems and provincial societies should be formed. Academic study should be supplemented by practical experience, which could be obtained by assisting a police surgeon in his routine work.

Dr DOUGLAS KEPP (Edinburgh) pointed out that a medico-legal service could grow up in a similar manner to the public health service, the first essential being that one man specially interested, and later one specially qualified, should be officially appointed for a given area. All forensic questions and *post-mortem* examinations in the area should be referred to him in the first instance, and not be undertaken by practitioners ignorant of this branch of medicine.

Professor J. T. J. MORRISON (Birmingham) said that medico-legal practice in England in the sphere of crime was not encouraged in due proportion to its legal and social importance. The financial departments of public bodies were reluctant to authorize coroners to return the services of medical experts in elucidating complex problems where crime or unnatural death was known or suspected. Too often it was thought that *post-mortem* examination might be assigned to any doctor, and investigations demanding special skill and knowledge were entrusted to persons who were unfamiliar with the questions to be solved and with the procedure involved in their solution. He deplored

the fact that forensic medicine was put in the background in English teaching centres, and was frequently taught by men who were not in touch with medico-legal practice.

Dr HINCKS (Hull) instanced cases of difficulty to the general practitioner.

Lord RESSALL said that since the medical curriculum was already so heavy he was glad to hear suggestions of post-graduate teaching in this subject.

Sir W. SCHEMPP (Coroner for Central London) thought there should be a central mortuary where *post-mortem* examinations could be made and under certain regulations, be open to persons who wished to obtain knowledge in pathology and to be taught forensic medicine. The teacher should be one whose duty it was to deal with dead bodies and that was in a majority of cases, the police surgeon. The difficulty was that the work of the police divisional surgeon was not sufficient in itself to employ his whole time; private practice would not tend to increase his interest in criminal work.

Prof. G. LAYSTON, in reply, said that after many years of work as police surgeon and medico-legal examiner in Glasgow he agreed that the police should know something of the elements of medical jurisprudence, and for some years now the police and detective departments had received instruction on that subject. Thorough *post-mortem* examination was an important part of a medico-legal examiner's work, and in Glasgow there was a centre where bodies were brought for this examination. Financial considerations prevented many improvements being added.

## THE ABUSE OF CAESAREAN SECTION

BY

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ONE great difficulty I have in writing on the abuse of Caesarean section is that almost everything I can say on the subject has been anticipated by Prof. or Whitridge Williams of Baltimore and has been put much better than I can put it. In what I say, however, I am not merely repeating. In view—my own have been formed independently, but they coincide with his. Even in 1917 he anticipated the title of this paper. On the other hand it is a very great advantage to have his authority to support my own attitude. In 1916 when addressing the Clinical Congress of Surgeons of North America he spoke as follows:

Unfortunately history shows that advances in the practice of medicine and surgery are rarely attained in a thoroughly rational manner but that a period of undue enthusiasm or even of almost reckless abuse usually precedes the establishment of the actual value of a given procedure. I believe that we are at present going through such a stage in connexion with Caesarean section.

Again, in the last edition of his *Obstetrics* he writes as follows:

With the increasing perfection of surgical technique and an erroneous idea of the safety of the operation there seems to be a growing tendency to regard Caesarean section as the simplest means of coping with most obstetrical difficulties. At the present time I consider that the operation is being abused and that not a few patients are sacrificed to the *furor operativus* of obstetricians and general surgeons who are ignorant of the fundamental principles of the obstetric art. The being the case the conscientious obstetrician should be particularly careful in the recognition of indications or Caesarean section.

It would be an easy matter to quote similar opinions presented by other writers, but I think Williams's authority is sufficient. I think, too, that if together with the statistics which I shall put before you, will establish my two main points.

First, that Caesarean section should be avoided whenever possible on account both of its immediate risk and of its possibly crippling effect on the patient.

This paper read before the Australasian Medical Congress at Dunedin, New Zealand, early in 1917, has been a little curtailed and some appendices and statistical tables omitted in order to ensure publication.

Secondly, that Caesarean section is seldom necessary, because the art of midwifery provides a more satisfactory alternative.

The mortality following Caesarean section varies directly according to the stage at which the operation is done. The figures collected by Holland in 1821 prove this very clearly. Caesarean section for contracted pelvis done before labour begins caused a mortality of 14 per cent, early in labour a mortality of 18 per cent, late in labour a mortality of 10 per cent, after a preliminary induction of labour a mortality of 14 per cent, after attempted forceps a mortality of 25.7 per cent, after attempted craniotomy a mortality of 50 per cent. I wish to emphasize the fact that even when the operation was done under the most favourable circumstances the mortality was 14 per cent.

This is a low mortality—lower, perhaps, than is actually the case. Williams's corrected statistics for all cases in his hospital—corrected by the exclusion of deaths which were not attributable to the operation—give a mortality of 3.35 per cent. He divides his cases into two periods. In the first period he operated at any time during labour, often after a prolonged second stage. The mortality was 12 per cent. In the second period the operation, whenever possible, was done before, or a few hours after, the onset of labour. The mortality was 2.45 per cent. Further, he considers that the general mortality in the United States of all cases is 10 per cent.

The cost of Caesarean section done late in labour is very high. As Williams says, the evidence is clear that whenever a considerable time has elapsed between the onset of labour and the performance of Caesarean section, we must take into consideration the probable existence of a latent infection, which may later give rise to a general peritonitis. To prevent this there is apparently only one remedy, and that is to substitute a radical for a conservative operation, and to remove the uterus. Such a course reduces the mortality very markedly. Williams records 56 cases with a mortality of 1.8 per cent. It is, however, a high price for a young woman to pay.

Perhaps if it was possible to get into the mind of the operator who unnecessarily resorts to Caesarean section late in the second stage that his duty is to remove the uterus as well as the infant, it might induce him to try obstetrical methods of delivery before resorting to surgical ones.

I think we may take it as a fact that every case in which an unforeseen Caesarean section has to be done for obstructed labour is directly due to a failure of diagnosis—that is, in the great majority of cases, to insufficient or inefficient ante-natal care. I do not mean to suggest that diagnosis is always possible. Theoretically it may be. Practically it may not. I think, however, that if the causes of obstruction that cannot be recognized before or at the beginning of labour be examined it will be found that the correct treatment for most of them is not Caesarean section. Ante-natal care and diagnosis is one of the surest ways of avoiding unnecessary operations, of enabling us to do the necessary ones at the proper time, and so of reducing the mortality to a fifth of what it would otherwise have been.

I am quite sure that it is customary in many places to practise in contracted pelvis what is called the test of labour and, if delivery fails, to perform a Caesarean section late in labour. I cannot give a general approval to such a course. In the first place, careful examination and internal measurement with Skutsch's pelvimeter will usually enable us to decide whether Caesarean section is the proper course to adopt, while, if there is a reasonable prospect that the patient will deliver herself and she fails to do so, pubiotomy is preferable, especially in multiparae. There are undoubtedly borderline cases in which an exact prognosis is impossible, and in such the obstetrician who attends them must decide according to his own views. I would like, however, emphatically to protest against the idea that a test labour can be substituted for exact preliminary diagnosis because the object of the latter is to exclude, so far as is possible, the necessity for the former.

The risks of Caesarean section do not end with the convalescence of the patient, because there is in all cases

the danger that a permanent injury may result to the uterine wall, which is thereby thinned and prone to tear during a subsequent labour. Theoretically, it should be possible to produce a union of the incision which after a short time, is indistinguishable in appearance or strength from the rest of the muscle. Practically, there is always the risk that unsuitable suture material, bad suturing, or sepsis of the wound may cause a weakening of the scar. That the risk is a real one is shown by Holland's collected statistics. Seventy women were delivered, or delivered themselves through the vagina after a previous Caesarean section, and in 18, or about 25 per cent, the scar ruptured during labour. Rupture during pregnancy is rare, but it, too, may occur.

Again, peritoneal adhesions, while they are not necessarily dangerous to life, and may be symptomless, are not an advantage. Williams, in forty-eight women who had been operated on in his own clinic, found subsequent "broad or dense adhesions" in one-third. In others who had been operated on elsewhere he found them still more frequently. Accordingly, a young woman on whom Caesarean section is done may be left in such a state that she is unable to have a normal labour subsequently, she may be rendered permanently sterile by the loss of the uterus, or she may lose her life from the risks inseparable from the operation. The obvious conclusion from these facts is that Caesarean section must be avoided whenever it is possible to do so. The three most common conditions in the treatment of which Caesarean section is most abused are probably the milder degrees of contracted pelvis, eclampsia, and placenta previa.

The milder degrees of contracted pelvis offer perhaps the largest field for the irresponsible operator. As Williams puts it: "I have been reluctantly forced to the conclusion that, in many parts of the country, the mere diagnosis of a contracted pelvis, irrespective of degree, is considered a satisfactory indication for the operation."

There are usually considered to be four degrees of contracted pelvis. In first pelvis whose true conjugate measures  $3\frac{1}{4}$  inches or more there is very seldom an indication for operation. When the conjugate measures between  $3\frac{1}{4}$  to  $2\frac{1}{2}$  inches, Caesarean section is permissible, but can be replaced by the induction of premature labour, or by pubiotomy. In the other two degrees Caesarean section is positively indicated. The vast majority of contracted pelvis fall into the first, or the upper limit of the second degree—Williams places it at about 95 per cent, and of these 80 per cent deliver themselves spontaneously. The selection of the correct line of treatment is entirely a matter of exact diagnosis, as made by internal and external measurement of the pelvis, and by estimating the relation of the foetal head to the pelvic brim. External measurement alone is valueless. A general practitioner who has not had a very large midwifery experience is most unwise to undertake the management of such cases, and the routine performance of Caesarean section does not lessen his responsibility. To the obstetrician whose experience entitles him to treat such cases I would like to say

"Learn how to use Skutsch's pelvimeter. There is no mystery about it. The ordinary mechanic learns to use measuring instruments which are much more difficult to handle. You can learn its use on the dummy almost as well as on the patient. It is usually necessary to give an anaesthetic, but the number of women who must be measured internally is very small. If it was a question of an ordinary gynaecological examination, you would not hesitate to give an anaesthetic if necessary. Why should you hesitate when the welfare, and perhaps the life, of both mother and child are at stake? It is necessary to exhaust all the powers of diagnosis before you advise your patient that a Caesarean section is unavoidable."

Eclampsia is probably the next most common cause of the abuse of Caesarean section, and that, too, in spite of the fact that its results prove it to be almost the most fatal line of treatment. I pointed this out at the Christchurch meeting of the New Zealand Medical Association in 1923, and a short time afterwards I met a medical practitioner who has a large obstetrical practice. He told me that he and a friend had listened to what I had said at the meeting, and that I think his words were—they had never laughed so much before. I suggested that it was unkind of him to have laughed at me. He replied, "We did not laugh at

you. We laughed at the idea of anyone doing anything, but the reason section for eclampsia." Let us see what it was he actually was laughing at.

Eeden in 1922 published an exhaustive analysis of the results of eclampsia as treated in Great Britain and Ireland. One of his conclusions was that both in mild and in severe cases Caesarean section and accompaniment force were followed by the highest mortality—a mortality which Holland found to amount to 3. per cent after Caesarean section.

Petersen found that in the United States the mortality of eclampsia radically treated was 34.8 per cent and Williams at Baltimore prior to 1916 treated by radical measures 65 cases with a mortality of 24.7 per cent.

In Germany Engelmann reported a mortality of 26 per cent and Lichtenstein a mortality of 16.7 per cent.

The results of conservative treatment on the other hand are given as follows. Williams was able to report a mortality of 13 per cent. Engelmann of 6 per cent and Lichtenstein of 9.4 per cent after they had changed round to conservative treatment. FitzGibbon and Solomonson reported 204 cases with a mortality of 10.3 per cent. Stroganoff collected 3,522 cases treated by his method with a mortality of 10.4 per cent while in more than 250 cases which he treated personally the mortality was 2.5 per cent. Incidentally I may say that he stated that the mortality in New Zealand was 2.2 per cent but I do not know where he got his figures. The statistics which I am just about to quote show a mortality of 22.9 per cent.

What my friend laughed at then seems to have been methods of treating eclampsia which reduced a mortality of between 16.7 per cent and 34 per cent in one of between 2 per cent and 13 per cent. Even in his own country of New Zealand facts are against him. I have recently analysed the results of 149 cases of eclampsia reported by different medical practitioners. Conservative treatment in 104 cases gave a mortality of 15.38 per cent. Caesarean section in 29 cases of 27.5 per cent, and accompaniment force and allied procedures in 16 cases of 43.7 per cent. I have no reason to think that the cases treated by Caesarean section were any more serious than those treated conservatively. It is generally recognized that there is a place for Caesarean section in the treatment of eclampsia but it is a very small one, and, practically speaking, is only to be found amongst the cases in which conservative treatment has failed to bring about any improvement.

Placenta praevia comes next and here too the results obtained from Caesarean section are compared with those of more conservative measures, are directly opposed to its routine use.

Holland reported that the mortality in the British Isles after Caesarean section in 139 cases was 11.5 per cent. R. W. Holmes estimated that the similar mortality in the United States was 20 per cent. On the other hand purely obstetrical treatment has given the following results. Williams who uses the Chamberlain-Hubbs bag had one death in forty cases or 2.5 per cent. Hofmeister, Behm, Lomer, Ess, Moller, Pinard and Strutz have recorded a total of 693 cases treated by Braxton Hicks' method with a mortality of 2.9 per cent. I recorded a short time ago 264 cases which had occurred at the Potomac Hospital with a mortality of 5.3 per cent. I am able to say that a number of the patients who died were moribund on admission and could not have been treated by Caesarean section. If the 264 cases are excluded as they should be in any comparison with the results of Caesarean section the mortality would have been about 3 per cent.

Unless we are prepared to accept obstetrical incompetence as a valid indication for Caesarean section the only justification for it in placenta praevia is that it will save more infants. As Holmes says, in the United States operation saved one baby for every mother it killed. I do not think that in ante partum haemorrhages the prospect of life posed by a premature infant weakened by maternal and often by foetal haemorrhage is sufficiently valuable to place in competition with the life of the mother.

There is a place for Caesarean section in the treatment of placenta praevia just as there is in the treatment of eclampsia but it is a very tiny one. A foetus that is viable and that has not been weakened by previous bleeding, a mother who is in good condition and a placenta which is central give I think, a good reason for doing Caesarean section in order to save the foetus.

There are still a few conditions left which serve as reason or excuse for Caesarean section. Malpresentation of the foetus is one of them. I think that since I was qualified I have known personally of two cases in which Caesarean section was done for transverse presentation. In one the mother died, in the other both mother and

child lived. The former was catastrophic, the latter—peculiar.

In the morning an hour and a half after the rupture of the membranes the medical attendant found a transverse presentation by external examination. He did nothing. In the evening he found the cord and a hand in the cervix. Internal examination. He gave the patient morphine. The next morning an incision was coming away, he did a Caesarean section. The patient was 24 and had had two normal confinements. His reason for his treatment was that the uterus was throughout in a state of tonic contraction but the fact that the child was alive and well twenty-four hours after the membranes ruptured is rather a cry to this. No attempt was made to see if the contraction would pass off under an anaesthetic or to correct the presentation by internal version.

I would make the following suggestions:

(1) That almost every case of neglected shoulder presentation in which the child is alive can be changed to a foot presentation by internal version.

(2) That if the presentation cannot be changed the amount of force required to bring the foetus out of the pelvis during a Caesarean section must be so great as to be injurious to the uterus.

(3) That such a case would almost invariably be a fact and that consequently a hysterectomy is always necessary.

(4) That when the child is dead there is no possible indication for Caesarean section.

I have the record of 209 cases of transverse presentation treated in the Rotunda Hospital. I do not think that decapitation has ever been done on a living child nor has delivery ever been effected by Caesarean section. In other words in every such case it has been possible to correct the presentation. I am of course excluding cases in which operation may be necessary not on account of the presentation but because the pelvis is contracted or other form of gross obstruction exists.

I said that there was a tiny place for Caesarean section in the treatment of placenta praevia. I do not think there is even this place for it in the treatment of transverse presentation.

Time will not allow me to discuss the other forms of obstructed labour that have been used as a reason or an excuse for Caesarean section. There are undoubtedly several forms in which the operation may be necessary and amongst them I am afraid that the tightness of the cervix is sometimes included. I had thought that this ancient legend of the obstetrician had passed away with the midwife who kept her fingers in the vagina throughout labour. Still should a bona fide instance of it occur I am inclined to think that it should be possible to remove it by obstetrical measures instead of removing the child by surgical ones.

#### Some Statistics of Results of Obstetrical Operations in Certain Maternity Hospitals

At the Pellicane and Associated Hospitals in New York 4,263 patients were confined. Caesarean section was done once in 37 cases. The death rate from eclampsia was .2 per cent and after Caesarean section 7 per cent. The total death rate was 25 per 1,000.

At the Boston Irving Hospital 1,133 patients were confined. An obstetrical operation was performed once in every 24 cases and Caesarean section was done once in every 12 cases. The death rate from eclampsia was .54 per cent and the total death rate was 22 per 1,000.

At the Jefferson Hospital in Philadelphia 1,453 patients were confined. Caesarean section was done once in every 63 cases the general death rate was 23 per 1,000.

With these may be contrasted the similar statistics of the Potomac Hospital for thirty-four years ending 1922. There were 57,432 confinements. Caesarean section was done once in every 366 cases. The death rate from eclampsia was .325 per cent and the total death rate was just under 5 per 1,000.

Is it any wonder that Williams speaks of "an abuse of the operation (Caesarean section) which can be attributed only to an obsession by the *furor operativus*?"

I do not think that the accuracy of the statistics I have given can be disputed. Assuming that they are correct, is it possible for anyone to advise the operation for conditions that can be equally well or even better, cured by obstetrical measure. Further, can anyone fail to recognize the necessity for such careful and rational examination of the patient as will enable us to operate under the most favourable circumstances whenever Caesarean section is really necessary?

There is a glamour which attaches itself to the operation of Caesarean section in the minds of the public and a kind of spurious fame. I am sure there is no need here to run against my attempts to encourage such absurdity, but perhaps it is well to suggest the wisdom of definite efforts to kill it. I know no better way of so doing than by medical men bringing their patients to recognize that, as I have said before, practically every case in which an unforseen Caesarean section due to obstructed labour is necessary is due to my rate theoretically—to insufficient or inefficient ante-natal care. Moreover, I am quite sure that, whether with or without medical guidance, the public will some day recognize the fact for themselves. It is entirely preferable, when this happens, that the medical profession should be able to say, "We told you so."

I have written a little strongly, but I think it will be seen that every opinion I have expressed is shared by obstetricians of the highest rank. I think, too, that many will agree with me that there is a real danger of obstetrics becoming a lost art. R. W. Holmes foresaw this danger ten years ago, and I do not know that it has grown any less since then. There are several ways of combating it, but this is not the time to discuss them. It is, however, a good time to remember that the conscientious medical adviser cannot justify himself when he tries to replace a lack of obstetrical knowledge by mere surgical facility.

I dislike very much bureaucratic interference with the liberty of the individual unless it is unavoidable, but voluntary co-operation would be most welcome. I think that if medical practitioners generally would furnish the Health Department with information regarding cases in which they found Caesarean section necessary they would materially help to check any abuse of the operation, and so to reduce maternal mortality.

#### Conclusions

Finally, I should like to summarize briefly the conclusions which I think must be drawn from the facts I have put forward.

1. Caesarean section done under the most favourable conditions is associated with a mortality of nearly 2 per cent, and may be followed by peritoneal adhesions, and subsequent rupture of the scar.

2. Caesarean section done under unfavourable conditions is followed by a mortality of from 10 per cent to 50 per cent, and in patients who survive the risk of after-complications is greater.

3. The only way of avoiding such operations is careful ante-natal diagnosis, and the only way of reducing their mortality when they are necessary is to remove the uterus.

4. Unless there is good reason for thinking that the uterine incision has healed satisfactorily, it may be unwise to allow a patient to deliver herself at subsequent pregnancies.

5. The treatment of eclampsia by Caesarean section is followed by a mortality of from 16 per cent to 34 per cent. Conservative treatment is followed by a far lower mortality.

6. The treatment of placenta praevia by Caesarean section is followed by a mortality of from 11 per cent to 29 per cent. Obstetrical treatment is followed by a far lower mortality.

7. The necessity for treating a transverse presentation by Caesarean section is almost unknown. When it occurs, it is also necessary to remove the uterus.

8. The statistics of hospitals in which Caesarean section is extensively done, unless they are based on a foundation quite distinct from that of other maternity hospitals, do not offer any encouragement to those who would imitate their practices.

Perhaps it would be wise to disarm criticism by admitting at once that my paper has not got a single new idea in it, or any promise or even suggestion of a new idea to come. It is more or less a plea for revision—revision to the older and saner ideas that used to govern a midwifery practice generally, and that still govern it in most places. If Truth lies in front of us, it is well to go forward, but if we have overshot her and she is behind us, it is

necessary to turn back. Discretion is the better part of midwifery.

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## Memoranda;

### MEDICAL, SURGICAL, OBSTETRICAL.

#### MÉNIERE'S DISEASE TREATED BY THE ELECTROPHONIC

WHATEVER the true pathology of this disease, it presents a definite clinical entity, is extremely rare, and most distressing. First described by Ménière in the *Gazette Médicale de Paris* in 1861, the patient died, and the post-mortem examination revealed haemorrhage into the semicircular canals. Cases have, however, since been reported as having presented all the clinical signs of the disease in which post-mortem findings have failed to give evidence of haemorrhage into the canals.

A spinster, aged 43, consulted me early in April for severe vertigo and nausea. She was deaf in the left ear, hearing only a shout at one metre, the deafness was accompanied by tinnitus.

Her first attack occurred in August, 1926, when she fell to the floor from vertigo. She noticed that the left ear had become deaf after the attack. Consciousness was not lost nor has it ever been lost during the attacks, memory was, however, almost completely abolished. She was very dejected, the attacks of vertigo had become much more frequent both by day and night. The longest vertiginous attack lasted two hours, but the average duration was about half an hour. She had to crawl on all fours about the house and in going up and down stairs, in order to try and avoid an attack.

The trouble being labyrinthine, I at once began treatment with the Zund Berguet electrophonode. Within a week very definite improvement was manifest, and at the end of a fortnight she was able to attempt walking alone. Progressively with treatment the vertigo gradually disappeared, and with it the nausea. Now, after an interval of over two months, she has had no recurrence. Her deafness is better to the extent of hearing a low voice at one metre, the tinnitus is less, and memory has been regained.

I am confident that in the electrophonode otologists possess a very useful treatment in cases hitherto deemed hopeless, but its uses and limitations have yet to be defined.

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#### PULMONARY EMBOLISM FOLLOWING CHILDBIRTH

HAVING read the cases of pulmonary embolism following childbirth reported in the *BRITISH MEDICAL JOURNAL* of November 6th, 1926 (p. 835) by Drs McCulloch and Young and on November 27th (p. 987) by Drs Spencer and Dawson, and knowing such complications to be considered rare, I am sending you the report of a similar case which was under my care.

A young woman aged 30, healthy and robust (5-p.m.), had for some years suffered from varicose veins in both legs. I saw her on September 2nd, 1922. She was then in labour, with frequent slight haemorrhages. The cord was prolapsed and the implantation of the placenta low. As the cord was extremely pulsating and dilatation was occurring quickly, no intervention was attempted. She delivered herself in the course of an hour of a healthy female child. The puerperium was uneventful, temperature, pulse and lochia being normal. She was eating and feeling well and nursing the baby, and used to remark on my visits how well she felt. Never at any time did she complain of pain in the legs. She was sitting up in bed on the ninth and tenth days. After lunch on the eleventh day she was sitting up in bed, the nurse was putting on one of her stockings, when she suddenly complained of severe pain in the chest, and fell back in the nurse's arms. When I arrived she was livid with cyanosis, dyspnoea and air hunger, she died within fifteen minutes of the onset of the sudden pain.

No necropsy was performed, but I think no doubt could be thrown on the diagnosis.

Possibly pulmonary embolism following childbirth is not as rare as the textbooks would have us believe.

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## Rebuclos.

### TO BEGIN WITH

THE stimulus which led Professor Raymond Pearl to write *To Begin With*, the subtitle of which is "Prophylaxis against Pedantry," was a doubt whether the results achieved by the "highly formalized and mechanized system of education which prevails in the land and is in such perfect accord with the cultivation of that efficient, standardized mediocrity which seems to be the very spirit and genius of American civilization" are wholly satisfactory. Professor Pearl is not the only doubter. "Our present difficulty," wrote an Oxford professor a few years ago, "is that our students often attain to technical dexterity without acquiring the mass of knowledge which is needed if their skill is to be profitably employed" (Watson's *Life of Bishop John Wordsworth*, p. 109). That was said of theological and philological research, but it is equally true of biological and medical work. Professor Pearl writes

"What I used to do was to make out lists of highly technical researches in the particular field of interest and tell the student that along that pathway was the road to salvation. This I am sure was a mistake. It started from a false assumption. The progression was forthwith to the effect on the supposition that the general has been taken care of. But nothing could be more ridiculous nonsense than such an assumption. In consequence of the widely prevailing pedagogical theory that needlework, jigsawing, salesmanship and many other kindred academic disciplines are of at least equal cultural and intellectual value in the training of our youth to the study of Greek or Latin or mathematics or chemistry coupled with the permission, if not active encouragement to the undergraduate to specialize during his mental infancy it results that when the young things begin serious graduate work a solidly grounded general background upon which to build a sound specialty is precisely what, generally speaking, they most completely lack."

Professor Pearl's remedy, or palliative, is to bring to the notice of his students books which are either essentially great literature or, at least, illuminate some aspect of human life and work (or play) which is not a mere returning subject of academic education. It is unlikely that any two men would approve the whole of Professor Pearl's list, it is still less likely that any educated man would object to the inclusion of a very large majority of the items, and we hope, but do not much expect, that young men and women turning out the es for the degree of Doctor of Philosophy will not only read Professor Pearl but take his advice. For indeed, although Professor Pearl writes easily and wittily about it, the evil which he sees is a very great one. At least no medical journalist will underestimate it. Every year hundreds of papers are published on a level of technical efficiency which was not attained a generation ago by any writers or only by writers of the greatest ability. But the general value of these papers in an intellectual sense is greatly below their technical standard. We would even go so far as to say that while the best papers now printed are as good as or better than the best printed fifty years ago, much more pure nonsense—more both absolutely and relatively—now finds its way into print than in the past. The reason is, as Professor Pearl contends, that we are producing not educated human beings but technicians. In 1848 Macaulay made this entry in his diary

I received to-day a translation of Kant from Ellis's friend at Liverpool. I tried to read it but found it utterly unintelligible just as if it had been written in Sanscrit. Not one word of it gave me anything like an idea except a Latin quotation from Persius. It seems to me that it ought to be possible to explain a true theory of metaphysics in words which I can understand.

We may conceive the scorn with which our young post-graduate philosophers would smile at so philistine a demand. Metaphysics and medicine we shall be told have progressed so far that nobody can hope to understand the description of any research within their fields without prolonged technical training and, as everybody cannot be technically trained in every branch—even of his own profession—it would seem to follow that we must all be

mutually incomprehensible. Perhaps this is true, but there is another hypothesis which covers this fact. It is that young people are now so poorly educated that they can no longer express themselves in what was once the common speech of cultivated men, and take refuge in jargon. The dean of the faculty of letters of Paris—quoted by Professor Pearl—complains that

"in the papers on my desk are lines that are ridiculous. If they were published they would be taken for the invention of a humorist. In a single page of Latin we commonly find a dozen examples of bad spelling. We don't write French any longer because we don't speak it. That's the whole difficulty."

Perhaps there is no remedy. It is so hard to earn a living that very few people can afford to look upon education as something more than a means toward a pecuniary end, and that sort of education is technical education. Still, perhaps something may be done by calling the attention of our post-graduate to good books. Professor Pearl may possibly save a few souls and even save the world from a few doctoral theses.

### THE HISTORY OF BCG

Whatever may be the outcome of Professor Calmette's work on the bacillus Calmette-Guérin (BCG), there can be no doubt that his researches and theories are ingenious and interesting. Criticism of this sort is far from being purely what of the destructive variety, alleging, for example, that the statistics are insufficient, no properly controlled or unconvincing. Professor Calmette has now published, in collaboration with Dr. Guérin Boquet and Négre, a summary of his researches in a volume entitled *La Vaccination Préventive contre la Tuberculose par le BCG*.

The argument of the book is that in tuberculosis immunity—meaning thereby resistance to reinfection—only exists when the body harbours some living elements of the parasite, and that when the lymphatic glands are infected by a few slightly virulent bacilli the individual is pre-immunized against virulent infections. He quotes J. Parrot of Nancy as stating that in tuberculous families 40 per cent of infants under 2 years of age, and 50 per cent between the ages of 4 and 10, react to tuberculin while in non-infected families, although there is no reaction in children under 2, 31 per cent react at 10 years of age.

The first part of the book before us is devoted to an examination of various attempts that have been made to discover a method of antituberculous vaccination. The attempts appear to show that it is impossible to produce immunity by means of dead bacilli. Experiments with different varieties of bacilli, sometimes modified by various physical or chemical agencies, have suggested that antituberculous vaccination might be efficacious if living bacilli, deprived as far as possible of their aptitude to produce extensive follicular lesions, were used. It was on these lines that Professor Calmette began, about 1903, to experiment with the bovine bacillus.

The second part of the volume describes the experimental study of the BCG. Having arrived at the conclusion that in cattle lasting tolerance of tuberculous infection required the presence in the animal of living bacilli, and seeing that the bacilli in the glands should be incapable of producing tuberculous lesions, Professor Calmette and his collaborators tested the efficacy of pre-immunization by the intravenous injection of the BCG in cattle kept in contact with infected animals. They found the method entirely satisfactory, but the duration of protection did not exceed eighteen months. Incidentally they formed the opinion that a positive tuberculin reaction could not be considered as a criterion of infection, but as a criterion of immunity. Consequently they consider that it loses all diagnostic importance, inasmuch as when everybody susceptible to tuberculosis has been artificially impregnated with avirulent bacilli, they will all react in the same manner as infected subjects.

According to Professor Calmette the immunity is exactly analogous to that produced by other living attenuated virus-vaccines, such as vaccinia, the enteric vaccine, and

<sup>1</sup>*To Begin With*, being *Prophylaxis against Pedantry*. By Raymond Pearl. New York and London. A. A. Knopf. 1927. (Cr. 8vo pp. 86. 5s. 6d.)

<sup>2</sup>*La Vaccination Préventive contre la Tuberculose par le BCG*. Par A. Calmette avec la collaboration de C. Guérin, A. Boquet et L. Négre. Paris: Masson et Cie. 1927. (64 x 94, pp. 250. 40 figures. 25 fr. sans majoration.)



that for hydrophobia. As with these vaccines, the immunity only lasts for a comparatively short time. The sole difference is that it is difficult to apply the BCG to adult subjects because so many are already infected by virulent bacilli. Hence the need for using the BCG in the early days of the individual's existence.

After his experiments on cattle and on rabbits, Professor Calmette obtained a trial of his BCG by Dr. Wilbert on a series of monkeys in French Guiana. These monkeys were immunized either by a single subcutaneous injection or by five ingestions by the mouth. The pre-immunization lasted at least a year, and could be renewed by fresh ingestions yearly.

In the third section of his book Professor Calmette describes the preparation of his cultures, the physical and chemical characters of the BCG, and the histological changes associated with its injection. One milligram of BCG suffices to produce tuberculin sensitivity. But Dis. Boquet and Negro have established that immunity and tuberculin hypersensitivity are distinct and independent states in organisms infected by the Koch bacillus. Immunity comes later than hypersensitivity. In many cases the extinction of tuberculin sensitivity is not accompanied by any lessening of the resistance to reinfections. Although in many animals a large dose of BCG may cause the internal organs to be studded with follicles or tubercles, these follicles never caseate, and in process of time completely disappear.

The last part of the book is devoted to the methods and results of administration of BCG to infants, and it is against this part of Professor Calmette's work that criticism has mainly been directed. The justification for this criticism is perhaps to be found in the chronicity of tuberculosis, the time required for watching and comparing patients, and the ease with which patients disappear from view when long periods of observation are necessary. Thus, although many thousands of infants have now been pre-immunized in France, the statisticians who have examined the figures have only been able to deal with a small proportion which have been definitely followed up. M. Moine reported on 882 cases treated in the course of two years and seven months. Dr. Ott dealt with some 332 cases in the department of Seine Inférieure and Le Havre. Dr. Briand studied 1,877 cases of pre-immunized infants, but whether this number included one, both, or neither of the two other groups is not clear.

It is evident that the time has not yet come when a definite opinion can be given on the pre-immunization of infants with BCG. But it is equally evident that the work of Professor Calmette and his colleagues cannot be passed over without investigation. Professor Calmette's proposition is that the only way to produce immunity to tuberculosis is to provoke a state of what he calls pre-immunization during the first days of life, to ensure as prompt an impregnation as possible of all the lymphatic organs with a sufficient number of bacilli to form a true vaccine, and to see that these bacilli are deprived of virulence and at the same time capable of producing defensive substances. He thinks that BCG meets these requirements. But he admits that against intrauterine infection by the so-called tuberculous ultra-virus, investigated by A. L. Calmette, and others, BCG may fail to operate, and that it may form an insufficient protection against massive infections. The case is presented in an interesting manner in the book.

#### FORENSIC PSYCHIATRY

*An Introduction to Forensic Psychiatry in the Criminal Courts*, by Dr. NORMAN EAST, is a book which fills a gap in forensic literature. Of recent years much attention has been paid to the mental condition of persons accused of crime and whilst there is no scarcity of books dealing with psychiatry, these treat the question of mental disease from the medical rather than the forensic aspect, a distinction which, unfortunately, mental experts sometimes fail to appreciate. Dr. East before his appointment to be

medical inspector of prisons, was for many years senior medical officer of Brixton Prison, and in that capacity had a very extensive experience in this branch of forensic work. The results are embodied in his book, which discusses some of the same subjects as the late Dr. Sullivan's *Crimie and Insanity*, reviewed in our issue of June 28th, 1924 (p. 1151). Dr. East has had the advantage not only of dealing with insane criminals, but of having under his care persons with regard to whom the question of insanity has been raised but not admitted by the courts. This has afforded him much material, and the chapter on criminal responsibility, a subject bristling with difficulties, is written in an extremely clear and interesting manner.

We do not know of any work which gives such an excellent summary of the matter. Certifiable insanity and a condition absolving an accused person from legal liability are by no means the same, as the author points out, a fact which may at first mislead a medical witness. It does not follow that because a person charged with an offence is found to be insane that he should be certified, or that because he is certifiable he is not responsible for a particular crime. The question of certification frequently presents difficulties in forensic practice, and has lately become so prominent, owing to the number of actions against medical men, that many practitioners are unwilling to accept responsibilities in this matter, as every police surgeon is aware. The inclusion in the next edition of a chapter on certification would add to the value of a most excellent work. The book is clearly written and well illustrated with cases, a point of great value in forensic work. It will make an appeal not only to the mental expert but to all engaged in criminal cases.

#### NEURO-PSYCHOLOGY

*Thought and the Brain* is the title of a translation from the French of a valuable monograph by Professor HENRI PIERON. The author, who is the editor of *L'Année Psychologique*, has made a number of notable contributions to neuro-psychology and is a distinguished and erudite writer. The ideal of science, he observes in his preface, is the highest possible degree of unification, and certainly as far as the problem of body and mind is concerned it undoubtedly aims at the correlation of psychological facts with physiological mechanisms. This view would appear to be sound, as also his contention that, whatever certain theorists may say to the contrary, neuro-physiology does often provide an adequate representation of the laws established by psychology, whereas the study of the functions of the brain frequently supplies a satisfactory explanation of psychological phenomena. The validity of such views is made abundantly evident throughout this book, which provides an excellent critical survey of modern opinions regarding the functions of the nervous system.

The book is divided into four parts. In the first an outline of our knowledge of neuro-mental functioning is given, a lengthy chapter being devoted to the problem of localization or the differentiation of function in the cortex. In the second part are considered the receptive and motor functions—the elementary modes of sensorimotor thought. The third part deals with verbal function and thought—the cerebral mechanism of language—and with aphasia. The author gives an admirable presentation of this most difficult problem. The final section is concerned with the effective regulation of mental action, both its role and mechanism being briefly considered. The reader will probably wish that these concluding chapters had been considerably expanded in view of the importance of their subject-matter for our understanding of normal and abnormal behaviour.

This book will interest the practising physician, the neurologist, and the psychiatrist. Mr. Ogden, who has translated it, has done a service to English-speaking readers by introducing the work of a writer who has much to say to communicate.

<sup>1</sup> In *An Introduction to Forensic Psychiatry in the Criminal Courts*. By Dr. Norman East. M.D. (Lond.) London: J. and A. Churchill, 1927. (Dn. 8vo pp. ix + 381 net.)

<sup>2</sup> *Thought and the Brain*. By Henri Pieron. Translated by F. J. Ogden. The International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trenchard & Co. Ltd., New York: Harcourt, Brace and Co. Inc., 1927. (Dn. 8vo pp. xvi + 532 20 figures 12 6d net.)

# PHYSIOLOGICAL CHEMISTRY

THE vitality of the study of biochemistry in the United States and presumably, the dissatisfaction with its teaching is testified by the number of new textbooks of the subject which continue to come to us from across the Atlantic. Some have been so bad as to have established no reasonable excuse for existence. Others have been of sufficient merit to be welcomed without reserve if without enthusiasm. Not one—if we may be so rash as to seek to identify the classic in contemporary literature—has borne those evidences of inspiration which would place it beside the older masters whose teaching “shall not grow old.”

The latest arrival is *Introduction to Physiological Chemistry* by Professor MAYER BONANSKY. While it is unlikely to achieve the most favoured place in the library of the teacher it is certainly not to be classed amongst the bad books. The author's plan is conventional. Indeed, tradition and rigid curricula make it difficult for a textbook to attempt an original approach to the subject. The account given of the chemistry of carbohydrates, fats, and proteins is followed by digestion, enzyme action, and putrefaction. The chemistry of the blood and lymph next invite attention and then discussion is directed to inter-meat metabolism, the urine, and the internal secretions. The volume concludes with chapters on animal calorimetry and nutrition. These are on the borderland of biochemistry and physiology and are often but poorly handled in such books as this. In this instance however they definitely embellish the work. These physico-chemical principles which have thrown light on many characteristics of protoplasm and many intricacies of function have been introduced where they aid precision but have not been laboured to the point of wearing the biological student uncomfortable in the company of mathematical formulae.

Within the limitations of detail which the author has imposed upon himself the book is comprehensive and coherent and offers a nicely balanced survey of a field whose borders touch the territories of many sciences.

## NOTES ON BOOKS

THE second number of *Antiquity* a quarterly review of archaeology, edited by Mr O. C. S. CRAWFORD is as good as the first in particular the standard of illustrations—an important part of a publication of this kind—both in the text and on special paper is well maintained. It contains an article by Professor A. H. SAVILE on the Arvan problem with a subtitle fifty years after—after that is his early writings about the Aryans and the Hittites. A great many facts have been collected in the interval. Professor Savile still hesitates to generalize but he says that it has proved that there was continuity of culture and trade, possibly also of language or race or both between north-western India and the valley of the Euphrates at the very beginning of the Bronze Age. An article by Dr E. A. HOOTON “Where did man originate?” is also wisely inconclusive but he goes so far as to reject the theory of a central Asiatic area of dispersal for the protohuman stocks. The annual subscription payable to Mr Crawford, Nursing Southampton is £1. Separate numbers can be obtained from Mr John Pellows, Gloucester price 5s. 6d.

In preparing their book on the *First Principles of Chemistry* DOORSON and BERRY have evolved a scheme of presentation founded on their own appreciation of those principles. This is in contrast to many introductory textbooks which have been prepared on the plan of making an older book more modern by adding newer discoveries. Such books usually have all the defects that result from putting new cloth upon an old garment. The authors of the book before us have revised the facts of chemistry and the reactions which typify general principles in appropriate connexion with their relation to modern theory. Our appreciation of the book is so high that it seems worth while to mention one or two of the few imperfections we have found. The formula  $\text{Na}(\text{SiO}_3)_2$  (p. 42) is not correct and may prove misleading. There can be no objection to writing  $\text{Na}_2\text{O}(\text{SiO}_3)_2$  nor should there even be any prejudice against

the expression  $\text{CaO} \cdot \text{SiO}_2$  for  $\text{CaSiO}_3$  where it suits the context. We suggest too that the sentence (p. 121) “When heated with caustic alkalis sulphur passes into solution in the form of the metallic sulphide, might be enlarged to show that a part of the sulphur forms sulphide while another part enters into the composition of an oxyacid thus behaving like phosphorus, chlorine, and other non-metallic elements. The learner who works conscientiously from this little volume will lay a sure foundation for all that he may afterwards need to build.”

The nursing profession is already well supplied with textbooks on midwifery but Professor THORNTON has the right to say “I would like to see a book which would deal with the normal midwifery for Midwives and Nurses.” The book embodies a course of lectures given to the nurses at the Bournemouth Hospital and deals almost exclusively with the normal process of parturition. The main principle of the book is that midwives should understand clearly what is normal so that they may be able to help in every case showing abnormality. He forbids them in any circumstances to make vaginal examination and urges the adoption of a rectal examination in the few cases where abdominal palpation does not lead to satisfactory diagnosis. Such a reference only is made to common abnormalities such as breech and hinder presentations. The author maintains that the nurse's duty ends when he has ascertained that the case presents difficulties but the country midwife ought to know the immediate treatment of the commoner complications pending the arrival of medical help which he should be able to do. In the management of the third stage of labour the nurse is advised to leave the uterus severely alone. To quote the author's words: “Think of the uterus as a hot roughly hot tempered irritable old woman with a gun.” The chapter on a physician's midwifery is misleading for surely blue and white physicians are not the same nor is the treatment identical for the two varieties. A short chapter on aphorisms is included but for a convincing physician's ideal is to present a full book of normal midwifery but it is probable that this fuller reference to the abnormal would be desirable and that while the book is hardly adequate for a nurse or a physician of following with intelligent interest all the cases which may come under his care.

Dr I. F. HUNTER's monograph on gynaecology in the *Corpus* and *Pliny* which is dedicated to the sixth international congress of the history of medicine recently held in London and Amsterdam (see JOURNAL, August 20th 1927 p. 317) is divided into two parts devoted to a treatment in obstetrics and gynaecology respectively. In his introduction Dr Hunter points out that the classical and archaeological writings contain a mass of material on drugs and surgery in the ancient schools. It could not be difficult to form collections on the evolution of the gynaecology of that time in the present day from a study of a general textbook on pharmacology. Both *Diocorides* and *Pliny* quote extensively from older authorities but while *Pliny* was a conscientious if extremely credulous and egoist physician *Diocorides* was a medical practitioner who has left a somewhat more critical and systematic work probably based on his own experience. Although there was an interval of more than four centuries between the *Corpus Hippocraticum* and the age of *Diocorides* and *Pliny* gynaecology and obstetrics did not undergo any essential advance in the interval. The names of diseases were about the same the symptoms were not more closely defined and drug treatment at follow of the same lines in the first century A.D. as in the age of Hippocrates.

In *New Poems and a Preface*, Mr HERBERT MOORE PIM who is not a member of the medical profession contributes some Hospital Lyrics dated last year from the Cromer Cottage Hospital and in a footnote appeals for more generous support than our hospital has now received. In a number of smoothly phrased sonnets he pokes playful fun at the medical men who appear to have ventured to explore his chest at the ways of matrons and at the nurses who trade his bed with more or less success. His gratitude is more outspoken to one specially, to—

Doctor may have a heart of stone  
The Dentist's heart is like your own  
In fact he has such tender ears  
He cannot hurt you if he tries

The preface dated this year from Kelling Sanatorium, Norfolk, deals in rather pathetic tones with the fate of poets.

*Normal Midwifery for Nurses and Nurses* By C. W. THORNTON. 1 Ch. Camb. Oxford Medical Publications. London: Milford Oxford University Press. 1927. (Demy 8vo pp. xx + 228 2s. 6d. net.)  
*Die Frauenkrankheiten des Mittelalters* Von I. Fischer. Wien: Julius Springer 1927. (6 x 9 1/2 pp. 26 R.M. 2.)  
*New Poems and a Preface* By Herbert Moore Pim. Lond. & Bristol: Gales and Washbourne Ltd. 1927. (Fcap 8vo pp. viii + 70 frontispiece 6s.)

*Introduction to Physiological Chemistry* By M. BONANSKY. Phil. & Nat. Sci. (1927) 2nd ed. 4s. 6d. net. London: Chapman and Hall.  
*First Principles of Chemistry* By D. OORSON and B. BERRY. 2nd ed. 4s. 6d. net. London: Chapman and Hall.  
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## THE STATE OF THE PUBLIC HEALTH

## SIR GEORGE NEWMAN'S REPORT FOR 1926

ENGLAND AND WALES

[First Notice]

In his annual report, which has now been issued,<sup>1</sup> Sir George Newman deals with the state of the public health in England and Wales during 1926. The statistics on which it is based are the Registrar-General's returns relating to births, deaths, and infectious diseases, together with the various records in respect of invalidity obtained through the operation of the National Health Insurance Acts. Supplementary data have been derived from the reports of medical officers of health, and from investigations by medical officers of the Ministry of Health and other governmental departments concerned with the well-being of the people.

This year's report is appreciably larger than the previous one, it contains twelve chapters and four appendices. A prominent feature is the emphasis laid on the danger of drawing erroneous conclusions from statistics, particularly when the original returns cannot be regarded altogether without suspicion. When this primary information is incomplete or inaccurate the deductions drawn will have a similar character.

*Registration of Causes of Death*

An example of this is furnished by the official recording of deaths, from which much information about the incidence of ill health is necessarily derived. The accuracy of death certificates and the findings of coroners' courts have consequently a collective importance which is not always fully recognized. Sir George Newman believes that the official records of mortality contain actual errors due to the omission of relevant information, either deliberately or because it was unobtainable. Thus he suggests that if the mileage of motor vehicles was known and taken into consideration it might be found that this was relatively less dangerous year by year, though the absolute danger to life in this respect is increasing rapidly. Moreover, tabulation of these accidents by localities might reveal facts of considerable significance, and it is not stated what proportions of the victims were drivers, passengers, and pedestrians. In the case of deaths due to cancer of the liver and gall bladder there is often failure to intimate the primary site of the disease, and it is considered that when such an operation is complete removal of the breast for carcinoma has been performed and the patient dies subsequently of cancer elsewhere in the body, this previous event is sufficiently significant to require its being recorded on the death certificate. The omission of relevant information assumes a special importance in the case of deaths attributable to alcoholism, and Sir George Newman devotes attention to this obvious cause of false deductions. He compares unfavourably the present system of open certification with the practice in Switzerland, where the certificate is a confidential document, and the friends of a deceased person have no access to the statement of causes of death. He does not suppose that the records in this country are thereby absolutely vitiated, and thinks that the conclusions drawn annually as to the decline in intemperance are probably substantially sound, but he believes that there would be a considerable extension of knowledge as regards the real toll taken of human life by the intemperate use of alcohol if death certificates became confidential documents. Similarly the sensational index afforded by the number of children suffocated in bed or "overlaid" by adults is open to suspicion when used as evidence of alcoholism; other factors might conceivably become more prominent if greater care were exercised in certification. Sir George Newman also draws attention finally to the unsatisfactory term "status lymphaticus," and in a careful examination of the problems concerned, describes its employment since 1911, when it was first used as a heading in the publications of the Registrar-General. He insists that the using of a diagnosis on the weight of the thymus is unscientific owing to the marked variability of this gland, not in the present state of knowledge,

can the histological appearance be used safely as a criterion. He believes that status lymphaticus is a mere verbalism, and that the current textbook teaching on the subject is erroneous; he goes so far as to use the terms "medical mythology" and "obscure intusism" in this connection. He concludes that it is urgently necessary to ensure correct registration of the cause of death since, apart from social and legal issues, it supports the fabric and vit of preventive medicine. Sir George Newman's careful examination of this question will draw attention anew to the provisions of the Births and Deaths Registration Act, 1926, which came into force last July, and it may be recalled that some account of the reforms introduced, particularly in respect of death certification, appeared in our issue of June 18th (p. 1118).

*Births and Deaths*

The birth rate has again declined, the fall in 1926 being 0.5 per 1,000 of the population as compared with the rate in 1925, and 7.7 under that for 1920, which marked the climax of the temporary rise in the birth rate following demobilization. The death rate similarly fell, being 0.6 per 1,000 less than in the previous year; it is now approaching the rate in 1923 (11.6), which is the lowest on record. A slight upward trend in the mortality rate is expected to occur soon, this is believed to be inevitable owing to the change in distribution of the age groups, for a declining birth rate implies an increase in the average of the population. It will not necessarily indicate any strengthening of the conditions favouring mortality.

The following causes of death were prominent during 1926, the figures in each case being the proportion in 1,000 deaths: diseases of the heart and circulatory system, 188, bronchitis, pneumonia, and other respiratory conditions excluding tuberculosis, 150, malignant diseases, 117, affections of the nervous system, 103, and all forms of tuberculosis, 82. Increases were recorded in the deaths from diphtheria, cancer, and diseases of the heart, but these were more than counterbalanced by a decline in the deaths from influenza, pneumonia, bronchitis, and the diseases of early infancy. The reduction in the infantile death rate affected mainly the age-period 3 to 12 months, the mortality under the age of 4 weeks still remains relatively high. Whooping cough was a serious factor, but there was a decline in the number of deaths from influenza. The low level of infant mortality in 1926 may be reckoned as the equivalent of the saving of some 40,000 infant lives. It also implies that the physical condition of children between the age of 1 to 5 years has improved, and that hygiene, both personal and public, is better. The mortality among women in childbirth remains high, in 1926 2,850 women died, puerperal fever accounting for as many as 1,109.

*Small-pox*

In 1926 in England and Wales 10,141 cases of small-pox occurred as compared with 5,354 in 1925, 3,797 in 1924, and 2,504 in 1923. The disease was for the most part mild in character and confined to the northern parts of the country. The 5,354 cases of small-pox in 1925 were scattered through twenty-two counties, only fourteen being so affected in 1926, those with the highest incidence were Durham (6,645 cases), the West Riding of Yorkshire (1,215), Derbyshire (882), and Northumberland (843). The disproportionate prevalence in Durham is attributed to the operation of various factors, thus there were reported invasions of the disease from Northumberland, two districts were backward in taking active measures to limit the spread of infection, and it was difficult to obtain a adequate number of beds for isolating the patients. Reference is made to the outbreaks in London and the Willesden urban district to indicate how easily the infection of small-pox may be introduced into England. Sir George Newman comments briefly: "It must be quite plain, that the facts and figures recorded indicate an increasing tendency to small-pox, and the English people must make up their minds whether they prefer small-pox to vaccination." He adds also in the report that in the world generally the incidence was low in 1926, the only European countries in which more than 100 cases were reported during the year.

<sup>1</sup> *On the State of the Public Health. Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1926.* H.M. Stationery Office. (Med. 810 pp. 221 3s. net.)

England, France, Italy, Spain, Portugal, and Russia. There was, however, marked prevalence in Egypt and Algeria, and an epidemic with over 2,100 deaths at Rio de Janeiro, while 957 cases with 171 deaths occurred between January 1st and May 15th, 1926, at Los Angeles.

#### Various Infectious Diseases

During 1926 were notified 2,739 cases of enteric (including paratyphoid fever) as compared with 2,779 in the previous year, 4,121 in 1924 and 3,211 in 1923. Scarlet fever cases fell to 81,672 from 91,362 in 1925. Sir George Newman expresses the hope that the early administration of scintillated antitoxin serum in suitable cases will reduce materially the period of detention in hospital of these patients. There were 51,669 cases of diphtheria notified in England and Wales during 1926 with 2,094 deaths, as compared with 47,720 cases in 1925, and 41,680 in 1924. The warning is given that immunization is too often postponed unduly until an epidemic occurs, full protection cannot then be assured, owing to the fact that the condition of immunity requires at least two or three months for its development. The diphtheria death rate increased slightly from 0.071 per 1,000 population in 1925 to 0.077 for the year under review. Until the end of 1926 there was no evidence of influenza being of particular importance statistically, but in the first week of January, 1927, an epidemic began in London and moved slowly northwards. Sir George Newman gives an account of this epidemic, and concludes that the recrudescence of influenza was rather more serious than the outbreak in 1924, but less so than that of 1922. In age distribution and general type its features were those of the pre-epidemic period rather than of 1918-19. There was an associated increase in pneumonic notifications. Two locally contracted cases of bubonic plague occurred in Liverpool in 1926 but the cause was not traced. One case of typhus of unknown origin was detected in Sunderland.

#### Acute Poliomyelitis

Special consideration is given to acute poliomyelitis in view of its increased prevalence during 1926, when 1,159 cases were reported with 176 deaths. The outbreaks since 1897 in various parts of the country are tabulated. In 1926 the disease began its epidemic phase in the middle of July, and continued till the end of the year, extending through the mild winter, including the first two months of 1927. The disease was particularly prevalent in Essex, Kent, and the Midlands but the cases were not very numerous in the most populous areas, and in London the incidence was relatively slight. The infection usually involved small groups of population in rural districts. Details are given of the outbreaks in Leicestershire, Essex, and Kent. It is concluded that there is at present no evidence to incriminate the milk supply in this connexion. No social predilections were shown by the disease, and it appears that the home conditions were not so concerned in its spread as they are in other contagious diseases. Clear evidence of contact transmission was obtained in two outbreaks, and it seems to be established that the infection may be conveyed by persons suffering from acute typical attacks, or from the mild and atypical forms; it may also be spread by healthy persons who have come into contact with the diseased without being affected by it, or by chronic carriers who have apparently recovered fully. The infectivity in acute cases is greatest during the early stages of the malady. The possibility of transmission by insects, food, dust, or sewage seems to be remote and human contact remains the chief, if not the sole, probable means of spread. The general evidence points to an incubation period of four to five days though shorter and also much longer intervals have been recorded. Details are given of the clinical manifestations, the diagnostic criteria and the prevention and treatment of the disease. Sir George Newman concludes that infection is probably widespread in a community during an epidemic, but that only a small proportion of susceptibles are attacked. He emphasizes the importance of early diagnosis and of providing institutions equipped to give special treatment with a view to preventing muscular weakness or permanent deformity.

(To be continued)

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

### ANNUAL MEETING IN 1926

THE annual meeting of the British Association for the Advancement of Science, which was founded ninety-seven years ago, began in Leeds last week when Sir Arthur Keith, M.D., F.R.S., Conservator of the Museum of the Royal College of Surgeons of England, succeeded the Prince of Wales in the presidential chair. The Prince, who was still in Canada at the time of the meeting, sent a message in which he recalled that in his address at Oxford last year he had dealt with the relations between science and the State. The choice of this topic had, he thought, been justified by the proceedings of the Imperial and Colonial conferences, which both had emphasis upon the value of scientific research in relation to imperial development, and both set up special committees on research. Such events put it beyond doubt that one of the main objects of the British Association was in process of achievement—namely, that of 'obtaining more general attention for the objects of science.' The Prince then referred to the splendid generosity of Sir Alfred Arrowood in making a gift of £10,000 for the general purposes of the Association, to be expended in the course of twenty years. In conclusion, the Prince said that he could wholeheartedly congratulate the Association on its choice of his successor for Sir Arthur Keith's name stood very high in the science of man's origin and early biological history.

Before Sir Arthur Keith began his address he read out a letter of thanks to the Prince of Wales, in which, also, stress was laid on the inspiring message the Prince had given at Oxford to the Association, and through it to men of science throughout the Empire. His appeal had already borne fruit. Closer union between men of science overseas and their colleagues at home in their endeavour to solve problems of imperial concern was within sight.

The President then delivered his address, which is printed at page 459. In acknowledging it its conclusion a vote of thanks which was given with great enthusiasm, Sir Arthur Keith announced that the Council of the British Association was considering the advisability of purchasing for the nation the house and surroundings in which Charles Darwin worked and which were thus the cradle of ideas that had transformed the outlook of man.

### THE SECTIONS

The British Association publishes at the time of its annual meeting a *Journal of Scientific Transactions* which not only serves as a *Journal* of the various meetings, but also gives concise abstracts of many of the papers. The publication is of interest also in affording some idea of the all-embracing scope of science. From the nucleus of the earth to infinite space there is hardly a phenomenon of the universe that escapes its scrutiny. The approach, naturally, to the man of science but the ordinary citizen, in these strenuous and somewhat perilous times, cannot be so indifferent to such subjects as for example, mental stress and the psychology of accidents.

### HUMAN PHYSIOLOGY: ITS STUDY AND TEACHING

Taking for the subject of his presidential address the development of human physiology, Dr C. G. Douglas, F.R.S. (Oxford) sought to place before the members of the Section of Physiology a picture of the real task of physiology—namely the study of the phenomena which characterize normal life as shown in the individual organism. Bearing this definition in mind it was clear that the very great advance in knowledge which had been made in the last fifty years did but take us to the threshold of the subject, investigation had been analytical the organism had been treated as consisting of more or less independent systems—circulatory, respiratory and other—which were separately investigated in detachment, as it were, from the individual organism and studied apart from their normal setting. Moreover, the discoveries, with some exceptions, had been made in animals by experimental methods, and often under the influence of anaesthetics—

that is to say, not under normal conditions, but under the pathological conditions of traumatism and intoxication. Invaluable as the information reaped from these researches had been, it did not meet the demands of the definition, nor give the full answer that we required. In a few instances the experimental procedure had been of a nature not to interfere with the regular bodily functions of the animal, this was so, for example, in Pavlov's researches on the digestive juices and those of Rubner on nutrition and energy liberation. Apart from these exceptional instances, however, it could hardly be denied that the traditional methods had their limitations, and Dr Douglas contended that in the study of normal physiology man himself was in many instances a far more advantageous subject for investigation than were the lower animals. In support of this contention he adduced several instances in which valuable information had been reaped from investigations on the human subject, and he claimed that for gaining any adequate conception of what is really implied by life, the method could be replaced by no other.

The history of the development of our idea about respiration afforded, he said, a striking example of the value of human physiology. The researches of Haldane and Priestley by this method had shown that the activity of the respiratory centre depended on its sensitiveness to the concentration of CO in the blood—a trifling rise causing hyperpnoea, a trifling fall causing reduction or cessation of breathing. It became evident that the activity of the respiratory centre was proportional to the mass of CO produced in the body and carried to the lungs, and this in turn implied that the quantitative correlation of the ventilation of the lungs with changes of metabolism in the body as a whole was ensured by chemical means. From this work we gained our first insight into the amazing delicacy of true chemical correlation within the organism. It was subsequently recognized that the respiratory centre was sensitive not to CO<sub>2</sub> is such, but to changes in the H-ion concentration of the blood, and that lactic acid accumulation resulting from muscular activity had to be taken into account. Having grasped the fact that breathing was automatically adjusted to tissue metabolism, it became obvious that the delicate adjustment of the breathing in conformity with the various changes in the activity of the different tissues and organs would be valueless without an equally delicate coordination of the circulation, since on this depended the transport of gases between the tissues and the lungs.

To ascertain the full facts of the regulation of the circulation and its adaptation to the varying needs of the body was a more difficult problem than the regulation of breathing, but a beginning had been made. Methods had been developed for determining the circulation rate in man, for measuring the variations in the amount of blood expelled from the heart under different conditions of bodily activity, the extent of the changes in gas content of the venous blood entering the lungs, and the relative part played by alterations in the pulse rate and in the systolic discharge at each beat. These and other researches referred to by the lecturer showed something of the part that human physiology had already played in the study of vital phenomena. The evidence of balanced interaction of the functions of the different organs with the preservation of the functional integrity of the whole, which was so convincingly brought home to us in experiments on the human subject, had made us appreciate the fact that for the comprehension of life it was the normal human organism which should be regarded as our physiological unit.

Finally Dr Douglas expressed the opinion that the teaching of physiology would be more satisfactory if human physiology occupied a more prominent position, not so much as regards advanced teaching, but in the course taken up by the majority of students who had a medical career in view. So far as elementary practical physiology was concerned, as distinct from biochemistry, reliance was still placed largely upon an experimental treatment of the rudimentary phenomena exhibited by amphibian muscle and nerve, and there seemed little doubt that a serious attempt to incorporate, even in elementary courses, experiments in human physiology would be amply justified in its results.

#### MENTAL DISSOCIATION

Dr WILLIAM BROWN, the President of the Section of Psychology, gave an address on mental unity and mental dissociation. Its substance may be stated as follows. Considered in its most general aspect, man's mind was a unity—one, and indivisible. So too with regard to its function, in the broadest sense mind had but one fundamental function—a purposeful striving toward a definite equilibrium, the calm of which was satisfaction. But, like all other things, mind had undergone development from the simple to the complex in its varied experience. It had employed partial activities to aid and favour the attainment of its one fundamental objective, and its structure had been moulded without being divided, to subserve these partial ends. Mind, therefore, although one, was not homogeneous, but exhibited structure, and presented itself as an association of partial activities developed by varied moulding of a single originally homogeneous substratum. As the mind could, by association, combine partial activities to its advantage, so also it could reject partial activities which, in changing circumstances, opposed its fundamental aim. This dissociation was a normal, not a pathological, process of the mind—a process, not of annihilation, for the mind could not obliterate the structural modification upon which the partial activity had depended but one of reduction to mere potentiality, and degradation from participation in the practical affairs of life. Since the structural modification remained, circumstances might revive the potential partial activity into actuality. It might be supposed that if a complex group of such potential activities was suddenly brought into play and if at the same time the corresponding normal, but contrasting, group was degraded, the individual would exhibit, not a division of the mind, but a new personality. Instances of alternating personality of this kind were well known and it was in such cases that the pathology of dissociation could be detected. It was not that dissociation was in itself an abnormal process—the contrary was the case—but that in these instances it was incomplete, a tendency which was repressed was, as it were, rejected and accepted at the same time—rejected by clear consciousness, but still clung to by the mind.

Dissociation is a normal process might, however, be abnormal in its incidence, just as the contraction of the uterus, although a useful function, might be inopportune if untimely. The dissociation, instead of suppressing an undesirable activity might affect a part of the normal mental processes and put out of action an essential element in the normal working of the mind. Cases of shell shock afforded examples of this, a forgetfulness of the events immediately succeeding the catastrophe indicating the loss of a partial mental activity. The unity of the mind was not destroyed, but its adaptation to the changing circumstances of existence was impaired. The physical phenomena associated with the shock, such as tremors, mutism and paralysis, which would pass away under the influence of an intact mind, were severed from their psychical counterpart—feared—and became fixed. While treating cases of shell shock in France, Dr Brown found that a large proportion showed a more or less extensive amnesia for events that had occurred immediately after the explosion. These patients were easily hypnotized, and under a light hypnosis the lost memory could easily be restored, and he found that if at the same time the terrifying emotion were also recalled, the accompanying physical symptoms disappeared spontaneously. This result he explained in terms of a theory of reassociation (*BRITISH MEDICAL JOURNAL*, June 14th, 1919) by re-associating the whole of the lost experience in all its emotional vividness the physical manifestations became linked up with their psychical counterpart, the mind became re-synthesized, and the physical symptoms, coming once more under the sway of the entire mind, could disappear.

#### LITERATURE OF THE VAS DEFERENS

In the Section of Zoology the committee (Dr F. A. F. Crew, Mr T. T. Cunningham and Professor J. S. Huxley) for the experimental investigation of the effects of vaso-



ligation, cryptorchidism, grafting etc., on the seminal tubules and interstitial tissue of the testes of animals, presented a further report. The right vas deferens was ligatured, in the rat, in two places and a piece between the ligatures cut out. The animal was killed 104 days after the operation. The end of the vas next to the operated testis was found to be closed and the spermatic blood vessel uninjured. Abundant active sperm were obtained from the epididymis of the non-operated testis, and the operated testis showed perfectly normal spermatogenesis. The epididymis of the operated side was distended with semen its diameter being twice the normal. Experiments on ligation of the vas efferentia were carried out on the rat. They showed that closure of the lumen of the vas efferentia caused complete disorganization of the seminal epithelium in six days. As the operation involved no interference with the circulation of blood in the testis, it was evident that the effect was to be attributed to increase of pressure within the tubules. It followed therefore that if the vas deferens only were ligatured the absence of injurious effect was due to the fact that the great space contained in the long coiled tube of the epididymis prevented the increase of pressure in the seminal tubules, the epididymis acted as a reservoir for the semen and became greatly distended in consequence.

The conclusion drawn was that when the distension and pressure increased to a certain point within the epididymis, absorption of semen was increased, an equilibrium was reached and no further rise of pressure occurred. In one experiment, in the rat, the membrane through which the vas efferentia pass was ligatured on the left side and the right testis was detached from the scrotum and fixed to the abdominal wall by a ligature passing through the guberniculum. The animal was killed after sixteen days when the right testis was found to be atrophied being only about half the normal size, and its seminal epithelium was completely disorganized. The left testis was functional and the ligature loose.

#### MENTAL STRESS AND THE PSYCHOLOGY OF ACCIDENTS

In a paper read to the Section of Physiology Dr P. J. S. McDONNELL, Professor of Physiology King's College, London, maintained that the general effect of mental stress was as related with increased sympathetic activity, there is an increased rate of the heart and vaso-motor tone which together bring about a great elevation of blood pressure. Further, there is definite evidence that alimentary activity in general is diminished as shown in the reduction in salivary and gastric secretion and the marked delay in the emptying of the stomach. Such conditions, says Professor McDONNELL, suggest a largely responsible factor in many alimentary ailments and in part also for undisturbed circulation. With regard to accident causation Mr I. Farmer in a paper read to the Section of Psychology said that it had been shown that the distribution of industrial accidents among individuals exposed to the same risk was not such as can be explained by chance. The typical curve of accident distribution exhibited special features which seemed to point to the conclusion that each person had a given degree of accident proneness which would determine to a large extent the number of accidents he would sustain in a given period of exposure. This conclusion was reached as the result of certain sensory motor tests of the rapidity and accuracy of visual, auditory, and tactual reactions.

#### FIRST RECORDED CASE OF COLORED BLINDNESS

In the same Section Dr Edridge GLEN claimed that the celebrated physicist Robert Boyle was the first to record a case of colored blindness. Two cases came under Boyle's notice concerning one of which, a girl of 18, he writes in 1653 that

"she can distinguish some Colours as Black and White but is not able to distinguish others especially Red and Green. And when I bled her a Drop or a few and gave her Pills with Tincture of Coloured Silk she looked as white upon it but told me that I could not seem Red but of another Colour which one would have been a Description to be Dark or Dirty one and the Tincture of Silk that were finely Coloured she took in her Hand and told

me they seemed to be a light colour but could not tell me which only she compared it to the Colour of the Salt in Stuff of the Thread of a Red that brought her to me and said that the Colours were very much alike. And when I asked her whether in the Evening when he went alone to walk in the Field which she much delighted to do the Meadows did not appear to her (as they did in Green) She told me they did not but seemed to be of an old Darkish colour and added that she had a mind to gather Violet the he had in that Place where they grew. I was not able to distinguish them by the Colour from the neighbouring Grass but only by the Shape or by feeling them.

Some years previously this girl had lost her sight, which gradually returned, with the exception of the colour sense.

#### AMOEBOID MOVEMENTS

Mr C. F. A. PRATT contributed to the Section of Zoology some observations on amoeboid movements. As these were, he said, independent of permanently differentiated contractile structure, the theory had been advanced that they were due to a lowering of the surface tension at one spot. Microscopical dissection and other evidence showed that this view is untenable and that the movement was associated with the ready changes of state of the protoplasm from a fluid "sol" to a contractile "gel" and vice versa. The changes were easily observed in the *Lamprocyba* type of amoeba, in which each particle of protoplasm underwent a more or less rhythmic change of state from sol to gel.

#### THE FERTILITY OF THE SEA

Mr H. W. HERVEY reported to the same Section some ingenious observations on the fertility of the sea. Its animal life was he pointed out ultimately dependent on minute plants which in their turn were dependent on the supply of phosphates and nitrates in the water. Such salts were in general abundant in the deep water of the open ocean but absent from the surface where also the presence of light rendered vegetable life possible. Where, however, currents brought the deep water to the surface, there minute organisms were abundant, giving the water a greenish hue contrasting with the deep blue of the barren areas of the ocean. Around our coasts the cooling of the surface in winter caused mixing with the warmer layers below and plant life being carried at that season the organisms from the deep of decomposing accumulated. In spring a rich outburst of diatoms utilized the salts, while in life's summer a second outburst of plant life occurred utilizing the salts recruited from the corpses of the spring and early summer growth.

#### HEAD HUNTING

In the Section of Anthropology many several papers of interest were read by Dr J. P. HUTTON on the savage custom of head hunting. A recent authoritative work on Borneo traces the custom to a desire for human beings as an ornament or for human beings to accompany the dead in the next world. Dr Hutton satisfied himself that in Asum it had a different significance for it appeared to be connected with a belief in the fertilizing powers of the dead—for the soil for stock and for the human population. To assist these fertilizing powers, phallic stones were erected as symbolic altars, places for the soul and similar stones were intimately connected with head hunting.

#### EDUCATION OF UNCIVILIZED PEOPLES

In the Educational Section Mr Rivers SMITH made some interesting observations on the educational policy which appears to have been officially adopted for tropical Africa. The best persons he considered, were to be looked for by the adaptation to the demands of civilized societies of what can be retained of native social systems, and by endeavoring to promote the growth of the new order through a natural process of evolution rather than by an undue insistence on Western systems. Care he urged, should be exercised not to distort a good African by the inoculation of ideas and tastes which could not find expression in an African community. The aim should be to produce a new but firm conception of the African rather than a spurious imitation of the European.

# British Medical Journal.

SATURDAY, SEPTEMBER 10TH, 1927

## DARWINISM AND THE ASCENT OF MAN

THE President of the British Association for the Advancement of Science stands in the position of an ambassador called to speak for Science in the Court of the World, and this year at Leeds the honourable responsibility has fallen to Sir Arthur Keith. He has interpreted his duty in a characteristic way by saying, on behalf of the whole body of scientific workers, that the future of thought is being built on the foundations that Darwin so securely laid. In this connexion it is interesting to look into the work of the thirteen sections of the British Association, and no one who does this seriously can fail to realize that Darwin's mind has fundamentally affected the main lines of work of nine or ten. Sir Arthur Keith refers to Darwin's wise generalship in giving twenty-two years, at least, to preparing to launch his main contribution to science, we now know that those years were not spent in hatching the idea, we have in printed form the preliminary sketch written as Darwin began to ponder over his masterpiece. But Darwin was not only a master artist who saw into Nature as few others have done, he was also humble and patient enough to collect details and check them, and to adjust his ideas to new light from fresh facts. Sir Arthur Keith did not concern himself with the details of the picture of evolution as painted by Darwin or as elaborated by constructive criticisms and, at times, obscured by verbal subtleties since his day. Darwin's main plea for the survival of some and the elimination of other variations in the struggle for the life of the individual and the group is still held to be of great importance and we are beginning to perceive somewhat dimly how all sorts of reactions between organism and environment are influences for change.

The advance in our knowledge of the process of evolution since Darwin's day has not been so marked as might have been hoped, there have been too few who could even aspire to bend the bow of Ulysses. The trend of thought has rather been in the direction of following out the idea of evolution in the phenomena of growth and health and disease, in the study of social organizations the world over, in theory and practice of education, ancient and modern in economics and psychology, in poetry, and deep down into the innermost recesses of philosophy and religion. The great influence is still unfolding its power, and it is well that Sir Arthur Keith should stand forth in his high position to make a simple statement, to tell the plain truth—that there is no part of the study of life and thought that can be built up for the future, save on the basis which was crystallized out from the work of hundreds of researchers by the synthetic imagination of Darwin and Wallace, and their humble patience in collecting a unique store of artillery for the controversy ere it was launched.

It has been natural for vested interests in the field of thought and for some indolent persons to listen to details of criticism of Darwin's work, which has necessarily been modified especially by advances of physiological research, and some of them have thought

that the idea of evolution was fading, that the clear view had gone. Sir Arthur Keith has the support of all scientific workers in proclaiming that the idea of evolution is as yet young, and that some cherished opinions may need deep modification, however much casuistic subtleties may delay and prolong crises and turn men's thoughts from the essentials. Some of Darwin's friends and successors in their controversial agitation had little peace of mind in which to build up for themselves a picture in proper perspective, we need rather to leave controversy alone now our representative has repeated the fundamental message. If we are wise enough to do this, we may hope to work towards an enrichment of the picture of the evolutionary processes that some bellicose politicians have so misapprehended.

The idea of evolution is treated by Sir Arthur Keith in its connexion with man, and his modesty has prevented him from enlarging upon several points which would have brought in his own work and his own views. He thinks that our pithecoïd ancestor inhabited the tropical or subtropical forests of Miocene times, and emphasizes the value of the work of Pilgrim and of Gregory on the apes of that time, of whom, unfortunately, only teeth and jaw fragments have been found. Since that distant epoch we and our anthropoid ape-relatives have diverged, one towards the warm forests the other apparently towards more temperate lands. But the divergence has not gone so far as to obscure relationship, and Sir Arthur Keith pays his tribute to the work of Professor G. H. Nuttall on the similarity of blood reactions between apes and ourselves, and of Professor Elliot Smith on the human brain. The difference even in the latter is only a difference in proportions, the human brain contains no formation that is not in the ape's brain. The President, however, from his long studies of ancient skulls, sees clearly that we have not an orderly file of stages from ape to man, some skeletons are very man-like in certain features and very ape-like in others, and he illustrated this difficulty most aptly by a reference to the recent, but fortunately closed, controversy as to whether the—on the whole—very human skull and the very ape-like jaw at Pliocene could belong to the same type. It is now practically universally agreed that they did.

To unravel man's pedigree we have, Sir Arthur Keith said, to thread our way not along an orderly line but through the meshes of a complicated network. By this he means that the ancient skeletons which we know are all to some extent departures from the main human stem in some feature or another, and we have to infer from one and another what the common ancestor was like. We could have wished that, from the President's long studies of growth, it had been deemed appropriate to include in the address some illustrations of the concept that differences in growth make adults aberrant, and that it is not necessary to suppose that any adult ever showed just the whole assemblage of characters which we conceive of as ancestral. The young are more akin to one another, and Sir Arthur Keith rightly pressed home the idea that the study of experimental embryology is one of the great hopes of the future. So far as man is concerned, embryological observation—extended well into the period of post natal growth and bringing in all that can be gathered about the influence of thyroid, pituitary, and other endocrine secretions on the basis of Sir Edward Sharpey-Schafer's great work—is likely to be of immense importance for the advancement of knowledge. Since man has come into existence

the levels of land have changed, climatic zones have moved, deserts have spread, and with all these changes have gone alterations in growth that need to be worked out in far greater detail than has hitherto been possible. When more has been done in the way of the combined study of man and his environment we shall see better how it comes about that the adults of related stocks differ from one another so much more than do their young, we shall have an idea of the influence of growth changes in promoting evolution of types, and we may even glimpse some understanding of the mystery of the transmission of new characters of growth to the germs of future generations.

We may interpret Sir Arthur Keith's message to the world as a clear statement that the positions won by Darwin are definitively held, and that the field is clear for a great advance in the understanding of the evolution of man by synthetic work, gathering in the facts that geographers, anatomists and physiologists, sociologists and psychologists place at the disposal of the Science of Man.

### RESTORING THE DISABLED

The end of the great war left every combatant nation with a number of damaged individuals on its hands, for whose cure and relief it felt itself responsible. Certain nations realized in addition that the average standard of health of their members as shown by the examination of recruits, was much too low. Never before had the entire young adult manhood of the English speaking nations come under thorough and skilled inspection. The result in this country gave a severe shock to our complacency, and 'Are we a CS nation?' became a familiar question in our newspapers. But we have had so many other troubles in the last eight years that perhaps our attention has wandered a little from the question of the improvement of the physical fitness of our people. In the United States however the question of rehabilitation, as it is called, has not been allowed to slide into the background of domestic politics but has been earnestly discussed by a number of social workers and medical men. The United States has only so comparatively recently changed from a nation preponderantly agricultural and pastoral in its occupations to one that is increasingly urban and industrial that it was natural for the average American to assume that the physical development of his fellow citizens was as good as that of the embattled farmers of Emerson's poem and the days of Washington. It was to him collectively a great surprise to find that the enforcement of the draft showed how many townsmen were physically unfit and he is not disposed to accept this depressing report without making strong efforts to improve matters.

As this unfitness was generally the result of the maladies and unwholesome conditions of childhood and youth as well as of adult life the adequate treatment of acute and chronic disease in all its stages assumed a position of great importance, and rehabilitation has come to connote the making good of the organism damaged by the diseases of peace as well as by the effects of warfare. Among the States which have seriously gone into the matter that of New York is conspicuous and the New York Academy of Medicine has taken the lead in investigating the facts of the situation as regards the care and management of convalescent homes. One outcome of these inquiries takes the form of a report of the Public Health Committee, which consists largely of epitomes or reports

by subcommittees on the convalescence of surgical, medical, neurological and pediatric cases respectively. The authors of these elaborate reports, among whom is Dr Frederic Brush, the medical director of the Burke Foundation at White Plains, New York, seem to have considered all aspects of the question, including provision for the treatment of cases which are not strictly convalescent but chronic, and also those cases of poor health which by treatment in a country institution may be saved from the breakdown which seems imminent and might otherwise be inevitable. Dr Brush uses the name of 'preventoria' for proposed institutions intended for the care of such patients, and he states that over 30 per cent of the 6 000 patients treated yearly at the Burke Foundation are in the 'preventive' class. The need of continuity of treatment and the establishment of liaison between the general hospital and the convalescent home is insisted upon for it appears that in the United States it is not usual as it is in London for the hospitals to maintain their own convalescent institutions. About 300 000 to 400 000 patients were cared for last year in the United States in convalescent homes, and of these cases if the experience at White Plains may be taken as typical some 25 per cent would be more properly called chronic than convalescent. Dr Brush expresses some of the most important of his conclusions in these words: 'Every community of upwards of 200 000 people should have one large general convalescent hospital serving the community open to all, receptive to the man that walks in off the street to the private doctor, and the employer—not alone to the hospitals and health organizations. It is not that the large places can be run at less cost per day—a prevalent fallacy. It is because of the superior convalescent therapy that is inherent in the larger grouping. Also special convalescent homes are needed. They may be small and established for heart disease first the neurological borderlines rheumatism, special dieting etc.'

We have not yet in this country inquired into the needs and origins, or formulated our requirements with such thoroughness as has been done in New York, but we may hope that as far as convalescents are concerned we have provided and shall continue to provide for them adequately. The organizers of our charitable efforts might well consider the plea put forward in America for a widening of the field of institutional treatment. In all or nearly all of the States throughout the Union, organizations have sprung up whose object is to restore the disabled worker to health, or at least to a condition or wage earning capacity. At the beginning of this year a monthly journal called *The Rehabilitation Review* was established under the editorship in chief of Dr Fred H. Allbee whose work in the treatment or discharge of bones and joints is well known and having for managing editor Mr Frederic G. J. Iton. The advisory editorial staff of nearly ninety on which Canada and nearly every state of the Union are represented includes also nine names of European surgeons and physicians widely known in connection with medical as well as surgical rehabilitation. If such a publication succeeds, as it should in enlisting the sympathies and interests of workers in rehabilitation generally, it

<sup>1</sup> Institutional Convalescence. Standards for the Care and Management of Convalescent Homes. A Report of the Public Health Committee of the New York Academy of Medicine. Reprinted by the Sturgis-Pepper Fund of the Burke Foundation.

<sup>2</sup> The Essentials for Convalescent and Sub-standard Health Care. By Frederic Brush M.D. Medical Director, The Burke Foundation for Convalescent White Plains New York. Reprinted from Hospital Social Service, Vol. 1, 1927, 36.

<sup>3</sup> *The Rehabilitation Review*. Devoted to the Persuasion and Employment of the Disabled. Representing the National Organizations Interested in the Welfare of the Disabled. 20 East 23rd Street New York.

should become a most valuable and beneficent power, not only in America, but in all the civilized world, but there seems some risk of its straying from its proper field of action and trenching on the domains of active surgery or medicine. In the three numbers that have reached us there are articles describing in detail surgical operations for the relief of the disabilities produced by polyomyelitis, and on the treatment of fractures, which excellent in themselves, would be more appropriately published in the pages of a special or general medical or surgical journal. We offer in all friendliness the suggestion that similar contributions should not in future be admitted, lest their presence should alienate the interest of the many non-medical workers in rehabilitation.

#### HEALTH OF BRITISH TROOPS IN CHINA

Our latest reports from China show that the health of the troops continues very satisfactory in spite of the difficulties attendant on the confinement of a large body of troops within a small space in a town like Shinghai. Dysentery has been almost entirely absent, and no case of cholera has occurred among the troops. There have been a number of cases of malaria, but the majority of these were relapsed cases contracted in India. Cases of pneumonia have continued to occur through the summer months. There has been a small outbreak of enteric fever among the men of the 1st Battalion Middlesex Regiment at Wei-hai-wei. The first case occurred on July 14th, and by July 29th fifteen cases had been admitted to hospital, but no further cases have since been notified. The source of infection is uncertain. Venereal disease has been a difficult problem from the time of arrival of the troops in the Far East, but the incidence appears to be declining. Ample hospital accommodation exists both in North and South China, and a convalescent depot of 400 beds has been established at Wei-hai-wei for troops from Shinghai and Hong-Kong during the hot weather. The local medical and public health authorities have rendered much valuable assistance. The Canadian Department of Soldiers' Civil Re-establishment has very kindly provided accommodation in its hospital at Vancouver, B.C., and patients requiring long convalescence or subsequent evacuation to England are being sent there. The journey home through the monsoon during the hot weather is thus avoided.

#### CHARLES DARWIN'S HOUSE

In our article this week (p. 459) on the annual meeting of the British Association at Leeds brief reference is made to the announcement by the President, Sir Arthur Keith, regarding the proposal to purchase for the nation the home and surroundings in Kent where Charles Darwin lived for forty years. The appeal for funds with which to acquire this historic house has now resulted in a munificent offer from a member of our profession, Mr. George Buxton Browne, F.R.C.S., of Wimpole Street, London, who retired from practice some years ago. Downe House (or Down, as it used to be spelt) stands in a retired corner, about sixteen miles from London, between the high roads to Westerham and Sevenoaks. In 1842, when Darwin bought it and made it his home for life, a long coach drive was the only means of access. Of these quiet surroundings, in which so much of his epoch-making work was done, Darwin wrote: "My life goes on like clockwork, and I am fixed on the spot where I shall end it." He made a number of additions and alterations to the house and grounds, and died there on April 19th, 1882. Mr. Buxton Browne's motive in offering to make himself wholly

responsible for having the estate and establishing a fund for its upkeep is to permit future generations to visit Darwin's home. The General Committee of the British Association on September 6th authorized its President to accept with gratitude this offer. It is understood that the donor has expressed a wish that Downe House, with and without, should be restored, so far as is now possible, to its condition in 1882, and that some appropriate medical man of slender means should be appointed resident custodian. All Darwin's preliminary study for *The Origin of Species*, as well as the writing of that book and *The Descent of Man*, took place at Downe. It is intimately associated, therefore, with the greatest works of the great naturalist.

#### NEW INSURANCE DRUG FUND REGULATIONS

DRAFT regulations amending the National Health Insurance Medical Benefit Regulations in so far as payments to pharmacists are concerned have now been issued by the Minister of Health. They are in accord with the proposals set out in a recent circular, on which we commented in a leading article in the *JOURNAL* of August 20th last (p. 315). In that article we noted a curious proposal whereby Insurance Committees might if so advised, reserve up to one-tenth of their Chemists' Fund for special distribution to those chemists who had been continuously for specified periods of time on the lists of those supplying drugs and appliances to insured persons. The draft regulations now provide that where a portion of the fund is so appropriated the Committee "shall increase the sums payable to those persons in respect of the ven to which the Chemists' Fund relates in proportion to the accounts submitted by them and passed by the Committee in respect of that ven." So far no explanation has been given of the purpose of this novel provision, nor of the circumstances in which it may be expected to be put into effect. It will be interesting to ascertain or to observe these, inasmuch as it is conceivable that corresponding conditions might be held to arise in connexion with the Practitioners' Fund. A further draft regulation directs the Insurance Committees to furnish returns of the "capitation fees and other sum paid by them to insurance practitioners in respect of the supply of drugs and appliances to insured persons." This is with a view to the Minister ascertaining the yearly balance left in the Medical Benefit Fund after these and the other necessary payments have been made, the whole of which balance has, under the new conditions, to be handed over to the chemists. One important point must at once be raised with regard to this on behalf of dispensing practitioners. It will be remembered that prior to the present calendar year, the dispensing capitation fee for practitioners was 2s. The Insurance Acts Committee put forward a claim, which it considered fully justified for 2s. 6d. The Ministry, in a letter dated October 9th, 1926 offered an increase to 2s. 3d. as from January 1st, 1927, and the Conference of Representatives of Local Medical and Panel Committees, with some reluctance, resolved "That the offer of 2s. 3d. be accepted as the best under the circumstances." The new regulations bring about a radical alteration in the circumstances, and this will clearly justify the Insurance Acts Committee on the annual conference next month in reopening this question if on the merits of the case, they consider it desirable to do so. It will be the more necessary to consider this if any proposal be made—as it may be—to agree that no further alteration of the Medical Benefit Regulations shall be made for a definite period of time. Because dispensing practitioners decided to forego their full claim on whatever balance there might be in the fund under the then conditions it does not follow that they would be willing to forego it if the effect is merely to add to the sum distributable among the chemists. It would be

interesting to know what one penny on the dispensing, expiation fee of practitioners represents per insured person on the sum distributable to pharmacists

### TELEGRAPHISTS' CRAMP

Telegraphists' cramp forms the subject of a report by Miss May Smith, Dr William Culpin, and Mr Eric Farmer to the Industrial Fatigue Research Board. Though it does not appear to record any notable advance in the prevention of this disorder it is possible that the tests devised by the investigators may be of use in any further work which aims at assisting vocational selection amongst would-be entrants to the telegraph services. This is the view taken by Professor Greenwood in a statistical note appended to the report. The observers found that telegraphic work makes more exacting demands than allied occupations, and that these demands affect the emotional rather than the intellectual life. Consequently a majority of the "cramp" subjects examined had psychoneurotic symptoms, commonly allied to muscular weakness. Though in many cases muscular tests did not differentiate the subjects from normal people, tests applied to young learners of the age of 16 showed that it was possible to distinguish those with psychoneurotic symptoms from those of more stable development, but only 100 learners were examined. Six of these had sufficiently acute symptoms to admit of classification in recognized groups of psychoneurosis. Eleven others approximated to the type of the majority of sufferers from cramp, and were afflicted with psychoneurotic symptoms and weak muscular co-ordination. Fifty-four showed no such predisposition, and twenty-seven were slightly unstable. The report seems to suggest that the 20 per cent who had psychoneurotic symptoms would have nervous breakdowns in some other occupations also, but would be very liable to "cramp" in telegraphy. At the same time they might be efficient at some other occupation where their emotional make-up did not receive constant stimulation in the work. The investigations indicate perhaps that little can be done at the moment except to leave the selection of entrants to the telegraphic service to those who are at present responsible. Doubtless these authorities succeed in eliminating at all events a portion of the 20 per cent of psychoneurotics, whereas the method of selection reached by Dr Culpin and Mr Smith would exclude such a proportion of post-office workers as to lead Prof or Greenwood to describe it as very drastic. It is interesting to note that in America, where telegraphy is not a permanent occupation, telegraphists' cramp is hardly recognized as a disease.

### THE BIBLIOGRAPHY OF CANCER

For some years past the French anticancer league has published, as a supplement to its bulletin, a number of abstracts of papers on cancer from current literature. It now proposes to institute a more complete analysis in the form of a quarterly fasciculus, under the title of *Index Analytique Cancerologique*. It is intended as announced in the first fasciculus to give a classified list of the titles of all papers relating to cancerous disease which appear in the periodicals and publications of the entire world, together with a summary of the contents of such as appear to call for special notice. It is calculated that the annual volume will comprise about 600 pages containing some 2,500 references. The present fasciculus contains nearly 600 references, and there are one or two summaries on every page. Where authors have given summaries in their papers these are to be reproduced word for word in the abstracts. The underlining is naturally one of great magnitude and can only be brought to completion gradually, but the hope is expressed that

it will have an international character. With regard to organization, it is proposed to establish an international committee to collect material from the respective countries. The members of the French committee, already constituted, are Borel de Nabel, Hattis and Regaud, and Roussy, with Fauchon as general secretary, and similar committees have been appointed for Germany, Belgium, Denmark, Spain, Holland, Norway, Sweden and the U.S.S.R., it is hoped that other nations will join the scheme. The material collected by the national committees will be transmitted to the French editorial committee, and the whole will serve without other alteration than the translation of the titles and abstracts, for editions in different languages. A so-called similar project has already been undertaken in this country and is the direction of the Council of the British Empire Cancer Campaign. A strong committee was formed, of which the late Sir William Lushman was chairman, and a review started with the title of *The Cancer Periodic*, the first number of which appeared last year. The deal intended was to give an abstract of every important publication bearing upon the problems of cancer research. Thus the scope is more limited than that of the French project, and no attempt is made to include the titles of every paper published on the subject. Fifteen numbers of the review have now been issued, and it cannot fail to be considered excellent in every respect. As is well known the term "abstract" is very elastic, sometimes it refers merely to a brief statement of what a paper is about, and may give little more information than the title, at other times it aims at giving a concise account of the contents of the paper, and in its best and most useful form serves almost as a substitute for the original article. *The Cancer Periodic* appears to favour the latter type of abstract: it requires skill and a considerable amount of space but there is an evident intention to be unflinching in both. Of the necessity in these days for good works of this kind there is no need to speak.

### INCOME TAX THE THREE YEARS AVERAGE

SECTION 29 of the Finance Act, 1926 which comes into operation for the first time this year substitutes the basis of the previous year for that of the previous three years. In so doing it fulfils one of the recommendations of the Royal Commission on the Income Tax and incorporates a modification suggested by that Commission with a view to the avoidance of hardship. If the option is to be exercised the election to adopt the three years' average must be notified to the local officials—in practice to the inspector of taxes—not later than October 5th 1927: this date is to be carefully noted. It will be opportune therefore to give a brief account of the conditions and limitations of the option. The assumption underlying the provision is that where profits have increased more or less steadily no hardship is involved in the change of basis, but where in consequence of the change, the profits of unusually bad years are excluded from the calculation, then some special concession is due, because those poor years have not yet had an adequate effect on the taxpayer's liability. An example may make this point clearer. Suppose that a practitioner who ordinarily earned £1,200 a year for some reason earned only £600 in 1925 then up to and including the financial year 1925-26 he will have paid tax on an assessment of £1,200, and for 1926-27 on 1/3 of (£1,200 + £1,200 + £600 =) £3,000—that is, on £1,000, and if he is assessed for subsequent years on his earnings for the previous year he is left in the position of having paid on £400 more than he has earned. The statute therefore provides what may be called a test of hardship, and the test laid down is whether or not the amount of the average profits for the six years 1918 to 1923, inclusive,



exceeds either of the profits for 1924 or 1925, if it does, then the person or firm to be assessed can elect to adopt the three years' average for 1927-28 and 1928-29. It should be borne in mind that the election applies to both years and not to either separately. The exercise of the option calls for some judgement, because so far as 1928-29 is concerned the balance of advantage turns to some extent on the amount of the profits for 1927, which, of course, are not now ascertainable—though they may be capable of a reasonable estimate—unless the end of the practice year precedes October 5th, whereas, in fact, it is usually December 31st. It will frequently happen that the individual or group of individuals owning a particular practice in 1927-28 will not be identical with those owning the same practice throughout the six years 1918 to 1923. The point is dealt with in the statute, but cannot be fully explained in a brief note. In effect, if at least one individual has been the owner or a part-owner throughout the whole period, then the comparison is made as if there had been complete identity, on the other hand, if there has been a complete change in ownership, then the periods in which none of the existing owners were proprietors of that practice have to be excluded from the years 1918 to 1923, and an average taken of the earnings of the remainder of those years.

#### THE NATIONAL INSTITUTE FOR THE BLIND

The report of the National Institute for the Blind for the year 1926-27 gives an account of the work of the largest institution for the blind in the world. It is becoming more and more the co-ordinating agency of the numerous small local blind aid societies throughout the country, it is through it that for many purposes various statutory authorities assist the blind, it helps the blind in relief and training, in finding employment, and in organizing the marketing of their handwork. For these reasons alone it would be worthy of all sympathy and assistance. But these aspects of its work are not the greatest features of its activities. Perhaps that which is the most helpful is its action as the greatest publishing agency for the blind. Embossed books in Braille and Moon types are prepared and printed by the Institute for the whole Empire. During the year under review nearly 400,000 publications were issued, and ten periodicals—including two newspapers, a literary review, a popular monthly, and monthlies devoted to juvenile literature, music, massage, and religious subjects. The latest innovation is the *Braille Radio Times*, of which 1,500 copies are now sold weekly. Wireless broadcasting has been an inestimable boon to the blind, and the new journal gives them information about the programmes and as to how to keep their instruments in order. The books published for the blind include classical as well as modern works, and the students' library which is mentioned has been described as "a library of books unobtainable from other libraries." Nearly 800 new volumes for students have been prepared by hand by volunteer Braille writers during the year, and the total of books now in this library is 5,000, valued at £11,000. A new machine is being designed whereby it will be possible to reproduce from an original Braille manuscript a number of copies. It is a marvel of ingenuity, the paper sheets from the writer, when inserted in the machine, act as selectors, allowing small plungers to rise by means of compressed air. There are now 4,000 of these plungers, so the delicacy of the apparatus may be imagined. The work of the Institute in the foundation and maintenance of homes for blind babies, "Sunshine Houses," is too well known to require more than mention. But greater than this is its work at Chorley Wood College for Girls with Little or No Sight, it is a fine piece of work, and we are pleased to note that the College has been

recognized by the Board of Education. The work of the Institute is controlled by an executive committee. The names of its members are given, with a "Who's Who." We note that Dr. Brackenbury, the Chairman of Council of the British Medical Association, is now a member representing the Association of Education Committees, Mr. Bishop Harman is the advisory ophthalmic surgeon to the Institute. The report contains a clear financial statement of the Institute and its subsidiary departments, prepared as prescribed by the Ministry of Health and the Board of Education. Last year, owing to the general depression caused by the severe industrial crisis, there was a decline in funds of £15,000. How can the Institute be helped? The answer is given in the report. Perhaps the most valuable form of assistance is the annual subscription. The total amount of annual subscriptions received should be the basis of the funds upon which the Institute can calculate in respect of maintenance and extension of activities. The head office is at 224, Great Portland Street, London, W.1.

#### MEMORIAL TO THE LATE DR J. G. ADAMI

In view of the personal popularity and scientific eminence of the late Dr. J. G. Adami, F.R.S., it is fitting that a memorial should be established in the University of Liverpool, to which, as Vice-Chancellor, he devoted himself with such energy and enthusiasm in his later years. It has been suggested that the most appropriate form for a memorial to take would be the creation of an Adami Fellowship in Pathology, for this the sum of £3,000 would be required. There must be very many old students, friends, and admirers, both in Montreal and Great Britain, who would wish to associate themselves with this tribute, and their co-operation is earnestly invited. An alternative and less ambitious proposal is the endowment of an Adami Library of Pathology in connexion with the Medical Library. Donations to the Adami Memorial Fund may be sent either to the Treasurer or Registrar of the University of Liverpool, or to Heywood's Branch of the Bank of Liverpool and Martins, Limited.

#### NEW REGULATION FOR EDINBURGH M.D. DEGREE (Correction)

In our last issue—the annual Educational Number of the *BRITISH MEDICAL JOURNAL*—we printed at page 427 a paragraph on the new regulation for the examination for the M.D. degree of the University of Edinburgh. This repeated almost word for word the information already given in our issue of April 2nd, 1927 (p. 639). We regret to learn that its appearance in the Educational Number under the general heading "Degrees for Practitioners" has caused misapprehension among practitioners who are not Edinburgh graduates. We are officially informed that the new regulation referred to is simply a change in the nature of the clinical examination for the degree. The M.D. Ed. degree is, now as hitherto, conferred only on graduates of the University of Edinburgh. We hasten to correct the wrong impression thus inadvertently conveyed.

#### THE MEDICAL REGISTER UNTRACEABLE PRACTITIONERS

We publish in the *SUPPLEMENT* this week (p. 126), at the request of the Registrar of the General Medical Council, a list of the names of those medical practitioners who have not replied to his inquiries as to the accuracy of their postal addresses. Any practitioner who finds his or her name included in this list should communicate at once with the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1.

## Ireland.

### MEDICAL COUNCIL (FRET STAFF)

The result of the voting for the election of two direct representatives of the medical profession to the Free State Medical Registration Council established under the Medical Practitioners Act, 1927, was as follows: Dr Maurice Hayes, 1,141 votes, Dr R J Rowlette, 926, Dr P E Hayden, 552. Dr Hayes and Dr Rowlette were declared elected.

### ROYAL MEDICAL BENEVOLENT FUND SOCIETY

At meetings of the Central Committee of the Royal Medical Benevolent Fund Society of Ireland, held in the Royal College of Surgeons, Dublin, during July and August, the following grants were made:

Medical man aged 33 in hospital suffering from pulmonary tuberculosis £30 special grant  
Applicant aged 40 in reduced circumstances £15 special grant  
Applicant aged 75 income £26 per annum from curacies and old age pension £20  
Medical man aged 65 incapacitated through blindness income 10s. a week £50 special grant  
Widow aged 50 nine children six dependent income about £200 per annum £30 special grant  
Widow aged 57 health broken took in lodgers while she was able £30 special grant  
Widow aged 70 income from old age pension and £26 gift from friend £20  
Widow aged 35 left suddenly destitute through accidental death of husband four children under 8 years of age £50 special grant.  
One application was refused.

### FERMANAGH COUNTY HOSPITAL

The report of the Fermanagh County Hospital for the last year is, when all branches of its work be considered of a more encouraging nature than previous ones. The medical side is decidedly satisfactory, and the hospital is self-supporting to the extent of 44 per cent of its expenditure the County Council providing the other 56 per cent. The total income was £5,540 13s 3d. It is to be regretted that the committee had to close one ward of eight beds for want of funds. There is perhaps in consequence, a small waiting list for admission on the male side, and it became necessary to refuse some cases, such as tuberculosis of the spine, which might occupy beds for many months. There is a sum of £675 due still to the hospital by the County Council and if this were paid the governing committee could provide a x-ray apparatus, which is badly needed, and for which the electric wiring connexion has already been provided. The total income from dividends (bequests and gifts) is £148 13s 10d yearly the late Mr C Wilson, registrar of the hospital, contributed the sum of £1,027 10s. 8d. There was a considerable increase in donations, but this excellent institution requires all the help it can receive to maintain it in a state of efficiency.

## Scotland.

### PRESERVATIVES IN FOOD

The Scottish Board of Health has issued a memorandum dealing with preservatives in certain articles of food as amended by the regulations of December, 1926 and July 1927. The memorandum directs local authorities and officers of Customs and Excise to enforce the regulations and authorizes them to enter premises where articles to which the regulations apply are prepared, packed, labelled or sorted, with the object of taking samples for which they are authorized to make reasonable payment. It is forbidden to add any form of preservative to meat except that sausages and mince are allowed to contain not more than 450 parts per million of sulphur dioxide. Sulphur dioxide (including sulphites) may also be added to fruit pulp, dried fruit, jam, sugar, beer, cider and wines, and benzoic acid is permissible in unfermented wine, ginger-beer, pickles, and sauce. Among the colouring matters prohibited are compounds of antimony, arsenic, cadmium, chromium, copper, mercury, lead, and zinc, also gamboge

and picric acid. When articles of food contain preservatives these must bear a label of prescribed form stating that preservative is present.

### SCOTTISH ASSUMES PATHOLOGICAL SERVICE

The thirtieth annual report of the Board of the Scottish Assumptions for the year 1926 gives an account by Dr Reynolds the pathologist of the work done during the year. The laboratory is now accommodated in the university buildings, where facilities for the work are provided at the expense of Edinburgh University. The expenses of the research and reporting are provided by subscriptions from twenty-one institutions, and amounted to a revenue of £1,657 in 1926. A research has been undertaken into "The paths of infection to the brain meninges and venous blood sinuses from neighbouring peripheral foci of inflammation." Research in regard to neuroglia was also commenced, various lectures to students and graduates had also been given by the pathologist. As regards routine reporting work, 127 reports had been sent out to various asylums dealing with bacteriology, Wassermann's reaction, chemical examination of the cerebro-spinal fluid, and histology. The expenditure had been £1,037.

### MONTROSE ROYAL ASYLUM

The annual report of the Royal Asylum of Montrose for the year ending May 15th, 1927, shows that the number of cases under treatment during the year was 861, the number discharged being 64. Of these, 46 left the institution as recovered, 6 as relieved, and 12 as not improved while the number of deaths was 74. The daily average number resident was 746, of whom 720 were certified and 26 voluntary patients. The average age on admission was 49 years, an increase of almost four years on the average of the past five years. Seven cases were under 20 years of age and 25 or 17 per cent, were over 70. 5 of them being over 85 years of age. Forty cases had suffered from at least one previous attack. With regard to causes assigned for the mental breakdown, hereditary predisposition was ascertained in almost one-third of the admissions. Over 70 per cent suffered from general weakness, malnutrition, or active physical disease. As the patient gained in strength a corresponding mental improvement was found. Fourteen patients suffered from congenital defect, of whom 4 were also epileptic. Four cases were general paralytics, but it is noted that the incidence of this disease has greatly diminished during recent years. Fifteen cases were recorded of mania, 30 of melancholia, and 4 of alternating insanity. The number of patients discharged was 74 of whom 46, including 19 men and 27 women, had recovered. The recovery rate, calculated on a number of admissions, was 32.6 per cent. The death rate, calculated on the average number of residents, was 10.2 per cent, the average age at death being 60.4 years. With regard to voluntary patients, 26, or 39 per cent of the total private admissions, came under this heading. Of these 11 were discharged recovered making a recovery rate of 42.3, which compared favourably with the 32.6 per cent in the certified cases.

## England and Wales.

### HOME AMBULANCE SERVICE

At the end of June the Home Service Ambulance Committee of the Order of St John and the British Red Cross Society had 319 ambulances and 54 affiliated stations, four new ambulance stations were equipped during the June quarter. The number of patients carried during that quarter was 21,154 in the home service ambulances, and 7,572 in the affiliated ambulances. Altogether since its establishment the number of cases carried exceeds half a million. The liaison officer, Major Paget, in the course of a recent tour, visited many ambulance stations, and reported that there was evidence of an increased desire to make the service of invalid transport as nearly perfect as possible. At station after station he found proof of the generous spirit in which members of the Order and of the

Society spent themselves in the service of the sick and injured. He noted with particular satisfaction the care taken to keep the inside of the ambulances in good order, to provide clean and well used blankets and pillows, and to make arrangements for first-aid appliances, hot-water bottles, and other necessities. An ambulance, of course, does not last for ever, and in increasing number of stations are setting themselves to get the best type possible when the time comes for replacement. Special attention is directed to a new ambulance recently taken into use at Aylesbury, every detail, from the stretcher carriers to the door hinges, has been carefully considered by the officer in charge, Superintendent P. Marshall. The Home Service Ambulance Committee is taking in active part in the organization of the road service scheme for bringing first aid to the victims of traffic accidents. The lines on which this work is developing vary, according to local stations, from a full service, including roadside tents equipped for first-aid treatment, with an ambulance at hand and patrols on the road, to simpler but useful arrangements by which stretchers or first-aid appliances can be readily obtained at convenient points.

#### MANCHESTER POST-GRADUATE COURSE

The customary post-graduate lectures given at the Manchester Royal Infirmary will begin on Tuesday, September 27th. They take place on Tuesday and Friday afternoons, commencing at 4.15, and provide an opportunity for practitioners in the district to obtain information about recent advances in medicine and surgery. These lectures have been given regularly since the war, and the attendance is satisfactory, though it is thought that more practitioners in the immediate neighbourhood might take advantage of them, for they offer very valuable facilities. The Tuesday lectures are delivered by the active honorary staff of the hospital, the Friday lectures are largely given by other members of the Infirmary and University staff. Dr. J. Gray Clegg will speak on the field of vision and on the microscopy of the living eye, Dr. I. M. Brockbank on Dr. Peirce and Dr. Peirce in their relation to public health problems in Lancashire, Dr. Veitch Clark, the medical officer of health of Manchester, on immunization against diphtheria and scarlet fever and Dr. A. D. Macdonald, of the physiological staff of the University, on the causation of shock.

The Lloyd Roberts Lecture in Manchester will be given this year by Dr. Hector Charles Cameron at St Mary's Hospital, Whitworth Street, on November 1st. His subject is "The child in general practice, a study both of temperament and disease."

#### THE PUBLIC AND CANCER

It is a common practice nowadays to furnish the public with information on the subject of cancer, although there is, unfortunately, little to be gained at present from the knowledge imparted except emphasis on the importance of earlier or more frequent visits to the doctor. Dr. A. G. Anderson (M.O.H., Rochdale) has provided his council with a rather more complete summary than usual of our knowledge, or lack of knowledge, of this disease. The passages from his report for 1926 have been published as a pamphlet. After discussing the etiology of cancer, and mentioning the indications research affords of the possibilities of prevention, Dr. Anderson summarizes facts under this head which he thinks the public ought to know. After stating that the incidence of cancer is rising rapidly, and that during the last fifteen years the mortality has been increasing more rapidly amongst men than women, he goes on to urge that diagnosis and treatment must not be delayed, that an attitude of fear, despair, or fatalism must not be allowed, and that the early pre-cancerous danger signals must be watched for. The danger signals enumerated by Dr. Anderson cover so large a field that the average man may be disposed to disregard them. Though it may be difficult to induce the man in the street to read and comprehend the pamphlet, it may be hoped that an impression will be made by the optimism of the final statement—that by early treatment one-third of all male cancers, and one-half of all female cancers can be cured, and that "the present high cancer mortality ought to be, and could be, reduced by nearly 50 per cent."

#### ARTIFICIAL SUNLIGHT TREATMENT OF FREDDIE CHILDREN

The medical officer of the 11th of Huddersfield (Dr. S. G. Moore) has made a report on the open air residential treatment of under-average children at the Cinderella Holiday Home, Honley. It gives an account of an interesting experiment in the treatment of these children with artificial sunlight. There were sixty-two children resident during the past winter the children were separated into two groups, matched in pairs as far as possible, and to one group was given ultra-violet treatment, to the other group none. Both received equal benefits in good housing, good clothing, and good food. The children on admission were undernourished and anæmic. All improved substantially. The results of the experiment are apparently disconcerting. Increase in haemoglobin and in red cells "is in favour of those who received the treatment compared with those who did not, 6.7 per cent contrasting with 8.182 per cent of the former, and 58,600 contrasting with nearly 400,000 of the latter." On the other hand the boys who did not have the light treatment gained on an average 4 lb 2.8 oz in weight as against 3 lb 8.364 oz of those receiving the treatment. The latter gained more in height and less in chest measurement. With the girls there were similar results. It is noted that on admission many of the children were suffering from enlarged veins of the trunk which is regarded as evidence of subnormal respiratory function, and that this defect was greatly improved on discharge.

## Correspondence.

#### THE EPIDEMIOLOGY OF POLIOMYELITIS

SIR,—In a paper upon the epidemiology of poliomyelitis (August 27th, 1927, p. 347), Dr. Walshe calls particular attention to certain suggestions which I have made in connexion with the mode of spread by carriers and brands. I am the author of a series of preposterous statements, in the heat of his argument, which compel my immediate repudiation, further he accuses me—I am sure quite unwittingly—of falsifying Dr. Reece's figures in an allusion to the Stoke Rivers incident in the Devon and Cornwall outbreak of 1911, for the purposes of furthering my argument. I have suggested that a "cancer" epidemic preceding and working up in violence to an epidemic of disease might possibly explain the multitudinous recorded instances in which poliomyelitis has suddenly appeared simultaneously in a number of widely separated localities. Let me quote Dr. Reece's words in connexion with the outbreak above mentioned:

"Poliomyelitis was dispersed all over both counties (Devon and Cornwall) in a short space of time, and apparently the appearance of the disease in many widely separated parts was almost simultaneous, so that it could not have been explained by abortive cases unless these had been present in very large numbers."

I have never used the word "simultaneous" in connexion with the subject of poliomyelitis except in relation to appearance of the disease in widely separated localities. Yet Dr. Walshe accuses me of the statement that

"the presence of this army of carriers leads to the practically simultaneous mass infection of all available susceptible subjects. This manner of spread involves the universal and simultaneous striking down of all susceptible members of the community."

I have never made any such statement, nor can any such interpretation of anything which I have ever said or written be justly arrived at. The absurdity is over-whelming in the light of every recorded epidemic.

Dr. Walshe becomes incomprehensible when he makes me responsible for the "categorical statement that at the moment of infection the virus ceases to be infective, thus rendering case-to-case spread impossible." I have argued that the carrier is the chief means by which the disease is spread. Is not the carrier infected? Is not every case of poliomyelitis of necessity a carrier during the incubation period, since this is a nasopharyngeal infection and readily communicable by droplet infection? What I have said to explain the absence of any proved infectivity from poliomyelitis in the pyrexial stage and thereafter is that the infectivity of the virus wanes very rapidly when the body is

reaction to the disease appears, and in so doing I am in accord with a general principle by which infectious disease is recovered from. For example measles is produced intensely infectious at the moment of appearance of the first symptom and probably for some time before that. Thereafter the infectivity rapidly declines. Dr Walshe will not be able to diminish my denial of proved case-to-case infection so summarily or easily as by referring to the infection of monkeys from a case of poliomyelitis of ten days' duration as readily as from a carrier since the injection of the virus into the central nervous system which is the means by which monkeys are usually (and with great difficulty) infected is not the means by which poliomyelitis is transmitted in the human subject and is no proof of the possibility of nasopharyngeal infection with a virus of the same strength.

The classic Trastena event reported by Wickman—referred to by Dr Walshe—does not in reality support his argument. It proves that six of the fifteen houses infected from the school were infected by a carrier who did not subsequently develop the disease and does not in any way disprove that the other nine houses were infected by carriers who did thereafter develop the disease even though Dr Walshe should deny the evidence of Klump and Pettersen who record that they proved at least two carriers for every developed case of the disease in the infected households that they examined.

The advent of the disease upon one member after another in the same household with a definite period between the onset of each case does not disprove that the infection occurred from the one to the other in the carrier or incubation stage and it does not prove the infectivity of the developed disease.

Dr Walshe comments upon my short reference to the Stoke Rivers outbreak, a swift scourge which, lightning upon the little village of Stoke Rivers laid low in a few days 45 persons out of a total population of 119, as so out of harmony with the facts as to lend no support to his theory, and he proceeds to state that there were but 35 cases, and that the epidemic lasted forty days. I referred to this outbreak as of historic interest and merely used it in support of my theory. My services as to the numbers is supported by the wording of Dr Reece's report.

In the community of 119 persons there were thirty-six attacks by poliomyelitis which were more or less definite. In addition to the thirty-six there were nine others who may possibly have suffered in a minor degree.

Dr Walshe seems to object very much to my description of the curve of incidence in time of cases of poliomyelitis during an epidemic as having characteristically a rapid breeze high peak and rapid fall. Surely this type of curve has been recorded much more often than any other and may be termed justly the most characteristic. The slowly rising and slowly falling flat-topped curves of the low incident epidemics of large towns which I have referred to the "salting" of the community, are, of course well known.

Any mention which I have made of immunity following epidemic poliomyelitis has no reference to my personal experience for in England we have not had successive epidemics incident upon the same community. But it is gathered from the record of the American epidemic, that an epidemic seemed to remove all the susceptibles and in a second epidemic incident upon the same community only those born subsequently to the first epidemic were affected.

When Dr Walshe states that during the last twenty years children admitted to hospital suffering from poliomyelitis in the pre-exal stage have been treated with the precautions usual in infective disease and that their opportunities of spreading infection are restricted in consequence and uses this argument against my contention that cases of acute pre-exal poliomyelitis have repeatedly been admitted to the children's wards of our hospitals, and that no case of spread of infection has ever been recorded, he is surely on very unsafe ground, for at no hospital at which I have served nor at any London hospital at which I have been able to inquire since the appearance of his paper, nor at the hospital where Dr Walshe and I are colleagues,

have any such precautions been taken, and for the reason that experience has never called for them.

The case for the carrier epidemic and the carrier infection has not fallen to the ground and remains entirely sound in spite of this recent comment. Moreover it is in keeping with the trend of recent epidemiological research. The argument for case-to-case infection from the developed disease needs only the one indisputable case to prove it, and that case is not yet forthcoming.

I cannot think that any speculation upon disease nor suggestions which may explain its strange manners made in the light of clinical experience and with a knowledge of the literature will have any of the dire effects Dr Walshe warns his readers against—I am, etc.,

LEONARD W. T. AUSTIN, M.D.

JAMES COLLIER

## ALCOHOL AND THE MOTORIST

SIR—Allow me to pay my tribute of admiration to the valuable scientific work of Dr Clifford Carter, Dr Southgate, Professor McManby, Widmark, Miles and others in their efforts to elucidate the problems involved in alcohol and the driver.

The method of approach along specialized lines is extremely interesting to the police surgeon but for practical purposes we must surely take a broad view of the clinical signs that justify the diagnosis of drunkenness with the corresponding unsuitability to drive. The borderline cases are naturally those of greatest difficulty. In the preliminary stage of intoxication—call it exuberance or hilarity—the man is liable to consider his judgment lost and in fact to take unnecessary risks. Frequently associated with this "superior" judgement there is a reckless, will power coupled with an unsteady mechanism for converting that power into effect.

The definition of a good driver may well be put thus: One who gets a grip of approaching danger in an instant and who has the skill and the power to avoid it. A rapid reaction time is perhaps one of his most valuable possessions. Undoubtedly alcohol delays this reaction time but the degree of interference is not constant and varies in him.

If we admit the pathological condition to be one of damaged association fibres physiological and psychological, with delayed reflex, we are even then confronted by the fact that these paralytic, partial and temporary though they be do not travel *pari passu* in any one individual. It is well to have a list of tests available and to be continually on the lookout for fresh signs and for fresh tests, but in my experience the man himself discloses in his own story the way in which the alcohol has affected him and so affords clear indications for the surgeon's examination.

Not by the quantity of alcohol excreted by any one organ but by his behaviour and the manner of his driving, should a man in my opinion be judged—always providing the surgeon sees him soon after the accident and pronounces him drunk.

Justice would be assisted if the surgeon were permitted to re-examine the man the following morning—I am, etc.,

J. MATHIAS, M.B. Lond.,

Aust. J. H.

Surgeon, Division Metropolitan Police

SIR—I have read with interest the leading article in your issue of August 27th (p. 354) in which you gave appreciative consideration to my paper at the Edinburgh Meeting on the alcoholic urinary concentration as a guide to intoxication. But though appreciative in the main it is critical in detail. May I, therefore, be permitted to draw attention to one or two matters in debate?

I need not emphasize the paramount importance of the general clinical examination of the person concerned, to which every clue must be given. Upon its completion a written statement is required from the doctor giving his diagnosis. This statement is produced in all subsequent legal proceedings. The analytical tests can only follow, later, and confirm or fail to confirm, what has been written and the tests have likewise to be stated in court. It follows that the alcoholic urinary analysis is of greatest value in "borderline cases," and it is in these instances that I most frequently make use of it.

You comment upon the possible illegality of the proceeding. I do not think there is any illegality, and Lord Russell, who presided over our discussion in Edinburgh, is of my opinion. I contend that we have as much right to examine the urine as the breath, or pulse, or reflexes. Indeed, I examine for sugar and albumin at the same time, and might be adversely criticised in court if I did not, as a recent case of which I lately read testifies. The other point is the well known difference in the behaviour of comparative abstainers and toppers who have recently consumed alcohol. Mellinby and Southgate have shown that in the case of the latter there is delayed absorption. They do not readily become drunk and they fail to exhibit a high alcoholic blood content. As they do not become drunk they are not apprehended for being drunk, and consequently do not concern us in this issue. But if, by chance (as recently happened in two of my cases), after a "night out" they do show signs of intoxication, then a high alcoholic urinary concentration will be found. In other words drunkenness will appear in the abstainer and the topper in accordance with how much alcohol is present in the blood (and consequently the urine) at the material time. We are not concerned in any way with how much alcohol a person has consumed. All that signifies is "Is he drunk?" If his blood alcoholic content be high he will inevitably show signs of intoxication, topper or abstainer, whether little or much drink has been needed to produce that effect—I am, etc.,

Sheffield Aug 21st

GODFREY CARTER

## GOITRE REMEDIES

SIR,—Your New Zealand correspondent (August 27th, p 361) seems to take the new health regulations in that country rather seriously. It seems "that iodized salt can safely be used for household purposes, and its use is authorized in breadmaking." As iodized salt only contains 1 grm of potassium iodide, or more likely 1 grain of sodium iodide, in 35 lb of salt the dose of iodide is fairly homeopathic. Moreover, it does not seem to be evenly distributed, as I have never been able to find a trace of iodine under ordinary methods of analysis, in fact, it seems to be as elusive as vitamin. The sodium chloride is all right, and it is an excellent table salt, but I would not pay a fancy price for it in the idea that I was being dosed with iodine. It would be perfectly safe in the hands of those misguided physicians who prescribe iodine and thyroid in exophthalmic goitre. For ordinary goitre allopathic doses are requisite.

In a paper in the *Practitioner*, April, 1914, on the functions of the thyroid, the suprarenal and the pituitary glands, I recorded two cases of exophthalmic goitre caused by large doses of tincture of iodine, and rapidly cured by the substitution of a calcium salt for the iodine.

Youths up to the age of puberty frequently suffer from defective action of the thyroid, and in such cases I have long recommended a large piece of solid iodine, say 2 inches, to be placed in an open cup in the dormitory. This slowly volatilizes into the atmosphere which the patient breathes at night, but usually additional small doses of iodine or an iodide are requisite.

There are very few diseases more easily prevented and cured than the different varieties of goitre. I have never seen a death from exophthalmic goitre since I ceased recommending surgery about a quarter of a century ago—I am, etc.,

London SW7 Aug 27th

JAMES BARR

## SALARIES OF TEACHING APPOINTMENTS

SIR,—In recent numbers of the JOURNAL the post of surgical tutor which the University of Leeds desires to fill has been refused advertisement and is put on the "black list" on the ground, I believe, that the salary offered is £500 instead of the £600 which the Association's scale requires. May I suggest that the Association is not acting in the best interests of the progress of medicine when it tries to extend the policy which has succeeded so admirably in professional appointments to the sphere of university education, with which it is not concerned?

The advantages which are open to a young graduate holding a junior teaching appointment in a university are

enormous, he has the opportunity of devoting himself wholeheartedly for two or three years to learning his subject in a real way and gaining a unique equipment for whatever line he selects to take up for life. For such post-graduate education I think sometimes payment might be asked instead of given. It is, however, necessary for even the most earnest students to live, and universities offer a great number of small appointments which enable young men and women to do that in decency if not in comfort. It is quite impossible for them to pay at the rate which the Association (I dare say quite rightly) demands for professional as distinct from educational services, nor would it, I think, be right for them to do so. Those who hold these appointments get at least as much as they give, and the only consequence of the action which the Association is attempting will be to diminish the number of young medical graduates who can take advantage of the splendid educational opportunities which are offered to them—I am, etc.,

Radlett Herts, Aug 18th

A E BOYCOTT

## MEDICAL CONFIDENCES

SIR,—Dr Gemmell (August 20th, p 329) seems to hold the view that priests who hear confessions could give valuable evidence in legal trials, and that they are exempted from being called upon to break faith with their penitents because they are more determined in their resistance than are doctors.

The difference in treatment is better explained possibly by the difference in value of priests and doctors respectively as witnesses. A doctor is a much more valuable witness than a priest would be. His evidence consists chiefly of his observations and opinions, whereas a priest can say only what has been told to him.

Further, there can seldom be any difficulty in finding out which doctor has been attending a patient who is a party to a lawsuit, whereas it would usually be impossible to discover to which priest any particular confession has been made, nor could it be known whether the person whose confession was required for evidence had confessed the action or conduct with which the trial was concerned.

If the required doctor were as little discoverable as the required priest, and if his evidence were confined to relating the verbal confidences that he had received from his patient, he would be as little troubled by subpoenas as is the priest.—I am, etc.,

Wales Colne, Essex, Aug 21st

R M COURTNELD

## TONSILS AND RHEUMATISM

SIR,—The real problem of prevention of rheumatism is, as has been clearly shown in the recent reports of commissions, one rather of social hygiene than of strictly medical practice. That, however, does not justify any slackening in our medical study of the disease and its prevention, and Dr Parker's letter (BRITISH MEDICAL JOURNAL, August 27th, p 366) seems to me to smack just a little of *laissez faire*. Whatever one's views may be as to the exact relation between tonsillitis and rheumatism, there can be little doubt as to the closeness and importance of the relation, and it follows that the most crucial part of the prevention of rheumatism from the medical point of view is the prevention of tonsillitis. To preserve a healthy nasopharynx should be the ideal, attainment of which would help to prevent a whole host of diseases besides rheumatism. The attainment is admittedly not easy, and demands a much more serious view of the common respiratory affections of infancy than is usually taken. The ordinary "nasal discharge"—which is often regarded with complacency even by medical men—if allowed to persist lays the foundation for chronic lymphatic enlargement in the nasopharynx, with all its train of evils. Infant welfare activities should do much to improve matters in this respect. Cod-liver oil both in prophylaxis and treatment is of great value, and seems preferable to the iodine mixture suggested by Dr Parker, since it not only contains plenty of iodine but also, through its vitamin content, exercises a favourable influence on calcium metabolism. Ultra-violet light will often rapidly clear up nasal catarrh in an infant.



When the tonsils and adenoid tissues are already enlarged and inflamed, the problem is one of practical politics. Social conditions must be taken into account as well as much medical. Tonsillectomy like many another surgical procedure is a reproach to the physician but like them is often also the wisest course to adopt. It is clear that it is to restore the damaged tissue to health and function is the most desirable end and, given good hygienic circumstances, this may, no doubt, be not infrequently attained, as Dr. Puharman says. Unfortunately it is just in the "rheumatic" cases that it is most difficult to attain. In my work in the nose and throat department of the Aberdeen Dispensary I made a practice of attempting conservative treatment whenever there seems to be some prospect of success. In the great majority of the cases one is forced eventually to resort to tonsillectomy. What has to be borne in mind when considering the treatment of enlarged and inflamed tonsils is that they either are already or may easily become the permanent habitation of colonies of specific or non specific bacteria, thus composing the prolegomena to many tragedies of disease. Only when there seems to be a fairly good prospect of restoring the glands to health and function is one justified in persisting for any length of time with conservative treatment—I am, etc.

At the top of the page, the text reads: "D B C WALKER, M D, Ch B".

Sir,—In my letter in your issue of August 27th (p 366) I inadvertently cited Sir George Newman as having stated that "enlarged or inflamed tonsils are a cause (or the cause?) of rheumatism in children"

I am afraid I made the mistake—all too common—of quoting without verifying from the source the exactness or otherwiso of the words ascribed with the result that I find I have credited Sir George Newman with a view which he has never, in fact, expressed. I much regret this error and offer Sir George and yourself my sincere apology

I may add that with the exception of the first paragraph, my letter expresses my opinion on the subject under correspondence—I am, etc.,

Flackwell North Duck Aug 3<sup>rd</sup>

G D PAKER

## AN OPERATING THEATRE OUTFIT

Sm,—The timely letter of Sir John O'Connor in the JOURNAL of August 27th (p 365) opens up a question which, I submit, urgently requires to be thoroughly discussed and finally settled. Do surgeons and nurses need to envelop themselves in caps, masks, rubber glove, and "boots, gum, leg," or will the use of soap and hot water, a scrubber, and antiseptics for the hands and forearms with cleanliness of dress, (short) hair, mouth, teeth, and throat, be sufficient? I have been through the periods of (1) the Listerian ritual (2) antiseptics, (3) asepsis as practised to-day and submit that the right method is a combination of (2) and (3).

We do not need to render the patient poisoned and exhausted by a superheated theatre or by exclusion of fresh air (so-called avoidance of chill) or make ourselves uncomfortable by wrapping up as described above or by absorbing vitiated and heated air, laden with the vapour of anaesthetics. I was assistant at the South Devon and East Cornwall Hospital for many years to the late Connel Whipple, a well known Plymouth surgeon. A clean rapid and decided operator, he never took to rubber gloves (while I knew him), but wore a sterile overall and carefully prepared his hands and forearms with plenty of hot water and soap thorough scrubbing and prolonged soaking in a solution of mercury bismide in alcohol! I do not remember that he got more sepsis in his work than any of the surgeons who followed "aseptic" methods. I have been an ardent advocate of rubber gloves, but now, except for septic cases, have discarded them. From age and force of circumstances I perform no major operations at present but I do all the minor surgery that comes my way with cleanliness and strict attention to antisepsis detail. In the only case of mine which became infected, two years ago, I made use of rubber gloves—I will etc

H W WEBBER, M S M D LOVD

Wm. Loe, Cornwall Aug 31st.

## CONVULSIONS OCCURRING DURING SURGICAL ANAESTHESIA

Sir—I do not think Dr Pinon (Nw Leth, p 256) has to look for the cause of his trouble it was in the too large doses of atropine that he has been employing in conjunction with ether anaesthesia. The ether was in no way to blame. The majority of medical men fail to realize that the same dose of a drug cannot be given to a patient when under an anaesthetic as can be employed with possible safety in a patient who is not under that influence it depends upon the anaesthetic used. In other words Dr Pinson might have given, say 1/60 grain atropine to a patient and used chloroform as his anaesthetic and not had death shivers with the same patient if he had used ether he would have had convulsions and possible death.

During my thirty years as an anaesthetist and a teacher of anaesthetics I have spent some years working out the correct dose of morphine and atropine to be given to any patient prior to operation. The correct dose—that is, from the point of view of absolute safety and also I have no hesitation in saying the routine and maximum dose for any patient over 12 years of age should not exceed 1/8 grain morphine and 1/150 grain atropine. Between the ages of 5 and 12 years the dose should be 1/12 grain morphine and 1/200 grain atropine. The doses mean safety and are ample for all patients male or female. The symptoms of atropine poisoning are: Convulsions followed by paralysis, pupal at times alternating with delirium, coma and death preceded by heart failure and failure of respiration. Death is due to asphyxia"—I am, etc.,

Melbourne July 6<sup>th</sup>

R W HOPKINS

Sir,—I was much interested in Dr K B Pinnore's article (May 28th, 1927, p 956) dealing with cases of convulsions occurring during surgical anaesthesia. I notice that all the cases reported by him happened when ether was used as the anaesthetic. In 1919, when I was working at the Civil Hospital, Basrah I had a similar experience, but in this instance chloroform was the anaesthetic employed. The patient was an Arab woman and the operation curettage. The anaesthetic was pure chloroform (ether or mixtures were found to be too volatile in the high temperatures prevailing) and was administered by an Indian sub-assistant surgeon. The patient went under quite well but just as I was about to begin she had a typical epileptiform fit. There was no obstruction to the breathing and no change of colour. The anaesthetic was continued, and after a few minutes the convulsion ceased and I was able to complete the operation. There were no further convulsions. I could obtain no history of previous fits.

The case completely puzzled me, seeing that chloroform is so frequently used to control convulsion. Evidently, as Dr. Pinon remarks, the anesthetic agent is not the cause, and his suggestion of an excess of CO<sub>2</sub> seems to be the only explanation—I am etc.

Pukekohe New Zealand July 2nd

L J FORMAN BULL

## A FORGOTTEN BENEFactor

SM,—It is about a great medical pioneer and about his forgotten and neglected grave that I venture to appeal for the sympathy and support of your reader.

the sympathy and support of your readers.

On January 27th, 1860, was born at Ludlow in the parish of Bromfield a picturesque village two miles or so from Ludlow in Shropshire a boy to whom the name was given of Henry Hill Hickman. Three years later on April 2nd, 1863, he died - of a broken heart - and his body was laid to rest near the grave of his grandfather in the churchyard of Bromfield. Henry Hill Hickman is now only just decipherable as he lay there and his face bore a sadly neglected appearance. He was the possessor of a broken heart for that is a common lot of poor men and a pioneer he undoubtedly was. The aged were surprised in his own day he was the real first discoverer of one of its greatest boons ever conferred on suffering humanity - the anaesthetic relief of pain. It was probably in his latter days, or whilst as the custom of radical men of that day, he was serving his time as an apothecary apprentice,

that Hickman began to feel his way experimentally towards the scientific use of anaesthesia. The principle of his method was to induce unconsciousness by inhalation. The vapour he used was probably carbonic acid gas (CO<sub>2</sub>), unmedicated. His method was no doubt crude, and probably dangerous also, inasmuch as he proposed to deprive the patient of air and put him to asphyxiate him. Nevertheless, Hickman's was the pioneer work in this great discovery. He took the diploma of M.R.C.S. and began his career as a country practitioner.

It must have been some twenty years before ether was introduced into England from America, in 1846, and still longer before Simpson in Edinburgh, three years later, discovered chloroform, that Hickman was trying in vain to get his anaesthetic discoveries recognized by the medical profession. In London he could get no hearing. In Paris they gave him a warmer reception, and many encouraging words. He even secured the honour of an introduction to the French King, Charles X, but neither in France nor in his own country could this young surgeon get any practical move on in the way of specialized experimental research. Having by this time a wife and children he had to revert to the ordinary ways of earning his livelihood. For a while he practised in Shifnal, in Ludlow, his native district, and in Tenbury. At the latter place he lived at No. 18, Teme Street. A notice card is still extant to say that on every Tuesday (the market day in that town) he was willing to see gratis, between certain hours, the poorer people of the neighbourhood. Was this kind yet eager heart already beginning to break? Anyhow, at the early age of 30 he died at Tenbury, leaving a widow and four children.

At the beginning of the present century Hickman's name was partly recovered from obscurity by one or two of the leading medical journals, and some little honour was done to his memory. Mr C. J. S. Thompson, a chemical authority, wrote a long and interesting article on Hickman's short and tragic career in the *BRITISH MEDICAL JOURNAL*, April 13th, 1912 (p. 843). It was illustrated by Hickman's portrait—a very pleasing one, in the possession of his granddaughter—from a copy in the Wollecome Historical Medical Museum, 54, Wigmore Street. All this took place just before the outbreak of the great war. That catastrophe overshadowed, of course, greater events than the revival of any one individual memory. Now that we are coming back to more normal times, and now that we are nearing the centenary of Hickman's death, is it not reasonable to hope that those who represent the English medical faculty will do something to recognize the debt which we all owe to one of our greatest medical pioneers? The least that might be done is that his dilapidated grave-stone should be restored, with some suitable inscription perpetuating his name, and expressing the honour long overdue to a great human benefactor, one with English blood and English bred—I am, etc.,

F. WYLAND JOYCE,

Formerly Vicar of Harrow and Prebendary of St Paul's

Petersham Aug 20th

### ULTRA-VIOLET RADIATION AND VARICOSE ULCERS

SIR,—In the discussion on the uses and limitations of ultra-violet radiation in the Section of Dermatology at the Annual Meeting of the British Medical Association, Dr F. Gardiner is reported to have stated, "It was useless for varicose and chronic ulcers" (*BRITISH MEDICAL JOURNAL*, August 13th, p. 257). This statement, in the present stage of the development of actinotherapy, is unduly dogmatic and, coming from an authority who has obtained good results with ultra-violet treatment in such difficult conditions as lupus erythematosus and syphilis, carries too much weight.

It will be observed that Dr Dore, who read the opening paper in an admittedly pessimistic vein, stated that chronic septic and tuberculous ulcers are benefited by light. It is assumed that he included varicose ulcers in this chronic septic type.

These two opinions, coming from accepted authorities, would have been irreconcilable if Dr Gardiner himself had not given the explanation by saying, "The accurate and scientific dosage and the limitations of the new therapy could not yet be stated." Throughout the discussion and, it may be added, throughout the literature on ultra-violet treatment, these diametrically opposed views are continually met with. The reason, of course, is that there is no standard technique, and unless the technique is mentioned there is no common ground for discussion. Ultra-violet treatment may mean a few minutes with a carbon arc at three or four feet, or double the time with a Kromayer in contact.

I have not found ultra-violet radiation useless in the treatment of varicose and chronic ulcers but, on the contrary, very valuable. Varicose and other ulcers which had remained unhealed for many years, in spite of every form of treatment, immediately began to improve, and steadily healed with ultra-violet radiation—I am, etc.,

London, W. 1, Aug 18th

M. WEINBERG.

### BLOOD PRESSURE

SIR,—Many members of the medical profession will feel grateful to Dr Adam Moss for his letter on blood pressure which appeared in your issue of August 20th (p. 328). In it he states what must have passed through the minds of many of us. What he objects to is unfortunately, only one of several practices which, under the name of medical or surgical advances, are used without due regard to the real advantage of the patient—I am, etc.,

JOHN CAMPBELL, M.D.  
F.R.C.S. Eng.

Craigavad Co. Down, Aug 30th

### Medico-Legal.

#### ACTION TO RECOVER MEDICAL FEES

Our special correspondent in Capetown sends the following note. A decision of much interest to the medical profession in general and to specialists in particular, was given in the magistrate's court, Wynberg, on July 5th, by Mr D. D. Leslie, A.R.M., in the action brought by Mr C. E. Jones Philipson, F.R.C.S. Ed., of Capetown, against Otto Thiel. The plaintiff, who practises as an ear, nose, and throat specialist, sued the defendant for the sum of twelve guineas, being professional fees for services rendered to the latter's daughter. Defendant denied responsibility claiming that he was not in law liable for the fees—his daughter being a minor—and that, in any case, they were excessive and unreasonable. He conducted his own defence. According to the evidence of plaintiff, Mrs Thiel consulted him one afternoon, complaining of great pain in the ear. The trouble was diagnosed as inflammation of the middle ear. He applied immediate treatment for alleviation of the pain, and sent her home with instructions to report to him on the following day. After her departure, in accordance with a well established custom in the profession, he communicated with the girl's mother on the telephone and explained the position, giving at the same time instructions as to further treatment. Mr Thiel was not at home at the time, and plaintiff did not speak to him about the case. Mrs Thiel attended at his consulting rooms six times in all. His fees for the consultations and treatment amounted to twelve guineas, an account for which was rendered in due course. Evidence for the plaintiff was given by Dr W. Duley Hunter, President of the Medical Council, who asserted that the procedure adopted by Mr Jones Philipson in communicating with the mother of the patient who was a minor, was correct. It was not usual, he declared, to discuss the question of fees beforehand, and the fees charged, in his opinion, were most reasonable. Evidence testifying to the correctness of the treatment advised and to plaintiff's observance of medical etiquette was given by Mr H. A. Moffat, F.R.C.S. and Mr F. F. Petersen, F.R.C.S. Ed. Called by her father, Mrs Thiel stated that she had been troubled by earache, and had been advised to consult Mr Jones Philipson. She was not aware of the fact that he was a specialist when she went to him and her father knew nothing about the visits until later. Cross-examined, she admitted that her trouble was relieved as the result of the treatment received. After hearing counsel in result, the magistrate granted judgment for plaintiff, with argument. He found that the treatment had been necessary, that costs incurred had been essential and that the ear trouble was such as reasonably to require the services of a specialist. He was further of opinion that Mr Jones Philipson had acted in accordance with professional custom in communicating with the girl's mother, and that the fee charged was, for a specialist, in no way excessive. The only other question was whether, in the circumstances, the mother of the minor was in law liable to pay, which question had to be answered in the affirmative.

## Obituary

ALBAN HENRY GRIFFITHS DORAN F.R.C.S.F.R.C.,  
Consulting Surgeon to the Samaritan Free Hospital  
London

In an announcement in our issue of August 20th we regretfully stated that Mr Alban Doran had been admitted to the ophthalmic ward in St Bartholomew's Hospital suffering from acute glaucoma notwithstanding all that the loving care of the staff of his old hospital could do for him he died on August 23rd.

In the London medical world he was once a familiar figure which however, had not often been seen lately, as advancing years and failing sight restricted his activities. Twenty or thirty years ago Alban Doran's personality, his anatomical and general medical erudition and certain harmless eccentricities of movement and expression marked him out for notice at those meetings of medical societies which he long frequented where his small but active figure and his alert carriage never failed to attract attention.

He was brought up in a literary atmosphere for his father Dr (of Philosophy) John Doran F.R.S. was editor of the *Athenaeum* and of *Notes and Queries*, and was the well known author of various works on the stage and historical subjects.

Alban Henry Griffiths Doran was born in London in 1849 and received his preliminary education at a private school. He entered the medical school of St Bartholomew's Hospital in 1867 and distinguished himself by winning scholarships and prizes. After holding the office of house physician to Dr Reginald Southey and house surgeon to Mr Lutley Holden he was appointed an assistant demonstrator of anatomy in the medical school but gave up teaching after a year's experience. He obtained the diplomas of M.R.C.S. and L.S.A. in 1871 and that of F.R.C.S. in 1875. Doran was a skilled and delicate dissector and in 1875 he became anatomical assistant to Sir William Flower at the Royal College of Surgeons in England, thus beginning a connexion with its museum which lasted almost to the end of his life. Soon after this appointment Flower fell ill and in his absence Doran undertook the secretarial work of the conservator which brought him into relation with many eminent men of science such as Richard Owen, Huxley, St George Mirart Garrod, Slater (who investigated the remains of an albatross bird from Rodrigues Island) Parker Vachon and others. On the return of Sir William Flower, Doran helped him in his work of craniometry.

Doran's attention was drawn to the middle ear in mammals, and he took up the subject enthusiastically exploring the large store of mammalian skulls in the museum and finding a great number of auditory ossicles which he mounted on glass. It only then came to his knowledge that Professor Huxley had written a monograph on the subject based on a considerable number of specimens. At that time the College received frequently the bodies of animals which had died in the Zoological Gardens, and these furnished him with additional materials. With the help of Mr Ockenden for many years an assistant in the Gardens, he dissected out the

and took out of an elephant. The collection of ossicles thus required was displayed as they may still be seen in a wide shallow box. To the collection added Max Hübner's collection showing the anatomy of the bone of the inner ear in mammals, which was recounted by Mr Doran. The ossicles audited were exhibited at a meeting of the Royal Society and a little later a monograph on the subject was published with engravings by Bergeau, in the *Transactions of the Linnean Society* (1878).

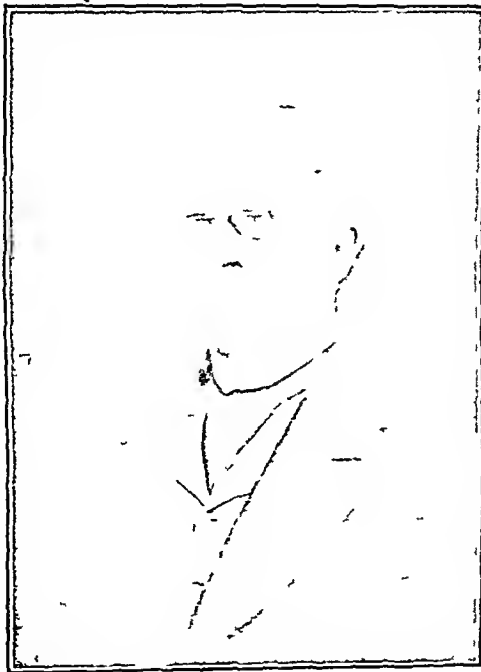
But Alban Doran's industry and intelligence were not exclusively devoted to anatomy. He held the appointment for some years of pathological assistant at the College of Surgeons, and for eight years he laboured with Sir James Paget and Sir James Coddart in the compilation of a catalogue of the pathological specimens in the museum. In 1877 he was elected an assistant surgeon to the Samaritan Free Hospital for Women where he had Sir

Spencer Wells, Dr Bantock and Mr Knowles Thornton for colleagues and took part in that development of gynaecology with which his names and his own will always be associated. For eight years he acted as president in the arrangement of the surgical series of the pathological collection at the College of Surgeons and his practical knowledge was of great value in the rearrangement and description of the specimens illustrating disease and injury of the female genital tract, many of which were obtained from the Samaritan Hospital. Doran worked for thirty-three years at the hospital his surgical operative work being largely concerned with supracervical hysterectomy for fibroid and with certain abdominal tumours mainly retroperitoneal the pathology and the operative results he brought before various societies and published in this Journal.

When he retired from private practice in 1909 Doran returned as a volunteer worker to the museum of the College of Surgeons where Sir Arthur Keith afforded him facilities for work in any field that he preferred. The

obstetrical and gynaecological series were there rearranged with the valuable help of Professor Slater and he obtained the aid of Dr Barr and Sir Bartholomew's Hospital in mounting a small but instructive group of normal and deformed pelvises.

Doran had become President of the Obstetrical Society in 1899 and when that society was abolished by the Royal Society of Medicine he used his influence to promote a transfer of its museum as a loan collection to the College of Surgeons and from 1912 onwards he was largely devoted to the compilation of a descriptive catalogue of the obstetrical and other specimens in the museum to which Sir Pickman Godlee added his appliances and instruments used by Lister in his physiological and pathological researches and in the evolution of the puerperal emergency. Doran completed the descriptive catalogue before he died in 1915. It has been typed and many of the plates printed and it forms a handsome work of 1000 pages. It is not quite unique or his industry and knowledge would be understood that the catalogue is being prepared by Mr C. S. Thompson lately of the Wellcome Historical Medical Museum, who had helped Mr Doran in the carrying out of his compilation.



*Alban Doran*

Doran joined the salaried staff of the *BRITISH MEDICAL JOURNAL* as sub-editor in the early eighties, when Mr. Lincolt Hart was the editor, and Dr. Alexander Henry, who had long been secretary of the Metropolitan Counties Branch, was assistant editor, the other sub-editors were Dr. Faucomt Barnes, son of the more famous Dr. Robert Barnes and Mr. George Eistes, F.R.C.S., who had been honorary secretary, and afterwards treasurer, of the Metropolitan Counties Branch, and subsequently an active member of the central Council. The salaries were small and the duties light, but Doran would spend the whole of publishing day with Dr. Henry. He could always be depended upon to get up his facts carefully, had a command of several languages, and wrote a good English style. But journalism did not appeal to him, and he presently found more congenial occupation at the Royal College of Surgeons, as has already been related.

Alban Doran's was not a narrow mind. Notwithstanding his anatomical, pathological, and surgical activities, he found time to acquire much curious learning and a wide knowledge of literature. He was an accomplished Shakespearean scholar, and contributed the article on "medicine" to *Shakespeare's England*. Those who had the good fortune to hear his annual oration as President of the Medical Society of London in 1899 on "Shakespeare and the Medical Society" will remember with what an almost overpowering wealth of quotation it was illustrated. His article in the *Journal of Obstetrics of the British Empire* on "Burton (Dr. Slop), his forceps and his foes," in which he wrote of Dr. Burton of York and Sterne's caricature of him, displayed not only his erudition but also his sense of humour. He was an honorary fellow of several foreign societies, and besides the works above named he published a *Handbook of Gynaecological Operations* in 1887.

[The photograph reproduced is by Mr. Adolphus Tear, London and Ipswich.]

#### ARTHUR DRURY, M.B., C.M.,

Late President of the Association of Public Vaccinators

Dr. ARTHUR DRURY, who died on August 22nd, at his residence in Halifax, at the age of 66, received his medical education at Edinburgh where he graduated M.B., C.M. in 1887. He then commenced practice in Halifax and held the appointments of medical officer to the Halifax Union and public vaccinator to the borough.

Dr. Drury will chiefly be remembered for his strenuous support of vaccination, he was honorary secretary of the Jenner Society, and for a time he edited a supplement to the *Medical Officers' Journal* on this subject. He was at one time president of the Association of Public Vaccinators of England and Wales, and he was the author of an article on vaccination published in the *Journal of the Royal Sanitary Institute*. During the war he served as registrar of St. Luke's War Hospital, Halifax, with the rank of Major R.A.M.C.

Dr. Drury was assistant secretary of the Yorkshire Branch of the British Medical Association from 1890 to 1900, and a member of the Branch Council from 1909 to 1914. He was a representative of the Halifax Division from 1908 to 1916, and chairman in 1914. He was also a member of the Vaccination Subcommittee of the Public Health Committee from 1912 to 1913.

We are indebted to two of Dr. Drury's colleagues for the following personal appreciations.

Dr. A. E. COPE writes: The news of the death of Dr. Arthur Drury will come with the shock of painful surprise to many who never had the privilege of his acquaintance. Right away from the time when, in May, 1893, as public vaccinator for Halifax, he gave evidence before the Royal Commission on vaccination, his name has been closely linked with the cause he there advocated. The formation of the Association of Public Vaccinators of England and Wales naturally attracted him, and he was one of the early members, being elected to the council in 1903, and serving as president from 1907 to 1909. He threw himself most actively into the association's work, rarely missing a council meeting and his keen insight, abounding energy, and journalistic instinct deeply influenced its policy and

extended its influence. On the death of Dr. Bond of Gloucester he took over for a time the secretaryship of the Jenner Society, and held himself ready to enter the lists against any of the opponents of vaccination, whether with voice or pen. For many years he edited the supplement to the *Medical Officer*, devoted to the interests of the Association of Public Vaccinators, while more recently he added to his labours the editing of a similar supplement on behalf of the Poor Law Medical Officers' Association. Both associations will find it difficult to fill his place.

He was a keen controversialist, but never harboured a grudge, and his uncompromising honesty and singleness of aim won him friends even among his opponents. Although his health had been a source of anxiety for some time his tireless enthusiasm and indomitable courage kept him at work right to the end. He gave evidence quite recently before the Vaccination Committee appointed by Mr. Neville Chamberlain, and in July he took part in the discussion on small-pox at the Hastings meeting of the Royal Sanitary Institute. We lose a most loyal comrade and friend, and the public health service a strenuous and unselfish advocate.

Dr. JAMES BRADY writes: As ex-president of the Public Vaccinators Association I feel I must write a short appreciation of my old and sincere friend, the late Dr. Arthur Drury of Halifax. Dr. Drury was a man of magnetic personality, of the most transparent sincerity, and these, accompanied by such an extraordinary gift of expression, both by word and by pen, made him a truly outstanding figure in the great profession to which he belonged. How he spent his strength for others is well known to his medical colleagues, and in spite of physical suffering, which for several years necessitated his taking a long holiday in the South of France during the winter months, his temperament was such that he could not find peace of mind unless he was working at a rate impossible to most of us, and he died in harness, which was his wish. A brilliant debater and an incisive writer, he has rendered unmeasurable service to the community as a whole by his advocacy of vaccination for small-pox. Those of us in closest touch with the Public Vaccinators Association are only too conscious of the great loss we have sustained. Capable of almost superhuman effort and accomplishment, and giving unstintingly of his brilliant qualities, his place can never be adequately filled by one person. Notwithstanding that his sight had all but failed him, and his strength had ebbed, he was as cheery as ever and arranged to attend the congress of the Royal Sanitary Institute at Hastings, to support the case for vaccination. Few men possessed such a knowledge of the history of small-pox, combined with statistics relative to the efficacy of vaccination. It is therefore little wonder that when legislative changes were contemplated his experience was so frequently drawn upon. His was a case of "the busy man always finding time," for not only had he built up a large private practice, but the causes of Poor Law and national health insurance always found in him an able exponent and a faithful practitioner.

Dr. SAMUEL WILLIAMS, who died at his residence in Llanelly on August 19th, aged 60, received his medical education at Cardiff and University College Hospital. He obtained the diplomas M.R.C.S. Eng., L.R.C.P. Lond. in 1891, graduated M.B. Lond. in 1893, and proceeded M.D. two years later. He held the appointments of house-physician and obstetric assistant at University College Hospital, and was later senior medical officer at the City Fever Hospital, Birmingham. For some time subsequently he travelled abroad and then commenced at Llanelly an eminently successful practice, taking a prominent part in the medical affairs of the district. He was a member of the Executive Committee of the South-West Wales Division of the British Medical Association from 1907 to 1913 and from 1922 to 1925. He was a member of the South Wales and Monmouthshire Branch Council in 1914 and chairman of the South Wales Division in 1916. He was also secretary of the Panel Committee a certifying surgeon under the Factory Act, a medical referee under the Workmen's Compensation Act, and during





## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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### QUERIES AND ANSWERS

#### DIAPHORETICS AND DIURETICS

"**SCRUTATOR**" finds that many diaphoretic and diuretic mixtures are unpalatable. He asks for suggestions as to mixtures which are at once palatable, effective, and reasonable in cost.

#### HYPERIDROSIS

**Dr C. J. L. Cook** (Blackheath) writes in reply to "**Tropicus**" (*JOURNAL*, August 27th p. 372): "I would suggest he tries an ointment containing 2 per cent of formaldehyde in hand without previous bathing by the patient. This is rubbed once a day into the feet and hands on two or three extreme cases on three or four successive days after which the hyperidrosis ceases and the sweat is brought back to normal. The effect lasts from four to six weeks, when the treatment may be repeated, if necessary."

#### OMENTAL TEARS

**Dr JOHN M. MUNRO** (Odessa, Ontario) writes in reply to "**M.B.**" (*Ch.B.* July 23rd p. 152): "The case seems to be one of 'tear on the omentum.' An exploratory operation is necessary to relieve the pain as the omentum may be caught in the tear. I had a case recently and on operation found the omentum not only caught but herniated to such an extent that it could not be replaced in the abdomen without extension of the tear, and then a kangaroo tendon suture to close."

#### TREATMENT OF ONYCHIA

**Dr AGNES SAVILL** (London, W.) writes in reply to "**W. S. M.**" (*JOURNAL* July 30th p. 196): "Onychia is so obstinate that every means of raising the general resistance should be employed. Fresh air, tonic, vaccines, sunlight, exercise, plenty of water, fruit, vegetables, and avoidance of sweet foods all aid the patient. Locally mild mercurial ointments may be sufficient, but ionization provides the most reliable means of dealing with the infection. A small piece of gauze or cotton wool soaked in a 2 per cent solution of zinc sulphate is carefully inserted round the base of the nail, another piece is placed over it and a small flexible tin electrode attached to the positive pole. The negative pole is a larger pad on the anterior aspect of the forearm. A small current—1 to 5 milliamperes—is passed for five to eight minutes according to the severity of the condition. Three or four applications given twice a week are usually sufficient even in severe cases."

#### ANGIO-NEUROTIC OEDIMA

"**C. F. S.**" who noticed the inquiry of "**Ajax**" (*JOURNAL*, August 20th p. 331) as to the treatment of a case of angio-neurotic oedema asks whether the administration of fresh sea water has been tried. "**C. F. S.**" suggests that "**Ajax**" might begin with doses of 5j in water two or three times daily, half an hour before food, increasing the amount up to one half or one pint in the twenty-four hours, if necessary. It is readily taken by infants in milk or when they have come to appreciate its pleasant "ting" in plain water. It does not retain its energizing, soothing and vitalizing properties for more than about a week, but the tuberculous child the weak and overworked adult the asphyxiated and in all septic cases however severe its action and its virtues so widely recognized and used more than two centuries ago should have been for so long forgotten. Even its

effects in miasmas neonatorum (made known to us by the French some fifty years since)—peace in twenty-four hours, plumpness and happy activity by the end of another four or five days at the most—do not seem to be remembered.

### LETTERS, NOTES, ETC.

#### TOLAFRIA AND MENTAL DISORDER

**Dr JOHN B. BIRNY** (Keshelagh) writes: "I was asked to see a young woman with a view to her readmission to an asylum for the third time. On entering the bedroom I was impressed by the disgusting odour, which I found was due to the state of the patient's mouth. She had eyes and mouth closed, and appeared almost unconscious. I decided to treat the mouth, and, if possible, get rid of the bad smell before sending her away. I procured a 2 oz. glass syringe and making a wash of one part of hydrogen peroxide to seven of warm water, gave the mouth and throat a good wash out, this treatment was followed up every four hours by the mother until the next day, by which time not only was the offensive smell almost gone, but the girl was taking notice and able to swallow liquid nourishment. When I visited her on the third day she was downstairs by the fireside, and it was not necessary to send her to the asylum."

#### RHEUMATIC INFECTION IN CHILDHOOD

**Dr A. C. T. HALFORD** (Brisbane, Australia) has been induced by the leading article on the prevention and control of infection in childhood, published in our issue of April 16th last (p. 731), to send a letter, too long and discursive for publication in full, expressing his conviction that rheumatic infection can be conveyed from one person to another. The concluding part of his letter contains the following passages: "In my own practice a large proportion of cases show evidence of pre-existing disease in parent or guardian, though persistent inquiry and clinical examination has had to be resorted to to establish a positive or a negative history. Acute rheumatic affections in the child are sometimes overlooked by the medical attendant, and these cases go to swell the number of negative histories. I therefore believe that the disease, like phthisis, is conveyed from a previous case as a result of exposure to infection on innumerable occasions over the long period of childhood. It is evident that prevention depends upon a careful survey of those in whose case we find the sufferer. A proper clinical examination in every case may reveal in the parents factors which ultimately may be found of great import. All focal infections must be regarded with the same suspicion as sources of danger to others as they are now regarded as unfavourable to the host. The influence of mixed infections is baffling and must be guarded against among all in the household and these persons should be warned that the disease itself is communicable. The power of the infection to be latent, ohemic, and practically forgotten is seen most convincingly in the recurrences in the same patient at long intervals. It is impossible, therefore, at any time, to declare a patient free from infection. Why not regard a parent with or without an incriminating history as suspect in the same manner? In both instances there are dangers to others. Why not guard against such possibilities?"

#### TRIATAMINI OF VARICOSE VEINS BY INJECTION

**Dr S. M. WILLS** (London) writes with reference to Major General T. M. Corbier's inquiry, that within the last year he has treated about twenty cases in Valparaiso all—except one of which he does not know the sequel—with very good results. He heard of no accidents in the case of colleagues. He adds: "The injection, no doubt, causes an aseptic phlebitis and a firm thrombosis in the veins. After the injections there is some redness and tenderness, which causes a little inconvenience. The injection can be given in the consulting room and the patients can go about their work as usual immediately afterwards. Varicose ulcers clear up in a comparatively short time. Those who complain of heaviness and tiredness in their legs are greatly relieved. One of my first cases a lady, had extensive varicose veins reaching well above the knees and a very painful varicose ulcer in the usual place, about the size of a shilling. She could not afford to lie up, having a family of eight, and she did the morning housework, she obtained relief after the first injection, the ulcer ceased to hurt her, and she was able to go about quite well. The ulcer healed over in a little more than a month. The veins could be felt like cords under the skin, and there was no tenderness anywhere. I usually give two to three injections at about three to four inches interval at one sitting, repeating the process in a week wherever the veins are soft, this is not the case round the site of previous injections. The average case requires about three sessions. Of my cases three had ulcers, two healed completely to my knowledge. The third had just finished treatment when I left. The ulcer was smaller and had shelling, not punched out, edges, it was covered with healthy granulations and quite painless. All the patients were highly pleased with the method and consequent benefit, since they did not have the loss of time, discomfort, expense, and ever present danger of a surgical operation."

#### VACANCIES

**NOTIFICATIONS** of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 36, 37, 38, 39, 42 and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenures at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 128.

# THE TREATMENT OF ACUTE LOBAR PNEUMONIA

## I—PROPHYLAXIS SPECIFIC TREATMENT: SYMPTOMATIC TREATMENT

JOHN HAY, M.D., I.R.C.P.,  
Prof. of Medicine University of Liverpool

The question of the treatment of patients suffering from pneumonia is one of paramount importance, and one which appeals to every member of our profession. I realize not only the honour but also the responsibility of being asked to speak in the open, and my remarks will be directed with the object of promoting and exciting a full and free discussion, rather than of urging any particular view or views which I may hold.

Pneumonia is a disease which killed 35,930 persons in England and Wales in 1925, and if we accept a mortality of 20 per cent there was a severe incidence of 185,000. In the city of Liverpool, with a population of 842,268 in one year there were 640 deaths, 3,200 persons were affected, or 1 in every 263 of the population.

It is remarkable that even to-day there is no immunity as to the actual nature of the disease. It is admittedly an infection, and the causal organism is the pneumococcus, either alone or in combination with other organisms acting as allies in its attack on the patient, but what is not agreed upon is the method by which infection takes place.

As we consider it a primary blood infection, a septæmia or is it a disease invading the lungs directly by way of the air passages? In other words, is it to be considered of hæmatogenous or biologically origin? This is a question of considerable importance when one comes to discuss the question of specific treatment.

The drift of opinion is away from the conception that pneumonia is primarily a general infection and towards the view that it is entirely a local infection striving to become general. Accepting the second view, we may say that pneumonia is a specific infectious disease due to the pneumococcus with the primary site of infection in the lungs.

The outlook in any particular case depends on the virulence and type of the infection and the local and general resistance of the patient. The infecting pneumococcus may belong to one of four groups.

Professor E. L. Glenn has pooled the American and British figures. His figures show the relative incidence of the types and the associated mortality.

Type 1	In nearly 1/3 of adults	25%
Type 2	In nearly 1/4	33%
Type 3	In nearly 1/10	50%
Type 4	In more than 1/4	10%

In addition to the pneumococcus, among other organisms the streptococcus or influenza bacillus may be present.

Pneumonic patients seem to have had a bad time in the past. In the early part of the nineteenth century they were excessively purged, bled and starved. Later on, alternatively, they were treated with massive doses of nauseating antimony, and, still later, they were drenched with alcohol. The mortality was appalling, and by degrees it was recognized that treatment less dramatic and more imbued with common sense gave far better results.

Pneumonia is a self-limiting disease tending to recovery. In 100 cases the chances are that about 75 will survive if allowed to do so. 10 to 15 will probably die—doomed from the first. This leaves another 10 to 15 patients who are chances or recovery will depend on the manner in which the case is handled. The medical man is the determining factor in this small percentage of patients. Correct treatment and careful nursing are going to turn the balance.

For the last few years there has been an earnest endeavour to discover some treatment which might fairly

be called "specific." But of a specific comparable in result to the antitoxin for diphtheria or a vaccine comparable to that I cannot find in the literature. We are arrested by the preliminary facts before we reach the infectious disease in which treatment becomes a recognized and assured position. If the medical man drenches pneumonia with the first acute infection to be combated successfully in this way.

### Prophylaxis

Pneumonia is an infectious disease and prophylaxis in regard to it obtains less consideration than in diseases.

In view of its contagiousness it is unwise to concentrate the pneumonia as in a general ward of a hospital. In 1883 I made this mistake in order to facilitate chemotherapy with the unfortunate result that three of the out-patients developed pneumonia.

When a patient suffering from pneumonia is nursed in a general ward he should be partially screened off from the adjacent patient. Sputum should be disinfected as well as clothing and other fabrics which have been contaminated by the patient.

Every nurse should be taught to hold a disinfectant paper over the nose and mouth of the patient when he coughs or sneezes.

Examining the right side of the patient's head is essential. The patient may and must be left and vice versa. Otherwise the patient may and must be left, cough directly into the face of the doctor or nurse. It is not only unpleasant but clearly dangerous.

Hands should be washed after examining a patient and always before food is taken.

Since the pneumococcus is liable to lurk in the mouth of the patient, attendance on the patient requiring with caution or other anti-septic is advisable.

Finally, the room should be carefully scrubbed down and the bedding disinfected when the illness is over.

**Prophylactic Vaccination.**—This is no longer a matter for controversy of uncertain value. Since 1911 the evidence has been accumulating and the result of prophylactic vaccination in the mines of South Africa in which it is used by Sir John Lister has proved that the administration of large doses of pneumococcus has a specific effect and greatly diminishes both the incidence of the disease and its mortality. The great value of prophylactic vaccination has been further demonstrated by Cecil Auer, Vaughan and others. However, there is no treatment practicable in ordinary life if a fresh attack occurs but it is certainly advisable in the case of those nursing pneumonia and in the case of men in the army or in the navy or in the work are frequently and inevitably exposed to the disease in close quarters. The risk of an outbreak of pneumonia is lessened. The nature of the disease is variable in extent with the prevailing type of infection.

Pneumonia has been anticipated as a general emergency and from the onset there is a rapid and early manifestation. It may be treated as a general disease. While much more could be said in regard to this, in private, the essentials are the same.

In private you will be surrounded by nursing friends and friends. The suddenness of the onset of the disease in the confinement of the patient gives rise to complications between hope and despair. The atmosphere of apprehension is not only a burden to the patient but also a burden to the doctor. It is difficult to judge the trend of the disease in the early stages. The tendency is to over-estimate the danger to the patient and to his relatives in mind or whom it affects. It is a term for which there is no doubt the disease is a general emergency. For the sake of the patient and perhaps of the doctor, it is better to err on the side of which he has said that the disease is a general emergency. Confidence and calmness are essential. The doctor—the man responsible for the patient's life.

The common rule of the doctor is to keep the patient in bed and complication is avoided or minimized. The three important factors are (1) to maintain (2) to avoid (3) to keep the patient in bed. The result of the patient's life is the same. (1380)

For treatment to be effective, therefore, these factors must be borne in mind from the first. The main essentials are fresh air and complete physical and mental rest. A quiet, cool, well ventilated room, with an open window—for fresh air is a tonic. A fire, but no fire. The bed should be single, the bed clothing light, there should be neither cold nor too dense counterpane. No gungsee jacket is required. A gungsee jacket is merely a sop to the mentality of the relatives and nurses.

The clothing should be loose and open down the front to facilitate examination. It is then easy to examine the major part of both lungs without disturbing or distressing the patient. With arms at rest on the pillow above the patient's head there is easy access to the axillae. After a diagnosis has been made this method of examination will suffice.

From the first the need for absolute rest must be impressed on those in attendance, and the use of the bed-pin, distasteful as it is to some, must be insisted on from the beginning. Every unnecessary movement should be avoided, energy must be conserved. The time to treat eridne fulure is before it has occurred. If, however, the patient is comfortable in the semi-prone position there is no reason why he should not be partially propped up. Sometimes breathing is easier thus. Tepid sponging is soothing, and tends to ease and comfort, and is standing to the vasomotor system.

A pneumonic patient is thirsty rather than hungry. He should have plenty of fluid, and in the first forty-eight hours fluid only, water, or natural lemonade containing glucose, diluted fruit juices, grapes, and one pint of milk in the twenty-four hours, well diluted. Tea or coffee may be given but the coffee should not be allowed towards the end of the day. After the shock of onset (in a mild case) there is no objection to a somewhat less sloppy diet—such as a lightly boiled egg, pines, and a few dry biscuits. I question whether it is wise to give soups and broths.

At the onset the bowels should be freely opened. Calomel or salines, or a combination of both are generally all that is required. If the bowels are stubborn, then a simple enema. This can be repeated when necessary, or a saline given each morning.

**Abdomen**—Throughout the illness the condition of the abdomen must be carefully noted, and at the first indication of distension steps taken to afford relief. A distended abdomen hampers the diaphragm, and in emphysematous patients or those with old-standing mitral disease abdominal distension is a grave complication. If there is reason to suspect that the diet is responsible then milk should be stopped, sugar diminished, a simple enema given, and, if necessary, a rectal tube inserted to remove colon flatus. If these measures fail, an intramuscular injection of pituitin should be given. An ice-bag to the abdomen is sometimes of service.

#### Specific Treatment

We now come to consider specific treatment—treatment by vaccines or serums or both, a line of attack concerning which there is undoubtedly considerable difference of opinion. For example, in the 1925 edition of Osler's *Medicine* we read that "There is no proof that the use of vaccines is of value in treatment." And in the article by Drs R. A. Young and G. E. Barnum contributed to the textbook edited by Dr F. W. Price, the position is summed up thus: "Vaccine treatment is recommended by some, but the results are generally disappointing during the acute stage. Vaccines seem to be more valuable in cases of delayed resolution." This may be taken as fairly representing the view of the majority of the profession in regard to the use of vaccines in the treatment of pneumonia.

On the other hand a large amount of careful work has been carried out which tends to show that, under certain limited conditions in which types of the disease, vaccine treatment does shorten the illness, modify the severity of the attack and diminish the mortality. In England Professor Wynn is well known for his enthusiastic advocacy of this form of treatment.

My personal attitude towards the therapeutic value of vaccines in pneumonia has been frankly critical. I looked upon pneumonia as a septicaemia in which there is, as a rule, a good morrow response with an adequate leucocytosis, and serum treatment (when feasible) appeared to be the line of attack most likely to give results. In addition, I was perhaps unduly influenced by the practical difficulty in determining the specific form of organism responsible in each patient, and the delay in preparing an autogenous vaccine.

Recent investigations, however, seem to indicate that pneumonia is a local infection in the lungs with only a tendency to septicaemia—in fact, a focal type of disease in which vaccines might be expected to prove beneficial and aid in the more rapid development of antibodies. I was impressed by an interesting paper published by Captain Malone in 1925, in which he dealt with 58 cases of pneumonia—29 treated with vaccines and 29 as controls. He gave a dose of 400 million on the day of admission. This was a mixed vaccine containing Type 1 (one strain) and Type 4 (three to four strains). The sputum was typed the same day and a vaccine prepared from the peritoneal cavity of a young rabbit. The next day and the day following the patients received 400 million of homologous vaccine. The results were favorable and appeared to justify the following conclusions: (1) That early vaccine treatment proved effective in promoting recovery, lessening the duration of the fever, and assisted in ending the fever by crisis. (2) That vaccines after the third day proved ineffectual. This and other credible evidence cannot be disregarded.

All the advocates of vaccine therapy in pneumonia stress the importance of vaccination within the first three days. After the third day it is questionable whether anything is to be gained by this form of specific treatment.

Pure pneumococcal pneumonia with frank leucocytosis is not clinically comparable to the influenza pneumonia, in which there is a tendency to poor or delayed morrow response, and a leucopenia rather than a leucocytosis. In these patients my treatment which will stir up the morrow is of benefit. Polyvalent serums, either antipneumococcal or antistreptococcal, protein shock, in whatever way produced, and vaccines, autogenous or stock, act in this manner. It is an open question as to how far this treatment is truly specific. This is a question for the bacteriologists.

It is in the leucopenic type of pneumonia that we should expect the best results from injections of sodium nucleinate—advocated by Dr Grindley-Medwin—during which has proved of considerable benefit.

The use of vaccines or serums is attended by certain obvious difficulties, the chief being the necessity for the active co-operation of a good laboratory near at hand, for the type of the infecting pneumococcus and also the nature or any associated organisms must be determined rapidly.

If serum is used there is in addition the very considerable expense entailed. Serum is dear and, to be effective, large quantities must be injected every eight to twelve hours. There is the liability to anaphylactic reactions (Thomas records two deaths). Serum treatment is confined to Type 1 pneumonia, but since there were in England and Wales in 1915 something like 32,000 cases of this form of pneumonia, with 8,000 deaths, there is plenty of scope for its use. These are material disadvantages, and unless the results are incontrovertible I question whether the general practitioner is likely to be an enthusiastic exponent of serum treatment. These difficulties are met to some extent, so far as vaccine treatment is concerned, by the use of stock vaccines, prepared from fresh cultures representing the putative flora of the prevailing epidemic. The stock can be used for the first injections while the pneumococcus is being typed and an autogenous vaccine is prepared. If the autogenous vaccine is not used during the acute stage it may be of service later, if resolution is delayed.

In conclusion, Type 1 serum appears to have made good in the treatment of Type 1 pneumonia, and it is possible that it may be of benefit to patients suffering from other types. To be efficient it must be injected intravenously in doses of 100 c.c. every eight hours, and this treatment must be started early.

The value of vaccines is not so varied. If they are to prove effective they must be given in the first three days and in a large dose. In practice this will generally mean the use of the vaccines.

#### Symptomatic Treatment

From specific we pass to symptomatic treatment and pain is usually the dominant symptom. Pain is incompatible with physical and mental rest, and must be mitigated. Fixation of the lower part of the chest may be all that is required but sometimes this cannot be tolerated. If the patient experiences relief when the lower chest is grasped and studied by the doctor's hands then wrapping or firm bandaging should be applied. A mustard poultice or rubbing often gives relief, but the most satisfactory method is that of a hypodermic injection of morphine, or a dose of a mixture of opium or other opiate such as Dover's powder or omnopon. So long as the analgesics are dry morphine can be given without hesitation for the relief of pain. If morphine fails as it may I should not hesitate to follow the advice of Procter or Wynn and introduce 500 to 500 c.c. of oxygen or air into the pleural cavity.

Insomnia is another dangerous symptom because of the recurrent nervous exhaustion, and it is most important that sleep should be secured in the early days of the illness before the condition is critical. Sleep must be obtained for excitable, nervous, and apprehensive patient. A cool quiet room and hydrotherapy tend to produce sleep, but may not suffice. If pain is the cause of insomnia, sleep will ensue when the pain is relieved. When in doubt, rather than risk a restless and fatiguing night, an opiate should be administered. An ounce of whiskey or brandy given as a hot drink with the opiate has a definitely soothing effect, and may prove comforting to the patient. Paraldehyde in doses of 2 drachms with an equal amount of brandy, prescribed in an emulsion in peppermint water, is another satisfactory although unpleasant, hypnotic. After the fifth day opium and its derivatives must be given cautiously, especially if there is undue secretion in the air passages. In the wild delirium, sometimes almost maniacal, which may occur at the crisis there is of course no option. Morphine, alone or combined with hyoscyamine, is the only remedy.

#### Cardiac Failure

From the first the management of the case is directed towards the prevention and treatment of cardiac failure. One factor in the production of cardiac failure is the toxæmia (always present though in varying degrees) which impairs the functioning power and the integrity of the myocardium, hits the central nervous system and interferes with vasomotor tone. A second important factor is anoxæmia. From various causes the blood flowing through the coronary arteries is deficient in oxygen. A third element is the stress on the right ventricle resulting from the pathological changes in the lung. Distension of the abdomen, with interference of the movements of the diaphragm, is a further factor which sometimes adds to the difficulties of the right heart.

From the onset management of the patient is directed towards preserving the functional integrity and efficiency of the myocardium. Vasomotor tone is maintained by hydrotherapy. The depth of the respirations is increased by cool fresh air and the relief of pain. Physical effort on the part of the patient must be reduced to a minimum. Toxæmia must be met when possible by specific treatment by careful attention to the bowels to the intake of fluids, and to the action of the kidneys.

At the first indication or evanescence the administration of oxygen should be instituted. It should be given continuously for an hour at a time and the result noted. Oxygen is probably the best cardiac stimulant. The difficulty is to get oxygen into the blood, the usual method is ineffectual and more often acts as a placebo to the relatives than as an efficient oxygenator. The funnel method is futile unless the funnel is large and applied close to the nose and mouth. More efficient is a No. 10 catheter with three to four apertures inserted into one nasal orifice after de-arterizing the mucous membrane. The other nasal orifice should be blocked with cotton wool or compressed by the

nurse during each inspiration. Recently the method does not compare with the new method. My experience is that a patient with a very poor tolerance of oxygen applied over the nose and mouth, especially if he is a particularly delicate person.

Barach (Irel Int Med 1920) and others have described an apparatus used by him with success. It is a nose-piece and rebreathing apparatus by which a 40 per cent oxygen mixture in the nasopharyngeal air is obtained. Still better results followed the use of an oxygen tent. In his opinion, the value of oxygen is supportive and not curative. It tends to prolong life until such time as the immunity mechanism is able to accomplish recovery. The passing of oxygen through alcohol is merely foolhardy. If there is considerable moisture in the air passages it is well to combine the administration of oxygen with hypodermic injections of atropine.

#### Digitalis

There is no agreed opinion as to the value or the effect of digitalis in pneumonic patients except in those in whom fibrillation existed before the onset or when it occurs during the infection. It is obvious that if pneumonia is superimposed on fibrillation the fibrillation must be controlled by digitalis, and the control maintained a daily total of 45 to 60 minims of the tincture or other adjuvant preparation must then be given from the first. Fibrillation occurring during the course of the illness must be treated in the same manner. If no member of the digitalis group has been exhibited before the onset or the fibrillation, then I should not hesitate to give an inavenous injection of strophanthin but my experience is that this toxic form of fibrillation—especially in the infarctal type of pneumonia—does not respond satisfactorily to digitalis and its allies.

In an interesting communication by Levy (Irel Int Med, September 1923) it is shown that the tendency to dilatation of the heart in pneumonia was demonstrably lessened by adequate doses of digitalis. He was dealing with hearts whose fundamental rhythm was normal. It has also been shown that digitalis has a favorable action on the efficiency of the heart irrespective of alteration in the rate. The contractility is increased.

I believe we are justified in looking upon the routine exhibition of digitalis as of value. To be efficient it should be given from the first in adequate doses—from 45 to 60 minims of the tincture in each twenty-four hour. In the short period covered by an acute pneumonia it is unlikely that any toxic effects will be produced with the above doses, nevertheless careful supervision is essential and by the fifth or sixth day the dose may require modification.

#### The Administration of Alcohol

The general public still has implicit faith in alcohol as the cardiac stimulant, and it is evident that there are some members of our profession who even now believe that alcohol in some peculiar way—in its specific action—increases the efficiency of the heart. In a recent textbook in the section dealing with pneumonia I find the following: "Alcohol is often useful. It should not be given too early in the attack but where there are indications of incipient cardiac weakness 4 to 6 oz daily may be given and this even to alcoholic." Four to six ounces of alcohol in twenty-four hours is no more than a dose.

So far no scientific evidence has been advanced in support of the view that alcohol in its specific action is a cardiac stimulant, and I am convinced that the use of alcohol in any particular patient is a very grave mistake. The doses of alcohol administered to prevent or cure cardiac failure. Like the use of digitalis in the treatment of cardiac failure, I was trained to attribute alcohol to the treatment of cardiac failure and I have seen many cases in which the result of clinical observation is that the value of the use of alcohol is not great.

In the years 1879 to 1921 I have read many papers in a large number of journals in which it was claimed that a small quantity of alcohol was a powerful cardiac stimulant and that the administration of alcohol in cardiac failure was of great benefit. For example, in 1879, 103 cases were treated without alcohol, 103 received alcohol when

For treatment to be effective, therefore, these factors must be borne in mind from the first. The main essentials are fresh air and complete physical and mental rest. A quiet, cool, well ventilated room, with an open window—for fresh air is tonic. A fire, but no rug. The bed should be single, the bed clothing light, there should be neither eiderdown nor dense counterpane. No gumboot jacket is required. [A gumboot jacket is merely a sop to the mentality of the relatives and nurses.]

The clothing should be loose and open down the front to facilitate examination. It is then easy to examine the major part of both lungs without disturbing or distressing the patient. With arms at rest on the pillow above the patient's head there is easy access to the axillae. After a diagnosis has been made this method of examination will suffice.

From the first the need for absolute rest must be impressed on those in attendance, and the use of the bed-pump, distasteful as it is to some, must be insisted on from the beginning. Every unnecessary movement should be avoided, energy must be conserved. The time to treat croup fulmo is before it has occurred. If, however, the patient is comfortable in the semi-prone position there is no reason why he should not be practically propped up. Sometimes breathing is easier thus. Tepid sponging is soothing, and tends to ease and comfort, and is stimulating to the vasomotor system.

A pneumonic patient is thirsty rather than hungry. He should have plenty of fluid, and in the first forty-eight hours fluid only, water, or natural lemonade containing glucose, diluted fruit juices, grapes, and one pint of milk in the twenty-four hours, well diluted. Tea or coffee may be given, but the coffee should not be allowed towards the end of the day. After the shock of onset (in a mild case) there is no objection to a somewhat less sloppy diet—such as a lightly boiled egg, pines, and a few dry biscuits. I question whether it is wise to give soups and broths.

At the onset the bowels should be freely opened. Calomel or salines, or a combination of both, are generally all that is required, if the bowels are stubborn, then a simple enema. This can be repeated when necessary, or a saline given each morning.

Abdomen—Throughout the illness the condition of the abdomen must be carefully noted, and at the first indication of distension steps taken to afford relief. A distended abdomen hampers the diaphragm, and in emphysematous patients or those with longstanding mitral disease abdominal distension is a grave complication. If there is reason to suspect that the diet is responsible, then milk should be stopped, sugar diminished, a simple enema given, and, if necessary, a rectal tube inserted to remove colon flatus. If these means fail, an intramuscular injection of pituitin should be given. An ice-bag to the abdomen is sometimes of service.

#### Specific Treatment

We now come to consider specific treatment—treatment by vaccines or serums or both, a line of attack concerning which there is undoubtedly considerable difference of opinion. For example, in the 1925 edition of Osler's *Medicine* we read that "There is no proof that the use of vaccines is of value in treatment." And in the article by Drs R A Young and G E Beaumont contributed to the textbook edited by Dr F W Price, the position is summed up thus: "Vaccine treatment is recommended by some, but the results are generally disappointing during the acute stage. Vaccines seem to be more valuable in cases of delayed resolution." This may be taken as fairly representing the views of the majority of the profession in regard to the use of vaccines in the treatment of pneumonia.

On the other hand, a large amount of careful work has been carried out which tends to show that, under certain limited conditions in different types of the disease, vaccine treatment does shorten the illness, modify the severity of the attack, and diminish the mortality. In England Professor Wynn is well known for his enthusiastic advocacy of this form of treatment.

My personal attitude towards the therapeutic value of vaccines in pneumonia has been frankly critical. I looked upon pneumonia as a septicaemia in which there was, as a rule, a good morrow response with an adequate leucocytosis, and serum treatment (when feasible) appeared to be the line of attack most likely to give results. In addition, I was perhaps unduly influenced by the practical difficulty in determining the specific form of organism responsible in each patient, and the delay in preparing an autogenous vaccine.

Recent investigations, however, seem to indicate that pneumonia is a local infection in the lungs with only a tendency to septicaemia—in fact, a focal type of disease in which vaccines might be expected to prove beneficial and aid in the more rapid development of antibodies. I was impressed by an interesting paper published by Captain Malone in 1925, in which he dealt with 58 cases of pneumonia—29 treated with vaccines and 29 as controls. He gave a dose of 400 million on the day of admission. This was a mixed vaccine containing Type 1 (one strain) and Type 4 (three to four strains). The sputum was typed the same day and a vaccine prepared from the peritoneal cavity of a young rabbit. The next day and the day following the patients received 400 million of homologous vaccine. The results were favourable and appeared to justify the following conclusions: (1) That early vaccine treatment proved effective in promoting recovery, lessening the duration of the fever, and assisted in ending the fever by crisis. (2) That vaccines after the third day proved ineffectual. This and other credible evidence cannot be disregarded.

All the advocates of vaccine therapy in pneumonia stress the importance of vaccination within the first three days. After the third day it is questionable whether anything is to be gained by this form of specific treatment.

Pure pneumococcal pneumonia with frank leucocytosis is not clinically comparable to the influenza pneumonias, in which there is a tendency to poor or delayed morrow response, and a leucopenia rather than a leucocytosis. In these patients any treatment which will stir up the morrow is of benefit. Polyvalent serums, either antipneumococcal or antistreptococcal, protein shock, in whatever way produced, and vaccines, autogenous or stock, act in this manner. It is an open question as to how far this treatment is truly specific. This is a question for the bacteriologists.

It is in the leucopenic type of pneumonia that we should expect the best results from injections of sodium nucleinate—advocated by Dr Grindley-Medwin—a drug which has proved of considerable benefit.

The use of vaccines or serums is attended by certain obvious difficulties, the chief being the necessity for the active co-operation of a good laboratory near at hand, for the type of the infecting pneumococcus and also the nature or any associated organisms must be determined rapidly.

If serum is used there is in addition the very considerable expense entailed. Serum is derived, to be effective, large quantities must be injected every eight to twelve hours. There is the liability to anaphylactic reactions (Thomas records two deaths). Serum treatment is confined to Type 1 pneumonia, but since there were in England and Wales in 1915 something like 32,000 cases of this form of pneumonia, with 8,000 deaths, there is plenty of scope for its use. These are material disadvantages, and unless the results are incontrovertible I question whether the general practitioner is likely to be an enthusiastic exponent of serum treatment. These difficulties are met to some extent, so far as vaccine treatment is concerned, by the use of stock vaccines, prepared from fresh cultures representing the putative flora of the prevailing epidemic. The stock can be used for the first injections while the pneumococcus is being typed and an autogenous vaccine is prepared. If the autogenous vaccine is not used during the acute stage it may be of service later, if resolution is delayed.

In conclusion, Type 1 serum appears to have made good in the treatment of Type 1 pneumonia, and it is possible that it may be of benefit to patients suffering from other types. To be efficient it must be injected intravenously in doses of 100 c.c. every eight hours, and this treatment must be started early.



The value of vaccines is not so assured. If there are to prove effective they must be given in the first three days and in massive doses. In practice this will generally mean the use of stock vaccines.

#### Symptomatic Treatment

From specific we pass to symptomatic treatment and pain is usually the dominant symptom. Pain is incompatible with physical and mental rest, and must be mitigated. Irritation of the lower part of the chest may be all that is required but sometimes this cannot be tolerated. If the patient experiences relief when the lower chest is grasped and steadied by the doctor's hands, then strapping or firm bandaging should be applied.

Ice-bag often gives relief, but the method is that of a hypodermic injection of morphine, or a dose of tincture of opium, or other opiate such as Dover's powder or emulsion. So long as the air passages are dry morphine can be given without hesitation for the relief of pain. If morphine fails, as it may, I should not hesitate to follow the advice of Professor Wynn and introduce 400 to 500 c.c. of oxygen or air into the pleural cavity.

Insomnia is another dangerous symptom because of the resultant nervous exhaustion and it is most important that sleep should be secured in the early days of the illness before the condition is critical. Sleep must be obtained for excitable, nervous, and apprehensive patients. A cool quiet room and hydrotherapy tend to produce sleep but may not suffice. If pain is the cause of insomnia sleep will ensue when the pain is relieved. When in doubt rather than risk a restless and fatiguing night, an opiate should be administered. An ounce of whiskey or brandy, given as a hot drink with the opiate, has a definitely soothing effect, and may prove comforting to the patient. Paraldehyde in doses of 2 drachms with an equal amount of brandy pre-erupts in emulsion in peppermint water, is another satisfactory although unpleasant hypnotic. After the fifth day opium and its derivatives must be given cautiously, especially if there is undue secretion in the air passages. In the wild delirium sometimes also met, which may occur at the crisis there is of course no option. Morphine, alone or combined with hyoscyne, is the only remedy.

#### Cardiac Failure

From the first the management of the case is directed towards the prevention and treatment of cardiac failure. One factor in the production of cardiac failure is the toxæmia (always present though in varying degrees) which impairs the functioning power and the integrity of the myocardium, hits the central nervous system and interferes with vasomotor tone. A second important factor is anoxæmia. From various causes the blood flowing through the coronary arteries is deficient in oxygen. A third element is the stress on the right ventricle resulting from the pathological changes in the lung. Distension of the abdomen, with interference of the movements of the diaphragm is a further factor which sometimes adds to the difficulties of the right heart.

From the onset, management of the patient is directed towards preserving the functional integrity and efficiency of the myocardium. Vasomotor tone is maintained by hydrotherapy. The depth of the respirations is increased by cool fresh air and the relief of pain. Physical effort on the part of the patient must be reduced to a minimum. Toxæmia must be met when possible by specific treatment, by careful attention to the bowels, to the intake of fluids, and to the action of the kidneys.

At the first indication of cyanosis the administration of oxygen should be instituted. It should be given continuously for an hour at a time, and the result noted. Oxygen is probably the best cardiac stimulant. The difficulty is to get oxygen into the blood, the usual methods are ineffectual and more often act as a placebo to the relatives than as an efficient oxygenator. The funnel method is futile unless the funnel is large and applied close to nose and mouth. More efficient is a No 10 catheter with three to four apertures inserted into one nasal orifice after de-ensuring the mucous membrane. The other nasal orifice should be blocked with cotton wool or compressed by the

nurse during each inspiration, nevertheless this method does not compare with the mask. Experience, however, is that patients will very readily tolerate anything applied over the nose and mouth, especially if they are partially delirious.

Barach (*Arch. Int. Med.*, 1926 vol xxxvii) has described an apparatus used by him with success—a glass nose-piece and rebreathing apparatus by which a 40 per cent oxygen mixture in the nasopharyngeal air is obtained. Still better results followed the use of an oxygen tent. In his opinion the value of oxygen is supportive and not curative. It tends to prolong life until such time as the immunity mechanism is able to accomplish recovery. The use of oxygen through alcohol is merely fooliness. There is considerable moisture in the air passages it is well to combine the administration of oxygen with hypodermic injections of atropine.

#### Digitalis

There is no agreed opinion as to the value or the effect of digitalis in pneumonic patients except in those in whom fibrillation existed before the onset or when it originates during the infection. It is obvious that if pneumonia is superimposed on fibrillation the fibrillation must be controlled by digitalis, and the control maintained, a daily total of 45 to 60 minims of the tincture or other adequate preparation must then be given from the first fibrillation occurring during the course of the illness must be treated in the same manner. If no member of the digitalis group has been exhibited before the onset of the fibrillation, then I should not hesitate to give an intravenous injection of strophanthin, but my experience is that this toxic form of fibrillation—especially in the influenza type of pneumonia—does not respond satisfactorily to digitalis and its allies.

In an interesting communication by Levy (*Arch. Int. Med.*, September, 1923) it was shown that the tendency to dilatation of the heart in pneumonia was demonstrably lessened by adequate doses of digitalis. He was dealing with hearts whose fundamental rhythm was normal. It has also been shown that digitalis has a favourable action on the efficiency of the heart irrespective of alteration in the rate. The contractility is increased.

I believe we are justified in looking upon the routine exhibition of digitalis as of value. To be efficient it should be given from the first in adequate doses—from 45 to 60 minims of the tincture in each twenty-four hours. In the short period covered by an acute pneumonia it is unlikely that any toxic effects will be produced with the above doses, nevertheless careful supervision is essential, and by the fifth or sixth day the dose may require modification.

#### The Administration of Alcohol

The general public still has implicit faith in alcohol as the cardiac stimulant and it is evident that there are some members of our profession who even now believe that alcohol in some peculiar way—in its specific action—increases the efficiency of the heart. In a recent textbook in the section dealing with pneumonia I find the following: "Alcohol is often useful it should not be given too early in the attack but where there are indications of incipient cardiac weakness 4 to 6 oz daily may be given, and this even to children. Four to six ounces of alcohol in twenty-four hours is no mean dose."

So far no scientific evidence has been advanced in favour of the view that alcohol in its specific action is a direct cardiac stimulant and I am convinced that the prognosis in any particular patient is rendered graver by repeated doses of alcohol administered to prevent or counteract cardiac failure. Like most other medical men of my age, I was trained to prescribe alcohol freely at the first indication of cardiac weakness and it was not for some years that as the result of clinical observation I began to question the value of this line of treatment.

In the years 1899 to 1901 while resident medical officer in a large urban infirmary, I made a careful and serious attempt to determine whether pneumonic patients did better with or without the administration of alcohol, and careful notes were kept of 150 cases. Forty-seven were treated without alcohol, 103 received alcohol when

the ordinarily accepted indications for its use rose. The patients in each section were of the same type, and they were drawn from the same districts of the city. On certain days of the week every case of pneumonia admitted passed into the first group. On the remaining days the pneumonias were drifted into the other group. In this way, if there was a variation in the severity of the prevailing infection, both groups were affected equally.

The results were remarkable. They left no doubt in my mind that alcohol, given to fortify and strengthen the heart, failed in its purpose, and instead of helping the patient to fight his infection materially diminished his chances of recovery.

In Section 1, treated without alcohol, of the 47 patients 14 died—a mortality of 29.5 per cent. In Section 2, of the 103 patients 47 died—a mortality of 45.5 per cent, a difference of 16 per cent. The average age in each group was 35 years.

I thought that this remarkable difference in mortality might be due to a relatively greater number of moribund patients being admitted into the second section, and in order to eliminate that factor I deleted all those who had died within twenty-four hours of admission. I found that 5 moribund cases were included in Section 1, and 16 in Section 2. The revised figures, after deducting those patients moribund on admission, are as follows:

Section 1—42 cases with 9 deaths—a mortality of 21.4 per cent. Average age 34 years.

Section 2—87 cases with 31 deaths—a mortality of 36.8 per cent. Average age 32.8 years—on the whole a younger group.

We find a difference of 15 per cent in the mortality remaining after the elimination of those moribund, the two sections having, for all practical purposes, the same average age.

I do not wish to stress unduly the actual figures. There were possibly some unrecognized factors responsible, in part, for the lowered mortality in Section 1, but in view of the fact that the only material difference in the treatment of the two groups was in the administration of the withholding of alcohol, I consider it reasonable to assume that this was at any rate the dominant factor.

Further experience has convinced me that alcohol is only of use to pneumonic patients under certain well defined conditions, and that it is not only futile, but detrimental, when administered in repeated doses to help a failing heart. It may be of service, either alone or in combination with other sedatives, in procuring rest and sleep during the acute stage of the disease. It may be comforting, given in a hot drink during the initial rigor, and no objection could be taken on therapeutic grounds if alcohol in some palatable form were ordered during convalescence. But to give alcohol in the belief that it is a cardiac tonic or stimulant is opposed to scientific teaching and clinical experience.

One most important action of alcohol in the blood stream, and an action generally overlooked, is its effect on the immunizing response of the body. Recovery, in pneumonia, depends on the production of antibodies, and alcohol has been proved to inhibit this vital activity on the part of the organism.

Professor Winn sums up this aspect of treatment tersely when he says: "No proof has yet been advanced that alcohol is of service in cardiac failure, and to give, under the guise of a stimulant, a depressing drug which, moreover, inhibits the immunizing process, to patients who are unable to neutralize its effect, cannot be sound treatment." With this I agree.

I have already mentioned the value of glucose taken by the mouth and there is an increasing volume of evidence in favour of administering it by the intravenous method. 250 ccm of a 10 per cent solution of glucose in normal saline is injected every eight hours, or at longer intervals if considered necessary. Glucose is a valuable heart food. The injections tend to fortify the heart and incidentally soothe and comfort the patient. Another method of administration—namely, though of questionable efficiency—is that of adding glucose to a saline enema.

A material drop in the blood pressure is of serious moment, and indicates failure in the cardio-vascular apparatus. In such circumstances pituitin, 1/2 to 1 ccm,

should be injected every four to six hours, and an ice bag applied to the abdomen.

Pügge (*Deut. Arch. f. Klin. Med.*, 1922, April 18th) has used intravenous injections of hypertonic saline in the critical periods. He states that 100 ccm of 25 per cent salt solution raises the blood pressure 15 to 35 mm of mercury, and that this rise is maintained for about six hours.

Caffeine is a direct cardiac stimulant, and also stimulates the vasomotor centres. It can be administered as strong coffee, as caffeine, or the citrate, and there are several preparations on the market for hypodermic injections. If the patient is restless, or has difficulty in sleeping, it is wise not to give coffee in the late afternoon or evening.

In strychnine we have another drug very widely employed and with a reputation beyond its merits. Hypodermic injections are commonly given in the belief that the strychnine is a direct cardiac stimulant. There is, however, no evidence that it has any specific action on the heart. It acts rather on the respiratory and vasomotor centres, and in this way may prove of service in the latter days of the disease.

Intensection is occasionally of value. It will temporarily relieve the heart in the first few days, when the right ventricle is struggling to adapt itself to the mechanical difficulties imposed upon it by the rapid consolidation of lung tissue. Later on, engorged jugulars, an increase of the cardiac dullness to the right, and marked cyanosis would justify blood letting. The relief is only temporary, and is of value in so far as it enables energetic measures to be instituted for the salvage of the cardio-vascular mechanism.

Probably ammonium carbonate is more commonly prescribed in pneumonia than any other drug. Its action is that of a crumulative, a respiratory stimulant, and an expectorant, its chief value is when there is free bronchitic secretion, embarrassed breathing, and increasing cyanosis. It is of questionable value in the first few days unless there is an associated bronchitis. Fairly large doses should be administered, such as 10 grains every two hours, followed by a hot drink and a definite attempt on the part of the patient to expectorate.

There are other lines of treatment which have had a vogue, and other drugs from which benefit is said to accrue. To mention a few: potassium iodide and creosote, preparations of quinine, calcium chloride, bismuth chloride, camphor, and diathermy. In practice the wise man uses few drugs and understands their action and their dosage.

In the discussion which follows I would suggest that attention be directed more particularly to the larger issues. Let us pool our experiences in regard to the efficiency and practicability of specific treatment, serums and vaccines, the value of alcohol, the indications for morphine and digitalis, and the best methods of administering oxygen. Along such lines a discussion must prove of exceptional value.

#### REFERENCES

<sup>1</sup> Bacteriological and Clinical Observations on Pneumonia and Empyema. Medical Research Council Special Report Series No. 79. *Lancet* 1922, p. 116. *British Medical Journal* July 12th, 1924, p. 49.

## II—THE VACCINE TREATMENT OF ACUTE PNEUMONIA

BY

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APPARENTLY the chief obstacle to the general employment of vaccines in acute infections, such as pneumonia, is the fear of obtaining a reaction—a phase of lowered immunity—which might harm the patient. It is not sufficiently understood that a reaction only occurs in a person who is sensitized, whose cells are allergic. This state of sensitization is due to the presence of specific antibodies. If these antibodies are absent there is no sensitization, and it is impossible for a reaction to occur. We see this clearly in tuberculosis. It is quite safe to inject a whole cubic centimetre of old tuberculin into an uninfected infant who has had no experience of the infection, whereas a tuberculous adult may react to the one hundred-thousandth of a cubic centimetre.

Specific antibodies are present in all stages of chronic infection, and therefore reactions are easily produced in chronic bronchitis, asthma, chronic arthritis, chronic septicaemias, unresolved pneumonia, and so on. In acute infectious they are only present after a certain interval has elapsed, as the process of their formation is comparatively slow. It is this interval after infection and before sensitization that affords us the opportunity of intervening safely with an injection of a fairly large amount of vaccine without fear of producing a reaction.

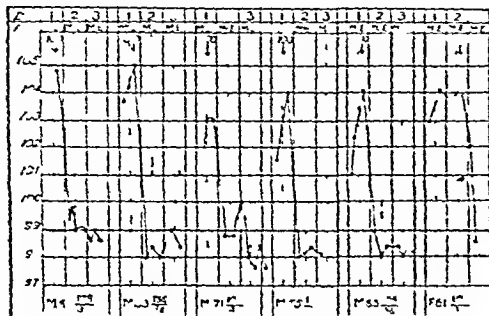


CHART 1.—Lobar pneumonia. Inoculated on first day

In pneumonia the curve of intoxication probably rises rapidly and then remains fairly steady corresponding roughly with the temperature chart. At first antibodies are absent, but about the fourth day they begin to be present, the rise of their curve is at first slow, then rapid, and about the end of the week the antibody curve overtakes the curve of intoxication and a crisis occurs. The problem is to produce an early rise in antibodies while the curve of intoxication is still ascending and crisis to overtake, and before the toxins are fixed in dangerous amount in the nerve and heart cells. There is an interval in which the patient is sensitized, and it is found as a matter of experience that if during that interval we inject an adequate amount of a suitable vaccine we can to a large extent control the infection. It is obvious that the earlier the injection the more successful the results should be.

The first action of the vaccine appears to be a non-specific one; it is not too rapid in the production of specific antibodies, which rise only after effect.

For acute lobar pneumonia I use a stock vaccine of pneumococci made from primary growths under twenty-four hours old. The vaccine contains several strains but it is more important that it should be an active vaccine from virulent organisms. For an adult at least 100 million should be injected for a child aged 12 half the dose and a child aged 3 or 4 a quarter. As at present true lobar pneumonia is comparatively infrequent and the majority of cases are severe broncho-pneumonias of mixed infection, I use a vaccine containing equal parts of pneumococci, streptococci and *D. bifidus* at 100 million of each.

In either case the important thing is to inject early. I would not treat pneumonia as a regardable as an acute emergency requiring prompt action as in cases of surgical emergencies such as a perforated ulcer. Our plan should be "strike early and strike hard." It is a great advantage of vaccine treatment that a successful vaccine can be at hand and injected at once. The object is to control the infection as soon as possible after its onset and so prevent dangerous intoxication. After the toxins are fixed in the

cells the issue is out of our hands. If injected within the first twenty-four hours after the initial rigor it is my experience that in the majority there is a fall of temperature combined with general improvement during the following twenty-four hours. The earlier the injection the more certain the result. If the first injection fails we can repeat the vaccine every twenty-four hours.

The charts show the results of injection on the first, second, and third days respectively. The first chart is that of a man, aged 40, who was injected three and a half hours after his rigor. He already had blood stained sputum,

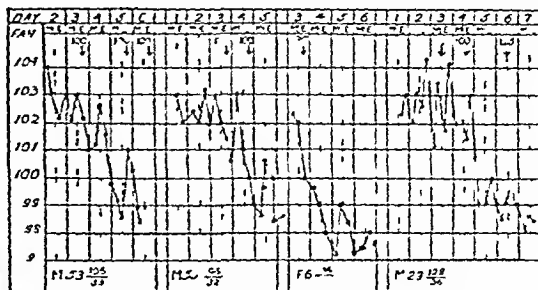


CHART 2.—Lobar pneumonia. Inoculated on third day

pain in the side, grunting respiration, a temperature of 105°, and a respiration rate of 38. 100 million pneumococci were injected. The temperature steadily fell and reached normal in sixteen hours. For a few days he had consolidation of both lower lobes with a complete absence of symptoms.

The second is that of a man of 53 seen one evening. A rigor had occurred in the morning; his temperature was 103°, respirations 32, and pulse 136. There were early signs in his right lower lobe. He received an injection of 100 million; his temperature fell and in the morning was normal, with a pulse rate of 63 and respirations 20. He was out of bed in a week and at the end of a fortnight.

Again was seen the striking phenomenon of a man with a portion of his lung solid, and yet a complete absence of symptoms. The vaccine appears to hasten consolidation which is a protective reaction and it also quickens resolution.

The charts of patients injected during the second day show a similar result but a second injection is more often required. When injected on the third day the fall of temperature is usually

more gradual and more than one injection is required, when injected first on the fourth day again the fall is more gradual and crisis is less easily obtained.

The results in 100 consecutive patients were that 49 were injected during the first three days, of these only one died. This was a pregnant woman who had been a chronic asthmatic and was confined forty-eight hours after the onset of pneumonia. Of 51 injected after the third day 12 died. This shows the importance of treatment before dangerous intoxication has occurred.

Of patients injected during the first day 83 per cent had a normal temperature in ten to four hours and 103 per cent in forty-eight hours. Of those injected on the second day 57 per cent had a normal temperature in twenty-four hours, 93 per cent in forty-eight hours, and 100 per cent in seventy-two hours, whereas of those injected for the first time on the third day only 20 per cent had a normal temperature in twenty-four hours, 60 per cent in forty-eight hours, and 73 per cent in

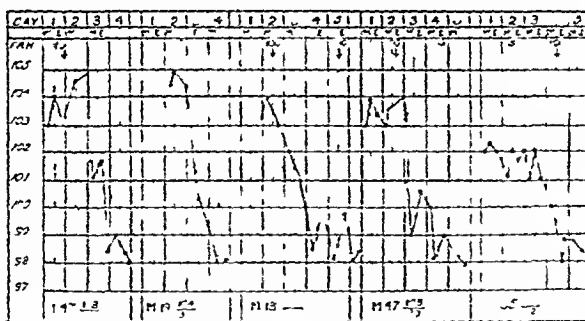


CHART 3.—Lobar pneumonia. Inoculated on second day

seventy-two hours. I think those figures again show the importance of early treatment.

I have some charts of influenza pneumonia injected on various days which show the same influence of a vaccine in shortening the duration of the disease.

Apparently Professor Hry holds that if vaccines prove to be successful in pneumonia it will be the first instance of the success of vaccines in acute infections. On the contrary I hold that acute infections offer the most brilliant examples of successful vaccine therapy, its use in pneumonia is merely an application of a general principle—that any acute bacterial infection for which an appropriate vaccine can be prepared, and which can be treated early, may be aborted by timely injection.

In vaccine therapy, therefore, I consider that we have a weapon which can be applied promptly and effectively, and which, if used on a large scale, would help to reduce the very high mortality from pneumonia.

#### DISCUSSION

Dr H. MORLEY FLETCHER (London) endorsed Dr Hry's condemnation of the gumgee jacket. He thought that morphine could safely be given, if necessary, during the first three, or perhaps four days, but afterwards should be withheld unless there was some urgent indication for its use. One of the dangers attending the use of morphine in the later days of the illness was meteorism; he had seen this occur with fatal results on several occasions shortly after the administration of the drug; the sudden abdominal distension increased respiratory embarrassment. The deleterious action of alcohol on the cardiac muscle was recognized and also the fact that it might act as a cell poison, but it should not be withheld indiscriminately in pneumonia, which was an acute illness of short duration, there was no direct evidence that a moderate dose of alcohol given for a few days could affect the heart muscle to any serious extent. It promoted sleep and also might be of considerable use in the crisis in cases exhibiting signs of collapse which so often accompanied the fall of temperature. He did not consider alcohol in any form necessary for young adults in the absence of special indications. The treatment of pneumonia by diathermy, recently advocated by Eaton Stewart, should be thoroughly investigated. Sodium nucleinate had been recommended by Gardner-Medwin in cases of pneumonic patients exhibiting a leucopenia or low leucocyte count. It had been claimed that injections of this drug given on one or two successive days stimulated leucocytoesis and were followed in forty-eight hours by crisis. These results by Gardner-Medwin had not been confirmed by Dr Morley Fletcher's investigations of cases of lobar pneumonia or of other infective conditions. The clinical evidence of toxæmia was cyanosis but in some cases of pneumonia increasing pallor might take its place. Cyanosis and rapid breathing might be present before the signs of consolidation appeared. The best therapeutic measure for combating toxæmia was oxygen, but it was usually given too late in the course of the disease or as a last resource when all hope had been abandoned. He thought that oxygen was the most valuable agent available for the treatment of pneumonia, but it should be given early, systematically, efficiently, and in sufficient quantity. In the case of adults it should be administered more or less continuously as soon as the diagnosis was made. Oxygen lessened the toxæmia and so reduced the risk of cardiac collapse, it was also a cardiac stimulant and had a marked effect in calming delirium and promoting sleep. It had been suggested that the delirium of pneumonia was due to unoxidized toxic bodies in the circulation, and this might be some explanation of the calming effect of oxygen on delirious patients. In his opinion the intranasal tube was the most useful method for the administration of oxygen, as it was efficient and easy to manage. It was first employed in Edinburgh in 1910 by Thomson and Dunlop. It was a method which could be used for infants with great facility. There had been much discussion as to the value of digitalis in acute febrile conditions, especially lobar pneumonia. The high pulse rate in pneumonia was not necessarily an indication of cardiac failure, but was due chiefly to the action of toxins on the cardiac centre. Digitalis did not lower the pulse rate in these

circumstances. Later, when the heart muscle began to fail, digitalis might be of great value, and there was no evidence that its action then was different from that produced in non-febrile failure of heart muscle. Cardiac failure in pneumonia might be recognized by increasing rapidity of pulse and the onset of irregularity due to auricular fibrillation. A further indication was the progressive fall of blood pressure. These signs of cardiac failure should be treated in the same way as when they occurred in non-febrile conditions—namely, by digitalis. Unfortunately they might manifest themselves suddenly, without warning, it was then too late to administer digitalis, as the time left was too short for its action to be exerted. In these circumstances strophanthin given intravenously and repeatedly was the best substitute. For this reason he held that it was advisable in a case of pneumonia in the late stage to give strophanthin preferably as the tincture. There was no satisfactory evidence against doing so, and the advantage to the patient at a later stage might be very great—in fact, it might determine the issue of the battle.

Professor R. J. S. McDOWALL (London) dealt with the methods for the relief of the heart from the physiological aspect. The heart had two loads: (1) it had to force out blood against diastolic pressure, (2) it had to pump out the blood which filled it at the end of diastole, in pneumonia the load at the end of diastole might be appreciably in excess of normal. Conditions which raised the carbon dioxide contents of the blood tended to raise the venous pressure, in health the heart responded by increased force and rate of the beat, but when the heart was poisoned there was the possibility that it might be filled with more blood than could be pumped out. Cardiac tonics, although assisting the heart, might also hamper it by constricting the blood vessels and so increasing the work the heart had to do. The most physiological method of relieving the heart was by bleeding, and as the high venous, and possibly a high pulmonary, pressure was partly responsible for the cardiac failure there was much to be said for bleeding before the actual stage of failure was reached. It had been objected that the effect on the arterial pressure was only temporary, but what happened was that the arteries became constricted to keep up the arterial pressure, the venous pressure fell in consequence, and the fall was prolonged. The fall was accompanied by a reduction in the viscosity of the blood, and these two factors must relieve the heart appreciably. There was also evidence that the blood had an increased bactericidal power after bleeding. Alcohol was a drug which reduced venous pressure, although it might have little or no action on the isolated heart there seemed to be no doubt that in the intact animal it did cause a fall in this pressure. Adrenaline might be tried in the treatment of the shallow respiration which was partly responsible for the faulty aeration of the blood. The shallowness was thought to be due to an exaggeration of the Hering-Breuer reflex, and he had recently found experimentally that adrenaline had a distinct action in abolishing this reflex.

Dr STANLEY DAVIDSON (Edinburgh) put in a strong plea for serum treatment, though he could not give any figures obtained in this country in support of his plea, as it had never received a serious trial, but the indirect evidence obtained by experiment and the direct evidence of the results obtained at the Rockefeller Institute were overwhelming. The clinician might obtain great help from a trained bacteriologist, films of sputum showing great numbers of pneumococci and positive blood cultures persisting after the onset of the disease were of bad prognostic significance.

Sir JAMES BARR said that it would often be much better to consider the treatment of the patient suffering from pneumonia rather than the treatment of the disease. The mortality would probably always be rather high owing to failure of the defensive mechanism. Prevention was better than cure, and if half the money spent on the prevention of tuberculosis were devoted to the simpler problem of the prophylaxis of pneumonia there would be a different result. The drawback to vaccine prophylaxis

was its short duration, but even a short immunity was a decided gain. If the severe chill in the early stage was recognized and dealt with promptly and efficiently an attack of pneumonia might be warded off. An important point in treatment was to get as many free calcium ions into the blood as possible and to avoid decalescing agents.

Dr A. F. HERRAT (Edinburgh) expressed his strong belief in the value of alcohol in the treatment of pneumonia. He said he would feel greatly handicapped in dealing with any case of pneumonia if he knew that alcohol must be withheld.

Dr F. M. GARDNER MEDWIN (St Asaph) described some of his results with sodium nucleate. He had found that all types of lobar pneumonia responded to a single dose of sodium nucleate, the pneumonic process being terminated in forty-eight hours after its administration. This result was independent of the period of the disease at which the drug was given. The first cases Dr Willmore and he had treated were cases of heliotrope cyanosis with high fever and delirium, such patients ordinarily all died, but with sodium nucleate they recovered. Professor HAY had stated that probably 10 to 15 per cent. of all pneumonia patients were doomed from the first to die. Dr Gardner-Medwin believed that an intramuscular injection of sodium nucleate with plenty of soda glucose lemonade, would save 90 per cent. of these "doomed" cases.

## THE INFLUENCE OF INTERNAL SECRETIONS ON SEX CHARACTERS

BY

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THE sexes are to be distinguished by differences in details of structure and of function, and maleness and femaleness can be defined. For purposes of discussion it is convenient to classify the sex dimorphic characters as (1) primary genotypic, (2) secondary genotypic (including the primary gonadic), and (3) secondary gonadic. In the establishment and maintenance of this sex dimorphism the component members of the endocrine system, it has long been recognized, play a most important part. That this is so is illustrated in the following aphorisms, which in their sequence show the historical development of the modern point of view: "Propter solum uterum mulier est, quod est"; "Propter solum ovarium mulier est, quod est"; "Propter secretionem internas totas mulier est, quod est."

There is no difficulty in demonstrating that the physiological activity of the gonads is a condition of the normal development and maintenance of such of the sex dimorphic characters as are secondary gonadic, since by definition these are such as are dependent upon the gonad. The criterion of a secondary gonadic character is that it reacts to the physiological activity of the gonad in a particularly definite way. It is established that the gonadic influence punctuates the growth of the long bones, thereby affecting the general proportions of the body, that it influences the development and the functioning of the central nervous system and affects the processes of general metabolism. But in addition, and especially, the physiological activity of the gonads exerts a strong and definite influence on certain structures and functions which constitute the commonly and readily recognized sex dimorphic characters.

The intimate and significant relation between gonad and secondary gonadic characters is revealed by the results of (1) gonadectomy, (2) gonad implantation, and (3) administration of prepared products of the gonads.

### Gonadectomy

Castration of the newborn male rat is followed by a non-development of the genitalia, but has no effect upon general development. Since there is a sex dimorphic difference in growth rate, and since orchidectomy does not affect general development, it would seem that growth rate is dependent upon sexuality—that is to say, is a

secondary genotypic character, but that it is not a secondary gonadic character. However, it is more probable that the male type growth rate of the castrated rat is due to the after action of the gonadic hormone. In the case of the female the ovary does not function during the antepubertal period. This can be demonstrated by injecting ovarian extract or by implanting adult ovary into the immature female, when rapid growth and differentiation of the genitalia ensue, though only in cases in which these have already attained a certain stage of growth.

The effect of castration varies according to the age at which the operation is performed. Following prepubertal orchidectomy (later than in the case of the newborn) the genitalia do not develop normally—*peris vasa deferentia*, seminal vesicles, and prostate remain incompletely developed and of small size, though the corpus cavernosum attains its full development. In the human the beard does not grow until in old age the castrate develops one similar to that of the aged female. The hair in the region pubis comes to a horizontal hair line whilst the chest, axillae and the extremities remain hairless. The localization of subcutaneous fat is characteristic, much accumulating in the gluteal region, under the breast, in the trochanters, on the mons veneris and on the lateral aspects of the upper eyelids. The zone of proliferation of the epiphyses of the extremities persists even to the age of 35, so that the castrate attains a relatively greater height with disproportion of the body. The pelvis remains infantile, as does the larynx. The pituitary commonly undergoes enlargement so that the sella turcica is increased in dimensions. Erection and cohabitation remain possible for a considerable time in some cases. The general intelligence is not obviously affected, but general apathy is characteristic.

Post pubertal orchidectomy is followed by a non-development or a disappearance of the beard and a change in the regional distribution of the body hair, and a localized disposition of subcutaneous fat. The larynx becomes small and the voice high pitched. Sexual libido may persist for some time but ultimately disappears.

Ovariectomy in the human is performed late in life and the sequelae are therefore not well marked. Atrophy of the genitalia takes place especially of the vagina and the uterus. A marked accumulation of fat and an increase in body weight occur. Generally there is a decrease in the size of the breasts and in sexual libido. In some cases ill-defined premenstrual disturbances follow.

The evidence derived from the results of gonadectomy points to the conclusion that the development and maintenance of many morphological, physiological, and psychological characters are dependent upon the integrity and functional activity of the gonads. The gonads affect not only the component of the sex sex sexual apparatus but also such sex dimorphic characters as the regional distribution of the hair and the pitch of the voice. Metabolism is significantly reduced—that of fats particularly, that of carbohydrates less so, and that of proteins not at all. Following gonadectomy the next interrelationship of the members of the endocrine chain is disturbed and certain of the effects of gonadectomy may be due secondary to the indirect effects of this operation upon one other member or members of the endocrine system. It is seen that the effects of gonadectomy upon the sex-dimorphic characters vary according to the time at which the operation is performed in relation to the time of attainment of sexual maturity, prepubertal gonadectomy resulting in non-development of the genitalia and secondary gonadic characters whilst the effect of post-pubertal gonadectomy is in inverse ratio to the age of the individual at the time of operation.

There is no satisfactory evidence which supports the conception that gonadectomy not only leads to the disappearance or atrophy of homologous sex characters, but also to the appearance of the heterologous. The apparent swing of the characterization of the castrated male in the female direction is to be explained more simply on the assumption that there is an agonadic full grown form that the female sex characterization is nearer to this than the male, and that after gonadectomy there is a tendency on the part of individuals of either sex to swing towards the agonadic type.

The opening paper of a discussion in the Section of Physiology and Biochemistry at the Annual Meeting of the British Medical Association at Edinburgh.



*Gonal Implantation*

It is recognized that removal of the gonads is followed by a definite train of events, and it is reasonable to assume that the phenomena which follow gonadectomy are caused thereby. If this is so, then it may be assumed that the successful and timely implantation of appropriate gonadic tissue should result in the restoration of normal sexuality in the case of the agonadic individual, and implantation generally should be followed by phenomena which can be regarded as the effects of this procedure.

There is no difficulty in demonstrating that complete maleness and femaleness cannot be assumed and cannot be maintained in the absence of normally functioning pituitary, thyroid, adrenal, and so forth, but these endocrine glands stand in a different relationship to sexuality from that which the gonad occupies. Extirpation or disease of any of these in the mammal leads to the establishment of a distinct pathological condition, which can only be repaired by the restoration to the general economy of the disfunctioning or absent tissue. Gonadectomy, on the other hand, does not result in a diseased state; the individual becomes altered functionally and structurally, but the change is not so far removed from normality as to constitute disease. The gonads are especially concerned in the development and maintenance of sexuality, and it can be stated that the secondary gonadic characters, which are the most prominent of the sex-dimorphic characters, develop only when in an otherwise healthy body the gonids are functionally normal and active.

It is abundantly established that an animal which is castrated at an early age, and into which at the time of this operation its own testes or those from another animal from the same or from a nearly related species are successfully implanted, will develop normally in respect of the somatic functional and structural sex characters. The prostate, seminal vesicles, and penis in such animals develop so as to remain unexceptional. Partial or almost complete restoration of maleness is possible even in older animals castrated in early life, and the degree of restitution varies with the age of the individual at the time of castration and at the time of implantation, and with the length of the interval between the operations.

It is equally possible to restore femaleness in an individual previously ovariectomized by implanting ovarian tissue, and to prevent the sequelae of ovariectomy by implanting the individual's own ovary or that of a similar or nearly similar biological form at or about the time of ovariectomy. In such cases the uterus does not atrophy or it increases in size again, and in the human the menses return.

It is established that it is possible to feminize a male by castration and subsequent implantation of ovarian tissue. The latent homologous sex characters—for example, the mammary gland—are stimulated into activity, whereas the heterologous—for example, the penis, prostate, seminal vesicles—remain underdeveloped, or become diminished in size and complexity.

It is established that it is possible to masculinize a female by ovariectomy and subsequent implantation of testis. The uterus and mammae remain undeveloped or shrink, whereas the clitoris increases in size to such an extent that it resembles the male copulatory organ. It seems fairly clear, therefore, that ovarian and testicular hormones are sex-specific, acting only upon those structures with which each is normally associated. It may be, however, that for genetic reasons female tissues—that is, such as are genetically female—respond preferentially to the hormone of the ovary, whereas genetically male tissues respond preferentially to that of the testis. It is established also that the sex-hormones are not specific for each biological form of animal.

It is established that it is eminently possible to produce an artificial hermaphrodite by combining in one and the same body both kinds of gonadic tissues. A male with a normally functioning sex-equipment can following successful ovarian implantation, come to possess well developed mammae, and a female with a perfectly functioning reproductive system can harbor a testis graft which can proceed to spermatogenesis. Similarly, hermaphrodites can be produced through implantation of testis and ovary into an agonadic individual.

It has been recorded that such experimentation is followed by the development of bisexuality in respect of the psychical characters, but this has not yet been fully established.

In the case of the human, gonad implantation has been performed to "jockey" the individual's own gonads into a greater and more efficient activity, or to repair the agonadic condition. Many such operations have been attended with success, while others have not. Failure is probably due to imperfect technique, and to lack of a precise knowledge concerning the conditions within the body which are pre-requisite to successful implantation. Heterotransplants have not been very successful, and it is probable that in these cases failure is due to anathropic immunity, the host being unable to provide the implant with appropriate nutritional conditions. It is established, however, that testicular grafts from certain anthropoids can survive in the human body for many months, possibly even for years, and that the implants can exhibit a normal hormonal activity.

Such experimentation as this confirms the view that in the mammal one and the same somatic structure reacts differentially to ovarian and to testicular hormones. This may be due to the fact that the hormones are different while the soma of the two sexes is the same, that the hormone of the ovary is the same as that of testis while the soma of the male is different from that of the female or that both hormone and soma are different in the two sexes. It is probable that the last view is the correct one.

*Injection of Gonadic Tissue and Extracts*

The results of injection have been conflicting. Definite effects upon the circulation, metabolism, nervous system, and on the sex-dimorphic characters have been recorded, but in the main they have been effects which can be obtained by injection of extracts of animal tissues of all kinds, being characteristic of the action of proteins generally and not of gonadic tissue in particular. The effect of the extract must vary with the method of preparation and with the technique of administration. Moreover, it is not easy to reproduce the relation of gonad and soma by injecting gonadic material, particularly if such an organ exhibits a rhythm in its functioning, and if a quantitative action is involved. Though the evidence derived from injection methods is confusing, it can be said that this is due to imperfections in the methods of preparation and administration, and that there is nothing in this evidence which contradicts the point of view that the gonads, in their physiological functioning direct the differentiation, and ensure the maintenance, of many of the sex-dimorphic characters.

The part played in sex-differentiation by the gonads and other endocrine glands is well illustrated in cases of spontaneously occurring or experimentally produced abnormality of the reproductive system. For example, the individual with abdominal testes is infecund but not impotent, and the penis, prostate, seminal vesicles, and all the secondary gonadic characters develop normally. In its behaviour the male exhibiting cryptorchidism is hypersexed. Similar results follow double vasectomy and vasectomy and castration of the testes. In the case of the ovary also it has been established that the gonad exerts its action upon the soma even after the gametogenetic function is in abeyance or destroyed.

The action of the gonad is demonstrated in cases of intersexuality. In the human there are clinical records of cases in which a periodic change in the psycho-sexual characters was to be noted both in males and females. Several hypotheses have been advanced to account for this. According to one, the soma is perfectly ambivalent, but there are two forms of that particular gonadic tissue which is responsible for the elaboration of the specific sex-hormones. There is a physical basis for the female sex-hormone and another for the male. An individual may find himself or herself equipped with both kinds in the gonads or even with the kind appropriate to the other sex. Normally only the more potent of the two sex-hormones exerts its action, but physiological disturbances may upset the balance, and the other kind of sex-hormone will then exert its effects, and so with such characters as are capable

of responding to this fresh stimulus transformation in characterization can become evident. It is to be expected that the psychic characters, being more labile, will indicate this change more quickly and more thoroughly than will the morphological characters, which lose their plasticity much earlier.

Another hypothesis suggests that the gonad itself can be intersexual for genetic reasons, and that under the conditions the normal hormone elaborated by the normal gonad is not sufficiently potent to guide the differentiation of the sex somatic characters into a state of maleness or of femaleness. For genetic reasons also the gonad itself may be intersexual and it has been suggested that if this were the case the cure for homosexuality might well be implantation or injection of gonadic material. Such treatment has been practised. For example, the testes of a homo sexual man have been removed and those of a normal individual implanted with it has been claimed remarkable success. Other cases have not been successful. Such evidence as exists, however, permits one to assume with reason that many cases of homosexuality are due to some endocrine disturbance, though not necessarily a disturbance of an intersexual kind. In other cases it is by no means impossible that external agencies are responsible for the homosexual condition.

Medical literature includes many records of individuals in whom about the time of puberty a change of sexual characterization occurred. Commonly the case refers to an individual who, in early life, was with reason regarded as a female yet who later developed many of the typical male characters. Many such cases have been shown to be instances of masculinization of a female by a hypernephroma. Similar adrenal neoplasms in the male have led to precocious sexual development and it is recorded to advanced feminization. It is of importance to note that in these cases the effect of adrenal dysfunctioning is only evidenced in the presence of the gonad. In other cases intersexuality has been found to be associated with the presence within the body of both ovarian and testicular tissues. This condition is in every way equivalent to that of a perinatal hermaphroditism produced in the guinea pig and other laboratory animals.

There is yet another type of intersexuality which apparently is due to a different cause. In these cases the gonads are testes, usually intra-abdominal, but sometimes lying within the inguinal canals or subcutaneously; the necessary sex apparatus consists of well developed derivatives of both Mullerian and Wolffian ducts; uterus, vagina, vasa deferentia, sexual vesicles and prostate being present, whilst the external genitalia range in their form from that of an unremarkable vulva and clitoris to that of a grossly abnormal male with hypospadias and cleft scrotum. In these cases in which the external genitalia are of the female type the individual is regarded as a female. In all cases, however, with development and growth there comes the assumption of typical male characters—growth rate, voice, and regional distribution of hair whilst the psychic characters in the case of the intersexual human are confused through treatment. Such are the cases of young "women" who become "men."

It may be that these are really females genetically in which ovarian tissue existed in the earlier stages of development, but in which this disappeared to give place to testicular. It may be that these are instances of hermaphroditism in which the ovarian tissue undergoes removal. But it seems more reasonable to regard them as genetic males in which the appearance of the physiological activity of the testes was for some genetic reason delayed, so that the growth of the rest of those structures which constitute the sex-equipment was pursued in the absence or the directing influence of the gonad. If there is a time variation in the differentiation of the component parts of the sex-equipment, one structure becoming capable of responding to the stimulus of the sex-hormone of the testes before another then the degree of abnormality of the sex-equipment consequent upon a retardation in the exhibition of the stimulus will be a reflection of the degree of retardation. The facts that there is a very wide range of abnormality in these cases, that they can be arranged in a series with an almost normal female at one end and an

almost normal male at the other, that in all cases testicular tissue alone is found, whereas in none is evidence of degenerate ovarian tissues present, and that in all cases the later exhibited sex dimorphic characters are entirely and completely male point to the conclusion that the cases are males in which the time of differentiation of the testes has been abnormal.

The part played by the sex hormones in the production of this kind of intersexuality is best illustrated by the case of the bovine freemartin—a genetic female (XX) co-twin to a normal male—the reproductive system of which becomes abnormal during the period of sexual differentiation as a result of the action of the sex-hormone of a male co-twin *in utero*. Twins may be monozygotic or identical, and those arising from one and the same egg are always of the same sex and very similar in their characters, or they may be dizygotic or fraternal resulting from the synchronous fertilization of two separate ova. In the latter case they may or may not be of the same sex, and do not resemble one another any more closely than do brothers and sisters born at different times. Twins in cattle may consist of two normal males, two normal females, one male and one female, each normal or one male and the other an individual with an abnormal reproductive system and known as a 'freemartin'. In all save one of 126 cases of twins in cattle thoroughly examined two corpora lutea were found. This shows that twins are almost invariably dizygotic in this animal since two ova are concerned in female there is no such anastomosis.

The two fertilized ova pass into the bicornuate uterus and become attached to the uterine mucosa. If they have been discharged from the same ovary, the zygotes usually develop in one and the same uterine horn. As the zygotes increase in size the embryonic membranes of the two foetuses meet to adhere and in many cases to fuse. If such fusion occurs an anastomosis of their blood vessels can result so that a common vascular intercommunication may become established. It is to be noted that in the case of twinning involving one normal male and one normal female there is no such anastomosis.

Thus the situation arises in which the sex-hormone of each developing individual is at liberty to pass into the tissues of its co-twin. The sex hormone is the instrument which models the sex-organization alone. The internal secretions of the primary thyroid, adrenal and so forth, can also pass from each individual to the other but these are mainly concerned in the general and not in the special development of the individual, and will be able in both twins.

But if it so happens that the twins are bisexual (and a study of the sex ratio in cattle shows that by the law of probability three possible sex-combinations in twinning must occur in the proportion of  $1\sigma^2 : 2\sigma\eta : 1\eta^2$  and that the twin combination that includes a freemartin must be regarded as male-female) and if the fusion of the chorion occurs and further if a vascular intercommunication becomes established as it does in seven cases out of eight, the differentiation of both individuals will be directed by that sex hormone which is exhibited earlier, or which is more potent. The testis becomes differentiated at an earlier stage of development than the ovary and so the sex hormone of the male is liberated before that of the female. The female twin (that is genotypic female) will pursue her sex-differentiation under the direction of the male sex hormone of her co-twin and will therefore come to possess more or less completely the organization of the male. The assumption of the male characters in the case of the foetuses examined is imperfect: the external genitalia are of the female pattern, the internal organs of reproduction more or less completely male. The male sex-hormone is liberated before the embryonic gonads of the genotypic female have undergone differentiation into ovaries; such differentiation is prevented and so there is no question of a competitive action between male and female sex-hormones. The end-result will have a relation to the time of exhibition and to the efficiency of the male sex hormone. The variation in the size of the testes of the male co-twin and of the extent of vascular intercommunication seems to point to the conclusion that the amount of the hormone is not a significant factor in the production of a freemartin, but

that there is a minimum stimulus, and the reaction is of the "all-or-none" type. It is seen that the tissues of the genotypic male respond completely to the stimulus of the testicular sex-hormone, whereas those of the genotypic female fail to do so. Now it is known that genotypic male and female tissues are to be distinguished by differences in their chromosome content, and it is reasonable to assume that, because of these differences, they differ also in their physiological constitution. It is probable, therefore, that though both kinds may be capable of responding to one and the same sex-hormone stimulus, they will respond differentially. The male cootum develops testes because he is a genotypic male, and becomes a phenotypic male because he develops testes. His embryonic gonads become testes because their differentiation was pursued under the direction of the male-differentiating reactions elaborated by the interaction of the genes in the sex-determining gene-complex. The sex-hormone elaborated by the testes, passing into the body of the genotypic female, swings her sexual differentiation in the male direction, but the swing is not complete, because the sex-hormone of the testis is not equivalent physiologically to the male-differentiating substances elaborated by the sex-determining factors, and because her tissues are constitutionally different from those of the genotypic male.

It is seen that in the mammal the most distinctive sex-dimorphic characters are the secondary gonadic, and that for the development and maintenance of these the presence and action of functional gonadic tissue is necessary. The physiological action of gonadic tissues of the opposite sex causes the further development of incompletely differentiated structures to follow the direction appropriate to that sex, and, so far as is morphogenetically possible, renders the individual intersexual.

## AMOEBIIC DYSENTERY.

### I—INVESTIGATIONS INTO THE LIFE-HISTORY OF ENTAMOEBA HISTOLYTICA

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It is now generally agreed that the function of the cyst formation in *Entamoeba histolytica* infections is the propagation of the parasite from one host to another. This belief is based on sundry observations of a more or less satisfactory nature. There is much evidence indicating that in ordinary circumstances the active amoeboid stage of the parasite does not long survive after passage of the faeces. Dobell and O'Connor (1921) write that "In ordinary circumstances the free forms cannot live outside the body for more than a very short time, they die if swallowed." This view is also shared by Wenyon (1926), both as a result of personal observations and of his researches into the literature on the subject. Wenyon also states that "unless cysts are present the animals cannot be infected by feeding." In short, it was until quite recently believed that there are two possible ways of infecting animals—namely, as Dobell and O'Connor write, "by feeding them upon the cysts of the parasite, or by injecting active amoebae into the large intestine."

In further support of the view that the purpose of cyst formation is solely for the propagation of the parasite from one host to another are the investigations which have been made on excystation. This work has suggested that the cysts of *Entamoeba histolytica* will hatch only after they have been subjected to the action of the gastric and pancreatic juices, or to that of the pancreatic juice alone. Study of the literature indicates that this hypo-

thesis is probably mainly based on the observations of Ujihara (1914), of Penfold, Woodcock, and Dier (1916), of Chatton (1917), and of Cutler (1919). Ujihara records that cysts after incubation with gastric juice for twenty-four hours at 37° C. remained for the most part undigested, but that pancreatic juice was much more active. Penfold, Woodcock, and Dier write as follows: "As excreting agents we have tried pepsin in an acid medium, bile, and pancreatic extract, either alone, consecutively, or together, as appeared indicated, but the only success we have had has been with pancreatic extract used alone." Cutler states that "if a solution of 'liquor peptiens' is first allowed to act on the cysts for a short time, followed by a similar solution of 'liquor pancreatius,' a very large proportion of the treated cysts react." Chatton's experiments were of a different type, but permit of similar conclusions, he fed cats with *E. histolytica* cysts, and sacrificed the animals after periods varying from three and a half to seventeen hours, careful examination of the contents of different portions of the alimentary canal caused him to draw the conclusions that cysts pass through the stomach without alteration, except for digestion of the chromidial bars, and that excystation takes place in the small intestine.

It is remarkable that these workers have either overlooked, or ignored, the very interesting paper of Darling (1913). Chatton, it is true, refers to his work, but offers no comment upon it. Darling describes the gradual disappearance of cysts from moist chamber preparations of heavily infected faeces, and also the development of amoebulae within the cysts, and their emergence. This statement is so definite, and based apparently upon such careful observations, that it is curious it should have escaped comment from those who later worked on the same subject. Probably there are several reasons for this, most influential of which was the general preconception that the cysts must be swallowed before they can develop, another consideration was, doubtless, the possibility that Darling's preparations were—as so often happens in the tropics—contaminated with free-living amoebae. However this be, the fact remains that Darling's work seems to have been more or less ignored, and the view generally accepted that *E. histolytica* only excysts when it has been swallowed and subjected to the influence of the digestive juices. Dobell and O'Connor (1921), in their book on *The Intestinal Protozoa of Man*, after considering previous work on the subject conclude that "it is certain that the cysts never hatch in the colon where they are found, or outside the body."

In 1924, however, an important piece of work was published by Sellards and Theiler, which indicated that *E. histolytica* cysts would hatch when injected intracutaneously into kittens, and their work, which was very carefully controlled, has more recently been confirmed by Horie (1925). This observation is naturally of considerable interest and reopens the whole subject regarding the conditions necessary for excystation of *E. histolytica*, possibly it may have some bearing on relapse production in amoebic dysentery, as it has been suggested by Sellards and Theiler that relapses may, at times, be due to excystation of cysts which have persisted for some time in the colon.

With the object of throwing light on the matter, we have during the past two years conducted numerous experiments, details of some of which have already been published elsewhere (Yorke and Adams, 1926 and 1927). In the present communication we propose to summarize the main conclusions reached in these papers, and to refer to other and more recent observations which appear to us to bear on the life-history of *E. histolytica*.

The work commenced with the inoculation of a couple of tubes of Locke-egg-serum medium (Boeck, 1924, and Boeck and Diholm, 1925) with a small amount of human faeces containing numerous cysts of *E. histolytica*, and incubating at 37° C. On examining the tubes next day we were surprised to find large numbers of active amoebae, morphologically indistinguishable from *E. histolytica*. As no vegetative amoebae were observed in the stool at the time of inoculation, it appeared that those present had originated from the cysts. Many similar

A paper read in opening a discussion on amoebic dysentery in the Section of Tropical Diseases at the Annual Meeting of the British Medical Association, Edinburgh 1927.

experiments with the freshly passed stools of the same patient and also with those stored at laboratory temperature for three or four days, gave comparable results as did likewise experiments performed with the stools of other patients which contained cysts of *F. histolytica*. We were therefore led to the conclusion that, contrary to the general opinion, *F. histolytica* cysts are capable of hatching *in vitro* in the circumstances are suitable.

In order to study under the most favourable conditions this very interesting phenomenon we devised various methods for concentrating the cysts and separating them from most of the faecal material and bacteria. That giving the best results is as follows:

A mass of faeces is ground up with water in a small mortar and the emulsion shaken up with 500 or 1000 ccm. of water poured into a tall glass cylinder and allowed to stand for fifteen minutes to permit the coarser faecal material to settle. The supernatant fluid is withdrawn and either centrifuged or allowed to stand overnight in a cylinder; the deposit is then taken up thoroughly with a solution of cane sugar in water of a specific gravity of about 1.070 and centrifuged at high speed. This procedure results in separation of the vast majority of the cysts from the remaining faecal material; the faeces being precipitated and the cysts floating in the supernatant fluid which is withdrawn, diluted with about four times its volume of water and again centrifuged at high speed; by this means a small deposit is obtained consisting of great numbers of cysts in a relatively minute quantity of faecal material. The deposit is then washed several times with water to get rid of all traces of sugar and the majority of the remaining bacteria.

Washed concentrated suspensions of cysts prepared by this method were found to give remarkably satisfactory cultures of *F. histolytica* the relatively few bacteria which such suspensions contained as compared with the original faeces enabled the excysted amoebae to become well established before the growth of bacteria snuffed them and owing to the great number of parasites such cultures contained, and the relatively minute quantity of faecal debris, we were enabled to study the stages of development of the cysts and their excystation, under most favourable circumstances, both in the living state and in stained preparations.

Before discussing the changes leading up to excystation it would be well to point out that the cysts passed by different patients and even by the same patient at different times vary greatly in appearance, especially in respect of the number of nuclei they contain, and of their chromatoid bodies and glycogen. Thus, on one occasion the cysts may be practically all uninucleate with much glycogen and but few of them containing chromatoid bodies whereas on another occasion the vast majority may be quadrinucleate, with chromatoid bodies and but little glycogen. To cite an extreme case:

A chronic dysenteric patient A. P. passed on Mar. 14, 1925 a stool containing numerous *F. histolytica* cysts. On making a differential count of an iodine stained preparation it was found that the various types—as regards number of nuclei—were present in the following proportions: uninucleate 5 per cent, binucleate 7 per cent, quadrinucleate 22 per cent and those with indeterminate nuclei 6 per cent. In a stool passed three days later a differential count revealed the various types of cysts to be present in the following proportions: uninucleate 83 per cent, binucleate 6 per cent, quadrinucleate 6 per cent and those with indeterminate nuclei 5 per cent.

The fact that a patient may pass practically only uninucleate cysts on one occasion, and only quadrinucleate cysts on another occasion is very interesting and its correct explanation would seem to us to throw important light on the life history of *E. histolytica*. But before going further into this matter we propose to take into consideration the changes occurring in the cysts during cultivation *in vitro*.

When the washed concentrated suspensions of cysts referred to above were sown on Locke-egg serum (LES) medium, and incubated at 37° C. the cysts were found to develop rapidly; the uninucleate and binucleate cysts quickly being converted into quadrinucleate individuals, and after a few hours free amoebae began to make their appearance in the cultures. A single example will make this clear:

A differential count in iodine showed that a concentrated cyst suspension contained 57 per cent of uninucleates, 18 per cent of binucleates, 15 per cent of quadrinucleates and 10 per cent of individuals in which the nuclei were either indistinct or the cysts were shrunken or granular after incubation of this suspension

on LES medium at 37° C. for three and a half hours the differential count was as follows: uninucleate cysts 4 per cent, binucleate cysts 8 per cent, quadrinucleate cysts 41 per cent, cysts with indistinct nuclei or shrunken and granular 33 per cent, free amoebae 14 per cent. More prolonged incubation resulted in almost complete disappearance of the cysts and their replacement by free amoebae; many empty cyst envelopes were also to be seen.

After much close study of fresh and stained preparations of cultures of different ages we are able to give the following account of the developmental stages in the cysts which terminate in excystation.

The youngest cysts are uninucleate and loaded with glycogen as development proceeds chromatoid bodies make their appearance, the nuclei divide, and the glycogen decreases in amount. Later the cyst becomes quadrinucleate, chromatoid bodies are well developed but the glycogen is much less evident or entirely absent. When the cyst is completely mature and ready to excyst, the nuclei are agglomerated and the cytoplasm is homogeneous and without glycogen; the chromatoid bodies are greatly reduced or absent. We have failed to observe any evidence of autolysis in the development of the cysts but we have frequently seen chromatium particles apparently extruded from the nuclei immediately prior to, or during division.

The recently excysted *F. histolytica* contain four closely agglomerated nuclei and the cytoplasm is very finely alveolar. It moves in a characteristic slug-like manner with the nuclei almost invariably anterior, and drag behind a more or less motionless tail as bacteria are ingested the cytoplasm becomes more alveolar and digestive vacuoles quickly appear.

In cultures the majority of the excysted quadrinucleate amoebae divide either directly or indirectly, into four uninucleate individuals but in a certain proportion the cytoplasm fails to divide and individuals containing many nuclei are developed; these multinucleate forms frequently grow to very large dimensions. Here again we were unable to observe any indication of autolysis.

These observations show that contrary to general belief *F. histolytica* cysts readily develop and hatch under suitable conditions *in vitro*. So far as we have been able to ascertain moisture and a suitable temperature (preferably about 37° C.) are essential for development and excystation; the passage of the cysts through such solutions as liquor pepticus or liquor pancreaticus is unnecessary for excystation.

Shortly after the publication of our preliminary paper, in which these observations are set forth in detail, a communication appeared from Dobeil and Laird (1926) which confirmed this work in so far as they state that they were able to initiate cultures from the cysts of *E. histolytica* passed in faeces. They however add that 'Cysts just passed in stools do not hatch or develop further if placed immediately in culture media and incubated at 37° C., they merely die. They must first be allowed to cool, and then must be kept for a certain time.' The time required for maturation outside the body is stated to be approximately one or two days. This statement obviously raises very important epidemiological questions for it implies that the faeces of chronic dysenterics are not infective for one to two days after being voided. It is furthermore in conflict with our own impressions, for although we had not specially investigated this point when we published our previous papers yet we have among our protocols many records of the successful initiation of cultures from *F. histolytica* cysts passed only three or four hours.

In view of the practical importance of the point it appeared to us desirable to reinvestigate the subject and with this object in view a number of patients suffering from chronic amoebic dysentery were from time to time brought to the laboratory and asked to evacuate their bowels, so that the freshly passed stools could be sown immediately on warm Locke-egg serum medium. A differential count in iodine of the various cysts and vegetative amoebae (that is, as regards the number of nuclei contained) was made immediately on passage of the faeces and also after cultivation on LES medium for hours. In all observations of this kind it was found that the cysts developed in a perfectly normal manner, the

majority of the uni- and bi-nucleate individuals becoming rapidly converted into quadrinucleates. When, however, we come to the question of excystation the problem is distinctly more complicated. Differential counts revealed in numerous experiments a very varying degree of excystation on some occasions none of the cysts hatched, but on others a considerable proportion were found to have excysted, the proportion varied greatly, but in no instance did it exceed 58 per cent.

In existing round for an adequate explanation of this defective excystation several possibilities present themselves. In the first place, although it is clear that the great majority of the uni- and bi-nucleate cysts were alive, as they developed into quadrinucleate individuals, it is possible that many or all of the quadrinucleates present in the faeces at the time of passage were dead, and such an hypothesis would explain the relatively small hatch usually obtained. In the second place, it is conceivable that, even though all the cysts were alive at the time of the passage, only limited excystation took place in certain experiments, and in others none at all, because, as Dobell and Laidlaw state, maturation outside the body at low temperatures is an essential factor for excystment, or, in the third place, some unknown factor in the conditions of the experiments might have been more or less inimical to excystment.

In order to investigate these points, and more particularly as to whether some at least of the quadrinucleate cysts were dead at the time of passage, or whether cooling outside the body is essential for excystation, experiments of the following nature were undertaken.

A differential count of the cysts and vegetative entamoebae in the stools of a chronic dysenteric was made immediately after passage in the laboratory, and a portion of the stool was sown immediately on warm LES medium. From the remainder of the stool a concentrated washed suspension of cysts was rapidly prepared according to the second procedure described in our first paper (1926), care being taken to maintain the temperature at 37° C throughout the operation. During the preparation of the cyst suspension, which occupied approximately one hour, all the vegetative forms were destroyed. A differential count of the cysts in the concentrated suspension was then made, and a portion was sown immediately on warm LES medium. Finally differential counts in iodine were made of each of the above cultures after incubating at 37° C for various periods.

The results of these experiments showed that, whereas the degree of excystment resulting from cultures of the original faecal mass varied from 0 to 40 per cent, that resulting from similar cultures of the washed concentrated cyst-suspension prepared at 37° C varied from approximately 60 to 95 per cent. From this we are able to conclude: (1) That cooling outside the body is not essential either for the development of the cysts or for their excystation. (2) That usually the great majority of cysts are alive at the time of passage, this is clearly evident from the fact that cultures of washed concentrated cyst-suspensions usually resulted in a hatch of 80 to 90 per cent of the cysts. On certain occasions, however, the fact that hatches of only 60 or 70 per cent were obtained, even under the most favourable conditions, suggests that an appreciable proportion of the cysts—probably of the quadrinucleate type—were dead at the time the faeces were passed. (3) As the relatively poor hatch obtained from cultivation of freshly passed faecal material cannot therefore be explained either on the ground that cooling outside the body is necessary for excystation or on the ground that the majority of the cysts were dead when passed, it must be the result of something in the faecal material itself which, although not preventing development of the cysts, does inhibit their excystation.

But before proceeding to further evidence in support of this contention it appears desirable to return to another question raised by Dobell and Laidlaw. These authors claim that it is only the completely developed cysts which survive cooling outside the body, they write "When this (cooling to laboratory temperature) is done all immature cysts cease to develop and likewise ultimately die, but all fully formed cysts remain alive and unaltered for a considerable time." This again raises a point of considerable practical importance, for it implies that a stool such as the one referred to above, in which the uni- and bi-nucleate cysts constituted about 90 per cent of

the total present, is relatively only very slightly infected after it has been passed for a short period.

Numerous experiments have satisfied us that cooling the faeces, or the washed concentrated cyst-suspension, either to 0° C or to laboratory temperature, for periods varying from an hour to two or three days, does not cause the uni- and bi-nucleate cysts to die more quickly than the fully developed quadrinucleate individuals. In fact, the evidence shows that cooling the faeces to 0° to 5° C for one or two days has no appreciable effect on either the immature or mature cysts.

Returning to the question of the inhibitory effect of faecal material on excystation, experiments of the following nature were performed.

A washed concentrated suspension of cysts, prepared as previously described, was sown on LES medium, and also on the medium to which had been added, either at the time of sowing or two hours previously, a piece of faeces about the size of a pea. Differential counts were then made after incubation at 37° C for various periods. In other experiments an extract was made by rubbing up a little of the faeces with Locke serum in a mortar, and then precipitating as far as possible the faecal material by prolonged centrifuging at high speed; the supernatant fluid was used for covering the egg slopes and after warming to 37° C the cyst-suspension was sown. Here again differential counts were made after incubating at 37° C for various periods.

The results of these experiments showed that the presence of faeces, or of faecal extracts, in the culture tube, had a definitely inhibitory effect on excystation, although it did not prevent the development of the uni- and bi-nucleate stages into the quadrinucleate.

Hitherto we have had no absolutely satisfactory criterion which would enable us to decide whether *E. histolytica* cysts are alive or dead. The usually accepted method of determining their viability is their behaviour in dilute eosin solution. This test is based on the assumption that dead cysts stain immediately with weak solutions of eosin in water, whereas living cysts do not, but whether this assumption is wholly justifiable is a matter of very considerable doubt, it is highly probable that the cysts which stain are actually dead but whether all those which do not stain are alive is a much more doubtful matter. The method described above of sowing washed concentrated cyst-suspensions on LES, and observing the proportion of cysts which have hatched after incubation at 37° C for various periods, has proved a much more reliable test of viability, and has enabled us to investigate certain important questions such as the longevity of the cysts under various conditions *in vitro*, and their resistance to heat and to various drugs and chemicals.

The results of such experiments have shown that *E. histolytica* cysts commence to die fairly rapidly in faeces which have been kept at laboratory temperature (16° to 20° C) for three or four days, and that all are dead within about ten days, approximately the same result is obtained when the faeces are kept at 0° C in the ice chest. When freshly passed stools are placed immediately in the incubator at 37° C, the cysts are found to be practically all dead within a period of less than twenty-four hours; the precise period appears to vary with different stools, and in some instances but few cysts survive for longer than eight or ten hours. Washed suspensions of *E. histolytica* cysts in water live rather longer, more especially when stored at 0° C, but even under these conditions live cysts are not found after three weeks.

*E. histolytica* cysts survive a temperature of 45° C for thirty minutes, but are killed within five minutes by a temperature of 50° C. The cysts are remarkably resistant to emetine and to Yatrien and relatively so to hydrochloric acid and chlorine, the last named, in strength far in excess of that used in the bacteriological sterilization of water, having no effect on the cysts within a period of half an hour.

Returning now to the interesting observations of Sellards and Theiler—that littens can be infected by intrarectal injections of *E. histolytica* cysts—we have already mentioned that these authors have advanced the hypothesis that relapses may, on occasions, be due to hatching of cysts which have persisted in the colon for some time. This is obviously a question of great practical importance, and merits serious consideration. Hegner (1927) refers to this work in his recent book, and writes as follows:



Irreversible excystation may also take place in the large intestine of man. Sellards and Thieier have gone even further and suggest that cysts may hatch in the colon of the amoeba individual in which they are formed. Pelpel in amoeba may according to this view result from the hatching of resistant cysts held for long periods in the intestine. However the observation of Dobell and Laidlaw that cysts must be cooled below body temperature for several days before they will hatch indicates that cysts could not hatch until they had passed out of the body of the host in which they encysted.

But as we have already shown, in the experiments recorded above Dobell and Laidlaw are mistaken when they state that cysts must be cooled outside the body before they can excyst and develop further, so that no valid argument appears, up to the present, to have been advanced against Sellards and Thieier's hypothesis. Many of the facts brought to light in our investigations appear, however, to bear on the matter and to indicate that cysts do not hatch in the body of the host in which they are formed.

The first question which of necessity arises in considering the subject, is the length of time *F. histolytica* cysts live in the human body. There seems to be no reasonable ground for doubting that the cysts are formed from the precystic stage either on the surface of the ulcer or, more probably, in the lumen of the gut. The period occupied by the conversion of the precystic stage into the cystic stage is not known, but such evidence as there is suggests that it must be comparatively short. The small precystic amoebae can often be found in small numbers if looked for carefully, in freshly passed stools which at first sight contain nothing but cysts. On several occasions saline enemata given to chronic dysenterics, whose stools contained apparently only the cystic stage produced large numbers of the precystic forms, and again it is generally recognized that an apertient will cause in similar cases the appearance of precystic amoebae in the stools. After the effect of the enema or apertient has ceased the precystic forms are again replaced by cysts. When once the cyst is formed it quickly develops at 37°C. into the mature quadrinucleate individual. Numerous experiments have shown that *in vitro* the uni- and bi-nucleate cysts are converted into quadrinucleates within a period of three to four hours. This fact affords an entirely satisfactory explanation of the observation previously referred to—namely, that the cysts passed by different patients, and even by the same patient at different times, vary greatly, on one occasion they are practically all uninucleate whereas on another occasion they are practically all quadrinucleate.

The stage in which a cyst is passed obviously depends on the length of its sojourn in the bowel, and as a general rule we have noted that in the case of a patient whose bowels are moved several times a day, the proportion of uninucleate cysts is materially higher than in cases where there is only one motion daily. There must be exception to this generalization as obviously the site of the lesion will exercise influence if the precystic amoebae are formed in ulcers situated in the caecum, the cysts other things being equal will naturally be longer in the bowel than if the site of their formation is in the lower 10 or 15 cm. of the rectum.

There is thus substantial reason for believing that the interval occupied by the development of the precystic stage into the mature quadrinucleate cyst is comparatively short, probably not exceeding six to eight hours. Furthermore experiments *in vitro* and *in vivo* show that under suitable conditions mature quadrinucleate cysts hatch within a few hours. It is unnecessary to mention again the *in vitro* experiments which we have already discussed fully but brief reference might here be made to certain hitherto unpublished *in vivo* experiments. It was found that when washed concentrated cyst-suspensions were injected intraperitoneally into mice, or subcutaneously into guinea-pigs, the cysts hatched within a period of three or four hours, and in a certain proportion of cases the infection developed, with the production of general peritonitis or large subcutaneous abscesses in which vegetative amoebae were to be found in considerable numbers. The observations are in agreement with those of Chaiton who found free quadrinucleate amoebae in the intestine of a kitten three and a half hours after feeding it with human faeces containing *F. histolytica* cysts. We can therefore conclude that under suitable conditions *E. histolytica* can

pass from the precystic form, through the various cystic stages to the excysted quadrinucleate amoeba within a period of twelve hours. If this happened in the bowel large numbers of cysts would be constantly hatching and wasted for the purpose for which they are intended, providing the patient did not have more than one or two motions daily. There is however very considerable evidence to show that this does not happen. In the first place notwithstanding the most careful search on innumerable occasions, we have never found in the stools any forms resembling the characteristic recently excysted entamoeba, with its four closely agglomerated nuclei and in the second place although the process of development proceeds apparently uninterrupted to the formation of the mature quadrinucleate cysts these do not hatch in the bowel, possibly partly owing to lack of sufficient moisture in the contents of the rectum but mainly because of the presence in the faeces of something which inhibits excystation.

Although the mature quadrinucleate cysts will not hatch in faeces, there is evidence that they will remain viable in the bowel for some time. How long, this is we do not know, but we have already referred to the fact that when infected faeces containing large numbers of quadrinucleate cysts, are kept in the incubator at 37°C. the cysts do not survive longer than from about eight to eighteen hours, the precise period varying with different stools. This does not of course, mean that they cannot survive for longer periods in the bowel as doubtless, changes inimical to the cysts occur in faeces kept outside the body at 37°C., but these observations together with the facts that in the stools of every patient we have examined a certain number of cysts appeared to be dead when passed, and that the number of these is greater in hard constipated stools suggest that the period for which the mature quadrinucleate cysts can live in the bowel is probably not more than a day or two at most.

Our investigations, therefore lead us to the belief that the development of *F. histolytica* from the precystic form to the fully mature quadrinucleate cyst proceeds steadily, and without interruption in the lumen of the bowel, and that the whole process occupies only a few hours, the mature quadrinucleate cysts do not hatch in the bowel, but can survive there for a period which is strictly limited, probably not more than a day or two at the outside. It is not easy to harmonize Sellards and Thieier's observation with these views but the following reflections appear to us to be relevant. Obviously there may be some essential difference between the human intestine and the rectum of a kitten and it is possible that the contents of a kitten's rectum may not have the inhibiting or inhibiting excystation as has that of the human intestine. Then again it must be remembered that the fluid is fatal for excystation and that this factor was applied in Sellards and Thieier's experiments in the form of the 3 cm. of saline in which they suspended the small quantity of faecal material injected. Such injections would probably lie, at first at any rate below the faecal mass in the kitten's bowel and in contact with the mucous membrane, and the cysts would not be so intimately intermingled with faecal material as is the case in the human intestine. It seems to us that it is quite probable that in such circumstances the conditions might not be sufficiently unfavourable to prevent entirely excystation of the injected cysts and that those which did excyst might succeed in penetrating Lieberkuhn's crypts and in invading the bowel wall of a susceptible animal like the kitten.

Notwithstanding therefore the interesting observations of Sellards and Thieier we adhere to the belief that the sole purpose of cyst formation in *F. histolytica* infections is the propagation of the parasite from one host to the next, and that Nature has devised a method of safeguarding this and of preventing the waste which would result if hatching of the cysts occurred in the intestine in which they are formed.

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## II—RECENT ADVANCES IN THE TREATMENT OF AMOEBIC DYSENTERY

TOGETHER WITH AN ACCOUNT OF THE SIGMOIDOSCOPIC APPEARANCES OBSERVED IN DIFFERENT STAGES OF THE DISEASE

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Cases of amoebic dysentery are not only difficult to cure, but they are also exceedingly common, and it is obvious that any step forward in treatment should be eagerly looked for and as readily tested.

The first really specific treatment of amoebic dysentery was with ipecacuanha. There is no question that in many cases it was efficacious, but it was soon superseded by emetine, which was introduced by Sir Leonard Rogers in 1911, who then prescribed ipecacuanha nowadays.

The introduction of emetine was a definite step forward, and it still seems to us to be the treatment of election in the early stages of acute amoebic dysentery and for amoebic hepatitis. However, even with careful treatment a certain percentage of cases relapse, and subsequent treatment with a further course of the same drug is often of no avail, in other words, the entamoebae in these cases have become emetine-resistant. Our experiences with emetine as a means of eradicating the intestinal infection have been distinctly disappointing, and the results of observations on 87 of the cases under our care in the Hospital for Tropical Diseases were published by Renne in 1922. Chronic cases, too, often do not respond at all well to emetine injections, and we have seen patients treated repeatedly with doses of 80 grains, or more, of emetine over a prolonged period without permanent benefit.

### *Emetine-Bismuth-Iodide*

Emetine-bismuth-iodide, which is given by the mouth, was then adopted in place of injections of emetine, and, undoubtedly, many cases which failed to respond to emetine were cured by this drug.

The following cases illustrate the remarkable curative effect of emetine-bismuth-iodide uncombined with any other form of treatment.

A marine who contracted amoebic dysentery in China in 1912 was seen in 1924 after repeated relapses, which during twelve years had been treated with emetine. There was extreme wasting, the weight was only 8 st 7 lb, the general condition was poor and the patient was passing about ten stools daily swarming

with active amoebae. Sigmoidoscopic examination showed numerous ulcers. After 36 grains of emetine bismuth-iodide he put on 7 lb in weight in ten days. He has remained free from symptoms since, and returned to work.

Another patient contracted amoebic dysentery in Trinidad in 1914; this was followed by frequent relapses till his admission to hospital in 1922. He was treated with many courses of emetine injected without avail. Great emaciation was present, and he lost 3 st in weight, while passing nine to twelve stools a day containing free entamoebae. A preliminary course of 10 grains of emetine bismuth-iodide, the more acute symptoms, but he continued to pass free entamoebae. He then had two full courses of emetine bismuth-iodide, one of 30 grains and another, two weeks later, of 16 grains. The stools had been free from entamoebae ever since the patient improved remarkably in general condition and had put on a stone in weight. For the last three years he had been back at his work in Ecuador, remaining free from symptoms.

The total number in this series treated with emetine-bismuth-iodide alone was 40 cases. Out of these there were 5 in which full courses of this salt and of emetine periodide had no permanent effect.

The more acute the symptoms, the more striking and permanent were the effects of treatment with emetine-bismuth-iodide.

Emetine periodide proved less satisfactory, for out of 12 cases treated with it, 5 had to be subsequently treated with emetine-bismuth-iodide in order to be completely cured.

Three of our patients treated with emetine-bismuth-iodide relapsed after as many as nine courses of treatment, demonstrating the well known fact that entamoebae become resistant also to this drug. There is no doubt that its introduction has considerably raised the percentage of cases of chronic amoebic dysentery permanently cured, but there still remains a fairly large residue who, in spite of all known treatments, live with the certainty that sooner or later they will relapse to their former condition, passing numerous stools with blood and mucus. Such patients usually become neurasthenic.

Not even the most enthusiastic advocate of emetine or emetine-bismuth-iodide would claim that such treatment is ideal from the point of view of the patient. The administration of emetine means a rather painful injection, and emetine-bismuth-iodide is notoriously likely to result in distressing vomiting. The well known toxic effects of emetine are also a much graver objection to its use, resulting, as a general rule, in an appreciable fall of blood pressure—about 20 mm of mercury. The circulatory system is particularly liable to be involved, and the very characteristic "emetine pulse," and cardiac irregularities of various types, are not infrequently seen. From the mental point of view emetine is sometimes a depressing drug, and a very painful neuritis and desquamation of the skin are well known sequels. We have found that such untoward symptoms are less likely to supervene if a more generous diet is allowed than the milk diet originally suggested. Still, in treating a series of cases, some will always be met with in which the full course of treatment cannot be tolerated, especially among women and children. A less toxic and more efficient drug had clearly become very desirable in the treatment of amoebiasis.

### *Yatren*

In 1921 P. Muhlens and W. Menk first introduced a new drug called Yatren 105. It is an iodine-oxyquinoline-sulphonate compound, and may be given orally, rectally, intramuscularly, or even intravenously. We have experience only of the first two methods, but have now used them on a large series of cases.

By the mouth the usual dose given by most workers has been 15 grains three daily, but we found that such a dosage caused diarrhoea, and were content with a smaller dose—4 to 8 grains three daily. It may be given in pill form or in cachets.

By the rectum yatren is given as an enema, the quantity used being 200 c.c. of a 2½ per cent solution. The rectum is first cleared out by a preliminary enema of 2 per cent sodium carbonate, 1 pint, and then the yatren solution is run in slowly and retained as long as possible. Most of the patients can retain it about six to ten hours, and after a little experience many of them can hold it for a much

longer period. Proof of absorption consists in testing the urine with iron perchloride, the reaction giving rise to a greenish colour.

The course of treatment adopted on the continent consists in giving it for ten days by the mouth combined with ten daily injections by the rectum. It is good practice to repeat the course after an interval of five to seven days. The diet should be light, and can include fish pudding and chicken a milk diet alone is quite unnecessary. Apart from the diarrhoea following large doses by the mouth we have observed no toxic symptoms attributable to ratren, and we have not been able to find any evidence of such in the literature. It certainly is a very safe drug, in spite of the large amount of iodine in the combination; symptoms of iodism are unknown. It is possible to give it to children, which is a great advantage as compared with emetine and emetine-bismuth iodide. Mild cases, such as cyst passers without symptoms, may be treated without confinement to bed but absolute rest should be part of the treatment of any more acute dysenteric condition.

The mode of action of ratren is a little uncertain, but it is claimed that it is a definite cell stimulant. According to Kofoid and Wagener it has in vitro no very powerful action on *Entamoeba histolytica*. On the other hand Vogel in a recent communication, has adduced clear evidence that ratren in a dilution of 1 in 100 is capable of exterminating all the entamoebae in artificial culture within a period of three hours and in a higher dilution (1 in 1,000), it prevents the multiplication of this organism from taking place after a period of twelve hours.

Ratren is certainly a safe non-toxic drug and much more pleasant from the point of view of the patient, who, as a general rule increases in weight during the treatment. We believe it to be a drug of the very greatest value and can fully confirm its efficacy in curing long-standing cases of amoebic dysentery which have proved resistant to emetine and emetine-bismuth iodide. This is illustrated by the following rather striking cases.

#### Cases Treated by Ratren Alone

Out of four cases treated by ratren alone which one of us reported in 1925 one relapsed subsequently, and was treated with emetine-bismuth iodide. Since then we can quote the following.

One patient had frequent relapses of dysentery dating from 1916 in Salonica. He was treated frequently with full courses of emetine and emetine-bismuth iodide. In hospital two weeks after a full course of emetine-bismuth iodide he developed amoebic hepatitis followed by a relapse of dysentery. In February 1925 ratren was given by the bowel for ten days and also ratren pills by the mouth 24 grains daily. The amoebae disappeared and the stools were reduced to one daily. He gained 5 lb in weight in ten days and in a month's time he had added another 16 lb. He returned to Nigeria and in February 1926 had had no relapse. He has remained in perfect health.

Another patient who contracted amoebic dysentery in 1922 in St Vincent had had 66 grains of emetine with frequent relapses and was invalided home. After admission to hospital he was treated with two full courses of emetine-bismuth iodide but he relapsed nine months later with amoebic hepatitis and dysentery. In November 1924 he received a full course of ratren by the bowel. He has remained in good health ever since and has returned to duty in the tropics.

A third patient had dysentery in Gallipoli in 1915. He was given numerous injections of emetine at the time and emetine-bismuth iodide in full doses in 1918 and 1919. In spite of this diarrhoea returned every two months with blood mucus and free entamoebae. He was given a course of ten ratren lavages in December 1925. He reported at the beginning of 1927 that he had been free from symptoms since the treatment.

The question naturally arises. Has ratren any value in the treatment of amoebic hepatitis? Beyond the case quoted above we have no personal experience of this but several cases presumably cured in this manner are recorded in the literature. Further observations on this point are necessary. The next question is whether ratren fails more often than emetine-bismuth iodide. To this it must be answered that, although its action appears to be curative when the lesions are situated in the lower portion of the

large intestine, there are patients who relapse owing to lesions in the caecum and transverse colon. To meet this contingency we have introduced what we believe to be the treatment of election for intractable cases of amoebic dysentery—that is, emetine-bismuth iodide given by the mouth and ratren administered by the rectum simultaneously.

#### Combined Treatment with Ratren and Emetine-bismuth Iodide

During 1926 the combined treatment has been given to 22 cases. 5 grains of emetine-bismuth iodide being given every night and ratren (200 ccm of 2 per cent solution) lavages in the morning. To our surprise this seemingly drastic treatment was well tolerated by the patient and the usual diarrhoeic effect of emetine-bismuth iodide when given alone was not observed. Vomiting was almost entirely absent.

From a clinical point of view these cases have been the most successful in a series of 153 proved cases of amoebic dysentery which we have quoted in this paper especially when it is remembered that most of them were war infections of long standing and especially intractable to treatment. The following illustrative cases are worth of record.

One patient had had uncontrolled dysentery for eleven years since his original attack at Gallipoli in 1915. He was given frequent courses of emetine and emetine-bismuth iodide without avail. In May 1926 when he was passing ven stools daily containing free *E. histolytica* he was given 27 grains of emetine-bismuth iodide combined with ten daily rectal lavages of ratren the treatment being controlled by sigmoidoscopic examination. He was in hospital for only sixteen days and has been perfectly fit ever since.

Another patient first contracted dysentery in India in August 1923. He had numerous courses of emetine and emetine-bismuth iodide in India. In September 1925 he was treated in a London hospital with emetine relapses were frequent. On admission to the Hospital for Tropical Diseases in February 1926 he was passing ten stools daily containing blood and mucus with free *E. histolytica*. He was treated with ratren alone by rectum and one month later he was then given emetine-bismuth iodide combined with ratren in two courses with an interval of one month. At the beginning of 1927 he was absolutely free from symptoms.

A third patient contracted dysentery in 1925 in Colombia. Numerous injections of emetine and courses of emetine-bismuth iodide were administered with only temporary relief. He was treated in various London hospitals without success. In October 1926 he was passing sixteen stools daily with numerous free *E. histolytica*. He was then treated with emetine-bismuth iodide 3 grains at night (to a total of 30 grains) combined with ten ratren lavages. Frequent sigmoidoscopic examination were made. He has been free from symptoms since the cessation of the treatment (May 1927).

As we well recognize that great caution is required in estimating the value of any particular line of treatment in such a chronic resistant infection as amoebic dysentery, and remembering that similar positive assertions were made about emetine and emetine-bismuth iodide at the time of their introduction to the profession we have refrained from quoting any which have been treated in this manner during the last nine months otherwise our case would be much larger.

The combined treatment has much to be urged in its favour. It has, we think, been abundantly demonstrated that both these drugs possess a definite curative value in amoebic dysentery which may be limited in its extent when they are used singly, but is much more intense when both are combined. We do not think there is any doubt from our observation that ratren is widely absorbed but it may be that it can only reach the amoebic lesion situated in a limited area or the large bowel, and so extensive lesions in the caecum and ascending colon may escape. These lesions and their contained parasites are then reached by the emetine-bismuth iodide given by the mouth. Moreover as the treatment is continuous both by day and by night, the parasite is given no chance to recuperate. Whatever may be said about the rationale of the method, the combined drugs are remarkably well tolerated, and the results as controlled by the sigmoidoscope and backed up by clinical observations, are very satisfactory.

In order to be efficacious, emetine-bismuth-iodide must be prescribed and administered in the proper manner. It is useless, in our experience, exhibiting it in pill or stercoroid form, as is frequently done, since it will be passed out of the bowel unchanged. If covered closely with any protective substance the drug is not absorbed. When given as recommended here it is more nauseating, and is apt to produce its most disagreeable effects. The red powder should be enclosed in a gelatin capsule.

If the full dose is to be tolerated it is better from the point of view of the patient to take one capsule containing 3 grains of emetine-bismuth-iodide rather than three capsules containing 1 grain each. The usefulness of the smaller sized capsule is that the dose can be graduated, and in sensitive persons and in women it is better to commence with smaller doses—1 grain for the first night and 2 grains for the second, so as gradually to accustom them to this drug. Some people cannot tolerate more than 2 grains. It is most important to observe certain precautions in giving the drug. The patient should have had no food or drink for four hours beforehand, and should be absolutely at rest when swallowing the drug. He should endeavour to go to sleep, and any saliva should be wiped from the mouth and not swallowed. Should vomiting ensue within two hours of giving emetine-bismuth-iodide the drug will not be absorbed. In these cases it will be necessary to give 10 minims of tincture of opium out half an hour beforehand. Generally this salt is tolerated at 10 p.m., though in some cases it is difficult, in order to avoid a restless night, to give it earlier—at 6 p.m. When given at 10 p.m. the last solid food should be taken at 4 p.m. and a glass of milk permitted at 6 p.m. Hot applications or surpisms to the epigastrium are useful in prevention of vomiting due to the liberation of the drug from the capsule.

#### *Sigmoidoscopic Appearances*

In connection with this investigation on treatment an intensive study has been made of the sigmoidoscopic appearances of the bowel in amoebic dysentery to supplement previous work of one of us on this subject.<sup>1</sup>

A knowledge of the changes undergone by the bowel in all stages is, of course, indispensable in the diagnosis of intestinal amoebiasis and affords an index as to the cure of the disease by any particular drug or combination of drugs. The lesions differ considerably from those commonly seen on the *post-mortem* table. They are much more minute, delicate, and superficial, so that all the mucosae would necessarily be lost at a grosser *post-mortem* examination. The sequelae of amoebic dysentery and the appearances of the latent stage are, perhaps, the most interesting. In the very acute stages the more dramatic appearances are observed and then fulminant nature must be seen to be realized.

In the most acute stage the superficial nature of the destruction of the mucosa more resembles that of the bacillary dysentery. The mucous membrane is covered with patches of ragged superficial ulceration and dotted with numerous bleeding points and fissures. The bowel surface is much folded and reticulated. When scrapings are made from this haemorrhagic surface, entamoebae are present in masses over the affected area. The lesions extend, as a rule, down the rectum right to the internal sphincter, and are easily visible directly the sigmoidoscope is inserted into the bowel, while the entamoebae may be demonstrated in scrapings taken at random from the mucosa, as in artificially produced intestinal amoebiasis in the cat.

In the subacute stage of amoebic dysentery the bowel surface presents the same folded and reticulated appearance, the lumen is filled with blood-stained mucus, the amoebic lesions take the form of small yellow elevations filled with putty-like material which are probably small ulcerations communicating with the submucosa, while the more recent lesions are represented by small star-shaped haemorrhages in the mucosa. Scrapings from the ulcerated surface yield either scanty entamoebae or Charcot-Leyden crystals which, as J. Gordon Thomson has pointed out, often afford an excellent index of the amoebic nature of the infection.

#### *Chronic Amoebic Dysentery*

Under this heading we have included those cases in which the more urgent symptoms of the disease are absent, and the patient is inconvenienced solely by irregularities of the bowels or by abdominal discomfort. These are just the cases in which the diagnosis is difficult or impossible from the physical examination of the patient or microscopic examination of the faeces for amoebic cysts. Definite ulcerations of considerable size and extent are visible, the ulcers may be superficial, involving the mucous membrane only, or deep and penetrating the submucosa. They usually have undermined edges, haemorrhagic margins, and yellowish or grey bases. On scraping the bases of these ulcers with a blunt spoon masses of amoebae may be recovered in cases where they cannot be found in the faeces.

#### *Latent Amoebic Dysentery*

The sigmoidoscopy is of the greatest practical use in the diagnosis of the latent stages of amoebic dysentery, and it is therefore necessary to be familiar with the somewhat elusive appearances of the bowel. In this case amoebic cysts can neither be found in the faeces nor can the organisms be recovered from scrapings of the lesions. The lesions take the form of yellow papillae on the surface of the mucous membrane, they are associated with the peculiar infolding or reticulation of the mucosa, or the surface of the mucosa may be studded with small pits or depressions which represent healed ulcerations. Intermingled with these, small flame-shaped haemorrhages are often observed. The most deceptive form of all is the one where the only lesions visible are faint and small submucous haemorrhages. The painless nature of the lesions is ascertained by sigmoidoscopy during the more quiescent stages of the disease should be emphasized.

#### CONCLUSION

The lessons conveyed by the study of the different phases of amoebic infection, both in the acute and quiescent stages, should be utilized for the control of the treatment of the disease.

The changes undergone by the mucosa during combined emetine-bismuth-iodide and jation treatment are rapid and striking. A healed bowel after treatment is one in which signs of amoebic activity are entirely absent, but where traces of former lesions are seen in the small depressions or pits which everywhere stud the mucosa, and with which the clinician should make himself familiar as representing a bowel cleansed of amoebic infection. No observations are yet forthcoming to show how long these small and almost microscopic depressions persist, but that they are diagnostic of latent or recently healed intestinal amoebiasis there can be little doubt.

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#### DISCUSSION

Professor C. A. Koron (California) said that study in his laboratory during the past nine years of over 4,000 cases of infection by *Entamoeba histolytica* confirmed the greater efficiency of emetine-bismuth-iodide and emetine periodide as compared with emetine, jation, and stovarsol, the last two were useful adjuvants, and neo-arsphenamine was replacing stovarsol with advantage. For diagnosis he relied primarily upon the finding of cysts and the nuclear structure of mature cysts. He had been studying an amoeba which resembled the largest "rice" of *E. histolytica*, and was generally present in the quadrinucleate stage in stools. It had clear pseudopodia in the motile stage, and showed, as its most diagnostic features, a single large lateral blob of peripheral chromatin on the nuclear membrane and the presence of eight chromosomes at nuclear division. In culture this amoeba had maintained its characteristic morphology and behaviour for long periods, in one instance for over a year. The name *Councilmania dissimilis* had been proposed, and the question of pathogenicity or harmlessness was not yet certain.

# RETRO MALLEOLAR TUBERCULOSIS CURED BY TUBERCULIN ADMINISTRATION ACCORDING TO KOCH'S METHOD

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When the patient who is here described first came under observation he presented a smooth, soft, uniform, indurated swelling, an inch and a half in diameter, situated between the right internal malleolus and the heel.

The hollow at the sides of the tendo Achillis were filled up and there was some fullness along the outer side of the foot. The swelling was not affected except for one or two papules and a small area the size of a threepenny piece over the lower part of the swelling where it was thin and boggy. There was no pain and no restriction of movement. There was no history of injury; the condition had developed gradually with slight variations during the preceding five years in the last six months of which an oval nodule about an inch in length made its appearance further up the leg just above the top of the boot. The patient was a young farmer, 28 years of age, of good physique and in good health except for an digestive trouble and a rather considerable amount of meridional wear and tear. The condition corresponded to a clinical form of local tuberculosis described by Dr. L. Chido at the British Congress of Tuberculosis in 1904 under the title, "Tubercule retro-malleolaire."

The treatment adopted not only effected a complete cure in the patient but also a permanent cure. The patient began with a 0.002 ccm. and ending in the course of eleven weeks with a dose of 2 ccm. The latter was given at a time to be the full dose recommended by Koch, but at a matter of fact only one-fifth of his maximum dose, which is 20 mg. old solution. The interval between the injections varied from two to six days according to the dose and the proportionate increase of dose was from double with the malik to ten times with the high T. Toleration was very good with the exception of one dose of 0.7 ccm. T.P. administered three days later, 0.3 ccm. when too great an advance caused a sharp reaction which abated within twenty-four hours. The general health of the patient was well maintained throughout the series and even improved. Reaction at the site of dose though distinct was mild although after the last three or four doses there was considerable focal oedema for which the position and movement of the affected part may have been in part responsible.

Six weeks after completion of this treatment the upper nodule had practically disappeared the mass between malleolus and heel had shrunk into a well defined rounded compact lump and the ankle had a much more normal appearance. It was clear that a specific curative effect had been produced and it was noted in particular that in accordance with Koch's description by the time a dose of from half to one milligram had been reached there was distinct clinical evidence of an immunizing action. Ten weeks after the administration of the final dose the effect of old tuberculin was tested 0.0015 ccm. T.H. gave an indurated result 0.007 ccm. four days later was negative but 0.02 ccm. aurum test after a further interval of seven days produced a large general reaction (temperature 102.4) distinct but not excessive focal redness and oedema at the site of dose and great inflammation at the site of injection.

It was concluded from this test that reactionable material still persisted at the site of dose either as living bacilli or their pathological effects. As a matter of fact there were both for fifteen months later the skin over the mass between malleolus and heel broke down giving exit to a necrosed malodorous plug about the size of a marble and having the appearance of coagulated white of egg after which the edges turned in and the site healed soundly and permanently though slowly.

The patient was now too light for about five years. There was then a large area of chronic inflammation of the skin of the length of three in breadth immediately above the former site of dose and a small scrofulous opening ruptured in the lower extension from below upward. Evidently the infection had passed through the aponeurosis near the original site of the disease in the triangular space in front of the tendo Achillis and had spread upward in the subcutaneous tissue. After a few preliminary doses of T.P. bacillary emulsion was given and used on the same intensive plan. The intervals were gradually increased from two days to a much as six weeks and the dose was increased by fractions rather large at first but ultimately not more than a twentieth to an eleventh up to a dose of 3.5 ccm. containing 175 mg. solid and total bacillary substance. This process occupied fourteen months. Mild reaction at the site of dose occurred after the earlier injection and gradual but obvious improvement went on throughout the series ending in complete permanent replacement of the disease by healthy scar formation nine weeks after the last injection. The scrofulous opening was scraped midway in the series without any decisive influence on the course of cure on several occasions subsequent to the scraping fresh places within the affected area inflamed broke down discharged their contents and healed up more or less slowly. With the exception of a little rest occasionally the patient carried out active duties throughout the entire

This case is published not as an example of ideal treatment but as a definite instance of an undoubted specific curative effect of tuberculin corroborative, so far as it goes, of Koch's teaching on the subject.

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## OVARIAN HÆMORRHAGE FROM RUPTURED BLOOD CYST

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The account of two cases of severe ovarian hæmorrhage in young girls (*British Medical Journal*, June 18th, 1906, para 657) prompts me to relate a case with similar features and doubtful etiology that recently came under my care.

A young unmarried woman, aged 22, was seen by me in consultation with her doctor about four months ago, for acute abdominal pain which had begun during a game of golf the same day. She gave a history of lumbar ache and vague abdominal discomfort coming on after exercise during the last six weeks. Her period had been regular of four weeks cycle and the next was due.

The present attack consisted of cramp-like pain in the hypogastric and right iliac fossa associated with vomiting. The pulse was 98 and the temperature 100°. The right rectum was lightly rigid, the caecum resembled an apple.

Laparotomy revealed free blood in the peritoneal cavity and altered blood of a thicker consistency and large clot filled the pelvic region. About a pint of fluid was removed. The right ovary was found to be replaced by a dark fleshy tumour three inches in diameter twisted on its pedicle, engorged and ruptured across its centre. The right Fallopian tube was also deeply congested. The tumour and tube were removed and the peritoneum cleared of blood clot and debris as far as possible before final closure of the abdomen. The left adnexal region was examined and the left ovary was found to be lightly congested but otherwise normal. Convalescence was uneventful and the menses appeared regularly and of normal duration.

Three months later I was called to see her again late at night for sudden onset of acute abdominal pain and vomiting which began earlier in the evening. The pain was again cramp-like and situated around the umbilicus and hypogastrium. The temperature was 97° and the pulse 80. The physician pointed to either another ovarian cataplexy or the left adnexa or commencing obstruction of the small intestine from adhesion. The latter appeared the more probable and I set out on opening the abdomen two hours later. A quantity of clear serous fluid gushed out of the wound and examination revealed the lower two feet of ileum distended and twisted round a thin fibrous white band between the intestine and anterior abdominal wall. The wall was divided but the ovary appeared only partially relaxed. A further arch, situated in the right hand higher up connecting the ileum and umbilicus. This proved to be a Meckel diverticulum the canal being patent at its junction with the ileum about two feet above the ileocecal valve. The remainder of the diverticulum which was four inches in length was merely a slender imperforated cord. These bands being suitably divided with the gut grafts returned to normal colour. The appendix being engorged and inflamed was removed at the same time.

The pelvis was now examined. The right adnexal region was clear of adhesion and showed a well defined cavity from the former operation. On the left side a thin wall of ovarian cyst was found. It was freely movable attached by a pedicle and a large as a tennis ball. It was removed without difficulty. The patient made a good recovery. During convalescence she was given a course of thyro-ovarian endocrine compound and various other therapeutics. So far two months after the second operation there have been no symptoms of artificial menopause. On the contrary she is bright, vivacious and of healthy appearance whilst her menstrual flow has occurred since the operation.

There are several features of interest in this case.

1. The pathological report of the solid tumour on the right side showed a mass of blood clot and granulation tissue. There were no signs of ectopic gestation which could be doubted entirely in this case. The condition was probably due to a simple unilocular ovarian cyst that had been subjected to many twists and torsion with attendant hæmorrhages, resulting in final strangulation and rupture.

2. The left ovary though slightly cystic when first examined had become completely degenerated and cystic in the space of three months, and had enlarged to about



three inches in diameter. It would doubtless have shared the same fate as the right ovarian cyst had it not been removed.

3 During this period, menstruation had been normal and regular.

4 The risk of intestinal obstruction was constantly present by reason of the Meckel's diverticulum fixed at either end like a bow-string. This danger became enhanced by the advent of adhesions following the ruptured cyst, the fluid being of a particularly gluey and fibinous nature.

## Memoranda:

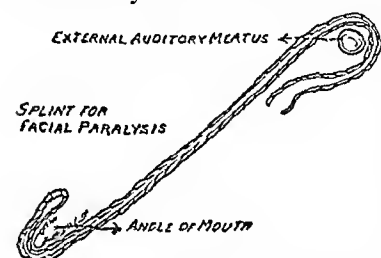
### MEDICAL, SURGICAL, OBSTETRICAL.

#### TREATMENT OF FACIAL PARALYSIS DUE TO EXPOSURE

Facial paralysis due to exposure to cold, often in riding in an omnibus, is by no means rare, I have seen four cases during the last two years.

The great majority clear up quickly under the influence of salicylates and protection from cold by wool, but there are a minority which become chronic, one instance being a woman, aged 70, who had been afflicted since childhood. Undoubtedly such cases would decrease in number if pre-

cautions were taken to prevent the facial muscles from becoming stretched, a line of treatment adopted in other paralyses. In neurological and massage clinics suitable apparatus is used with this end in view, but frequently cases only



reach the clinics when the condition has become chronic.

Two acute cases received salicylate treatment. In another patient a simple splint, made in a few minutes, was used in addition. A piece of covered electrical wire (not flex), about 15 inches long, was bent in the middle and covered with linen tape. The doubled end was bent in the form of a retractor, and inserted in the angle of the mouth. The free ends were curved round the ear in the manner of spectacles, and in such a way as to draw the angle of the mouth upwards and backwards. The device is worn as much as possible, day and night.

The patient volunteered the statement that articulation was easier with the apparatus in position and that it felt more comfortable. Recovery started six weeks later and was almost complete.

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F.R.C.S.D.

Harrow

#### TREATMENT OF ACUTE TRAUMATIC SYNOVITIS OF THE KNEE

On page 39 of the Army Health Report for 1925 it is stated that where there is no internal derangement cases of synovitis of the knee recover more quickly if treated by aspiration of the joint, repeated if necessary on several occasions. When this operation came into my experience as aspiration was not found necessary, perhaps because my cases were but few, perhaps because they were seen early, perhaps because they were young, but, I venture to submit, it may have been because of the after-treatment by elastic pressure.

I was then serving in the *Excellent*, where there were many young officers and men going through courses of instruction, and it was urgent that any case of synovitis should be cured with the least delay possible. Consequently any joint that seemed to have more than half an ounce of fluid in it was aspirated, the puncture was sealed with collodion, and over this cotton-wool and an elastic bandage were adjusted, producing gentle and uniform pressure, the patient remained in bed, without a splint, though his leg might be swung for two or three days. No patient was away from work more than seventeen days,

and none had to be aspirated twice. In the first eight months of 1908, of the 15 cases of injury to the knee 3 went to hospital (2 with loose cartilages), 1 had a contusion of bone, and 11 had effusion—small in 6, who went to duty in fourteen days (average), 5 had more effusion and were aspirated (fluid 3½ oz. down), they also returned to duty—4 in fourteen, 1 in seventeen days—but of course they were the more severe cases. The first time I heard of this elastic pressure treatment for a superficial effusion Mr. Chiene was telling us of a patient who, on the night before his wedding, boxing with a friend, got a nasty smack in the eye, and came to Mr. Chiene in great perturbation to be saved from an awkward disfigurement on the morrow. Mr. Chiene filled up the patient's orbit very evenly with cotton-wool, put in elastic bandage over, and next day the man was unmarked. Care is required in the adjustment, for haemorrhage occurs wherever in the orbit pressure is relieved by inequality in the packing. The method is most useful, too, in treating sprains, especially if they are seen early, when it prevents subcutaneous laceration of tissues and shortens the time of absorption, it is also useful after operation to limit oozing.

Kew

W. E. HOWE,  
Fleet Surgeon R.N. (ret.)

#### RETROVERTED GRAVID UTERUS WITH INTESTINAL OBSTRUCTION AND RUPTURE OF BLADDER

The following case appears to be worthy of mention on account of its rarity, the complication of rupture and enteritis, and the remarkably rapid improvement of the patient after the intravenous injection of hypertonic saline solution, and of ammonium chloride by the rectum as a preliminary to operation.

On December 15th, 1925, I was called to see a woman aged 32, who was complaining of a sudden acute attack of abdominal pain, colicky in character and accompanied by vomiting. There was no previous history of gastric, biliary, renal, or appendicular trouble, and menstruation had been regular until four months previously, since then she had had no periods and thought that she was about four and a half months pregnant. The bowels acted regularly.

The abdomen was slightly distended and a tumour dull on percussion, was felt above the pubes, passing down into the pelvis. There was no sign of free fluid. Per vaginam, the cervix was felt to be pushed forward towards the symphysis, and a fairly firm mass filled the pouch of Douglas.

The patient was admitted to hospital, and on vaginal examination under an anaesthetic the uterus appeared to be retroverted and fixed in the pelvis. An unsuccessful attempt was made to replace it. On recovery from the anaesthetic abdominal pain with vomiting continued and distension increased. A few hours later the patient aborted a four and a half months foetus, but abdominal distension continued and signs of free fluid were found particularly in the left flank. As distension of the abdomen persisted and the bowels did not move with treatment, exploratory laparotomy was undertaken. The patient's condition at this time was grave, so 3 drachms of ammonium chloride in 5 oz. of water were injected into the rectum, and 10 oz. of a 15 per cent solution of sodium chloride intravenously.

#### Operation

The operation was performed under scopolamine and morphine and local anaesthesia with a little open ether, the peritoneal cavity was found to be full of clear fluid which was mopped up and siphoned off. The small intestine was distended and obstructed by pressure at a point where the posterior inferior wall of the elevated bladder made an angle with the anterior wall of the retroverted and enlarged uterus. Here were some flakes of recent lymph, and here also was a small rent in the posterior inferior wall of the bladder through which urine was passing into the peritoneal cavity. The intestine was easily freed and damaged and the bladder wall sutured. The abdomen was closed except for a rubber drain to the bladder area, and the uterus was brought up from its retroverted position. A catheter was left in the urethra.

For two days after operation the patient had complete anuria, and complained of intense thirst after which urine was passed normally, but very intense and persistent diarrhoea developed and continued for four or five days, during which time she became very ill, but slowly improved and left hospital on January 22nd, 1926, the bladder and bowels acting normally. She has since been delivered at full term of a normal infant, after the newly pregnant uterus had again become retroverted.

Mr. Rutherford Morrison, in *Abdominal and Pelvic Surgery*, mentions rupture of bladder with retroverted pregnant uterus as an emergency, and refers to the occurrence of enteritis following the accident as an extremely rare and dangerous complication. The development of

intestinal obstruction in this case was an interesting complication, especially as its site was at the point of rupture in the bladder

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### THE HOT BLANKET PACK IN PERSISTENT VOMITING

ABOUT seven years ago I read in the *BRITISH MEDICAL JOURNAL* an article on treatments for cholera, ending with the remark "On no account forget the hot blanket pack, especially in the case of children." Some time afterwards I was asked to see, in consultation, a boy suffering from uncontrollable vomiting, due to gastritis; the usual remedies had failed, and I recommended the blanket pack. The boy was wrapped in a warmed blanket, and to his body was applied a flannel compress previously wrung out of hot water to which mustard had been added. Food and medicine were stopped. In a short time he went to sleep, and in an hour or so after waking was allowed sips of water, and later, small quantities of liquid nourishment—milk and soda water, etc. I generally begin with sugar and water, and later give milk, with or without soda water, albumin water, and broth, and usually by the third day a gradual return to full diet is possible. In some cases I have used linseed meal poultices with a teaspoonful of mustard added to the first, in place of the compress.

One case was unusual. A girl aged 7 had been ill with chicken pox for a week, and during the last three days had been unable to retain food or medicines, and had got in a critically weak state with sighing respiration, great restlessness, and very feeble pulse. Within three hours of the use of the pack the whole outlook was changed and recovery assured. The next case was a lady who had both eyes operated on for glaucoma the first with local and the second twelve hours later, with a general anaesthetic. When I visited her two days later I found the surgeon in attendance anxious because of persistent vomiting. I suggested the blanket pack and mustard compress, and had a cheerful note the next day to say that all went well afterwards.

So far I have not had a failure with this line of treatment, so thought it worth while pressing it on as an effective and simple means of dealing with other troubles than cholera. In the case of a child one large blanket should be enough in adults two might be used. In any case the object is to secure good surface warmth generally and counter-irritation over the stomach.

Reighier

JOHN B. BERRY, M.D.

### POST-NATAL OSSIFICATION OF THE PARITIAL BONE

As it must be comparatively rare for the membranes over a meningocele to ossify, the following case may be worthy of record.

On June 10th 1927 I delivered a primipara of a male child. The presentation was a right occipito-posterior; the head rotated naturally after a somewhat prolonged labour and the child was delivered easily with low forceps.

The caput appeared to be rather large but at the time this was attributed to the prolonged labour. On the fourth day the caput was still present and was found to be a meningocele. It was fluctuant and translucent, situated at the posterior superior angle of the left parietal and measured 2 by 2 in. being raised about three-quarters of an inch above the surface. The edge of the bone could be felt as a sharply defined ring around the swelling. Apart from the deformity the child was in perfect health and weighed 8 lb. at birth. I naturally felt pessimistic and gave the parent a guarded prognosis.

On July 1st when the child was 3 weeks old a ring of bone a quarter of an inch wide had grown in around the margin of the opening. By July 8th the hole was only one inch across and by July 22nd was completely closed; the new bone forming a hemispheric cover the swelling measuring approximately 1.5 by 1.5 by 1.4 in. It was quite hard not translucent and pressure on it caused the child no inconvenience.

The lesion seems to have been an exaggerated posterior fontanelle. The rapid ossification of the membrane was very striking and seemed to argue the removal of some factor which had prevented intracranial ossification.

Notbury, S.W.

W. EDWARDS, M.B., B.Ch.

## Rebriels

### A NEW TEXTBOOK OF PSYCHIATRY

Drs. D. K. HENDERSON and R. D. GILLIES are jointly responsible for a *Textbook of Psychiatry for Students and Practitioners*. Though the subject-matter and its arrangement are naturally similar to those which are customary in manuals of psychiatry, this volume has a distinctive "atmosphere" of its own, and we feel that its authors have been justified in providing yet another textbook on mental disease.

The first chapter consists of an interesting historical review of the cure and treatment of mental illness, and the second deals with classification. The authors point out that no attempt at psychiatric classification is entirely satisfactory, and consequently "that diagnosis" or the placing of the patient in an appropriate class is on an unstable foundation. It is not diagnosis which matters, however, but the understanding of the disorder, and the patient who suffers from it—under what circumstances it arose, how it is related to the patient's normal condition, what the disorder means, what light is shed on his problems and what can be done to help towards a favourable outcome. The authors—with considerable justification it would seem—renounce the rigid notion of disease entities, speaking of the different types of mental disorder as different "types or reactions." Disease, whether physical or mental, is not, as we know, an entity or "thing" with an independent existence of its own; it is a process—a reaction of the living organism to conditions which tend to disintegrate it. Thus general paralysis is merely a convenient term to include some of the reactions which result from no action of the syphilitic virus upon the organism. It is only one of the many types of reaction which may be exhibited, for the nervous system may be affected in numerous ways without adversely influencing the psychic reaction, and when the latter is affected as in general paralysis the clinical forms of this malady are infinite in their variety. It is in mental diseases particularly that we observe how variable are the reactions of the living being to the same noxious influences.

The scheme of classification adopted in this volume is simple but adequate. After chapter dealing with etiology, method of examination and general psychopathology, we are given a clinical description and modes of treatment of the affective (manic-depressive psychosis) and involuntal (melancholia), schizophrenic and paranoid reaction types. These are followed by chapters on mental defect, psychoneuroses and the psychoses and psycho-neuroses of war. The volume includes a practical account of occupational therapy and also a chapter on psychiatry and the law. The latter includes an account of the law in Scotland relative to the admission of voluntary boarders and certified patients into mental institutions.

A valuable feature of this book is the large number of clinical records of the writers' own case. In their preface they state that they have done this for the following reasons: since mental illness is an individual affair its symptoms have but little meaning apart from the setting in which they occur. This setting includes not only the general mental and physical condition at the time, but the individual's personality, circumstances and history from his earliest days. Hence general descriptions of clinical syndromes while interesting are not of the first importance. What is wanted always is an understanding of the patient as a human being and of the problems which he is meeting in a morbid way.

Unfortunately many psychiatrists feel the main "problem" which the psychotic patient has to face is a morbid change in his organism—in the depths of his organic life—which manifests itself by morbid intrusion into his psychic life. This morbid change—the patient's problem—he certainly cannot control, and he is even unaware of its existence. In only too many cases the

*A Textbook of Psychiatry for Students and Practitioners*. By D. K. HENDERSON, M.D., and R. D. GILLIES, M.D. Clarendon Press, Oxford. 1927. (Demy 8vo pp. x + 502 12s. 6d.)

psychiatrist also is unable to control or prevent the morbid events taking place in the organism, and our knowledge of their nature is still very meagre. Hence our relative incapacity to apply precise therapeutic remedies in the biogenetic psychoses, and the urgent need for continued biological research.

The views expressed in this admirable volume are largely inspired by the teaching of Professor Adolf Meyer. Due acknowledgement is made by the authors, who have dedicated their book to this eminent American psychiatrist.

### SURGICAL ANATOMY

THE appearance of a third edition, apart from three reprints, of *A Manual of Surgical Anatomy*,<sup>2</sup> by Mr. BEESLEY and Professor JOHNSTON, within the short period of eleven years affords unimpeachable evidence of the high esteem in which the book is held. Its success is in no way surprising, for in scope, in clarity of expression, and in accuracy of statement it leaves little to be desired. In view, however, of the important position it has obtained among students' textbooks and of the certainty that further editions will shortly be required we propose, while recognizing the manifold merits of the work, to point out certain small details to which we venture to take exception.

We see, for instance, no necessity to represent the relationship of the tendons of the flexor sublimis digitorum in Fig. 31 inaccurately, diagram though it be, and we consider the term "middle palmar space" puzzling and meaningless, unless both the thenar and hypothenar spaces are mentioned. In Fig. 82 the perinephric fascia and the fascia over the psoas of one side are shown passing across the middle line to become continuous with the corresponding fascia of the opposite side in a way to suggest that use on one side would almost inevitably spread to the other. On page 277 these two fasciae are, to say the least, clearly distinguished, a view which, unfortunately, is affirmed in Fig. 83. On page 315 the cystic artery is stated to cross in front of the common hepatic duct, a relationship which we believe to be the exception rather than the rule. On page 271 the sessile hydatidiform body of Morgagni is alone mentioned. In the account of the lymphatics of the mammary gland nothing is said of the lymphatics of the nipple, while among the vessels drained by the superficial inguinal glands the body of the uterus fails of recognition. More important omissions affect the sphincter round the common biliary and pancreatic ducts (Oddi's) and the various sphincters of the alimentary canal, other than the pyloric and ileo-caecal. With the exception of Jackson's vein no mention is made of the occasional peritoneal folds found passing between neighbouring abdominal viscera, of which some five or six are now recognized. The site for injecting the second division of the fifth cranial nerve is given, but those for the first and third divisions are ignored. Turning from such details to a matter of more general character, we consider the book would gain considerably by a less rigorous exclusion of physiological reference. The authors apparently are not unaware of this, for in the section dealing with the sympathetic and parasympathetic systems they depart in some measure from their self-imposed rule.

The book naturally invites comparison with the other English textbook on the subject—namely, TIERES'S—but it is a comparison into which we prefer not to enter. Each book will no doubt have its own adherents, perhaps in equal numbers. We will content ourselves with saying that in our opinion Beesley and Johnston's manual is more to the anatomical side, Tieres's more to the surgical side of the subject. In one important respect—namely, in illustrations—the former book is far superior, the skidgrains of the abdominal region being of quite special excellence. In conclusion, we would say that the book is well on its way to becoming—if it has not already become—a standard textbook, it reflects the highest credit on its authors.

*Manual of Surgical Anatomy* By Lewis Beesley, L.R.C.S.E. and T. B. Johnston. Third edition. London: Milford Oxford University Press, 1927. (Cr. 8vo pp. xiv + 565, 165 figures, 18 net.)

### THE ENGLISH PUBLIC HOUSE

MR. ERNEST SELLEY remarks that it is strange that no one has yet attempted to give any comprehensive survey of the public houses of the country. They are much talked of, often with laud epithets, many who comment on them would appear to have little or no knowledge of them personally. He therefore set himself to learn their character first-hand. He spent two years on his investigations, visited many types of towns and country districts, and from his experiences has produced a very readable and informative book, *The English Public House as it is*.<sup>2</sup> There are over 80,000 public houses in the country licensed by the justices for the sale of intoxicating liquor. The public house is more than a shop. It is a place where people busy for social intercourse as well as for refreshment. They busy in a fashion that no one does in a tearshop. Yet the history of the licensing laws shows that successive generations have regarded the public house as a potential danger to the public well-being. The Privy Council in 1604 said, "ale-houses and victualling houses ought to be no more than a number competent for the receipt of travellers, and for the supply of wants of poor people not able to provide for any quantity of victual for themselves (which is the true and natural use of these houses)."

Public houses, formerly owned by tens of thousands of separate individuals, are now so few as nine-tenths of them owned by a comparatively small number of brewery companies. They are multiple shops, as business organizations, to judge by the balance sheets of the companies, they are highly successful. As a firm of stockbrokers put it, "In good trade or bad trade, whether there is a strike or whether there is a lock-out, the brewer always makes money." The manager of a house may be good from the public point of view or from the trade point, the two are not synonymous. An undesirable back-street house is often a better commercial proposition than a more up-to-date house in a main street.

Mr. Selley's experience convinces him that the overwhelming mass of the people who use the public houses (and they form well over half the adult population) is not in the least besotted or degraded. The bulk of its patrons seek companionship. Generally there is good feeling both sides of the bar. There is companionship, refreshment, enjoyment, warmth, and light. A man seeks his "set", they talk on things that interest them—even Bernard Shaw and the relative values of paper and sterling! "The 'pub' is the working men's club", but there is evidence of a demand for a better club in the increasing number of clubs in towns, some of which have definitely come into being because of discontent with certain public houses. Drunkenness is mainly seen at week ends when there are funds in the pocket and a greater concourse in the public houses. The Saturday night swilling is difficult to account for on any rational grounds in civilized communities. Statistics of drunkenness the author finds unreliable as a basis for argument. The methods of the police vary in different parts. He cites some examples. The following is a good one. Huddersfield has one licensed house for every 362 people, Middlesbrough one for every 757, yet the number of charges for drunkenness per 1,000 people in Middlesbrough in 1924 was seven times that of Huddersfield.

Public houses vary greatly in type. Some are frequented by definite groups. Men meet for business or market purposes. Some have a name for being frequented by bookmakers, others by loose women. If these are disturbed by the police the customers fit to fresh quarters. As taverns, for the supply of food, there is still much business done, particularly in market towns and in great centres of population. Some, by supplying good food at rates that underest local restaurants, attract a large custom and pay well, on the policy of strengthening the spirit to catch the whale. Others have developed a social side, the house has a bowling green or a quoit pitch. It may be the headquarters of a football club, pigeon club, cycling club, or the like. Entertainment clubs are formed and have their headquarters in the public houses. Large numbers of trade union branches hold their meetings in public houses, which

*The English Public House as it is* By Ernest Selley. London: Longmans, Green and Co., Ltd. 1927. (Demy 8vo, pp. v + 184, 5s. net.)

give rooms for meetings free of charge. The local institutes which make a charge of 5s. for such facilities are beaten by the public house which takes its part in other forms. The author visits many evening entertainments, as one of the company and describes his experiences.

True the entertainments bordered on the verge of profanity and much of the patter was very suggestive. The people love community singing. A chorus about "I know the loves me here" she told me was sung again and again with great spirit. There was no doubt that while singing these people were happy. Their faces were transformed and their eyes shone with delight. Tired and suffering had made their mark on the faces and bodies of many of the women. The only beautiful thing about most of them were their eyes during the singing. Their voices were not pretty but their eyes were like jewels.

Where no music licence is allowed the wireless has made up for the lack. In one of the best houses in the Potteries which had no music licence the barmaid said, "We don't want one now, it would attract the riffraff." But there is a wireless behind the bar. The barmaid said that on Sundays the customers like to hear the church service. "They simply love to hear the hymns and sermon, and they sit absolutely quiet while it is on." There are signs that the village public house is deteriorating. Much of the former Saturday night custom goes into the small towns, the motor bus is responsible for this, and the attraction of the pictures. In isolated villages there are as much a part of the established order of things as the church, and it is no uncommon thing to hear a mandolin Saturday night violinist singing lustily in church on Sunday morning.

The author notes defects and abuses, the demand for reform, the experience of the Carlisle scheme, efforts of reform by the trade, the growth of the public house habit among women. He asks the question, "Have public house habits improved?" He is very cautious in his reply. It is, he says, difficult to get a fair criterion of what former conditions were. While he finds general agreement that there is better behaviour and less excess nowadays, very few would commit themselves to the assertion that the number of people who take intoxicants in public has decreased. In his opinion the greatest checks on excess have been restricted hours of opening and high prices. These two factors combined with a lower average specific gravity have resulted in producing a measurable decrease in the amount of drunkenness. Longer hours and lower prices, other things being equal, tend to increase consumption and drunkenness, though perhaps not in the same proportion as formerly.

On the larger questions of policy his conclusion is this: "The community has seen fit to restrict this business and limit its power to injure by means of laws and regulations but until the great pushing power of private profit-making has been removed the community cannot expect to be master in its own house." It is a book to read.

### THE NATURE OF DISEASE

Part I of Mr J. F. R. McDonagh's *Nature of Disease* was fully reviewed in these columns on its appearance three years ago (November 29th 1924, p. 1008) and now he has brought out Part II, which in due course is to be followed by another dealing with intestinal auto-intoxication and chemotherapy, the genesis of cancer and other problems, and correlating with medicine recent psychological work and Mr F. M. Alexander's views on the conscious control of the individual.

The present instalment, the appearance of which was delayed by the destruction of the type by fire, is therefore part of an encyclopaedic work and commands respect for the author's imagination, enthusiasm and energy. The difficulties of judging fairly the future possible applications of physical chemistry to medicine are very great in the present state of medicine, but important modifications in the basal conceptions of the mechanism of life and disease must be imminent in the light of the

advances in connexion with the constitution of the atom and the electron. In the first chapter Mr McDonagh considers the characteristics and changes which the protein particles in the plasma undergo in disease. These are summed up as (1) dispersion leading to coagulation, and (2) condensation with subgroups of (a) hydration and (b) dehydration and gelation. The next chapter details the influences of the changes in the protein particles on the concentration of water and inorganic salts in the blood, hydration, or gelato-hydration leads, it is said to hydraemia. It is maintained, further, that when undergoing gelato-hydration the protein particles become precipitated in any one or more of the four important viscera in the following order—kidneys, brain, lungs, and liver, damming up of the glomeruli causes parenchymatous nephritis and profound hydraemia and oedema, and the author is firmly convinced that the so-called chloride retention has not anything to do with oedema. Arhydraemia is the result of dehydration of the protein particles which become soluble, thus increasing the "solid" contents of the plasma; this it is said, leads to hardening of the capillary walls and interstitial changes, arteriosclerosis, and fibrosis of the viscera. In later chapters the changes in the vascular system and in the viscera resulting from alterations in the state of the protein particles are considered in detail and, as elsewhere, illustrated by cases. The genesis of cancer, considered in Part I in three chapters, is again submitted to critical analysis in the light of Gre and Brinard's work, and the somewhat remarkable conclusions are drawn that that work favours the non-parasitic rather than the parasitic origin of cancer, and that "the cause of cancer will never be found because as an entity it does not exist."

The concluding chapter of ninety pages is concerned with chemotherapy, organotherapy, and immunotherapy. Which it is held, increase the bodily resistance by subjecting the protein particles in the plasma generally, and in the leucocytes locally, to division and subdivision, thus augmenting the area of proteolytic substrates exposed to the invader for it is regarded as certain that therapeutic preparations do not exert any direct action on invader, their first action being always on protein particles in the blood stream. Further, it is laid down that no therapeutic substance acts primarily on a specialized structure, for example, "the sympathomimetic action of adrenaline is secondary to the dual action of conduction and dehydration exhibited by this drug upon the protein particles in the blood."

As was the case with Part I the work is far from easy reading, and it is rather striking how very little reference is made to the researches of other writers within the wide area of subjects on which Mr McDonagh touches.

### ORTHOPAEDICS OF CHILDREN

The volume entitled *Orthopaedics of Childhood*,<sup>1</sup> like the others of this series is intended for the general practitioner. It will probably be found by him to be a useful guide to modern methods of treatment of deformities in childhood. The title would have been pleonastic when orthopaedics were restricted to the etymological meaning of the term, as used by its inventor, Andry.

Dr WILLIS CAMPBELL is known as a capable surgeon, well acquainted with his specialty and this book will not do him or the University of Tennessee discredit. In his preface he expressly disclaims any pretensions to a complete representation of the literature or of the evolution of this vast subject. The object of operative method alone is considered consequently many standard procedures are barely mentioned or omitted.

With the limitations above implied this book will doubtless be found useful. Unlike surgeon of the Boston school the author scarcely mentions posture or the supposed results of faulty posture. There are many illustrations but some of the reproductions of photographs are by no means satisfactory.

<sup>1</sup>The *Nature of Disease*. By J. F. R. McDonagh. F.R.C.S. Part II. London: W. H. Freeman (Medical Books) Ltd. 1927. (Cr. 4to pp. 344. 12s. net.)

<sup>2</sup>*Orthopaedics of Childhood*. By Willis C. Campbell, M.D., F.A.C.S. Chicago: Lippincott Co. 1927. (Cr. 4to pp. 344. 12s. net.)

One of the drawbacks of a series such as this, to which Professor Foote's *Diseases of the Bones, Joints, Muscles and Tendons*,<sup>6</sup> also belongs, lies in the difficulty or even impossibility of avoiding overlapping of subjects. We find in Dr Foote's volume articles on quite a large number of subjects which are also treated of by Dr Willis Campbell. This may be accounted for by the statement in Dr Foote's preface that his book "treats of disease as affecting these tissues and structures from the point of view of the physician rather than that of the surgeon." Certainly the paucity of details of surgical treatment bears out this statement. We believe that any attempt to divide orthopaedists into physicians and surgeons is wrong. The orthopaedic surgeon should know all be, in the words of Jonathan Hutchinson, "a physician who operates," and the establishment of two points of view can only be bad for the patient. Everyone who treats Pott's disease, for instance, uses fresh air and sunshine and good food as well as jackets and extension frames, and all surgeons give cod-liver oil for rickets as well as applying splints or the osteotome. The outlook for the practitioner is gloomy if he is to find himself obliged to study two works on every surgical subject—one written from the physician's point of view and another from the surgeon's. Many subjects are considered in this volume which, as far as we know, are not susceptible of any so-called medical treatment. What, for instance, is the medical point of view in the treatment of congenital and developmental anomalies of the bones, or of congenital defects such as dislocation of the hip, talipes, cleft palate, and supernumerary digits, to mention a few conditions? On the other hand the article on rickets contains a great deal of information on the present state of opinion on the etiology of this disease, although the author seems not to find it necessary to quote recent British investigators of this subject.

### NOTES ON BOOKS

THE importance of scientific method in malaria survey work has sometimes been neglected, and factors of first-rate importance have not been recognized. One of these—namely, the enormous loss of time and labour involved in hatching out larvae of anophelines as a preliminary to identification—has received attention by Drs STRICKLAND and CHOUDHURY in *An Illustrated Key to the Anopheline Larvae of India, Ceylon, and Malaya*,<sup>7</sup> which is a sequel to the *Short Key to the Adult Anophelines* by the senior author. It deals, therefore, with larval forms, methods for their collection, transmission, preservation, and examination, and contains a key to the identification of the oriental species, some fifty in number. In appendices reference is made to the necessary equipment and staff, the recorded geographical distribution of the species, and the commoner habitats of the larvae. The book will prove of great value to all those engaged in malaria survey work.

*Tuberculosis*,<sup>8</sup> by BALDWIN, PETROFF, and GARDNER, deals chiefly with the bacteriology and laboratory diagnosis of the disease, and is intended to serve the needs of teachers, students, laboratory investigators, and technicians in tuberculosis institutions. The chapters devoted to the acid fast group of bacteria, the biology and diagnosis of *B. tuberculosis*, experimental tuberculosis, pathological anatomy, serum diagnosis, tuberculin and experimental therapy, describe the procedures which the authors have found the most useful, and should prove of special value to laboratory workers. The book is excellently illustrated with numerous original drawings and photographs and four coloured plates.

Dr G. O. LOTS's book on *The Radiographic Diagnosis of Bilharziasis*<sup>9</sup> is a collection of skilful photographs showing the infiltration of calcified bilharzian eggs in the bladder, uterus, and kidneys, accompanied by a discussion in French, English, and

Arabic on the parasites, the infiltrations, and the differential diagnoses—more especially from urinary calculus. The photographs have been made mostly from cases sent to the author for examination for suspected calculus. The cases are discussed in detail, and the photographs are interleaved with explanatory diagrams. The statements about the parasites in the introduction are scrappy, but the volume should prove of considerable value to those interested in radiology, especially in a country such as Egypt, where two thirds of the population are infected.

It is often said, particularly in introductory addresses at this season of the year, that it is a good thing for a medical man to have a hobby. Mr JOHN W. WEIR, helped perhaps by the clear skies of South Africa, has found a hobby in astronomy, especially in the study of comets. Like others before him, he is puzzled to account for the constant form a comet maintains, and in a book, *Comets and the Sun*,<sup>10</sup> he has put forward a theory which would attribute the form to the presence of an envelope. The study of comets led him to consider theories and known facts with regard to the sun, and he has a chapter on the solar origin of the planets. The book is beautifully got up, it is a quarto, and its form has no doubt been selected in order to make possible the reproduction of a number of large photographs—some of them lent by eminent astronomers—of comets and of the sun, they are extremely well presented. One of them, in colour, of a great scarlet solar prominence is very striking. The frontispiece is a photograph of Halley's comet, lent by the late astronomer at the Cape, and on another page there are four photographs of the same comet taken at the Transvaal Observatory in 1910. We have no doubt that the book will be found of interest by those among our readers who are attracted to the study of the heavens.

To *The Tibetan Book of the Dead*,<sup>11</sup> which the Oxford University Press has published (price 16s.) for Dr W. Y. EVANS WENTZ, belongs the respect which attaches to a writing looked on as sacred by at least one part of a very large section of mankind. The title is no doubt correctly translated, but the scope of the book might perhaps be better conveyed by substituting 'death' for 'the dead'. To read the translation itself, made by a Tibetan Lama acquainted with English, one must be something of an enthusiast, primarily it is a service to be recited to the dying, it fills 160 pages—nearly two thirds of the volume. Dr Evans Wentz has written an introduction filling 80 pages, which is an essay on Buddhist doctrine. Sir John Woodroffe, Reader in Indian Law at Oxford, has provided a foreword giving an explanation of the doctrine implicit in the ritual, in the course of it he makes the observation that the fundamental difference between Christianity and both Brahminism and Buddhism is that the former teaches resurrection and the latter reincarnation. To those attracted by the study of what is sometimes called comparative religion the book will prove interesting.

<sup>10</sup> *Comets and the Sun. New Theories Regarding Their Structure.* By John W. Weir, M.D. F.R.C.S. Ed. London: Longmans Green and Co., Ltd. 1927. (Demy 4to pp. xv + 72 illustrated. 12s. 6d. net.)

<sup>11</sup> *The Tibetan Book of the Dead, or The After Death Experiences on the Barid Plane* according to Lama Kazi Dawa Samdrup's English Rendering. By W. Y. Evans Wentz, M.A., D.Litt. B.Sc. With foreword by Sir John Woodroffe. London: Milford, Oxford University Press. 1927. (5½ x 9 pp. xiv + 248 illustrated. 16s. net.)

### PREPARATIONS AND APPLIANCES

#### 1 Standard Ether

MANY years ago a distrust of ether as an anæsthetic became engendered in the public mind as well as among the medical profession. The suspicion was no doubt originally well founded, for in earlier days the finer degrees of purity, if not quite unknown, were more rarely attained, certainly no sharp discrimination was exercised between the purest and the ordinary. It is now known that all the defects peculiar to ether were due to a group of impurities some of which originated in the process of manufacture, others—such as peroxides—being generated through exposure to sunlight during storage. Echoes of the old distrust from time to time are, however, still heard, more particularly in the lay press. Popular prejudice may do much harm, and should be corrected at every opportunity. It deserves to be made known that in twelve years 500,000 pounds of ether for anæsthetic use have been supplied by Messrs. Howards and Sons without the report of any untoward event. Messrs. Howards and Sons are manufacturers of a highly purified ether for anæsthetic use which they supply in amber coloured bottles under the label of Howards Standard Ether. We have examined a specimen analytically, with results confirming the makers' claims as to its purity.

<sup>6</sup> *Diseases of the Bones, Joints, Muscles and Tendons.* By John A. Foote, M.D. Clinical Lectures, vol. viii. New York and London: D. Appleton and Co. 1927. (Roy. 8vo pp. xvii + 295. 76 figures. 16s. net.)

<sup>7</sup> *An Illustrated Key to the Anopheline Larvae of India, Ceylon and Malaya.* By C. Strickland, M.A., B.Cantab., and K. L. Choudhury, M.B., D.M.Sc. With a foreword by Sir Ronald Ross, K.C.B., F.R.S. (Illustrated). Thacker, Spink and Co. 1927. (Cr. 4to pp. xi + 67. 12 plates. R. 4/8.)

<sup>8</sup> *Tuberculosis.* By Edward R. Baldwin, M.D., S.A. Petroff, Ph.D., and Leonard Gardner, M.D. The Trudeau Foundation Studies, vol. vi. London: Baillière Tindall and Cox. 1927. (Pb. 8vo pp. xvi + 342. 82 figures. 21s. net.)

<sup>9</sup> *The Radiographic Diagnosis of Bilharziasis.* By Dr G. O. Lots. Paris: H. Fricke and Co. 1927. (Med. 4to pp. 90. 22 plates, 83 figures. 25s. post paid or 50 francs.)



## THE STATE OF THE PUBLIC HEALTH

## SIR GEORGE NEWMAN'S REPORT FOR 1926

ENGLAND AND WALES

[Concluding Notice.]

## CANCER

The death rate per million of the population in 1926 due to cancer was 1362 as compared with 1,556 in 1925 1297 in 1924 and 1267 in 1923. The point is reiterated that these figures do not indicate an actual rise in incidence but that important factors in the apparent rise are more accurate diagnosis improved certification of the causes of death and increased longevity resulting in a greater number of people reaching the age period of cancer than was formerly the case. It is suggested that the hope for the future lies in the discovery of some biochemical test which will render possible early and accurate diagnosis, together with the provision of some method of treatment other than surgical, and some etiological revelation which will open the way for prevention. Details are given of the work of the departmental committees the main facts that have been established, and the reports that have been issued. The compilation and study of accurate records are mentioned as a desideratum, and reference is made to special events during 1926 such as the success of the Yorkshire Council of the British Empire Cancer Campaign in collecting money and founding the research centre at Leeds. The depth of the public interest was recognised practically by the British Medical Association, which devoted the Hastings Lecture for 1927 to this subject.

## Tuberculosis

Sir George Newman has still to complain that in some districts a considerable proportion of tuberculosis cases are not notified before death. The decline in the mortality of this disease continued, the number of deaths from pulmonary and other forms being respectively 50,108 and 7,417 in 1926 as compared with 52,382 and 8,005 in the previous year. The reports of medical officers of health show that in many districts accommodation for advanced cases remains inadequate but more facilities have been introduced for dealing with surgical tuberculosis and co-ordination has improved. The diagnostic value of x-rays has been increasingly recognized and the use of artificial light treatment for various forms of tuberculosis including lupus has been extended. There is more co-operation between general practitioners tuberculosis officers, Poor Law authorities, and school medical officers. It is suggested that it would be well if the annual reports by medical officers of the urban and rural districts contained fuller information about the conditions in their areas as regards this disease in view of its preventability, there seems to be general agreement that unsatisfactory housing conditions play a large part in its prevalence. Mention is made of the sanatorium and Spralinger methods of treatment and Sir George Newman regrets that in the latter case the complete serums and vaccine have not been available for a scientific investigation of their clinical efficacy by the Ministry of Health. Approved x-ray facilities have been provided by 37 county councils and 48 county boroughs under their tuberculosis schemes, and the value of radiography in diagnosis and in the estimation of progress is generally admitted.

## Venereal Disease

At the close of 1926 there were 190 treatment centres in England and Wales, with approximately 770 weekly sessions. A tabular summary of the returns from these centres for the last ten years indicates a slight decline in syphilis but more cases of soft chancre and gonorrhoea were reported. The ratio of attendance to cases showed a further increase in 1926 implying a reduction in the amount of debility before the completion of treatment; this is attributed to the propaganda work of the British Social Hygiene Council and local authorities and to the

influence exercised by the medical officers at treatment centres. There is no evidence that the establishment of centres in special premises apart from general hospitals deters patients from attending. The suggestion is made that the reduction in the number of cases of syphilis would be more pronounced if there was not inadequate treatment by some practitioners which results in relapse and the appearance of the patient at a treatment centre as a new case though not a fresh infection. It has been shown that the short course of six or eight injections of an arsenobenzol compound and mercury is followed by a high percentage of relapses. The importance of early diagnosis and treatment of syphilis in pregnancy and in congenital cases is emphasised.

## Maternity and Child Welfare

A striking feature of this section of the report is the conclusion that the general financial stringency of 1926 did not cause any appreciable physical deterioration in children. This is attributed to the special efforts made to sustain their nutrition by the provision of meals at schools, the increased amount of milk supplied to nursing mothers and infants, and the activities of the officers of local authorities and voluntary workers. More facilities are now being made available by maternity and child welfare authorities for consultations with specialists, institutional treatment and nursing assistance in cases of puerperal pyrexia. The number of maternity homes and hospitals recognized by the Minister of Health, either directly or indirectly, for purposes of grant is voluntary institutions 81 with 1,423 beds, and municipal institutions, 68 with 857 beds. Emphasis is again laid on the importance of ante-natal supervision, and it is stated that there are now 772 centres for this, as compared with 675 in 1925. Infant welfare centres have similarly increased from 2,195 to 2,324, but the large average attendance at these indicates that still more are required. There are now 3,963 whole-time or part-time officers engaged in health visiting, and a reminder is given that on and after April 1st, 1928 all health visitors appointed for the first time will be required to possess the certificate in health visiting approved by the Ministry. The case of the child between the ages of 2 and 5 remains a problem still awaiting satisfactory solution. As a result of the examination of nearly 1,000 children aged 3 in various parts of the country it was found that in 48.7 per cent. there were manifestations of rickets. Dental decay was noted in 21 per cent, enlarged tonsils in 21.7 per cent, a denture in 15.3 per cent. Sir George Newman refers to the international inquiry into infant mortality which was instituted by the League of Nations in 1926 with special reference to (1) immunization against diphtheria, scarlet fever and measles, (2) the provision of instruction in pediatrics for medical students, nurses, midwives and health visitors, and (3) the investigation in selected areas of different countries with regard to the causes of infant death. It is hoped that among other good results this inquiry will stimulate interest in child welfare among the more backward communities and lead to improvement of the prophylactic machinery.

## The Insurance Medical Service

The total population of England and Wales in 1926 was 39,067,000, and 14,102,000 persons were entitled to medical benefit under the National Health Insurance Act. The number of insurance medical practitioners was 14,432, and the average number of insured persons on a practitioner's list was 945. The total cost of medical benefit in the year was £5,621,638 of which approximately £6,592,500 was devoted to the remuneration of doctors, and £2,228,738 to the provision of drug and appliances.

## Regional Medical Staff

The regional medical staff consisting of fifty-one whole-time medical officers dealt with 390,487 cases in 1926, as compared with 204,088 in the previous year. This large increase was almost entirely due to references by approved societies on the question of incapacity for work during the period of the coal stoppage.

*Health Education by Insurance Committees*

It appears that 75 of the 128 Insurance Committees in England undertake health education work to some extent, and in 33 years its scope may be termed considerable. The methods employed included public lectures, cinematograph and lantern demonstrations (21 committees), lectures by insurance practitioners to persons on their panel lists (12 committees), distribution of literature and publication of posters (42 committees), and participation in exhibitions and health week campaigns (25 committees).

*Food in Health and Disease*

Sir George Newman throws doubt on the current view that primitive man was more favourably situated as regards his diet and nutrition than the man of the present day, but he admits that the diet of a considerable proportion of the population is not nutritious enough. He discusses entirely various popular beliefs about nutritive values, and emphasizes the importance of milk and green vegetables. The gratifying progress that has been made in checking adulteration of milk and butter is shown by a chart, this is attributed not only to legislation, but also to a better informed and more determined public opinion. Reference is made to the possibility of arsenical contamination of apples and of glass fragments in food, the new regulations with regard to the use of preservatives have been actively applied. Numerous outbreaks of food poisoning occurred during the year, but none were on any considerable scale.

*Scientific Investigations*

One department of the Ministry of Health is engaged in the collection from home and abroad of medical information, and arranging for its transmission to appropriate quarters, it collaborates closely with the Epidemiological Bureau of the Health Section of the League of Nations. In the Ministry's pathological laboratory the preliminary work on the serological classification of hemolytic streptococci has been completed, and a report published in the *Journal of Hygiene*, 1926, vol. xxx. The study of pneumococcal virulence and immunity is approaching completion, and forty-eight outbreaks of food poisoning were investigated during the year. Professor Topley and his assistants are continuing their study of the flora of the respiratory tract in the hope of elucidating some of the problems of epidemic influenza.

*Artificial Light Treatment*

Increased provision was made during 1926 by local authorities for artificial light treatment in connexion with tuberculosis and child welfare schemes. An account is given of the results obtained by the use of various types of lamps. The importance of skilled medical and nursing supervision is emphasized, and the indiscriminate use of ultra-violet rays is strongly deprecated.

*International Health Co-operation*

Sir George Newman devotes one chapter to the consideration of health questions from the international point of view, and describes the organization and work of the League of Nations in this respect. An international standard of potency has been established for diphtheria and tetanus antitoxic serums, and tuberculin has been similarly considered. Interchange courses of instruction for public health officers were continued, and have now been extended to Japan and West Africa. Two special tours were arranged to maritime ports in the Mediterranean, the Baltic, and the North Sea. The weekly bulletin of infectious diseases in the East has proved very useful to the public health administrations concerned. The International Office of Public Hygiene in Paris has prepared a revised draft of the International Sanitary Convention of 1912 and has completed its work on the nomenclature of disease. Useful interchange of information has been arranged with regard to small-pox, scarlet fever, encephalitis lethargica, relapsing fever, typhus, and yellow fever. Details are given in this section of the report of the important international sanitary conference held in Paris

during May and June, 1926, and reference is made to the valuable scientific papers read at the International Pacific Health Conference in Melbourne last December.

*The Way to Personal Health*

Sir George Newman concludes his report with a very interesting and stimulating summary of the general health position. He indicates what the State is doing to stimulate and reduce premature mortality, and insists that a sanitary environment is the essential basis of all effective medical services. He shows that in spite of an enormous increase of population without enlargement of the home territory the total death rate and the infantile mortality rate of the nation have been halved within four generations. Moreover, the mortality of childhood is one-third of what it was eighty years ago, and the expectation of life for a child born in this country to-day is no less than seventeen years longer than it was for a child born in 1846. His brief but comprehensive account of the campaign against small-pox on page 261 of the report may be cordially commended to the attention of those exposed to the inquiries or criticism of the ignorant or fanatical opponents of vaccination, it provides a veritable armoury for the busiest medical practitioner. The preventive value of health insurance is similarly displayed, and the way to personal health is clearly and convincingly indicated. After showing how recent years have been characterized by many improvements in the public outlook on life, Sir George Newman ends his report with the following two sentences:

"These changes indicate an immense awakening and a wider use of the improved environment and health facilities which the State has provided. Much disease and impairment remain, but evidence and experience suggest that we are on the high road to their amelioration."

## UNIVERSITY OF CAPE TOWN

## NEW MEDICAL SCHOOL BUILDINGS

## [FROM OUR SPECIAL CORRESPONDENT]

THE first of the two blocks comprising the new buildings for the medical unit of the University of Cape Town, the foundation stone of which was laid by the Governor-General, the Earl of Athlone, on May 10th, 1925, has been completed and is now occupied. The buildings are situated near the Mowbray entrance to the Groot Schuur estate, at a distance of exactly one mile from the main university, which is now in course of erection on a site which can only be described as majestic in its surroundings and outlook. The medical school itself is distant some three miles from the city proper, from which it may be reached by two alternative routes—by the de Wail Drive, the mountain motor road skirting the foot of Table Mountain and the Devil's Peak, or by way of the main road leading from the city to its southern suburbs. The buildings of the medical school are quite close—to be precise, some two hundred yards—to the site for the new General Hospital, which is now being cleared and levelled on the slopes just below the de Wail Drive. The medical unit will thus be very closely associated with the hospital, an association which clearly is in the interests of the patients as well as of the research to be carried out in the several departments.

The block completed, to be known as the Weinher-Beit block, is from the design of Mr. Cleland of the public works department, and is in the shape of a double "E," with the central portion omitted on the western, or de Wail Drive, side. It is a stately and imposing building of stone and concrete, standing in surroundings that give promise of ultimately becoming a fine terraced park. The main entrance is from the de Wail Drive side and gives immediate access to the three floors—a basement, a ground and a first floor—which are readily reached by a central stairway. A feature of architectural interest is the central courtyard extending from the basement to the top of the building, which serves the dual purpose of lighting and ventilation. Opposite the main entrance, and occupying the middle projecting limb from the main horizontal

corridor, are the three lecture theatres, placed one above the other. On the first and second floors are the two main theatres, each with accommodation for about two hundred students. The seating is arranged in semicircular fashion on ascending tiers. The lecturer's desk is fitted with facilities for the demonstration of specimens and behind it, on the wall faced by the audience, are double sliding blackboards and an adjustable screen for the epidiascope, one of which of the latest pattern is provided in each theatre. Ventilation is efficiently carried out by a system of powerful double-acting electric fans by means of which a continuous current of fresh air is made to circulate through the room. In the basement below the larger theatres is a smaller one, the general arrangements of which correspond to the description already given. This is utilized by the department of medicine, the two larger serving the requirements of the departments of surgery, pathology, and bacteriology.

#### Pharmacology

The department of pharmacology occupies most of one side of the ground and first floor. It comprises a lecture theatre additional to those already described with separate entrance for students from the main corridor, a practical laboratory in which a feature is the up-to-date draught cupboard, private laboratory for the professor, several laboratories, workshop, store rooms and side rooms. The laboratories are splendidly equipped and contain the latest kinds of kymographs, pumps for artificial respiration and the other necessary mechanical devices. Power is supplied from electric motors by means of belting to the main driving shafts fitted in each room. The brackets which carry the main driving shafts also convey the electric mains for lighting gas and water pipes, from which supply points are arranged at frequent intervals. A room is set aside for an electro-cardiograph. Professor J. W. C. Cunn, who is in charge of the pharmacological unit, is the curator for the building.

#### Bacteriology

The department of bacteriology is on the other side of the ground and first floors. It comprises retiring rooms and offices for the professor and his assistants, a private laboratory for the professor, a routine laboratory in which the clinical work of the general hospital will be carried on, vaccine preparation and media rooms and a very large practical laboratory for students. This latter is perhaps the feature of the department, and is equipped in almost sumptuous fashion. It contains four rows of work benches, running lengthways, divided into spaces on both sides of the bench allotted to each student. Each space is fitted with microscope, illuminating lantern, rack for reagents and water tap. Suitable provision is made at one end of the laboratory for lecture purposes. The department in addition, contains a mixing room, and has its own self-contained refrigerating plant situated in the basement, by means of which the various cool chambers are supplied.

#### Surgery

The surgical unit situated in the rearmost portion of the left wing of the building on the first floor is ideally fitted and designed for its purpose. The rooms set aside for operative and experimental surgery are lined throughout with white glazed tiles. The former—the larger apartment of the two—contains four operating tables, the latter two. Each table is lighted by a cluster of lamps arranged under one shade working on an adjustable ball and socket joint. Very complete provision is made for cleansing purpose by means of water supply taps and sinks. The rooms would put to shame the operating theatres of any modern hospital. Further accommodation consists of a professor's room, a private laboratory, specimen rooms and a dark room fitted for the most up-to-date method of colour photography.

#### Medicine

The department of medicine occupies a series of smaller rooms in the basement adjoining the lowermost lecture

theatre. There is provided private accommodation for the professor and his assistant, a dark room for photographic purposes, an electro-cardiograph room, and a laboratory for experimental medicine. In this section, too, there is a room intended for the use of the lecturer in public health, as well as a larger apartment to be utilized as a museum for the department of forensic medicine.

#### Pathology

Perhaps the most interesting of all the departments is that occupied by the professor of pathology, which takes up the whole of the first floor and part of the basement in the right wing connected by a covered way with the mortuary and post-mortem rooms which form a separate single storied block detached from the main building. In addition to the rooms set aside for the professor and his staff there is a spacious preparation room where specimens will be received and prepared for examination. The students' practical laboratory, like that in the department of bacteriology, is a really magnificent example of what such a laboratory should be and its equipment is of the finest and most complete description. Another feature of this department is the record room where the facilities for storing and indexing of pathological slides have been designed by a master mind. Below each slide filing cabinet is a series of drawers designed to hold the clinical history of the case from which each specimen is derived, by this means it will be possible to study the section of a diseased organ in conjunction with the medical history of the case. The mortuary block may justly be described as the "show section" of the new medical school. It would indeed be difficult to find in any similar institution a post-mortem room and adjuncts so beautifully designed and fitted for the peculiar local needs of a teaching hospital. In the post-mortem room the tables and walls are of pure white enamel while the arrangements for ventilation and cleansing excite the admiration of even the casual observer. A special feature however is the refrigerating plant, which provides the cold storage necessary to preserve cadavers in a climate so warm and moist as that of the Cape peninsula. It is capable of effectively chilling ten large vaults that open on to a corridor leading to the post-mortem room. Each vault has storage for five bodies and has a special door at the back which permits of a body being taken into a small waiting and viewing room, where friends and relatives can see it in private. In connection with the mortuary is a chapel of dignified design with a separate outside entrance and ante rooms. These rooms are so arranged that Europeans and non-Europeans are kept apart, beside having their use in case of denominations with special rites such as the Moslems. In keeping in mind the small but important details the architect has shown his comprehensive grasp of a scheme which provides such a beautifully designed mortuary unit. This unit will not be utilized until after the completion of the new general hospital.

#### Students' Common Rooms

In conclusion mention should be made of the ample accommodation for students in both sexes in the shape of comfortable common rooms. These are fitted with lockers, keys for which are lent to students on payment of a small deposit. The common rooms are situated in the basement, where too, there is a tea room. Lavatory accommodation throughout the building is more than ample both for staff and students. Protection against fire is adequately provided by the installation at all strategic points of hydrants fitted with pressure gauges indicating the lead of water available. The roof of the building is of tiles and the woodwork throughout of seasoned teak. The furniture in the majority of the rooms is in the characteristic South African style and made from stockwood. This description would be incomplete if it omitted to mention the large modern animal house erected on the grounds where the animals used for inoculation and the necessary experimental work are housed and cared for. Here again scrupulous cleanliness is the keynote and the facilities provided for that purpose are admirable.

## TREATMENT OF INDUSTRIAL RHEUMATISM IN GERMANY

[FROM A CORRESPONDENT]

By invitation from the German Ministry of Health a number of British medical men and twenty representatives of various industrial organizations attended recently the inauguration of a German Committee on Industrial Rheumatism in Berlin. The meeting, under the chairmanship of Professor Dietrich was held in the clinic of Professor Bier, many papers and demonstrations were given, and a general policy was decided upon. Later a few British and Dutch physicians were the guests of the German Spa Federation (Allgemeiner Deutscher Bäder-Verband) at certain health resorts, that they might see on the spot what is being done for the insured patient since the war.

The British party was under the leadership of Dr R. Fortescue Fox, chairman of the Rheumatism Committee of the International Society of Medical Hydrology, which recently met the representatives of the English approved societies to discuss the possibility of establishing a clinic in London on the lines of those already existent in such centres as Berlin, Dresden, Hamburg, and Archen, for the treatment of insured patients. In former times the Krankenkassen (approved societies) had relied for the treatment of their chronic rheumatic patients on contracts with the various spas, of which there are well over a hundred in the country. Of late years, however, the number of these patients, and the expense entailed by sending them to the resorts, have increased so much that clinics were established at various places—often in connexion with a general hospital or university bond, where balneological and physico-therapeutic treatment could be obtained for their members in the town at a much lower cost. For in-patient treatment several large hospitals have been established, notably at Archen, which are said to provide sufficient accommodation for all needs. The patient whose invalidity lasts more than twenty-six weeks, however, is still given the opportunity of obtaining a "cure" at a spa, if the physician in charge of the case thinks that this offers a reasonable chance of alleviating the symptoms sufficiently to raise him from the category of permanent disability. He is then sent for a minimum period of three weeks—which may be extended to a maximum of six weeks—to one of the spas, where he is banded at a low cost either by contract with the small hotels or, in many places, in a home run by the society for this purpose, the employers also contributing.

Sickness insurance appears to be much more far-reaching in Germany, and every grade of the Civil Service (which apparently includes most people) is catered for at some or other of the spas. At Bad Elster, for instance, which is a State spa, there are homes for the workman, the clerk (and family), hospital nurses, State officials of "middle grade," army N.C.O.'s and officers, there is also a home for children. It is held to be important in this respect to consider the social customs of these various grades, and not to emphasize unduly the contrast between their usual surroundings and their spa environment. The patients are supposed to be under rigid medical discipline whilst undergoing the cure, but this seems to vary immensely as the grade of home.

### TOWN CLINICS Hamburg

The Brinbeck Hospital, completed in 1913, contains nearly 2,000 beds, has a department for balneological treatment and physiotherapy to which is attached 200 beds, under the charge of Professor Plate. The great majority of the patients attending are rheumatic subjects, although other cases for which this type of treatment is suitable are referred from other parts of the hospital. The plans for this department were drawn up by a committee, under Professor Pfeiffer, consisting of physicians, surgeons, an orthopaedic surgeon, and an engineer in consultation with the architect. Original work appears to be carried out here in connexion with the treatment of the chronic rheumatic diseases, and the duration of sciatica, in particular, seems to have been reduced by means of Professor Plate's system of intensive treatment. It is strongly held at this centre that these diseases are largely occupational, and a cinema film was shown to corroborate this

there is, therefore, an advisory committee appointed to consider each particular patient on discharge, with a view to discussing the necessity for either modifying or changing his occupation. The insurance companies state that, in their opinion, this has reduced their total sickness payments of late years.

### Berlin

Two clinics were inspected in Berlin, the larger one being a special department of the great Vinchow Hospital. It is under the charge of Dr Laquei, and more than 200 patients are treated daily by the various douches, sprays, water baths, sand baths, mud baths, violet ray baths, vapour and steam baths, hot air baths, and "primal" baths with which the department is amply supplied. There is also an enormous 'Zander' gymnasium, where the patients undergo the vigorous passive movements which characterize that system. The dozen or so unselected patients who were questioned seemed to have derived—from their own account—very considerable benefit from treatment, the duration of which had varied from four to twelve weeks, since all the treatment in this clinic is ambulatory, its duration, so long as my prospect of benefit remains, is not limited, as it is at the spas.

The other clinic (Victoriastrasse) is run entirely by the approved societies for their members, and was founded just before the inflation of the mark. The Government, however, later repaid all their investments in the stabilized currency, and the result is that these clinics are the most lavishly equipped institutions in Germany. Patients can be recommended by any general practitioner since there is no "panel," the insured person having the right to consult any doctor who has expressed his willingness to see this type of patient. If the recommendation is accepted the patient gets five treatments and, after seeing the director, returns to his doctor, who can order continuation treatment if he considers it necessary.

These institutions are mostly staffed by whole-time medical officers and assistants under a medical director, and are open all day and until late at night, for the convenience of patients who can only reach them then.

### Dresden

Saxony is the most strongly socialist of the German States, and considers itself very progressive. Certainly the 'Ostbathenhaus' of Dresden is one of the most palatial modern buildings in the city. It comprises an administrative block and large out-patient departments for the various types of treatment, a feature being the provision of a tiny wooden cubicle for each patient, in which he can undress. The balneological department is a single enormous room in which are some fifteen or twenty baths for the provision of every treatment of this kind. This would probably not be considered a satisfactory arrangement in England, but makes for economy in the number of assistants required, whilst the physician in charge can more easily exercise a general supervision. A large rest room adjoins this department, every patient lying down for half an hour after treatment. It appeared that the chief superintendent was not a medical man, a fact which, it is said, makes for continual friction, and since every case sent up by outside doctors is not, therefore, seen on arrival, the therapeutic facilities of the place are occasionally abused.

In addition to balneology there are departments for massage, Swedish gymnastics and Zander treatment heat and light of all kinds, and electrical treatment, including high frequency for the hand. There is also an advisory bureau for young men and women about to marry, which is advertised locally by means of rather lurid posters designed to point out the dangers of not consulting this centre. As the result of pressure from below the socialist authorities have included practitioners of the popular 'Nature Cure' cult (Naturheilkunde) among their 'panel' doctors, a state of affairs prevailing only in Saxony, and against which the profession are apparently powerless, especially since the doctors' 'strike' some years ago, which revealed the fact that the "blackleg" was not a monopoly of the proletariat.

### Wiesbaden

Wiesbaden, although a fashionable watering place, takes also a considerable number of insured patients, under a contract, and the recently opened Städtischen Forschungsanstalt, which is both a research institute and hospital, accommodates about a hundred in patients, who are thoroughly investigated both bacteriologically and biochemically under the supervision of the director, Dr Hupfender. The building was once a hotel, and has on the premises a warm saline spring, with a Roman tablet extolling its healing properties. Original work on the action of waters on the yeasts and ferments is being carried out in the excellently equipped laboratories, and it is interesting in this connexion to note that research is being supported by the

approved societies in most of their hospitals, though to a varying extent. Patients can be sent here for a three weeks' cure, which is felt by the staff to be too short but may be extended to six weeks, if no other claim has been made during the year by the patient. If no improvement is noticeable after this period the patient is graded by the hospital medical board, and can then go on to permanent sickness benefit. Both lower and middle class patients are treated here, but no distinction is made between them, since no room has more than two beds. The hospital is, in addition, well equipped to give other forms of treatment.

#### Mann (Mannere)

The clinic inaugurated by Dr. Frank in this city more than twenty-five years ago has been the pattern for most of the clinics which have been described above, and from this point of view is well worth a visit, since even to-day there is said to be no essential point of design which it is felt could be improved upon. Only a certain proportion of the cases treated here are not by the approved societies, the rest being private patients, who are graded according to the amount they feel inclined to pay into four classes. The director exercises a general supervision, but himself treats only those cases specifically referred to him.

#### Aachen

Aachen (Aix la Chapelle) lies in a valley some six kilometres only from the frontiers of both Belgium and Holland. Its natural sulphur springs are from the medical point of view its greatest asset; they are amongst the hottest in Europe, and since Poman times have been frequented for the treatment of rheumatism and skin diseases, and when combined with inunction have long been used for patients suffering with the later manifestations of syphilis, particularly those intolerant of arsenic. Early cases are not considered suitable.

The Landesbad Hospital, founded in 1912 by the insurance organization of the Rhine province, is probably one of the best equipped institutions in Europe, and can accommodate nearly 400 in-patients, about a third of whom are women. Dr. Krebs is the director, and the medical staff is on a whole time basis. No out-patient department is attached to the hospital, since the patients are sent direct by a medical board at Düsseldorf, which accepts also members of other friendly societies at a slightly increased rate of payment. The patient's third-class railway fare is paid if he has to come from more than a certain distance. The inmates are only allowed out of the building once a week, but a spacious garden is provided for them, as also frequent lectures, outings and social evenings. A research department was opened during this summer under the general control of the Faculty of Medicine of Düsseldorf, and post-graduate lectures and courses are to be given during the winter.

#### Stassfurt

The spa treatment of chronic rheumatism, although in use since the Roman era, has until recently been regarded with a certain amount of suspicion by the medical profession, owing in all probability to the largely empirical nature of the methods employed. This is presumably still the attitude of a minority of the profession in Great Britain. In Germany the subject was taken up from a scientific point of view at the beginning of the present century by men appointed by the universities and is the result of their inquiries, the approved friendly societies decided to include spa treatment amongst their additional benefits—largely also, it is said, owing to the alarming increase in their dental payments for chronic arthritides. The societies in their recent reports state that they have arrived at the conclusion that this policy has paid in view of the fact that one-sixth of their total invalidity results from this cause, a figure which, according to the Ministry of Health's recent report, also holds good in England. They further point out that the provision made for tuberculous subjects has always in the past been much more adequate, although the rheumatic patient predominates in the proportion of 8 to 1 (Zimmer).

A few selected spas of differing characteristics were visited by the British and Dutch physicians, a brief description of them follows in the order in which they were visited.

*Odenkirk* which rather grandiloquently styles itself the city without steps, is a small town about one hour by train from Hannover. It is picturesquely situated in a valley between the wooded slopes of the Teutoburger Wald. It boasts five saline springs, heavily charged with carbonic acid gas, the

chief indications for treatment being, therefore, rheumatism and nervous diseases, but heart disease is also treated on lines practically identical with those used at Nauheim. As a spa it takes itself seriously, and provides little in the way of entertainment other than an excellent band and a Kurtheatre. There are also the sedative delights incidental to fine buildings, and a well laid out Kurpark. The results, claimed in rheumatic cases, are good, although a repetition of the cure is advised even when apparently successful. At the Auguste Victoria Children's Home nearby twenty-five post-rheumatic cardiac cases are treated for periods of four weeks all the year round on Nauheim lines, the earliest acid bath being used largely. The treatment aimed at in the nervous cases is largely sedative and is said to alleviate spasm. The waters are given both externally and internally by the latter method apparently with great frequency.

*Eisen* is a two-hour journey by motor from Odenkirk. The road lies through the picturesque gap in the wood-clad mountains—the Porta Westphalica—out of Westphalia and into the true ex-principality of Schaumburg-Lippe. The ex-prince who is still wealthy enough to command the respect of the local democrats has employed his leisure to build a colossal hotel which is advertised as a *Kaiserhof*. A *Hofstille* of quiet refinement and has partly furnished it from his Schloss. Adjoining this is a model bath house in which the potent cold sulphur water of which there is a most unusual amount in the vicinity can be taken in any form—both drunk, or inhaled the last being given by means of the recently invented Italian method of using a dry vapour. Mud baths are also much used. For those who require less magnificent quarters there are two other large hotels, all three being run in conjunction with one another, and sharing the very delightful Kurpark. There seemed to be no insured patients in Eisen.

*Bad Nenndorf* is said to owe its origin as a spa to the fact that Jerome Bonaparte was cured of his rheumatism after bathing in its four hot sulphur springs; it is largely owned by the State of Prussia and is now used almost entirely for the treatment of insured patients, the establishment being open all the year round. For the most part the accommodation is unpretentious, and many are boarded out in the town at an average cost of a mark a day, the cost of the cure, which lasts here four weeks is extra. The expense of this is calculated on an average basis of twenty marks per bath at a cost price of 4 marks each, but these baths may, if the patient wishes to economize, be used on three occasions at no extra cost; this is not, however, advised, since the therapeutic potency is said to suffer by reheating. The natural water here is said to be of double efficiency in the treatment of the rheumatic since in addition to its strong sulphur content it contains 6 per cent of bromine. It is for this reason also much used in the treatment of chronic respiratory disorders, chiefly by inhalation and vaporization and of skin complaint. For the casual visitor Nenndorf is not always a pleasant place, since the sulphureous fumes penetrate to all the beds of the hotel and strong men have been known to curl their lips at the account. Drawbacks of this nature are however thought to be more than made up by the picturesque native costumes worn by the peasants on Sundays and holidays, and by the hospitality of the residents.

*Pyrmont* the next spa to be visited is reached by a road which passes through the quaint little town of Hameln on the river Weser, the scene of the famous Pied Piper legend of the thirteenth century. This is amply commemorated there by a tablet in the church by the piped piper's house in the main street and by scores of rats of all sizes made in glazed brown bread with bead eyes which are pressed upon one in shops of all sorts. There is also a table commemorating the reputed discoverer of morphine who lived in this town. Pyrmont which stands about 450 feet above sea level in a valley well protected from north and north-east winds was known as a spa in Poman times when sterility cures seem to have been practised and even now it is known principally as a woman's spa. The water contains a high percentage of sodium chloride and that from the chief spring in addition iron and carbon dioxide. Mud is obtained by light railway from a large lake nearby and is said to be of exceptional potency. Pyrmonter applies its water in bottles by contract to some of the city clinics for insured patients, but is rapidly becoming one of the most popular watering places in Germany, and consequently not very much is done for such patients on the spot. The general opinion throughout Germany appears to be that the presence of insured patients in any number has a detrimental effect on the spa from the moral point of view, by keeping away many of the wealthier classes who would otherwise patronize it accordingly the trend of policy is to devote the smaller spas to the cure and more of the service of the

Krankenanstalt which keeps the larger and better known almost exclusively for the use of the paying patient. Exceptions to this policy are made in many places, such as Wiesbaden, where considerable numbers of insured patients are treated in



their own institutions, and do not, consequently, take much part in the life of the place.

*Bad Elster* is a small State owned spa, situated amidst beautiful forest scenery 1,000 feet above the sea. It is only twenty minutes from the Czechoslovakian frontier, and is thus brought into competition with the spas over the border in the neighbourhood of Karlsbad. It is consequently the cheapest of the German resorts. Its chief additional medical assets are a bracing but uniform climate, twelve alkaline saline springs—some of which also contain carbon dioxide (Marienquelle)—and two lady doctors. Mud (peat), iron, and pine needle baths are used extensively, heart disease used to be treated here more than is now done, and an elaborate system of graduated walks exists up the neighbouring hillsides for the after treatment of these cases. There is also an open air theatre, restaurant, and dancing place. As has been mentioned previously, a very large number of insured patients are treated here annually, and homes exist for their accommodation, the average cost for a patient whilst living in a home and taking the cure is 3.50 marks a day, with a 20 to 100 per cent reduction in the cost of his treatment and doctors' fees. The most palatial of these homes is for clerks and their families, but appears originally to have been established under a private bequest. The spa is not, according to Herr Etienne, the director, primarily run as a business proposition, only a small margin of profit being aimed at, since any renovations or building operations which may become necessary are undertaken by the State, which, in return, has the right to send 200 patients for free treatment and 250 at half price every year. For his services the doctor, who is selected by the patient, receives 10 marks, and is required to see him twice. The cost to the spa is worked out on a basis per patient of twelve peat baths and six carbon dioxide baths, the former being by far the more expensive item.

Apart from the insured patient, Elster is also patronized to a considerable extent by the middle classes, who were particularly hard hit financially during the crisis in 1923, and a certain number of these patients are also able to get a reduction in their fees for the cure. This number is, however, limited, although not rigidly. No mention of Elster would be complete without reference to Dr Kohler's magnificent sanatorium, which is equipped completely for the balneological and physical treatment of rheumatics, or to the tuberculous children's home, which he runs by means of voluntary contributions—amongst others, from the English "Save the Children Fund"—and which is a model for other homes of the sort.

From what has been said it will be evident that a great deal is being done in Germany for the insured rheumatic patient, and the fact that it has now been done for some years would appear to show that the approved societies find that financially it "pays." Representatives of these societies were interviewed, and although, as they say, actual statistics on such a point are unsatisfactory, they were agreed that this was so.

With regard to the position of medical men under this scheme there seems to be less unanimity, they are but poorly represented on all the insurance boards, and in the matter of clinics also they do not seem to have been given due consideration, in all cases the chief bone of contention is undoubtedly that of the increasing expenditure, which is laid by the societies entirely at the door of the doctors. From 1884 to 1914 sickness benefit payment had increased ninefold, according to the reports, what they do not appear to have noticed, however, is that during that same period the administrative expenses had increased fourteenfold (Finkenrath).

There is in Germany no category for "additional benefits," and spa and allied treatments accordingly come under the "general treatment" heading, as do all new or improved methods and drugs, it is reasonable, therefore, to suppose that an increase in the sick payments was inevitable when these methods were sanctioned. The efforts made by the societies to check this increase appear, however, to fall almost entirely upon the medical profession, to their eternal tribulation.

Whether or not the establishment of some similar scheme in England is possible as has been recently suggested, it is outside the province of this article to discuss, but the advice proffered by a distinguished German medical man—to the effect that if a move be made, let it originate from the medical profession and not the societies—would appear salutary in view of the position of affairs in that country.

## THE BERNE INTERNATIONAL CONFERENCE ON GOITRE

The International Conference on Goitre held in Berne on August 24th, 25th, and 26th drew about 120 experts from sixteen different countries. One of the objects of this conference was to promote, among experts representing every phase of the subject, formal and informal discussions on goitre, and the extent of the ground covered may be partly gauged from the fact that eight hours a day were spent at the formal meetings alone. The programme of the conference provided for an opening speech on the frequency of goitre in the different countries by the president, Dr H. Carrière. Papers on the pathological anatomy of goitre were read by Dr Aschoff of Freiburg and Professor Wegelin of Berne. In the place of Dr Marine of New York, a paper was read by Dr Graham of New York on this subject. He also dealt with the relationship in the United States between goitre, on the one hand, and cretinism and deaf-mutism, on the other. Professor Huguenin of Berne gave an account of goitre among domestic animals in Switzerland, and Dr Holst of Oslo drew attention to the remarkable frequency of this disease in the coastal districts of Norway. The pathological physiology of goitre was discussed by Professor de Quervain of Berne and Dr Breitner of Vienna. Dr Plummer of the United States was unfortunately prevented from attending this meeting. The etiology and epidemiology of endemic goitre were allotted to four introductory speakers, Professor Bernard of Lyons, Lieut-Colonel Robert McCarrison of the Pasteur Institute, South India (whose paper was read by Sir James Berry), Professor Galli-Vallerio of Lausanne, and Dr Birchler of Aarau. In the discussion which followed attention was drawn to the influence on the provocation of goitre of such factors as the contamination of food and drinking water supplies.

The introductory speakers on the prophylaxis of endemic goitre were Professor Wagner von Jauregg of Vienna, Dr Mugger de Sondrio of Italy, and Professor Silberschmidt of Zurich. The Swiss authorities and the foreign visitors drew attention to the value of the energetic prophylactic measures adopted in certain Swiss cantons, the provision of iodized salt for wholesale consumption in small quantities being particularly praised. Professor Nicolaysen and Dr Lunde suggested that something could be done to reduce goitre by a diet of sea fish whose iodine content is exceptionally high. The benefits of iodine prophylaxis were, however, queried by some speakers.

The president's proposal that this conference should be followed by another on similar lines received general acclaim, the success of the conference may, indeed, be measured to a certain extent by the general expression of a desire to see it soon repeated. The work of its secretary, Dr Stiner, was greatly appreciated. It should be added that the goitre exhibition organized in connexion with the conference proved a most attractive side-show. The following are some of the points made by Colonel McCarrison.

### *The Etiology and Epidemiology of Endemic Goitre*

Colonel McCarrison insisted that the constellation of causes which gives rise to goitre is not always the same, nor is the character of the disease identical in different parts of the world. Of the many theories professing to account for the origin of this disease, two have survived. The first is the iodine deficiency theory, the second as the infectious or toxic theory, which attributes goitre to some unknown pathogenic organism or to its products. Colonel McCarrison has come to believe that the truth lies in a judicious blend of both. In Himalayan India there is no evidence that the incidence of the disease is in inverse ratio to the iodine content of the soil. The water supply of two places some miles apart may be the same, yet goitre is present in one and not in the other. Drinking water containing 300 parts of iodine per 100 billion parts of water has not prevented the occurrence of the disease in endemic form in the presence of a high degree of bacteriological impurity of the water, the substitution of a bacteriologically pure for a bacteriologically impure water has caused the rapid and complete disappearance of

the disease from a place in which it had been endemic for seventy years, although the new water supply contained less iodine than the old. Iodine-containing salts appear, however, to have an influence in preventing this type of endemic goitre.

Colonel McCarrison recently obtained a deteriorated and bacteria laden rice from a notorious locality in Burma which caused large hyperplastic goitres in 12.5 per cent of birds fed exclusively upon it—a result suggesting that some positive goitre-producing agency, probably bacterial, was present in this rice. Its iodine content did not differ from that of other rices. In 1927 he found that, while a minority of pigeons developed large hyperplastic goitres when fed exclusively on an iodine-poor diet of American white flour the majority did not. The occurrence of goitre in the minority could not, therefore be attributed solely to iodine deficiency, but to the action of some positive agency peculiar to the affected birds. In iodine poor localities goitres may develop spontaneously in well fed animals confined in dirty cages, only the most meticulous cleanliness prevents goitre in laboratory animals in such localities. It can also be prevented by increasing the consumption of iodine or cod liver oil. Chlorine acts in a similar way but with less certainty. Iodine antiseptics—thymol, salol, B-naphthol and *B. bulgaricus*—given to the subjects of goitre cure it in many cases, notably recent cases without any change being made in habit of life, place of residence or food.

After giving an account of his experimental production of goitre in goats and rats and the experimental prevention of goitre in man, Colonel McCarrison concluded that the essential cause of the type of goitre with which he was dealing is a positive toxic agent derived from the gastro-intestinal tract. This agent may or may not itself cause chronic hypertrophic goitre in the presence of a sufficiency of iodine, nor may an insufficiency of iodine cause the disease in the absence of gastro-intestinal infection. When both factors are present the conditions for the development of this type of goitre are at their optimum. Hence his recommendations for the prevention of this disease and its sequelae: (1) the perfecting of sanitation, (2) the provision of pure and protected water supplies, (3) efficient personal hygiene and drainage of the gastro-intestinal tract, and (4) the use of a well balanced food containing a sufficiency of iodine in a natural state.

## THE VETERINARY CONGRESS

The annual congress of the National Veterinary Medical Association of Great Britain and Ireland has been held this week at Torquay, under the presidency of Mr. GEORGE WOOLDRIDGE, professor of medicine at the Royal Veterinary College, London. Among the numerous papers on general veterinary subjects two submitted to the Section of Veterinary State Medicine are of special interest to medical men.

### Meat Inspection

Lieut.-Colonel T. O. Young, in discussing the "Veterinary surgeon in relation to meat inspection" stated that an ideal system of food inspection should include slaughter of all animals in public abattoirs, ante-mortem and post-mortem inspection by trained officer of all animals intended for human food, and inspection of all meat products and food factories. This system was in practice in many countries, including those from which this country obtains much of its food supplies, but no serious attempt had yet been made to adopt a similar system in England. Here meat inspection was only one of the numerous duties of a sanitary officer instead of being a special duty. Regulations existed but their great weakness in practice was the lack of uniformity. One difficulty connected with a satisfactory system of inspection was the number of private slaughterhouses existing in England (about 20,000) this made regular and thorough inspection impossible. The position was different in Scotland, where 90 per cent of the home-produced meat was prepared in public abattoirs. The English Departmental Committee which inspired the Public Health (Meat) Regulations of 1924 recognized the necessity of reducing the number of slaughterhouses. Both

it and the Scottish Committee also considered the subject of the qualification of meat inspectors. The latter decided that only medical or veterinary officers should be in charge of meat inspection with lay assistants where necessary, to act as 'detention officers'. The English Committee was less definite and admitted the employment of non-professional officers, owing to the prohibitive cost of employing an "ideal staff". In England (but not in Scotland) veterinary officers have no official power to seize unsound food, the statutory right at present rests in the medical officer of health, the sanitary inspector or inspector of nuisances. This was an extraordinary state of affairs, and should be remedied. Dr. Leighton regarded food inspection as being supervised by the medical officer of health, who mainly occupied in administration and matters of policy, would act only in the nature of a consultant, the inspection was carried out by the veterinary surgeon, who would do the actual inspection of meat and milk.

Lieut. Colonel Young said that no satisfactory system could be evolved until in every city and urban district veterinary officers were appointed in the public health departments. These duties would include: (1) inspection of all diseases under the Diseases of Animals Acts, (2) care of all horses owned by the local authority, (3) inspection of cows and cow sheds under the Dairies and Tuberculosis Orders, and (4) inspection of all animals slaughtered for food. They would probably need assistant veterinary officers or thoroughly trained assistant lay inspectors or both.

### Diseases of the Cow in Relation to Milk Legislation

Mr. BRENNAN DE VINCE, in opening a discussion on this subject said that the cow filled a very important place in public health legislation being attacked by many specific diseases, not a few of which were common to the cow and man. The most important and serious bovine disease in Britain was tuberculosis. The prevention of the infection of man was to a certain extent provided for in the Milk and Dairies Act which prohibited the sale of milk from a cow affected with tuberculosis of the udder. Cows not in milk but affected with tuberculosis of the udder were dealt with under the Tuberculosis Order, but as this only applied to advanced cases no great decrease in the number of diseased animals could be expected. In any septic condition of the uterus discharge might be transferred to the milk and any diseased condition of the udder or teats might render the milk harmful. In streptococcal mastitis the milk might cause sore throat in man and in actinomycosis a not very common condition in the udder, the infection might be carried to man by the milk. Although there were very few cases on record of the conveyance of anthrax infection to man by milk, the use of milk from infected animal should be prohibited. Foot-and-mouth disease was easily conveyed through milk, although in affected animals the yield was small.

### The Application of Electrotherapy to Domesticated Animals

Lieut.-Colonel MONTGOMERY PERCY said that high frequency treatment applied for from five to even minutes daily had given most gratifying results in cases of paralysis from various causes and had a wonderfully bracing effect on the whole system. It was a good stimulant to the skin and the growth of hair and many cases of rheumatism were amenable to it. Fulguration had given good results in treating the small unpedunculated fibrous growths so common on the skin of many dogs. Ionic medication was useful so far as it could be applied in veterinary medicine for conditions similar to those treated in this way in man. Ultra-violet radiation gave excellent results in rickets, especially in the heavy breeds of dogs. Its effects were increased by the exhibition of cod-liver oil. Good results followed this treatment in eczema and indolent wounds and ulcers often unresponsive to other forms of treatment, readily yielded to this. He concluded by discussing the value of x-rays as a diagnostic agent—especially before operations—in dogs and cats.

Other papers dealt with diseases of the udder and teats, other than mastitis, the clinical aspects of ringworm and eczema in the dog, lightning and electric shock in animals, and intestinal parasitism.

# British Medical Journal.

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## THE PUBLIC HEALTH A STOCK-TAKING

MEDICAL practice, that hilly-burly of problems and emergencies, affords but little opportunity for the 'quiet calm deliberation' which, as W. S. Gilbert has told us, "disentangles every knot." Scant time is available for a survey of positions which have been won in the campaign against disease, or a critical study of the bewildering profusion of new methods of medical treatment. In these circumstances Sir George Newman's annual report on the state of the public health,<sup>1</sup> of which our concluding notice appears this week at page 499, is most welcome. We commend it in particular to the busy practitioner, who can hardly fail to draw from its pages both encouragement and practical help in his own work. The summary, with which the report ends, can be read in a very short time, and yet it gives a remarkably comprehensive sketch of the principles underlying the maintenance and restoration to health, both individual and collective.

"The function of the sanitary reformer is to reduce every reducible known cause of disease to its least possible degree of destructiveness." So wrote John Simon nearly seventy years ago in one of his masterly papers on the sanitary state of the people of England. The condition then was deplorable, and the ineffectiveness of public authorities a disgrace. Simon saw clearly enough that reform would be a long and hard business, uphill all the way. "It is indeed only by very gradual increase," he said, "that legislation and government can succeed in giving to human life the same security against the infliction of preventable disease as against the infliction of wilful violence, and millions may have died before this public carefulness for individual safety can have become co-extensive with even the present certainties of preventive medicine. But growing knowledge will bear its fruit." Growing knowledge has indeed borne fruit in this country since 1858, and a national sanitary conscience has grown up, so that it is possible for Simon's lineal successor, the Chief Medical Officer of the Ministry of Health, to write in 1927 "I suppose it is correct to say that never before in the history of this country has so much been attempted by the State on behalf of the health of the people as now."

The science and art of Preventive Medicine is extending in almost all directions, knowledge of it is becoming more applicable and effective, and public opinion is supporting the cultivation of health and fitness in the individual. These changes indicate an immense awakening and a wider use of the improved environment and health facilities which the State has provided. Much disease and impairment remain, but evidence and experience suggest that we are on the high road to their amelioration.

The attainment of this happier position is admittedly due to the extension of preventive and curative medicine, and to their better co-ordination, yet no one will deny that much remains to be done. A wider outlook is essential, both on the part of the State and municipal official, who must co-operate freely with all

who labour in the interests of the health of the community, and also of the general practitioner, who is being increasingly called upon to recognize that his duties embrace the work of communal as well as of individual medicine. Each appearance of the Annual Report of the Chief Medical Officer enables the working practitioner to take stock of the progress of the whole health movement, by using this recurring opportunity his hands will be strengthened, and he will be armed against those doubts and attacks which he inevitably encounters from time to time. For instance, the arguments and assertions of those who would deny to the community the benefit of vaccination against small-pox, without offering anything in its place, are effectively countered in the two pages devoted to a summary of the reasons for a belief in the value of this practice. Again, the shallow criticism too often directed against medical scientists—"Who shall show us any good?"—receives in the report a convincing answer. The extent and nature of the benefit of national health insurance to the community is clearly brought out. Many other instances of important subjects, effectively yet briefly treated, will be found.

This report, then, deserves close study, both by those who welcome stimulus for thought and by the many who need concentrated practical information. The yoking of statistical science to the everyday problems of life is no mean achievement, and when, as here, a judicial attitude is preserved, and the results are set out with philosophical deliberation, the conclusions are worthy of very careful consideration. The far-reaching influence of the British Broadcasting Corporation is used one evening lately to advertise to women the practical value of this balance sheet of human health, it is obvious, therefore, that it must receive the special attention of the medical profession, whose members may otherwise find themselves in the awkward position of being less well informed, on some points of detail or even of principle, than those whom it is their duty to instruct in the conditions of health. Finally, the considered optimism which characterizes the report as a whole may well bring encouragement to the great body of general medical practitioners, many of whom, in the stress of their daily round, have little time to reflect on the large share they themselves take in promoting the happiness and well being of their fellow men.

## BIOMETRICAL INVESTIGATION OF DISEASE

A NOTEWORTHY development at the Johns Hopkins Hospital, Baltimore, is the utilization of its elaborate clinical notes by the application of modern statistical methods under the inspiration of Professor Raymond Pearl, who is head of the department of biometry and vital statistics in the School of Hygiene and Public Health, and of biology in the Medical School of the Johns Hopkins University. In the past the pioneers of biometrical methods were primarily biologists, and between biology and medicine there was a gulf which made sympathy and correlation difficult. Now the sciences of physiology, anthropology, and biometry are being applied to medicine with, it may be anticipated, great advantage to a profession which is both an art and a science. Statistical methods demand a mathematical knowledge rare among medical men, except those whose training or temperament has been on rather exceptional lines. Professor Karl Pearson, who was third wrangler at Cambridge in 1879, is the

<sup>1</sup> On the State of the Public Health. Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1926. H.M. Stationery Office. (Sold 8s. 6d. net.)

founder of the British school, but it is perhaps remarkable that among his pupils few have come from that university.

The twenty-first volume of the *Johns Hopkins Hospital Reports*<sup>1</sup> contains two fasciculi devoted to the elucidation of morbid conditions by biostatistical methods. Four years ago reference was made in these columns (1923 I, 1104) to the first of a series of biometrical studies in pathology, dealing with the quantitative relations of certain viscera in tuberculous—by Raymond Pearl and Agnes Latimer Bacon. Examination of a group of cases in which the morbid lesions were those of tuberculosis led to the conclusion that the heart was relatively small and the spleen large—a different conclusion from that drawn from the study of patients with tuberculosis which was inactive and accompanied by other morbid conditions. These results led to an investigation of the absolute weight of the heart and spleen in tuberculous persons. Utilizing the same material—1341 necropsies showing tuberculosis of some sort, 825 being active and 516 inactive—the authors undertook to elaborate data and to correlate the absolute weights of the heart and spleen with age. These age organ weight tables at once showed it might be expected (1) that the weights of the organs changed with advancing age but (2) that this regressive change was not linear indeed. From it especially in the case of the spleen the absolute weight of the heart was notably larger at each age from birth to an age somewhere between 35 and 55 and then steadily but more gradually got less; this curvilinear form of the regression line is essentially the same at the same age in the two sexes and in whites and negroes whether or not the heart shows pathological lesions. The heart is smaller when tuberculosis alone kills than when other pathological lesions are partly responsible for death. In like manner the regression of the weight of the spleen is progressively greater up to the decade centering at 35 years, and then becomes less; the absolute weight is greater in the negro race than in whites, and there is a tendency for the spleen especially when it does not show any morbid change to be heavier when tuberculosis is the only significant pathological lesion but, contrary to the suggestion made in the earlier paper, comparison with the tables of the weight of the normal spleen shows no evidence that the spleen of patients with tuberculosis is heavier than that of normal non-tuberculous persons.

The other paper which is by Miss Mary Gover is a statistical study by modern methods of the etiology of benign hypertrophy of the prostate and is based on the punch cards each of which contains 156 items or 997 cases examined microscopically at the Johns Hopkins Hospital. The conclusions drawn are interesting but largely of a negative character. There is not sufficient evidence to warrant a definite decision as to hereditary influence. Patients who had had gonorrhoea—33 per cent—formed a group having in early age of onset and operation, possibly due to gonococcal complications for the prostate was smaller than in the other cases so that it may be said that gonorrhoea does not cause hypertrophy. Single men appeared to be not so liable as married men but when they did suffer the prostate was as large as in the married no relation could be shown to exist between the patient's reproductive activity and the size of

the prostate nor did alcoholism seem to exert any influence in this direction, men following sedentary occupations were not more prone to prostatic hypertrophy than those engaged in active physical work. There was no correlation between the systolic blood pressure on admission and the weight of the prostate. It appears that the increasing growth of the prostate with age is not continuous; it occurs mainly between 45 and 75 years of age and both before and after this period is slower. The average age of onset of symptoms was 60.2 and of operation 66.7 years.

#### THE WHITE MAN IN THE TROPICS

For long it was taken for granted that the tropics were necessarily unhealthy for white men and the prevalent sickness and high mortality in hot countries were ascribed to telluric influences inseparable from the climatic conditions. As knowledge of the etiology of tropical diseases increased and practical methods of prevention developed, there followed a swing of the pendulum until nowadays some hold that the climatic conditions of hot places are negligible and that exogenous disease and incorrect diet are the only obstacles to the permanent settlement of white races in the tropics. The question is obviously important, and much interest has been aroused in it by the advocate of a white Australia. Divergent views have been expressed with considerable vigour but without any convincing evidence based on scientific inquiry. Sundstrom, working in Townsville, North Queensland, has approached the problem by studying the various changes which occur in vital processes when men accustomed to temperate climates are transferred for shorter or longer periods to the tropics. Townsville described as the largest tropical community in the world with a pure white population offers excellent opportunities for such inquiry and the likelihood of physiological modifications being confused with changes due to disease is less there than in most other tropical towns for locally acquired malaria and other parasitic affections are uncommon. Various examinations including those of the blood sugar and phosphorus contents, protein metabolism, water regulation and comparisons of the results with the standards in temperate climates, seem to indicate that climatic factors do exert a definite influence calling for human adaptation which may or may not be adequate. This is about as far as Sundstrom is willing to push his conclusions though he regards the adaptation required to meet the altered cooling power of the environment as making demands upon the whole bodily economy, the necessary alterations extending beyond the ordinary heat-regulating mechanism. Some Australian writers have laid stress upon the fact that local insurance companies accept proposals from the residents of North Queensland at the same rates as apply to temperate regions. When the point was raised at a recent meeting of the Institute of Actuaries in London no definite opinion was expressed regarding tropical Australia but the general view seemed to be that on a life-table basis an extra premium was necessary in any part of the tropics. Insurance tariffs, however, represent the business policies of the companies concerned and into this question there will enter other factors besides the mathematical expectation of life. Professor H. Pricley, to whose investigations at the Institute of Tropical Diseases at Townsville we have previously referred (*Journal* 1922 vol. II p. 253) when addressing the Pan-Pacific Congress in Australia in 1923 expressed the opinion that physical health need not suffer but he made reservations as to the effect of hot climates upon mental health. The diversity of views upon this aspect of the subject was illustrated last year in the correspondence which followed the publication of a letter by the Bishop of Singapore upon

<sup>1</sup> The Johns Hopkins Hospital Reports, Vol. XXI, Fasciculi II & III, Statistical Study of Benign Hypertrophy of the Prostate Gland by Mary Gover. Fasciculus I, *Biometrical Studies in Pathology—III*, The Absolute Weight of the Heart and Spleen in Tuberculous Persons by Raymond Pearl and Agnes Latimer Bacon. Baltimore: The Johns Hopkins Press, 1925 and 1926.

mental irritability and breakdown in the tropics (JOURNAL, 1926, vol 1, p 503) More work upon the lines of that done by Sundstroem is required, but very much fuller data are necessary before such comparisons as he makes can safely be accepted. Meantime, in North Queensland a great experiment is in progress. Several generations may have to pass before conclusive results can be obtained, for the considerations involved are so numerous and so interwoven that the proof of this pudding may well be in the eating rather than in minute analysis of its ingredients.

#### STANDARDIZATION OF ULTRA VIOLET LAMPS

ATTEMPTS to measure and standardize ultra-violet radiation are being made continually, but most of the methods suggested, scientifically sound though they may be, appear too cumbersome for use in practice. In some of the latest work in this field, which has resulted in a chemical method of standardization,<sup>1</sup> it is admitted that some simpler procedure is necessary, and experiments are being continued from that point of view. The method employed in this instance depends upon the photochemical decomposition of oxalic acid in the presence of uranium acetate, which furnishes a measure of the strength of the emitted ultra-violet radiation. It has been used for the testing of carbon arc lamps employed for light treatment at the Birmingham City Sanatorium, and certain interesting comparisons have been made between lamps of different electrode characteristics. Lamps having carbons with a mineralized core were found, on a 30-minute test, to be 2.7 times as strong in ultra-violet action as lamps having two carbons of the ordinary kind, and on a 15-minute test to be 3.3 times as strong. When the upper positive electrode was a carbon with a mineralized core and the lower negative electrode an ordinary carbon, the results on a 30-minute test were 2.9 times, and on a 15-minute test 2.6 times, as strong as with ordinary carbons. With the carbon-tungsten arc a silver lens is interposed for local treatment, and with this lens in position the ultra-violet radiation at 12 in. from the arc was found to be eight times as strong as the radiation at 28 in. (the usual distance between the patient's thorax and the arc) from ordinary carbons. Without this lens the carbon-tungsten arc had about one-third of the strength of ordinary carbons calculated on a 15-minute test. The experimenters (Mr J. E. Moss and Mr A. W. Knapp) found that the mineralized carbons had a tendency to splutter and obviously to vary in emission from minute to minute, the carbon-tungsten arc also spluttered slightly and required occasional adjustment of its electrodes, but ordinary carbons were much more constant. The quantity of ultra-violet radiation reaching a patient depends upon the source of the radiation, the distance and position of the patient in relation to the source, and any interposed material such as lenses or screens. These investigations have established that the intensity of the radiation at any given point is shown by the oxalic acid decomposition test is inversely proportional to the square of the distance of that point from the source of the rays. If, therefore, two patients are exposed to the radiation from the same arc at the distance of one yard and of two yards respectively the former will receive four times as strong a dose as the latter. When the range from the part treated to the naked arc is 18 in. or less, small variations in distance should be avoided or careful allowance should be made for them. If only one carbon arc is used for the treatment of a number of patients simultaneously, the patients should be placed around the circumference of a circle drawn on the floor, the centre of the circle being vertically beneath the arc, but when, as often happens, two arc lamps are used, the

curve joining the points of equal exposure approximates closely to an ellipse. The authors examined one arrangement whereby one of two patients who were supposed to be receiving the same treatment from two carbon arcs was actually receiving one-third more radiation than the other. Some tests have also been made by oxalic acid decomposition on the difference between sunlight and mercury vapour lamps. The radiation at 8 in. from a mercury vapour lamp which had been in use for 100 hours proved to be one and one-third times as strong in ultra-violet as brilliant July sunshine at Bournemouth, at 25 in. the light from the lamp was only about one-eighth of the strength in this respect of bright sunshine. The trouble in all this work seems to be that it is only possible to argue loosely from lamp to lamp or from the output of a particular lamp at one stage to its output at another.

#### CHRONIC INTESTINAL AUTO INFECTION

CHRONIC intestinal auto-infection is defined by Dr P. Desgeorges<sup>2</sup> of Vichy, who has written much on this debatable subject, as the intermittent, transient, or more or less constant passage of comparatively slightly virulent bacteria from the bowel into the circulation, and, though slowly producing widespread changes, very different in its results from those of the cases of undoubted *B. coli* septicaemia. This difference must obviously depend on the size of the dose and the resistance of the body. The author's experimental injection into the veins of a rabbit of one million colon bacilli did not give rise to bacteriæmia, whereas another rabbit injected with fifty millions became acutely ill and gave a positive blood culture. In chronic intestinal auto-infection the number of bacteria in the blood at any one time is so small that blood cultures are sterile, although, as Adams and his co-workers showed in 1899, visceral invasion proves that bacteriæmia occurs. The question must naturally arise in the reader's mind how to distinguish in practice between the more familiar chronic intestinal intoxication, in which the absorption of poisons only is predicted, and the graver chronic intestinal auto-infection. The criterion appears to be provided by the presence of bacteria in the urine, and Dr Desgeorges protests against the view current in France that all women have coli-bacilluria, and that therefore it is unimportant, in all positive cases he has been able to correlate with the presence of bacteriuria symptoms which wax, wane, and diminish in proportion to its degree. Among 25 cases he found the colon bacillus in 69, the enterococcus alone in 10, and in combination with the colon bacillus in 5, in one instance he found both the *B. coli* and *B. paratyphosus*. Often, no doubt, chronic intestinal intoxication and infection are both present, and Dr Desgeorges admits that Sir Arbuthnot Lane and he are very often applying to the same condition different names, but he maintains that the conditions are different. The region of the caecum and ascending colon is regarded as a special site of entrance of the bacteria which reach the circulatory system, the kidneys, and the body generally, not so much by way of the portal vein, as has often been assumed, as by the lymphatics and the thoracic duct. The passage of bacteria to the liver, which is responsible for inflammation of the biliary tract, hypercholesterolaemia and gall stones, is considered to occur through the hepatic artery. Chronic intestinal auto-infection Dr Desgeorges believes to be three or four times commoner in females than in men, on account of constipation, visceroptosis, the sedentary life, and pregnancy. It is hereditary and familial, but rarely congenital. Besides stasis in the caecum and ascending colon, chronic appendicitis, colitis, bites of ova and inflammation impairing the resistance of the colic mucosa,

<sup>1</sup> The Examination of Carbon Arc Lamps By J. Ewart Moss A.I.C., and Arthur W. Knapp, F.I.C. *British Journal of Actinotherapy*, May, 1927.

<sup>2</sup> Desgeorges, P., *Revue de méd.*, Paris, 1927, xlii, 167-183.



are etiologically important. The kidney and the liver which excrete the bacteria are specially prone to suffer from chronic inflammation and disorders of excretion is common, and a form of umbiligo, peculiar in being worse in the recumbent position and so at night, occurs in the absence of any definite renal lesion. The general symptoms are, like those ascribed to intestinal stasis, piteous, especially "the enteroneurotic syndrome which includes the majority of so-called nervous disorders of an indefinite character." Cancer, however, is not mentioned. Treatment is not so easy as diagnosis; surgery has its place when adhesions or chronic appendicitis are responsible, dieting and treatment at a health resort are important, but vaccine therapy is usually disappointing.

#### MEDICINE AND THE FRUIT INDUSTRY

The activities of modern industrial enterprise are truly colossal, especially in America. The United Fruit Company of Boston, Massachusetts, has issued recently the fifteenth annual report of its medical department, and the general manager of the department, Dr. W. E. Deeks, states that about 5,000 copies of the report are distributed (largely by request) to individuals interested in tropical problems, to scientific institutions, and to libraries. The ramifications of the United Fruit Company are shown on a map at the beginning of the volume wherein are depicted the plantation districts in Central and South America, in Cuba and in Jamaica, together with the numerous routes of the company's steamships to the chief eastern ports of the United States and the routes taken by the Elder Fosse line to England and Rotterdam. In six tropical divisions and for two railroads the company maintains fully equipped hospitals. Nearly fifty medical officers are attached to these divisions and the services of fifteen consultants and others are retained in such a way that their names appear among the personnel of the medical department. From one seventy pages of statistics at the end of the report it appears that the medical department of the United Fruit Company undertakes responsibility for 223,000 people, that during 1926-29,000 were treated in hospital, 150,000 treatments were given in hospital dispensaries, and that 2,000 operations were performed with general anesthesia and 40,000 with local anesthetic. The bulk of the volume, however, is filled with original articles and reports by members of the medical personnel. Among these is one by Dr. Aldo Castellani, professor of tropical medicine at the Tulane University, New Orleans, on the classification of bacterial dysenteries and of dysentery bacilli. The articles are illustrated with pictures of diseased conditions of sundry parasite and with x-ray photographs, and at the beginning of the report photographs of the company's hospitals are reproduced. So varied are the duties for which the medical officers are called upon that the volume concludes with an article on general instructions for embalming. The report is a fascinating picture of the varied interest attaching to the medical side of a great commercial undertaking.

#### THE NSPCC

The annual report of the National Society for the Prevention of Cruelty to Children for 1926-27 is entitled *Progress*. The name is used not so much for the purpose of showing increase in such activities as prosecution but rather to indicate the measure of success attained in improving the status of children. Thus the number of children requiring help is falling, the gravity of offences against children is not increasing and the prosecutions show a marked decrease. The need for removal of children from their parents' care—on lack of care—is growing less and drink is no longer the principal cause of cruelty. On the other hand there has been development in the medical branch,

with its two ambulances in London for conveying children to hospitals, the number of patients seeking advice from the society is increasing and a special inspector looks after the interests of children on canal boats. The society hopes that in time Parliament will pass an Act excluding all children from the cinema. One direction in which the medical branch, under Dr. J. D. Saunders, is extending its activities is in persuading or helping parents to submit their children to operation or other treatment which has been advised by school medical officers or hospital surgeons. The inspectors frequently convey the child to and from the hospital in the society's ambulance. With the retirement from the directorate of Sir Robert Parr who succeeded the Rev. Benjamin Waugh in 1905 a second chapter in the history of the society may be said to have closed. The executive committee looks forward to increasing usefulness in the future.

#### THE LEPERS OF MAKOGAI

Dr. A. MONTAGUE, chief medical officer of Fiji, has sent us a small book on the above subject, written by Dr. F. Hall, who was medical superintendent of the leper hospital there from 1911 to 1920. Makogai and Makodraga are two islands lying some eighteen miles north east of Levuka, the old capital of Fiji. They used to be a coco-nut plantation, but when the Government of Fiji made the segregation of lepers compulsory, they were purchased and converted into a leper colony. Here are collected all the lepers of Fiji, a country scattered over an archipelago three hundred miles in extent. It promises to become the leper station of the Southern Pacific for New Zealand now sends its lepers there, as do Samoa, Niue Island, Tonga and the Cook Islands. The Gilbert and Ellice groups will probably do so in the near future. Makogai is two and a half miles long, it is a rocky cone rising nearly 800 feet above the sea, with four distinct and many smaller peaks running down to the sea in ridges. From the summit the spectator looks down on a series of sand bars fringed with palms, the sea of every shade of blue and green, marked with lines of white surf where the waves break on coral reefs and beyond, the deeper shade of the ocean studded with islands as far as the eye can reach. Near by is the rocky islet of Makodraga giving shelter and an excellent anchorage to the bay of Dehece where is the main leper hospital. Scattered over the island are the leper villages, five in number, each nationality having its own village with its native headman who is paid a small sum by the Government and is responsible for cleanliness and good order. Work is expected from and is beneficial to the lepers if they are capable of it and they are given the use of land and implements of cultivation, their surplus crops being purchased by the Government if they so desire. They have also their own store, run on a co-operative basis from which they can purchase almost everything they desire. They can, besides, earn money in connexion with the erection of new buildings and general public work at Dehece a bank has been established and is largely used for the deposit of saving. Sports and amusements are encouraged and there is abundant opportunity for fishing, beating model yacht racing, dancing, and so forth. Each denomination has its own church, well built and attractively furnished and a large building for a school has recently been completed. With regard to the prospects of cure, Dr. Hall states that if patients would only come early enough—at the first sign of an anaesthetic spot or macule or nodule—they could be cured. The hospital statistics are indeed very encouraging: of the 934 patients admitted since its opening in 1911, 444 have been discharged (100 on parole are cured, 19 unconditionally as cured, 325 repatriated), it is a very noteworthy fact that of the patients so discharged, only 6 have been readmitted owing

to renewed activity of the disease. The hospital consists of a number of detached buildings pleasantly situated in a palm grove, with a staff comprising a medical superintendent, a lay superintendent, twelve European sisters, a housekeeper, and a lunch driver. There is a well equipped laboratory, with every facility for bacteriological, microscopical, and photographic research. From Dr Hall's description and the photographs of the country which illustrate it, it is evident that they are in no way behind us in Fiji, and have some attractions of which we cannot boast.

#### THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

As the Rockefeller Foundation has so many activities, it is useful for the sake of reference and information to have the recently issued account of the organization of the Rockefeller Institute for Medical Research,<sup>1</sup> founded in 1901, and its three departments—the general laboratories, the adjacent hospital, and that of animal pathology. The Department of the General Laboratories, of which, as well as of the Institute as a whole, Dr Simon Flexner is director, has five divisions: that of Pathology and Bacteriology, with a number of subdivisions conducted by workers with such well known names as Drs. Noguchi, Peyton Rous, Orlitzky, Silver, and Gates; the Division of Chemistry, under the guidance of Dr P. A. T. Levene; that of Experimental Surgery, under Dr Alexis Carrel; that of General Physiology, conducted by Dr W. J. V. Osterhout; and that of Biophysics, by Dr J. B. Murphy. The Rockefeller Hospital, which has been under the direction of Dr Rufus Cole since it was opened in 1910, investigates certain forms of disease, and the patients admitted are all suffering from the conditions under consideration at the time, the problems now being studied are acute respiratory disease, acute rheumatism, cardiac disease, nephritis and blood chemistry, respiration, and chicken-pox. The Department of Animal Pathology, opened in 1917 and presided over by Dr Theobald Smith, is on the shore of Carnegie Lake, opposite Princeton, New Jersey, and stands in a tract of 525 acres, the property of the Institute. All members of the scientific staff are paid, are required to be whole-time, to have preliminary training such as would be represented by an M.D. or a Ph.D. degree, and to possess a knowledge of research. The Institute does not confine its investigations to problems having an immediate application to human pathology, but considers that it can best serve medical science by devoting a great deal of attention to fundamental biological, physical, and chemical problems. Further, though the greater part of the research work is carried out in the laboratories of New York and Princeton, expeditions for the solution of problems such as that of yellow fever in South America, led by Dr. Noguchi, are undertaken from time to time.

#### CATS AND MICE, AND BEEF

One of the major problems of stock owners in this and other countries is the control of parasitic infections, and one of the most important groups of these diseases is that family which infests the lungs. In most cases the life-history is unknown, but a recent article in the *Journal of Helminthology*<sup>2</sup> on an analogous condition in domestic cats may assist in the solution of this problem. Cats in various parts of Britain suffer from a parasitic pneumonia caused by a minute species of roundworm. This worm lives in the parenchymatous tissue of the lungs, and there lays innumerable eggs, which hatch *in situ*. The larvae which emerge are swallowed, and pass to the exterior in the droppings, there they die, unless swallowed by mice which

feed on this material. Once swallowed, they migrate to the connective tissue and, encysting, wait until the mouse is eaten by the cat, when the cycle is completed. A somewhat similar state of affairs is found in the case of the common cat tapeworm, and laboratory workers throughout the world are familiar with the elongated cyst of that form in the mouse's liver. Biological control obviously depends on preventing the cat from eating mice—for once in a way rodents and hygieno conspire together to bell the cat. But if cats are not permitted to catch mice their chief function in life, at least in many humble homes, has disappeared. If they carry out their duties they suffer from a severe and often fatal pneumonia or from tapeworms. What, then, is to be done with our cats? Sir Arthur Keith's recent masterly survey, at the Leeds meeting of the British Association, of modern conceptions of evolution recalls Charles Darwin's story of cats and clover. It had been found that red clover will seed only when the plants are cross-fertilized by visits from bumblebees. (The clover crops in New Zealand were failures until bumblebees were introduced to fertilize them.) The nests of the bees, however, are raided by field voles, which greedily feed on the larvae they find there. Accordingly, the more field voles the fewer the bees, and consequently the poorer the next crop of red clover. But now villages cats kill (but do not eat) field voles, and so it follows that the greater the number of cats the fewer the voles, the more bumblebees, the better the clover crop, the richer the pasture, and the greater the production of beef. Our dinners, then, depend to some extent on the number of cats present. This might suggest an alternative occupation for an animal which obviously is suffering from two distinct industrial diseases, and perhaps in future its most important function in a man controlled world should not be to assist in the accumulation of wealth of Lord Mayors of London Town (that could be relegated in part to the more prosaic mousetrap), but in helping to maintain the traditional quality of the roast beef of England.

#### ROYAL SOCIETY OF MEDICINE SPECIAL DISCUSSIONS

At a conference of the presidents and presidents elect of the various sections of the Royal Society of Medicine, held three months ago under the chairmanship of the President, Sir James Berry, it was decided to continue the holding of special discussions during the forthcoming session. The following subjects were agreed upon, and are now announced in the calendar of the society for 1927-28, the dates will be settled later and notified on the day card. Two discussions will be held by the society as a whole—one on diet as a factor in the causation of disease, and the other on cleansing the colon. Twelve joint discussions will be held by the sections immediately concerned, their subjects are as follows: (1) chronic appendicitis in children, (2) treatment of pyuria in children, (3) the influence of naso-oral sepsis on the lungs and gastrointestinal tract, (4) nomoses in the tropics, (5) cutaneous mycoses in the tropics, (6) ocular complications of encephalitis lethargica, (7) surgery of the heart and pericardium, (8) new methods of treatment of pernicious anaemia, (9) treatment of varicose ulcers by intravenous injection, (10) effects of middle-ear disease on efficiency in civil and military life, (11) the pulpless tooth, (12) radiological pitfalls.

The fifth David Lloyd Roberts Lecture has been arranged by the Medical Society of London for Wednesday, November 16th, at 5 o'clock. It will be delivered by the Right Hon. Lord Hewart, Lord Chief Justice of England, who has chosen as his subject "Criminal law and insanity."

<sup>1</sup> The Rockefeller Institute for Medical Research Organization and The Rockefeller Institute for Medical Research  
pp. 24-2 plates)  
<sup>2</sup> *Journal of Helminthology*, 1927 vol. v, pp. 55-66

## Nova et Vetera.

### A SURGEON ENSLAVED

In the year 1689 John Taylor "at the sign of the ship in St Paul's Church-yard" offered for sale "A Relation of the great sufferings and strange adventures of Henry Pitman Chirurgion to the late Duke of Monmouth," etc (reprinted in Arber's *English Garner*, vol vii, 1883)

In this little book, of which there is a copy in the British Museum Pitman tells us that when on a visit to relations in Somerset he heard of Monmouth's landing and out of curiosity he and his brother and some friends rode to Taunton to see the Duke and his army, and found when they wished to return, that their road was blocked by the Government forces. Pitman accordingly yielded to the desires of his friends and acquaintances that he should attend to the sick and wounded in the rebel forces.

There does not appear any justification for his styling himself Chirurgion to the Duke nor does he tell us that he so much as had speech with him. He says that he was never in arms himself, but attended to the wounded and the sick at Sedgemoor on the fatal sixth of July, 1685, after which he fled homewards, but was taken prisoner and committed to Newgate, and afterwards, with his brother and many others was tried at Wells Assizes, when they were found guilty and sentenced to be hanged drawn, and quartered. This sentence was soon afterwards commuted to transportation to the Caribbee Islands.

Long before Botany Bay was discovered it was the evil custom of the English Government to sell its convicts into what was practically slavery in the plantations of the southern colonies of the North American continent and of the West Indies. The French also sent convicts and prostitutes to the Mississippi as early as the seventeenth century, as we may read in Prevost's *Manon Lescaut*. Not only were criminals so transported, but a large proportion of the Scottish prisoners taken at Dunbar were similarly treated and occasionally, at least persons whose presence in England was inconvenient were kidnapped and indentured as servants to the planters. Like all slaves, the hardness or comparative mildness or their lot depended largely upon the dispositions of their masters. Defoe probably had good grounds for his description slight as it is of the experiences of Moll Flanders in Virginia. He also had taken part in the rising under the Duke of Monmouth but, more fortunate than the subject of this article, escaped the tender mercies of Jeffries and of Kirke.

In those days it was not the practice of the Government to resume the care of the transported convicts either on the voyage or after arrival. The responsibility was transferred to purveyors of forced labour and to the planter in the colonies the Government being thus saved the trouble and the revenue possibly benefiting by the sums paid by the slave dealers—for so in fact they were—as purchase money. Pitman tells us that, in accordance with this practice,

my brother and I with nearly a hundred more were given to Jeremiah Neple and sold by him to George Penne a needy Papist that wanted money to pay for our transportation and therefore was very importunate with my relations to purchase mine and my brother's freedom.

It seems that Pitman's relations were people of substance for they paid Penne £60 on the condition that he should set the brothers free on their arrival in Barbados to which island they were travelling.

Penne was bound with his brothers in a bond to pay £120 if this and other conditions were not fulfilled. Unfortunately for the prisoners, the Governor and the Assembly of Barbados in an access of loyalty or pride pressed an act under which it became impossible for Penne to carry out his undertaking. By this savage law the period of service of all the Sedgemoor convicts was fixed at ten years without redemption. It was to be enforced under severe penalties. Attempts at escape were to be

punished by thirty-nine lashes on the bare back, the pillow, and branding on the forehead with FT—meaning "Fugitive Traitor."

The voyage from Weymouth to Barbados occupied five weeks. It was very sickly, and nine of the passengers died. On arrival in the colony the brothers were sold to one Robert Bishop. We are not told what kind of work they were put to, but Henry evidently practised his profession, although his master took all the fees. He would not, however, give them clothes, and their diet was "very mean"—5 lb of salt Irish beef, or salt fish a week for each man, and Indian or Guinea Corn ground on a stone and made into dumplings instead of bread. This diet which was not very suitable for the tropics, brought Pitman, so he says, "to a violent flux." His requests for an improvement and his protests against his treatment resulted in his being severely earned and put in the stocks in the full heat of the sun for twelve hours. It should be remembered that Barbados lies only about thirteen degrees north of the equator. Bishop got into money difficulties and could not complete payment for the slaves so that the brothers were returned into the merchant's hands as goods unsold. Soon after this, however, Henry's brother died and Henry determined to make an attempt to escape from the island.

It seems that he had a friend in Barbados to whom his relations in England sent money for his benefit and thus he was enabled to buy a boat and the necessary stores and to bribe assistants. The list of stores is interesting.

A hundredweight of bread a convenient quantity of cheese a cask of water some ten bottles of canary and Madeira wine and beer these being for the support of nature and then for use a compass quadrant chart half hour glass half minute glass log and line large tarpaulin, a hatchet hammer saw and nail some spare boards a lantern and candles.

Thus the party of eight, six of whom were Sedgemoor prisoners, which started in an open boat at midnight of May 9th 1687, was not badly provided. They were bound for the Dutch island of Curacao for they durst not land on an English possession for fear of recapture. The distance in a straight line is nearly seven hundred statute miles, making the voyage a daring adventure but there are many islands by the way at which the fugitives hoped to refill their water-cask and no doubt obtain food of some sort or another.

They stole out of the roadstead presumably Bridgetown, at night and despite a leaky vessel and bad weather and the impossibility of taking observations with the quadrant, going from island to island they reached the Isle of Saltatudos a week after leaving Barbados. Pitman nowhere tells us how or where he acquired any knowledge of practical navigation. He attributes his failure to get observations of the sun to the movement of the boat and the nearness of the sun to the zenith. It was then May, and the latitude of Saltatudos is given by him as 11° 11' N. Here they found a party of twenty six privateers who had somehow been left behind by their shipmate. These men tried to persuade Pitman and his companions to leave the island with them in canoes or piraguas as they were called locally, and on their refusing the privateers burnt the boat, used the nails thus obtained to fasten top-sides or weather-beards on their canoes and all but four sailed away leaving the others marooned.

The island of Saltatudos by which name it was known to the English, was so called on account of its natural salt-pans which were visited by the Spaniards and others at intervals of many months in order to obtain salt. By the Spaniards it was known as Tortuga from the number of turtles that were found on its shores and this name it still keeps. It is some twelve miles long by three broad and is situated about fifty miles from that part of the Spanish Main which is now known as Venezuela and about four hundred miles from Barbados. There are a number of places of the same name in the West Indies and Central America the best known being another island lying to the north of Haiti. Pitman called his island uninhabitable, but though it was then and still appears to be uninhabited, it proved to be quite habitable for the turtles and numerous bird and fish provided abundant food and there was a good supply of fresh water. The lack of farinaceous food

was felt, however, and the diet of turtles and their eggs brought on diarrhoea, which Pitman cured with

"an opiate tincture which I had provided on another occasion. For before we came from Barbadoes, I thought of a way to deliver ourselves out of our enemies' hands, in case we should be taken, without shedding of blood. And it was this. I dissolved a sufficient quantity of opium in a bottle of rich cordial water, which we carried with us in the boat intending to give it to those persons that should take us, which I supposed they would readily drink, and by that means would be overtaken with so profound a sleep that we should have opportunity sufficient to make our escape from them."

It was as well that this tincture was put to a less dangerous use. There were no trees on the island, but plenty of bushes, which provided fuel and some edible fruits. One plant, which he calls a "cucurbit," provided a juice which scoured their clothes in place of soap, moreover, its leaves when fermented furnished a sweet juice "like the syrup of baked pears," from which they prepared "a most pleasant and spirituous liquor to drink. The innermost part of the body or stump we cut into slices, and ate it like bread." This admirable plant, which Auber suggests might have been an agave, reminds us of the natural products which the Swiss Family Robinson found ready to supply every want. A substitute for tobacco was found in a certain herb which he called wild sage, and crab's claws served for tobacco pipes. He does not complain of the heat, although the months of May, June, July, and August, during which he remained on the island, must have been hot enough in the absence of any effective shade. At the end of this time a privateer ship appeared and took on board the four men the canoe party had left behind and then inquired "Which was the Doctor?" When Pitman was pointed out they invited him to sail with them but refused to take his fellow-refugees from Barbados.

"When we came to the man of war, I was very honourably landed up the side, the trumpets in the meantime sounding, and very kindly received and welcomed aboard by the Captain and Doctor, who invited me aft into the Great Cabin where I was not only feasted with wine and choice provisions but had given me by the Doctor a pair of silk stockings, a pair of shoes and a great deal of linen cloth to make me shirts, etc."

If the buccaneers were so villainous as some have thought, their name is nevertheless, like that of Byron's Corsair, "linked with one virtue"—a due appreciation of the medical profession, as was noticed in an article on "Buccaneer Surgeons" in the *JOURNAL* of August 26th, 1922 (p. 397). The privateers took him to Providence in the Bahamas where they burnt their ship and shired their boats, and after some stay Pitman sailed to New York, and thence, in a vessel bound for Amsterdam, he reached the Isle of Wight, and so returned home to find that his friends had procured his pardon. He seems to have set up as a vendor of nostrums, for at the end of the original work there is a page of advertisement of the "Quintessence or Powers of Scurvy grass, both plain and purging," price one shilling a bottle, of "Magisterium Anodinum" to cure pain, price one shilling a box, of "Spiritus Catholicus," a kind of purgative, and Pillule Cathartice. "These medicines are all prepared and sold by Henry Pitman at the sign of the ship in St. Paul's Church Yard."

There we leave him. His name does not appear in the books of the Barber or of the Apothecaries Company, and it seems probable that he was unqualified, for he nowhere claims to be a physician. He seems to have been a real person, for in the *Calendar of Treasury Books*, vol. viii, pt. I, we find, under date 1685, the following entry: "Co. Somerset Wells. Prisoners delivered for transportation to Jerom Nipho. Hen Pitman," and among a number of other names we find that of William Putman, which might well be a misspelling of his brother's name. The following entry in the *Calendar of State Papers, Domestic*, William and Mary 2, 1690-91, p. 410, suggests that Henry Pitman did not make a fortune out of his quack medicines, supposing it to refer to him: "1691. June 12, Whitehall. Passes for Thomas Wilson, James Dickenson, Henry Pitman and William Muckloe to go Gravesend for Barbadoes."

His former companions after many adventures, including

captivity and all treatment by the Spaniards, returned home at last, as related in an appendix to Pitman's book.

It has been suggested that Defoe had read Pitman's "Relation," and that when he wrote *Robinson Crusoe*, thirty years after this book was published, he had in view Tortuga and not Juan Fernandez. It is true that the situation of Tortuga in the Caribbean sea and near the mouth of the Orinoco corresponds well with Defoe's description of Crusoe's island, whereas Juan Fernandez lies far away in the Pacific.

But such attempts at identification are futile. Pitman was by no means the first to be marooned on an uninhabited island, and neither from Pitman nor from Sellink is Defoe likely to have got the wealth of convincing detail which he gives us with such wonderful verisimilitude. Probably he could get more out of an hour or two's conversation with a returned mariner, and remember the details more accurately than an ordinary person could after a year's companionship.

## WELFARE OF THE BLIND

### AN OFFICIAL HANDBOOK

THE ADVISORY Committee on the Welfare of the Blind, of the Ministry of Health, has just issued a *Handbook on the Welfare of the Blind in England and Wales*.<sup>1</sup> In his preface the Minister, Mr. Neville Chamberlain, writes

"The handbook gives an attractive and sympathetic account of the principles which have been found most effective in helping the blind, and of the way in which they have been carried out in practice. I believe it will not only prove valuable to those who are already engaged in the work, but that it will make a wide appeal to the public, who have always demonstrated their sympathy with those deprived of sight, and some of whom may perhaps be induced after perusing this book, to offer their services in one of the many ways in which they will be welcome."

After reading this handbook we, too, are convinced that the committee has done a most excellent piece of work. In the space of thirty-four well printed pages there is a wealth of information set out in a most attractive style. Here is everything that the sympathetic person, the social worker, the educationist, and the economist can desire to know about the blind—how best these may be helped, and how they are being helped.

### Definitions and Returns

First there is a statement of the definitions of blindness, as they affect school children and adults, and a note of some of the difficulties that attend this determination. The definition for school children "too blind to be able to read the ordinary school books used by children" has some measure of prevention attached to it, so this definition is wider than that for adults, "so blind as to be unable to perform any work for which eyesight is essential," which has a purely economic bearing. The two definitions do not coincide, and cannot, for their objects are not the same. Care is therefore needed in the choice of training of elder blind children who, though scholastically blind, may not be economically blind.

The latest return of the blind shows that there are 46,822 in England and Wales, an increase of over four thousand since the last year. The increase is due to better registration. In the past few years one of the most frequent causes of blindness was ophthalmia neonatorum, the success of preventive measures has greatly reduced its incidence, so that there will be an increase in the proportion of blindness at later ages.

### Growth of Service for the Blind

An interesting account is made of the growth of services for the blind. France has the honour of providing the first public institution in the Hospice des Quinze-Vingts in Paris, founded by St. Louis in 1260, principally for blinded soldiers. Our first institution of the sort was founded by Edward Rushton in Liverpool in 1790, he became blind on a slave ship while tending negroes with trachoma. France produced Braille and his embossed writing, England Dr. Moon and his type, which is the easier for adults to learn. England produced Mr. H. M.

<sup>1</sup> *Handbook on the Welfare of the Blind in England and Wales*. Ministry of Health, London, H.M. Stationery Office, 1927. 6d net.

Taylor, the inventor of mathematical and chemical formulae which make it possible to produce scientific tools for the blind, and another Taylor whose slate for teaching mathematics is used in all schools. The first legislation for the blind was in Queen Elizabeth's time, it enjoined care by relatives or by the overseers. In recent years there has been improved legislation, the codification of the Education Acts, and the Blind Persons Act. The effects of the measures are stated in the handbook.

The duties of the local statutory authorities, education and county are now clearly defined. All the 146 councils of counties and county boroughs in England and Wales (except one just constituted) have made schemes under the Act. A comprehensive scheme includes provision for children under school age, education and training of children and of young persons and adults, employment in workshops, as home workers, hostels for the blind, homes, attention to the unemployable blind, home teaching, and registration. The work cannot be done wholesale, it demands individual attention, for the blind vary as much as normal persons, and even more.

Commenting on these provisions the remark is made, "It is obvious in the interest of the child that it should remain at home unless the home conditions are so bad as to necessitate its removal." When the child is at home and under school age much may be done to guide parents or a blind child. Schools for the blind are now pretty complete. Training is twofold—for the children leaving school, and for those blinded in later years. Both have their own special problems. As a prerequisite it is necessary to make sure that the person is likely as a result of training to become reasonably efficient, and that there are openings for remunerative employment for him at the end of the training. Much avoidable suffering may be caused to the blind by neglect of these considerations.

Work may be done in workshops where these are near to the blind person's home or else it must be done at home. The handicap of blindness prevents most persons from earning a livelihood if they are paid only what they earn. There must be augmentation of these earnings. How best to arrange for this and preserve the highest inducement to earn has been a problem that has needed much thought. There are given in an appendix the findings and recommendations. The home worker has special needs, he has to be helped to find his market, and there are here valuable opportunities for good Samaritans in helping him by sales of work garden parties, and the like. Some agencies have promoted motor shops for the sale of these goods. In any case his work must be real work and no pastime. Some blind men have worked their way, by reason of their exceptional gifts in church, law, politics, and elsewhere. The name of Milton need scarcely be cited to show how one overcame his affliction, and lived so "that I may see and tell things invisible to mortal sight." Few works of greater promise for the blind can be undertaken than constant experiment with a view to finding new occupations for them and scientific study of the work for which they are specially fitted.

#### *The Unemployable Blind*

The tale of the unemployable blind is a heavy one. 67.6 per cent. are so classed in the latest return. Some 10 per cent. of the whole suffer other physical or mental defects. A few of these blind persons have means of their own, some have husbands who support them, others have old age pensions (for which they are eligible at 50) or pensions from one of the societies. Some receive disablement benefit, or workmen's compensation. Some are children in good homes, or parents in children's homes. Others are lonely, helpless, and destitute. The measures for the relief of these persons are considered. In the last resource "it will rest upon the local authorities under the Act as an essential part of their duty to secure that reasonable provision is made for these persons."

#### *Home Teachers*

The pivot of the social work for the blind is the home teacher. There are 360 of them. Their work is to secure that all the blind who need visiting should receive visits

systematically. They teach blind writing and reading, pastime occupations, hygiene, engage in welfare work, and introduce solitary blind to social centres. "There is no more promising outlet for the efforts of volunteers interested in the welfare of the blind than to assist in this sphere of work." But the efforts must not be haphazard, so volunteers should get their work co-ordinated by one of the local voluntary agencies, of which a list is given.

The concluding chapters deal with the organization of administration, with the place of voluntary organizations, and with the prevention of blindness. Here will be found a recommendation to read the report of the committee on "The causes and prevention of blindness" issued in 1922, which we can heartily endorse.

## India.

### TUBERCULOSIS IN INDIA

THE increase of tuberculosis in India during the last fifty years was the subject of a paper read by Dr. C. Frimodt-Møller at the Fourteenth Indian Science Congress at Lahore last February, and since published in the *Indian Medical Gazette*. Dr. Frimodt-Møller attributed it primarily to the climatic conditions and especially to the prevalence in certain areas of heavy rainfall and monsoon storms. That this is not the only cause is indicated by the severity of the disease in certain cities, such as Hyderabad (Deccan), which is favoured by a good climate, and seems to have been comparatively free from tuberculosis forty years ago. The educated classes and the more prosperous communities are believed to be becoming increasingly infected in spite of their higher level of hygiene for this their greater exposure to infection in educational institutions is blamed. Moreover, the larger industrial centres intensify dissemination by drawing to the cities considerable numbers of the inhabitants of villages who, having contracted the disease, return home and become dangerous sources of infection for the non-immune rural populations. Improved travelling facilities are also incriminated in this respect, and in India, as elsewhere in the tropics, it is demonstrable that tuberculosis travels along the chief lines of communication. Dr. Frimodt-Møller advocates therefore, the establishment of at least one large sanatorium in each province where the climatic conditions are suitable. These institutions, he adds, might well become centres of scientific research, with a view to determining the best ways of applying the various forms of treatment to the special requirements of Indian patients; they would also function as educational centres for medical graduates and students. Special tuberculosis hospitals of cheap and light construction should, he thinks, be erected outside the chief towns, and larger hospitals with research facilities should be constructed in the provincial capitals. He advises postponing the establishment of dispensaries until more adequate residential accommodation is available and suggests that the dispensaries already in existence should function mainly as clearing stations for diagnosis, with special duties in regard to the detection of the sources of infection and the devising of co-ordinated preventive measures. He recommends further that a tuberculosis bureau should be organized with a view to teaching the public the dangers of infection and the use of prophylactic procedures.

### TREATMENT OF LEPROSY

Dr. Milton C. Lang, medical superintendent of the Chundkuri Asylum, Central Provinces, India, in his annual report for 1926 summarizes the results of the quarterly examinations of the inpatients at this asylum, and states that there was an average of 183 patients under treatment for a whole year, receiving two injections weekly of either pure hydriocarpus oil with creosote and olive oil, or the diluted esters of hydriocarpus oil. Of these patients an average of 85 showed improvement, 69 remained stationary, and 29 became worse. Dr. Lang considers, therefore, that treatment is very much worth while, even in the present circumstances. In the large majority of the so-called stationary cases the disease has almost



run its course, but, by treatment, the patients can be made bacteriologically negative. During the last year about one hundred patients have been removed from the treatment list, as they have passed into the class of "burnt out" cases, they have the scars of leprosy such as the loss of fingers and toes, but they are no longer infectious, and resemble the man who shows the pox marks of small-pox but who no longer has the disease. During the current year much better results are expected. The luteal lepers will first be treated for syphilis and their progress checked by means of the Kahn test. Dr Lang remarks that Muir and others have shown repeatedly the absolute necessity of removing predisposing causes, such as hookworm, malaria, syphilis, and other debilitating diseases, and reports an illustrative case. A woman who was progressing particularly well received three weeks' leave of absence. When she left the institution she would hardly have been recognized as a leper. While away she had a severe attack of malaria, which was untreated, and subsequently thickening on her liver developed, with new nodule formation. Had the malaria been radically treated at once this would not have occurred. Dr Lang states that each year all patients receive the carbon tetrachloride mass treatment for hookworm. Extensive stool examinations during the past year showed the incidence of this infection to be practically nil. He adds that hookworm is not very common in the district, but the mass treatment helps to remove any that exists. The eradication of malaria and its sequelae is more difficult, but by persistent efforts considerable improvement is expected. It is now realized that not only must the leprosy be treated, but predisposing causes and debilitating diseases must be removed, when the leprosy will progress more rapidly toward arrest, if these diseases are not dealt with extensive and long-continued treatment is valueless and tends to discredit a method which has been proved successful. During the last quarter ten patients were classified as cured of the disease—that is, so far as the physical and bacteriological examinations were concerned, they were free of leprosy. These are not called cured, but arrested cases, though there is good reason to believe that if their living conditions are suitable and they take proper care of themselves they will remain free of the disease for the rest of their lives.

#### MEDICAL PROGRESS IN BIHAR AND ORISSA

There has been a steady increase in the number of hospitals and dispensaries in Bihar and Orissa during the three years 1923, 1924, and 1925. At the beginning of this period 485 institutions were at work, and during the triennium 165 new ones were opened and 52 were closed. Most of these new buildings were dispensaries in rural areas established by local authorities. An attempt is being made to provide one dispensary for each police station. In his report for the three years Colonel H. Ainsworth, I.M.S., Inspector-General of Civil Hospitals in Bihar and Orissa, states that travelling dispensaries have not been successful in this province and their number in the period under review was reduced from sixteen to three, two of which were at work in the Angul district and one in Saran. The number of patients treated annually in these dispensaries fell from over 50,000 in 1923 to 7,000 in 1925. Colonel Ainsworth suggests that in place of these dispensaries, which are very difficult to staff, greater inducements should be offered to medical practitioners to settle in the larger towns and villages where dispensaries do not exist. In some places the local authorities subsidize doctors for a term of years until they are able to establish themselves in practice. During the period under review over 10,000 patients were treated at the Patna General Hospital, over 7,000 at the Pilgrim Hospital, Gaya, and nearly 6,000 at the Cuttack General Hospital. The work in the outdoor departments of the hospitals and dispensaries increased steadily, an average of nearly 4,000,000 patients being dealt with as compared with rather less than 3,000,000 in the preceding triennium. This satisfactory development is largely due to the provision of more dispensaries in rural areas. Cholera hospitals were established at Puri and Gaya, and in the case of a severe epidemic both can be rapidly extended. A leprosy committee has come into being to supervise the

work in connexion with this disease. It has been decided to appoint a medical officer as an expert on leprosy in the provinces, and to establish special clinics wherever required to carry on propaganda, with a view to the discovery of early cases. The Radium Institute at Ranchi has increased considerably in popularity and new buildings have been erected to accommodate Indian families, Europeans, and poor patients of all classes. The quantity of radium at the Institute is 547 milligrams of the bromide and 606 of the element, this considerably exceeds the amount available elsewhere in India. A scheme to facilitate radium treatment by medical practitioners in India has been drawn up, but requires considerable financial support before it can be launched. During the triennium under review an attempt has been made to render the provinces self-supporting as regards the supply of medical officers. A medical school has been erected in Darrbhanga and the local hospital has been enlarged to provide the necessary facilities. A college was also erected at Patna to deal with the first-year medical students, these were to be transferred last year to Darrbhanga, permitting the Patna institution, which is affiliated to the University, to accommodate more advanced medical students. In the present absence of facilities at Patna for teaching in midwifery and mental diseases, arrangements have been made for students to receive clinical instruction in midwifery at Bangalore, and in mental diseases at the Indian Medical Hospital at Kanke.

#### PASTEUR INSTITUTE, SHILLONG

The tenth annual report of the King Edward VII Memorial Pasteur Institute and Medical Research Institute at Shillong, in Assam, shows that 1,417 persons completed treatment for rabies during 1926 as compared with 1,176 in 1925, of this total 72 were Europeans. In 12.3 per cent of the cases the bites were caused by jackals, the hydrophobia rate for which was calculated to be 52 per cent, as compared with 0.41 per cent in those bitten by dogs. Of fourteen patients who died from hydrophobia, seven were bitten in the face. During the year antirabic vaccine was issued to medical and veterinary officers for the prophylactic treatment of bitten animals. Research work in kala-azar was continued, and the effects of two new preparations—aminostiburea and novostiburea—were tested. Very good results have followed the intensive campaign during the last year or two against kala-azar based on experimental work in the Institute; the number of patients suffering from this disease having diminished. Early in 1927 a preliminary note on a quick and simple test for distinguishing malaria from kala-azar and other fevers was published by Lieut.-Colonel L. C. Hodgson, I.M.S., director of the Institute and two of his colleagues.

## England and Wales.

#### VITAL STATISTICS FOR 1926

THE Registrar-General's *Statistical Review of England and Wales for 1926*, Tables, Part II, can now be obtained from H.M. Stationery Office price 5s. It contains statistics of the population, marriages, births, passenger movement, parliamentary and local government elections, and vital statistics of the British dominions. The total population in thousands of Great Britain and Ireland was

	1926	1925	Increase + or Decrease - per cent
England and Wales	39,057	38,893	+ 0.46
Scotland	4,897	4,893	+ 0.08
Northern Ireland	1,255	1,257	- 0.02
Irish Free State	2,970	2,935	+ 0.59
Total	48,180	48,025	+ 0.34

In England and Wales the male population increased by 0.52 per cent and the female population by 0.40 per cent. The number of marriages solemnized in England and Wales during the year was 279,860, equal to a rate of 14.3 persons

married per 1,000 persons living. This rate is 0.9 per 1,000 below that in the previous year end, with the exception of the war year 1917, is the lowest rate recorded since 1886. The births registered during the year numbered 694,563 and were equal to a rate of 17.8 per 1,000 population. This rate was 0.5 per 1,000 below that recorded in the previous year end, with the exception of the war year 1918, is the lowest rate recorded since the establishment of civil registration. Not only has the birth rate declined but the actual number of births is the lowest recorded since 1860 when the population of England and Wales was only 19,922,000, or about one-half of the estimate for 1926. The proportion of male to 1,000 female births was 1,041. This proportion showed a great increase during the war years and reached a maximum of 1,060 in 1919, since then the decline has been almost continuous and the rate is now approximating to that which prevailed in the period immediately prior to the war.

#### TOWN DWELLERS' RESISTANCE TO TUBERCULOSIS

The relatively high resistance of town dwellers to infection by the tubercle bacillus forms an interesting subject for investigation. Dr R. M. F. Picken, medical officer of health for Cardiff—the city chosen for next year's Annual Meeting of the British Medical Association—has begun, in his report for 1926, to collect data for elucidating the problem, and he hopes to carry out investigations with Professor Lyle Cummins and Dr Gidechrist, into the effect of active immunization on infants specially exposed to infection. Dr Picken points out that, according to one theory, those who have been repeatedly exposed by town life to small doses of infection in childhood acquire a certain degree of immunity. On the other hand it has been supposed that town dwellers inherit their resistance from an immune ancestry who have been able to survive to reproductive ages in unfavourable conditions only because they possessed this power. It is hoped that by recording the birthplace and parentage of persons suffering from tuberculosis over a series of years, and by obtaining information of the fate of infants born into tuberculous households it may be possible to arrive at definite conclusions on the question of urban or rural nurture in relation to heredity and exposure to infection. Such conclusions would have an important bearing on the need for special anti-tuberculous measures. The statistics in Dr Picken's report do not take one very far, but this is only to be expected with a chronic disease such as tuberculosis, in which obervations over a series of years are alone of value. Moreover the exceedingly rapid growth of Cardiff until comparatively recent years makes it improbable that many of the present adult generation had parents who were both born in the city. With regard, however, to infants born in 1926 in tuberculous homes, though the numbers are comparatively small, it appears that the mortality among them was approximately double the infant mortality of the city.

#### LONDON COURSES IN NEUROLOGY AND PSYCHIATRY

A post-graduate course on diseases of the nervous system will be held at the National Hospital, Queen Square, London, from October 3rd to November 25th. The general course will consist of clinical lectures and demonstrations, teaching in the out-patient department and pathological lectures and demonstrations. The fee for this course will be £5 5s. A course of lectures on the anatomy and physiology of the nervous system will be arranged if there are sufficient applicants, fee, £2 2s. A course of clinical demonstrations, chiefly on methods of examination of the nervous system, will also be given, fee £2 2s. Tickets entitling to attend the Out-patients' Clinic only (£2 2s for three months) may be obtained from the secretary of the Medical School, National Hospital, Queen Square, W.C.1.

A course in advanced psychiatry will be held at the Maudsley Hospital during the same period. Times of lectures and demonstrations will be so arranged that it will be possible for medical practitioners to attend both courses. The course in psychiatry consists of three parts: clinical lectures illustrated by cases, demonstrations upon the investigation of recently admitted cases and discussion of fully investigated cases. The fee for the whole course

is £5 5s. Those wishing to take any part separately should communicate with the Director of the Medical School, Maudsley Hospital, Denmark Hill, S.E.5.

#### EXETER MEMORIAL TO MR E. J. DOMVILLE

At St David's Church, Exeter, on September 4th, the vicar dedicated three carved oak seats and a bench as a memorial to the late Mr Edward James Domville, O.B.E., M.R.C.S., who was long closely associated with that church and was mayor of the city in 1893. Mr Domville was consulting surgeon to the Royal Devon and Exeter Hospital, and for many years took an active part in the work of the British Medical Association, both locally and in central committees and the Council. He died in November, 1925, and the funeral service was held at St David's Church. The memorial seats, bearing an inscription are in the north transept below a stained glass window commemorating his only son, David who died several years ago. They have been designed by Mr W. D. Caroe, who was architect of the church.

## Scotland.

#### THIRTY YEARS' PROGRESS IN PUBLIC HEALTH WORK

SIR LESLIE MACKENZIE, at the opening of the new pavilion of the M. Kelvie Hospital, Oban, delivered an address on the public health movement in Scotland since 1899. He said that the public health movement in Scotland really began about that year. The many problems covered by the official names "maternity service" and "child welfare" were increasingly realized by the public imagination. With the new extension of the hospital which had just been opened the corporation of Oban would possess an effective modern hospital of 42 beds. The new extension would permit the local authorities to deal with cases of infectious diseases such as measles, ophthalmia neonatorum, and whooping-cough occurring in children. Thirty years ago compulsory notification was made universal in Scotland, and the list of notifiable diseases now approached thirty. In these thirty years medical men had notified 1,450,818 cases, and of these 770,000 had been removed to hospitals under the management of the local authorities for public health. These great numbers gave an idea of the problem that constantly faced public health authorities in Scotland. Notification of pulmonary tuberculosis had been carried out since 1906, and 137,705 cases had been notified in that period. The annual figures had been as high as 9,000, though recently there had been a falling off till, in 1926, the number notified was only 6,669. The total notifications for all cases of tuberculosis had been 189,159, of which 63,354 had been removed from their homes for treatment. In the early years of notification the annual figures for typhoid fever had been as high as 5,600, but in recent years they had never exceeded 800 and in some years the cases of this disease had fallen below 400. It appeared, therefore, that typhoid fever was now under effective control. As to typhus fever this disease had fallen off so much that occasionally a year passed without a single case. In 1926 only one case of small pox had been notified in Scotland, and small pox also was therefore under effective control. Finally new methods of dealing with enteric fever and diphtheria had been introduced and were already beginning to have effect in diminishing these diseases.

#### CENTRAL MIDWIVES BOARD EXAMINATIONS

At the examination of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, which concluded out of 91 candidates who appeared for examination 63 passed. Of the successful candidates 15 were trained at the Royal Maternity Hospital, Edinburgh; 27 at the Royal Maternity Hospital, Glasgow; 5 at the Royal Maternity Hospital, Dundee; 4 at the Royal Maternity Hospital, Aberdeen; 13 at the Queen Victoria Jubilee Institute, Edinburgh; 2 at the Elsie Inglis Hospital, Abberhill; 5 at Stobhill Hospital; 3 at the County Maternity Hospital, Bellshill, and the remainder at various recognized institutions.

## Correspondence.

### EPIDEMIOLOGY OF POLIOMYELITIS

SIR,—I note with regret the terms in which Dr James Collier (September 10th, p 468) has felt compelled to challenge the accuracy of a summary of his views on the epidemiology of poliomyelitis contained in a paper of mine on that subject in the JOURNAL of August 27th last (p 347).

The summary in question and the deductions drawn therefrom were formulated after a most careful study of Dr Collier's opinions, as expressed in the JOURNAL on April 23rd (p 751), and were certainly not intended to impute any wilful inaccuracy of statement to him, nor indeed do I think that the careful reader will find anything of the kind in them.

Although our respective views on these disputed points are on record in the pages of this journal for all who may be interested to assess their relative value and accuracy, yet since the subject is of more than purely academic interest and importance it is as well that the issues should be made as clear as possible, and that any confusion arising from merely verbal obscurity should be dissipated. Therefore, although there is nothing in my paper which I wish to modify, the challenge to its fairness and accuracy is so emphatic that I may be allowed to give the authority upon which the disputed passages are based.

In the first place it appears from his letter that Dr Collier and myself are no longer at one in our use of the term "carrier." I take this to refer to an individual who, while he harbours a given pathogenic organism, is himself free from the disease to which this organism gives rise. By a "carrier epidemic" I understand the prevalence at a given time and place of numbers of such individuals harbouring some particular pathogenic organism, the associated disease being itself not present.

Throughout his paper Dr Collier gives indications that hitherto he also has understood these terms in the above sense, yet in his letter he appears to use them in another and a less precise sense, and one involving a material change in his views on the question of case-to-case infection. Thus, in his paper he says "though the virus can be obtained from the mucous membrane of cases for some days after the disease has appeared, and monkeys can be inoculated with the disease from this virus, that does not mean for one moment that a patient even in the early days of his illness can deliver an infective dose of the virus to another person. There is strong evidence that a case of poliomyelitis is not infectious, and that a carrier, especially a recent carrier, may be very infectious." Further, "the disease is never transmitted by the one who is suffering from it, but only by the carriers." And finally, "When an epidemic of poliomyelitis occurs in a community it is preceded by a carrier epidemic in which for a time no cases occur but many carriers are made, and with the increasing advent of carrier infection to susceptibles the virulence of the infection is raised and at last definite cases occur. Such a preceding carrier epidemic best explains the curve of incidence in an epidemic, with its rapid blaze, high peak, and rapid fall, all the cases occurring within a few days and then no more cases." It follows that when a case of poliomyelitis occurs in a semi-isolated community such as a school which has been assembled, say, for several weeks, there has already been a carrier outbreak going on for some time, and all the boys are already infected as cases or carriers or they are immune. The actual cases are not infectious, and all the damage that can be done has been done so far as the boys are concerned.

These statements, which might be added to considerably, not only afford ample confirmation of the accuracy of my summary but indicate that the writer uses the term "carrier" in the accepted sense, regards the carrier as the sole vehicle of infection, and places sufferers from poliomyelitis in a separate category. In his letter, however, Dr Collier now says that by carriers he also means sufferers from poliomyelitis in the incubation period. "Is not every case of poliomyelitis of necessity a carrier during the incubation period," he asks, "since this is a nasopharyngeal infection and readily communicable by droplet infection?"

In short, it is by virtually abolishing the distinction between carrier and sufferer—between carrier epidemic and disease epidemic—that Dr Collier impugns the accuracy of my summary of his views. What are we to understand by a carrier epidemic on this new definition? May it be nothing more after all than an outbreak of definite cases of poliomyelitis during their few days of incubation? If this be so, nothing is left of the theory of the carrier epidemic and of the non-infectivity of cases of poliomyelitis.

The other objections to my paper appear to be based upon similar qualifications of previously expressed views, and they are, in my opinion, fully met by the quotations given above. It remains only to refer to the question of the figures in the Stokes Rivers epidemic.

I cited that outbreak as evidence that in the matter of day-to-day case incidence, multiple cases in households, and the non-immunity of persons not infected at the outset, epidemics of poliomyelitis do not present the features ascribed to them by Dr Collier and do not allow of the interpretation he has put forward. The total case incidence is a matter of no importance in this connexion and the difference in our respective figures is due to the fact that Dr Collier has included nine cases described in the original report as doubtful, thus bringing his total to 45, while I have confined myself to the 36 cases in which the medical officer of health was satisfied as to the diagnosis.

It is surely clear enough that my criticism of Dr Collier's reference to the outbreak lies in his description of it as "a swift scourge which could lay low in a few days" whereas actually the total of 36 (or 45) cases occurred over a period of forty days, not more than two fresh cases developing on any one day. I still believe that this criticism is valid and material to the question at issue between us—I am, etc.,

London W 1 Sept 11th

F M R WALSHE

### TONSILLECTOMY AND CONSERVATIVE TREATMENT

SIR,—Dr Walker in his letter on tonsils and rheumatism (September 10th, p 470) is most happy in his description of the practice he adopts in the nose and throat department of the Aberdeen Dispensary—namely, that "of attempting conservative treatment whenever there seems to be some prospect of success," though in the majority of these cases he is "forced eventually to resort to tonsillectomy." This attitude and this experience are in accord with my own and those of most moderate-minded practitioners.

In the attempt to succeed with conservative treatment I have found that a penetrating local application of iodine has been very efficacious, even to the extent of "doing me out of" an expected tonsillectomy. The application consists of iodine 5 grains, rectic ether (acid-free) 2 fluid drachms, and glycerin up to 1 ounce. This has to be well shaken and brushed into the tonsils. The rectic ether adds to the pleasantness of the taste and appears to carry the iodine into the depths of the tonsillar crypts. I have verified this by painting tonsils with this solution and causing the patient to swallow several times previous to their removal. After the removal I divided them at right angles to the surface and dropped on the cut part a solution of starch. A reddish-purple tint was then, and only then, produced, extending very deeply into the crypts. The experiment was controlled by the application of starch to sections of tonsils not painted with iodine, when no such coloration was visible.

As a prophylactic gargle for the tonsils *thymol water* has a great reputation, which I think is quite justified. A culture taken by Dr Carnegie-Dickson from the tonsils after a gargle of plain warm water was found to afford a copious crop of colonies of the usual microbial inhabitants of the mouth. After a gargle with thymol water and again with simple warm water such colonies were extremely few. A condition of such effects is that the thymol water should not merely be slopped about the root of the tongue, but should be allowed to pass into the back of the throat while the head is thrown well back and the movement of swallowing performed without, if possible, allowing the fluid to slip down the gullet.

Caseous masses filling the crypts may be cleared away by means of a fine dental syringe with the point bent at a right angle (charged with hydrogen peroxide (equal parts of the ten volume solution and warm water). Such accumulations are often concealed behind the plica triangularis. The relief afforded by such syringing is often very considerable and prolonged. In the case of a gentleman who had come over from Australia with such pain and discomfort that nothing would convince him that he was not suffering from cancer, the relief following the washing out of a mass of the size of a pea was so extraordinary that he jumped up and exclaimed that his trouble had completely gone.

In giving the conservative treatment a fair chance these simple suggestions will be found useful while still leaving a sufficient number of tonsillectomies for those who wisely perform the complete enucleation in appropriate cases, seeing the gratifying results as regards local comfort and general health—I am, etc.,

London W1 Sep<sup>r</sup> 14th.

JAMES DENNIS GRANT

#### A TREATMENT FOR ASTHMA

Sir—I regret very much that your powerful JOURNAL should, in its leading article of August 27th (p. 355) have dammed with such "faint praise" the valuable results of Professor Storm van Leeuwen's investigations with regard to the causes and treatment of asthma and the other allergic diseases.

Your criticism on Storm van Leeuwen's alleged views as to kapok pillows is in reality a strong vindication of his theory of the importance of moulds in asthma. He has never said that *penicillium* is an exciting cause of asthma. He simply regards kapok as a good culture medium for the *Aspergillus fumigatus*. In the Swiss mountains, his and similar moulds are not found; consequently it is a matter of indifference whether the pillow used is kapok or feathers, provided it has not been infected before being brought to the mountain heights. The freedom of asthmatics from symptoms at the *haute altitude* is no doubt due to the absence of these moulds and other allergens.

I have had personal experience of Professor Storm van Leeuwen's treatment in an allergen-free chamber as I slept in one for over four weeks in his clinic at Leiden. I was not a pure climatic case, and did not gain entire freedom from asthmatic attacks while sleeping in it. I did the great majority of the other patients who were in the clinic at the same time as myself, but the number and severity of my attacks decreased and my general health improved markedly.

The mere fact that it is alleged that cacti alone can be grown in allergen-free chambers is no proof at all that the chambers are unhealthy for man. Who tried to grow the plants? A good doctor is not necessarily a good gardener. Owing to the rapid change of air in the chamber excessive evaporation goes on. Was this allowed for? Allergen-free chambers are meant for sleeping in, not living in throughout the day; consequently it is not of vital importance to have them as well lighted as an ordinary day room. Owing to the difficulty of making sure that they are hermetically sealed the usual practice is to have only one window in the room in which the chamber has been erected. How much sunlight was there in the allergen-free chamber in which the attempt to grow plants was made? Without details as to these and many other questions that I could suggest themselves to a practical gardener, it is impossible to form a judgement as to the correctness or the statement that cacti alone can be grown in allergen-free chambers. The clinic in Leiden is in an improvised building over-hung by trees, and I should regard it as anything but a suitable place for experiments on the growth of plants in allergen-free chambers.

The most valuable of Professor Storm van Leeuwen's statistics as to the benefit of allergen-free chambers in the treatment of asthma is based, not on the temporary freedom from attacks in asthmatics admitted to his clinic, but on the continued freedom from attacks in patients who have been sleeping in allergen-free chambers erected in their own homes. Professor Storm van Leeuwen regards

the allergen-free chamber a treatment as his most important contribution to the treatment of asthma, and from two results that I saw in the clinic at Leiden I entirely agree with him.

I feel very strongly on the subject of the treatment of asthma in England. I have recently been absent from my practice for eight months, owing to "asthma of the continuous type," which commenced at the age of 55 after my first attack of bronchitis. In spite of treatment by some of the most distinguished men in Harley Street, nasal cauterization, irrigation of my antrum, change of climate to various places abroad, including Biskra in Algeria, I became worse instead of better. It is entirely due to the results of the investigations of Professor Storm van Leeuwen during the past eight years that I have gradually improved till I am now able to undertake full duty, and hope, if I can find an English firm enterprising enough to erect an allergen-free chamber in my own house, to be absolutely free from asthmatic symptoms.

Whatever we may say to the contrary it is a fact that it is the practice in England to regard asthma as a pulmonary neurosis, hopeless from the point of view of treatment except by a change of climate. So long as we maintain this attitude, so long will we lag behind men like Storm van Leeuwen, who are earnestly and scientifically investigating causes and searching after possible methods of treatment of this incapacitating disease—I am, etc.,

Verbury Drive, Sept. 14th.

D. KENVET, M.D.

Sir,—In your leading article on "A treatment for asthma" (August 27th, p. 355) you kindly mention my name, but suggest that there are difficulties in harmonizing my work with that of Professor Storm van Leeuwen, particularly with regard to the use of feather and kapok bedding.

As you state, I believe most firmly in the value of the dermal reactions, and cannot do otherwise after seeing the scores of patients who have lost their asthma entirely by avoiding these proteins to which they are proved sensitive.

Where van Leeuwen uses the individual moulds I have obtained specimens of dust from patients' own houses and if they gave reactions to such dusts I have made suitable dilutions and desensitized the patient to the dust. Further, when Professor van Leeuwen was lecturing at the Royal Society of Medicine in 1924 I spoke and passed round culture tubes full of moulds showing that house dust consists chiefly of mould spores. The fact that Professor van Leeuwen has discovered that patients may be sensitive to individual moulds is extremely interesting and constitutes a valuable addition to the long list of proteins to which patients may be sensitive, but I do not think these moulds take the place of the other proteins. It is not yet proved, I believe, whether the spores of these moulds floating about in the air or some substance broken off from the proteins on which the moulds are growing, that constitute these air-borne allergens.

In my opinion patients may be sensitive either to feather or kapok or moulds as present in house dust, or to any one or more of these, and I hold that every case of asthma should be efficiently tested to every protein with which the patient comes in contact. I recently had the pleasure of seeing Dr. Rieckemann of New York, who entirely agrees with this preliminary investigation of every case of asthma. These reactions are extraordinarily specific. If a patient is sensitive to feathers alone he will be relieved of his asthma if put on kapok bedding. If kapok is in common use in Holland one would naturally expect many patients to become sensitive to it just as they do to bedding stuffed with straw, chaff, and hay in other places. If a patient is sensitive to house dust and moulds he will have trouble wherever the *house* moulds are to be found growing, including all forms of bedding that have been any time in use.

There are many intermediate stages and factors at work by which the proteins eventually bring about an attack of asthma, and there may well be other influences stopping the asthma at high altitudes besides an absence of dust and moulds. We may compare the amenorrhoea and other

menstrual disturbances that take place on the high table-lands of South Africa

I shall at once add these moulds to my test proteins and shall be extremely interested to watch the results, as I think Professor van Leeuwen's work will probably constitute a great advance in the treatment of asthma—I am, etc.,

FRANK COKE

London, W 1, Sept 10th

#### THERAPEUTIC ABORTION

SIR,—I am in complete agreement with many points in Mr Cook's letter in your JOURNAL of August 27th (p 368) as to the influence which starvation and dehydration have in the vomiting of pregnancy. I am also in agreement with the treatment as outlined by him, but I am glad to notice that it is "in the vast majority of cases" that this treatment is successful. The trouble is in the minority where the treatment fails.

Therapeutic abortion represents a confession of failure of that line of treatment, to sign the patient's death certificate is the complete confession of absolute failure—I am, etc.,

Edinburgh Aug 31st

H S DAVIDSON

#### FELO-DE-SE?

SIR,—I have recently attended a woman who died of peritonitis. In the belief that she was pregnant, and with the intention of producing an abortion, she had herself, ten days previous to her death, passed a foreign body into her uterus. As a matter of fact she was not pregnant, nor had she recently been so of this I am perfectly satisfied. I placed the whole facts before the coroner, who held an inquest without a jury and returned a verdict of "*felo-de-se*" I shall be obliged if you, or some reader whose forensic knowledge is more expert than mine, will inform me if this verdict was recording to law. According to my reading of the law it was not. The law is thus expressed "Every woman being with child, who, with intent to procure her own miscarriage, shall unlawfully, etc. and whosoever with intent to procure the miscarriage of any woman, whether she be or be not with child, shall unlawfully, etc." (Italics mine). The salient points in the case I quote are that the woman was not with child and that no other person was concerned in the act which caused her death—I am, etc.

Urmston Manchester Sept 3rd SIDNEY A WINSTANLEY

\*\* *Felo-de-se* as the name suggests, means one who feloniously commits self-murder, he being a felon with respect to himself. Dr Winstanley correctly quotes from Section 58 of the Offences against the Person Act of 1861, which constituted abortion a felony, and it will be seen that a distinction has been drawn between the case of a person who endeavours to procure abortion upon herself and the case of a third party who attempts to procure abortion upon another, and that in the case of the former an essential element is that the person charged should be with child. In the case of Regina v. Whitchurch, which was decided in 1890 it was held by Lord Coleridge, C.J., that a woman who was not with child could be convicted of a conspiracy with a third person to procure abortion, though if she stood alone she could not be guilty of the intended offence having regard to the wording of Section 58 before referred to. This is the nearest we can find to a direct decision upon this point, though the wording of the Statute is so clear that a definite ruling would hardly be expected as the prosecution of a woman who had either used an instrument or taken a noxious drug to procure abortion would not be likely to succeed unless she was in fact with child. From this it follows that the woman was not in fact guilty of a felonious act in making use of the means in question, as she was mistaken in her belief that she was with child. The coroner, therefore, would appear to have been technically incorrect in returning a verdict of "*felo-de-se*", she was not a felon towards herself as it could not be described as self-murder, the essential elements of murder being absent.

#### DRIED COMPLEMENT IN THE TROPICS

SIR,—In some tropical areas guinea-pigs are troublesome to breed and supplies difficult to obtain. Dried complement, if active, would be invaluable to the pathologist working in such regions. For some time past a preparation has been available and during last April a small quantity from a German source was received by Dr W. Fletcher, the director of the Institute for Medical Research, Federated Malay States, who handed it to me for testing.

The material was packed in sealed glass ampoules, each containing 0.1 gram. A solution of this quantity in nine times its weight of distilled water was claimed by the manufacturers to result in a solution equivalent to the original guinea pig's serum. The contents of three ampoules was taken up in 2.7 c.c.m. of water, but the resulting solution was, however, turbid and filtration was performed before proceeding to an evaluation test.

Estimation was carried out according to the technique of Tildes and McIntosh (Method 111, Medical Research Council Special Report Series No 14), except that the number of tubes in each row was increased to eight in order to allow of an increasing dosage to 0.5 c.c.m. of diluted complement. (The dilutions employed were 1/24 in the no antigen row and 1/85 in the antigen row.)

Incubation for fifteen minutes resulted in partial hemolysis only in the last tube. After an hour the corpuscles in the tube containing 0.5 c.c.m. of diluted complement were completely lysed, but hemolysis was still incomplete in the 0.45 c.c.m. tube. A control with local guinea pig's serum showed complete hemolysis in fifteen minutes with 0.15 c.c.m. of a similar dilution.

Sufficient complement for the usual Wassermann test (25 M.H.D.) would thus be contained in 0.5 c.c.m. of a 1/10 dilution of serum reconstituted from the dried material. Such a low concentration of fresh guinea pig's serum should not be employed for the Wassermann reaction, because the presence of a large quantity of serum during the test is likely to lead to fallacious results. If the sample tested was a representative one it is thought that dried guinea-pig's complement cannot be of value in tropical laboratories until the loss of complement, which occurs in proportion, has been considerably reduced by improvements in the drying process—I am, etc.,

A. NEAVE KINGSBURY, M.B., B.S.

Institute for Medical Research  
Federated Malay States, July 23rd

#### SINUSITIS

SIR,—In your issue for June 4th (p 1004) I read an article by Dr Leonard Mickey on sinusitis in children. A few years ago I made some special observations on sinusitis in patients attending my medical clinic, and in a series of 391 consecutive cases I found 26.5 per cent had definite evidence of sinusitis. This was rather staggering. This condition is the cause of endless amount of disease, as it is a focal infection, and allows of the entrance of organisms to the blood stream, as does any other focal infection. It has been obviously overlooked in the past as a source of disease. This is very much so in gonorrhoea associated with exophthalmos. One very important factor I would like to emphasize is the finding of multiple infections, infected tonsils, sinusitis, and proctocolitis. This is so common that one is almost forced to the conclusion that the same organisms are responsible for all. I think tonsils are infected at a very early age from the parents, dental caries follows with adenoids and nasal infection, and later proctocolitis. Disease of any organ or tissue is possible from this source, but especially lobar pneumonia and chronic bronchitis with or without asthma. I have not, since I have been looking for it, been able to find a case of bronchitis or asthma without sinusitis, and I have not failed to clear up or greatly mitigate even cases of asthma. All the drainage from these infected sinuses passes down the chain of glands in the posterior angle of the neck into the mediastinal glands at the bifurcation of the trachea. The infection gradually spreads along the bronchi, giving the characteristic lobar thickening which is so often suspected of being tuberculous. The diagnosis of sinusitis is really very simple. The mere presence of a yellow post-nasal discharge unassociated with definite cold is absolute evidence. It may be intermittent or more or less constant. Headaches are almost always present except in pure nasal cases. Sinusitis is the cause of at



least 90 per cent of headaches with which I am afflicted. In the treatment of this very widespread disability no very fortunate have almost a specific in the action of colloidal manganese. My percentage of cures has been 90 per cent in the general run of cases, but in purely neural cases only 50 per cent. Where there is marked polypoid degeneration or low grade involvement of bone I have known nothing but time to give any good results.

Sinusitis in children is far more common than is suspected. All children with chronic running noses have sinusitis. In dealing with them cure can be obtained by giving them a quarter of a grain of potassium permanganate twice a day a quarter of an hour before morning and evening meals in a pill. I discarded vaccines five years ago as very unsatisfactory—I am, etc.,

SYDNEY PERK, M.R.C.S., L.R.C.P.

Melbourne Victoria July 20th

### TREATMENT OF GONORRHOEA

SIR—I have tried the treatment of gonorrhoea with hydrogen peroxide advocated by Dr Cock (August 15th p. 267) on many occasions, but with doubtful results. If injections are preferred or for private reasons have to be used, I find the old fashioned and generally discarded zinc salts as good as any, especially the sulphocarbolate. I have tried most of the new silver preparations from protargol onwards, but have not been much impressed by them. Concerning irrigation, I think that the chief action is mechanical, and due to simple lavage. The gonococcal action of any drug used in this way must be slight for the drug is not long enough in contact with the gonococci to produce much effect. Potassium permanganate is certainly one of the best preparations to use because, in weak dilution, it is harmless to the urethra. I conclude with a word of warning against the 'spraying up process' with various practised chiefly, I believe, in America. I have had cases treated by others in this way with disastrous results. The only way to abort gonorrhoea is to catch the gonococcus early (within twelve hours of first appearance of discharge) and treat by injections of any gonococcal drug preferred—I am, etc.,

C. F. MARSHALL, M.D., F.R.C.S.

London EC3 August 27th

### POOR LAW MEDICAL SERVICE

SIR,—After perusal of this year's Educational Survey of the Journal I observe that among the public services offering a medical career, there is no mention of Poor Law as being in the field of consideration. I know that this service is much discredited by the recently qualified as offering a possible career and it appears to me that some remarks upon it should prove useful particularly in view of rapid advances in recent years and of the likelihood of further changes for the better.

In these days of professional overcrowding no avenue of medical interest and livelihood should be left unexplored. Poor Law offers as good a career as any other public service, provided one is forewarned of difficulties and dangers. London and the large provincial cities have to-day finely equipped hospitals and infirmaries under purely medical administration, offering possibilities which cannot be ignored. There are also a number of full-time non-residential or "district" appointments and a still larger number of part-time appointments forming most valuable adjuncts to general practice.

Taking the average case of the young man with one or two general hospital appointments behind him and little or no capital, Poor Law deserves his consideration with other services for the following reasons.

There are large numbers of posts as resident assistant medical officers in Poor Law hospitals and infirmaries at salaries from £200 to £450 with full keep, and sometimes extras as well. The duties are much the same as those of a house physician or house surgeon in a general hospital with the following advantages.

1. The larger salary makes it possible to save a little capital for entry into general practice, while having the opportunity

to observe a suitable opening, and at the same time serving a most valuable apprenticeship. A part-time appointment may also be available to augment practice or partnership.

2. There is ample time and material in most cases for preparation for the higher qualifications with introduction to consulting practice and paid consulting appointments.

3. An introduction to Poor Law as a permanent career. Medical superintendents of Poor Law are paid from £600 to £1,600 plus house light coal, etc. First assistant medical officers are paid from £400 to £700 plus the above allowances. There are also full-time non-resident district medical officers, drawing salaries from £600 to £1,100, frequently with car or other allowances.

There is but one type of Poor Law appointment which requires a word of warning. There are still Poor Law institutions where the bulk of the inhabitants are sick, septic or simple minded, which remain under the administrative control of a workhouse master with his wife as matron. Full-time resident medical appointments in such places are only worthy of consideration either as a very temporary stop-gap, or where it is ascertained that administrative changes are imminent, either by complete separation of the sick and infirm from the rest under medical administration, or by the erection of an entirely new hospital. No matter what the personalities of doctor and master may be, if the proportion of medical work is large—and it must be to necessitate a resident doctor—the lot of the doctor is an unenviable one. He finds himself taking a markedly second place to the master and matron (man and wife) in work which is essentially medical. This of course, is absurd. I am not attacking workhouse masters and matrons in their proper sphere, but the system which permits of their retention in institutions which have far outgrown their original status of workhouse. I have had personal experience of this in an institution containing many hundreds of sick and infirm out of a total of about a thousand. The place I have in mind is a training school for nurses, assists in the training of students, has some hundreds of operations annually, a consulting staff, a ray plant laboratory, etc. It was, and still is, under the control of a workhouse master and his wife as matron. The difficulties in such a place render the whole position *serio-comic*.

It appears to me that the best and worst of Poor Law as a possible career should receive some publicity. There is a marked and increasing tendency on the part of the newly qualified to weigh the full-time public appointment, particularly with house, etc., provided, security of tenure, and a pension in later years against the exigencies uncertainty and worry which beset the young beginner in general practice, unless he is provided with adequate capital for a secure start. The facilities which Poor Law can offer entitle it to its share of consideration with the other public services in the difficult task of reviewing possible careers. Looking at the question broadly it appears to me to be very doubtful whether any other public service can show any greater all round advantages. I am, etc.,

D. CYRIL THOMAS,

Medical Superintendent at Battle Infirmary  
Paling Park.

Stretton

\* Dr Cyril Thomas's letter enables us to repair an undersigned omission.

### ALCOHOL AND THE MOTOPIST

SIR—Muscular inco-ordination is stated to be one of the signs of drunkenness. Muscular inco-ordination may occur in a motorist who has taken no alcohol.

Recently I had occasion to drive well over 200 miles in the day. The first 30 miles were driven before lunch, the remaining 180 or more were driven straight off. I started at 4.30 p.m., and finished up between midnight and 1 a.m. The last 70 miles were driven in the dark over known roads with some rain during the last hour. I ate and washed while driving and stopped two or three times for adjustments and petrol. I had no alcohol whatever during the day—the previous night I had one glass of whisky on going to bed. I was in fit condition and had driven nearly 200 miles the previous day. I have rather high

myopia, but no night blindness. About 70 miles from home I stopped for petrol, and then noticed nothing amiss.

On arriving home and getting out of the car my legs felt wobbly, but that I put down to sitting so long. Having put the car away I had some cake and milk—no alcohol. Half an hour later, on going to bed I found my legs still somewhat erratic, so much so that I remarked to my daughter, who had accompanied me, that it was lucky I had not met the police or they would surely have thought me drunk. On lighting my candle I found that my hand was unsteady. I did not feel excessively tired. I slept well and was perfectly normal next morning.

It was the duration of the inco-ordination that struck me as unusual—upwards of half an hour. I did not attempt to sit up to see how long it would last—I am, etc.,

Woolley, Herefordshire, Aug. 29th

JOHN S. CLAPKE

### PREGNANCY AND GLYCOSURIA

SIR,—I read with interest Dr. Kean's memorandum on the subject of pregnancy and glycosuria, which appeared in the *BRITISH MEDICAL JOURNAL* of July 16th (p. 100). I fail to understand why the case referred to should not have been considered a possible case of lactosuria. The relationship between the appearance of the reducing substance in the urine and the presence of milk in the diet is significant. The subjective symptoms experienced by the patient coincident with the bouts of "glycosuria" are certainly unusual in true cases of diabetes mellitus—I am, etc.,

A. J. HARR, M.B., D.T.M.,  
West African Medical Service

Accra, Aug. 8th

### COURTESY CALLS

SIR,—Up to a few years ago it was the custom for a man settling in practice to call upon his neighbours. Since the war this custom seems almost entirely to have died out.

The advantages to both the old-established practitioner and the newcomer are so obvious that it is not necessary to take up your space by recapitulating them. It does, however, seem worth while to point out that in the publication designed for newly qualified men this ordinary piece of common courtesy and medical etiquette should be dwelt upon, and I therefore ask the hospitality of your columns—I am, etc.,

Liverpool, Aug. 27th

G. F. RAWDON SMITH

\*\* Adherence to this custom is strongly recommended in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association. The paragraph relating to it is as follows:

27. A practitioner newly settled in a town or district—deputies, assistants, and holders of—excluded—should call upon his professional colleagues to whom this courtesy should be extended are, generally speaking, those with whom the newly arrived practitioner is likely to come into contact. The first visit may well be paid to the Chairman or Honorary Secretary of the B.M.A. Division in which the practitioner has come to commence practice.

### POISONING BY OIL OF EUCALYPTUS

SIR,—In the *BRITISH MEDICAL JOURNAL*, June 4th (p. 1005), Dr. Giblin reports a case of poisoning by eucalyptus (blue gum), and adds that he finds no textbook records.

In the *Australian Medical Gazette* of June 20th, 1914, there was an article by Dr. Burton Cleland (Government microbiologist) dealing with Australian poison plants, referring to eucalyptus he cites from the *BRITISH MEDICAL JOURNAL*, February 18th, 1911 a summary by Dr. Foggie of blue gum poisoning. In it a case of my own is mentioned—the death of a boy from the oil in 1914 in Tasmania, with post mortem results—I am, etc.,

Sydney, July 22nd.

ALFRED NEALE, M.D.

### Obituary.

WILLIAM THELWALL THOMAS, M.B.E., CH.M.,  
F.R.C.S.

Consulting Surgeon, Royal Infirmary, Liverpool Emeritus.  
Professor of Regional Surgery and Clinical Lecturer in  
Surgery, University of Liverpool.

We regret to announce the death, which took place with tragic suddenness at his residence in Alleton, Liverpool, on September 10th, of Mr. W. Thelwall Thomas, the distinguished surgeon. To the knowledge of some of his colleagues, Mr. Thelwall Thomas had been in indifferent health for some months, and he recently had the misfortune to lose his wife after a painful illness. But he stuck manfully to his work, and performed an operation, with his usual brilliance and attention to detail, on the morning of the day he died. The summons came to him as he would have wished, while he was still in harness.

William Thelwall Thomas was the son of the late John and Elizabeth Thomas of Liverpool, and was born in that city in 1865. Ambitions from his youth, and endowed with great mental vigour, he early decided to enter the medical profession and, after completing his school education at the Liverpool Institute, he proceeded to Glasgow and enrolled as a medical student. In the Royal Infirmary there he came under the influence of men who were carrying on the work in antiseptic surgery initiated by Lister. Part of his training he received in the Royal Infirmary and Medical School of his native city, and in 1886 he passed the examinations for the M.R.C.S. Eng. diploma, and in the same year took the Scottish triple qualification. Thereafter he filled resident posts on both the medical and surgical sides in the Liverpool Royal Infirmary, and subsequently acted for a time as assistant lecturer in anatomy at University College, Liverpool, being Holt Scholar in 1887. In 1890 he was admitted to the Fellowship of the Royal College of Surgeons of England. This opened the way for his admission to the surgical staff of the Liverpool Royal Infirmary, where he became assistant surgeon in 1892. His conspicuous abilities as a surgeon were at once recognized by his colleagues. He was a man of ready resource, a fine surgical diagnostician, and a brilliant operator, with a gift for attention to detail.

In due course, after sixteen years, he was promoted to the full staff, and on his retirement two years ago, on reaching the age limit, he was appointed consulting surgeon. In addition to his hospital work and the demands of a very extensive surgical practice, which took him all over the north-west of England and far into the heart of Wales, he found time to fill the posts of professor of regional surgery and lecturer in surgery at the University of Liverpool. A man of general nature, who knew what it was to fight against unpropitious circumstances, he had a fine sympathy for his students and an excellent understanding of their difficulties. By them and by his house-surgeons he was much beloved. He had excellent didactic gifts, and could drive home the salient points in a difficult case with precision and certainty, so that students who followed his ward clinics had little difficulty in picking up an excellent knowledge of surgical practice, while those who worked with him in the theatre had a constant demonstration, not only of fine technical skill, but of conscientiousness of an unusually high order. In his university lectures he made great use of the pictorial method of imparting instruction, believing that mental impressions conveyed through the eyes were not only more valuable in surgery, but were also more readily grasped than impressions received through the ears. He presented an epidiascope to the University, and made constant use of it in his lectures.

Tradition says that Thelwall Thomas was the first surgeon to introduce a sterilizer into the Liverpool Royal Infirmary—in the shape of a five-shilling fish kettle. One of the first surgeons in Liverpool to put into full practice the antiseptic method, he soon proceeded to asepsis, and he was largely responsible for establishing a theatre technique of the highest order, which has been of incalculable benefit to those junior colleagues who have followed him. Endowed with a singularly receptive mind, he was no blind follower

of fashion. Up to date in all his methods, he refused to adopt new procedures simply because they were novel. He had a singular gift of appraising the value of a new procedure, and no operation was too daring to daunt him. But with him the safety and comfort of his patients came first. He was not prepared to subject them to new and comparatively untried surgical procedures if he was not convinced that the new method would render them and him better service than the old. He introduced several novel "gadgets"—for example, the detainer needle and black silkworm gut, and the large handled Spencer Wells forceps. He brought to a fine perfection his operation for herniorrhoids by suture over the face of the clamp. This operation has entirely displaced from hospital practice in Liverpool the old fashioned operation by clamp and enter.

And simultaneously with the Mayo in 1903, he introduced the transverse incision in the operation for umbilical hernia. In renal surgery he was responsible for the introduction of the double incision for stones occurring simultaneously in the kidney and distal end of the ureter, and, with the late Professor Benjamin Moore, he instituted an investigation into the chemical nature of renal calculi. This investigation altered completely our knowledge of this subject. All of the stones examined were proved to be of calcium oxalate. Previously they had been regarded as being composed of uric acid and urates.

Thelwall Thomas made many contributions to the literature of his subject, all of which were characterized by a simple directness and an entire absence of unnecessary detail. He was a practical man—not a word spinner. He contributed the article on surgical shock to the *Encyclopedia Medica* in 1903. His many writings are too numerous to mention in detail, but attention may be called to his report on "Fifty cases of hour-glass deformity of the colon," which was published in the *British Journal of Surgery* in 1921. To his numerous papers in the *Liverpool Medical-Chirurgical Journal*, and to his two addresses as president of the Liverpool Medical Institution on "The evolution of the voluntary hospital and its future" and on "The evolution of the surgeon and his training." He took a regular part in the discussions at the Liverpool Medical Institution and constantly exhibited interesting pathological specimens. His capacity for hard work was enormous. As an instance may be mentioned the fact that during the war he worked practically single-handed on the surgical side in the Liverpool Royal Infirmary, and the number of operations performed by him alone almost equalled the full complement under peace-time conditions.

He was with Mr. Paul, a pioneer in Liverpool in abdominal surgery and his careful technique, coupled with his executive ability, which was of the highest order, gave him the most excellent results. Honours came to him as he grew older. After the war he was made a member of the Order of the British Empire, and the affection felt for him by his colleagues and the confidence they had in his judgement were evinced by his election to the Council of the Royal College of Surgeons and the General Medical Council. On his retirement from his university and hospital posts he was pre-occupied by his colleagues and friends with his portrait in oils, reproduced on the next page.

When the British Medical Association held its Annual Meeting at Liverpool in 1912 Mr. Thelwall Thomas acted as joint local general secretary. He had been honorary secretary of the Section of Surgery in 1909 at Belfast and was president of the same Section in 1913 at Brighton.

Such, in brief, is an epitome of the professional career of a distinguished surgeon. But Thelwall Thomas was much more than a merely brilliant operator. He was a man with a thou and one fine qualities of head and heart. From his boyhood he showed grit and perseverance. Alone by his own unaided efforts he leaved out his career. He had no powerful influences to aid him, nothing but his own fine courage and his own great gifts. In his youth he led a hard struggle, but the memory of it did not embitter him, but rather made him more sympathetic to young men in like cases. Gentle by disposition and generous in heart he won and kept his friends. He was never jealous of his junior colleague. He was ever ready to lend them help from his large experience and to encourage them in every-

thing worthy they endeavoured to achieve. But he did not suffer fools gladly, though his judgements were charitable. He tested his men out. If they were true metal he took them to his heart and once admitted to that sanctuary it was not by any will of his that they left it. He rendered innumerable kindnesses to colleagues, he was generous without ostentation, and he was constantly doing little "acts of service and of love" that none but the recipients ever knew of. He was gifted with a fine sense of humour, he had the Celtic sense of the dramatic, and he could tell an excellent story.

In 1892 he married Anabel, daughter of the late Alexander Spence of Houth, Aberdeenshire. As already stated she predeceased him about two months ago. They had no children.

#### PREVIOUS PUBLICATIONS

We have received the following appreciations of Mr. Thelwall Thomas's work and character from Sir Robert Jones Bt., Sir James Barr who was President of the British Medical Association during the Annual Meeting at Liverpool in 1912, Mr. C. Thurstan Holland, lecturer in radiology in the University of Liverpool, Mr. F. T. Paul, consulting surgeon to the Liverpool Royal Infirmary, and Mr. R. I. Kelly, professor of surgery in the University of Liverpool.

#### SIR ROBERT JONES writes

The passing of Thelwall Thomas is a great loss to surgery, a painful shock to his friends and has cast a deep gloom over his native city. He was a surgeon who, from earliest days, earned the respect of his profession and the warm affection of his colleagues and his friends. He was marked out from the beginning, as possessing qualifications which made not merely for success, but pre-eminence. Not only a brilliant but an industrious student, he displayed a critical and well balanced mind, with that uncommon quality—a sense of proportion. His academic successes were constant and conspicuous. But what a wilderness of brilliant students we have known who have fallen by the way, whose early promise never fructuated—their energies blasted by the cold wind of lethargy and inaction. Thomas earned his reputation because he was an earnest student all his life. I remember him in his early days at his humble rooms in Mount Street always at work, cutting sections, elaborating notes, clearing cases—never for one moment idle. How rare it was in those days to be disturbed by a patient—the gods protected him. Would that the gods always protected men of promise from the tragedy of early success. Thomas realized what all students should realize, that undergraduate study is an aim and not only an achievement. It is the earnest carefully welded and fitted to prepare for the battle of life. As a graduate he worked conscientiously and long hours. He loved to work. Even in those days he realized his destiny and like a good labourer he ploughed his furrow straight. He knew no short cut to success. His path was not made easy for him. He had no professional influence to place him in positions of vantage. He owed his enviable reputation solely to his gifts of intellect and, what is equally important, character. In the true and highest sense he was a self-made surgeon. Every successive post he held was an inevitable appointment in each he more than justified his selection. Thelwall Thomas had another great asset—he had faith in his future. He steadfastly refused to be deflected from the career he had planned. I remember in the years of early struggle a very tempting offer was made to him to become lecturer in anatomy at one of our large medical schools. He refused the post when its acceptance would have immensely improved both his financial and academic status. No! he determined to become a great surgeon and to live and practise in his native town. When a man has attained to greatness he is apt to forget the early struggle and the bitter disappointments, and to speak instead of golden opportunities. The not abiding reputation is founded on triumph or obstacle. Thomas realized that each victory makes us stronger for the fight to come. "What credit to be dropped on Fortune's Hill the merit to climb it."

In Thomas's early days surgical posts were very few, and

a very apprenticeship had to be served before even minor official rank was obtained. Spade work was not merely a figure of speech, it was well-nigh exhausting. He had to prepare lectures for his seniors, diagrams for teaching, grind students for their examinations, and in those days it was not always that the sweet spirit of generosity is lavished by the master upon his slave. Let us hope that this old oppressive and suppressive atmosphere has been dispelled, and has passed for ever from amongst us, and that those who have attained high position and influence will remember their own early days, and in remembering make the path easier for those who follow them. Who can deny, however, that in Thomas's case the hard and strenuous path he so cheerfully traversed made his progress so irresistible and his position so unassailable? But we have not all the inflexible determination, the will to succeed, or the philosophic appreciation of the stimulus of failure.

Once given position and responsibility Thomas's rapid advance was assured. He was a great asset to hospital and to university. No more devoted teacher could be found, no more conscientious hospital surgeon. Many a time when we have been at a quiet dinner he has dropped his knife and fork with dramatic suddenness to answer an emergency hospital call. Even in his early days his technique was reproachable, and his manual dexterity a source of affectionate envy. He was a really great operator—bold but never reckless, rapid but never hurried, equally at his ease in zones of danger as in safe and simple ones. He inspired confidence and transformed an intricate operation into an artistic spectacle. When shall we ever see again a calculus which has lost its way in the meter so impressingly removed? He was one of a very few surgeons who covered with equal facility the operative field in all departments of general surgery. When we read his interesting contributions we feel they are far too few. That brain of his contained information which would have been a great gift to the surgical world. Thomas was great, not alone because he was a skilful operator, but because he had what we may call a true surgical instinct. He possessed not only the highest qualities of surgical technique, but that sound judgement so essential to the best interests of those entrusted to his care.

Only two months ago his wife, to whom he was passionately attached, died after a prolonged and painful illness. His agony was pathetic, and there can be no doubt he died of a broken heart. A man of sterling integrity and transparent honesty has crossed over, leaving only sweet memories behind.

SIR JAMES BARR writes

By the untimely death of Mr. W. Thelwall Thomas Liverpool has lost a very brilliant surgeon and a worthy citizen—a man who was held in high esteem by the medical profession and the public. His generous professional acts endeared him to a large number of the poor and needy, while he was ever ready to help his professional brethren in their difficulties.

He was the most dexterous operator which Liverpool has had since the days of Mr. Edward Bickersteth. As with Bickersteth, so with Thelwall Thomas when an operation was decided on there was no hesitation about the methods, every detail was carried out with rapid decision, a steady hand, and unerring judgement.

Thomas was alwaysaverse to prolonged anaesthesia, and the only time he was apt to become impatient was when the anaesthetic was imperfectly administered. He was not only a brilliant operator, but he was also an excellent diagnostician, and never operated for the sake of operating or of earning a fee. The number of exploratory operations performed by Thomas were few and far between. A short time ago he was requested to do such an operation in a case of jaundice. He refused, saying it was time the man had jaundice, but behind that there was advanced carcinoma of the head of the pancreas, and he could not live more than three months. All that could be done was to render the patient comfortable and treat symptoms as they arose. An operation would be wholly unjustifiable; it would not be surgery. The friends were not satisfied that everything had been done, another surgeon was called in who operated, and the patient was dead within six weeks.



W. Thelwall Thomas 1925

Thomas took a warm interest in the work of the British Medical Association, though he never had time to waste over its medico-political aspects. The great success of the Annual Meeting in Liverpool in 1912 was in no small measure due to his indefatigable energy as general secretary. Everyone connected with the meeting will readily remember how difficulties were smoothed over by his never-ending fund of good humour. I have had many opportunities of expressing my personal gratitude, and I now wish to place on record how much the Association is indebted to this versatile and genial surgeon.

He took a wide interest in the progress of medicine and in the advancement of our profession. A successful surgeon himself, he recognized that the chief struggles were in the lower walks of the profession, as he said to me, "There is always room at the top." He became a member of the Council of the Royal College of Surgeons, and on the death of Dr. Caton he was elected

to represent the Liverpool University on the General Medical Council—a better selection could not have been made.

Why or how he died I cannot wait to inquire, but I unhesitatingly say that there are many men who could, in the interests of the public, have been better spared. The death rate among medical men is much too high, they should set a good example to the public by preserving their own health and intellectual vigour.

After all it is not the length of life but its efficiency which should count and there are very few men who were more efficient in their day and generation than Thelwall Thomas. By his early death the loss to the public and the medical profession has been great and my wife and I feel that we have lost a dear personal friend.

Mr THURSTAN HOLLAND writes:

It is one of my privileges that I have been one of Thelwall Thomas's friends since the days when he first started as a pioneer of modern-day surgery in Liverpool—the first man who ever practised pure surgery in Liverpool, and declined any case which was not surgical. This, perhaps, is not generally known but it is nevertheless quite accurate. There was no surgeon in Liverpool before his days who entirely restricted his practice to surgical patients. In this respect Thomas showed one of his great characteristics—his capacity to vision the future. It is not my right to speak about him as a surgeon—that must be left to his surgical colleagues—but I can speak of him as a friend and as a member of the same hospital staff. In the early days of my connection with the Liverpool Royal Infirmary I was thrown very intimately into Thomas's work. The rare diagnosis of kidney stones was beginning and was interesting me. Whatever success I attained in this direction was very largely influenced by Thomas. He saw at once what could be accomplished by a man—far more than I did—and his encouragement and loyal support and help were ungrudgingly given. And so it was ever. Thelwall Thomas always gave his support to, and went out of his way to encourage, anyone—student or otherwise—who promised in any way to advance the science of surgery. He was a great surgeon, a great medical man, confident in himself, he inspired confidence in his patients, and his consideration for his patients was wonderful.

In his home life he was ideal, and probably a more devoted husband there never was. The last year of his life was saddened by the illness of his wife and the strain of this must have been at times almost insupportable. No doubt this strain told on him and hastened the end but one never heard a word of complaint. He went out quietly sitting in a chair and reading a book without pain and uncomplainingly—just the end he would have desired. His friends will miss him.

Mr F T PATEL writes:

The sudden death of Thelwall Thomas is a very sad shock to a large circle of friends to me a most unexpected shock. Few have known him longer than the writer of this short note for as far back as about 1878 he was 'walking the wards' of the Royal Infirmary when I was resident medical officer and surgical tutor. From the first contact with Thomas one recognized that he was a youth of exceptional intelligence, with an excellent capacity for work. Very early in his career he showed a special genius for surgery and while still quite young had his foot on the ladder up which he steadily climbed to be recognized as one of the most skilful and successful operators in the country.

Thelwall Thomas was not only skilful but kind and helpful to a degree and he gradually acquired a greater local appreciation than probably any Liverpool surgeon had previously obtained. He devoted himself wholeheartedly to his work, and did a great deal to advance the practice of surgery, especially by a very sound example. He was always up to date and a good judge of any real improvement which he would rapidly assimilate and make use of. Though he worked so hard and so regularly he took good holidays but unfortunately he had no hobbies outside his profession. If he had, and they had drawn him

sometimes from his work, we might have had the pleasure of his friendship and the value of his skilful help for many years yet but he was always absolutely devoted to his work, and nothing took him away from it but the regulation holidays which I believe he imposed on himself as a duty to health. Thomas of course held all the offices, practical and professorial, that he desired, and was esteemed, as he thoroughly deserved to be, in all. It is a sad thing for one so many years older, and never having imagined such a possibility till now, to be asked to write a line of appreciation for a man whom he has known and been in touch with as teacher, colleague, and friend for fifty years. The appreciation is best expressed in the profound sense of loss which will certainly be universally experienced by the profession and the public of Liverpool and a very wide surrounding district.

Professor R E KELLY writes:

The shock of Mr Thelwall Thomas's tragically sudden death rather overpowers a just appreciation of his life. Grief at his departure numbs all other feelings for we have lost in him a true friend as well as a great surgeon. And yet his death came as he would have wished—the sudden call faced with that courage which was the keynote of his character.

In the nineties, when he was assistant surgeon at the Royal Infirmary, it required courage to explore the cerebellum, to excise ribs to tackle exophthalmic goitres, ureteral stones and lung abscesses. Yet Thomas did all these operations comparatively early in his career. His observation was acute, his decision rapid and his work dexterous and complete. No detail was too small for his consideration. He had the capacity for seeing all round a problem, and once his mind was made up he stuck to his convictions with great tenacity. He read extensively, and perhaps for this very reason he wrote comparatively little but a glance at his papers and discussions shows how far advanced he was in surgical thought.

He was a great teacher, and had always something new and interesting to impart while his enormous experience was ever at the service of others. I worked with him constantly for over twenty years, a period of utterly happy collaboration and friendship. Thomas's integrity and ideals will always remain an inspiration to those who knew him. Such there is no better memorial than this.

**WILLIAM JOSEPH TYSON, MD, FRCP, FRCS,**  
Honorary Physician and Chairman Royal Victoria  
Hospital Folkestone

Dr WILLIAM JOSEPH TYSON, a distinguished medical practitioner in Folkestone, died on September 5th at the age of 76. He received his medical education at Guy's Hospital, where he was later house-physician and resident obstetrician, and obtained the diplomas M.P.C.S., L.R.C.P. in 1874, and in 1876 the F.R.C.S. by examination. In 1879 he graduated M.B. of the University of Durham, proceeding M.D. two years later. He obtained the diploma M.R.C.P. Lond. in 1889 and in 1901 was elected a Fellow of the Royal College of Physicians. He was an original member of the Association of Physicians of Great Britain and Ireland and regularly attended its meetings. He was a justice of the peace for Kent and chairman of the Bench for the Elham Division.

Dr Tyson commenced practice in Folkestone in 1876, where his father had long been established, though he did not join him in partnership. He devoted himself from the first to obtaining a wide knowledge of general medicine so as to fit himself for the position of consultant. He represented the South Eastern Branch on the Council of the British Medical Association from 1897 to 1903 and was again a member of the Central Council from 1912 to 1915. He was secretary of the Section of Public Medicine at the Annual Meeting in 1885, and vice-president of the Section of Medicine in 1907. He had also been a member of the Council of the Clinical Society of London. Dr Tyson devoted himself to the interests of Folkestone Hospital for fifty years where, in addition to his duties as physician, he had charge of the ophthalmic department. He held the post of chairman of the hospital for a long period, and



as recently as last August received Prince Henry on the occasion of the opening of a new wing. His literary publications included *Notes and Thoughts from Practice*, which was reviewed in our issue of July 31st, 1909 (p. 269), and several papers in medical journals on pulmonary and surgical subjects. His last contribution, dedicated to his colleagues at the Royal Victoria Hospital, was noticed in our issue of March 26th, 1927 (p. 572).

A colleague writes: Among those who have adorned the ranks of general practitioners in our time few have attained to such a position in the regard of his own profession and that of the general public as did Dr. Tyson. The fullness of his knowledge, his well-garnered experience, his breadth of view, and the simple-mindedness of his aim, commanded and returned to the end the respect and affection of his medical colleagues. He was a devoted churchman and a prominent member of the House of Laity for the Diocese of Canterbury. His election to the Fellowship of the Royal College of Physicians was richly deserved as a recognition of his efforts in upholding on all occasions the dignity of his profession and in promoting the attainment of knowledge. He never seemed to grow old, preserving as he did his sense of humour, his interest in new movements, and his love of children. He had all the characteristics of a true sportsman, and was a cricketer till he was 60. He was a fair shot, even in his seventy-sixth year, and played a sound game of golf. Alert in his movements, he was also quick in his mental action, and consequently was a good debater and a valuable chairman. His true kindness of disposition, generous thought for those in distress, and transparent sincerity will be sadly missed by all who had the good fortune of his friendship.

#### EDGAR GEORGE BARNES, OBE, M.D.,

Pontac, Jersey

We regret to announce the death of Dr. E. G. Barnes, OBE, who formerly practised for many years at Eye in Suffolk. Edgar George Barnes was born at Starbroke, Suffolk, in December, 1848, and after private study entered St. George's Hospital. After taking the diplomas of M.R.C.S. and L.S.A. he graduated M.B. Lond. (with honours in obstetric medicine) in 1870, and proceeded M.D. three years later. At St. George's he held the posts of resident obstetric officer and assistant chloroformist.

During his forty-four years of medical practice in Suffolk he became known to many members of the profession, more especially in the Eastern Counties, and was for some years a prominent member of the British Medical Association. In 1899 he succeeded the late Dr. W. A. Elliston as a representative of the East Anglian Branch upon the Central Council and remained a member of Council until 1909. He also served for short periods on more than one of the central committees. During the Annual Meeting at Ipswich in 1900 he undertook the duties of joint honorary local secretary, and he was subsequently elected president of the East Anglian Branch. In addition to this work for the profession he took an active interest in the Medical Defence Union, holding the office of President from 1911 to 1913 while the Norwich Medico-Chirurgical Society, of which he was a past president, elected him an honorary member upon his retirement from practice. He was for many years medical officer of health for the borough of Eye and the Hartismere rural district, and was elected mayor of the borough in 1908.

He left Eye at the end of 1913 and the last twelve years of his life were spent at Pontac in Jersey. During the war he acted as County Director of the Jersey Red Cross Society, being awarded the OBE in 1920. He became an active member of the Societe Jerseyaise and served on its executive committee. He took a keen interest in the Jersey General Dispensary and other local institutions.

Dr. MICHAEL BURNLEY, who was associated with Dr. Barnes as joint honorary secretary of the East Anglian Branch, writes: Edgar Barnes was one of the best workers for the Association, and to him was due the great success of the Ipswich meeting, when Dr. Elliston was President. He was a splendid organizer.

We regret to record the death of Dr. PERCY ALLAN, a leading practitioner of Croydon. He will be greatly missed by his fellow practitioners, to whom he had endeared himself by his strong personality and genial manner. Arthur Percy Allan was born at Chislehurst in 1868, and after five years' study at Birkbeck College entered Guy's Hospital Medical School. He graduated M.B., B.S. Lond. in 1894, and in 1898, after holding the posts of clinical assistant and house-physician at Guy's, he proceeded to the M.D. degree. During a large part of his successful career as a general practitioner Dr. Allan acted as surgeon to the St. John Ambulance Association, and during the war he was medical officer in charge of Wallasefield Hospital, which served as an auxiliary to the 4th London General Hospital. His war services were recognized by the award of the Medaille du Roi Albert. Dr. Allan was a man of varied tastes, and his literary ability was shown in a number of contributions to our columns and those of other medical journals. He was long a member of the Croydon Division of the British Medical Association, and was at the time of his death vice-president of the Surrey Branch. He was one of the founders and the first president of the Croydon Medical Society, and for several years acted as its honorary secretary. It was largely due to his interest and efforts that the society reached the high position it now holds. Dr. Allan leaves a widow but no children.

## Medical News.

THE new winter session will open at the Middlesex Hospital Medical School on Tuesday, October 4th. The introductory address, entitled "The paths to the stars," will be delivered at 3 p.m. at the Queen's Hall by Mr. Victor Bonney, M.D., M.S., F.R.C.S., after which the prizes gained during the past year will be distributed by the Right Hon. Lord Justice Sargent. The annual dinner will be held the same evening at 7 for 7.30 p.m. at the Savoy Hotel (Embarkment entrance), with Mr. Somerville Hastings, M.S., F.R.C.S., in the chair. Dinner tickets (price 11s. 6d., exclusive of wine) may be obtained from the secretary of the Medical School.

THE inaugural address of the winter session of the Westminster Hospital Medical School will be delivered on Monday, October 3rd, at 3 p.m., by Dr. E. W. Anstey Walker, dean of the school of medicine of the University of Oxford. The annual dinner for past and present students will be held on Saturday, October 1st, at 7 p.m., in the Royal Adelaide Gallery, at Gatti's Restaurant; the chairman will be Dr. do Souza.

THE Fellowship of Medicine announces that a two weeks' course in general medicine, surgery, and the specialties will start at the Westminster Hospital on September 19th, on the same date the Royal National Orthopaedic Hospital begins a fortnight's course occupying the whole of each day. A course in endocrinology at the National Hospital for Diseases of the Heart from October 3rd to 15th which is strictly limited to 20. A three weeks' course at the Central London Throat, Nose, and Ear Hospital will also begin on October 3rd, and include two parts, which may be taken together or separately, the clinical part occupying the whole day, and a practical operative surgery class in the mornings, and also a personal endoscopy course. A course in ante-natal work will be held at the Royal Free Hospital by Professor Louisa McIlroy on Fridays, at 5 p.m., from October 7th to 28th, the course is strictly limited to 10. On Wednesdays, at 5.15 p.m., from October 12th to November 2nd, Dr. C. B. Heald will give lectures and demonstrations in electrotherapy. Other courses will be given at the Chelsea Hospital, the Royal Eye Hospital, the London School of Hygiene and Tropical Medicine, and the Paddington Green and Victoria Hospitals for Children. A two months' course in neurology at the National Hospital, Queen Square, starts on October 3rd, consisting of attendance at the afternoon clinics at the hospitals and certain special lectures. Copies of syllabuses and of the general course programmes may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

HEALTH WEEK will be celebrated from October 2nd to 8th in various parts of the country, lectures, demonstrations, and exhibitions will be arranged, and prizes for essays on "The health road to happiness" will be awarded to school children. Further information and suggestions for programmes may be obtained from the Secretary, Health Week Committee, 90, Buckingham Palace Road, S.W.1.

THE annual dinner of past and present students of University College Hospital London, will be held at the Hotel Cecil on Friday October 14th, at 7 p.m. Sir George Black or will be in the chair.

THE "John Hampton Halo" Research Laboratory of the Royal Dental Hospital of London will be opened on October 4th, at 4 p.m. by Sir Walter Fletcher M.D., F.R.S., who will also distribute the prizes to the students.

WOMEN students are now to be admitted to the Royal Veterinary College, Camden Town, for the complete course of instruction for the diploma of the Royal College of Veterinary Surgeons.

THE Sims Woolhead course of lectures in constructive health education arranged by the Medical Council of the People's League of Health will begin on Thursday October 15th at 6 p.m. in the lecture room of the Medical Society of London. Participants may be had from the honorary organizer of the league Miss Olga Nettersole, 12, Stratford Place, W.1.

THE British Institute of Philosophical Studies has arranged the following courses of lectures for next term: Professor Alexander, "Value"; Mr John Hobson, "Economics in relation to ethics"; Professor Leonard Russell, "The approach to philosophy"; the Director of Studies "Introduction to philosophy"; Dr William Brown, "Psychology". A full syllabus can be had from the Director of Studies, 88, Kingsway, W.C.2.

Dr TOM HARRIS B.Sc. M.R.C.V.S. of the Lister Institute of Preventive Medicine, London has been appointed to the Chair of Pathology at the Royal Veterinary College. He graduated in medicine at the University of Liverpool in 1924 and proceeded M.D. last year.

Dr ADAM WILSON, V.D. J.P. of Newcastle upon Tyne has been appointed a Deputy Lieutenant for the county of Northumberland.

An abridged form of *The British Pharmacopoeia* has been translated into Chinese by Dr C. L. hao, and has been published under the auspices of the London Chamber of Commerce and the British Chamber of Commerce Shanghai. It may be obtained from the London Chamber of Commerce, 1, Oxford Court E.C.4 price 6s.

THE *Revista Sud Americana de Endocrinologia Immunologia e Chimioterapia* offers three prizes for the best works in Spanish, Italian, French, German, English or Portuguese on endocrinology, immunology, or chemotherapy. Works that can be used for commercial purposes are excluded. The value of the first prize is 1,000 pesos (£26) and of the second and third 500 pesos each. The award will be made by a committee consisting of university professors and the editor of the *Revista* *Medicina* 1745 Buenos Aires to whom the works should be sent before September 30th.

THE Orlis prize of 100,000 francs of the Institut de France has been awarded to Dr Charles Nicolle Director of the Pasteur Institute of Tunis, for his work in acute infectious diseases, especially in connexion with typhus, measles, and Mediterranean fever.

THE Bureau of the Far East at Singapore reports that during the week ending August 6th there were 12 cases of plague, all fatal; 443 cases of cholera with 261 deaths, and 100 cases of small pox with 22 deaths.

MESSRS BAILLIÈRE TINDALL AND CO. announce for early publication a new and enlarged edition of Dr Nathan's *Pulmonary Tuberculosis its Etiology and Treatment*.

THE report of the Professional Classes Aid Council (251, Brompton Road S.W.3) for 1925-27 shows a steady appreciation of its work. The Council began as a war relief fund in 1914, and in the following six years it dealt with 12,000 applications for help. Distress among the professional classes did not end with the war and the obligation remains to aid those who suffer as much as any and make no part of their suffering. The applications prove that there is permanent need of the Council's work. Its policy is to avoid doing immediate help is given where necessary, but the endowment is to set professional men and women on their feet. A great part of its work is bridge building tidying over temporary difficulties and helping people to permanent work. A correspondent wrote "The Council appears to be a sort of superman institution overlapping the more than sixty societies who are named as given. I do not understand why the professional classes with their numerous societies do not look after their own members. The reality was that these societies do all they can but their funds are often diminished under conditions that cut some applicants off from help. Some assist only their own subscribers some only aid those with definite qualifications. There is no overlapping for there is intercommunication in regard to any particular case that it appears possible may be provided for by another society. There is co-operation. Its income last year was just over £3,000 of this £5,500 was spent in the assistance of cases, mainly by way of paying fees for education.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**.

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## QUERIES AND ANSWERS.

### CONSULTING ROOM COUCHS

"COUCH" asks for information about consulting room couches not too fantastic in design.

The Medical Supply Association (167-185 Gray's Inn Road) has a couch of the kind the specimen we saw was in and was covered with brown pegamoid but it could be made in mahogany. It had an adjustable head or back rest which could be flat with the rest of the couch or raised at any angle. The cost was £10. A similar couch made by the Holborn Surgical Instrument Company (Thames Inn Holborn Circus) is of polished mahogany or walnut color with adjustable back rest and sliding tray. Its price with straight legs was £6 with cabriole legs 15s more. The same firm had a more expensive couch though not more pleasing in appearance, embolism, a three action movement. The price plain upholstered was £10 15s and button upholstered £11 10s. Messrs Mayer and Phelps (59-61, New Cavendish Street W.) have a consulting room couch with an adjustable end upholstered in pegamoid it can be made in birch stained mahogany oak or walnut from £6 10s. The price of a similar couch adjustable at both head and foot and with metal plate legs, crutches for litho omni position is £13 15s. We believe that all the firms mentioned are prepared to build a couch to any design to suit the other furniture of the room.

## LETTERS, NOTES, ETC.

### PELVILETIF

DR. J. G. M. MORONY TINDALL writes: Prof. or Monro Kerr states the obvious truth in saying, "the consideration of the foetal head the best pelvimeter and the embryo a modification of Miller's method of examination—lateral pressure on the foetal head do not move it into the pelvis then as in two fingers of the other hand and into the vagina estimating the degree of over-riding of the foetal head with the thumb of this hand. The only danger I have had is that if the finger is pushed far into the vagina—in the region of the sacral promontory—one need an abnormally long thumb to reach the top of the sacral promontory's pubis. I suggest therefore the following modification. The foetal head is pressed down as before with one hand the forefinger of the other hand is placed into the vagina against the symphysis and overlapping the thumb of this hand overlapping is a small relief for the thumb but this time the forefinger is placed below and in contact with the symphysis. Of course the other methods such as estimating the distance of the sacral promontory are tried as well. This method may be of course for all I know be well known but I have never seen it described or heard it mentioned.

## A PALATAL REFLEX

Dr. R. ANDERSON (Birmingham) records the case of a lad, aged 17, who complained of a clicking noise in his mouth occurring when he was unable to breathe through his nose owing to a cold. He could produce the same noise by pinching his nose. There was a rhythmic click, click 156 times a minute, which became slower with deep or rapid moving up and down. Anderson adds that he has never heard of

## DIPHTHERIA SIMULATING FOREIGN BODY IN THE THROAT

Dr. CHARLES J. ILLI L. AITKEN (Kilburnist, near Rotherham) writes: A woman applied to the casualty department complaining that she had swallowed a fishbone and that she was certain it had stuck in her throat. She was referred to the throat department, where it was found she was suffering from diphtheria in the larynx. This is the opposite to the case recorded in the *Epilepsy* of August 20th (p. 141).

## HERPES AND VARICELLA

Mr. J. E. RUDDLES, lately a student at the Livingstone College, Leyton, and now engaged in missionary work in Painsway, reports a case of the association of herpes with subsequent varicella. A typical unilateral herpes rash developed in an Indian, with the usual pain and symptoms, it ran the customary course and cleared up in ten days. A fortnight later the patient's child developed varicella with a typical rash and slight fever, and a week later his wife became affected. Four other mild sporadic cases occurred subsequently in people living in the next house. Mr. Ruddles adds that chicken pox is not endemic in the sparsely populated district concerned, nor is it otherwise epidemic at the present time.

Dr. F. W. BLAKE GREAVES (Annandale, New South Wales) sends notes of an instance of herpes and chicken pox occurring consecutively in mother and infant. Herpes appeared first in the mother (aged 28) on October 15th, 1926, the infant (aged 4 months) began to suffer from chicken pox on November 3rd 1926.

Dr. W. T. TAYLOR (Ballyclare, co. Antrim) notes that most of the cases recorded of the association of herpes and varicella the herpes preceded the chicken pox when there was direct contact. He has recently seen a case in which neither of these conditions existed. The patient (a woman), who has been confined to the house for ten years on account of paraplegia, was attacked by herpes zoster on July 1st. An outside helper comes in daily to help in lifting her out of bed, etc. This helper's son, aged 7 years (not a patient of Dr. Taylor's) had had chicken pox six days previously, but at no time could have been near the paraplegic. If there was any connexion between the two attacks it would appear, Dr. Taylor considers, infection must have been conveyed to the paraplegic patient from the boy by his mother.

Drs. C. EDR and A. K. JAMES (Calne, Wilts) write: While a large number of cases have been reported in the last few years showing the intimate relation between herpes and varicella, practically all have been instances of one disease being followed by the other after contact. The following case is of interest in that it exhibited simultaneous development of both diseases in one individual, bearing a close resemblance to two cases reported by the late Dr. Claude Ker (*Lancet*, 1920, ii 347). On June 28th a man, aged 39, consulted us and stated that four days previously he had pain in the right side of his chest, on the following day a "rash" developed in that situation. One day later he noticed spots on the trunk and arms. He was found to have typical herpes zoster of the fifth right dorsal nerve; the vesicles being especially marked in the region of the lateral and anterior cutaneous branches. Scattered over the trunk and arms typical vesicles of varicella were to be seen.

## ETIOLOGY OF RHEUMATIC INFECTION

Dr. IFENG N. CLOUGH (Bristol) wishes to support the suggestion of "C. M. H." (*Hong-Kong*) (*Journal* August 13th, p. 293) that the study of diseases prevalent in temperate climates might be greatly aided by noticing their incidence in tropical and sub-tropical climates. Does rickets really not occur in Hong Kong? She states that when working at the Holdsworth Memorial Hospital in Mysore City she was so struck by the extreme frequency of rickets among the out-patient children that she made observations on 200 children, selected at random, they were continued for two months or more, and the English sister in charge of out-patients undertook the clerical work. Dr. Clough had to leave India on account of health shortly after and the records were lost but she recalls that the points noted were age, religion, method of feeding, date of teething, walking, and closure of fontanelle, beading of ribs, presence of Harrison's sulcus. Roughly, one fifth of the patients were Mahomedan, nearly four fifths were Hindu, both these were of all classes. In Mysore City as in other parts of South India, parrah is rare among Brahmans and high caste Hindus. A small percentage of patients were Christian (Roman Catholic and Protestant), the Protestant section were the more prosperous but neither section was wealthy. Most children were breast fed. Of the bottle fed babies she believes she noted that every child showed marked symptoms the older children especially displaying, even signs late walking, late teething, and barrel shaped chest with well marked sulcus. Hand feeding was not a success in Mysore City. Some were fed on milk, others on patent foods. Any patent food could be obtained in the city and the sale of patent medicines was enormous. Out of 200 children 199 showed beading of the ribs. The one exception was the child of Eurasian parents, where the father was earning good wages. These observations

were made in a year when conditions were at their worst after the war, high food prices, shortage of housing and of employment. Mysore City is 2,500 ft. above sea level and the climate is subtropical. Dr. Clough never noticed the thermometer on the verandah register a higher temperature than 95° F. or lower than 60° F. The city was within a rain belt area of 30 in. to 50 in. a year. There were three months of hot weather, the rainy season was from June to October but rain might fall in any month. There was no cold season. Sanitation, on the whole, was good—certainly far ahead of most Indian cities. The notes were taken from January to March—that is during the end of the cool season and the first two months of the hot season.

## HAEMORRHAGE IN THE NEWLY BORN

Dr. R. D. ATTWOOD (Royston, Herts) writes: In view of the two cases of haemorrhage in the newly born recently recorded in the *British Medical Journal* the following is of interest. On July 29th I was called to a baby 2 days old and found that a considerable quantity of blood had been brought up, the amount was difficult to estimate, being, of course, on cloths, it was certainly over half a pint. The treatment adopted was the administration of saline by the rectum and the intramuscular injection of 1 gram doses of calcium chloride. Slight haemorrhage continued for a few days, but subsequently there was a complete recovery.

## TYPHOID FEVER IN MONTREAL

From March 1st to June 28th, 1927, there were notified in the city of Montreal 4,755 cases of typhoid fever with 453 deaths as against 37 cases with 11 deaths, 48 cases with 18 deaths and 44 cases with 21 deaths, for the period March 1st to June 30th of the years 1926, 1925, and 1924 respectively. It appears, therefore, that since the beginning of last March Montreal has suffered a severe epidemic of typhoid fever with a case incidence in proportion to population probably unknown in any other large city in the world within the present century. No evidence was obtained that either the city water supply or the city sewerage system was responsible. The disease was distributed over the greater part of the area of the city with much more concentration in proportion to population of some sections than in others. It was found soon after the beginning of the outbreak that a very large proportion of those infected had drunk milk from a certain dairy company, and that a very considerable proportion of the milk which entered and was distributed from the plant had escaped efficient pasteurization.

## SCHILLER'S DISEASES

Dr. ERIC EBSTEIN of Leipzig, who is the author of clinical studies of Goethe, Chamisso, Lotzbeine, Lessing, Newton, and others, has recently devoted attention to the pathological history of Friedrich von Schiller (*Forschungen und Fortschritte*, May 20th, 1927). The poet, as is well known, started life as an army surgeon, but the success of his romantic play, "The Robbers," made him quit medicine for literature. It is noteworthy that two years before the publication of his play Schiller had written three articles on medical subjects one of which, on the difference between inflammatory and putrid fever, contained the clinical history of his friend August von Hoven. Physically Schiller was of a delicate and asthenic constitution. At the age of 23 he had a severe attack of influenza, and in the following years during his residence in Mannheim, he suffered from malaria in which was then very prevalent in the Rhine district, where even now it is occasionally met with in the summer. This attack of malaria was severe and, in spite of quinine, he had several relapses. In 1787, at the age of 29, he first developed symptoms which may be regarded as manifestations of intestinal tuberculosis, from which he suffered until his death eighteen years later. During this period he contracted whooping cough from his children and was laid up for over six weeks. His so-called attack of cholera in 1797 must be regarded as one of the manifestations of intestinal tuberculosis while the "red" another attack in 1805 are interpreted as an indication of ileo-caecal tuberculous only known to his intimate friends and Korner from all others. Wilhelm von Humboldt states he carefully concealed them. Dr. Ebstein relates that the last word he uttered was "nephthia" by which he meant Hoffmann's drops, then much in vogue for the treatment of colicky pain.

THE "MEDICAL REGISTER." UNTRACTABLE PRACTITIONERS  
"STILL ON THE REGISTER" writes: While having every sympathy with the Registrar of the General Medical Council in the number of non-replies to his inquiries it does seem somewhat strange that such names as that of the late Professor Stirling and the still living Sir Thomas Smartt should be included. We are all fallible and many of us very casual, but I think that the *Medical Register* might be checked with the *Medical Directory* (which, after all, is really to most of us more important in a sense) and, where the address is unaltered, the benefit of the doubt of our present existence be given us.

## VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 40 and 41. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 132.

## ROUTINE EXAMINATION OF THE CEREBRO-SPINAL FLUID IN SYPHILIS

ITS VALUE IN REGARD TO MORE ACCURATE KNOWLEDGE, PROGNOSIS AND TREATMENT

BY

CLAUDE H. MILLS, M.R.C.S.

Surgeon St. Paul's Hospital for Genito-Urinary and Skin Diseases

To-day we know that dissemination of the organism takes place very rapidly after inoculation in syphilis. The first appreciation of this fact would appear to date from the realization that total excision of the early chancre does not abort the infection, as for instance, in the case of the "malignant pustule" in anthrax. More recent experimenters have proved the presence of spirochaemes in the neighbouring lymph glands in rabbits in but half an hour following the cutaneous infection, and further, others claim to have obtained the organism from the cerebro-spinal fluid in the primary stages of syphilis in man.

The pathologists have provided us with a combination of most sensitive and accurate tests which can be applied to the cerebro-spinal fluid by means of which we are enabled to detect the earliest evidence that the nervous has reached the central nervous system. Prior to this clinicians were dependent wholly upon the exhibition of signs and symptoms in a patient resulting from neural dysfunction—often unreliable—before such diagnosis could be arrived at.

Upon this early recognition of central nervous system involvement in syphilis depends so much with regard to subsequent management of the case and the prognosis from a neurological point of view. The examination of the cerebro-spinal fluid in syphilis, therefore, is imperative, and should be carried out as a routine in every up-to-date clinic.

In the earlier part of 1916 whilst in charge of the syphilis cases at Rochester Row Military Hospital it occurred to me that with so much material at hand there was a good opportunity to carry out an investigation upon the cerebro-spinal fluid in syphilis in general. It was thereupon decided in future to examine the cerebro-spinal fluid prior to treatment in every patient. This was done with the following results:

### Primary Syphilis

The number of cases of primary syphilis examined was 233. They comprised:

(a) Cases with negative blood Wassermann reaction	147
Number of these with pathological cerebro-spinal fluid	7=4.76%
(b) Cases with positive blood Wassermann reaction	135
Number of these with pathological cerebro-spinal fluid	18=13.23%
Total number of pathological cerebro-spinal fluids	25=8.83%

### Secondary Cases

The number of secondary cases examined was 768. They consisted of:

(a) Previously untreated cases	559
Number of these with pathological cerebro-spinal fluid	173=31.8%
(b) Cases previously treated showing relapse of blood Wassermann reaction within two years with no clinical sign	62
Number of these with pathological cerebro-spinal fluid	27=43.5%
(c) Previously treated cases exhibiting clinical relapses of a secondary nature	147
Number of these with pathological cerebro-spinal fluid	69=46.9%
Total number of pathological cerebro-spinal fluids	274=35.4%

If we add the primary and secondary cases together we have a total of 1,051 in which were found 299 abnormal cerebro-spinal fluids (28.35 per cent).

### Extragenital Infections

In view of the supposition that there is a high incidence of central nervous involvement following upon extragenital chancres, more especially with regard to those situated in close proximity to the brain, an analysis of the findings in these cases is given. With regard to the theory that direct invasion of the central nervous system might possibly take place by way of the perineural lymph

channel in these cases the distance to be traversed by the organism would be comparatively short.

The number of cases with extragenital infections examined was 35. The *Spirochaeta pallidum* was detected in every chancre.

Of 29 secondary cases (advanced) the cerebro-spinal fluid was affected in	3=10.3%
Of the total 35 cases the cerebro-spinal fluid was affected in	4=11.4%

Taking into consideration the advanced stage to which the infection has progressed prior to examination, as is the rule unfortunately with these cases, one certainly would be judging from this error that the percentage of changes in the cerebro-spinal fluid is below the average found with genital infections of the same duration.

### Tertiary Cases

The total number of tertiary cases examined was 463. They comprised:

(a) Cases exhibiting active gummatous lesion	330
Number of these with pathological cerebro-spinal fluid	106=32.1%
(b) Cases with positive blood Wassermann reaction in which no active gummatous process could be discovered	133
Number of these with pathological cerebro-spinal fluid	71=53.8%
Total number of pathological cerebro-spinal fluids	147=31.7%

### Congenital Syphilis

The total number of cases (adults) examined was 87, of which 23 (25.3 per cent) were found to have abnormal cerebro-spinal fluids. It must be pointed out that all these cases are from amongst men who had been passed for military service and therefore the figures only apply to such cases as had escaped or survived some of the grosser stigmas associated with the congenital type of infection. Their ages ranged from 18 to 45 years. As might be expected the large majority were cases of interstitial keratitis, of which there were 72 amongst which 14 (19.4 per cent) were found with cerebro-spinal fluid changes.

### Neurosyphilis

The neurological cases investigated numbered 166 and the effect of various types of treatment was estimated by frequent clinical and pathological examinations.

With the evidence provided by the foregoing investigation, so amply supported by the findings of others, there can be no longer any question as to the absolute necessity of routine examinations of the cerebro-spinal fluid at a stage of the infection in syphilis. That the first attendance of a patient at a clinic should be accompanied by a minimum of discomfort in order that an accurate diagnosis will be followed by a willing and regular attendance is central.

With this aim in view it might be urged that in the instance of the early case the performance of a lumbar puncture following upon scraping of the chancre, possible gland puncture, taking of the blood specimen for the Wassermann test, intravenous injection of arsenobenzol, deep subcutaneous or intramuscular injection of bismuth or mercury plus massage might be calculated to increase the incidence of treatment defaulters. Here the personification both in the surgeon and the patient, is a very important factor. In intelligent sympathy combined with gentle and careful technique in the former but seldom rare in engendering confidence and appreciation in the latter. It is wise to keep the patient in bed for the lumbar puncture and for the ensuing twelve hours under aspirin and bromide. Unfortunately there is known as yet no infallible measure of eliminating that "bingbear" the reactionary headache, we can only lessen its incidence. Happily it is of the rarest occurrence in patients with grossly pathological fluids, and these are the cases in which frequent repetitions of spinal puncture are necessary.

If a patient is to be excused a lumbar puncture it perhaps at the first attendance of the primary case this might be permitted but in such instances never should this examination be omitted at the termination of the initial course of treatment—that is to say, in the first interval following upon the first ten to twelve arsenobenzol injections and the supplementary mercury or bismuth treatment. The subsequent progress of the untreated primary case with a pathological fluid should receive special scrutiny in this respect and is one calling for somewhat more intensive early treatment than a similar case with a normal fluid at the onset. At all later stages of the infection, examination of the fluid should be insisted upon prior to drawing up the scheme of treatment.

A paper introducing a discussion in the Section of Venereal Diseases at the Annual Meeting of the British Medical Association, Edinburgh 1927.

	Blood Wassermann Reaction	Cerebro-spinal Fluid	Inferences
Type (a)	Negative	Normal	The infection is well under subjection and residual foci if any are inactive. Prognosis good.
Type (b)	Positive	Normal	Residual foci in general tissues as opposed to the parenchyma of the central nervous system but early vascular lesions are not excluded. Prognosis good.
Type (c)	Positive ++	Wassermann reaction ++ ++ ++ ++ or + - - - Cells 50 to 250 or more Globulin ++ Lancet luetic curve	Points to active meningeal involvement. Prolonged and intensive treatment to be resumed at once but commenced cautiously to avoid Herxheimer reaction nipping of cranial nerves haemorrhagic encephalitis etc. This is the type which in the absence of delay in follow-up treatment will develop neuro-recidives. Subsequent cerebro-spinal fluid examination after the meningo-vascular element is eradicated will reveal the presence of possible coexisting parenchymatous involvement though rare. With thorough treatment the prognosis is good.
Type (d)	Positive but may be occasionally negative	Wassermann reaction ++ ++ + - - - or + + + + Cells 10 to 50 Globulin ± or + Lancet paletic curve	Should be regarded as strongly suspicious of parenchymatous involvement of the central nervous system and repeated cerebro-spinal fluid examination at three monthly intervals whilst under continuous treatment is imperative combined with careful clinical neurological investigations. More especially the prognosis is bad if an initial examination of the cerebro-spinal fluid prior to treatment revealed early changes. Prognosis general paralysis of the insensate and tabes are frequent in this group.
Type (e)	Positive	Wassermann reaction ++ + - - - Cells 5 to 20 Globulin ± or absent Lancet luetic or nil	Suggests residual foci in general tissues plus meningeal vascular involvement of central nervous system—the meningeal factor slight or under subjection. Will probably show normal fluid after further treatment. In the absence of such a likely candidate for cerebral endarteritis (hemiplegia, hemianesthesia etc.)

In my opinion the most critical epoch in the career of a syphilitic is this period at the termination of the initial course of treatment, for, in the light of our present knowledge, not until now are we enabled to "grudge" with some degree of accuracy the "depth of penetration" of the invasion by its response to treatment. In fact, this first course of treatment should be regarded in the nature of a "therapeutic test," and should therefore be "standardized" to consist of the administration of not less than 4 grams of salvarsin (or the equivalent of neo-salvarsin) plus bismuth and mercury over a period not exceeding fourteen weeks.

It is now that in examination of the cerebro-spinal fluid, read in conjunction with the blood Wassermann reaction, affords such valuable information, and should be made six weeks after the cessation of the initial course of treatment, and prior to resumption. (During the first four weeks of this "test period" the patient is usually given iodides.) The accompanying table may be found useful as a rough guide as to the significance of certain types of fluids met with at this stage in regards diagnosis, prognosis, and future treatment.

*What importance should be placed upon these findings in the cerebro-spinal fluid in deciding upon the subsequent management of the case?*

#### Type (a)

Provided that sound treatment is continued for a minimum further two years, in the absence of any pathological findings it should yield 100 per cent cures. The cerebro-spinal fluid should be examined at the end of the first, second, third, and fifth years.

#### Type (b)

As above, excepting that the "two years" should date from the time that the blood Wassermann reaction was rendered negative. Several workers have noted that a normal fluid at this period is a very good omen that the central nervous system will not develop evidence of involvement subsequently.

Schmidt investigated in after-years, 155 cases in which at the initial examination the cerebro-spinal fluid was normal prior to treatment, or had been found to be negative five years after the termination of treatment. In those cases tested the cerebro-spinal fluid was found to be still negative. Wild and Marshall stated that in several thousand cases in which lumbar puncture was performed a positive fluid was found in only three cases which had previously been found negative. Moore and Kemp consider that the evidence gained by the repeated routine spinal punctures in a series of 54 patients justifies a general statement that in early syphilis, if the cerebro-spinal fluid is normal after six months' treatment, the patient will not develop clinical neurosyphilis, nor a positive fluid unless a second dissemination of the organism is permitted to

take place, as evidenced clinically by recurrent secondary syphilides or a blood Wassermann relapse. Fouldes has stated that if the cerebro-spinal fluid is once found to be normal after treatment the probability is that the central nervous system will not be affected subsequently.

#### Type (c)

Changes as gross as those to be found only six weeks after cessation of arsenobenzol therapy would indicate severe meningeal invasion such as is more likely to be experienced after a longer rest from treatment. Moore and Kemp found the average time interval between the day of the last treatment and the onset of neuro-recidives in 27 such cases to be 21 months. Kemp and Chesney reported a case in which syphilitic meningitis of the neuro-recidive type developed four months after cessation of treatment, which had been commenced in the primary sero-negative stage. Three cubic centimetres of the cerebro-spinal fluid (which was positive to all tests) was inoculated into a rabbit's testicle. Approximately sixty-eight days later the animal developed an orchitis, in which numerous *Sp. pallida* were demonstrated fourteen days afterwards.

Such relapses were seen far more frequently in the early days of arsenobenzol therapy when the dosage was what we know now to be very inadequate—in fact dangerous—in that it was usually sufficient to inhibit the natural output of antibody by effecting a temporary suppression of spirochaemes. Thus when residual "nests" of the organism awoke to renewed activity—whether situated in the meninges or elsewhere—they did so, as it were, upon virgin soil, just as in the secondary stage of the untreated case, in fact it seems possible that a second dissemination could take place. It is by means of the early recognition of meningeal involvement by routine examination of the cerebro-spinal fluid during this pre-symptomatic period that we are enabled entirely to prevent, by immediate resumption of treatment, the development of such evidences of gross inefficiency as cranial palsies, etc. In the type under discussion it is certain that the "protective mechanism" of the central nervous system has been called into action, and it is only by subsequent examination of the cerebro-spinal fluid, after the meningo-vascular element has been cleared up by treatment, that its efficacy in protecting the parenchyma is revealed.

The prognosis, assuming that the condition is recognized in the asymptomatic stage whereby prompt and intensive treatment can be cautiously resumed, is good. If irreparable damage has been caused prior to the resumption of treatment the processes can be arrested with perseverance, but permanent dysfunction will persist in proportion to the extent of neural destruction. Routine examination of the cerebro-spinal fluid should render impossible the development of any such disabilities. It is recognized by all that the case which relapses once is very prone to exhibit subsequent recurrences.



## Type (1)

The importance of the early recognition of this type cannot be overestimated as regards diagnosis, treatment and prognosis. It is in this group perhaps more than in any of the others that the findings at the initial pre-treatment examination of the cerebro-spinal fluid convey most. Should the first examination have revealed early changes which under the "test" course of treatment have progressed as indicated the presumptive evidence of parenchymatous involvement of the central nervous system is very strong.

With this evidence before us some workers go so far as to state that we are no longer justified in continuing treatment along the lines of the ordinarily accepted schemes of intravenous or deep-subcutaneous arsenobenzol therapy, whereby valuable time is allowed to elapse, during which the progress of the parenchymatous invasion is not materially checked. They urge that at once more drastic procedures should be employed. Bunker advocated the following four lines of therapy should the positive Wassermann reaction and paretic gold curve be present in the cerebro-spinal fluid after the initial course of treatment:

- 1 Intraspinal injections by Swift-His technique at short intervals
- 2 As above supplemented by intracerebral injections
- 3 Thorough trial of trypan-blue
- 4 Treatment with malaria

He feels that two weeks given over to malaria in these "pernicious" cases may be worth several months under the other schemes of treatment with which the malaria can be immediately supplemented. Kahl of the Vienna school advocates an earlier exhibition of the malarial treatment in those cases of syphilis with a distinct serological or cerebro-spinal fluid findings rather than waiting until a hitherto for the proclaimed tubercle or paretic. Any treatment which has been proved capable of sending normal the cerebro-spinal fluid in a general paretic should be given at this period to the type of case under discussion. Massive doses of silver salvarsan intravenously accompanied by sulfarsenal deep subcutaneous plus spinal drainage has been spoken well of by Harrison in this respect in an advanced paretic.

## Type (2)

Early recognition of the cases coming within this category is second in importance only to that of the preceding group because in the event of the immediate resumption of treatment which is hereby indicated the prognosis in the great majority is good. On the other hand in the absence of such resumption or where a protracted rest interval is followed by inadequate supplementary courses of treatment the clinical disaster resulting from endarteritis of the central nervous system are of an alarming nature. The "plegias" always leave in their wake a varying degree of permanent damage no matter how efficiently the case is treated after the onset of such. In the syphilitic who is willing to remain under prolonged observation during which the blood Wassermann reaction and cerebro-spinal fluid are tested at regular intervals endarteritis of the cerebral spinal or in fact any vessels should never be allowed to progress unperceived in the absence of treatment.

Possessed as we are today of modern improvements in specific therapy and the delicate tests for controlling the response of an infection to such the development of, say hemiplegia in a lues syphilitic is to be regarded as the fault of the doctor or the patient—perhaps both—but not the disease. The findings in the cerebro-spinal fluid as indicated in this group might equally well occur with an early mild meningeal involvement or one which has been partially cleared up by the initial course of treatment.

It matters nothing however whether it is the meninges or the vessels which are principally involved at this stage, what is of paramount importance is the immediate necessity for the resumption of treatment. Re-examination and comparison of the findings in the cerebro-spinal fluid after early follow-on course of treatment will provide most

valuable data in assessing the accessibility of the spirochaemes in a particular infection. Upon these findings everything will depend in deciding the subsequent management of the case.

## The Importance to be placed upon the Various Tests and their Significance

**Junge Colloidal Gold Reaction**—Although the results obtained from its employment are not recorded by me in the series of cases mentioned this test was used in all of the frankly neurological cases and subsequently to a less progress in the majority of those other cases in which a grossly pathological fluid was discovered at the first examination. The utmost care in the preparation of the colloidal gold solution and the cleansing of the glass utensils has a very important bearing upon the "readings" obtained with the test. From my clinical observations over the past ten years of the progress of a considerable number of neurosyphilitics I am firmly convinced that a strong paretic curve accompanied by a persistent positive Wassermann reaction in the cerebro-spinal fluid is to be regarded as of the gravest prognostic significance. Miller and his collaborators found, upon examining the cerebro-spinal fluid from 252 cases composed of paretics, tabetics and of cerebro-spinal syphilis that the Junge reaction was invariably positive when the Wassermann test was positive and in 4 cases was positive when the Wassermann test was negative. Wendt considers its sensitiveness one of the main advantages of the colloidal gold test in that it may indicate the necessity for further treatment when all other tests are negative. He also regards an early strongly paretic type of reaction in syphilis as an omen for a bad prognosis. Hunt believes that the gold test next to the cell count is the most important of the four main tests supplied by the cerebro-spinal fluid and in his experience has proved that most sensitive and delicate. It is both of diagnostic and prognostic value. It forecasts the future development of the disease more than any other laboratory measure. The gold curve he considers can be used as a guide and with its fit tendency to simulate the curve of paretic is the material treatment could be instituted.

**The Wassermann Reaction in the Cerebro-spinal Fluid**—It is infrequent to find a positive reaction in the cerebro-spinal fluid in the primary stages and then only with two volumes of fluid more rarely with one volume. In none of the primary case in my series did it occur with the smallest amount of fluid. In the secondary cases one more frequently meets with stronger reactions especially in the relapse cases. Amongst these the "meningo" or "neurocidive" cases in conjunction with a high cell count and excess of globulin the Wassermann test may show ++ throughout the four dilutions. It is in this type that the Wassermann reaction in the cerebro-spinal fluid is most easily influenced by treatment but may remain refractory with two volumes of fluid for a long time after the cells and globulin have disappeared. In later cerebral syphilis of the meningo-vascular type much the same conditions in the fluid commonly exist. Of all syphilitic conditions the Wassermann reaction is most certainly strongly positive in the cerebro-spinal fluid in general paresis and also the most difficult to influence by treatment. In tabes it is somewhat more responsive and especially is one liable to be too optimistic in the earlier part of treatment when the existing meningo-vascular element is being brought under subjection as evidenced by the decrease in cells and globulin and possibly the Wassermann reaction to a less degree. Eventually however a stage is reached when the Wassermann reaction remains rigidly positive with two volume and with one volume of fluid with the cells swinging between 5 and 15 per cmm. Such one feels to be representative of the true residual parenchymatous involvement. A persistent positive Wassermann reaction in the cerebro-spinal fluid after the initial course of treatment in the early, or in fact any stage of syphilis should always be regarded as an absolute indication for prolonged and intensive continuation treatment controlled by re-examinations of the cerebro-spinal fluid at regular intervals at which the

Lange test is never omitted. I regard a positive Wassermann in the cerebro-spinal fluid as an indication of the existence of spirochaemes within the central nervous system, and cannot accept Dujardin's theory that the Wassermann substance is not formed within the central nervous system, its presence in the cerebro-spinal fluid being dependent upon the permeability of the capillary walls to permit of its passage from the blood into the perivascular lymph spaces or not. We frequently meet with a positive Wassermann reaction in the cerebro-spinal fluid accompanied by a negative in the blood, a condition which can exist for many months and remain constant in spite of exhaustive spinal drainage up to 80 or 100 ccm twice weekly. Moreover, the organism has been proved to exist in the cerebro-spinal fluid, and interstitial and parenchymatous central nervous tissues.

#### Cells and Globulin

"There is never smoke without fire," and in syphilis the cells and globulin in the cerebro-spinal fluid might be regarded as fairly reliable indicators of the intensity of the inflammatory meningeal blaze, thus in syphilis a severe involvement of the meninges is responsible for a gross excess in each, as with other infections. An increase in cells of from 5 to 10 was the most frequent first change to appear in the cerebro-spinal fluid of the primary cases previously described, the excess in globulin coming next, with a positive Wassermann reaction in the comparison, and then usually accompanied by a pleocytosis. The detection, therefore, of an excess in cells or globulin in the cerebro-spinal fluid is invaluable in furnishing the first evidence of central nervous involvement in syphilis in order that treatment can be planned accordingly and its efficacy judged by subsequent examinations of the cerebro-spinal fluid. Some observers have found an invariable increase in pressure in fluids showing this early pleocytosis.

Should a cell count of, say, 8 to 15 be returned, after the initial course of treatment, as the only abnormality, I consider it to be an indication to push treatment, but would regard a solitary slight excess of globulin as of less importance, since it can persist over very long periods in cases which, by prolonged observation, have been proved subsequently to do well.

Since the methods are so simple it is better in the routine examination for globulin always to employ both the Pandy and Nonne-Apert methods, for, as Greenfield and Carmichael point out, whereas a trace of globulin might be detected by the one, a negative with the other test would prove it to be within the normal limit.

#### Some General Views Expressed by Various Investigators

O'Leary, Paul, and Nelson call attention to the fact that neurosyphilis may progress clinically in the presence of completely negative cerebro-spinal fluid findings. They found that continued treatment after the cerebro-spinal fluid has become negative is productive of 70 per cent of clinical benefit, and 45 per cent in those whose fluids returned to normal without treatment. They conclude that such investigations of the cerebro-spinal fluid plus clinical examinations should be made in all neurosyphilis whose fluids have become normal, with or without treatment.

Bunker asserts that the purely clinical differentiation between the meningo-vascular and parenchymatous forms of neurosyphilis not only often presents considerable difficulty, but is, in fact, sometimes quite impossible during life. It matters but little what label one may elect to apply—meningo-vascular or parenchymatous, mesodermal or ectodermal what, however, is of paramount importance is whether the treatment is proving efficient in a given case of neurosyphilis regardless of such label. This can only be judged by the definite and progressive influence exerted upon the positive findings in the cerebro-spinal fluid. This evidence cannot be obtained without repeated examination of the cerebro-spinal fluid as treatment progresses. A single examination of the cerebro-spinal fluid he regards as of about as much value as a single temperature reading in any acute infection. He points out how misleading and of what little value symptomatic amelioration may be in the absence of concomitant improvement in the cerebro-spinal fluid.

Fordyce pointed out that the signs and symptoms of involvement of the nervous system in the early months are sometimes absent or are so indefinite as to be easily overlooked. If lumbar puncture is limited to the cases with obstructive signs invariable during its result—a low-grade parenchymatous encephalitis, with slight or no meningeal involvement, may exist for years with indefinite symptoms impossible to classify or interpret without the aid of spinal fluid tests. The absence of the praeputic gold sol curve in the majority of cases definitely excludes paresis. Cerebral meningo-vascular syphilis and general paralysis may give identical findings in the cerebro-spinal fluid and present very similar clinical pictures. The persistence of a strongly positive Wassermann reaction in the high dilutions with a praeputic gold curve after intensive and prolonged treatment is the only practical way of differentiating these closely related clinical conditions. He and his co-worker (Rosen) had yet to detect a recurrence in an early case of neurosyphilis which had been discharged with a negative cerebro-spinal fluid after adequate treatment, or to observe a late infection of the fluid in one shown to be normal in the first two years of the disease. He considered that if the nervous system is not involved in the early period of the infection it is extremely improbable that it will be at a later date, vascular lesions and gummata being excepted. Certain types of neurosyphilis, including the purely vascular, the gumma unaccompanied by a meningitis, some unusual psychoses, and epilepsy of luetic origin, are often found with little or no change in the cerebro-spinal fluid. These exceptional conditions in no way alter the general rule that the cerebro-spinal fluid reflects the pathological process in the brain and cord.

Mott considered it probable that the cases in which the cerebro-spinal fluid remains positive after prolonged treatment are those which subsequently (average ten years after primary infection) develop tabes and general paresis. There is hardly any organic disease of the nervous system which may not be simulated by syphilitic disease, but, he added, it must be remembered that functional diseases may occur in syphilitic subjects. *Nemasthenia plus syphilophobia*, on account of the venereal disease propagandi, is frequently met with at the present time. (Another strong indication of the value of cerebro-spinal fluid examination.)

In a paper upon the diagnosis and treatment of neurosyphilis Hunt makes the following very sound observations: "The most successful diagnostician of all is he who has the clinical reports in his right hand, those from the laboratory in his left hand, and the patient in front of him." The reason for erroneous diagnosis and for unrecognized neurosyphilis is largely the fault of the physician, "it arises from his unwillingness to do a lumbar puncture." And again: "No neurological diagnosis should ever be made until syphilis has been eliminated by an examination of the cerebro-spinal fluid, and no diagnosis of neurosyphilis ought to be accepted until the cerebro-spinal fluid has been examined." In the vast majority of cases he considers that this one test will settle the question.

#### Conclusions

- 1 Routine examination of the cerebro-spinal fluid is absolutely essential in the management of syphilis.
- 2 The cerebro-spinal fluid furnishes the earliest and most accurate indications governing diagnosis, treatment, and prognosis.
- 3 In the primary stage it is an advantage, in the later stages imperative, to know the condition of the cerebro-spinal fluid prior to the commencement of treatment.
- 4 The cerebro-spinal fluid should be re-examined after a period not exceeding six weeks from the cessation of the initial course of treatment, such "standardized" course of treatment to be regarded in the nature of a "therapeutic test."
- 5 In the earlier cases this is the most critical period in the management of the infection, since it is now that the cerebro-spinal fluid might provide possibly the first and only evidence to indicate invasion of the central nervous system, and within broad limits the depth of such invasion when present.
- 6 The warning obtained from routine cerebro-spinal

fluid examination at this period should prevent entirely the subsequent development of neurological relapses, and their sequelae.

7 A positive Wassermann reaction in the cerebro-spinal fluid (especially if such existed prior to this initial course of treatment) accompanied by a parietic Jarisch curve is strong presumptive evidence of parenchymatous involvement of the central nervous system at this stage. Rigorous intensive schemes of treatment should be instituted forthwith for its eradication by which such valuable life may be saved.

8 In every early case treated at this subsequent examination of the cerebro-spinal fluid should be made, accompanied by the blood Wassermann test at the termination of the first, second third and fifth year. Continued treatment and subsequent management to be continued thereby.

9 After cases presenting a persistent positive blood Wassermann reaction no matter at what stage of the infection the patient first comes under observation should have the cerebro-spinal fluid investigated, accompanied by a careful neurological examination. The distinction between cerebral and spinal endarteritis would be indicated thereby and a timely prevention by adequate treatment.

10 A routine blood Wassermann test should be made upon every patient at all medical institutions irrespective of the nature of the complaint and when found to be positive an investigation of the cerebro spinal fluid should follow.

11 Once the cerebro-spinal fluid has been found to be pathological in a syphilitic case subsequent examination of the fluid is imperative for many years after it has been rendered normal.

12 Lueseritis are regular recurrences indicated in those cases which have once relapsed and in prodromal cases of neurosyphilis after the fluid has become normal. The old aphorism, "Once a neurosyphilitic always a neurosyphilitic," must never be regarded lightly.

13 Neurosyphilis—more especially of the cerebral type—can progress clinically in the presence of negative findings in the cerebro-spinal fluid, yet it can be much hastened by specific treatment. Much valuable time and labor is to be obtained from the stilled neural system during progress in such cases, and should always be utilized.

14 The earlier treatment is commenced in the detection of the disease the chance of preventing syphilitic involvement of the central nervous system, the earlier the termination of such, should it have occurred, the greater the possibility of preventing the invasion of the parenchyma.

15 No patient with a history of syphilis should be given mercury without an examination of the cerebro-spinal fluid.

#### DISCUSSION

Dr. R. R. RICHMOND (London) said that a balance had to be struck between positive pathological changes in the cerebro-spinal fluid and negative clinical findings. It was the initial six weeks' course of treatment where there were such pathological changes the patient should be treated for the rest of his or her life, or, at any rate, should be kept under periodic inspection. It might be a bad scheme for a patient in whom the cerebro-spinal fluid had become negative after having once been positive was safe after five years had elapsed, the arsenic must be in the negative for he might get tabes with an apparently normal cerebro-spinal fluid. It must be remembered that it was the business of the physician to treat human nature and not positive Wassermann reactions. Moreover, the remedies employed were poisonous and it was possible to overdo an antisyphilitic therapy. Severe headaches were liable to follow lumbar punctures, and one such might make a patient rebel against any further examination, hence it was important to take every precaution, one of the essentials being the use of a fine needle.

Dr. D. K. HENDERSON (Glasgow) thought that routine examination of the cerebro-spinal fluid was open to serious objection because in not a few cases the after-effects were serious. In his opinion it was essential that the patient should be kept in bed for at least twenty-four hours after

the puncture. The early diagnosis of parenchymatous syphilis was impossible, because patients with only the slightest clinical signs might present advanced pathological changes in the cerebro-spinal fluid. It often happened that the earliest cases and consequently the most promising turned out the most disappointing in treatment, while others who came under observation comparatively late did relatively well. There also occurred cases of tabes and general paralysis which showed no apparent pathological change in the cerebro-spinal fluid. He considered that no patient who had had general paralysis, even if supposed to be cured should ever be allowed to hold a position of responsibility.

Dr. J. C. GREENFIELD (London) described several tests for the cerebro spinal fluid in neurosyphilis and said that the Kahn test was very fairly comparable with the Wassermann test, but it was sometimes really positive when the latter was negative. The test of Bollz was almost specific for general paralysis. Other tests recommended were those of Haffa, which corresponded with Jarisch's test, and Winkler's colorimetric estimation of protein for estimating the actual quantity of protein present in the cerebro spinal fluid. General paralysis was the only condition in which the globulin approached the albumin in quantity in the cerebro-spinal fluid. The Wassermann body was probably formed in the meninges, but this could not be considered proved. The persistence of a positive Wassermann reaction in the cerebro spinal fluid was the strongest proof that the patient was suffering from general paralysis, not cerebro-spinal syphilis.

Colonel L. W. HARRISON (London) called attention to the fact that the term "spirochaemia" had now been discredited by its sponsor, Mr. Clifford Dobell. A compromise might possibly be found by testing the cerebro-spinal fluid for the first time in cases selected according to their behavior to the first course of treatment. He had found at St. Thomas's Hospital that cases which were still sera positive at the end of their first course of treatment remained so for numerous subsequent courses, in many of these the cerebro spinal fluid was persistently positive. On the other hand, he had not found a single positive cerebro spinal fluid in a case with a negative blood reaction at the end of the first course of treatment. He thought, therefore, that only those patients with a positive blood reaction at the end of the first or second course of treatment need have the cerebro-spinal fluid investigated, though it should be examined in all cases before discharge from treatment. Some means ought to be found for making the titration of the non-responsive cases react better. Very little work had been done on the subject, but Major Pettit had repaid some time ago that at Rochester Row were positive early cases had been made responsive by the administration of thyroid extract. If this means or by protein shock therapy something might be done to change the outlook. He was convinced that the employment of arsenobenzol simultaneously with another metal was followed by a much smaller incidence of neuro palsies than when arsenobenzol was given alone or was followed subsequently by a course of mercuric bismuth. In his own clinic, where the combined method was used, there had not been a single case of a cerebellar palsy, while at Johns Hopkins, where the "standard" principle was followed they had had 53 cases of retro-recurrence out of 2,500 cases of early syphilis. In the early days of arsenobenzol therapy, when salvarsan was used alone, there had been a large number of neuro-recurrences and in his own experience it had been mostly in the purely arsenobenzol-treated cases that clinically manifest recurrences had occurred. If a system such as the simultaneous arsenobenzol and mercury (or bismuth) treatment was attended by a smaller incidence of neurosyphilis than was the case when arsenobenzol was employed first and mercury (or bismuth) afterwards, the former seemed preferable.

Mr. VOOR (Edinburgh) read a preliminary note of a test devised by Dr. W. O. KERNACK and MRS. L. WRIGHT and KERNACK had shown that when casein gum benzoin was precipitated by varying concentrations of cerebro spinal

fluids of different degrees of acidity, the abnormal fluids from a case of general paralysis of the insane were characterized by the development of a zone at a pH 5-8, under conditions which precluded the appearance of this zone when a normal fluid was employed. Syphilitic serums were in general distinguished from normal serums by the development of a similar zone at a concentration of serum varying from 1/4 to 1/16 of the undiluted serum. It had previously been suggested that this abnormal zone of precipitation might be occasioned by the presence of a protein of high iso-electric point. It had been found that elupaine, a protamine derived from herring milts, when added in the requisite small amounts to normal cerebro-spinal fluid or serum, caused these fluids to simulate syphilitic fluid and serum in their behaviour towards gum benzoin. An attempt had been made to obtain evidence as to whether a basic protein was actually present in excess in syphilitic body fluids. The reaction of Sakiguchi (development of a red colour by protamines and other compounds containing a free guanidine group when treated with naphthol and sodium hypochlorite) had been slightly modified and applied to syphilitic serums and cerebro-spinal fluids. The preliminary results indicated that in fluids and serums of syphilitic origin the red colour developed more readily than in normal ones, and a high degree of correlation appeared to exist between the results of this colour test and the Wassermann test.

Dr. FREDERICK SMITH (Boston, U.S.A.) agreed that it was of great importance to make the taking of cerebro-spinal fluid from patients by lumbar puncture as painless and free from unpleasant after-effects as possible. He said that by using a local anaesthetic and a small needle, and keeping the patient in bed, he was able to make this operation quite free from drawback.

The PRESIDENT of the Section gave a clinical demonstration of about twelve cases of neurosyphilis, especially with a view to showing the results of treatment, chiefly by triprotinamide, which he had used in large doses without ill effect but with great benefit to the patient. The cases included several of juvenile general paralysis, also of acquired general paralysis of the insane, and of tabes. In many of these cases the results of treatment were striking and impressive. The President did not claim that it was possible to restore the afflicted individual to a strictly normal condition, but he did suggest that they were often able to arrest the degeneration of the nervous system and return the patient as a useful member of society, able to work and self-supporting.

## DISCUSSION

OR

### EPIDEMIC ENCEPHALITIS.\*

#### I—EPIDEMIOLOGICAL CONSIDERATIONS

BY

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HAD it is not expected that in opening a discussion the speaker should make a systematic survey of the subject under review. He may assume that those who may take part are already familiar with the main facts and features of the subject, and it is his business to make appropriate and, if possible, provoking remarks, thus focusing attention on some of the problems suggested by his own experience.

In seven successive years, from 1918 till 1924, the attention of the profession in Glasgow was directed to a "new disease," accounts of which had come during the same period from various parts of the world, and a description of which had already been given a year earlier by von Economo in Austria. That it was new admits now of no question, for there is nothing in the literature of

medicine to compare with the phantasmagoria of disorder manifested in the course of this strange malady. There is scarcely a sign or symptom of nervous derangement which did not at one time or another make its appearance during the epidemics. Into the maze of contradictory phenomena it seemed almost impossible to read anything like a rationalized order of events which might be termed a disease entity. Profound and prolonged torpor, protracted and resistive sleeplessness, paralysis, violent jerking, chorea, athetosis, and convulsions, pruritus referable to the head, limbs, and internal organs, every conceivable anomaly of movement of the external and intrinsic muscles of the eye, giddiness and rotatory displacement of the body, abnormal reactions of alimentary tract, emaciation, and respiration, delirium, muscular excitement and fever, comprise some of the outstanding features of this picture of chaos.

The original attempts to interpret the phenomena in the light of nosological principles took various directions. An anatomical basis was soon established in the non-purulent form of encephalitis which was discovered in every case which came to *post-mortem* examination. One result of this discovery, however, was to transfer the confusion to another field of discussion. Non-purulent encephalitis had been described in a variety of diseases. It was present in the cerebral form of poliomyelitis, in the cerebral paralysis of children, in We尼克's syndrome, and as a sequel of a number of acute infections, chief among these being influenza.

The prevalence of influenza at the time of the outbreak lent colour to the view that the new disease was associated with that infection. There were others who, inspired either by vision to "new diseases" or by doubt as to the existence of anything which might be termed a "disease entity," sought refuge in the proposal to regard the phenomena as a form of post-encephalitis. Objection, moreover, was taken to the term "lethargic encephalitis," because, on the one hand, lethargy is not invariably present, and, on the other hand, the morbid reaction was not always confined to the encephalon.

Classification of symptoms, pathological anatomy, and logical disputation ruled individually and collectively to unravel the tangle which the initial stages of the epidemic presented. The efforts of the laboratory were no more successful, for examination of the cerebro-spinal fluid and bacteriological investigation afforded no data of importance, and experimental research gave no results. It is a striking commentary on the nature of morbid processes, and on the part which the clinician plays in their interpretation, that the disease had to reveal its own identity in the course of time before it could be even partially understood. It soon became apparent that, however obscure the microbial origin, however bizarre and baffling the preliminary disturbances, the tendency of the human organism to preserve its identity found expression in the long run in sequelae which constituted a fairly reliable standard of reference. It is just this issue of encephalitis in peculiar and characteristic sequelae which justifies its recognition, not only as a disease entity, but as a new disease.

For what is it that constitutes a "disease entity" or a "new disease"? The physician is concerned not, like the naturalist, with a wide range of different organisms theoretically adapted in an average way to an average environment, but with a single organism, the human subject, striving to preserve its identity in adverse circumstances. In this struggle all those tendencies and activities which are stabilized in the processes of normal life assert themselves. The conflict is not confined to the part first afflicted. The unity of the organism provides for the participation of a variety of immediate and distant reactions in the attempt to maintain or restore order. If the initial assault be severe, as in an acute infection or a cerebral haemorrhage, confusion and disorder are likely to prevail. If this stage be survived, the course of events will be determined by the extent of the damage and by the efforts of the organism, successful or otherwise, to restore a state of equilibrium.

It is the organic substratum to the chaos of disease that has a deciding influence on the course of the morbid process. It determines the tendency of disease to manifest

\* This discussion took place in the combined Sections of Mental Diseases and Neurology at the Annual Meeting of the British Medical Association, Edinburgh 1927, under the chairmanship of Professor Edwin B. A. S. S. S.

itself only in a limited number of ways and it also determines the more or less constant features of each manifestation. These tendencies are exhibited to advantage in disorders of the great integrating systems of the organism, and especially in the nervous system it is just these tendencies that render possible the classification of disease.

There enter into the concept of a disease other considerations which have reference to its incidence, as well as to its course. In the case under review we attribute its origin to an infective agent; we interpret the initial symptoms as due to the irritation and destruction of nervous elements for which the poisons of the infective agent have a special affinity; we explain the late and permanent symptoms as expressions of partially successful or unsuccessful efforts of rehabilitation.

In claiming for lethargic encephalitis the status of a new disease entity it is contended:

- 1 That while nothing is known of the toxic agent except that it produces encephalitis, it is not the toxic agent of influenza or of poliomyelitis or of herpes.
- 2 That the sites of toxic reaction in the central nervous system are peculiar to lethargic encephalitis and are distinct from the sites involved in other forms of encephalitis, such as cerebral influenza, poliomyelitis, Wernicke's disease and the cerebral palsies of children.
- 3 That the sequelae of encephalitis while they are the hall mark of the disease are not phases of progressive infection but phases of attempted adaptation.
- 4 That the history of the successive epidemics in Glasgow indicates a change of type which is not recognized in any other infection of the central nervous system.

These contentions are based on an experience of the disease extending over nine years. During this period about six hundred cases have been examined, and two hundred of these have passed through my own wards in the Forth District Hospital and Victoria Infirmary. The brain and spinal cord of forty cases which came to the post-mortem rooms have been examined. Through the courtesy of Dr. Chalmers and of Dr. MacGregor I have been in constant touch with the Health Department where a very thorough and extensive investigation of the problem has been carried on from 1918 till the present time. I have also had the advantage of regular collaboration with my colleague Dr. Marshall.

### 1. The Toxic Agent

I cannot pretend to be conversant with the literature on this aspect of the problem, but there does not seem to be any reason to believe that the site of infection or the character of the organism have been recognized.

### 2. Pathological Anatomy

The feature of the post-mortem evidence was the absence of change visible to the naked eye. This was all the more striking in view of the pronounced character of the clinical disturbance. Apart from general congestion, nothing abnormal was noted beyond isolated greyish specks in the basal nuclei and mid brain of six patients who died in the acute stage and a relative poverty in pigment in some of the cases which came to necropsy after prolonged Parkinsonian illness. In the spinal cord of five cases minute areas of infiltration in the posterior cornua could be seen on naked eye examination.

This is in marked contrast with what we have observed in other cases of non-purulent encephalitis. In four cases of influenza areas of infiltration, some of them as large as a shilling, were visible on the cerebral cortex. (One of these showing naked-eye changes in each island of Reil is exhibited in the Pathological Museum.) In two cases of encephalitis due to the toxæmia of pregnancy extensive hæmorrhagic exudates could be seen with the naked eye in the basal nuclei and mid brain. (One of these is exhibited in the Pathological Museum.) In a case of Wernicke's disease extensive hæmorrhagic softening was seen in the mid brain, and in lesser degree in the basal nuclei and cerebral cortex. Two cases of poliomyelitis were observed in which translucent reddish areas of

softening were visible in the cerebrum and mid brain as well as in the anterior cornua of the cord. There are on record cases of non-purulent encephalitis in which there were no naked-eye signs of disease in the brain on post-mortem examination but the case is generally admitted to be true. It is thus permissible to draw the general conclusion that the encephalitis known as lethargic encephalitis differs from other forms of encephalitis in that there is on the whole an absence of naked-eye signs of disease in the central nervous system. No account need here be taken of the encephalitis due to syphilis, tubercle, malaria or trypanosome infection for these obviously belong to a quite different category.

With regard to microscopic lesions a distinction can be drawn between the cases which died in the early stage of the disease and those which came to post-mortem examination after a prolonged Parkinsonian illness. In the former the lesions are diffuse and of a moderately acute inflammatory character, and as pointed out by Turnbull and McIntosh and Douglas McAlpine and others tend to be more pronounced in the basal nuclei of the cerebrum and in the mid brain and especially in the mid brain and in the substantia nigra of that region. Occasional foci of reaction may be noted in the cerebral cortex, pons, upper reaches of the medulla, and in the posterior cornua of the cord. The anterior cornua nuclei are not involved. The inflammatory reaction is represented in perivascular infiltration, occasional hæmorrhage, deposits of salts in the vessel walls and surrounding tissues, degeneration of neurones and occasional neuronophagia and proliferation of glial cells. The reaction is not so intense as in poliomyelitis and in influenza, and is quite different from that in Wernicke's disease or in the encephalitis of pregnancy which is essentially hæmorrhagic and not of the nature of a true inflammation.

In the Parkinsonian syndrome there is a consensus of opinion that the most pronounced lesions are in the substantia nigra. Our own findings in this respect accord fully with those of Jacob Douglas McAlpine and others who have gone carefully into the problem. It is questionable, however, whether the depigmentation, degeneration of neurones, demyelination, gliosis and slight vascular change in this region are accurately interpreted as inflammation, or, in other words, is a process in which the infective agent is still active. I am not convinced that the histological appearances resemble those observed in such chronic affections of the central nervous system as syphilis, tubercle, malaria or trypanosomiasis. On the other hand, I am in agreement with Hoffmann that in some cases there are changes though of a minor degree in the basal nuclei of the cerebrum. The possibility must be taken into account that the degeneration of the substantia nigra is not an isolated lesion accountable for the clinical phenomena in the sense in which anterior cornual degeneration accounts for the disabilities of poliomyelitis or destruction of the motor cortex accounts for hemiplegia of the upper neurone variety. It is more likely that the Parkinsonian sequelae are the expression of a disordered function of the whole compendium of reflexes related to the basal nuclei of the cerebrum, the mid brain and the vestibular apparatus, and concerned with the regulation of those phases of automatic posture which render voluntary movement possible. Histological evidence in those cases which died in the acute stages of the disease indicates the implication of the whole series of nodal centres of correlation between the caudate nuclei and the vestibular nuclei. Such widespread involvement is presumably the basis of an original derangement or function of this extensively consolidated mechanism, and the exhaustion and degeneration of the substantia nigra may quite well be a by-product as well as a contributing factor to the subversive process. Very little is known of the functional anatomy of the substantia nigra. Douglas McAlpine makes a very significant remark as to the difficulty of determining the condition of the nerve fibres which course to and from it. A solution of this problem would certainly throw much light not only on the Parkinsonian syndrome but on the physiology of the basal nuclei and of automatic movement.

The results of pathological investigation warrant a general



statement on the nature of the disease. The toxins of encephalitis show a predilection for the great correlating centres of the nervous system—that is, for the grey matter on the afferent side of the proprioceptive system, for certain nuclei in the base of the brain, and for the posterior cornua of the cord. It is significant that there is practically no evidence of disease in the occipital cortex, in the red nuclei, or in the anterior cornua of the cord. In sharp contrast with this is the affinity of the toxins of influenza for the cortex and of the toxins of poliomyelitis for the anterior cornua.

### 3 The Sequelae of Lethargic Encephalitis

The initial signs are varied. Sudden or insidious in its onset it may be mistaken for acute meningitis, haemorrhage, influenza, acute abdominal disease, lumbago, disseminated sclerosis, chorea, epilepsy, and other conditions. The prevalence of an epidemic was often the most reliable clue to a diagnosis. Frequently it was only when the acute stage had passed and the characteristic sequelae appeared that it was possible to recognize the real nature of the disease. But these sequelae are characteristic and peculiarly distinct in the manner in which they appear in children, on the one hand, and in adults on the other.

In the case of children the main disorder consists of profound emotional instability with perversion of conduct. Eruptions of excitement with uncontrollable impulse, often expressed in outrageous and criminal conduct, afford the evidence of a serious dissolution of nervous integration in the early stages of the disease. There is no clouding of perception as in epilepsy, for when the spasm has subsided there is clear recognition of what has happened, and often in expression, even a precocious expression, of regret. The presumption is that the peculiar character of the sequelae in children is determined by the fact that the disease has supervened during the early developmental period, and that normal dissolution has occurred in the basal structures before the association centres of the cerebrum have become consolidated with each other and with the lower automatic centres over which they are destined to exercise control. When, at a later stage in children, a Parkinsonian phase develops, the psychomotor excitement abates. I know of only one case out of fifty in which recovery may have occurred.

The Parkinsonian syndrome, the common sequel in adults, may emerge immediately from the acute stage or may not supervene for months or years. It comprises in its general uniformity of expression a great variety of somatic and visceral disorders, including inhibition of movement, tremor, excessive salivation, greasiness of the skin, outbursts of sweating, abnormality in sugar metabolism, attacks of hypotension, and occasionally excessive increase in weight. Combined in varying degree in the single characteristic sequelae are the features of two distinct diseases—of pulvis agitans and of katatonie. It is a pulvis agitans with vegetative disorder, and it is a katatonie without the stupor. It is inconceivable that such a varied disorder should be due to a lesion confined to the substantia nigra in the sense in which infantile paralysis is due to destruction of the anterior cornua, or hemiplegia to ablation of the motor cortex.

I have pointed out elsewhere that the initial involvement of the oculi and vestibular apparatus is consistent with the presence of acute changes in the basal nuclei and brain stem. The puits of the cortical nervous system originally affected are essentially those whose integration is concerned in the postural and automatic movement necessary for voluntary control by cortical activity. This great compendium of reflexes has its nodes of integration in the basal nuclei of the cerebrum, in the mid-brain, in the vestibular nuclei and in the posterior cornua of the cord. It is known to physiologists as the proprioceptive system and it is suggested that the Parkinsonian sequelae is due to a functional derangement of this system incident to destruction of some of its vital parts in the early stages of encephalitis. This conception is consistent with the anatomical findings on which a comparison was made with poliomyelitis and influenzal encephalitis. The lesion in

poliomyelitis is in the anterior cornua, in influenza in the occipital cortex and in lethargic encephalitis in the correlating centres in the basal nuclei and posterior cornua.

The manner in which a great neuro-muscular compendium may be functionally deranged is seen to advantage in the case of the respiratory mechanism, in which normal health may be impeded by the pathological reactions of coughing, sneezing, hiccup or the closely allied phenomenon of vomiting. Pathological physiology has to do, not merely with absence, diminution, or increase of normal function, it deals with the aberrant irradiation of stimuli and with subversive reactions which are absolutely inconsistent with normal function, but which may be kept within limits by stabilized organic tendencies. The pathological physiology of the Parkinsonian syndrome is the study of an organized chaos, a chaos induced in the first instance by destruction of important integrations and reorganized on an unstable basis in the process of rehabilitation. A suggestive analogy may be found in cardiac disease, in which the circulatory failure, which is often long delayed, bears some resemblance to the Parkinsonian syndrome. The adaptive process is not confined to the heart itself. It extends to the peripheral circulation in which altered tonus plays a part. When the subversive element in the adaptation gains the ascendancy the failure due to oedema and waterlogging occurs in the peripheral circulation. It is not unlikely that the progressive disability in the Parkinsonian syndrome is due, not to the continued activity of the original toxin, but to aberrant irradiation and subversive tendencies in a poorly adapted proprioceptive system. This conception is supported by the remedial effect in some cases of intensive treatment with belladonna and hyoscine.

The outlook in this sequelae is no more favourable than that in the special disorder in children, although great improvement may occur and progress may be staved in many cases by the treatment mentioned.

Of those who survive the acute stage few make a recovery. Not more than sixty, out of three hundred, were free from all signs and symptoms two years after the infection. It is a remarkable fact that in a disease involving vital centres of the brain and producing such pronounced aberrations of conduct and impediments to behaviour, there should be practically nothing in the nature of dementia in the sense in which that term is understood by the alienist.

### 4 History of the Disease in Glasgow

Looking back on the history of the disease in Glasgow several points of interest arise. Profound lethargy marked the earliest cases in 1918. The first six cases I saw never came out of the state. In 1919 the initial symptoms were often those of acute excitement. In 1920 (as, to a lesser degree, in 1924) a large proportion of those affected were children, and the majority of these showed choreiform agitation. In 1921 and 1922 the majority affected were adolescents and adults, and the initial symptoms were again severe, although in some cases they were insidious and took the form of transient giddiness or diplopia. In a few cases the disease began with epileptic seizures. In 1923 and 1924 the onset was, as a rule, more gradual, and we now know from the sequelae which have developed in the interval that the infection may occur without producing any incommence that could reasonably be ascribed at the time to encephalitis. In 1924 some cases were so misleading as to determine a definite diagnosis of disseminated sclerosis. In one instance Dr Marshall and I demonstrated on several occasions, as a typical example of disseminated sclerosis (ankle clonus, positive Babinski, absence of abdominal reflexes, nystagmus), a case which afterwards became lethargic, and which, on *post-mortem* examination revealed the definite evidence of encephalitis in the basal nuclei and in the posterior cornua. There was no histological evidence of disseminated sclerosis. I have from *post-mortem* records of similar cases. It is important to note that the optic nerves were normal in each case. There has been no epidemic since 1924, and in the interval I have not seen a single acute case in which the diagnosis of lethargic encephalitis was unequivocal.

## II—THE PATHOLOGY OF EPIDEMIC ENCEPHALITIS

BY

J. CODWIN GREENFIELD, M.D., F.R.C.P.

### 1. Etiology of the Virus of the Disease

EPIDEMIC encephalitis resembles many of the common infectious diseases in being caused by a virus which no one has seen, or has been able to grow in an artificial medium. Whether it has been possible even to transmit the disease to animals is still a matter of dispute. Although the most recent work tends to confirm rather than to discredit the assertions of those who claim to have done so. This work is of the very greatest interest and it is of special importance in that it seems to clarify some of the difficult etiological problems which the disease presents. In particular, it seems to shed light on the question why the more remote forms of the disease are less often followed by progress or sequelae than those in which it begins more insidiously.

Those who have claimed to infect animals with the disease must be divided into two groups. The protagonists of the first group are Loewy and Strauss of New York, and Kling and his associates in Sweden. Certain of those who obtained the earliest positive results in this country must also be included in this group. These workers used either brain pulp or cerebro-spinal fluid blood nasopharyngeal secretion urine or feces from cases of encephalitis for injections into rabbits. The animals showed no symptoms, but when they were killed and their brains examined microscopically about 50 per cent were found to show lesions very similar to those of the human disease. In particular, foci of lymphocytic exudate and perivascular infiltration. This disease could be transmitted from rabbit to rabbit indefinitely but again only about half of the rabbits became infected. The claims of these workers were shown to be invalid by McCartney who examined 372 stock rabbits at the Rockefeller Institute and found similar lesions in the brains of 55 per cent. Following on the work of Bull and Oliver he was able to trace the etiology of the encephalitis in the animals to a protozoon which Loewy has named the *Eucyballozoon cucullatus*. This comparatively harmless parasite had obviously caused an epizootic among the experimental animals which happened to resemble encephalitis lethargica in its histological characters. These results must therefore be completely discounted.

The other group of workers who have transmitted encephalitis to animals claim that the etiological agent is identical with that of herpes febrilis differing from it only in possessing a greater affinity for the nervous system. The first to transmit this virus from the human disease were Levaditi and Harrier who in 1920 produced the symptoms of acute encephalitis in a rabbit by the subdural injection of brain tissue obtained from a case of encephalitis lethargica. It is noteworthy that the patient from whom this material was taken had facial herpes at the time of death. Following on this Doerr, Schürbel and Berger in Bielefeld, Luger and Landner in Vienna and Perdrin in London have produced encephalitis in rabbits by the inoculation of either brain pulp or cerebro-spinal fluid. All these workers state that it is extremely difficult to infect animals and that only a very few of the human cases of encephalitis examined yield a virus which is pathogenic for animals. But when encephalitis is produced in the rabbit it can usually be transmitted as a rapidly fatal disease from animal to animal.

It has been known since the pioneer work of Gruter and its confirmation by Krüppel and Löwenstein that fluid obtained from the vesicles of dendritic ulcer or of libral herpes contains a virus which when inoculated on to the scarified cornea of rabbits produces a keratitis accompanied by copious purulent conjunctivitis and often followed by rapidly fatal encephalitis. Levaditi and Harrier in ignorance of this work, inoculated the virus which they had obtained first into the anterior chamber of the eye and later on to the scarified cornea of rabbits and in both instances produced not only local lesions but in encephalitis from which the animals died in ten to fourteen days

after inoculation. It only remained for Blane, working in the Pasteur Institute at Athens, to compare the virus obtained from these two different sources, and to prove by crossed immunity experiments that they were identical. It is true that certain differences are noticeable, not only between encephalitis and herpetic virus but also between different strains of encephalitic virus. Some of the latter constantly cause both keratitis and encephalitis, others produce a less severe keratitis but when injected into the brain produce a fulminating encephalitis. On the whole, the herpetic virus is more virulent for the cornea, and less virulent for the brain whereas the encephalitic virus may be comparatively avirulent for the cornea. But when keratitis has been produced by a virus of either kind, it is impossible to reinfect that cornea with virus of any other strain although it still remains sensitive to inoculation by other viruses, such as that of vaccinia.

The only serious criticism brought against the theory of the identity of the virus of herpes febrilis with that of encephalitis lethargica is that in the few instances in which encephalitis has been caused in rabbits by the inoculation of human material the virus of herpes febrilis had been accidentally included. This may well have been so in Levaditi's first case in which herpetic vesicles were present at death. In fact Flexner obtained an apparently identical virus from the cerebro-spinal fluid of a convalescent case of neuro-ophthalmitis. Herpes is a very common and widespread disease among mankind and the fluid from herpetic vesicles is constantly pathogenic to rabbits. Not only so but saliva and nasopharyngeal washings of those who are susceptible to herpes are frequently sources of herpetic virus. It would, therefore, not be surprising if occasionally virus of this kind reached the cerebro-spinal fluid during life or the brain after death. This opinion is strengthened by the observations of Teissier, Marinresco, and others that patients suffering from encephalitis lethargica are not more but less immune to herpes inoculated cutaneously than are the generalities of mankind. Levaditi himself thought to cure encephalitis lethargica by injecting the virus of herpes into the lumbar canal of patients and produced in many of them facial or labial herpes. There is therefore no such crossed immunity in the human subject as exists in rabbits. But it is notorious that human immunity to herpes febrilis is very slight. Even in the rabbit immunity to herpes does not last long and shows many peculiarities. It is definitely a tissue immunity and not a humoral immunity. Mixing the serum of an immune rabbit with virus does not reduce its virulence although the addition of immune brain pulp sometimes does so.

Peidrau found that the brain pulp of rabbits immunized by cutaneous inoculation contained aggressive virus in addition to immune bodies and that when kept in glycerin from two to three weeks the aggressiveness remained active whereas the immune bodies deteriorated. Acting on these observations he fortified the virus contained in human brain emulsion by adding to it before inoculation twice as much brain pulp from a recently immunized rabbit. In this way he produced encephalitis in rabbits with material which, when injected alone proved ineffective. He also made use of the negative phase of immunity by performing his intracerebral injection the day after a dermal inoculation, or even by giving on four successive days two dermal and two intracerebral inoculations. In this way he was able to produce encephalitis in rabbits with material from each of three fatal cases of encephalitis lethargica. His work is of the utmost importance since it seems to indicate why so many of the earlier experiments had failed. He showed in the first place that the most virulent human virus which if preserved in glycerin long enough would rid it of the accompanying immune bodies produced in rabbits a fulminating encephalitis fatal in four days from the time of inoculation, but if injected fresh and without the help of aggressives, produce no symptoms at all. And secondly that the most virulent material especially that obtained from less acute cases of the disease might produce in rabbits a subacute form of encephalitis with lethargic symptoms. These symptoms were quite unlike those of the ordinary herpetic encephalitis, but were exactly

similar to those seen if herpes virus were inoculated intracerebrally into immunized animals at a time when their immunity was passing off. In both cases the brains of these animals did not yield any virus which could be transmitted to other animals. From these observations he concluded that in the human disease one of three things may happen:

(1) The development of a local cellular immunity which overcomes the infective agent and leads to a complete recovery. (2) The development of a state of cellular immunity which only partially overcomes the infection, the final issue being either a fatal one or a chronic infection. (3) Failure of the development of any immunity and a quickly fatal result.

Cases of type (3) would yield a virus which, being free from immune bodies, would be easily transmissible to rabbits, but the majority of cases were of type (2), and material from them would be either completely non-infective or might produce a subacute encephalitis from which no further active virus could be obtained. If, however, it were freed from immune bodies by prolonged glycerination, or if its virulence were increased by the addition of "aggressins," such material might produce a typical herpetic encephalitis transmissible to other rabbits. Now the experimental work with herpes has shown that the immunity obtained by the inoculation of a weak virus is less complete and more evanescent than that given by a strong virus. It seems, therefore, likely that in the human subject an infection by a comparatively non-virulent strain might fail to produce sufficient cellular immunity to kill off the virus completely, and that it might spread in the brain, attacking only those cells which have less power of resistance. It may be, as Peidrau has suggested, that certain cell groups are less resistant than others, and possibly the melanin-bearing cells of the substantia nigra and substantia ferruginea are particularly susceptible. If so, it is easily understood why cases in which the initial cerebral symptoms are of the slightest character frequently go on progressively to a state of post-encephalitic Parkinsonism.

## 2 Clinical Pathology the Cerebro-spinal Fluid

The only laboratory examination which gives any assistance in arriving at the clinical diagnosis is that of the cerebro-spinal fluid. Here the evidence is sometimes negative rather than positive, as, even in the early stages, the fluid may be quite normal or may contain a slight excess of glucose, which is always of doubtful significance. But usually in the first few weeks of the disease there is a lymphocytosis of 10 to 100 or even more cells per cubic millimetre. In my experience, as well as in that of others, the cells are usually all mononuclear, but occasionally the presence of a varying proportion of polymorphonuclear cells has been reported. In the past I have been inclined to doubt the diagnosis when any considerable proportion of the cells were polymorphonuclear. But in one case in which I found 10 per cent polymorphonuclear cells, the onset of typical sequelae has established the diagnosis, and there appears to be no reason for doubt in Doughty's Sheffield cases, where as high a proportion as 44 per cent was sometimes found. In a case examined histologically by Dr. Iano, as also in one of von Wiesner's, the inflammatory exudate in the brain was largely polymorphonuclear in character and this is the case also in the herpetic encephalitis of rabbits during the more acute stages. In view of these facts I am inclined to alter my earlier opinion and to agree that polymorphonuclear cells may sometimes occur in the cerebro-spinal fluid. It is characteristic of encephalitis that the rise in the cell count is not usually associated with any great increase either in the total protein or the globulin, and sometimes a large cellular excess is associated with a normal protein percentage—the so-called cell-protein dissociation. Excess of protein is exceptional, and a coagulum practically never forms. Yellow or haemorrhagic fluids are sometimes obtained when there has been meningeal haemorrhage, but such cases appear to be rarer now than they used to be. Not uncommonly, the colloidal gold reaction gives curves of the luetic type. Some workers have obtained such reactions in every case examined, others only in 15 to 50 per cent of cases but all are agreed that some change in the colloidal gold is characteristic of the disease. Occasionally fairly strong curves of the parietic type have been

obtained, but these are much rarer. The colloidal gold reaction is of special importance in the post-encephalitic states, as it may give the only evidence of any abnormality in the fluid. The reactions obtained at this stage are usually so weak that the other colloidal reactions may fail to demonstrate them.

## 3 Morbid Histology

The histological picture of the disease is so well known that it would be unnecessary to add anything to it, were it not that there has lately been a tendency to focus attention on the mid-brain, forgetting the cerebral cortex, and to think more of the cellular exudate than of the damage done to the neurons. It has now been definitely established that post-encephalitic Parkinsonism is due to the destruction of the cells of the substantia nigra, and certain evidence, both clinical and pathological, appears to justify the assumption that sometimes the disease lingers on in this region of the brain after it has died out elsewhere. But there can be no doubt that destruction both of these melanin-containing cells and of nerve cells elsewhere in the brain may, and does in fact, take place at a very early stage. I have examined the brain of a case of lethargic encephalitis which terminated on the twenty-third day of the disease in which most of the cells of the substantia nigra had already disappeared.

Now it is easy by any of the ordinary staining methods to establish the disappearance of melanin-bearing cells, as the granules of melanin lie about free in the tissues for some time afterwards. But it is very much more difficult to tell when there has been destruction of some of the cells of the cortex or of the basal ganglia. In the case of the latter organs, cell counts have occasionally been done, and have shown that a certain small proportion of the neurons have disappeared. General shrinkage of the basal ganglia has rarely been taken into account, although it is well known that this may occur and may confuse the cell count. In the cortex comparative cell counts are extremely difficult. But decay of the neurons of the cortex and basal ganglia may be demonstrated in a large number of cases by the collection of lipid granules around the walls of the small vessels in these regions. The majority of these granules appear to consist of the lipochrome of nerve cells, although a certain number may result from the destruction of myelin. Compound granular corpuscles, however, are very rarely seen, and demyelination of the cortical layers is never prominent. There is evidence that lipochrome is not easily metabolized in the tissues, and its appearance in large amounts in the walls of the small cortical vessels after a few weeks of disease may, I think, be taken as showing at least severe damage to, if not destruction of, a large number of cortical neurons.

I have recently examined the brain of a case of encephalitis which ended in coma about four weeks after the onset of diplopia and parasthesia. In all the regions of the cortex examined the accumulation of lipid, not only in the nerve cells but also around the walls of the vessels, was very striking. It was not everywhere of equal intensity, but was usually greatest at the bottom of the sulci, and from here spread outwards in an irregular fashion towards the surface of the brain. Similar collections of lipid pigment were also present in the putamen and crus cerebri, but were less noticeable in the pallidum and optic thalamus. Unfortunately I did not have an opportunity of examining the mid-brain in this case. In a post-encephalitic case in which, in addition to Parkinsonian bradykinesia, there was pronounced lethargy, similar perivascular collections were found in the cortex, especially in the occipital poles. In the frontal cortex there was, in addition, a definite disappearance of nerve cells.

We are therefore justified in considering encephalitis lethargica as a disease in which there may be widespread and severe destruction of nerve cells, not only in the brain stem, but also in the cortex, and it seems clear that this neuronal degeneration is quite independent of any inflammatory cellular reaction that may be present. It is of interest to note that such skilled observers as Bonnamy and Bok and Flexner and Amoss have demonstrated a similar direct action by the virus on the nerve cells in the herpetic encephalitis of rabbits. This conception of

the pathogenesis of the disease is supported by the observations of McNulty, Borden and others that in the most rapidly fatal cases there may be little or no inflammatory exudate or perivascular cuffing. It is not a new conception but it is perhaps a useful one to keep in mind when we try to visualize the pathological substratum of the mental sequelae of lethargic encephalitis.

### III—CHRONIC ENCEPHALITIS

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Clinical and pathological experience has shown that encephalitis lethargica like neuro-synclitis and disseminated sclerosis is essentially a chronic disease. For whatever it declares itself acutely or insidiously and however complete the recovery from the initial phase may appear to be, in a large proportion of cases the infection which has evidently lain dormant for weeks, months or years again becomes active and gives rise to the grave disabilities with which we are familiar. The distressing result is that we never know when the patient is cured. At present we are at a prognostic impasse.

The disease commonly begins as an acute illness with the symptoms and signs of which we are not here concerned. Suffice it to say that it may be even with high fever and general constitutional disturbance or subacute with or without distinctive features, such as lethargy and diplopia, or so slight that it is looked upon as a trivial event. The mortality rate has been differently estimated, but it probably lies between 20 and 30 per cent. Of the survivors some are left with residual troubles that may in time disappear or become stationary or progressive. Others remain well for so long that we hope that the cure is complete. But there is always the danger of relapse and the development of late manifestation.

An important group of cases is that in which the disease seems to be chronic from the beginning. Of course there is the possibility that the initial attack has been missed or passed over as either influenza or a common cold. But with that in mind cases are not infrequently met with in which the most searching inquiries fail to reveal the history of a suspicious illness.

#### Clinical Forms of the Disease

Although the virus of encephalitis lethargica has a predilection for the brain stem and corpus striatum no part of the nervous system is immune. It has to be remembered also that the disease is a general infection with special affinity for the neuraxis but with powers to attack other structures as well, notably the ducts and glands. The variability of its clinical manifestations is therefore not surprising. At the same time there is the danger of an dealing with a new disease about which our knowledge is far from complete or oversteering it by anthropomorphism and of using it as a harbour for our diagnostic difficulties. The clinician with his mind attuned to new possibilities requires the constant check of pathological investigation. Nevertheless chronic encephalitis is already surrounded by the occurrence of many distinctive syndromes of function and others doubtless will yet come to light.

It is useful to separate various clinical pictures or syndromes from the diverse manifestations of the disease. With widespread infection of the central nervous system and involvement of physiological functions it is practicable. More convenient if less scientific is the classification in correlation grouping of symptoms and signs into one or more clinical pictures. The minimum anatomical involvement of the brain although different physiological units may be involved. But here again the liability to recurrence may alter the clinical picture throughout the course of the complaint. The classification on this basis becomes complicated and inadequate.

If the time at my disposal I will not attempt more than a brief outline of some of the physical disorders of func-

tion presented by the disease in its late stages. The mental changes, which are so important, especially in children, are dealt with by Dr Marshall.

#### The Parkinsonian Syndrome

This is the most common disability of a general kind in adult resulting from encephalitis lethargica. It occurred, for example in 70 out of 129 cases studied by Mac Leven. It may appear rapidly during the acute illness when there is some hope of improvement. But more often its evolution is slow and progressive from the outset, although in its course there may be stationary periods.

The clinical picture of the disorder in its fully developed form is now so familiar that to describe it afresh would be unnecessary. It would be more profitable to consider some of the features which indicate the mild Parkinsonian state. These are often slight but as a rule so alter the patient's appearance and behaviour that they at once arrest attention. He too is now aware that something is wrong and his constant complaint is of a sense of weariness and reduction in vigour. The symptoms will be discussed later in more detail since they may be present in extreme form without gross physical signs. With them, but not invariably, there is lethargy or insomnia which may last continuously for many months or disappear for a time and recur. The sleeplessness is particularly resistant to treatment. Such disorders of sleep are of course, not peculiar to the Parkinsonian state but may form part of any of the clinical pictures of chronic encephalitis lethargica.

The early signs of Parkinsonism are found more in the upper part of the body, especially the face, than elsewhere. The face is greyish, the expression tends to be fixed, the eyes staring, the mouth often a little open, and a pool of saliva may be seen between the lower lip and the teeth. The palpebral fissures may be wide or narrow but blinking is infrequent and quivering of the lids when an attempt is made to open or shut the eye is a constant sign. Diplopia, squint and nystagmus are less commonly found than in the acute stage of the disease but defects in ocular movement or pupillary reaction are never absent. The external ocular muscles are supranuclear in origin and consist of defective conjugate movement especially in convergence. A striking abnormality that is sometimes observed is intermittent spasm of the elevators of the eyes. The pupils are not usually altered in size or shape but are often unequal and almost always show some disturbance of reflex action to light or of accommodation or both. They may be fixed. Impairment of the pupillary accommodation reflex and of conjugate convergence of the eyes go together. Although there may be no definite diplopia, mistiness of vision from defective muscle balance or ocular paralysis is often complained of and may be a persistent defect.

A characteristic feature of the Parkinsonian state is the relative immobility of the affected parts even in the apparent absence of rigidity. It all events to the ordinary clinical tests. In its minimal development this is evident in slight fixity of the facial expression and of the eyes, a tendency to hold the head till a reduction or the associated swinging movement of the arm in walking and a diminution in the natural fluidity of the healthy individual.

Along with the face one upper limb is usually slightly affected. In the mild cases of Parkinsonism and when there is any rigidity its cog-wheel character can best be detected at the wrist. Or the other slight signs of the Parkinsonian syndrome two only will be mentioned—namely, excess of saliva in the mouth the result of diminished activity of the swallowing reflex and micrographia. Excess of saliva involvement of the right hand may also be portrayed in the handwriting which becomes smaller the reduction in size of the letter being progressively evident towards the end of each line and even more so the script goes on. In addition the line forming the letters are slightly wavy although tremor of the hand may not be seen.

#### Involuntary Movements

Involuntary movements of many different kinds are amongst the common manifestations of chronic encephalitis

**Lethargy.** The time of their appearance in relation to the onset of the disease, their duration, and the constancy of any one form show great variation. More than one variety may be seen in the same patient, and they may change during the course of the illness. Some are slight and almost insignificant, others are large and arresting, and, in a severe case, the body may be in an almost constant state of movement.

Involuntary movements rarely, if ever, occur alone as the sole manifestations of the disease. Mental or physical derangements of some sort are also present, but may be so slight as to be easily missed by the casual observer. Emotional instability and restlessness, especially at night, lapses in behaviour, minor pyramidal or extrapyramidal signs, and oculomotor defects are perhaps the most frequent slighter accompaniments of involuntary movements, but any of the dramatic respiratory disorders may be found.

Mrs. Levy<sup>5</sup> has grouped the involuntary movements of encephalitis lethargica as follows: (1) choreiform movements, (2) bradykinesia, (3) myoclonic movements, and (4) tremors. But, in addition, there are many others—for example, innumerable tics, shuffling and stamping movements of the feet, ocular or glossal spasm, complex automatic actions of the whole body, and the "imitative" movements described by Babinski and Klebs.<sup>1</sup> Brief mention only will be made of some of these abnormal reactions.

**Bradykinesia** is the term used by Marie to denote slow, regular, rhythmic movements, often of great amplitude. Such are torsion of the trunk, sthenoid movements of the limbs, spasmodic torticollis, and grimacing. They are not often encountered.

**Myoclonic movements** are well known in the acute phases of the disease. But they may also appear as late manifestations in any part of the body and persist for months, accompanied by pain and cutaneous tenderness, radicular in distribution. The pain is often severe and persistent, and may continue long after the shock-like muscular contractions have gone. The contractions are rhythmical, at first into which comes but may reach forty a minute, and involve part of a muscle, a whole muscle, or a muscle group. Usually they are of insufficient strength to displace a limb segment. When they are localized, the upper abdominal wall or the diaphragm is most often the part affected, and in the latter case the objective manifestation of the contractions is recurrent hiccup.

Tremor of different parts of the body occurs chiefly as a complication of the Parkinsonian syndrome. Froment and Delor<sup>4</sup> have rightly insisted that, unlike the tremor of paralysis agitans, it occurs as a rule only during voluntary movement or the maintenance of an active posture. In addition to the limbs it is found elsewhere, giving rise, for example, to shivering of the head, clicking of the teeth, to-and-fro movements of the tongue, and a rhythmical sucking action of the lips.

All involuntary movements are aggravated by emotional disturbance and fatigue, and, so far as I know, disappear during sleep.

### Respiratory Disorders

A considerable literature has grown up concerning these striking and diverse abnormalities. At first they were often looked upon as hysterical, a not surprising mistake, for they can to some extent be controlled by voluntary effort, become aggravated by excitement, and are frequently associated with emotional instability and restlessness, especially at night. With some of the more severe respiratory disorders delusions and violence may develop, necessitating the patient's confinement in a mental hospital.

Turner and Critchley<sup>6</sup> have classified respiratory abnormalities into three groups: disorders of rate, disorders of rhythm, and respiratory tics.

Tachypnoea and bradypnoea are usually paroxysmal, the attacks varying in duration from a few minutes to several hours. With increase in the respiratory rate (60 to 100 a minute) breathing is shallow, not necessarily distressing, and there may be no accompanying tachycardia. Sometimes, however, breathing is deep as well as rapid,

and, in prolonged attacks, tetany from overventilation of the lungs may then develop. Tachypnoea is followed by a period of either bradypnoea or apnoea before normal respiration is established. In bradypnoea the respiratory rate may fall as low as 6 per minute and the breathing is deep and often noisy and panting.

The term "dysrhythmia" is used to cover such abnormalities as sighing, apnoeic pauses, breath-holding, and the like. Breath-holding is a most dramatic performance, which may be often repeated, especially towards evening, and occur during sleep (Turner and Critchley<sup>6</sup>). After a few deep breaths the chest is held in full inspiration for as long as half a minute. The head is often thrown back, the limbs may perform various grotesque movements, the face may or may not be cyanosed, and, in the longer attacks, consciousness is sometimes lost for a short time. Noisy expiration follows and normal breathing is then established.

**Respiratory Tics.**—Hiccup, yawning, spasmodic hard cough without expectoration, sniffling, hawking, sneezing, are all included under this heading. They are perhaps most often met with in young patients of school age, who, in addition, show changes in character and are subject to nocturnal excitement.

### Spastic Paralysis and Muscular Atrophies

Evidence of slight pyramidal disturbance is common enough as part of almost any of the syndromes of chronic encephalitis lethargica, especially Parkinsonism, and, since Buzzard and Greenfield described the first case, it has been recognized that hemiplegia, with or without an apoplectic form onset, can occur during an acute attack of the disease. So, also, rapidly developing paraplegia from myelitis has not been unknown in some of the epidemics. But paralysis of either cerebral or spinal origin may also develop insidiously and form the prominent part of the clinical picture. The diagnosis in such cases may be extremely difficult or remain uncertain, but, as a rule, distinctive phenomena are associated with the paralysis, or the history of the illness provides the clue. Thus, Wimmer<sup>7</sup> has described a case of hemiplegia in which the paralysis was gradually replaced by Parkinsonian features. These disorders may occur simultaneously and on different sides of the body, as in one patient I had under observation for several weeks. Another case, where, however, the diagnosis is more doubtful, is that of a man of 53 who, three years after an acute attack of encephalitis lethargica, developed progressive pueria of one lower limb along with nystagmus and unilateral deafness. He was otherwise healthy.

Local muscular atrophies, with or without fibrillation, in different situations have been described by several observers. Thus, Wimmer<sup>7</sup> has recorded an example of wasting of the tongue, and I have it present under my care in a patient with unilateral glossal atrophy with fibrillation. Sicard and Pariz, Froment, and others have described atrophies in the limbs. These are often associated with pyramidal or sensory disorders, clearly pointing to spinal involvement. From histological and clinical evidence it would appear that muscular atrophies may be due to lesions either of the anterior horns or the roots, and, when radicular, there are often in addition severe root pains and cutaneous tenderness which may persist for months.

### Endocrine Disorders

Adiposity, with or without disturbance of the sexual functions, is fairly frequently met with. Duncan<sup>8</sup> found it in 7 out of 83 cases investigated at the London Hospital. One of my patients, a young girl, who became rapidly and grossly fat after an acute attack of the disease, had amenorrhoea lasting for many months. Later she developed exophthalmic goitre, and her weight diminished, but did not fall to normal until she made an apparently complete recovery in eighteen months.

In another case tachycardia, tremor, slight goitre, and emotional instability appeared in a girl a few weeks after she had seemed to recover from the acute phase of her illness, and persisted for many months.

Diabetes insipidus and glycosuria are also occasional late results of the disease.



*Isthmic Syndrome*

Lastly, there is a clinical picture of chronic encephalitis lethargica of which enfeeblement is the constant and main symptom and in which the physical signs may be slight. Insufficient attention has been paid to this not uncommon syndrome.

The condition may follow an acute attack of the disease either immediately or after a variable interval, or develop as a chronic state from the beginning. The patient's complaint is of a more or less persistent sense of fatigue, both mental and physical, not as a rule a mere inertia, but associated with the discomfort of great weariness. There is diminished desire or power for effort, and physical exertion or mental exercise aggravates the sensation of weakness. The patient looks tired and lackadaisical, and his movements and speech are slow and without animation. For a considerable time he may, with difficulty, continue his work, but if the feebleness increases as it usually does, he ultimately gives up the struggle and lies in bed or sits in a chair doing nothing. Unlike the weakness of myasthenia gravis the feebleness is not as a rule much diminished by rest and unlike the neurasthenic the patient does not tend to feel better as the day goes on. He may sleep well or be lethargic, but quite often insomnia is a serious complication.

Especially when there are family responsibilities the results of worry cloud the clinical picture and depression, tearfulness and irritability lead to the common diagnostic error of anxiety neurosis.

This state of fatigue with the sense of general ill health and weariness is common to most, if not all Parkinsonians, but the point I wish to stress is that it quite frequently occurs as the sole or main disability. At the same time, in my experience, some of the patients who are afflicted in this way sooner or later develop the Parkinsonian syndrome but with what frequency I cannot say since the period of observation in many is as yet too short. In one case a man of 40 the characteristic facies and bodily posture began to develop fifteen months after the onset of the illness.

Slight physical signs are almost always found and of these defective pupillary reactions and conjugate movements of the eyes especially on convergence are the most frequent. Sometimes there is a little weakness of voluntary movement of the face, tongue and palate or again mild Parkinsonian signs or involuntary movement such as tremor or facial tic may be seen.

Recognition of this group of cases is important not only from the point of the symptomatology of the disease as a whole but also for the differentiation of these cases from patients suffering from psychogenic disorders with which they are frequently confounded.

In the literature occasional reference has been made to this clinical form of encephalitis lethargica as a "myasthenic" variety of the disease—a term which in my opinion should not be used for between it and myasthenia gravis there are many essential clinical distinctions and complete pathological divergence.

The gaps in this brief outline of the clinical features of chronic encephalitis lethargica will be filled in by subsequent speakers. Our knowledge of the symptomatology of the disease, if yet imperfect is steadily growing but it must be admitted that in regard to prognosis and treatment we are at present profoundly ignorant. With nine years' experience now behind us and a wealth of material at our disposal, much could be done by systematic investigation especially at large hospitals to throw more light on the outcome of the disease and its various manifestations.

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## IV—MENTAL ASPECTS OF EPIDEMIC ENCEPHALITIS

BY

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THE disease encephalitis lethargica may be defined as an infection the toxic products of which have an affinity for the grey matter of the central nervous system and so give rise to any of the syndromes of disease of that tissue or to any combination of such syndromes, and which runs a fickle course that may end in recovery, death, or the production of characteristic sequelae.

In seeking to make a helpful contribution to a discussion of this protean disease it seems best not to try to give an epitome of the disease but to choose certain topics suitable for discussion. It is proposed, therefore, in what follows to deal briefly with the following points:

- 1 The clinical importance of the course that the disease runs
- 2 The incidence of the characteristic sequelae of the disease
- 3 The mental state of the restless, naughty child
- 4 The clinical affinities of the Parkinsonian syndrome

## 1 The Clinical Importance of the Course that Encephalitis runs

The chief end of the clinician's work on this disease appears to be to cut out of its protean manifestations various types, and to arrange them in a scheme of classification. Little or no success, however, has attended his efforts in this direction. Of the many schemes of classification of the clinical varieties of epidemic encephalitis that have been drawn up in almost every European tongue no one has met, or is likely to meet, with general acceptance. This general failure to make good in their taxonomic labours has been attributed by the clinicians themselves to the way in which well defined types of nervous disorder succeed each other in the course of the disease. It is not uncommon they have pointed out to see epidemic encephalitis begin as a neuritis and then pass through a series of states akin to chorea, lethargy, and acute mental confusion, each succeeding state blending with its neighbour in a way that eludes the powers of definition. But this failure to define clear cut types of the disease is hardly a matter for regret for while the fickle course that the disease runs may render the work of the taxonomist impossible, it is in itself a most valuable subject of clinical study. In this respect its chief value lies in the fact that a study of the course that the disease runs clinically brings the observer into touch with the morbid process responsible for the production of the clinical types that are the taxonomist's preoccupation. In so far as the clinical varieties that the taxonomist defines are static there is nothing specific about them. There is nothing specific for example about the ophthalmoplegia of epidemic encephalitis even although paralysis of accommodation is commonly met with in that condition. It only regains its specific character when it is reviewed in the light of its clinical history and demonstrated to be an incident in the course of a disease that runs a kaleidoscopic course.

While an epidemic of encephalitis lethargica is raging the diagnosis in the great majority of cases offers no real difficulty. It is another matter however when it is a question of recognizing a sporadic case of the disease. In these circumstances the difficulties of a differential diagnosis is between epidemic encephalitis and the other forms of non-purulent encephalitis may be insurmountable. The same remark applies to the difficulties that arise on meeting an unusual form of chorea, ophthalmoplegia or lethargy. In all these instances however the fact that the condition has occurred in the progress of a malady that has run a fickle course in which divers symptoms of nervous disease have put in an evanescent appearance goes a long way to establish the nature of the disease process at work.

## 2 The Incidence of the Sequelae in Encephalitis Lethargica

It is usual for an interval to elapse between the subsidence of a disease and the appearance of its sequelae. This is far from being the rule, however, in epidemic encephalitis. Not infrequently it happens that a syndrome that has played a more or less prominent part in the acute phase of the disease persists after this phase has apparently subsided. Tics, disorders of the respiratory rhythm, and psychomotor excitement frequently behave in this way. Therefore it is usual for an interval of anything up to four weeks to elapse before the appearance of the Parkinsonian syndrome, it also may follow hard upon, if not actually merge out of, the acute phase of the disease. On the strength of these considerations the appropriateness of the term "sequelae" for such manifestations of epidemic encephalitis has been called in question, and the term "residua" used in place of it. But the facts of the case are not so unique as to warrant this change in terminology. Seriatim nephritis is commonly regarded as a sequel of scarlet fever because an interval of a fortnight elapses between the subsidence of the fever and the appearance of the nephritis. But nephritis may also appear as a symptom of scarlet fever, and persist after the fever has subsided, yet no one has ever suggested on that account that seriatim nephritis should not be spoken of as a sequel of scarlet fever. The term "residua" may play quite a useful role as a label for the nervous syndromes that arise out of the acute phase of epidemic encephalitis and follow a subacute or chronic course of their own, but it can never displace the term "sequelae" for those syndromes which appear some time after the subsidence of the acute phase of the disease.

Age appears to play an important part in the incidence of the residua and sequelae of epidemic encephalitis. Psychomotor excitement, with or without nocturnal wakefulness and somnolence by day, tics, choreiform movements, and disorders of the respiratory rhythm, show a preference for the early years of life. On the other hand, the Parkinsonian syndrome, the well defined states of mental disorder—mania, melancholia, and confusion—and the residual paralyses are the appanages of youth and adult life.

Sex does not appear to influence the incidence of the sequelae, but there is some evidence to show that, although pregnancy does not play the part it was at one time thought to play in modifying the course of epidemic encephalitis in women, it influences the incidence of the Parkinsonian syndrome.

An attempt has been made to show that the severity of the acute attack influences the incidence of the sequelae. This is largely the work of observers who have been in a position to follow the after-history of patients whom they have treated during the acute phase. It is, however, a very common experience in a neurological clinic, or in a mental clinic for school children, to be unable to get a history of an acute attack of the disease in patients who show the sequelae of the disease in their most characteristic forms. This fact has led many observers to connect the incidence of the sequelae with the way in which the acute illness and the convalescence have been managed. These observers hold that the great desideratum is rest to the mind and body, and advocate six months of this for mild cases and a year for severe cases.

There is much evidence to show that the nature of the sequelae varies from epidemic to epidemic. Thus the Parkinsonian syndrome was a common sequel of the 1919 epidemic, and was practically unknown in that of 1918. On the other hand, psychomotor restlessness with nocturnal wakefulness was a common sequel of the epidemic of 1920-21 and athetoid movements of the epidemic of 1923-24.

## 3 The Mental State of the Restless, Naughty Child

A great deal of attention has been paid to the restless, naughty child because of the social and educational problems that he raises, and much that has been written about him is wide of the mark. The moral aspect of his behaviour has been emphasized, naturally enough, as it is his apparent

disregard of all moral considerations that makes him impossible at home, at school, or in the sick ward, and in my mind has seemed to be the most striking feature of his behaviour. I have often been asked to see him in his absence, and in my opinion of his moral sense. Strangely enough, very little has been said about the *mannal* character of his misbehaviour, although it has more affinity with that of the maniac than with that of the delinquent, hebephrenic or that *para avis*, the moral imbecile. There is nothing cunning or underhand about the misdeeds of the restless, naughty child. Unlike the delinquent, he does not choose a convenient season in which to commit his misdeeds, he carries them out in the public eye. He acts on the spur of the moment, and his offences are quite devoid of malice prepense. On the other hand, he does not show the stolidity of the hebephrenic or the moral imbecile. He is accessible to an appeal to his better self and is not insensible to correction. Most of the outrageous incidents in which he figures arise from injudicious handling. He commits some venial offence. Everything turns on the way in which he is corrected. If he is taken the right way the matter ends in tears but if his anger or resentment is aroused he throws the first thing that comes to his hand at the head of his censor, or indulges in all sorts of threats or abuse of him. But whichever mental state is aroused is of short duration and soon gives place to another. In short, there is any amount of instability, but little or no evidence of moral depravity, in the misbehaviour of the restless, naughty child.

If the mental state of these children be looked at as a whole, the instability that is so striking a feature of their misbehaviour is seen to be confined to no particular faculty of their minds. All their mental processes are unduly mutable. Their ideas, their moods, and the impulses of their wills are all easily induced and, failing to develop properly, are readily supplanted by others. In consequence of this these children become the slaves of their environment. They no longer behave according to the principles instilled into them by their upbringing, but obey the whim of the moment. They become pet and forward, inclined to tail to any person they meet, and to handle whatever catches their eye. Incidental and non-essential ideas, aroused by habit of speech or similarity of sound, break into their talk giving it a smack of piecemeal. On the other hand, their restlessness is far from aimless, it is well a piece of occupation. They are always busy about something, and so long as their activities can be confined to useful channels they work well under supervision.

What the psychologist calls *general intelligence* is not affected by the disorder to any appreciable extent. The recognized mental tests show that the apparent precocity of the restless, naughty child is not accompanied by a high intelligence quotient. On the other hand, it is quite exceptional for one of these children to have an intelligence quotient below 85. Nothing in the nature of a secondary dementia is ever seen, even when the disorder has lasted so long as nine years. All that may be said about them is that their mental powers do not mature. They are a sort of Peter Pan—they never grow up.

## 4 The Clinical Affinities of the Parkinsonian Syndrome

This sequel of epidemic encephalitis derives its name from the resemblance it bears to paralysis agitans. Although at the first glance the resemblance appears close, one, it does not stand detailed examination. There where an undoubted similarity exists between the two conditions there are important points of difference. There is, for example, no doubt about the strong family resemblance between the tics of Parkinsonism and Parkinson's mask, but the former shows none of the deep furrowing of the brow that is so prominent a feature of the latter. Again, there is much in common between the posture and gait that the patients manifest in the two conditions, but the localized distribution of the muscular spasm and the "kinesia paradoxa" that are often seen in Parkinsonism never occur in paralysis agitans. As for tremor, a symptom common to both conditions, it rarely dominates the Parkinsonian syndrome as it does paralysis agitans.

The differences which exist between the two conditions are notable. In the first place there is nothing in paralysis agitans comparable to the metabolic disturbances that often

constitute an important part of Parkinsonism. In Parkinsonism the skin of the face has not the thick, greasy look that it has in the faces of Parkinsonism, and it is never associated with sialorrhoea. Moreover, constitutional changes, such as are seen in the *forme ephrénétique* or in the tendency to obesity that patients suffering from Parkinsonism show, are never met with in paralysis agitans.

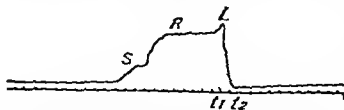
When cases of Parkinsonism begin to appear in France during 1919 they were often referred to as atypical cases of *l'atonie*. This identification of the characteristic sequelæ of epidemic encephalitis with *l'atonie* is in many ways more just than that implied in the term "Parkinsonian syndrome." So far as its somatic symptoms are concerned *l'atonie* has more in common with Parkinsonism than paralysis agitans. When well developed the faces of the two conditions are practically identical. Both show the stretched look with the smooth forehead, the thick greasy skin, and the saliva dribbling from the half-opened mouth. In both conditions the tongue tends to become small, indented, and the seat of an intrinsic tremor. The posture and gait are likewise very similar even to the presence in *l'atonie* of a condition in every way comparable to *kinesia paradoxa*. On the other hand epileptic manifestations which are a common feature in *l'atonie* rigidity, are sometimes seen in the rigid muscles of Parkinsonism. Here the resemblance breaks down for while mental changes are common in Parkinsonism the stolidity and inaccessibility of the *l'atonie* are never seen indeed it may be said that if a Parkinsonian were to become inaccessible *aprio facto* he would become a *l'atonie*.

## V—THE INDEPENDENCE OF BRADYKINESIA AND OF HYPERTONUS IN RESPECT OF PARKINSONISM

BY  
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THE polymorphism of epidemic encephalitis or encephalomyelitis which we distinguished in 1917 in describing for the first time this hitherto unknown disease is no longer under discussion. This is the principal reason why Professor Luriers, dean of the Faculty of Medicine of Montpellier recently said that there is no better name for this disease than the name of the author who first described it.

Of the many different aspects of the disease I will consider only a single point which I mentioned in my London lecture on the bradykinetic syndrome in 1925. Many authors admit that the slowness of movement in post-encephalitic Parkinsonism as well as in Parkinsonism in general is an effect secondary to the peripheral muscular hypertonus. So understood bradykinesia should be but a simple and particular case of movements which are executed against resistance. This point of view could



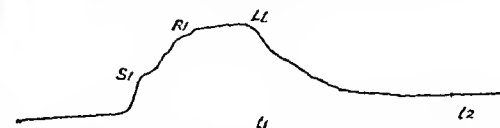
Graph showing the normal postural reflex. S Passive response of the tendon of the tibialis anterior produced by flexion of the foot. R Reflex. L Relaxation time of postural reflex.  $t_1-t_2=2.5$  seconds.

not be maintained and may fail to show perfectly the independence of bradykinesia. For a long time Vejer and I have noticed the existence of sequelæ of encephalitis which are characterized only by slowness of movement without real muscular hypertonus in such patients the postural reflexes and tendon reflexes are quite normal. It is not rare to discover hypertonus in such patients after several months. It is ordinarily of the type of Parkinsonian hypertonus characterized by exaggeration of postural reflexes. We call by that name the postural reflexes described by Forst and Thénard also called by Delmas-Marsalet elementary postural reflexes.

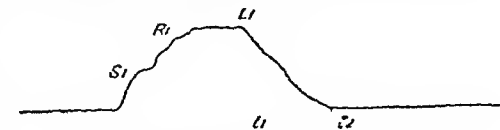
The simplest way of eliciting the reflex is to place the foot in flexion on the leg which renders evident the postural reflex of the tibialis anterior. This is obtained

a graph which can be resolved into three parts. The first part (S) indicates the passive response of the tendon of the tibialis anterior to the flexion of the foot. The second part (R) represents active contraction of the tibialis anterior—that is to say the real postural reflex. The third part (L) the foot being left alone indicates the return of the foot to its initial extension or position. This return takes a certain time (indicated on the graph by  $t_1-t_2$ ) which is called the relaxation time of the postural reflex. The duration of this relaxation time varies according to the greater or less intensity of the postural

Graph showing the action of Scopolamine Injection on the Postural Reflex of a Case of Encephalomyelitis (Anterior Tibialis)



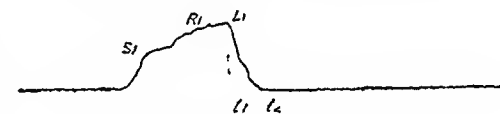
Before injection Relaxation time of postural reflex  $t_1-t_2$  = 2 seconds.



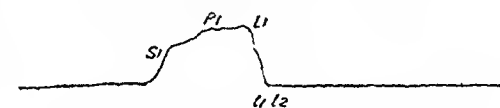
Twenty minutes after injection  $t_1-t_2=2$  seconds



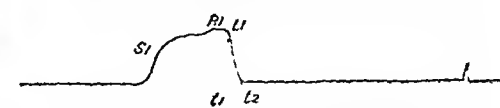
Twenty five minutes after injection  $t_1-t_2=11$  seconds



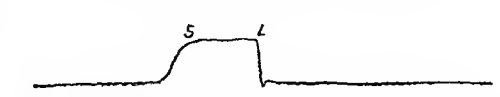
Thirty minutes after injection  $t_1-t_2=4$  seconds



Thirty five minutes after injection  $t_1-t_2=2.5$  seconds



Forty minutes after injection  $t_1-t_2=1.5$  seconds



Forty five minutes after injection Absence of the postural reflex and persistence of bradykinesia

reflex. Normally it is as shown on the graph. Lastly, with old Parkinsonian cases hypertonia can be transformed into a pyramidal type characterized by ankle clonus and Babinski's sign.

Whatever the type of case and whether the patient is not hypertonic or his hypertonia is a Parkinsonian or a pyramidal one bradykinesia remains exactly the same. This clinical observation therefore, shows well the independence of bradykinesia and the variable state of the muscular tonus.

These facts undeniable from the clinical point of view, needed an experimental demonstration. This has just been

given by one of my pupils, Dr Delmas-Marsalet. His test is as follows. By subcutaneous injection a solution of scopolamine biomhydrate is given, this provokes in Parkinsonians a progressive abolition of postural reflexes, which is complete in about forty-five minutes. It is well seen in the accompanying curves. At the moment when the scopolamine injection has completely abolished the postural reflexes, different segments of the limb are in flaccidity, and there is no longer hypertonia.

It is most important to note that if the patient is asked to execute movements these remain distinctly slow, in spite of the disappearance of hypertonia. What is equally remarkable is that the abolition of postural reflex leaves the tendon reflex and general sensitivity completely intact. It even permits, when pyramidal excitation and Parkinsonian hypertonia are associated, the reappearance of pyramidal excitation (clonus of the knee and ankle, and exaggeration of the patella reflex), which this hypertonia had inhibited.

These different facts indicate clearly that it is useful to separate bradykinesia from hypertonia. Bradykinesia, just as much as bradyphasia, must be considered as an alteration of special nervous functions which have nothing to do with the tonus. It seems that bradykinesia represents, as Vergé has said, a deficit of a general function of the brain—the automatic habit function.

Delmas-Marsalet's test in experimentally isolating the postural reflex gives a rational explanation of the action of scopolamine, known for a long time in Parkinsonians, and of the irregularity of this action. With the ordinary bradykinetic patient, without postural hypertonia, the effect of scopolamine is only moderate, the best result is obtained with the bradykinetic with postural hypertonia. When this condition is complicated by pyramidal signs the result is bad, because the abolition of postural reflexes will increase the pyramidal contracture still more. It is only in the cases in which pyramidal contracture, clinically absent, is discovered by the scopolamine test that the result is good, if this contracture is slight, it is right to use scopolamine. If this contracture is strong, it is better not to employ it.

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#### DISCUSSION

Professor GEORGES GUILLAIN (Paris) said that at different periods in the evolution of chronic epidemic encephalitis, soon after the onset of the disease, or a long time after the development of a Parkinsonian syndrome, it was not exceptional to observe symptoms which resembled those of myasthenia. When they were localized only to the limbs, or to isolated groups of muscles, the diagnosis of myasthenia gravis did not occur to one, in more numerous cases, however, the myasthenic symptoms, beginning in muscles supplied by mesocephalic nerves and later becoming generalized, revealed a clinical picture identical to that of the Erb-Goldflam syndrome. In such cases either a history of typical acute epidemic encephalitis before the onset of the condition, or certain symptoms of the Parkinsonian syndrome, indicated the true nature of the myasthenia. Th. Alajouranne and he had described such cases, and recently A. Wimmer (Copenhagen) had recorded a series of similar observations. Professor Guillain wished to recall the characteristics of the myasthenic aspects of epidemic encephalitis, and gave notes of three cases which disclosed three different aspects of abnormal myasthenic syndromes. The first two closely resembled myasthenia gravis, in the first a Parkinsonian syndrome, in the second a recent epidemic encephalitis, demonstrated the infectious etiology of the myasthenic syndrome. In the third case (seen at the Salpêtrière with Dr Thévenard) the clinical picture was partly that of an alternating syndrome of the bulbo-pontine region, and partly that of myasthenia, according to the character of the parietic troubles and their variability. The history of the disease and the influence of sodium salicylate treatment again suggested

the encephalitic etiology. Encephalitis lethargica seemed, therefore, able to produce symptoms quite similar to those of myasthenia. And furthermore, in encephalitic sequelae it was not exceptional to meet with isolated myasthenic symptoms, which were absent in the clinical picture of a Parkinsonian syndrome. Such cases were interesting from the point of view of diagnosis and prognosis, they did not seem to evolve progressively and severely as did myasthenia gravis. The diagnosis, too, was made easy by the knowledge of an acute period of infection or by the observation of sequelae of encephalitic type. Mean while certain cases could offer difficulties in their interpretation. In such cases the electro-diagnosis did not give any real help, but with Bourguignon's technique the study of chronaxy would give new reasons for supposing an encephalitic etiology. This series of observations showed the great variability of syndromes depending on encephalitis, and allowed a new conception to be formed of the still obscure etiology of myasthenia.

Dr E. MATHOTER (London) said that the psychiatrist was rarely concerned with the acute phase of encephalitis, and neither its intensity, type, nor duration seemed to be correlated with the severity or character of the mental sequelae. He quoted cases indicating how spurious psychogenesis and lack of physical examination might lead to cases of encephalitis being regarded as functional psychoses and neuroses. Febrile attacks, which were apparently a recrudescence, occurred in cases with mental sequelae, and sometimes led to increase of these, and also favoured the idea of continuing infection rather than maladjustment to damage done during the acute stage. Mental sequelae were almost independent of neurological syndromes, and this pointed to their dependence on lesions in special foci or systems of neurons. The attribution of delinquency to infection before a stable ethical code had been organized was obviously inadequate, since it occurred in those who had been normal adults, it was clearly a regression, not merely an arrest. No "moral centre" need be postulated but derangement of levels that subverted foresight of consequences—a view that was supported by indifference to danger in some of the same patients. This point was of great theoretical importance in relation to "moral imbecility" and cases of demoralization after head injury. Dr Marshall's identification of restlessness and delinquency seemed very questionable, often the occasional delinquent was perfectly quiet. The restlessness of the post-encephalitic differed greatly from the joyous excitement of true mania. With Parkinsonism mania was rare but suicide was common, this might be sense or insanity, but not euphoria. Lastly, the resemblance of katatonie to Parkinsonism was no greater than that of functional hemiplegia to organic, and the difference of the same order. The one was mental and the other not—doubtless a difference of level, but a material one. They could usually be simply distinguished clinically. The disabilities of the Parkinsonian were mainly in automatic activity, co-operation was ready and effort reduced disability. The usual immediate effect of urging the katatonic or hysterical to effort was increase of disability.

Dr B. SACHS (New York) said that following the European epidemic of 1918 the first cases were seen in New York in the winter of 1918, and were reported upon early in 1919. While there had been marked variations in the number of cases seen in succeeding years, the disease had been steadily with them in New York, both in its acute form and especially in its sequelae. Dr Sachs wished to supplant "encephalitis lethargica" by the term "central and basilar encephalitis"—which it really was. He used the term in his own writings. The history of the disease as it occurred in New York, and as reported in the volume published by the American Association for Research in Nervous and Mental Disease in 1921, tallied in every way with the account given by Dr McKenzie of Glasgow. In later years the myoclonic and choreic symptoms were much more marked than in the earlier years. There was no doubt a gradual attenuation of the virus, and probably some change in the site of the lesion. The motor manifestations of the disease, with frequent involvement of the basal

gingling had gained a special importance with reference to the more recent studies of the functions of the corpus striatum. Ramsay Hunt favoured the conception of two striated systems—one for the control of the automatic and associated movements (the pallidum system) and the other for inhibitory and co-ordinating functions (the neo-striatal system). Interference with these functions was responsible for the symptoms resembling on the one hand those of paralysis agitans and on the other those of chorea or athetosis. When both systems were involved there might occur any possible combination of the two types of motor disorder. Some of the lesions in the acute infantile cerebral palsies might be of cortical origin but these infantile cerebral palsies were sometimes of ganglionic origin. Dr Sachs was in full sympathy with Dr Marshall's report on the mental aspects of this epidemic disease and would particularly wish to endorse what Dr Marshall had said about the mental state of the restless naughty child but again he was still more impressed with the recollection of these adult cases of the disease that began with psychic symptoms (in one case a very unusual frictionsness, suggesting frontal lobe involvement) very acute manic symptoms and in several instances were fatal within two weeks. Some might stop to think of the cases of chorea in children of years ago so often fatal. There was also general agreement on the conclusion that epidemic encephalitis and acute poliomyelitis were distinct clinical and bacteriological entities in spite of the contention of Neustädter, Turkin and Baurthal that they were able to neutralize the poliomyelitis virus *in vitro* in six instances with serums of patients recovered from epidemic encephalitis and completely protect the six monkeys experimented upon. Amos (1921) stressed the point that experimental poliomyelitis is readily transmitted while epidemic encephalitis could not be transmitted experimentally with anything like the same ease.

Professor Karl Pribram (Umeå, Sweden) said that two Swedish observers, Professor Sjogvall and the late Professor Forssner had shown that phlogocytosis was invariably present in poliomyelitis during the acute stage and was of great importance in explaining the destruction of the motor cells. These findings had been amply confirmed by later authors. On the other hand in encephalitis lethargica phlogocytosis was usually entirely absent. These differences were in accord with the divergent courses of the two diseases. In poliomyelitis the paralytic symptoms reached their maximum intensity in a few days—almost always in not longer than four days. In contrast his difference was the course of encephalitis lethargica, a fact that it was not necessary to emphasize. Professor Petren also called attention to the oculocephalic reflex of Guillian in the diagnosis of the Parkinsonian state. This reflex consisted in the exaggeration of the blinking of the eyelids elicited by tapping the skin about the root of the nose. Professor Petren had found this reflex invariably present in the Parkinsonian syndrome. Dr Riddell had mentioned that there was often a certain interval between the acute phase of encephalitis and the appearance of Parkinsonian phenomena. It was therefore a question of the highest practical importance to determine how long this interval could be or in other words how long after a patient had had encephalitis lethargica might a Parkinsonian syndrome follow. In a large experience of such cases Professor Petren had never found this interval to be longer than four years.

Dr W. A. Potts (Birmingham) challenged the statements that the disease had a tendency to pass definite course and that the anatomical damage was permanent. For a long time there was numbing rather than destruction of the higher and other special brain centres. Such a conception was a better explanation of many cases especially the not infrequent ambulatory type. So far from not resembling neurological syphilis it was similar in many ways especially in still being amenable to treatment if thorough and prolonged even in late stages. There was also a choice of at least two possible courses according to the temperament and mental outlook of the patient—namely (1) the path of the dementia praecox type in which all its varieties showing almost continuous abnormality and (2) the path of the manic-depressive type

alternating between the euphoric (manic) state and the depressed state with lucid intervals for weeks often for months and sometimes for years. In connexion with the diagnosis there were two important symptoms. The first was the fact that in the ambulatory case when the patient did not leave his work for more than a day or a week-end there was always a history of at least two or three hours during which he felt desperately ill. The second was the fact that while in the later stages there was no loss of intelligence there was always in children a failure of other mental faculties to develop and sometimes an actual regression. In the adult the corresponding feature was a diminished sense of responsibility the result of which was bizarre or immoral conduct. Dr Potts advocated a course of autogenous vaccines or non-specific protein therapy with investigation of the teeth and thorough investigation of the intestinal tract which sometimes might be nothing less than a long course of Plombiere's colon douching. Each symptom must be treated as a further indication of a septic psychosis not yet completely dealt with. It must be remembered that while the most important fundamental factor was the unhealthy state of the alimentary tract and the unsatisfactory diet it was necessary to consider the probable entrance of the infection from the nose through the cribriform plate of the ethmoid hence the frequency of ethmoidal sinusitis as a complication, and the fact that the majority of early signs came from the base of the brain. The first step in treatment should be thorough disinfection of the nose itself this could not be effected by the occasional use of a watery application, but only by the daily and prolonged use of an oil solution of an efficient coagulating antiseptic to prevent further infection by the original virus or any secondary germs.

Dr Julian M. Wolfson (San Francisco) regretted that treatment of the chronic encephalitis had met with such poor results. Many chronic cases could be prevented by paying more attention to the acute stage of the disease. He had been his experience that few cases of the disease in its acute stage passed into the chronic stage if no matter how slight the symptoms were mental and physical fatigue were absolutely interdicted for six months once the case had been diagnosed as lethargic encephalitis. The management of the acute case after fever had subsided included complete rest intestinal antisepsis and administration of polyvalent autogenous vaccine from the intestinal tract and nasopharynx.

Dr T. A. Ross considered that 'neurasthenia' was a real entity as anything in medicine. The history sought for was a biographical one to indicate how the patient reacted to the ordinary difficulties of life at all times. The failure to regard 'neurasthenia' positively and not merely negatively had caused it to be considered as a sort of rubbish heap from which people were always extracting new diseases.

Dr Potton (Oldham) said that Parkinsonism in our appearance in the early stage was centrally a derangement of posture. He mentioned two cases the first of which showed a spasmodic cramp of the upward glance and indication of one a subacute excitement which was induced by postural position and which rested upon the entire controlling movements. The second case was one of complete external ophthalmoplegia with diplopia or six months standing. Simple swinging of the ears with cold water enabled the patient temporarily to move his eyeballs in every direction and caused the diplopia to disappear. These and other findings led the speaker to argue that a vestibular in not only existed but that it was responsible for the commonest group of symptoms—namely the ocular manifestations.

Dr P. C. Lower (Birmingham) considered that the mental symptoms of encephalitis lethargica were of the toxic infective type and resembled in some features the acute mental effects of such toxins as klonal because neurotoxins depolarized all nerve cells and especially those of the highest levels. In encephalitis in addition to the severe local lesions there was evidence of a depression of higher cortical functions in the characteristic organic



mental reaction of lethargy and the weakened attention and "gasp", Dr. Greenfield had shown that there might also be visible evidence of cortical cell degeneration. The mental changes could best be understood by utilizing the conception of "neuronal energy," and thinking of mental and nervous phenomena as evidences of orderly evolution and distribution of energy derived from the activity of the neurons at different levels in the nervous system. Heid had observed that the decerebrate cats of Buzzett and Penfold responded to stimuli reflexly and purposefully, so that a drop of water placed in the ear led to shaking of the head, while touching the ear with a finger produced a different but appropriate response. This purposeful adaptive character of reflex response to stimulation was only seen when the internal and external environment of the animal was good and the nervous system was said to be in a state of "vigilance"; it was abolished temporarily, for example, when the cat was given a little chloroform or suffered from sepsis. By considering what "vigilance" implied physiologically and applying that conception to high cortical levels, a close parallelism would appear between high vigilance in the cortex and high mental efficiency, with its heightened attention and ability to respond appropriately to whatever stimuli might arise in the changing environment of the individual. Attention implied in psychology largely what "vigilance" did in physiology—namely, that condition of the mind (nervous system) in which a selective response to a stimulus could be obtained at its optimum. It was these psychic characters which were impaired in mental disturbances of toxic and infective origin. Hence arose lethargy, defective power of concentration, loss of interest, and the inability to organize reactions according to social standards which characterized the child suffering from encephalitis lethargica and head injury, possibly the same accounted for the asthenic syndrome described by Dr. Riddoch.

## OPTIMAL RHYTHM IN THE MAMMALIAN HEART AND THE ACTION OF THE CARDIAC NERVES

BY

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Under experimental conditions, with the influence of anaesthetics, etc., the mammalian heart muscle shows two distinct types of behaviour, in which the ventricular contraction force is very differently influenced by changes in the rate of beat, whether such changes are then owing to local alterations in the normal pacemaker, to artificial or normal excitations, or to the influence of the cardiac nerves. In a communication to the International Physiological Congress in 1923, these types were designated I and II. Cats and rabbits were employed, anaesthetized with chloroform, ether, methane, etc., or decerebrated during anaesthesia with chloroform and ether. Graphic records were made from auricles and ventricles by the Canny myocardiograph or by an optical form. Intracardiac pressures, etc., were also registered in many experiments.

### CHARACTERISTICS OF TYPES

In Type I, which is the normal, premature or much accelerated beats tend to be of diminished force, while delayed beats, as seen after a compensatory pause or during simple slowing of rhythm, usually tend to be stronger. Within limits, the longer the interval between beats the longer is the ensuing beat. The optimal interval is indefinitely long. In Type II, on the other hand, there is a certain range of interval which is approximately optimal regarding contraction force. Slowing leads to weakening, the degree of which stands in strikingly close relation to variation in the length of the intervals. Acceleration beyond the limits of the optimal rate is attended by reduced

size of beat. The optimal rate varies under different conditions, it may be very much higher than the ordinary heart rate of the animal—in the cat, with its normal 90 or 100 beats a minute, the optimal rate may be 200 to 240—about the maximum rate of the heart after section of the vagi.

Sudden changes between periods of optimal and sub-optimal rhythms are attended by sudden diminution or augmentation of the beats. Similarly, single beats following an optimal or suboptimal interval show immediate and striking differences in size, not depending on changes in blood pressure, but connecting a special metabolic condition of the ventricular muscle in which recovery after a contraction is rapid and is followed by early return in contraction power, if another excitation does not occur after an interval of such duration as is suitable or optimal in the particular conditions of the muscle at the time. The behaviour of the contraction force is similar in ventricular beats due to excitatory impulses arriving from the auricles in normal fashion through the auriculoventricular bundle and in beats provoked by artificial stimulation of any part of the ventricular muscle.

The phenomena in question are related to what has been described as a "supernormal" phase in nerve and cardiac muscle of lower vertebrates under certain conditions. But the enlarged ventricular beats are not really supernormal, their increased size represents a return to or towards the normal from a subnormal size, which had been determined by the presence of a suboptimal rate of succession with intervals long enough to lead to a decline of contractile power below the optimum.

### DISTRIBUTION AND CHANGE OF TYPE

Type II has been seen only in the ventricles, where in a long series of experiments extending over many years it has been found to be about as common as Type I in cats. In rabbits, on the other hand, under similar experimental conditions, Type I was always recognized. The auricles of all the animals examined (cats, rabbits, etc.) always showed Type I. Repeated changes of type were often observed in the course of a single experiment. Type I is frequently altered to Type II after a phase of asphyxia or intravenous injection of adrenaline, alone or after a depressing dose of potassium, etc. Type II is often replaced by Type I after the administration of pilocarpine, acetylcholine, and other drugs. The alterations in size of beat shown by the recording lever are not dependent on altered physical conditions—for example, blood pressure, or filling of heart.

### RELATION TO ACTION OF CARDIAC NERVES

Since slowing may *per se* cause weakening of the ventricular beats in Type II and acceleration may give marked augmentation, the question arises as to how far the effects of stimulation and section of the vagus and sympathetic nerves may be conditioned by simple rate changes in the heart under experimental conditions.

### The Vagus

The records show that pronounced ventricular weakening during vagus stimulation is sometimes capable of being accounted for solely by the associated slowing of rhythm resulting from the action of the nerve upon the pacemaker. During the period of slowed weakened beats a contraction excited at the optimal interval is of full size, in contrast to the greatly weakened preceding and following beats which have come after an unduly long (non-optimal) interval. But, on the other hand, there is frequently evidence of a direct weakening influence also being exercised by the vagus—the reduction in force being specially at the culminating part of the vagus period—out of proportion to the degree of slowing. There is thus a combination of rate effect and direct force depressing vagus influence.

In Type I the vagus can show marked weakening effects in the ventricles (as well as the auricles). Here, though associated with slowing of rhythm, the weakening is not directly due to the slowing. Simple slowing, from vagus influence on the pacemaker, apart from a direct force-depressing influence of the nerve, usually leads to enlargement of the slowed beats. When weakening is marked it bears no constant relation to the length of intervals.

between the beats. During *vagus* standstill or slowing and weakening a rhythmical series of artificial excitations calls forth beats showing a progressive increase in size (stature) this indicates an influence inimical to the force-depressing power of the *vagus* on the ventricular muscle. The actual effect of the *vagus* on contraction force depends on an interaction between the influence of rate changes and the direct force-depressing power of the nerve. In opposition to the current view that the *vagus* has no direct effect on the contraction force of the mammalian ventricles, the present investigation affords abundant evidence of strong weakening effects in exceptional instances more extensive than those seen in the auricles. The weakening action of the *vagus* on the ventricles differs in certain important respects from what holds good in the auricles, being differently conditioned by rates of beat etc. In the auricles *vagus* weakening may occur without any change of rate and acceleration (by artificial excitations) of slowed and weakened auricles does not produce the augmenting effects seen in the ventricles.

#### *The Cardiac Sympathetic*

As regards sympathetic action it is clear that the acceleration induced may in Type II determine marked augmentation in the ventricle. But it is plain that such is not the sole mode of action of the nerve, for the augmentation may be much greater than results from simply bringing the heart rate to the optimum frequency level. A further augmentation may be obtained by sympathetic stimulation while Type I is present in both ventricles and auricles. Hence rate change is only a possible contributory factor in the ventricles in Type II. There is a further specific influence beyond the direct effects of rate changes in the case of stimulation or section of either the cardiac augmentor or the inhibitor nerves and operative on both the auricular and the ventricular contraction force.

## THE MECHANISM OF VOLUNTARY MUSCULAR FATIGUE

BY

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THE present inquiry deals with two forms of fatigue in man: (1) that induced by a series of voluntary contractions of the flexor digitorum sublimis recorded by a Mosso's ergograph; (2) static contraction of the same muscle maintaining weights at certain levels and registered in the same way. Animal experiments (under anaesthesia) were also performed: the tibialis anticus of the rabbit and cat being used in contraction against an elastic resistance was registered graphically under different conditions. The relation of experimental ischaemia to the incidence and characters of fatigue were examined both in the human subject and in animals.

#### *Fatigue from Serial Voluntary Contractions*

When fatigue results from a series of voluntary contractions the failure of effective muscular response is primarily "central"—that is it is primarily due to defective outgoing motor impulses from the central nervous system. This is shown by the fact that further muscular response can still be obtained from electrical stimulation of the median nerve or of the muscle directly by single induction shocks, or by faradic currents at rates of 40 to 200 per second. But though the fatigue is primarily central it is not always wholly so, there is evidence of marked depression of contractility in the muscle itself at least when fatigue is induced by a very rapid series (for example, 120 to 160 per minute) of voluntary contractions especially when the weight raised is considerable—for example,

2 kilos. Here there is an overlapping of central and peripheral changes. On the other hand, when a slow series (40 to 80 per minute) of voluntary contractions is employed to produce fatigue the muscular response to direct electrical stimulation may be practically unimpaired at the point of time when voluntary effort fails to raise the weight, the failure is almost wholly central in this case.

The comparative effects of electrical excitation of the nerve trunk and of the muscle directly do not afford evidence of any marked selective influence of fatigue on the field of conjunction of nerve and muscle—the myoneural junction. The power of the contractile response obtained from (a) the nerve trunk and (b) the muscle directly stimulated shows little difference even in advanced fatigue involving a great diminution of the available muscular energy. For example in a rabbit's limb with intact circulation there was only a slightly greater response from (b) after about 50,000 contractions (pulling against an elastic resistance) had been executed in a period of four and half hours with reduction of the excursions to less than one-tenth of their original size. Such results are opposed to the hypothesis that comparatively early failure of transmission through the junctional region between nerve and muscle plays an important part in the genesis of voluntary fatigue.

Some previous observers have stated that after fatigue has been induced by direct electrical stimulation voluntary effort can still cause effective contraction. In the present inquiry it has been found that after thorough fatigue has been induced by local stimulation voluntary impulses fail to elicit any marked further contraction.

#### *Fatigue in the Ischaemic Condition*

In the ischaemic arm muscular fatigue from a series of voluntary contractions occurs much more rapidly than in the normal limb—for example in two to three minutes as compared with fifteen to twenty minutes. The direct depressing effects of the bloodless condition on the working muscle might be supposed to account for this but it is found that local excitation (median nerve or body of muscle) still gives a marked though reduced contractile response. The fatigue is primarily in the central nervous system in this case also, weakening of the muscle develops as well though much more slowly than the voluntary failure.

Why should central failure occur much more readily here than in the limb with normal circulation since the central nervous system is far removed from the ischaemic area and beyond the reach of chemical agents metabolites etc., transmitted from the ischaemic limb? It is evidently contingent on afferent nervous impulses from the working muscle depending on conditions set up in it by repeated strong contractions—conditions (chemical etc.) naturally accentuated in the bloodless muscle setting up painful afferent impulses much more rapidly than in the normal arm.

Ischaemia *per se* cannot be regarded as the cause, for with quiescent muscle ischaemia up to a duration of fifteen minutes produces no discomfort and has no appreciable influence on the power of voluntary contraction. From the much earlier failure of response to voluntary effort during ischaemia it is evident that local conditions in the working muscle form part of the mechanism of fatigue. But the central nervous system is also involved, since further contractile response is given to local stimulation after voluntary effort has failed. The "central" failure is not simply a primary or direct one affecting some part of the central nervous mechanism concerned in voluntary motor discharge but is largely a reflex effect of afferent impulses from the working muscle—no doubt protective against excessive prolongation of activity and undue development of fatigue in the muscle.

Thus the conditions of developing fatigue arising primarily in the working muscle do not directly induce the depression of contractile power shown in the ergograph records. Their influence is exercised in reflex fashion by afferent impulses concerned in producing the "central" failure which determines the ineffectiveness of voluntary effort (in both normal and ischaemic limbs).

at a point of time when there is still much contractile energy available in the muscle if effective motor impulses were provided. There is reason to regard the process of fatigue in the ischaemic limb as similar in most respects to what occurs with the intact circulation, though more rapid and acute.

#### Static Fatigue

The onset of failure in this form of fatigue is of central origin, since when the continuous voluntary effort can no longer sustain the weight and prevent the shortening of the muscle from being overcome, the muscle can still respond strongly to direct electrical excitation. In this respect there is a general resemblance to the fatigue induced by a moderately slow (40 to 80 per minute) voluntary series of contractions. But in some other respects the two forms differ strikingly—for example, in relation to the influence of ischaemia.

The length of the period during which voluntary effort is effective in maintaining static contraction is very little affected by an ischaemic condition of the limb; indeed, the curves obtained in the normal and in the ischaemic states may be almost superimposable—in notable contrast to the rapid development of failure in voluntary serial contractions in ischaemia. Again, a period of static contraction has an improving effect (on contraction force), less than that of a period of rest, when interposed in the course of a series of voluntary contractions showing the progressive development of fatigue. There are indications which point to static fatigue with intact circulation as being essentially due to fatigue in the central nervous system, not dependent in any important degree on afferent impulses from the contracted muscle so far as evidence is available.

#### THE PINEAL GLAND \*

PROFESSOR HERMINE (St Andrews) showed a series of lantern slides illustrative of the histology of the pineal region of the mammalian brain. It was pointed out that the pineal body was not the remnant of the pineal eye found in some of the lower animals. The pineal body was a separate structure which was developed behind the pineal organ or pineal eye. In man and most mammals the pineal body was bound up with the habenular and posterior commissures, but in the rat the pineal body lay on the surface of the brain between cerebrum and cerebellum. In the animal it was isolated and highly vascular body which was suggestive of an organ of internal secretion. The pineal body of the rat was innervated only by fine nerve fibres, which entered it with the blood vessels. The mammalian pineal body contained a material which produced contraction of the myonophores of the tadpole, but its function was as yet unknown. Attention was drawn to the subcommissural organ of most mammals, which Dendy regarded as a receptor brought into action by changes in tension of the fibre of Reissner. The organ was well developed in most mammals, but was rudimentary in man.

#### PROTEIN METABOLISM IN CYSTINURIA \*

PROFESSOR D. MURRAY LION and MR. W. ROBINSON, D.Sc. (Edinburgh), in a joint contribution stated that various aspects of protein metabolism in a case of cystinuria had been studied. Cystine added to the diet to the extent of 20 grams over a period of four days was found to be quantitatively oxidized to inorganic sulphate. Likewise other amino acids were found to follow the normal paths of metabolism and to lead to increased water excretion. Addition of sodium bicarbonate caused an increased output of cystine, practically the whole of it being in solution in the urine and only a small part in the urinary sediment. Disodium phosphate had no appreciable effect in producing the alkalinity necessary to hold in solution the cystine excreted. Changing the diet to one containing more protein gave rise to an increased excretion of cystine. The position of the "inborn error" was discussed.

\* First of a series of communications to the Section of Physiology and Biochemistry at the Annual Meeting of the British Medical Association, 1927.

#### MODES IN WHICH DRUGS HAVE BEEN INTRODUCED TO USE

BY

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THE early history of the introduction of remedies is closely interwoven with the origins of primitive religions and, while reserving judgement on the theory that some animals have a crude idea of "first aid," it is highly probable that, since man's continuous effort has been to overcome the obstructions of Nature to his welfare and progress, his selfish instincts must have led him to seek means of defence against his personal injuries and diseases even before he evolved a communal religion.

The customs of primitive tribes show that the etiologies of diseases and misfortunes were first ascribed to malevolent human agencies, then to the interference of demons, and, progressively as religious beliefs developed, to infringement of a taboo, to neglect of ancestral spirits, and, finally, to an offended deity.

Among the least cultured peoples treatment commenced as a magical rite or exorcism, associated with the external application or internal administration of some medium, this medium or "drug" was essentially an amulet aiding the protection of the individual or the expulsion of the demon, in Polynesia, for example, the medicine given was "considered more as a medium by which the god would act than as possessing any power itself to arrest the disease."

When these primitive rituals had as objective the benefit of the individual they became the basis of primitive therapy, but when they had as purport the protection of the community from pestilence, famine, or other calamity, they became the foundations of religious belief or of public hygiene in the tribe.

As diseases became differentiated so the number of etiological demons multiplied, thus, there were evolved specialist medicine men and an expanding list of exorcising remedies of specific purport, in other communities exorcism or propitiation of several demons or deities was attempted by repetition of the magical rite or by numerical grouping of the remedies or the times of their administration.

A typical instance of this phase is recorded by Rivers at Iddystone Island, where epilepsy is treated by stroking the patient with four leaves and calling on "four ancient women" of the tribe, the treatment being performed on the last four days of the waning moon and repeated after four months. This case shows the primitive use of herbs purely as amulets, associated with the numerical arrangement of the rite and the herbs to influence four etiological factors, and indicates a primitive belief in the influence of the satellite on epilepsy.

Early Vedic literature provides confirmatory evidence of these views, thus, in the Atharva-Veda (circa 1000-700 B.C.), treatment is uniformly magical in type and curative agencies are amulets, the exorcisms may be directed against a human sorcerer or demons, or an offended deity is propitiated. The remedies were chosen on religious or mythical grounds, thus, butter and the soma plant were of great holiness, lead, catechu, colocynth, cinchona, and mustard had potent demon-dispelling powers, while cinchona was used for jaundice because of its yellow colour—a type of sympathetic magic. Liquorice was a charm to secure the love of women, and incense was a component of a battle charm. In Zoroastrianism also drugs were utilized chiefly as charms to expel demons.

Although there is some evidence, both from the primitive tribes in the Philippines and in America and also from the classical period, that drugs were tested upon animals and sometimes upon man, the evidence from primitive medicine regarding the evolution of drugs is against experimental therapeutics and in favour of the opinion that they were originally used for driving out the demons of disease from the body, hence we find in primitive therapy a preponderance of remedial measures having effects as purgative,

\* Read in the Section of the History of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

emetics, anthelmintics, etc., and of physical means such as bleeding, cupping, counter-irritation, and massage. Comparative physiology also supports this contention by affording proof that in many languages the root which implied "magic" or "incantation" produced stems to which were applied the transferred meanings of medicine—remedy, poison or physician.

As however diseases became clinically defined experience proved the empirical advantage of certain herbs or formulae. Two probabilities now arise: (1) the use of the drug might be continued while its magical rite was discarded, or (2) the symbolic ritual might be preserved—especially through folk medicine—and the remedy become obscured by admixture with others. This transitional phase is illustrated in Assyro-Babylonian tablets.

Our knowledge of Egyptian civilization affords proof that even in the first to third dynastic periods it was possessed of co-mesic pomades and paints, but the earliest medical treatises—the papyri of Ebers, Hearst, Smith, London, etc.—are all from a period approximating 1500 B.C. which may be regarded as a climax of Egyptian therapeutics. The Egyptians had on the evidence of the Ebers Papyrus at least, largely discarded the incantation, but this papyrus contains many prescriptions consisting of four remedies which are to be given on four occasions. The numerical grouping is evidently an endeavour to propitiate the four sons of Horus who guarded the four corners of Heaven and who presided over specific organs of the body; here we have an origin of the doctrine of physical and physiological fours. The Ebers Papyrus was a temple formula, which it was scrupulous to amend, but the priest-physician might record against prescriptions of proved value the words: "Good to use. It shows therefore a break away from theurgy and an attempt to establish empiricism. The formulae are difficult to work, partly because of unidentified ingredient and partly because the active ingredient is rarely placed first. In assuming that some of the formulae gave a measure of effective result, there is reasonable ground for believing that we owe to the Egyptians an elementary pharmacology of the following remedies:

*Emetics*—Copper salts, squill.

*Purgatives*—Figs, dates, raisin, aloes, ricinus oil, sea-salt, artemisia.

*Carminatives*—Caraway, coriander, juniper, myrrh, mentha (*P. pulgium*), fennel, dill, onion.

*Astringents for Dysentery*—Lead salts, egg albumen, gruel.

*Worms*—*Ascaris*, Pomegranate root bark, artemisia, ricinus seed, sea-salt, copper subacetate, *Taenia*, Ricinus seed, artemisia, mentha, lead salts, sea-salt.

*For Diarrhoea* (hookworm)—Turpentine resin, artemisia, mentha.

Meat and lincseed were used to make poultices, and to these were added herbs containing volatile oils which would act as counter-irritants for wounds, poultices containing sea-salt, onions or aromatic herbs, and wine are advised while conjunctivitis was treated by salves containing metallic astringents—for example, salts of lead or copper. Juniper and sea salt occur frequently amongst diuretic prescriptions. Other drugs, of which the purpose is obscure, are opium, poppy capsules—possibly also the juice—hosecramus, hemlock, zinc oxide, and iron sulphate.<sup>10</sup>

There is no doubt that the knowledge of Egypt filtered through to contiguous nations, and Assyro-Babylonian tablets dating from about 600 B.C. when the Assyrian physician had not succeeded in divorcing medicine from magic contain recipes which may be grouped into two types—older forms redolent of exorcisms and newer forms which are simply prescriptions. Assyrian remedies which have not been clearly established in the Ebers Papyrus are sulphur for itch, attar of roses, bitumen, almond oil, galbanum, gum liquorice, and amse.<sup>11</sup>

In Brahminical therapy a great improvement occurred between Vedic time and the Charaka-Susruta period (circa first to fifth century A.D.). Accumulated experience enabled Charaka to evolve fifty groups, each containing ten herbs which he thought "enough for the purpose of an ordinary physician." His classification is made on a pharmacological basis and to epitomize, there are quoted as emetics, salt, mustard seeds, and copper sulphate, as

purgatives, castor oil, as a stimulant, turpethum and sulphur and mercury preparations, and as an anthelmintic, embelia. Cannabis was recognized to be sedative and datura is inebrant but muscaria seems to have been recorded as narcotic. Cardamomus, chiretta and cane sugar have also been brought into use.<sup>12</sup> This rapid development of Hindu medicine is often regarded as a result of Grecian influence, but this is difficult to accept since most of the remedies are indigenous. It seems more likely that investigation of native herbs by the Brahmin was inspired by travellers from Egypt and Assria in a period (Aurvedya) anterior to Charaka.

About 1000 B.C. Egyptian and Mesopotamian therapy began to influence Greece, thus Homer tells of Helen receiving from the Egyptian Polydamna her knowledge of a soporific, which was probably opium to abolish grief and pain and he testifies to the superior skill of Egyptian physicians.<sup>13</sup> Homeric therapy shows little trace of theurgy but in the Asclepian temples drug therapy became subordinate to mysticism<sup>14</sup> and it was only when the Asclepiads divorced them from the priesthood at Cnidos and Cos that medicinal substances received appropriate homage again. The majority of the drugs in the Hippocratic collection are of Egyptian origin, and there are traces of resemblance in some prescriptions to those of the Ebers Papyrus, the few remedies of Indian origin were probably acquired through Phoenician traders.

I must not delay to eulogize Hippocrates; historical times have been reared with a substantial materia medica derived from ancient civilizations, the list was constantly being increased by addition of herbs collected by the physicians themselves or brought to them by the pharmacopoli, botanologoi and rhizotomoi. This knowledge was collated by Theophrastus in his *De Historia Plantarum*, a treatise describing some five hundred herbs. That the actions of these drugs were imperfectly understood needs no emphasis but attempts were made in the Alexandrian school by Hierophilus and Heracleides to determine their activities and regulate their mode of administration—for example those of opium as a soporific. In the same period the inebriate tenants of thrones instituted pharmacological experiments upon their subjects and to Mithridates VI, King of Pontus or his rhizotomist Krateras (120-65 B.C.) is due the universal antidote, emicridation and the conception that tolerance to poisons may be acquired. During this period the doctrine of the four humours developed and its extension to the four qualities of drug which did much to obscure their actions during the dark ages, the doctrine although ascribed to the Pythagoreans was there is little doubt founded on Egyptian religious tenet.

With Rome as the centre of culture there commenced a period of polypharmacy and uncritical empiricism when the rarity, secrecy or complexity of the compound was its chief claim to virtue, as in the famous theriacum of Andromacho—a panacea of some seventy ingredients—which remained in vogue till the *London Pharmacopoeia* of 1746. The Roman period however was not entirely decadent, and Dioscorides deserves recognition for his attempt to simplify therapeutics by his succinct descriptions of the remedies of his times.

I must leave the early results of empiricism with the statement that by making a rough classification of the present vegetable materia medica we can discover that 30 per cent of the crude drug are mentioned in the Ebers Papyrus, Assyrian tablets or early Brahminical treatises, that 37 per cent were known in classical times, and by including the drugs introduced by the Arabian school we reach 50 per cent of the whole. Among the remedies handed down from antiquity occur practically all the demulcents, flavour or carminatives, purgatives, and anthelmintics of but efficient occurs in Dioscoride and chiretta as a stimulant in Susruta, orange and lemon esopped Cero-Roman notice and were introduced by the Arabian. Of vegetable astringent, gall myrobala, and badru were used but astringent are also salts were preferred squill which was probably only an emetic with the Egyptians was a diuretic for drops in classical times. Opium was recognized as a soporific and hosecramus and datura as deliriant narcotics, knowledge

of the sedative properties of emmibus seems to have been transferred from India to the Arabians.

It may be said that, with the exception of the drugs introduced by the Arabian school—namely, rhubarb, senna, camphor, nutmegs, cloves, sandalwood, cassia, and turpentine, which probably emanated from India—the materia medica of Dioscorides was the foundation upon which medicinal treatment was based down to the advent of the renaissance in medicine, and that confusion of the pharmacological facts discovered by the ancients resulted from the doctrinal controversies concerning therapy which were waged down to within comparatively recent times.

The next important source of new remedies was the discovery of America, but the accounts of the introductions give us little concrete information as to the original reasons for their selection. Tobacco was discovered in Cuba in 1492, and guaiacum wood (*lignum vite*, *lignum sanctum*) reached Europe from San Domingo shortly afterwards. Friend states that Gersilvo Ferrand, in search of a cure for syphilis, found guaiacum used with success in the West Indies, and was the first to import it,<sup>15</sup> but Oviedo is also credited with its discovery in 1514.<sup>16</sup> Its fame as a tinctment for the "French Poxes" must have spread rapidly, because its virtues were extolled in 1519 by Ulrich von Hutten, whose work was published in English by Thomas Parnell in 1536,<sup>17</sup> and it was mentioned in conjunction with mercurialunctions and fumigations by Fracastoro in 1530.<sup>18</sup> It was Paracelsus, of course who popularized the employment of mercury internally in the disease.

A little later saissaparilla was introduced from New Spain and Honduras, and from about 1553 was recommended in the sudorific treatment of syphilis.<sup>19</sup> Jalap root was found in Mexico, and the Spanish physician Moanides refers to it in 1555 as the "rhubarb of the Indies"; the same author seems to have introduced the balsams of tolu and Peru.<sup>20</sup> The use of ipecacuanha for the "bloody flux" in Brazil is recorded in 1625 on the authority of a Portuguese friar,<sup>21</sup> but it was not until 1680 that Helictius, acting on information gleaned from

Paris merchant advertised its virtues in dysentery and, having successfully cured the Dauphin of France by its aid, sold his secret to Louis XIV for 1,000 louis d'or.

The mode of introduction of cinchona is almost mythological. Local legend suggested that the waters of a lake, into which cinchona trees had been overthrown by an earthquake, were found curative of ague, but it seems more probable that the value of the bark was known in Peru, and that a grateful servant imparted the knowledge in 1630 to the Governor of Lima, who transmitted it eight years later for the treatment of Countess Ana of Chinchon, wife of the Peruvian viceroy. Her cure led to its use a year later in Madrid under the name of "Countess's powder." By 1650 it had been widely distributed by the Jesuit priests, and acquired the name "Jesuits' powder." Thomas Willis mentions its value, and Sydenham in his *Methodus Curandi Febres* (1666) describes its use, but Sir Robert Talbot, an "irregular" practitioner, was mainly responsible for establishing its use by effecting with it the cures of Charles II of England and the Dauphin of France.<sup>2</sup>

The seventeenth century gave birth to physiology and histology, but the numerical and miscellaneous list of nearly 2,000 remedies which in 1618 constituted the first *London Pharmacopoeia* was an infant in which the sins of its fathers far more than the third or fourth generation were apparent even Culpeper, immortal quack, could make much at its expense.<sup>3</sup>

The eighteenth century has a more creditable record, the fourth and fifth *London Pharmacopoeias* were still idolized of skatological, astiological, and folk therapy, but the critical essay *Intithecologia*, by William Heberden (1745), was successful in banishing mithridate, theriac, and other superstitious nostrums from the sixth *Pharmacopoeia* of 1788, in which were approved the "diaphoretic powders" of Thomas Dover and of James, kino, which we owe to Fothergill, and senega, which, used by the Indians for rattlesnake bite, was advised by Dr Tennant, a Scotsman in Virginia, for pleurisy and pneumonia.

About this period Thomas Fowler, an apothecary of York, who had acquired in Edinburgh degree, analysed a patent medicine which was advertised as "tasteless igne and fever drops," and found it to contain arsenic. He devised the well known "Fowler's solution" (1786), and reported its effects in agues, remitting fevers, and periodic headaches, credit for the rational use of arsenic is thus due to a quick remedy.

Two triumphs resulting from the observation of folk medicine were the establishment of vaccination by Jenner in 1796 and the introduction of digitalis by Withering, an Edinburgh graduate, in 1785.<sup>22</sup> Bigot also was probably derived from folk medicine; it was known as an abortifacient during the sixteenth century, but did not come into general use as a uterine stimulant till the beginning of the nineteenth century.

The rapid advances in the nineteenth century were consequent on the development of chemistry with its discovery of the alkaloïds, and upon the knowledge gained through experiments upon animals. Magendie (1821) was a pioneer in determining the actions of bromides, strychnine, and morphine, and in showing their therapeutic applications. Magendie's mantle descended upon the Edinburgh school, and I need merely mention the names of Sir Robert Christison, David Wardle, Sir James Young Simpson, Alexander Cunn Brown, Sir T. Lauder Brunton, Sir Thomas Fraser, and Sir E. Sharpey-Schaefer to recall to mind the therapeutic advances for which experimental investigations were responsible. Another circle of experimental work was Dorpat, through which passed to larger spheres of influence Diengendorff, Buehheim, Schmeideberg, Robert and Hans Meyer.

The number of drugs introduced by modern experimental methods has been large, those which have survived the test of clinical experience are familiar to all, and I need do no more than remind you of some outstanding examples. Carbohe acid was introduced as an antiseptic by Lister in 1867, myl nitrite for angina pectoris by Brunton in 1867, chloral by Liebreich in 1869, cocaine as a local anesthetic by Koller, and antipyrine by Fehle in 1884, strophanthus by Fraser in 1891, and adrenaline by Sir J. Sharpey-Schaefer in 1894.

The late Sir Clifford Allbutt once said of Friend's *History* that "he spread his net too widely," the present endeavor to epitomize the evolution of remedies suffers from the exigencies of time and space, but its imperfect generalizations will, I trust induce some of my readers to elaborate and qualify the principles which in various periods have been involved in the introduction of new remedies.

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## Memoranda: MEDICAL, SURGICAL, OBSTETRICAL.

### TRAUMATIC RUPTURE OF MALIGNANT OVARIAN CYST

THE recurrent traces of this case render it worthy of record.

A girl aged 17 in good health while at play with some of her fellow workers received a severe blow in the abdomen somebody jumping on to it. Shortly afterwards she was seized with severe diffuse abdominal pain.

On admission to hospital the temperature was 99.8, the pulse 102, and the respirations 23. The upper half of the abdomen was tender and the upper half of the right rectus rigid, no bruising of the abdominal wall was observed. The patient's condition improved soon after admission and it was decided to wait. Ten days later signs of free fluid in the abdomen were evident and operation was urged.

**Operation.**—The abdomen contained a large amount of clear pale fluid. A large polycystic papilliferous ovarian cyst on the left side had ruptured, the right ovary was small and there was a tear 2 inches long in a loop of small bowel which had penetrated down to the mucous coat. The rest of the abdominal organs were healthy. Both ovaries were removed, the tear in the bowel sutured and the abdomen drained. The patient made a good recovery.

The pathological report was to the effect that there was a columnar-celled carcinoma of the left ovary.

On examining the patient two months after discharge from hospital the whole of the left iliac fossa was found to be occupied by a hard painless mass.

The patient died at home seven months after the injury, no post-mortem examination was made.

My thanks are due to Dr J. F. Hodgson for permission to publish this case.

Northwood Middlesex.

H. JAMES MPCS

### CONGENITAL OCCLUSION OF THE SMALL INTESTINE

On June 26th a female infant, 36 hours old, was admitted to Dewbury Infirmary because it had not passed meconium since birth, nor had any come away when the child was being born. It was well nourished, weighed 8 lb 2 oz, and was normal in every way except for slight distension of the abdomen. A thick plug of mucus was passed after a rectal examination, which discovered nothing abnormal.

The infant vomited on an average three times a day but refused to eat any part of a feed of food appropriate and natural to the child. No movement of the bowel occurred. The superficial veins of the abdominal wall became enlarged and visible as longitudinal channels with tortuous communicating branches. The abdomen became enlarged and on July 1st the child, which had gradually become emaciated, looked not extremely ill.

On post-mortem examination it was found that the stomach and the posterior half of the small intestine were considerably enlarged, the small intestine appearing as large as the middle and terminating abruptly in a bulbous end. From the remainder of the small intestine was continued a small tube about the size of a goose-quill and ending in a vermiform appendix and the whole of the large intestine was present in perfect maturity. The portion of the intestine below the dilatation had a complete lumen which contained nothing of the nature of meconium. The contents of the upper portion were fluid and yellow. Between the dilated and undilated portions of the small intestine there was a complete partition of mucous membrane which exhibited only a simple opening at the point where the vermiform should have been unbroken. The point of occlusion was well below the point of entry of the ileal duct and its existence was explained as being due to proliferation of the epithelium in the second month of foetal life.

Gen. & Infirmary, Dewbury.

BERNARD SHEA M.B. B.Ch.

### A CASE OF SCLERODERMA

Cases of scleroderma are of sufficient rarity to warrant a short description of a case I had under my care for several years.

The patient was a girl apparently normal in external make-up and physically until she reached the age of 13. It was then noticed that a few hours in the night her face was becoming white and that below the brow was a patch of skin about the size of a penny which the mother described as a "pale" colour. There was no disturbance in her general health. The patch gradually extended and fresh patches appeared on the right side of the neck extending as far back as the nape and a line ran from the shoulder down the inner side of the arm and for arm. The eyebrows and eyelids became involved on the affected side. A few weeks later the hand, forearm, and wrist showed signs of brown pigmentation and a little later the right side of the back commenced to discolor. A patch on

two well defined bands running forward one to the lower end of the sternum and the other just above the umbilicus, leaving the same distribution as the usual herpes. A very definite line appeared from the right anterior superior spine to the inner side of the knee and a right diffuse patch on the anterior surface of the leg and foot.

The whole process gradually developed. The hand soon discolored eventually becoming deeply pigmented (see photograph of face). The area of hair affected extended to the right axillary hair, became white as also did the right half of the pubic hair. The bones on the whole of the right side of the body, including skull, jaw bones, and clavicle ceased to grow excepting the arm which I think grew an inch in length after the onset. The hand became markedly impaired particularly the leg.

About six months from the onset deep ulceration occurred on the anterior surface of the leg. It continued for eighteen months and at the end the limb was completely withered and the muscle bone skin and tissue seemed glued together and atrophied. During this time the pigmented skin had become hard and non-elastic. The mouth had become drawn by the contraction of the skin and the ear had partially undergone a similar movement. The gums and lip on the right side atrophied and the teeth on this side were exposed almost in their entirety. The tongue was smaller on the affected side and the right nostril became more or less obliterated. Salvation became very troublesome and the right corner of the mouth eventually developed into an ulcerated mass. To add to her burden she became completely deaf in the right ear and almost blind in the right eye. The use of the arm improved a little at the end of a year. It never became ulcerated or ankylosed as did the leg and she was able with difficulty to do knitting and a crochet work.

She lived for ten years after the onset. The left side of the body grew normally. She was not affected mentally at any time. She eventually developed tuberculosis in the right lung and died from a profuse haemoptysis.

She had not had any previous illness and the family history revealed nothing abnormal. The other eight children are well and alive to-day as also are the father and mother.

ARTHUR W. TIBBETTS  
M.R.C.S. L.R.C.P.

Cradle Health Staffs.

### PITYRIASIS ROSEA: A SECOND ATTACK

It is exceedingly rare to meet with a second attack of pityriasis rosea, Graham Little described one in 1915. Owing to this rarity as well as the strong suggestion of direct inoculation which occurs in the following case it may be thought worthy of record.

#### CASE I

In August 1923 a mother brought her child, aged 10, as he feared the girl had ringworm. The body she had noticed a red ring on the child's right arm, the day before and I found midway between the costal border and the crest of the iliac an oval slightly raised patch pink and early at the margin, dilated yellow at the centre. The child said that the place itched slightly. The lesion had none of the characteristics of ringworm and the fungus was discovered by the microscope. There was no question of eczema, scabiosis, could be excluded. Pityriasis capitis was not present and there was no doubt that the patch was the herald of pityriasis rosea. In the course of two or three days the first crop of lesions appeared and by the end of a week the eruption had developed in the typical eruptive area of pityriasis rosea. In order of baths of Condy's fluid and a saline acetic ointment (2 p.c.). In ten days the child was free of the disease. The eruption had covered more of the body than of the first crop. The spots crossed by a fine line though both types of lesions were present. There was no fever and no glandular enlargement. The stomach was normal in its

#### CASE II

**First Attack.**—Fourteen days after I saw the patient for the first time I discovered on her own person midway between the umbilicus and the xiphisternal angle a reddish-yellow slightly irritable patch which rapidly developed into a typical herald patch. In the following seven days successive crops of small patches appeared most of them becoming medallion with central clearing and a pink and a cream margin. The eruption occupied exactly the herald patch area and included the upper part of the thigh. There was slight itching. No fever and no glandular enlargement were present. I used baths of Condy's fluid daily and mercuric iodine ointment in three weeks.

**Second Attack.**—Ten years later in June 1927 I discovered the patient on the same place a lesion. It rapidly developed into the typical herald patch and in the course of seven days the eruption was complete occupying exactly the herald patch area. In contrast to the previous attack more of the lesions were medallion. A certain number of these smaller



lesions had mitral characteristics. There was again slight irritation, but no fever or glandular enlargement.

On this occasion I employed no treatment at all, being curious to know how long the disease would last. I was clear of lesions in eight weeks.

The cause of this obscure and comparatively rare disease is unknown. A curious fact, however, demands mention. In examining the child whose case I have described, I gently scratched the lesion on her body with the nail of my right forefinger, and immediately afterwards, feeling the effects of the industry of *pulex irritans* (donation of a previous patient), I involuntarily applied this finger to the spot where I felt the irritation—that is, midway between the umbilicus and the xiphisternal angle, and slightly scratched the place. This was the area where I subsequently found the primary lesion of pityriasis rosea in myself. It might, of course, have been mere coincidence, but if the disease be of microbial origin it is at least conceivable that I inoculated myself, by scratching, with the causative agent.

Vidal in 1882 described the *Microsporon ananassae*, which he believed to be the cause. Du Bois has found a cryptogamic organism with small spores in the glandular orifices and follicles. Neither of these organisms has been shown to be the cause.

Although there is no certain evidence of contagion in pityriasis rosea, yet the primary condition, succeeded by an eruption of secondary lesions, suggests the possibility of microbial origin. I think the history of my first attack significant, though I cannot account for my second. I had not seen a case of the disease in the interval between the two attacks, though it is of course possible that I may have been in contact with a case in a public conveyance or place, or I may have examined a patient in whom the disease was going to occur. It is curious that the disease should be so strictly confined to the rest area.

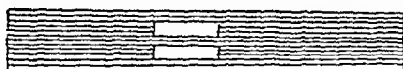
Manchester

B. GORDON LINDFORD, M.D., B.Ch.

#### CLOSURE OF ABDOMINAL INCISIONS

The publication of Mr. Strong Hemeny's note on the closure of abdominal incisions, on June 25th (p. 1143) induces me to send the following account of a method I have often used.

Three strips of good antiseptic adhesive plaster, 14 to 16 inches long and 2 inches wide, are cut as shown in the diagram, each bridge being 2 inches long. After placing a moderately hot pad



over the abdominal surface for a minute, the skin is dried, the plaster applied first on one side, far enough to allow the bridges to rest over the wound. The assistant, grasping the abdominal wall, brings the edges of the incision into apposition, then the other end of the plaster, tightly drawn, is applied to the opposite side. With the three strips thus applied the edges of the wound are held tightly together. A little bismuth-iodine-iodide is then dusted over the wound and the dressings applied. If necessary, they can be removed duly, and the condition of the wound observed. I have found that the plasters hold firmly even in cases of severe vomiting after the operation. This method could be applied to any part of the body, or face and extremities, where the surface is suitable, thus rendering it unnecessary to stitch a face wound in particular. The size of the strips depends on the size and locality of the wound, thus, on the face, I use strips 3 inches long and 1 inch wide, with only one bridge in the centre. By this method, if on duly examination the wound does not look too healthy, hot antiseptic pads might be applied.

Exton

HUGH KEITH

#### CONGENITAL TUMOUR OF THE BREAST

CONGENITAL tumours of the breast are sufficiently rare to make the following case worthy of publication.

On November 17th 1926 I saw a male Hindu infant fourth in the family, aged 3 days. The birth had been attended by a trained midwife under the supervision of the health visitor, and was reported as normal. There was a well defined swelling about the size of an orange on the outer side of the right nipple, which pushed the arm away from the side. The swelling was cystic,

not adherent to skin or muscle, and appeared to have no connexion with intrathoracic contents. No secretion was obtained from the nipple, and no enlarged glands could be felt.

The infant was breast fed and seemed to suffer no inconvenience apart from the pushing of the right arm away from the side. No treatment was undertaken, but the infant was seen weekly. It was proposed to operate at once if the swelling increased in size. I first saw the infant on March 2nd 1927 when the swelling had decreased to the size of a walnut. The family then moved to their village, and the further progress of the swelling cannot be watched.

I am indebted to the civil surgeon, Colonel T. Hunter, for advice and for seeing the case from time to time.

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## Reviews.

### THE PATHOLOGY OF THE PITUITARY GLAND

It was in the year 1886 that Marie introduced us to the disease which he named acromegaly, and which on the anatomical side is characterized most obviously by the enlargement of certain structures of the body, among them the pituitary gland, at that time regarded as a structure of no importance. This was the starting point of a series of observations which form one of the most fascinating chapters in medical science. In the forty years that have since elapsed we have learnt that the pituitary gland is one of the most important organs in the body, some half-dozen different diseases or syndromes have been defined as dependent on its dysfunctioning, the effects of a deficiency in its secretion have been demonstrated experimentally, and the experimental induction of a condition analogous to hypersecretion has recently been successfully accomplished by Evans of the University of California, and Tracy Putnam in Cushing's laboratory. The time is, therefore, favourable for taking stock of our position as touching our views on the nature of acromegaly and of the possible directions in which further advance is to be looked for, a subject which has been expounded with great clarity and personal charm by HARVEY CUSHING in his oration before the Medical Society, published in the first two numbers of this volume of the *BARRISTERS MEDICAL JOURNAL*, and with some additional details in his monograph on acromegaly, written in collaboration with Ivo Davidoff and published by the Rockefeller Institute for Medical Research.

When the functional importance of the pituitary gland came to be recognized it was natural that a causal connexion between the gland and acromegaly should be suspected, and it was thought, somewhat illogically it would seem, that the constantly observed enlargement of the organ indicated a diminution of its secretory activity. Experimental removal of the gland, however, proved that this was not the case, and that a diminution of function caused by pituitary removal was followed by effects that were just the reverse of acromegaly. Opinion then veered round in the direction of hyperpituitarism, and this view held its ground in spite of certain difficulties which presented themselves and seemed to militate against it. There were cases in which the lesion seemed to be in questionably destructive in its effects, actual neoplasms for example, while from time to time the *post-mortem* examination revealed no enlargement of the pituitary gland at all. The slight logical uneasiness incident to the latter fact was, of course, readily allayed by the consideration that a gland might be secreting in excess, although not enlarged. These difficulties have, it seems, been definitely removed by a notable discovery made by Benda in 1900. He has shown that the cells of the pituitary enlargements in acromegaly always contain acidophilic cells (cells containing granules stainable with acid dyes such as eosin) similar to those present in the normal gland, and that this is the case even where the lesion was regarded as an actual neoplasm. In other words the

<sup>1</sup> The Pathological Findings in Four Autopsied Cases of Acromegaly with a Discussion of their Significance. By Harvey Cushing, and Ivo Davidoff. Monographs of the Rockefeller Institute for Medical Research No. 22. New York 1927. (Sup. roy. 8s. 6d., pp. 131, 104 figures, 2 de ara.)

apparent neoplasms were shown to be in reality hypertrophic. As with thyroid enlargements there is room for discussion of the best designation for such tumours, whether hyperplasia, nodular hypertrophy, or adenomatous hypertrophy, the point of importance is that the constant presence of acidophile cells in all enlargements which are associated with acromegaly may reasonably be held to indicate an active secretion. With regard to those cases where no enlargement of the gland is present it has been shown in one or two instances that the number of acidophile cells is increased, and it remains to be ascertained whether this is so in all.

There cannot now be any reasonable doubt that acromegaly is caused by overfunctioning of the pituitary gland though we have no evidence as to what brings this about. Further progress in the immediate future is indicated rather in the direction of defining the complete syndrome in acromegaly, attention in the past having been riveted somewhat exclusively on the skeletal and pituitary changes. Cushing and Davidoff have taken up this line in their monograph, with a view to rounding off the clinical picture of the disease. They have made a thorough anatomical examination of the tissues and organs in four cases differing considerably in their clinical course and manifestations and by a comparison of results have ascertained what changes are common to all four and are therefore probably directly due to the pituitary lesion and not to some secondary influence. The constant findings in these cases were (1) the commonly recognized overgrowth of the mesodermal tissues, (2) the less commonly emphasized and disproportionate enlargement of the viscera especially the liver and kidneys, (3) more or less general polyglandular anomalies accompanied by a tendency to the formation of adenomata, and (4) a hyperplasia or adenoma of the pituitary gland. With regard to the polyglandular changes some of the organs—the sexual glands for example—tend to become atrophic others like the pineal gland appear to become functionally inactive or at least counteracted in their normal activity, while still others—the thyroid parathyroids, thymus and adrenal cortex—are not only enlarged but appear to be functionally activated. Moreover the tendency of the end glands to become adenomatous like the pituitary gland itself is so marked that it would seem almost justifiable to speak of acromegaly as a disease characterized by a pluriglandular tendency to adenomatous formations.

It would not be unreasonable to suggest that these polyglandular changes may be due to one common cause acting on the glands independently and not indirectly through the pituitary gland. Against this there is the fact that extracts of the pituitary gland are capable of producing in an experimental animal overgrowth not only of the mesoblastic tissues but enlargement of the viscera as well, together with changes in the ductless glands comparable to what is seen in acromegaly.

### CYSTOSCOPY

Few foreign works on cystoscopy have appeared but few in the English language. Mr J. B. MACALPINE'S *Cystoscopy* has therefore, few British competitors. It is more than an atlas of cystoscopy, it is a theoretical and practical handbook that contains in addition chapters on renal function and pyelography. The preparation of the book has entailed a great deal of work, notably frequent journeying by Mr W. Thornton Shiells the well known medical draughtsman, from London to Manchester in order to prepare the excellent cystoscopic paintings with which the volume has been generously illustrated. The opening chapters deal with the history of cystoscopy, the structure and optics of the modern cystoscope, and the technique of cystoscopy. In his preface the author acknowledges his debt to Mr Schranz of the Cento-Urinary Manufacturing Company, for help in dealing with the optics of cystoscopy, this difficult subject has been exceedingly well handled, just sufficient details being given to enable the reader to appreciate the construction of the cystoscope without being

overwhelmed with unnecessary technical points. Mr Macalpine does not apparently consider it necessary for the cystoscopist to be in possession of a large number of different types of instruments, for he describes only the ordinary cystoscopes in general use. As however, the work is primarily intended for surgeons whose opportunities for using the cystoscope are not sufficiently frequent to make them skilled in its employment the decision to avoid describing instruments not in general use is perhaps a wise one. Nevertheless it is an incontestable fact that certain regions of the bladder and not only its neck are more easily investigated by such instruments as Woolf's cysto-urethroscope than by the ordinary cystoscope. After describing the appearance of the normal bladder and the variations of the ureteric orifice which are commonly met with the author deals with pathological conditions. There is a description of the inflammatory conditions of the bladder and of the changes in the mucosa associated with this condition. Another chapter is devoted to a consideration of tuberculosis of the urinary tract, it deals with the diagnosis of the disease the means by which a decision is reached as to the site of primary lesions and methods of investigating the function of the unaffected kidney. Neoplasms of the bladder are described and their treatment by per urethral methods is discussed. Considerable advances have recently been made in cystoscopic methods of treatment and it is perhaps a pity that the author has not mentioned some of the new models of cystoscope that have been introduced for the specific purpose of treating bladder growths. To deal with a large growth by means of diathermy applied through an ordinary catheterizing cystoscope is very difficult especially if bleeding is occurring at the time of operation. In these cases such instruments as Woolf's irrigating cysto-urethroscope and Kidd's diathermy cystoscope are invaluable. Indeed their use may be a vital necessity and for lack of them it may be necessary to employ open methods. The omission of any mention of these instruments from Mr Macalpine's description of diathermy of bladder growths is rendered more striking by the fact that in the following chapter dealing with vesical calculi he gives a description and illustrations of a cystoscopic lithotrite, an instrument few general surgeons possess. In an excellent chapter on stones in the ureter the author describes the use of the wax-tipped bougie, Buerger's dilating olives and scissors and Bransford Lewis' ureteral dilator. The book concludes with a long chapter on pyelography well illustrated by plates.

It is impossible to read Mr Macalpine's treatise on cystoscopy without being impressed with the amount of labour expended on it both by the author and by the draughtsman associated with him. In a book devoted to cystoscopy the quality of the illustrations and coloured plates is of paramount importance and the fact that Mr Thornton Shiells has been responsible for these is a guarantee of their excellence. Fortunately little has been lost in the process of reproduction and author, artist and publisher are all to be congratulated on the result. The surgeon who employs that important therapeutic weapon—the cystoscope—only occasionally and even those who are more expert in its use will find here much that is helpful.

### ANATOMY OF THE CENTRAL NERVOUS SYSTEM

PROFESSOR GEORGES GUILLAIN and Dr IAN BEATTIE have produced a notable volume in their *Anatomie Topographique du Système Nerveux Central*. Working together in the laboratory of the Salpêtrière they aimed at producing a book which should be of moderate size but of a wider range than the schematic textbook suitable for students. For this reason schemata or diagrams are avoided altogether and the sixty fine plates which illustrate the work are all photographic reproductions of macroscopic and microscopic sections of the several parts of the central nervous system. The illustrations have been chosen with great care and with a view to rigorous

*Cystoscopy*. By James T. Macalpine, F.R.C.S. (Ed.), F.R.S. (Wimp.) and Son, Ltd. London: Simpkin, Marshall, Hamilton, Ker and Co. Ltd. 1927. (Med. Div. pp. xvi + 22. 161 figures, 12 plates, 2s. net.)

*Anatomie Topographique du Système Nerveux Central*. By Georges Guillaumin and Ian Beattie. Paris: Masson et Cie. 1926. (Imp. Bro. pp. vii + 22. 60 p. c. Pp. x cover. Ed. fr. board 50 fr.)

anatomical exactitude, they form the basis of the work. The text consists of descriptions of the naked-eye and histological anatomy as revealed by the plates, and physiological and clinical considerations have been omitted as the work is intended to be purely anatomical. It will prove of great value to house-physicians and others working systematically in the wards and laboratories of neurological hospitals, and for such it was primarily written, but the general physician also will find it a book which he will be glad to possess for reference as an authoritative guide in the elucidation of clinical cases and *post-mortem* appearances. Accurate anatomical knowledge is at the basis of neurological diagnosis and must precede physiological and clinical deductions in a sound neurological training.

The publishers have maintained their high reputation in the production of the plates, the printing of the text, and the binding, and the price for a volume of such a high standard is not unreasonable.

Messrs Masson, publishers of so many classical French neurological works, have added to their series an admirable small volume on the *Neurologie Elementaire des Centres Nerveux et du Sympathique chez l'Homme*,<sup>1</sup> by Professor P. GILIS of Montpellier. It is a straightforward account of the essential facts, and will be found of convenient size for the student and useful also in post-graduate classes, and for revision by physicians and teachers. A short account of the development of the nervous system is followed by a systematic description of the sensory and motor centres and tracts. The spino-thalamic tract is described after van Gehuchten as passing through the cerebellum, not directly through the brain stem to the thalamus. It is curious that the author should maintain this view, although it is abandoned in the second edition of the late Professor van Gehuchten's textbook. The account of the extrapyramidal nuclei and tracts is up to date and some guided clinical deductions are made. A very full account, occupying half the book, is given of the autonomic nervous system. The author is anxious to emphasize the anatomical unity of the cerebro-spinal and autonomic nervous systems and, as far as possible, the description of both follows identical general lines. There are some excellent diagrams and one plate.

### MALARIA ITS INVESTIGATION AND CONTROL

The object of this book on *Malaria*, by Major ROBERT KNOWLES, I.M.S., Professor of Protozoology in the Calcutta School of Tropical Medicine, and Mr RONALD SENIOR-WHITE, malarial research officer to the Central Malaria Bureau, India, is explained in the preface as follows: "Numerous as are the existing books on malaria, there at present exists in India no suitable handbook which can be put into the hands of medical men of the assistant surgeon class to help them in their malarial problems." It may with confidence be said, however, that this monograph will be welcomed by a much larger audience. The chapters on the life cycles of the malarial parasites, the laboratory diagnosis, and treatment of malaria are by Major Knowles, while Mr Senior-White is responsible for the chapters on malarial survey work and antimosquito measures.

The book is eminently readable and practical, and well illustrated, and the results of recent researches on malaria have found a place. All statements are submitted to a running commentary which assists the reader in assessing values and in noting the paths along which further investigations may go. It is impossible to deal at length with the several sections of this monograph, but it may be mentioned that the Sinton alkali-quinine method of treatment is advocated, and the general use of intramuscular injections of quinine condemned in no uncertain terms.

The later chapters on antimalarial work are full of practical points and important details, and upon such

matters success depends. There are appendices on breeding places and distribution, specifications for engineering work, and keys to mophelines, both adult and larvæ in the Indian subregion.

### BINOCULAR VISION

There are few who realize what an important part the faculty of binocular vision takes in work and in play. Those who do not possess the faculty may not consciously miss the possession, but they are aware of an incapacity to compete with their normal fellows in certain games and in forms of work. In no calling is the possession of this faculty of more importance than in flying. It has been ascertained that the chief risk of flying is landing, and that it is gravely accentuated when there is any defect of this faculty of binocular vision. The work of Flight Commander Clements and of some of the American Air Force surgeons has proved conclusively that the risks are inversely proportional to the degree of binocular vision. When it is highly developed judgement of distance and position is at its best and landings are well made, when it is poor, either by reason of congenital pooriness or disturbed because of illness or fatigue, then judgement is weak and landings are apt to be crashes. There is no absolute standard for this faculty any more than there is for that of visual acuity. We arrive at an average standard and check each man's capabilities against that. By such tests it is possible to grade the liability to risks amongst flying men. Clements used Humm's diaphragm test largely with that instrument it was possible to make the eyes walk, as it were, on a tight rope or if they failed at that to provide a plank, or a pavement, or a hole, breadth of street for their balancing, and the control of eyes in these several conditions is as variable as bodily stability in these actual standings. Dr KENNETH R. SMITH has been in the service of the Royal Air Force, and is therefore familiar with these facts. He has written an attractive little pamphlet<sup>2</sup> emphasizing these points, and believes that much may be done to remedy defects by definite exercises. He uses an instrument which is essentially Javal's binocular test. To a baseboard is fixed at one end a desk for printed matter or the like the other end the observer places against the face, at a certain distance before the nose there is an extended post, which obscures for one or other eye corresponding parts of the print which are seen by the other eye where there is binocular vision. All these devices are useful as tests, and some of them are invaluable in showing patients where they fail. But we have some doubt whether practice with such instruments for a few minutes or even up to an hour a day (and they are too monotonous for longer periods) will alter an inborn incapacity which is dominant for all the rest of the day. We should have thought that any development that was possible would be best attained by assiduous practice at games such as lawn tennis, there is no doubt that high skill in this game only comes to those with perfect binocular vision, where hand and eyes are in such intimate and automatic association that the judgement is perfect. Golf for this purpose is useless, a one-eyed man can do most of the shots just as well as he who has the best binocular vision, perhaps better. Dr Smith's little book is of interest and worth reading.

### PRINCIPLES OF THE HUMAN ECONOMY

We have read a good many primers on human nature and physiology designed for different sections of the public, from school children to wives and mothers, but for the most part these have not greatly attracted us, either on account of their failure to convey instruction with few words or because they did not succeed in conveying to the mind something more than a mere catalogue of facts. But there is a book before us—*The Human Body*, written by Dr TREVOR HEATON, Dr LEES PRADDER

<sup>1</sup> *Anatomie Elementaire des Centres Nerveux et du Sympathique chez l'Homme*. By P. Gilis. Paris, Masson et Cie, 1927. (5½ x 8 in.) 232 p. 25 diagrams. 2 plates. 20 fr. (any majoration).  
<sup>2</sup> *Malaria: Its Investigation and Control*. By Robert Knowles, Major I.M.S., and Ronald Senior-White. Calcutta, Thacker, Spink and Co. 1927. (7 x 10 in.) pp. vi + 263. 29 figures. 6 plates. Rs. 7/8.

*Some Facts about Binocular Vision*. By Kenneth R. Smith, M.D., late R.A.F. Service. Dimpbley and Sons, 14 King's Street, London, S.W. 1. 1927. (Pp. 20.)  
*The Human Body*. By Trevor Heaton, M.D., and Lees Pradder. Series. London, Chatto and Windus, 1927. (5½ x 8 in.) pp. 160. 7 plates. 7/6 net.

in Anatomy in the University of Oxford—which does attract us just because it is neither a catalogue of facts of elementary physiology and anatomy nor a bald narrative with no sense of the mystery of the human body within it. He has contrived to write one of the most fascinating books for the general reader that we have come across.

Dr Heston shows his purpose to be not so much to impart instruction as to awaken interest in a subject the approach to which is usually guarded by a ring-fence of technicalities. He intends his book to be readable and to provide some slight commentary on a number of matters of health and disease which do not as a rule pass the limits of knowledge of Vicarular's schoolboy. Of his success there is no manner of doubt: his book is readable for it is full of stimulating interest, not least commendable is the manner in which he has dealt with reproduction. For the most part books of this class leave the subject severely alone, either the authors dare not or they cannot write on the mystery of life. But here in three chapters on the internal secretions, reproduction and development and disease and death, there is a fine piece of writing that at once raises the whole tone of the matter to a high level of dignity and impressiveness. Facts are there, but the facts are so related to their purpose that mere curiosity is swamped by marvel, and the general reader who turns these pages will certainly be the better for their perusal.

### NOTES ON BOOKS

*Infernal Conduct* by MEDICUS is a tragic story of a well-meaning able but highly strung medical man who settles down to build up a practice and has a hard time at the hands of the medical men in the district who resent his intrusion as a plagiarist. A footnote explains that a plagiarist is a doctor who is up to a plate without first having a practice from an already established practitioner. Also every kind of minor misfortune happens to this unlucky man who, being in financial straits, becomes medical adviser to a new medical club for imitated persons, wins the secretary and committee of the club, is admitted to him canvas and idly in the paper, but he does not take the significance of this until he is summoned before the General Medical Council to meet a charge of infamous conduct in a professional respect, which obliges him that he commits suicide by taking prussic acid. The author hopes that the book will bring about revision of the terms of censure passed by the General Medical Council upon unfortunate transgressors. It has come to our notice that the publishers in their natural desire to push the sale of this novel have sent postcards to members of the medical press, on bearing the ambiguous legend "Infamous Conduct by MEDICUS. This book has been published at 6s. is of special interest to you. You should order it to-day. Though of course there cannot have been any intention to connect infamous conduct with the recipient it was surely ill-advised to send an advertisement so worded on a postcard especially to a country village where gossip is always rife.

The little book entitled *Management and Administration of Diet in Lunacy* has been revised and brought up to date. The matters dealt with are now arranged alphabetically, a change which will greatly facilitate reference. Since the first edition was published the Trustee Act 1925, the Settled Lands Act 1925, the Administration of Estates Acts 1925, and the Law of Property Act 1925 have all been passed, and additions and modifications consequent upon these Acts have been incorporated. Of medical interest are the affidavits which must be made by a medical attendant or medical superintendent of an institution when application is made for the appointment of a receiver. The book is concisely written and will be of value to those who are engaged in this special work.

A second edition\* of Dr R. FRANK'S handbook of recent pharmacological, physical, and dietetic treatment has been called for within a year, and this may have encouraged the publisher to send us a copy for review. The first part consists of a

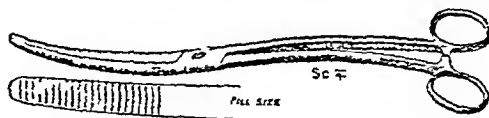
brief description in alphabetical order of drugs and proprietary preparations, followed by lists of mineral water, prescriptive, tuberculous, serum, and antidotes for poison, as well as patent foods and other proprietary preparations, the ingredients of which are stated. The second part is devoted to the treatment of medical disorders arranged according to the various systems.

### PREPARATIONS AND APPLIANCES

*Modified Bozmann Uterine Curet*

Mr J. LYLE CAMERON, F.R.C.S. (London), has devised a modified form of Bozmann's uterine curet, which he states is a very convenient instrument for packing or for making applications to the uterus, cervix or vagina, or for introducing a drainage tube.

The improved forceps has the usual double curve and single catch rack, but the blades are rounded at the tip, longer and slightly tapering from the joint and cross-hatched inside for one inch from the tip. The handle is longer, the entire instrument is stouter and stronger in construction and since



it is made of stainless steel it is easy to clean and sterilize and very durable. The rounded end, which is the size of a No. 5 uterine dilator, greatly minimizes risk of perforating the uterus or vagina. The taper admits of its use to some extent as a dilator. Its cross serrations provide a ready grip for introducing or removing packing or drainage tubing or for holding a pledget of wool when making an application. The greater length facilitates packing a large uterus and allows the hand to be kept on the way. The outline of the forceps permits twisting when swabbing, painting or cleaning the cervix.

Mr Cameron adds that to the general practitioner as well as to the gynaecologist this should be a useful instrument—in conjunction with a Sims or Sims or Sims speculum, a vulsellum, a gauze roll or ribbon impregnated or not as required—when haemorrhage calls for quick and firm packing, also for painting or packing the uterus after curetting.

### THE AMERICAN MEDICAL HISTORY OF THE WAR

The volumes in which the Medical Department of the United States Army is recording its activities during the war are planned on a very large scale. We have already given an account of some of them. They are not being published in numerical order. We received a few months ago the sixth and the fourteen, the eleventh which came to hand in August will be noticed later. It is the first part of the section on surgery and includes general and orthopaedic surgery and the surgery of the nervous system.

The sixth volume has the title *Sanitation*. It is of the same bulky character as the volumes previously published, and is in two parts, each occupying half of the volume. Part I, compiled by Colonel W. P. Chamberlain of the medical corps, contains an account of the sanitary and hygienic aspects of recruiting, camp, barracks, organization and administration of the military forces of the United States previous to their embarkation for service overseas. Part II, by Lieutenant-Colonel F. W. Weed, deals almost exclusively with sanitary work in connexion with the American Expeditionary Force in France. We are warned in the introduction not to confuse the expression *sanitary* as used in the American Army with *sanitation*. The former term is employed in the continental sense, and must be interpreted to mean the army medical service generally. For example, the sanitary train of a division is the term used for the divisional group of field ambulance companies and field hospitals and the sanitary corps is the corps of enlisted men for medical services corresponding to our R.A.M.C. Sanitation in its restricted sense was administered from the surgeon-general's office.

The Medical History of the United States Army in the World War. Volume VI. Sanitation. Washington: Government Printing Office, 1926. (Sup. 110, 80 pp. 111, 100 pp. 10 charts and 5 figures in Part I and 55 charts and 12 figures in Part II. 35s. (dollar). Vol. VI. Medical Aspects of Gas Warfare. (pp. 270, 37 charts, 10 plates, 2-2 figures. 3 dollars.)

\* I am indebted to Mr. J. P. Mott for the loan of the book. (See also p. 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.



in Washington by a sanitary inspection section, with a small body of itinerant sanitary inspectors numbering from four to eight.

#### RECRUITING

The opening chapters of Part I contain much that is of value as a guide to officers whose duties involve the sanitary inspection of camps, units, barracks, hospitals and other military institutions and consist mainly of copies of forms for inspection reports, together with selected examples of some of the reports actually submitted. The forms are of a very exhaustive character, and there must have been a vast accumulation of such reports in the surgeon-general's office. How far the recommendations of the inspectors were or could be carried out is another matter, for it would appear that the frequency of inspection was never up to the desired standard owing to the difficulty of obtaining a sufficient number of experienced and otherwise qualified officers for inspection services. The remaining chapters of this part of the volume deal with the usual subjects of military sanitation in the home territory, and with the physical examination of men on enlistment and on demobilization. All these subjects are treated in the detailed and documented manner which is characteristic of the United States medical history of the war, but is somewhat tiresome for general reading. Copies of forms, official memoranda, correspondence and so on, occupy a considerable portion of each chapter, and are, of course, of value historically and for educational and administrative purposes, but scarcely appeal to readers outside the United States medical service. It may be of interest, however, to note that the minimum physical standards for enlistment for men 21 years of age and upwards were 64 inches in height, 30 inches with 2 inches mobility chest measurement, 128 lb in weight, and 20/40 vision in right eye and 20/100 in left. These standards after June 5th, 1918, were lowered to 60 inches height, 110 lb weight, with auditory acuity from 20/20 in each ear to 10/20. The dental requirements, which at first were four serviceable opposing bicuspids or molars were increased to six, and six incisors or cuspids (canines) were also necessary. Recruits were classified in four groups, group A being men fit for general service, group B men fit after a remediable operation, group C men fit for special or limited service in a definite occupation, and group D men unfit for any service. Many difficulties arose with those men of group B who refused to undergo a remediable operation, as well as with those awaiting operation. Great numbers of the latter filled camps, barracks, and hospitals, occupying accommodation urgently required for group A men. The policy of having a deferred remediable class of recruit was consequently vexatious and a source of much trouble and controversy. It was eventually abandoned, and remediable cases remained in the army without operation or were discharged. The statistics of demobilization medical examinations are also interesting, although they are somewhat involved and incomplete. Four million are said to have been examined on demobilization. During the period November 11th, 1918, to December 31st, 1919, of these the number medically examined and the results reported was 3,133,921. As many as 2,936,780 were shown as discharged without any disability. The magnitude of the work undertaken by the American medical boards in this connection is worthy of notice.

#### PREVENTION OF DISEASE

The second part of the volume, dealing with sanitation in the American Expeditionary Force in France, is of the same detailed character. Only two diseases—epidemic diarrhoea and epidemic influenza—are stated to have developed sufficiently to cause excessive sick rates. Details are given of the organization for the prevention of communicable disease, such as delousing measures, disinfection of clothing, and destruction of rats. The measures employed were, as a rule, similar to those in force with the British armies. The same remark applies to the various measures of sanitation in connexion with purification of water supplies, disposal of waste products, shelters for troops, and so on. The well-known decontaminating plant assigned for use with the British troops was apparently copied by the Americans, although there is no

acknowledgement of the great value our experience and sanitary methods were to their troops and medical services in France. They coined a name, "sterilab," to designate this plant. It reminds us of the habit of the Japanese to concoct a new Chinese ideograph to designate a new invention. Details are given of the clothing and equipment of the U.S. infantry soldier, and of his rations. A weight of 50 lb is regarded as the maximum that should be carried by a man weighing 144 lb. The U.S.A. soldier's equipment and arms varied from 61 lb to 73 lb, with an additional 18 lb for clothing worn on the person. The Americans, however, were not called upon to make long marches, and there is no record of breakdown from carrying these excessive weights. The field ration was of high caloric value. At first it had a value of 4,871 calories, but this was reduced to 4,258 in 1918. Even then it was considerably higher than the allied and enemy field rations.

An interesting account is given of a mobile laundry, which was designed in the United States and shipped to France. The illustrations and details of this important unit are worthy of study. It is a new form of unit, the need of which was much felt by our armies in the field. Only four were shipped between June 5th and October 15th, 1918, but large numbers were ready for shipment by the time of the armistice.

One of the fullest chapters in the volume, a chapter of some hundred pages, deals with the prevention of venereal diseases amongst the American troops in France. A graphic description is given of the state of affairs. St. Nazaire, the chief port of disembarkation, where the American authorities came into conflict with the French over the question of putting licensed brothels out of business. The French authorities feared that the effect of the measure would be to increase clandestine prostitution and disseminate disease amongst the French women. As it had come to notice that a considerable percentage of the American troops on disembarkation were found to be suffering from syphilis or other venereal disease. Full details are given of the correspondence that took place on this subject. Among other suggestions by the French authorities was that at least three licensed houses should be open for American coloured men or that coloured women should be sent over for them from America, and that, failing acceptance of these suggestions, all coloured men should be sent back to the United States. None of these suggestions were accepted, and reliance was placed on the well-known prophylactic centres that were established by the Americans in France.

The size of the volume and the mass of information it contains do not permit of any extensive culling of other interesting points and we can only express our admiration of the care which characterizes the compilation of this history and its excellent series of illustrations.

#### CHEMICAL WARFARE

Volume XIV which has been published recently, transcends anything that has yet appeared in one volume on the medical aspects of gas warfare. Although it deals with the problems presented by this new weapon, so far as they concerned the medical department of the United States Army directly, or through affiliation with its chemical warfare service, it constitutes a record of great scientific value, and is of exceptional importance in connexion with the organization of the service of defence and the treatment of gas casualties. Early in the war the United States military authorities realized the seriousness of this new weapon and in the introduction of poison gases was one of the most important military developments, and that no innovation since the introduction of gunpowder has revolutionized warfare to the same extent. So seriously did the American General Staff regard it that by the end of the war the United States machinery for the manufacture of poison gas was producing nearly double the combined output of Germany, France and England. More than 10,000 men were employed in the chief factories in addition to those employed in nine other factories throughout the country. At the time of the armistice 140 tons could be produced daily, and in contrast with this it is stated that

mining was manufacturing 50 tons daily when it started mesh warfare, its power of production gradually increased, owing to economic conditions, and that at the time of the armistice it could produce only a fourth of its amount.

The volume tells us the history of the activities of the chemical department in connection with the defensive measures against the new weapon, in three main sections: twenty-one chapters. The first section of four chapters deals with the organization and administration of gas service, the second also of four chapters with the chemical features of gas poisoning, and the third forming approximately half the volume, with experimental research.

The chapters of the first section are comparatively short of eighty pages, are of chief interest from a military and practical point of view. They deal with the organization of gas defence in the United States and with the American Expeditionary Force in France, the classification and methods of use of war gases, and the field arrangements for gas defence and for dealing with gas casualties. As early as November, 1915, the military authorities in Washington decided that the duty of providing defensive equipment against poison gases, in the event of its being needed, should be assigned to the chemical department, and the Surgeon General consequently appointed two medical officers to act as observers in France. Eventually in May 1917 he was definitely entrusted to supply during the period ending June 1918 with gas masks, 8,500 sprayers and 1,000 oxygen cylinders. A field supply section and overseas repair unit and a training section for gas defence were then organized under Lieutenant-Colonel W. P. Chamberlain of the Medical Corps to whom an establishment of 144 officers, 1,637 other ranks was allotted. A large number of British gas expert officers arrived in Washington in November, 1917, under Major Auld of the British Military Mission and were posted to the training section. In January 1918 the whole of the training section was added to the engineers of the National Army and July of the same year a chemical warfare service was organized, to which the whole personnel administration and organization of gas defence were transferred from the chemical department. In this respect the development of gas defence in the United States followed much the same course as in the British Army.

A feature of the United States organization in the field was the appointment of a medical gas officer to each division, although none was actually appointed until the 1st of June, 1918, and it was not till October that all the divisions had their medical gas officers. The duties of these officers were to institute measures for instructing and training medical personnel in handling gas casualties and to rank and file in first aid to direct the work of mobile degassing stations, collect and forward pathological specimens to the army laboratory and generally control the management of gas casualties from the commencement of gas attacks until all had been degassed and disposed of, each division according to its position in line, in a sector or in a back area, one of its four field hospitals was assigned for the reception and sorting of gas cases, or for slightly gassed and convalescents or as a reserve in case of a gas attack. A scheme for sending two agencies, gas teams, consisting of an officer, two nurses, two orderlies from each base hospital to these field hospitals did not materialize, as it was strongly opposed by the chief surgeon of the First Army, who considered that resources of the army were insufficient without them and that a field hospital was not a suitable place for female nurses. A plan for allotting to each corps three mobile hospitals of 1,500 beds each as gas evacuation hospitals was also not carried out but a provisional army gas hospital was established at the end of August 1918 naturally five such army hospitals were allotted for the reception of gas casualties with 200- to 550-bed capacity. Medical services were also employed in an experimental establishment near Chantmont.

Nine pages only are given to the chapter on the classification and use of war gases, and the remaining chapter of the first section of the volume is a reproduction of the reports of divisional and other medical gas officers,

together with a history of the office of the medical director of the chemical warfare service with the United States Expeditionary Force, Lieutenant Colonel H. L. Gilchrist, who had spent some time studying defensive gas measures in the British gas school at Rouen. A useful plan of a degassing gas tent and an account of its organization and employment are given in this chapter. There are some interesting statements regarding self-inflicted gas burns and malnourishing. The United States mortality from gas poisoning was 17 per cent of the cases treated as compared with 3 to 4 per cent in the British and French armies. This cannot be attributed, says the report, to better treatment, but was "due wholly to the fact that a large number of reported gas casualties were suffering from other causes." In one field hospital a board of medical officers examined 281 cases under treatment for gas poisoning. They found that only 90 had actually been gassed, and the others were returned to duty. "Many men," the report goes on to state, "have claimed they were gassed in order to get out of the first lines" and again "it is believed if the true facts were known concerning our gas casualties, that they would not be over one third those actually reported."

The second section of the volume on the clinical features of gas poisoning records much the same facts as the corresponding chapter in the *British Medical History of the War*. The greater part of the section, however, is a detailed statement of 107 necropsies on men who died from gas poisoning illustrated with many coloured and other microscopic and microscopical specimens. It concludes with a chapter on statistics of gas casualties in which we are told that 70,552 or 31.45 per cent, of the 224,089 battle injuries in the United States Army were due to gas, and that 1,221 or 0.82 per cent, of the 13,691 deaths from these under treatment for these injuries were attributed to the effects of gas. Of the gassed cases, 27,711 (599 deaths) were from mustard gas, 6,834 cases (66 deaths) from phosgene, 1,843 (7 deaths) from chlorine and 577 (3 deaths) from arsenic poisoning. The nature of the gas in 33,557 cases and 546 deaths was not reported. These figures demonstrate the remarkable protection eventually provided against chlorine for when chlorine gas was first let loose against us in April and May 1915 it is estimated that fatal results occurred in 5 per cent of the cases under treatment as compared with only 0.28 per cent in the United States Army in the later years of the war after protective measures had been fully developed. An analysis is made of the after results in 3,014 gas casualties, from which it appears that 54.34 days was the average period of treatment in hospital and was greater in mustard gas than in chlorine or phosgene cases. 79 of the 3,014 cases had died but only 30 of these deaths were obviously due to the effects of gas. They occurred within ten to thirty days after the attack except in three single cases (after 61, 113, and 1,955 days respectively). Of the 30 deaths, 24 were from the effects of mustard gas. The incidence of pulmonary tuberculosis after gassing was studied, but the conclusion was that there was no evidence to show that the death rate from this disease in the United States had been in any way affected as the result of gas poisoning during the war.

The remaining section of the volume fills some 400 of its 876 pages. It consists of an account of the experimental researches in gas poisoning, by various workers in the United States, only one of its thirteen chapters being devoted to the work of the experimental gas establishment in France. The section is however of great pathological interest and is elaborate in its details of experiments on animals and human beings with various gases. An appendix of some seventy pages contains a statement of the gas defence equipment supplied, an account of interallied conferences and lectures given in Paris to the divisional medical gas officers, and other detail.

As a book of reference on the defence aspect of chemical warfare the volume has no equal in medical literature. Its practical value to the military medical services will be found in the comparatively short first section. It is beautifully printed and illustrated and its price 3 dollars makes us wonder how a volume of its size can be published at so small a cost.

## British Medical Journal.

SATURDAY, SEPTEMBER 24TH, 1927

### WINDOW GLASS SUBSTITUTES AND SUNLIGHT THERAPY

THE Council on Physical Therapy of the American Medical Association has issued recently a valuable report on tests of new window glass substitutes for which the claim is made that they allow the passage through them of the short wave lengths of light forming the ultra violet end of the spectrum. Four kinds of material were tested: vitaglass and coming glass, which are said to be true glasses, celoglass, composed of fine mesh screen filled with an apparently celluloidinous preparation and flexoglass, a thin, rather loosely woven cloth treated with a paraffin-like substance. Four tests were employed. The first was photography of the spectrum for clear glass, this at once shows the length of the spectrum transmitted. But as this is only useful for plain glasses, other methods had to be adopted for crinkled glass, since this scatters the rays. For testing crinkled glass a modification of the Hilger monochromatic illuminator was used. Into the eye piece of the instrument a thermopile was inserted connected with a delicate galvanometer, and the material to be tested was inserted within the eye piece close up to the thermopile, so that scattering effects were negligible. Further, a new instrument, the pyrehometer (fully described in the report), was employed to obtain continuous records of the intensity of the sunlight in connexion with the biological tests. This instrument is so sensitive that with it diffuse light can be measured as well as direct sunlight, and when used in connexion with a special amplifying unit it is sufficiently sensitive to measure the variations of twilight.

In the biological tests chickens were used, because experience has shown that they are well suited for an investigation of this kind. Chickens react to an environment deficient in ultra violet rays. They suffer from a leg weakness which is like, if not identical with, mammalian rickets. The chickens were housed in the same laboratory, feeding was identical and controlled. Six groups of birds were tested with different lighting—some with the special glasses, others with ordinary window glass. The condition of the epiphyses was determined by radiograms. With some of the birds exposed to ordinary window glass the well known characteristic posture of the rickets affection was obvious even a week before the x-ray photographs were taken, those exposed to the special glasses escaped.

The results of the investigations encourage the belief that materials for glazing windows are now available which do not possess the fault of ordinary window glass in excluding the health giving rays of sunlight. This belief (the report states) is particularly engendered because in the biological tests the cages did not have a southern exposure, and they were, moreover, of such a size that the chickens were not compelled to remain in the sunlight area. A comparatively small amount of exposure to sunlight, even during the winter months

at the latitude of Boston ( $42^{\circ} 22' N$ ) has a decidedly beneficial effect. Coming glass and the clear vitaglass are as transparent to the visible rays as window glass. Celoglass and flexoglass, on the other hand, are not transparent, but the data furnished by the experiments show their comparative value for use in solariums and for animal housing in cases where transparency is not essential. Both these substitutes are less expensive than ordinary window glass, but flexoglass is more affected by atmospheric changes than celoglass. The wax coating of the flexoglass has a tendency to soften in hot sunshine, and dust may then adhere which is not easily washed off.

This feature—the effect of dust—merely incidentally mentioned in the report, is a vital factor in the success or failure of any special glass or glass substitute. It will be remembered that efforts were made not long ago to persuade the London County Council to use one of these types of glass for the classroom windows of the county schools. The proposal was negatived owing to the belief that the installation would be of no effect. Windows in London are so speedily gumed with dust, both within and without—within from the heating apparatus and without from the smoky atmosphere—that daily cleaning would be needed to preserve the special properties of the glazing material. So that, however effective these new glasses may be in permitting the transmission of beneficial ultra violet rays, town dwellers cannot hope to reap any advantage from their use until such time as the campaign for smoke abatement has won substantial success. For the stock breeder in the country they are available, but he has at his disposal unlimited command of such sunlight as falls upon these islands if only he will not pen up his beasts and birds in buildings during the hours of daylight.

### PSYCHIC BACK NUMBERS

WHE among the higher mammals the degree of intelligence varies so greatly is not very easy to explain. Essentially it must be due to heredity and the primary urge or impetus peculiar to the species. It is doubtful whether the subject can, or ever will, be taken any further, but it is legitimate to ask what are the associated biological conditions. According to Professor Fleury, the astonishing superiority in intellect of man over other mammals is in part brought about by the long period of pre-natal life. He even believes that the increase of man's intelligence which has occurred comparatively recently when measured in geological time is related to a lengthening of the period of gestation from 220 to 280 days.<sup>1</sup> This extension, he suggests, has made possible a greater growth of brain before birth, while the delay in the hardening of the skull permits an increase in the cerebral volume during infancy. Dr. Ennle Devaux, who has recently<sup>2</sup> returned to a discussion of the psychic backwardness of the higher vertebrates as compared with man, calls these latter *amies psychiques*, which may perhaps, be roughly translated as psychic back numbers. To explain their inferiority of brain, despite in some instances apparent superiority of organization, Dr. Devaux points out that in all such animals either the muscles or the digestive apparatus are voluminous. To relieve this increase in volume a vast supply of blood is necessary, and the determination of the blood supply to the muscles or digestive organs leads to a comparatively poor supply to the brain. The cerebral cells cease to multiply as soon as

<sup>1</sup> *Physical Therapy Report on Window Glass Substitutes*, Journal of the American Medical Association 1927, vol. 83, No. 20, p. 1562.

<sup>2</sup> *Nature* 1927, vol. 118, p. 760.  
*Revue Scientifique* 1927, no. 2, p. 36.

their function is fixed so that for large brain development the organism requires in Dr Devaux's opinion, as in Professor Fleury's, a long period of intrauterine life combined with a long quiescent existence as an infant. In illustration of his views and to explain certain apparent contradictions Dr Devaux sets himself to answer the following questions: Why is the tiger not more intelligent than the cat? Why is the dog more intelligent than the sheep? Why is not a bird more intelligent than man? Why is the elephant inferior to us in intelligence? It is unnecessary to go into the arguments used by Dr Devaux in answering all these questions—it will be sufficient to take the case of the elephant which enjoys an intrauterine life of eighteen to twenty months—does not reach adult life until 22 or 24 years of age, and at first sight therefore, ought to be more intelligent than man. In the elephant the association of ideas attains a complexity which seems to surpass even that of a dog and its memory is remarkable. Nevertheless its recreation is infantile, and for these reasons says Dr Devaux it is exclusively a vegetarian feeder its osseous and muscular structure is gigantesque it has in hyperrophy on its tree. Evidently Dr Devaux is no vegetarian, since he states that animals living on vegetable foods which are longer of digestion have on this account to ration the supply of blood to their brains. Consequently the carnivorous dog is almost as intelligent as the elephant and far more intelligent than the sheep notwithstanding the mere sixty-three days of its gestation and the comparatively short period of puppyhood. When to its vegetarian habits we add the enormous bulk of the elephant and the prodigious development of its nose we have quite enough to account for the insufficient supply of blood to the brain which has prevented the elephant from attaining the human standard of intelligence. Dr Devaux's conclusion is that different syndicates of cells in the organism are in continual conflict on the subject of blood supply. This conflict in certain cases places the organ of thought in a state of functional impotence as the result of defective nutrition and thus explains the poverty of intelligence in animals which seem more favoured than we are in other directions of organization.

Dr Devaux was moved to write his article apparently because of a remark of Pierre Delbet that one of the advantages of transformism is the possibility it offers of explaining the origin of the huge development of the human brain. For this reason it may not be out of place to refer to the argument of Professor C Lloyd Morgan in a paper read earlier this year to the Aristotelian Society on emergent evolution. There is something of the nature of a boom in emergent evolution at present and Dr William Brown in a recent lecture at Oxford invoked its aid in proof of the existence of God. Professor Lloyd Morgan is concerned to show that while he claims that some evolution is by discrete or emergent advance each step introducing something new he does not deny the existence of resultant evolution. In resultant advance, says Professor Lloyd Morgan the conditions are such that there is homogeneous continuity. In biology the mechanist says that all processes and products from first to last from the not living to the living organism are susceptible of resultant interpretation and that further research will in due time resolve problems which today present difficulties. The believers in emergent advance find that there are modes of behaviour in the clustering of events within the living organism that are not

deducible from that which obtains in the not living. Their attitude is: Resultant advance in plenty—is much as can be proved, but not a few residual matters which bear witness to emergent advance. Professor Lloyd Morgan fears that the concept of emergence may lead to wild use of the phrase as a popular catchword and instances the possibility of people talking of the emergence of the elephant or the mongrel and the emergence of polydactylism in ants. He endeavours to make his meaning clear by suggesting that biological inquiry includes both natural selection and genetics—that natural selection is such deals with variants, that some variants are weeded out in the struggle for existence, leaving others to survive—that such an elimination is a resultant effect—that the origin of variations is a subject for genetics and that this or that variant may be the outcome of either resultant or emergent advance. It may be therefore, that Professor Lloyd Morgan's hypothesis can assist in answering Dr Devaux's question: Why is an elephant inferior to man in intelligence?

Dr Devaux in discussing his question: Why is the dog more intelligent than the sheep? speaks of the unequal strain imposed on the organism by different diets and he attributes in part the stupidity of the sheep as compared with the dog to the fact that digestion in a carnivorous animal is finished in twenty-four hours while a herbivorous animal requires three or four days according to one authority or even eight days according to others. The small intestine of the dog is only three times the length of the body that of the sheep twenty-eight times and in Dr Devaux's argument the blood supply differs correspondingly in profuseness. A study by Dr William A Thomas of Chicago of the Eskimos of Northern Labrador and of Greenland has some bearing on the points we are considering. He made his investigations in the course of the MacMillan Arctic expedition of 1926 and has given to his report the title: Health of a carnivorous race although only the Greenland Eskimo now lives entirely on meat he has no available source of vegetable food. Dr Thomas was chiefly concerned in making a cardiovascular and renal survey of the people. He did not find evidence of any excess or renal or vascular disease in this meat-eating race. Moreover the Greenland Eskimo derives sufficient vitamins from his food to protect him from scurvy and rickets. In Labrador however contact with civilization has led to a distressing condition. As food is abundant the inhabitants have learnt to cook their food. Moreover, the Moravian missions and the Hudson Bay Company with the best of intentions, sell to the natives such provisions as dried potatoes, flour, canned goods, cereals and cereal products. Dr Thomas says that scurvy, rickets and scurvy rickets are consequently universal in children the gums are black the teeth drop out and there are hemorrhages of the skin and mucous membranes. In adults there are rheumatic pains, stiff joints and fatigue. Notwithstanding months of constant sunlight, rickets seems almost universal. Except for these diseases, introduced by civilization the Eskimos are a healthy race leading a life of great physical activity and constantly exposed to great dangers and hardships. We have no reason to suppose that the small intestine of the exclusively meat-eating Eskimo is shorter than the intestine of a vegetarian but it is interesting to learn that a race can be so healthy on a purely meat diet. We learn also that in some cases at all events, the introduction of a diet in part vegetarian—especially of the canned variety—is not attended with risk.

## SIR JOHN GOODWIN

The Queensland Branch of the British Medical Association entertained Lieutenant-General Sir John Goodwin, K C B, late Director-General of the Army Medical Service, to dinner on June 16th, three days after his arrival in Brisbane to take up his appointment as Governor of Queensland. Dr H V Foxton, the president of the Branch, was in the chair, and 104 members were present. In proposing the health of Sir John Goodwin, Dr Foxton voiced the gratification of the Branch at his appointment as the representative of the King. Sir John Goodwin, in reply, expressed his thanks for the very hearty welcome given to him, both as a fellow medical practitioner and as Governor. He said that he looked forward with pleasure to his term of office, and keenly appreciated the kind reception he had had from the members of the Branch. Apart from his official work in Queensland, he added he was still greatly interested in medical work and in the activities of the British Medical Association, of which he was a member. He would support the interests of the medical profession so far as it lay in his power, and do what he could to assist those of the Queensland Branch.

## INJECTION TREATMENT OF VARICOSE VEINS

A good deal of interest has been shown by general practitioners in the comparatively new method of treating varicose veins by the injection of sclerosing substances. For those wishing to pursue the subject further a small work has now been written by Dr A H Douthwaite,<sup>1</sup> who briefly described the method in our issue of September 25th, 1926 (p 554). In his preface the author says that, with the exception of certain conditions which are detailed, he knows of "no varicosity in the limbs or anal canal, no matter how severe which will not respond to the sclerosing effect of a suitably chosen solution." The advantages claimed are that post-operative embolism and the discomfort of a general anaesthetic are avoided, and that the treatment is ambulatory and there is no loss of time to the patient. The method owes its inception chiefly to French workers among whom the names of Sicard, Gauguier, and Genuy are most prominent. Various solutions have been tried chiefly sodium salts including the carbonate, citrate and silicate, as well as such substances as biniodide of mercury, glucose, iodine, and solutions of quinine salts. Dr Douthwaite's experience is based on the neutral hydrochloride of quinine, of which he has now given over 2,000 injections. He employs for preference the following formula: quinine hydrochloride 4 grams, urethane 2 grams, distilled water 30 c.c.m. This can be boiled, and possesses strong antiseptic properties; 1 c.c.m. is injected on the first occasion to test the susceptibility of the patient to quinine, and 2 to 3 c.c.m. can be used at subsequent sittings. The patient is placed in a suitable position to distend the veins and the skin cleansed with spirit. The needle is inserted into the vein, and 1/4 to 1/2 c.c.m. is injected, and the process repeated two inches farther up the limb. The immediate effect is to produce a slight transient cramp and swelling of the vein. Subsequently some itching and tenderness may be felt, but this is dissipated by movement. Brimming from leakage at the site of puncture may occur. The quinine may be tasted by the patient immediately after injection and in those possessed of an idiosyncrasy tinnitus may follow. Inting giddiness and gripping hypogastric pain may be felt if menstruation is proceeding. Ague may be precipitated in malarial patients. The local effect of these solutions is to cause irritation of the endothelium of the vein followed by clotting, but it is claimed that this chemical clot is firmer and more adherent with less

tendency to detachment. As contraindications are cited pregnancy (quinine in particular should never be used), old or recent phlebitis, in which injection may light up the infection, and heart disease with imperfect compensation. Injections are inadvisable in cases of renal disease, uterine fibroids or during menstruation. The method is simple, and the results so far recorded are excellent. Whether they will be as good when the method comes into general use it will be interesting to see. Those intending to use it would do well to see it carried out before trying it. Criticizing the method from a purely scientific view it would seem that more investigation is necessary. It is said that this chemical clot is firmer and more adherent than the septic clot. What we would like to see are microscopic sections of its life-history, its formation, its extent, and time of its resolution. Does the end of the clot form a solid plug, or does it trail off? The fact that quinine can be tasted in some cases immediately after injection suggests some permeability of the clot in the deep veins or in the main radicle, and the question arises whether, after repeated injections, the effect remains as local as is indicated. The vogue of the transparent sill sticking has given a great impetus to this form of treatment and it is to be hoped that those intending to employ it will first master its principles, otherwise we can foresee some awkward complications following its use by inexperienced hands.

## ANNUAL REPORT OF THE MINISTRY OF HEALTH

The eighth annual report of the Ministry of Health has now been published in a separate volume, and supplements the report of the Chief Medical Officer of the department to which we have referred at some length in our last two issues. While the present report follows for the most part the lines of its predecessors, changes have been made in the order in which public health services are dealt with. The subjects treated include, under the heading of public health, international health work, general health questions, such as mental deficiency, registration of nurses and voluntary hospitals, sanitary administration, the inspection and supervision of food, infectious diseases, infants and child welfare, supervision of the blind, housing and town planning. Local government and local finance are considered at some length, and sections are devoted to the administration of the Poor Law, National Health Insurance and contributory pensions, and the Welsh Board of Health. Most of the matters treated in this report have been dealt with in official publications, noticed by us at various occasions during the year, but a new feature in the present issue is a valuable retrospect of the principal changes in the organization and development of services since the Ministry of Health was established in 1919. This affords an interesting survey of the administrative procedures which play an important part in the improvement of the public health. Accounts are given by general inspectors of the local administration of the Poor Law during the year—a revival of a former practice. The Report of the Ministry is published by H M Stationery Office at the price of 5s. net.

## ALCOHOL AND THE LEAGUE OF NATIONS

The question whether alcoholism has an international aspect which properly brings it within the sphere of the League of Nations led to one of the most spirited discussions of the present Assembly in Geneva. The proposal to make the alcohol problem the subject of study by the League was brought forward by the Foreign Minister of Belgium. Denmark, Czechoslovakia, Finland, Poland, Sweden. The basis of it upon the fact that it was not had been obliged during the last few years to take measures to prevent the smuggling of alcohol.

<sup>1</sup> *The Injection Treatment of Varicose Veins*. By A H Douthwaite. D. Mitchell, London. H K Lewis and Co. Ltd. 1927. (6s. 6d.)



frontiers so that the need for international agreements in this matter had been felt further, that the taking up of this question would be a logical sequel to the work already done by the League in respect to the traffic in alcohol in mandated territories and to the protection of women and children. In the work on this latter subject alcoholism and prostitution have been found to be largely interdependent. The chief opponent of the proposal was M. Loucheur, the French delegate who, while describing the joy and rapture he owed by good wine," nevertheless betrayed his anxiety lest the impression should get abroad that France was pro-alcohol. M. Loucheur grew almost lyrical in praise of the wine when it is red, and while professing respect for water drinkers declared that his respect was quite mingled by envy. It was during this eulogy that the President making a sudden gesture upset the water bottle on the table before him and drenched those in the vicinity. The delegates for Portugal and Italy also wine-producing countries warmly supported their French colleague but Mlle Rosenberg delegate for Hungary and president of the National Council of Hungarian Women said that the fact that her own country produced tokay would not prevent her from supporting strongly the action now proposed and she put it forward as an ascertained fact that women who took a glass of wine a day were unable to nurse their babies. But the noes had it? The Australian delegate the Hon T. J. Ley of Melbourne claimed that alcoholism could on no account be brought within the Covenant of the League. If the plea was made that because the occasional abuse of drink produced disease alcohol came under Article 23 (the League will endeavour to take steps in matters of international concern for the prevention and control of disease) why should not milk come within the scope of the League since impure milk caused tuberculosis or tobacco began excessive smoking caused nicotine poisoning? On the other hand said Mr. Ley, if the proposal came forward as an extension to all and sundry of the action which the League had taken on behalf of native races in mandated territories he thought it was even less justifiable. He also emphasized the point that prohibition in several countries was still in an experimental stage and that action by the League at this juncture would smother the progress of a social experiment as well as interfere with the liberty of the State. The Hon Philippe Roy of Canada said that a wave of prohibition had at one time threatened Canada but all the provinces except Prince Edward Island had reverted to wine. He could not support the proposal especially if it included wine which as a doctor he considered a form of nourishment and not a poison. Professor Burckhardt the Swiss delegate urged that while the League was not required to act in such a matter under the terms of the Covenant there was nothing to prevent it so acting but any action must be at the unanimous desire of the members which was certainly not forthcoming. Dr. W. E. Elliot M. P. the British representative suggested that the proposal be withdrawn and submitted in a new form to a subsequent assembly and eventually the proposal, headed by the Foreign Minister for Sweden agreed to this course. Evidently even such a modest proposal as to set up a League committee to study the subject and collect information brings unsuspected lions from their lairs.

#### DEFICIENCY DISEASES

There is a tendency to consider that deficiency diseases are not synonymous with vitaminosis. Recent experimental work on farm animals has shown however that not only is the list too narrow a view to take but that in fact diseases may be due to deficiency of certain non-vitaminous salts of iron, iodine, manganese, calcium, phosphorus and so on—minute quantities of which are

essential for the well being of all animal organisms. Thus certain tracts of valuable land in New Zealand are useless owing to the lack of iron in the soil. Sheep pastured on these areas show signs of anemia develop lameness, and become emaciated owing to this single deficiency. This can be seen in all parts of the world. One of the most striking examples however has been found in the Union of South Africa where two serious conditions of cattle—*lammekte* and *steyfsakte*—have long puzzled the local authorities. Recent investigations at Onderstepoort Veterinary Research Institute by Sir Arnold Theiler and his colleagues have shown that both may be traced directly to a lack of phosphorus. The latter disease is in fact due to this condition alone and so is a true deficiency disease. *Lammekte* however, is rather different. It is the form originally given by the South African pioneer farmers to a fatal disease of cattle characterized by symptoms of paralysis and paresis, principally of the locomotor system. The first clue to its causation was discovered by Sir A. Theiler in 1915 after observing a natural infection following the deliberate ingestion of skeletal carcasses. Experimental feeding with the same debris produced the disease and the idea of a toxicogenic prophage was at once considered. This was found to be a specific antibiotic bacillus *Parabotulinus* very closely related to the well known *Bacillus botulinus*. The next step was an inquiry into the cause of the depraved appetite (osteophagia) which impels the animal to eat carcass debris which it would otherwise shun and this was found to be due to the phosphorus-deficient vegetation causing a phosphorus starvation in the eat-le. Both can be entirely eliminated by the addition to the food of substances—such as bone-meal—rich in phosphorus, a proceeding which not only causes quickened growth in young animals but a considerable increase in the milk production in adults. These cases only indirectly affect human medicine but their fundamental importance is very great as great probably the discovery of vitamins a few years ago.

#### A LINK

HARRY BURRILL has written a delightful book full of illustrations on *The Platypus* (*Ornithorhynchus*). He has been on terms of intimacy with the animal for a period of twenty years, is well acquainted with its ways and has written its biography in a manner which evokes a more lively interest than that derived from the contemplation of one dried and bottled specimen. Introduced to science in 1799 by Dr. George Shaw the first specimen to reach Europe were looked on with suspicion, commonly they did, by way of the Indians was there was an inclination to class them with Eastern manna and other work of art of the crafty Chinese. When this prejudice was overcome the animal formed material for controversy among the bigwigs of science for nearly a hundred years. Being a furry animal it should by right be a mammal but Shaw had stated that it laid eggs and Home discovered that it had no nipples. The St. Hilaires in France thought it laid eggs while Richard Owen considered that it produced eggs which were hatched within the body. Meckel who discovered that mammary glands were present held that the young were born alive and Blainville held the same view. Blainville from an examination of the skull concluded with a genuine penetration that the animal laid eggs. Finally Caldwell settled the question by observing a female platypus in the second stage of parturition with the eggs in the act of passing through the dilated cervical canal. Not only does the animal build a nest and brood like a

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lion, it suckles its young after the eggs are hatched, possesses a common cloacal aperture like the lizards, and is furnished with channelled spurs and poison glands resembling the fangs of the serpent. It and its relative, *Ichidna*, are the sole surviving representatives of a race of great antiquity, which in Mesozoic times represented the aristocracy of the animal kingdom and were the lords of creation. At the present day it burrows peacefully in the banks and noses in the sandy bottoms of Australian rivers, and although zealously protected by the Australian Governments, it still retains some of its ancient defensive habits. Of these the most remarkable is that exhibited by the female of blocking up her nesting burrow with a series of mud barricades, or "pugs," as a protection against the ingress of enemies that no longer exist, the pugs being dug through whenever she leaves her nest, and replaced on her return.

#### REGULAR MEDICAL EXAMINATION

In our issue of September 26th, 1925 (p. 575) we noted the formation in Manchester of a company under the name of Family Medical Services, Limited, which had arranged at Lloyd's the "Anchor" policy for providing for the middle and professional classes a proportion of the cost of doctors' fees. We have now received from the company particulars of a scheme for what is called "regular medical overhauling" of subscribers. We find ourselves again obliged to complain of some lack of lucidity in the documents issued by those responsible for this undertaking. According to the latest prospectus, "Family Medical Services and Regular Medical Examination Association have no interest in the financial results of the schemes, and are merely to receive a percentage which has up to date fallen short of actual expenditure." Fees for regular medical examination are "a question of some difficulty," but it is suggested that the fee for examination of the first member of the family should be 7s. 6d., and for each other member 6s. The examination is to be carried out twice annually, and the result to be sent to the Regular Medical Examination Association in the form of a report by the doctor. The report is to state either that the person examined is in sound health, or that he is advised to have treatment under one of five headings—medical, surgical, dental, ophthalmic, or institutional. Whether, as a result of the report, Family Medical Services then steps in and urges the patient to have treatment, partly at the company's expense, is not stated. Anyone wishing to take part in the scheme is to write to the R.M.E. Association expressing a wish to subscribe for half-yearly medical supervision, and agreeing to pay the fees mentioned above. We are not told whether it is to be inferred that the R.M.E. Association—without any financial interest in the scheme—takes a percentage of the seven-and-sixpenny and six-shilling fees of the doctor, or whether Family Medical Services is the connecting link and provides the percentage upon which the Regular Medical Examination Association exists. We suggest that both bodies might be advised to employ an expert draughtsman to edit their prospectuses. In the meantime, those who wish to investigate the schemes may communicate with the head office, 20, York Street, Manchester, or the London address, 1 and 2, Great Winchester Street, E.C.2.

#### THE ROYAL VETERINARY COLLEGE

An appeal for £50,000 is being made on behalf of the Royal Veterinary College, Camden Town, of which Professor Frederick Hobday has been recently appointed principal. It is estimated that a sum of £85,000 is required to place the college in a satisfactory position in respect of building

and equipment. A grant from the Development Fund of the Treasury of a sum not exceeding £35,000 has been sanctioned, subject to the condition that an equal sum at least must be provided otherwise. In an interesting historical note accompanying the appeal it is recalled that the study of veterinary science only started in England in 1791, when the College was founded. The first students were enrolled in the following year, and a diploma was granted to those who passed an examination after having attended for eighteen months. During the first four years of its existence the College relied on donations and subscriptions (supplemented by students' fees) for the funds necessary for acquiring a site, building operation, and remuneration of the staff, but in 1795 Parliament sanctioned an annual grant of £1,500. This grant was withdrawn about the year 1815. The College, however, continued to develop, and in 1876 the curriculum was extended to three years, in 1893 a fourth year of professional study was added. Between 1890 and 1894 nearly the whole of the accumulated funds of the College, amounting to over £15,000, were expended on building and equipment. Through lapse of time the present buildings have become inadequate in extent, many being actually unsafe and beyond repair. Bearing in mind the national importance of the work carried on at the College, it is surprising to learn that in France and Germany the maintenance grant for the veterinary colleges in a single year before the war exceeded the total amounts given by successive Governments for veterinary education in England and Wales during the last 100 years. Help was, however, received recently from the Development Fund for the erection and equipment of the Research Institute in Animal Pathology, but no portion of it was applicable for improving the buildings devoted to education. The annual maintenance grants by the Ministry of Agriculture for research and education are also not available for capital expenditure on the College buildings. In view of the national loss inflicted by animal diseases there is urgent need of more intense and better directed study, and it is to be hoped that there will be a generous response to the present appeal. Over 6,000 cases are dealt with in the outpatient department annually, and thus invaluable opportunities are available for the education of students if only the buildings can be rendered adequate. The Earl of Northbrook is acting as treasurer of the fund.

THE museum demonstrations at the Royal College of Surgeons of England, for advanced students and medical practitioners, will begin on Friday, October 14th, when Sir Arthur Keith will show results of recent research into the reproduction and growth of bone. His second demonstration, on October 21st, will be on rheumatic and other changes in joints, illustrated by specimens from the Sturgeons Collection, now in the museum of the College. His third demonstration will be on specimens illustrating congenital dislocation of the hip and other joints. The demonstrations will be given at 5 p.m. on each day in the theatre of the College, in Lincoln's Inn Fields.

THE Huxley Lecture will be delivered at Charing Cross Hospital Medical School on Thursday, November 24th, by Sir Archibald Garrod, K.C.M.G., F.R.S., Regius Professor of Medicine in the University of Oxford. The subject has chosen is "Diathesis."

THE Rockefeller School of Biochemistry in the University of Oxford will be opened by the Right Hon. Viscount Cave, K.C.M.G., Lord Chancellor of England and Chancellor of the University, on Friday, October 21st, at 3.30 p.m.

## INTERNATIONAL HEALTH ORGANIZATION

[FROM A CORRESPONDENT AT THE ASSEMBLY OF THE  
LEAGUE OF NATIONS]

THE interest at the annual meetings of the League of Nations at Geneva in September shifted further and further from the Assembly itself, which is little more than a platform for oratorical speeches to the various Commissions, among which the overwhelming of the League's various activities is distributed. It is in the Commissions that the more vital discussions take place, and there also the effective resolutions are framed. The endorsement of these resolutions afterwards by the Assembly in what is called plenary session is a mere formality. The work of the Health Organization comes before the Second Commission, which this year is presided over by Senator Dandurand of Canada. The discussion occupied the greater part of two days. The members of the Commission include at least three medical men—Dr. Walter Elliot M.P., representing Great Britain, the Hon. Philippe Roy representing Canada and Professor Calvo Mackenna, representing Chile.

*The Car's Work*

The discussion on the work of the Health Organization was introduced by Sir RAMASWAMI AVAR, one of the delegates for India who referred to the welcome innovation made during the last year by the Health Committee in the appointment of expert assessors who took part in the work of the League in an advisory capacity. The appointment of assessors from countries as distant from Geneva as Australia and Japan showed how far the Health Organization extended. From the Bureau of Epidemiological Intelligence at Singapore weekly reports on the health conditions in 137 ports of Asia, Australia and East Africa were transmitted to a number of wireless stations. A more recent development was the weekly distribution of epidemiological information from the wireless station at Noumea, in Ceylon. The Sleeping Sickness Commission had terminated its work and had produced a report of much interest. The interchanges of public health officers on study tours had proceeded and a further development was the organization of international health courses, each course lasting about seven weeks and consisting of lecture, discussion and practical demonstrations. The first of such courses was held in Paris during the early months of this year and the second will be held in London in November and December. Sir RAMASWAMI AVAR also referred to the report of the Malaria Commission. As one result of the Commission's labours courses had been organized at the Faculty of Medicine Paris, the London School of Hygiene and Tropical Medicine, and the Institute of Maritime and Tropical Medicine Hamburg. A laboratory course of some four weeks duration was followed by two months' work in certain malarial districts of Italy, Spain and Yugoslavia. The expenses incurred by attendance at these malarial courses were a charge on the League Health Budget and the courses were necessarily limited to medical officers engaged in military work in Government employ in different countries. Another phase of the League's health activities had been the International Rabies Conference held in Paris in April last which had afforded the first opportunity for directors of institutes from all parts of the world to meet and compare experiences of the results obtained with various modifications of the original Pasteur method in use in their laboratories. Two other important activities touched upon by Sir RAMASWAMI AVAR were the study of health insurance by an expert commission which met in April last and decided on its programme of inquiry and the study also by an expert commission of infant welfare in certain selected countries. This latter inquiry was now proceeding in seven European and one of two Latin American countries were being taken to include areas with high and with low infant mortality and rural and urban districts. Sir RAMASWAMI AVAR concluded his survey of the health activities of the League with an assurance of the hearty co-operation of India.

*Health Mission to Latin America*

An account was given to the Commission by Professor CALVO MACKENNA, delegate for Chile, of the mission recently carried out in certain Latin American countries by the Health Committee of the League. The president of that committee, Dr. T. Malen, and the medical director, Dr. Ryckman, visited Latin America, mainly in connexion with a survey of the causes of infant mortality (a matter of special interest to Latin American countries in view of the sparseness of their populations) but they included general health conditions within their scope. Professor MACKENNA described the gathering at Montevideo last June of delegates from six South American countries to study the medical causes of infant deaths. The conference was presided over by the Minister of Industry of Uruguay, and attended by the President of the Republic. Investigations were set on foot and later there will be another gathering and an exchange of views on the results of the inquiry. Professor MACKENNA also announced that the Argentine Government was supporting a proposal to establish at Buenos Aires, under the auspices of the League, an international health centre for infant welfare. He went on to plead for a further extension to South America of the system of interchanges of public health personnel with the granting of scholarships to Latin American medical men to enable them to follow the courses of higher education in public health at Buenos Aires and Rio de Janeiro. There was a proposal from the Brazilian federal public health service that an international leprosy research centre might be established, also under the auspices of the League. A Brazilian philanthropist, Dr. Guinle, was prepared to contribute £2,000 a year towards the expenses of such a centre. Another proposal was to inaugurate in South America a centre for researches into the sero-diagnosis of syphilis. This proposal was made by the Instituto of State Hygiene at São Paulo which was willing to meet a proportion of the cost. Another South American enterprise mentioned by Professor MACKENNA was the sending over to Europe from Uruguay of a medical deputation to study the system of national health insurance with a view to the introduction of the system into Uruguay. Yet a further instance of the interest in public health in South America was the engagement by the Chilean Government of a Japanese expert from the Imperial Institute for Research on Nutrition in Tokyo for the purpose of inaugurating a similar service in the Central Health Department of Chile.

In some general discussion on the health work of the League, Mr. NAGAI of Japan said how much Japan appreciated the advantages of the interchange of experts. Mr. VEJERSKY of Czechoslovakia described how his country was tackling the problem of social health insurance and Baron NEVEST of Hungary, Herr BREIT-CHIEF of Germany, and Mr. VESCOVICH of Portugal reported various public health measures in their respective countries.

Dr. W. F. ELLIOT M.P. of the British delegation, spoke of certain aspects of the work of the Health Section, which so far had not been fully brought out. Among these was the work on the investigation of disease, particularly cancer and malaria. The cancer investigation was still in its infancy but he could imagine no field in which the comparative method would yield more useful results. In the investigation on malaria great work had already been done. Malaria was a disease which had a special interest for the League of Nations in view of the League's work in connexion with refugee and migration problems. The example of England which although a malarious country with many marshes and sluggish rivers had been able to eliminate indigenous malaria was encouraging for less severely afflicted. Another instance of the value of the health work of the League was in connexion with the standardization of dangerous drugs. It was a matter for justifiable pride that the official requirement all over the world with regard to many drugs was simply that they should conform to the standards set up by the League of Nations Commission. Finally, Dr. Elliot suggested that the health work of the League, with its opportunities for research and adventure, helped the League to make an appeal to the new generation not

less thrilling than the pomp and circumstance of war had made to the old.

The Commission adopted unanimously two resolutions. The first of these expressed gratification at the continued development of the international activities of the Health Organization, and in view of the recommendations made by the International Pacific Health Conference held at Melbourne at the end of last year, regarding work which might be done in connexion with the study of health problems in the Pacific area, asked that such work might receive the early and full consideration of the Health Committee. The second resolution was in the form of a blessing upon the extension of the work of the Health Organization to the countries of Latin America, commending to the consideration of the Council and the Financial Committee the several proposals mentioned by Professor Mackenna as having been put forward by the health authorities of Argentina, Brazil, and Uruguay.

### *Health Budget of the League*

The Fourth Commission approved the Health Budget of the League, which estimates a total expenditure for 1928 of 1,381,333 Swiss francs, or about £55,000. Toward this amount, however, the Rockefeller Foundation subscribes 388,695 francs, so that the total contribution of the League to health services is below £40,000. The salary of the Medical Director is 53,000 francs (£2,120). The proposed new work in Latin America, however, will involve certain supplementary votes.

The very interesting discussion on alcoholism, which took place also in the Second Commission, is the subject of a note elsewhere (p. 558).

## *Novæ et Vetera.*

### MEDICAL TRADITIONS AND EXPERIENCES OF A VICTORIAN NOVELIST

There is much of interest to medical historians in the life of G. P. R. James by Mr. Stewart M. Ellis. The novelist, so dear to our grandfathers but now almost forgotten, was the grandson of Dr. Robert James, patentee of James's powders, and the son of Pinkston James, who practised as a physician in George Street, Hanover Square, during the latter part of the eighteenth and earlier part of the nineteenth centuries. Old Robert James was a character. The fellow townsman, school-fellow, and lifelong friend of Dr. Johnson, he resembled that great type in the quickness of his temper, in scholarship, and in the frankness of his dealings. Inimitable to a degree, Dr. Robert would allow no one to contradict him save the mighty Dr. Samuel, and the latter, though he had no great opinion of the other's pharmaceuticals, nevertheless enjoyed his society and applauded his general skill in medicine. Boswell records Johnson's reception of the news of James's death in 1776, and is surprised at his apparent coldness. "Ah! poor James!" was all Johnson said, though later, "when we were in the chaise, he said with more tenderness, 'Since I set out on this journey I have lost an old friend and a young one. Dr. James and poor Harris' (meaning Mr. Thrale's son)." Afterwards, of Gilbert Wilmshurst he wrote: "At this man's table I enjoyed many cheerful and instructive hours, with companions such as are not often found—with one who has lengthened and one who has gladdened life, with Dr. James whose skill in physic will be long remembered and with David Garrick." "No man brings more mind to his profession" was another remark of Johnson's when discussing the inventor of the powders.

These were patented in 1745 when James filed a specification of a pill and of a powder. The ingredients of the latter were afterwards found not to tally with those of the doses sold for James by Newbery, the bookseller. Newbery sold two doses for half a crown "with good allowance for those who buy them for charitable uses." The public bought and swallowed not knowing what they swallowed, and were healed by their medical attendants. No less

a man than Horace Walpole encouraged the use of James's powders with his high if fantastic social prestige. The gentle Cowper attributed to them the recovery from illness of Mrs. Unwin, and an eminent physician who applauded their employment in the army believed them to be composed of powdered human cranium. Hutton was commonly held to be one of their ingredients, which are given by the encyclopaedias as calcium phosphate and antimonious oxide. Powerfully sudorific, they fell into disuse when fevers ceased to be treated with depressant, but they linger in the *British Pharmacopoeia* as pulmonary stimulants. The secret is indeed out, though they were long handed on as a "mystery" in the James family.

How far G. P. R. James benefited by this lucrative secret is not clear, but he lived at a high rate, as his grandfather had done. Monetary difficulties taking him to the United States, he was British Consul in 1853 at Norfolk in Virginia, and here he encountered the yellow fever, "an African disease unknown in the New World till they began importing negroes." As late as 1891, when the late Dr. Charles Creighton published his exhaustive work on epidemics, the fever was traced to filth in the slave ships, and especially to bilge water, but the true cause—the mighty bites of the *Stegomyia fasciata*—was unknown. James, in a letter to his publisher, speaks of himself as "surrounded by swamps and marsh miasm" and "eaten up by mosquitos and black flies." Yet the mosquito remained unsuspected, though it is curious to find that the great visitation of yellow fever in Norfolk in 1855 was heralded "by a plague of peculiar flying insects, partly yellow in colour." The *Stegomyia* mosquito, however, is a black insect, with silver markings on its thorax. Many of James's friends died of the disease, and some of them exhibited grievous symptoms, notably Mrs. Huron, wife of a commodore, from the pores of whose face blood oozed so quickly that it was useless trying to wipe it away. Norfolk was a city of desolation comparable to that which reigned in London during the Great Plague.

When the British consulate was transferred to Richmond, James, during his first winter there (1856), encountered an epidemic of diphtheria, then supposed to be a new disease. A well-known Southerner, Preston Brooks was its first victim. He was supposed to have been killed by his physician, who, to quote Charles James, son of the novelist, "insisted, against the patient's instincts, on surrounding his throat with powdered ice, which caused coagulation and death in a very short time. Before long diphtheria was epidemic in Richmond. When my father [G. P. R. James] hid it, his throat was cleared out repeatedly with lunar caustic." This treatment, the son thinks, may have stayed off suffocation. Two years later he believes, the disease crossed the ocean, creating panic in Europe. The principal epidemics were in particular towns, and in England diphtheria was known as "Boulogne sore throat." It was especially prevalent here in the winter of 1858-59, being regarded as a new disease of transatlantic origin, though it is really no novelty.

To G. P. R. James's own medical traditions and experiences should be added those of his wife, whom he married in 1828, she was the daughter of Honoratus Leigh Thomas, well known in his day as a leading London practitioner. He was President of the Royal College of Surgeons in 1809 and again in 1838. As a very young man he had come to London with an introduction to John Hunter, who characteristically bade him call at 5 o'clock in the morning, when the visitor found him busy dissecting insects. He became Hunter's dresser and a pupil of Cruikshank, whose daughter he married. Leigh Thomas was Hunter's near neighbour, and must have been deep in his traditions. We may well suppose that he told his son-in-law first about the great man, but beyond letting his reader know that he had long been familiar with the history of Sir Theodore Broughton's death by poison and practically of the trial that ensued, in which John Hunter was a principal witness, James seems to have made no use of the John Hunter legend. In his novel *Sir Theodore Broughton*, or *Laurel Water*, published in 1848 by Smith, Elder & Co. he missed a grand opportunity, for instead of describing Hunter's personality of which he must have been abundantly aware through his father-in-law, he contented

<sup>1</sup>The *Story of the Life and Adventures of G. P. R. James*. By S. M. Ellis. At the Cassell Press. 1927.

himself by alluding in his preface to the cautious and wholly admirable evidence of "the famous" John Hunter at the trial of Captain John Donellan for the alleged murder of his ward, young Sir Theodore Broughton, in 1781. John Hunter refused to commit himself to the assertion of other medical men to the effect that Broughton had died of a poisonous dose of laural water and merely insisted that the appearances at the post mortem examination amounted to putrefaction and no more. Hunter thus very honestly refused to condemn Donellan in his evidence, and incurred the sarcasm of the judge, who indulged in comments on the valuelessness of medical evidence. James in his preface shows himself on the side of Hunter, and expresses the opinion that Donellan was not the murderer. In the novel he tells the story of Broughton's death and shows what was probably Donellan's actual share in it, but of the trial he makes only a cursory mention on the closing page of his immense story.

George Payne Rainsford James wrote some eighty romances much read by his contemporaries, but also much blighted, for he opened most of his stories with "a solitary horseman" or two horsemen—onto the hero the other a king in poor circumstances—riding over a solitary landscape. So eloquently had the horse beginning become associated with his name that G. P. R. James in our fathers' days, was generally dismissed as a kind of joke by those patient and omnivorous novel readers, and since the sixties has fallen into undeserved neglect. Mr. Stewart Ellis is to the nineteenth century what the late Austin Dobson was to the eighteenth: he wears Dobson's mantle and is a scholarly and admirable biographer. But it is a question whether even he has read all James wrote, though his bibliography of James's works, which includes over ninety items, is a model of what such things can be. I would be interesting to know if G. P. R. James ever treated a medico-legal theme as in his novel above mentioned and in one other, *The Commissioner*, which deals, interestingly no doubt, with lunacy.

V G P

## Ireland.

### IRISH FREE STATE ELECTION

The following members of the medical profession are among those elected to the new Irish Parliament:

Sir James Craig (Dublin University) Independent  
Dr. T. Hennessy (Dublin City South) Government  
Dr. Miles Keogh (Dublin City South) Government  
Dr. P. J. O'Dowd (Lancaster) Fianna Fail  
Dr. J. J. O'Reilly (Cavan) Government  
Dr. James Ryan (Wexford) Fianna Fail  
Dr. Sean Tubridy (Galway) Government  
Dr. Ward (Monaghan) Fianna Fail  
Dr. Vincent White (Waterford) Government

It will be recalled that Dr. Thomas Hennessy, Irish Medical Secretary of the British Medical Association, was successful at the by-election in the same constituency shortly before the dissolution of the Dail. He is to be congratulated warmly upon repeating his success at the General Election on September 15th. There has been much delay in declaring the results of the polling in many constituencies, owing to the very tedious method of counting and elimination which accompanies proportional representation.

### MEDICAL INSPECTION OF SCHOOL CHILDREN IN NORTHERN IRELAND

An efficient system of medical inspection and treatment of children in primary schools is one of the great advantages conferred by the Education Act of Northern Ireland. The Ministry of Education in its report states that during the year 1926-27 there was a marked growth of interest on the part of local education authorities in this subject. This may be attributed not only to the united efforts of the Ministry of Education and the Ministry of Home Affairs to awaken in the local education committees and the general public a sense of the importance of this branch of the work, but also to the desire of the committees themselves to ascertain the extent of the

problem presented by the afflicted child. Moreover, a spirit of health rivalry has been aroused by the gratifying results achieved in those areas where medical inspection has been introduced at a very early stage. Some education committees had, in fact, addressed themselves immediately to the investigation of the physical condition of the children, but others, less convinced of the necessity for action, or somewhat apprehensive as to the cost, had hitherto appeared reluctant to take any serious steps towards the fulfilment of these duties. Apart from the education authority for the county borough of Belfast, the Ministry has now received reports of the working of schemes of medical inspection of school children in (1) the combined areas of Larne, of Lisburn and Belfast (rural), and of Antrim, (2) the combined areas of Londonderry and Limavady, of Coleraine and of Magherafelt, (3) county Fermanagh. These reports show not only that the necessity for systematic medical and dental inspection is great, but also that this need has hitherto been almost entirely unsuspected by the public. At first the medical officers of the local authorities encountered opposition on the part of both pupils and teacher, who did not understand the purpose of medical inspection. Since it has been discovered that these inspections have brought to light physical defects which were previously unsuspected, however, opposition has rapidly disappeared and parents have been anxious to have their children examined. Not only this, but it has also been found that parents generally have shown commendable alacrity in taking steps at their own expense, so far as has been possible, towards the remedy of the physical defects disclosed as the result of the medical examination of their children. The reports of the medical officers in the above mentioned areas show that the work so far accomplished though as yet necessarily incomplete, has been very valuable. All sections have been roused to the sense of their responsibility, and there is a growing eagerness to have the work continued and extended.

### MEDICAL TREATMENT FOR INSURED PERSONS IN THE FREE STATE

At the annual meeting of the delegates from the National Association of Insurance Committees (Ireland) which was held recently in Dublin, a memorandum was approved in connexion with the provision of medical treatment for insured persons in the Free State. The association, having considered the final report of the Committee of Inquiry into Health Insurance and Medical Services desires to place on record its considered views on certain recommendations therein as follows:

1 The association is convinced that the only satisfactory solution of the problem of the provision of adequate medical treatment for the working class and their dependents—whether insured person or otherwise—in Scotland, Eireann lies in the immediate adoption of a national scheme of medical services on a contributory basis comprehensive in scope and freed from all association with Poor Law administration.

2 The association emphatically agrees with the suggestion made in the final report that for various reasons—mainly financial—the immediate adoption of such a comprehensive scheme is not practicable. Not only is the care of the public health one of the first duties of government but true national economy lies in the pre-emption of the working capacity of the people. Economy secured at the expense of the people's health is a prodigal waste of a national asset.

3 The association agrees that unless a national scheme embracing insured persons as well as others is immediately adopted the provision of medical benefit for insured persons is an urgent necessity.

4 The association cannot commend the proposals for medical benefit adumbrated in the final report as satisfactory to insured persons. In its opinion the very limited advantages which they might confer on certain classes of insured persons are not commensurate with the sacrifices which insured persons generally as well as their employers are called upon to make.

5 The association considers that any scheme of medical benefit to be satisfactory to insured persons must comply with certain essential conditions: (a) It must be completely dissociated from Poor Law administration. (b) The treatment provided must be thoroughly efficient which involves agreement with and the full co-operation of the medical profession. (c) Being on a contributory basis operation must be open to the free criticism of the persons whom it serves and it must provide convenient machinery for the investigation of complaint. It must therefore



be locally administered by bodies on which the contributors as well as the other interests concerned are represented.

6 The Association strongly urges on the Government the immediate adoption of a comprehensive national scheme of health services for insured persons as well as other members of the community unable to provide adequate medical treatment in illness, on similar lines to those advocated by the Irish Public Health Council and the County Councils' General Council.

7 The Association protests strongly against the proposal to deprive insured contributors of the right of representation, guaranteed to them under the National Insurance Act 1911 which is involved in the recommendation for the abolition of Insurance Committees.

## Scotland.

### EDINBURGH UNIVERSITY CHAIRS

WITH regard to the chair of forensic medicine and the chief police surgeonship in the city of Edinburgh, rendered vacant by the recent death of Professor Harvey Littlejohn, steps have been taken for conducting the duties of the latter post, to which an interim appointment has been made of Dr Douglas Keir. Dr Keir has, for the past five years, held the post of assistant to Professor Littlejohn in both appointments. The appointment to the chair of forensic medicine in Edinburgh University is in the nomination of the Crown, and no appointment has yet been made. In regard to the chair of medicine, Professor G. Lovell Gulland, whose resignation was recently intimated to the university, has been reappointed to continue in office during the forthcoming winter session. The resignation was to have taken effect on account of the Professor's retirement, on attaining the age limit, from his position as physician to the Royal Infirmary of Edinburgh. The relinquishment of wards at the age limit does not, however, take effect before December of the present year.

### JAMES MACLEZIE INSTITUTE FOR CLINICAL RESEARCH, ST ANDREWS

The syllabus for the winter session of 1927 at the James Maclezie Institute for Clinical Research, St Andrews, has now been issued. Addresses on clinical subjects, followed by discussions, to which all practitioners are cordially invited, will be given on Tuesday afternoons, at 4 p.m., while on Friday afternoons, at the same time, meetings are held for clinical discussions. On Tuesday, October 4th, the introductory address will be given by the honorary director Mr A. M. Ramsay on ocula manifestations of gastro-intestinal disorder, and the ensuing discussion will be opened by Dr W. C. Souter, lecturer on ophthalmology in the University of Aberdeen. Dr J. B. Orr, director of the Roylett Research Institute, Aberdeen, on October 11th, will deal with the influence of diet on the physiology of the stomach; he will be followed by Professor Haining of the University of St Andrews. On October 18th Professor John Fraser will consider superficial pyrexia as an aid in the differential diagnosis of abdominal disorder, and in the following week Dr R. O. Adamson will describe dyspepsia as met with in general practice. Professor D. P. D. Wilkie will deal with gall-bladder disease and gall stones on November 1st, and Professor J. J. Charters, on November 8th, will discuss pharmacological principles in their relation to common gastro-intestinal ailments. The clinical significance of haematemesis will be the subject of an address by Dr E. Matthew on November 15th, and the surgical aspects of gastric and duodenal ulcer will be considered by Professor Archibald Young on November 22nd. The early symptoms of cancer of the stomach will be described by Dr Edmund Spriggs on November 29th, and Sir George Lenthal Cheate, on December 6th, will lecture on some recent views about carcinoma as applied to the colon. The last two lectures of the session will be given respectively by Professor Robert Muir on December 13th, who will discuss the dissemination of malignant disease, with special reference to the abdomen, and by Professor John Mainoch on the following Tuesday, who will enumerate some pitfalls in the diagnosis of acute abdominal conditions. The subjects dealt with

on the Tuesday afternoons will be found in our Diary, published weekly in the SUPPLEMENT, and the syllabus of the course may be obtained from the secretary at the institute.

### NURSING SERVICES IN SCOTLAND

At the opening of a fete held in the grounds of the Atholl Palace Hotel, Pitlochry, on September 15th, the Duchess of Atholl, M.P., Parliamentary Secretary to the Board of Education, delivered an address in which she outlined the position of district nurses in Scotland. The fete was held on behalf of the funds of Queen Alexandra's Scottish Nursing Memorial Fund and of the Pitlochry District Nursing Association. Her Grace said that there had been a great advance in the nursing facilities provided throughout Scotland, and that to-day it was recognised that skilled nursing was just as essential for the restoration and preservation of health as skilled medical or surgical treatment. A great impetus had been given to this movement by the Queen Victoria Nursing Institute. In more recent years the institute had given its nurses training in such matters as infant welfare, school medical nursing, and other health interests lying within the scope of the local authority. The Queen's nurses were the most highly trained type of nurse in the country, and the Government recognition provided for useful co-operation between statutory bodies which had powers to promote the health of the people in different ways and voluntary associations which dealt with many problems of health. Some 700 Queen's nurses were at work in different parts of Scotland, there were trained at considerable cost, and in recent years the institute had been faced with an annual deficit. A further increase of fully 50 per cent of nurses was required to meet the needs of Scotland. The object of the Queen Alexandra Fund was to endow the institute and enable it to carry on its great work, as well as to provide a lasting memorial to Queen Alexandra, who had done much to develop and encourage nursing during her lifetime.

### SCOTTISH QUARTERLY STATISTICS

The more outstanding features of the vital statistics of Scotland during the second quarter of 1927 are a birth rate of 20.6 per thousand, a marriage rate of 6.5, and a death rate of 12.9. The death rate is 3.2 below the previous quarter and is the lowest yet recorded in Scotland for the second quarter of any year. The actual number of deaths during the three months was 15,891. In the larger burghs taken individually, the quarterly death rate ranged from 14.9 in Coatbridge, 14.8 in Dundee, 14.5 in Glasgow, and 14.0 in Perth, to 9.7 in Kirkcaldy, 9.9 in Ayr, 10.1 in Clydebank, and 10.2 in Hamilton. The quarterly death rate in England and Wales was 11.0 per thousand, and in Northern Ireland 15.9 per thousand, the former being 1.9 less, and the latter 3.0 more, than the equivalent Scottish rate. The infantile mortality rate in Scotland for the quarter was 78 per thousand births, which is a low figure. Of the total deaths 13 were from enteric fever, 110 from measles, 45 from scarlet fever, 269 from whooping cough, and 70 from diphtheria. The deaths from influenza were 432, from encephalitis lethargica 27, and from cerebro-spinal meningitis 44. The deaths from tuberculosis, all forms, numbered 1,346, being 8.5 per cent of the total deaths in the quarter.

## England and Wales.

### GUY'S HOSPITAL

Among the chief matters of interest in the Guy's Hospital report for 1926 is to be found in the appendix to the treasurer's report. King Edward's Hospital Fund desired that hospitals should extend the principle of costing in various departments of their work, so as to show in greater detail the expenses of the various departments. In the appendix to the treasurer's report a preliminary attempt has been made to introduce a detailed costing system. From this it is shown that in a total of £100 per occupied bed the most expensive item is £70 for

salaries and wages. This is not surprising since it is stated that it takes approximately three people to look after two patients or, in round figures, 600 patients in hospital require 900 people doing working directly or indirectly on their behalf. The report shows also that certain departments such as the venereal diseases department are very expensive in comparison with ordinary out-patient treatment. It is suggested that in future, when the expenses of out-patient treatment in different hospitals are compared it should be noted against each hospital whether a whole-time venereal department is maintained or not. In a table on the unit of cost in various departments it is interesting to note that the cost per patient in the paving ward was £7 18 4d as compared with £10 4s in the general wards. This apparent anomaly is explained by two reasons. In the first place the paving ward is charged only with maintenance and bears no charges for administration, secondly, the average occupation of beds in the paving ward is only twelve days whereas in the general wards it is twenty. The actual cost per occupied bed in the paving ward is £219 as compared with £185 in the general wards. About 10 per cent of the cost per bed appears in the analysis as "unanalysed expenditure." The report contains an appeal for the endowment of medical education and research and subscriptions are invited to a discretionary fund which can be allocated between the hospital and the school in proportion to their respective needs.

#### CRUMPPALL INFIRMARY, MANCHESTER

Mr. A. H. Burgess, professor of clinical surgery in the University of Manchester, opened, on August 4th, new buildings at Crumppall Infirmary, with which he had been previously connected first as house-surgeon in 1893 and subsequently as visiting surgeon for ten years. The total cost of the present extension scheme including the provision of equipment was about £20,000 and the addition comprise three operating theatres, two recovery rooms, x-ray and storage rooms and a dispensary. Mr. Burgess in an address praised the enterprise and public spirit of the Manchester guardians in recognizing the responsibilities introduced by the modern advances in surgery by the provision of facilities which might be termed the very latest word in hospital construction and equipment. The co-operation of Poor Law hospital with voluntary hospitals in general hospital work was also the subject of favourable comments by speakers at the ceremony. Crumppall Infirmary was established in 1877 and has over 1,400 beds, of which the average number occupied is given as 1,259. A training school for nurses was instituted at the commencement of its existence. Beds are available for private patients.

#### LABORATORY ASSISTANTS' ASSOCIATION

The second conference of the Pathological and Bacteriological Laboratory Assistants' Association was held at the end of last month in the Department of Pathology of the University of Cambridge, and was attended by members from the Gold Coast, South Georgia, Shanghai, and from all parts of the British Isles. An official welcome was accorded by the Vice-Chancellor, who congratulated the association on the valuable share it was taking in the advance of scientific knowledge. During the conference the Junior Greenfield prize and medal were presented to Mr. E. B. Brain of Birmingham for colour drawings on pathological subjects. The Sims Woodhead medal was presented to Professor Lorrain Smith the first president in recognition of the great service he had given since the formation of the association in 1912. The subject dealt with at the conference included the manufacture of small pox vaccine in Shanghai, the dietary of rabbits and guinea-pigs, antagony and symbiosis of bacteria, the development of parasitology, the preparation of plague vaccine and tissue culture technique. A comprehensive exhibition of laboratory work and apparatus was arranged and visits were paid to the various centres of interest in the neighbourhood. The conference dinner in Trinity Hall was attended by 104 members and guests including the Vice-Chancellor and Professor G. H. Nuttall.

#### LIGHT TREATMENT IN BERMONDSEY

A new institute for light treatment was opened in Bermondsey in June, 1926 at the rear of the tuberculosis dispensary. Two large rooms for light treatment are provided one for men the other for women each room is fitted with a small dressing room, and is under observation by a nurse and a doctor's room. The mercury vapour lamps employed have long leads, so that they may be taken out into the adjacent open yards when the weather is propitious thus enabling treatment to be given in the fresh air. Overheating inside the rooms is prevented by large folding doors, which can be kept open except in the most unsuitable weather. During 1926 treatment was given to 341 patients, the total number of attendances being 10,416. Many patients came from the tuberculosis dispensary, and others from the maternity and child welfare clinics, a large number had been sent for treatment by general practitioners. Patients with definite tuberculosis comprised 27 per cent of the total number treated, while cases of debility and malnutrition formed 37 per cent, the great majority of the latter—debilitated children—came as contacts from the tuberculosis dispensary. In his annual report for 1926 Dr. P. King Brown expresses his belief that light treatment will benefit to a greater extent the people of northern countries, where the natural sun is deficient, than those from southern Europe and the tropics. Dr. D. M. Connan the clinical tuberculosis officer, who is in charge of the light treatment, emphasizes the importance of regular attendance, and reports that children who come from very overcrowded homes make slow progress; he thinks that light treatment in such cases can only counteract in part the results of bad housing conditions.

#### ROYAL INSTITUTE OF PUBLIC HEALTH

A course of lectures on the health of the nation will be delivered at 37 Russell Square, W.C.1, on Wednesday afternoons, at 4 p.m., from October 12th to December 14th inclusive under the auspices of the Royal Institute of Public Health. The first lecture will be given by Dr. Saleeby, on sunlight for childhood, and the second by Professor S. J. L. Cummins, on tuberculosis as a social disease. Professor Haldane will describe some disease conveyed to man from animals and Sir Henry Curran will deal with osteoporosis as a problem of childhood. The present situation in regard to housing will be discussed by Dr. F. L. Fremantle, and the subject of a police as regards the milk supply will be treated by Professor R. Stenhouse Williams. Dr. A. Dingwall Fordyce will lecture on the prevention of heart disease and Professor Blair Bell on the prevention of cancer. The final two lectures of the series will be given by Dr. L. R. Lempriere who will speak on the health of the public school boy and Professor F. W. Hope who will deal with the changed conditions of quarantine. These lectures are intended for all those interested in medico-social problems. The Harben lectures will be delivered in the lecture hall of the institute on October 17th, 18th and 20th at 4 p.m. by Professor R. Brunoghe, director of the Institute of Bacteriology in the University of Louvain who will take as his subjects The Twort-Herelle phenomenon and Some new research on relapsing fever. It is announced that the annual congress of the institute in 1928 will be held in Dublin.

#### ROYAL NORTHERN HOSPITAL X-RAY DEPARTMENT

A new x-ray department has been recently opened at the Royal Northern Hospital, London, the limitations of the old one having been corrected by rebuilding. The department now consists of a screening room, a dental room, a special radiographic room for the examination of the skeleton and a treatment room with the usual accessories. The latest type of x-ray tube has been installed this confers upon the operator a hitherto unattainable degree of immunity from danger. The screening and radiographic rooms have been equipped with a high tension transformer which is silent in operation. The cost of the new department has been approximately £2,500, of which there remains a sum of £900 to be raised.

## Correspondence.

### BRITISH DOCTORS IN MADEIRA

SIR,—Your reference to the position of British medical practitioners in Madeira (*SUPPLEMENT*, August 20th, p 118) prompts me to say, with your permission, that there is no tangible likelihood of the exercise of any powers the island authorities may possess in disturbance of the present status.

I am mainly responsible for the statements recently conveyed to our Embassy in Lisbon and to the General Medical Council in London, and I can definitely assert that the local councils too fully realize the need of British medicos among the steadily expanding influx of Madeira tourists and climate seekers to take any step harmful to this substantial source of their prosperity.

There is now no lack of reciprocity in Portugal, and I will by and by submit to you the necessary conditions for qualifying to practise in this country. The fees are light, and there is no power to exact special payments. Two British registered general practitioners now reside among their patients, and these still appeal to me in difficulties.

The trouble in 1866 concerned me personally when, though in charge of the whole British community at Funchal, I was abruptly cited to cease practising, and when in the same breath the druggists were warned against my prescriptions. I could probably have contested this ill-timed and ill-natured action, but, being fully equipped to face any reasonable examination, I elected to present myself in Lisbon as a candidate for the Portuguese diploma.

The competent medical authority in Portugal then centred in the Lisbon Board of Health, whose obstructive administration of an obsolete quarantine system had brought them country into notorious disrepute. This board, after protracted negotiations most ably conducted by Mr Robert Lytton (afterwards Indian Viceroy), and in spite of a positive order from the Prime Minister, rejected my application on the ground that I had not studied in Portugal. We quoted the reciprocity clause in the Medical Act of 1859 without effect, and the Prime Minister, losing all patience with his insubordinate medical corporation, published a decree abolishing the board, himself assuming its functions. This action met with general approval, and the defunct body has never been revitalized. Special permission was it once recorded to me to follow my profession at Madeira, and at my own request the concession in the original document was extended in effect generally to English physicians. This *modus vivendi* has lasted more than sixty years and will never be disturbed while my successors regard the national welfare and cultivate relations of unity with their Peninsular associates.

Those who come after me will find that I have done nothing to impair existing respect for British culture, and they will be fortunate indeed if they can justify a portion only of the attainments attributed to us, and expected of us as custodians and exponents of natural science in its local aspects. It is clearly due to the learned bodies whence we come to maintain the tradition of our comprehensive training and mental aptitudes—I am, etc.,

MICHAEL GRABHAM, M.D. LL.D., F.R.C.P.

Madeira Sept 5th

### "ETHER CLONUS" ALDEHYDE AND PEROXIDE

SIR,—The occurrence during the last year or so of several cases of so-called "ether clonus" at St Bartholomew's Hospital has caused me great concern, and I have been at some trouble to discover the cause. Cases were reported by the residents and others they did not conform to the cases of ether clonus that I had met with myself years ago. Most of the cases seemed to have occurred after a fairly long anaesthesia, not as in the cases I had seen. The first point I noted was that occasionally when giving the gas-oxygen-ether-chloroform combination the resultant mixture inhaled by the patient had a somewhat acid smell. At first I attributed it to faulty ether, and insisted on having the purest, but even then the same acid smell was noticed on occasions. I then consulted Messrs Duncan, Flockhart and Co, who at once gave me

every facility. They have been throughout of the assistance, and have at all times been most anxious and willing to help. At my suggestion they instituted a series of tests under the direction of Dr W. Inglis Clark, D.S., whose report may be summarized as follows:

#### Summary of Chemical Investigations

Two tests were used in estimating the aldehyde in ether-chloroform. (a) Contrast with caustic potash for two or three hours, when, if no colour was visible, it was assumed that the ether contained no aldehyde. (b) Nessler's solution added to the water obtained after shaking equal volumes of distilled water and ether or chloroform for two minutes in a separating funnel. The second method was found to be both accurate and comparative. The first method gave fallacious results with ether-chloroform due to the interaction of alcohol. The peroxide present was ascertained by the B.P. test for solution of potassium iodide. The experiments were carried out by passing nitrous oxide or oxygen or a mixture of the two gases through chloroform (a) or both, kept at a temperature of 40° to 50° C, and then examining the condensed liquid from the cooled gases, as well as the residue in the original vessels. The gases were passed through liquids for one hour and for three hours in each case. To variable ways in which the gases were passed through the liquids gave a total of twenty experiments, in each of which the amount of peroxide and of aldehyde both in the residue and the distillate was estimated. As a result it was found that after the gases had been passed for more than one hour through ether there was a distinct tendency to the formation of peroxide. In less than one hour there was usually none. In some cases there was a slight formation of peroxide if the ether was kept standing overnight and after a few days peroxide would develop in the ether. But the amount was usually about 1 in 100,000, and never exceeded 1 in 50,000. With regard to the aldehyde the amount detected was very small indeed, it never exceeded 1 in 80,000 and was often not more than 1 in 200,000. Standing overnight did not increase the amount of aldehyde.

As a result of these investigations it appears that when either oxygen or  $N_2O$  or a mixture of  $O_2$  and  $N_2O$  is passed through chloroform or ether, or through both, a certain amount of both peroxide and aldehyde is formed. This discovery—which I frankly admit was new to me—leads me to think that, although the amounts as shown by the tests are very small, yet we cannot neglect them at all. In consequence, as the tests were conducted under the best possible conditions, we should try to use as little ether and chloroform as possible when giving the gas-oxygen-ether-chloroform combination, and the distillate should be the purest obtainable.

I do not know whether the presence of this small amount of peroxide and aldehyde would be sufficient to produce the condition of "ether clonus," and, indeed, I hardly think that it would, but on occasion when I have noticed the acid smell that I have mentioned it appeared to me that there must be quite a large amount of some noxious substance present, and I have at once cut off the ether-chloroform and had recourse to gas and oxygen alone.

The impressions that I derive from this investigation are:

- 1 As peroxide and aldehyde are found, we should use as little ether and chloroform as possible.
- 2 The bottles containing the ether and chloroform should be thoroughly cleaned and sterilized every day.
- 3 As far as possible fresh ether and chloroform should be used for each case.
- 4 Whenever the acid smell is noticed the ether-chloroform should be shut off.

I feel that this matter needs a much fuller investigation, and I hope to be able to continue it during the coming winter, but have thought it wise to give this preliminary warning so that other anaesthetists may not only reap the benefit of this discovery, but be on their guard for any signs or symptoms that may help in the solution of the problem—I am, etc.,

H. EDWARD G. BOYD, O.B.E.,

M.R.C.S. (LOND.)

September 2nd

Senior Anaesthetist to St Bartholomew's Hospital

### CONVULSIONS DURING ANAESTHESIA

#### Atropine in Childhood

SIR,—It would be unwise to allow the suggestion of Dr Hornibrook (*September 10th*, p 471), that convulsions occurring during surgical anaesthesia are due to overdosage of atropine, to remain unchallenged.

To cite the atropine dosage for children alone at the Hospital for Sick Children, Great Ormond Street, a dose of 1/100 grain of atropine sulphate was given to a

administered to all children of four years and upwards before every operation until we found it wiser to administer the atropine by mouth instead of hypodermically. For some two years since the atropine has been given by mouth, this dose has been increased. The children take the atropine simply in two doses the first two hours before the operation and one second one hour before the operation the total amount being 1.80 grain for all children of 6 years of age and upwards. This does not cause convulsions.

As over 7,000 operations are performed at the above hospital every year the children never exceed 12 years of age and every operation being preceded by the dose of atropine already quoted it can be assumed that atropine is not the cause of the convulsions in question because these convulsions have not been observed by either myself or my colleagues on the anæsthetic staff—I am, etc.,

HAROLD SEXTON

Sir or Anne that is the usual for Sick Children Great Ormond Street

London W 2 S 1 1 b

#### 'A FORGOTTEN BY-FACTORY'

Sir—SMITH HENRY Hill Hickman was not, as Mr Winland Joyce says (September 10th p 471) "the first discoverer of the anæsthetic relief of pain." General anæsthesia is known centuries before his time but it was forgotten. Tom Middleton in his tragedy *Women Beware Women* (Act IV, Scene 1 1605 or thereabout) writes

I'll imitate the pines of old surgeons  
To this lethargy who ere they show their art  
Cast once a nap then cut the diseased part

As so often happens, the poet remembered and recorded what was forgotten by everybody else.

Anyone reading the surgical records of the thirteenth century must realize that the operations performed could not have been the successes they were if general anæsthesia was completely unknown. And in fact Guy de Chauliac (fourteenth century) has left this record

Some surgeons prescribe medicaments such as opium the juice of the moral hyoscyamus mandrake ivy black lettuce which send the patient to sleep so that the incision may not be felt. A new pouge soaked by them in the juice of the and left to dry in the sun when they have need of it they put this pouge unto warm water and then hold it under the nostril of the patient until he goes to sleep. Then they perform the operation.

Why the employment of general anæsthesia was given up and the memory of it quite forgotten by the medical profession are mysteries not easy to unravel. But probably the Black Death was responsible. So very many of the leading doctors including de Chauliac himself perished or the plague taking with them their newly acquired knowledge and almost without doubt, the general public disappointed and despairing lost all faith in the medical profession. This much is beyond question—while the thirteenth and early fourteenth centuries were bright with the new found triumphs in medicine and surgery the following centuries were almost hopeless. It was not till the nineteenth century that anæsthesia and sepsis came once more into their own. But it should not be lost sight of that the so-called discoveries of the nineteenth century were in actual fact rediscoveries. Most of the pioneer work done here had been done already—in the Middle Age—

I am, etc.

FRANK G. IATON

#### PAINLESS CHILDBIRTH

Sir—On page 35 of the *Epitome* of September 10th we summarized the experiences of two writers with Gwinn's method of rectal ether anæsthesia. Harris claims that the applicability of this method is much greater than that of scopolamine amnesia" is contradicted by the quotations he himself mentions. It appears the method is not to be continued more than ten or twelve hours (what appears then is not stated), and that it should not be begun only. I have continued scopolamine amnesia for six five hours and it has I believe been given for over 20 hours. It should be begun before the pains are severe, and deny the patient relief in the early stages as in

Catharine's method, is surely a stultification in part the term "painless childbirth."

Both writers emphasize inertia as contraindicating the ether method, in inertia scopolamine may be employed without hesitation since by producing sleep it preserves the patient's strength and gives the best chance of a natural birth.

Prophets given, scopolamine-morphine narcosis shows better results than "85 per cent pain greatly relieved" (Harran) and full analgesia in more than half the cases" (Nauditch). Harran says "there was no increase of forceps delivery", this is indeed "fine praise." Scopolamine gives an increased percentage of physiological deliveries—that is fewer forceps cases—because it obviates the use of instruments merely to shorten the sufferings or prevent exhaustion of the mother or to placate the relatives, it is especially useful in labours that are likely to be prolonged—that is difficult—in contradistinction to Nauditch's experience with rectal ether. This writer also says that the morphine may be repeated but this may entail danger to the child in scopolamine amnesia the morphine should be strictly limited to the first dose.

Continuing what Harran apparently implies it is my experience that scopolamine-morphine narcosis is eminently suitable for use in a private house and though it necessarily takes up much time and requires some experience to get the best results (which will not follow rule-of-thumb or unstandardized methods) it does not require "the service of a trained anæsthetist."

In the case of a falling birth rate which is in part due to the dread of the sufferings of childbirth it cannot be too widely known that scopolamine-morphine narcosis, properly given affords a method of relief which is safe, harmless, applicable to all cases, and can be used in the patient's own home—I am, etc.,

LESLIE W. S. S. P. C. H.

E. CUNNINGHAM PLUMPTRE

#### THE ABUSE OF CAESAREAN SECTION

Sir—The publication of Dr Henry Jellicot's paper under the above heading in the *JOURNAL* of September 10th (p 451) should be warmly approved by all who have experience of obstetrics and are anxious that a high standard be maintained in this specialty. With the statistics in the paper and the conclusions come to I need not dwell, as they are recognized as true and sound by all who are in a position and qualified to give an unbiased opinion. What I hope to do is to point out how this abuse often occurs, and suggest something for its control.

Caesarean section is a surgical operation and well within the scope of a properly qualified obstetrician's practice but general surgeons may also well claim (and do so) that it is within their province. But it is not apparently realized universally that the true obstetric question is the advisability or not of the operation in any given case. That question can only be decided after careful consideration and examination by an obstetrician—whether with or without the help of other surgeons is immaterial for the moment to the argument.

Now so long as practitioners (often anxious to get the troublesome case "off their hands") are willing to transfer these cases to institutions hospital or maternity homes regardless of what expert hands they go into so general surgeons attached to such institutions will prefer Caesarean section as the easiest way out of the difficulty to them according to their view. Consideration of the foregoing must point to the general practitioner as an important link in the chain of events leading to the results we are discussing. It is so easy to transfer cases into other hands and the responsibility is apparently over. The trained midwife is another link in the chain. She has no option in her legal duties but to call in a registered medical practitioner in cases of difficulty and local health authorities acting through their maternity committees (not to mention the Ministry of Health itself) see no difference between different practitioners called to the cases, which almost always require specialist attention.

Criticism so far—now the suggestion. The large share of the remedy is in our own hands. The profession as a whole must cultivate a "conscience" in obstetric

matters. Local bodies of the profession (the Local Division of the British Medical Association, obviously, in most places) should trench with no uncertain voice, in season and out, that obstetric complications are work for obstetric specialists. An obstetric tragedy should be looked upon as a reproach to the local profession, individually and collectively, unless they have enforced this principle. Thus a real public opinion will develop, and then the aim will be to place an obstetric surgeon on the staff of all institutions that take maternity cases. His opinion will then be available, whether he does the operation or not.

Incidentally the maternity mortality will be reduced as it has not yet been (Sir George Newman's Report shows there has been no fall in the last year). A difficulty has been a lack of practitioners with obstetric interests. On this point one would remark that there is no "money" in obstetrics alone as a speciality, but this is not the place nor the moment to deal with that difficulty—I am, etc.,

Norwich, Sept 15th

ARTHUR CROOK

### PREGNANCY AND GLYCOSURIA

SIR,—In reply to Dr. Howe's letter in the *BRITISH MEDICAL JOURNAL* of September 17th (p. 520), I beg to state that the possibility of the case being one of lactosuria has not been definitely eliminated. A rough and ready fermentation test was inconclusive, and could not be repeated as the condition did not return. I would point out, however, that lactosuria usually persists during lactation. Further, the amount of milk allowed under the "ladder diet" is too small to justify the appearance of lactose in the urine.

I agree with Dr. Howe that the case was not one of diabetes mellitus.

My object in publishing the case was to call attention to the possibility of disorders of carbohydrate metabolism in the toxæmias of pregnancy. Since reporting the case, however, I see that insulin has been used with success in the treatment of hyperemesis gravidarum, so that my idea is not altogether novel—I am, etc.,

Lisburn co Antrim Sept 19th

T. A. KEAN

### MEDICAL LITERATURE FOR KENYA COLONY

SIR,—With reference to the letter appearing under the above heading in the *Lancet* of June 4th, 1927, the Council of the Kenya Branch of the British Medical Association desires to express strongly its disagreement with the statement made therein, that the medical practitioners of Kenya would gratefully welcome gifts of fairly up-to-date books on medicine and surgery.

The fact is that the medical department of the colony maintains a medical reference library which is accessible to all doctors in the colony. This contains all the best of the most recent medical publications, and takes in the majority of the standard medical and scientific journals published to-day. Furthermore, it is probable that the private libraries of medical men in this colony would compare favourably with those of their professional brethren at home.

While grateful for the suggested vigorous generosity of the President of the Victoria League, my Branch Council feels that the statement that medical practitioners in this colony feel a pressing need for textbooks of medicine and surgery may be misconstrued into a reflection on their professional efficiency—I am, etc.,

J. B. CARRIE,

President Kenya Branch British Medical Association

Nairobi Aug. 21

### THE PATIENT AND THE PROCEDURE

SIR,—The letter of Dr. Alim Moss (August 20th p. 528) and Dr. John Campbell (September 19th p. 472) under the heading "Blood pressure" is worthy of attention.

Are we not in the days of clinical laboratory diagnosis and injection methods of treatment sometimes apt in our enthusiasm to think too much of the disease and not enough of the comfort of the patient? As a private practitioner of many years' experience I find that patients often object

to being constantly worried with needle puncture even the blood pressure test—necessary (in my opinion) and useful though it is—is received sometimes with a heated protest. To quote a personal experience I have once ordered a daily hypodermic injection of a small endocrine extract for fourteen days in succession. At the end of that time the backs of my forearms from the elbow to the wrist presented a series of red tender swellings these were not due to sepsis, as I was most careful to avoid.

Take, for instance, the Sippy regime for the treatment of acute gastric ulcer, especially as modified by H. C. Price's *Textbook of the Practice of Medicine*, 6th edition, pp. 505-6. The remarks of Beaumont and D. J. (Recent Advances in Medicine, third edition, p. 174) are very much to the point. Were I a sufferer from this disease nothing would induce me to submit to the treatment. In my opinion the Lenz method is much preferable and, I believe, gives equally good result.

The administration of the arsenobenzol compounds, colloids, vaccines, and many endocrine extracts in the puncturing the subcutaneous or intramuscular tissue—understanding them with fluid (the most painful part of the process). Are these unpleasant methods of treatment indispensable?—I am, etc.,

H. W. WEAVER, M.D. (Lond.)

West Looe Cornwall Sept 12th

### THE INTERNATIONAL CONTROL OF DRUGS OF ADDICTION

SIR,—The letter which appeared from Dr. W. I. Davis on this subject in the *BRITISH MEDICAL JOURNAL* of August 6th (p. 235) concluded with these words:

"The menace on the Continent is already very real and the medical profession in this country may be required to reach a decision sooner or later, as to whether the safety of and to the British Empire which may be attained from the prohibition of heroin may not be greater than the pain relief afforded to a few patients which some of us think may be obtained with codeine or morphine."

The injurious effects of heroin have not been so put in my experience as this letter suggests. The routine use of this drug to allay cough has always struck me as a sign of ignorance, since cough so frequently is the bright side of a malady, being Nature's way to help the in passages. If people, however, are becoming addicted to this drug for other purposes the sooner it is put off the better.

My purpose in writing is to go further, and suggest the introduction of some control over the use of morphine even for legitimate purposes, and by medical men.

Some years ago I was treating an elderly lady for a chronic cough which she had long suffered. She and her daughters said it was useless to do other than give her an injection of half a grain of morphine to which she was accustomed from her own cough. I protested that it was too much, and gave one-quarter grain then one-eighth more and finally as the cough persisted well as the daughters an additional one-eighth grain. Then ceased heavy sleep followed, and no awakening.

Another patient I saw through a bad attack of typhoid. When somewhat better I transferred the case to a friend as I was leaving Mentone. He at once gave morphine and seemed excited, and she died in a few hours.

A third case came lately under my observation. Her husband had a severe hæmorrhage from gastric ulcer. His doctor gave an injection of half a grain of morphine followed in the morning by one-sixth more. The patient never came out of comatose sleep which supervened.

This sort of thing appears to me to be going on to a far too great extent, and the consequences are in the presumption that it is the malady which is not the morphine. It is forgotten that half a grain of morphine to an enfeebled patient may equal to a much larger dose to a vigorous person, a principle which many medical men do not seem to realize.

Would it not be wise if some rule or law were introduced that no medical man should give more than a quarter or one-third of a grain of morphine on any day, without the confirmatory opinion of a colleague? We are dealing with a drug of great potency often to a patient of low vitality, and it should be the patient's fault alone if he fails to recover—I am, etc.,

T. J. HAYES, M.D. (Lond.)

D. W. CARRIE



## SOUTH AFRICAN NATIVE PRACTITIONERS

Sir—Your valued correspondent for the Union of South Africa in the *JOURNAL* of August 20th (p. 323), quotes without disapproval the opinion of the Hospital Survey Committee to the effect that the medical needs of the tribalized natives of South Africa will not be met by providing for an influx of natives into the medical profession and this because it is alleged, "the qualified native practitioner is rarely content to practise among his own people in their tribalized condition."

As only a very limited number of South African natives have as yet attained to the status of qualified medical practitioners (thanks largely to the fact that the right to finish their medical education in their own country is denied them) it is easy to misinterpret the accuracy or otherwise of the committee's contention as regards them all, and this has been done.

A writer to the *East London Daily Dispatch* goes over each one of them by name and shows that without exception they have all thus far preferred to go back to their own people to exercise the healing art. Even Dr Molema who is mentioned as an outstanding example of the supposed tendency is, I believe at work amongst his own tribe the European cases of his which have caused such a stir being not of his seeking and an almost negligible proportion of his patients. The writer referred to concludes his letter thus: "Consent with the foregoing. Dr Motobang the latest medical recruit, is showing the same preference for Basutoland. In the face of this clear record of the past, what justification then, is there for the allegation that native practitioners will 'drift to a large town'?"

I think, Sir, you will agree that in bare justice to the South African natives and in particular to those of them who are members of our profession and holding British qualifications, these facts should be published to let our agents—the supporters of the committee in its otherwise admirable report.

It is not always safe to argue (as the committee apparently has done) as to what an African will do, either from consideration of what a European would be likely to do in similar circumstances or even from consideration of what other Africans in another distant part of that vast continent have done and it is the considered opinion of many who have given much thought to the subject that the providing of facilities for the training of natives as medical practitioners would go a long way towards the solution of the medical difficulties of native South Africa—I am, etc.,

DAVID M. BROWN

(Lubwa Chin ali N. Rhodesia)

Annan Dumfriesshire Sept 12th

## BREATHEING EXERCISES WITH MOVING ARMS AND MUSCULAR INHIBITION

Sir—Dr Gittins (August 6th p. 239) rejects the view that a muscle elongated by some movement, during the movement, continues contracted or even becomes more contracted. Dr Gittins strives to differentiate between "tension" displayed by a muscle and the "tone" produced by a muscle. He agrees that the "tension" of the pectoralis major is increased as the muscle is elongated by such a movement as raising the arm from the side but he adds, "it is surely unwarrantable" to deduce from this that its tone increases or that the muscle is in a state of contraction.

"Tension" is a characteristic of inextensible tissues such as aponeuroses and tendons the tension they present depends on their fibres (white connective tissue fibres) not on their cells though the state of the fibres depends ultimately on the cells. Striated muscle when pulled on under certain conditions can easily be elongated if it presents a "tension" under such circumstances, this must be due to the state of the muscle cells. The connective tissue fibres in striated muscle and even the cells themselves can only come into consideration as a factor causing "tension" when the limits of the greatest elongation of the muscle possible in the intact animal are surpassed. The changes in the cells of the muscle tending to prevent elongation within the normal limits, can only be assigned to variations

in the osmotic pressure of the cells, which is delicately affected by nervous impulses.

This is the "tension" of striated muscle is the effect in muscle produced by its "tone" or by its "contract on" it is the effect of the nervous system acting on the muscle cells. The "contract on" of muscle is simply an exaggeration of its "tone"—of its "tonic contraction." The tension of muscle varies with its tone and, other things being equal the tone of a muscle varies with its length when elongated in a movement its tone and thus its tension are increased. A reflex arc determines this. Musculo spindles sensory in nature exist. When the muscle is elongated, these musculo spindles are pulled on and generate impulses which, running up the afferent nerve fibres to the cord, affect the cells sending efferent impulses to the same muscles. Thus, when a muscle is elongated its contraction must increase unless it is inhibited by some superior force. Palpation in the normal both in myself and in my dog, shows that such an inhibitory force does not come into play during movement, and the effects of strychnine poisoning the phenomena of Thomsen's disease and of the muscle "cramps" tend to support this conclusion. During movement muscles elongated do not become slack. On the contrary, the force exerted by muscles elongated during a movement increases throughout the movement the elongating muscles actively oppose and resist the movement, and in this way they guide the acting or maximally contracting muscles so that precise, "co-ordinated" movement results.

It has been supposed that the state of muscle during posture and movement is different. But active posture, as related with active movements, passive postures with passive movements or no movement at all. During active posture we are alert and ready for the impingement of external forces or to exert ourselves on some environmental appearance during passive postures we are incapable of such response. There may perhaps be different innervations of striated muscle nor medullated nerves may indeed supply some of the fibres. Such researches however cannot obliterate the results of even gross examination of the muscles in our own bodies as palpation gives the current teaching of to-day does not explain the results. It requires modification before it can satisfy the postulates of the physiological experiments seen in a larger world—I am, etc.,

Rugby Aug 21

R. H. PAINOFF F.R.C.S. Eng

## "HANGED DRAWN AND QUARTERED"

Sir—One of your correspondents throws some doubt on the capacity of the human organism to endure the shock of being disembowelled. It may be of interest in this connexion to point out that Harrison a signatory of the death warrant of Charles I got up and assaulted the executioner after being thus treated. Xenophon record, in *Anabasis II*, v. 33, that one of the Greek captains came fleeing to the camp "wounded in the belly and holding his bowels in his hands and related all that had happened."

τετραμενος εις την γαστερα και τα εστερα εις τας χειρας εχων κα ελεειναιτα ημερησια

—I am, etc.

Harroco Cambridge Sep. 11th

W. J. YOUNG

## MENIERE'S DISEASE TREATED BY THE ELECTROPHONODE

Sir—The interesting and important case described by my friend Mr. Arnold Ferguson of Jersey in your issue of September 10th (p. 454) is one which is highly satisfactory in the treatment of this difficult condition.

I hasten to endorse Mr. Ferguson's remarks by my own experience in two cases one of which a young lady aged 21, was published in the *Practitioner* for last August. In this case the vertigo which was her chief complaint, disappeared entirely before the first fifteen treatments were completed and she has since spent a holiday in Switzerland, where she practised mountaineering without difficulty—I am, etc.,

London W1 Sep 17th

MACLEOD YEARSLEY, F.R.C.S.

## "THE MEDICAL REGISTER"—UNTRACEABLE PRACTITIONERS

SIR,—With reference to the letter which appeared in your issue of September 17th (p. 526), written by a practitioner who signs himself "Still on the Register," in regard to the list of practitioners from whom replies have been received to the inquiries sent out from this office, I have to say that, in the case of practitioners in regard to whom it is improbable that a certificate of death will be received owing to their having died abroad, it is the custom of the Council to send a registered inquiry in order to comply strictly with the requirements of Section 14 of the Medical Act of 1858. This has proved to be a very necessary precaution. In the case of eminent men who at one time practised medicine but subsequently have taken up other careers, their names are included in the list in the ordinary routine, but, before names are erased from the *Register*, it is customary for the list to be carefully scrutinized, and as far as possible every precaution is taken to see that the names of those whose addresses can be ascertained and who are known to be living are not erased.

Your correspondent suggests that the *Medical Register* might be checked with the *Medical Directory*. I desire to point out that this is invariably done, and if an alternative address is found in the *Directory*, an inquiry is forwarded to it. The publishers of the *Directory* used to be in the habit of inserting an asterisk before the names of those practitioners who had not answered the inquiry sent to them. This is no longer done, and the Council is not able to see whether the address inserted in the *Directory* is one which has been ascertained immediately before publication or not. I might add that not only is the *Directory* consulted, but every possible means of preventing omission is adopted. Inquiries are addressed to the Ministry of Health, to the British Medical Association, and, if there is any indication that the practitioner has gone to the Dominions, the Colonial Medical Registers are searched, and no name is erased from the *Register* until considerable trouble has been taken to establish communication with the practitioner if still alive.

The following is a copy of Section 14 of the Medical Act, 1858, and it will be observed that the Council is under no obligation to do anything further than to send an inquiry to the registered address, but it does in fact make every reasonable effort to ensure that names shall not be erased if it can be avoided.

*Duty of Registrar to keep the Register correct.* "It shall be the duty of the Registrars to keep their respective Registers correct, in accordance with the Provisions of this Act and the orders and regulations of the General Council, and to erase the names of all registered persons who shall have died and shall from time to time make the necessary alterations in the addresses or qualifications of the persons registered under this Act, and to enable the respective Registrars duly to fulfil the duties imposed upon them it shall be lawful for the Registrar to write a letter to any registered person addressed to him according to his address on the Register to inquire whether he has ceased to practise or has changed his residence and if no answer shall be returned to such letter within the period of six months from the sending of the letter it shall be lawful to erase the name of such person from the Register provided always that the same may be restored by the General Council should they think fit to make an order to that effect."

—I am, etc.,

London W 1 Sept 20th

NORMAN C KING,  
Registrar General Medical Council

## MINKERS' NYSTAGMUS AND ULTRA-VIOLET RAYS

SIR,—The note on the sympathetic system in minkers' nystagmus (BRITISH MEDICAL JOURNAL, August 20th, p. 303) induces me to say that I have been treating cases of minkers' nystagmus by general ultra-violet radiation for the last nine months and have found the results most disappointing. I cannot record a single case so treated that has shown any earlier alleviation of symptoms than have those treated merely by rest or light work.—I am, etc.,

G. F. HARCRAFT, M.R.C.S., L.R.C.P.,  
Wolverhampton Aug 23th. D.O.M. and S.

## Obituary

SIDNEY RAWSON WILSON, M.B., M.Sc.,

F.R.C.S.E.D.,

Senior Anaesthetist Royal Infirmary, Manchester, and Lecturer in Applied Physiology and Anaesthetics, University of Manchester

THE tragic death of Mr Sidney R. Wilson last week removes a brilliant son of Owens College and a pioneer in the anaesthetic branch of the medical sciences. Mr Wilson was found dead on September 12th in his study, on his face was a mask, such as is used in the administration of gas and oxygen, and he appears to have met his death while experimenting with this anaesthetic on himself. He retired to his room at 3 o'clock in the afternoon and was not seen again alive. At 5 o'clock he was to have given an anaesthetic at a nursing home, and a telephone mes- senger came to inquire why he had not kept the appointment. His wife found him dead in his room with the mask on his face and a strong smell of nitrous oxide gas in the air. Artificial respiration was performed for some hours, without avail. He was known to be making experiments with the McKesson apparatus to find out the effects of different mixtures of nitrous oxide, oxygen, and air. The actual problem on which he was engaged was whether the anaesthetic properties of various gases and vapours were due to oxygen lack, or were produced by the action upon nerve cells.

Sidney Rawson Wilson was born in 1882 and was the third and youngest son of Dr A. C. J. Wilson of Penistone. His father is still alive and in active practice in the Penistone district. He was a grandson of the late George Wilson of Manchester, the chairman of the Anti Corn Law League, a well known Manchester worthy of his day, of whom a bust and oil painting are to be seen in the Manchester Town Hall. S. R. Wilson was educated at Owens College, and received his hospital training at Manchester, afterwards serving as house-surgeon at the Royal Infirmary. He graduated M.B., B.Ch. with honours at Manchester in 1905, and in the same year obtained the M.B., B.S. degrees of the University of London with honours and distinction. In 1902 he took the B.Sc. degree of Manchester with first class honours. He obtained many medals, scholarships, and exhibitions during the early part of his training, and, as a student, had a most distinguished career. Specializing in anaesthetics he came to be recognized as one of the foremost anaesthetists in the country, and he was a pioneer in many new methods. He was senior anaesthetist to the Manchester Royal Infirmary, and honorary anaesthetist to the Victoria Dental Hospital and Salford Royal Hospital. He held the post of lecturer in applied physiology and anaesthetics at Manchester University and lecturer in anaesthetics at the Dental Hospital.

He contributed numerous articles to the medical journals on the subject in which he was specially interested, and recently read a paper on anaesthetics before the Royal Society of Medicine. In 1922, in collaboration with Mr A. H. Southam, he contributed to the BRITISH MEDICAL JOURNAL a paper on cancer of the scrotum, which was the first published work to draw attention to the occurrence of mule-spinner's cancer among cotton workers. This paper aroused considerable interest, both in medical and lay circles, and resulted in special legislation being undertaken by the Home Office to deal with the disease. More recently he published in the *Lancet* an article on ether convulsions, which he attributed to impurities in the ether used, this paper also evoked much interest and discussion.

A colleague writes: "The death of 'S. R.' as he was commonly known to a very wide circle of friends and colleagues, is a very serious loss to medicine in Manchester, and the news came as a terrible shock to those who had the privilege of his acquaintance. His death will be no less keenly regretted by the students at the University and the Dental Hospital, where his teaching and methods were greatly appreciated by all who came into contact with him. As an anaesthetist it was a pleasure to watch him, and there is never any cause for anxiety when 'S. R.' was in charge of the case. In addition, he was

a born teacher and had a gift of imparting his knowledge such as is given to few. His quiet voice when reassuring patients and thereby gaining their confidence will long be remembered by those who came under his hands. His gentleness and ability when dealing with children was a gift given to few men and was a joy to see. While most of his time was fully occupied with his professional duties he still managed to take an interest in sport. He was a familiar figure at many boxing contests in Manchester and occasionally found time for a round of golf. A friend who spent holidays with him at the seaside noted the great affection he was held in by children wherever "S R" was to be found there was always a circle of young people around him. He is survived by a widow and two children. In a very happy family life his only cause for anxiety was probably for his son, who suffered from diabetes and needed constant and watchful care. The interests and welfare of this boy were one of "S R's" greatest concerns and he was seldom so happy as when talking of his boy and helping him with his animals. The funeral on September 16th was a spontaneous demonstration of the affection and esteem with which he was regarded. The one consolation to his friends is that though he has gone, his work and memory will live after him.

Many of our readers must have seen with regret the announcement of the death in Canada at the age of 53 of Sir WILLIAM CLYDE JONES who was for many years the leading figure in British pharmacy. In his early days he acted as dispenser to a succession of medical practitioners in London and then set up as a dispensing chemist on his own account in the East End. He was intimately concerned with the foundation of the Proprietary Articles Trade Association and was a vigorous member of the council of the Pharmaceutical Society of Great Britain from 1879 to 1904 the year in which he was called to the Bar. In 1903 he was appointed parliamentary secretary to the society and two years later became M.P. for Stepney. In the House of Commons he rendered immense services to pharmacy and pharmacists more particularly in connexion with the National Injunction Acts and the Poisons and Pharmacy Act. During the war he was for a time parliamentary secretary to Dr. Addison and in 1919 he was knighted, shortly after his appointment as secretary of the Pharmaceutical Society. He resigned that post a year and a half ago in order to become chairman of council of the Canadian Proprietary Articles Association throwing himself with characteristic energy and enthusiasm into the organization of that body. He had been chairman of the Association of Insurance Committees in England and Wales and his textbook on *The Law of Food and Pharmacy* published in 1909 is the standard work on that subject. In an appreciation printed in *The Pharmaceutical Journal and Pharmacist* of September 17th the Medical Secretary of the British Medical Association writes of the many opportunities he had of working with Sir William Glynn Jones on behalf of their respective professions and pays a special tribute to his signal services in connexion with the Dangerous Drugs Act and Regulations.

Dr WILLIAM THOMAS EVANS who died in the Cottage Hospital Bromley Kent at the age of 75 was the son of the late Mr Charles Evans F.R.C.S. and was born in Bakewell, Derbyshire in 1855. He received his medical education at Edinburgh and graduated M.B. Ch.B. in 1875. After holding the post of resident surgeon to the Edinburgh Royal Infirmary he commenced practice in Piddington holding the appointments of medical officer to the west district of this borough and to the St. John's Training School for Civil Worksman Park. He was a member of the British Medical Association and the Royal Medical Society Edinburgh and of the Hygienic Society London. He retired from practice in 1920 and settled in Kent. He is survived by his widow and three children one of whom is Major Douglas Gordon Evans, R.A.M.C.

The following well known foreign medical men have recently died. Dr LOUIS DUMETIL-CHAMBERLON of Tours, president of the Societe d'Anthropologie de Paris, an eminent medical historian and lecturer in the medical school at Tours, and Dr F. W. TILLOTSON, professor of internal medicine at Helsingfors, aged 56.

## Medico-Legal

### A SURGEON'S FEE

An action for the recovery of a fee for performing a surgical operation was heard by His Honour Judge Higgins at Exeter county court on September 13th. The plaintiff was Mr P. A. Worthington F.R.C.S. surgeon in charge of the throat, nose and ear department, Royal Devon and Exeter Hospital and the defendant was Mr S. T. Pitt, Yelverton the claim being for £70 7s being 6 guineas for an operation on defendant's daughter and 7 guineas as a retainer's charge.

Mr J. L. Pratt for the plaintiff said the operation was performed on defendant's daughter aged 15 at a time when he was in the Exeter Infirmary Hospital. The daughter was a boarder at the Marlborough School. It was discovered that she was suffering from scarlet fever. She had her own medical attendant at the school but as it was a case of scarlet fever arrangements were made for her to go to the Infirmary Hospital and at the parents' request she was put in a special ward. At the end of a month (January 24th) the scarlet fever was cured and Dr Strick the medical officer, would have been willing that she should leave hospital but it was found that the girl was suffering from a discharge from the ear and that an operation would probably be necessary. In fact the girl would have died if an operation had not taken place. The matron of the hospital advised Mr Pitt about this and pointed out that in Dr Strick's view it was a case in which a special fee was needed. Counsel said defendant could have been under no misapprehension that he would be liable for the fee because the usual notice as to this was sent to him.

Dr P. H. Strick, city medical officer who is in charge of the Infirmary Hospital testified that defendant was present at a consultation on January 24th when Mr Worthington expressed the opinion that an operation was necessary. The local authority did not pay specialists' fees.

Mr Worthington in his evidence said that at the consultation both Mr and Mrs Pitt were present. Witness advised an operation. Defendant did not consent then but two hours later witness received a telephone message from Mr Pitt authorizing him to go on with the operation. Witness found the condition of the child so serious that it was fortunate she was operated on. As to the fee he usual charge for such a case was 100 guineas but in this case he made a reduction.

Defendant's counsel sought to say Dr Worthington that his daughter has died still and was dead before the operation was done.

The matron and a nurse at the Infirmary Hospital spoke to conversation defendant's wife had with them as to what Dr Worthington's fee would be.

Defendant said he had no evidence to offer beyond that already given by the documents.

His Honour said it seems to him defendant was liable and there would be judgment for the amount claimed. The defendant expressed his intention to appeal on a point of law.

## Universities and Colleges

### UNIVERSITY OF DUBLIN

Mr DONALD B. GRIFFIN M.D. F.R.C.S. who has been lecturer on anatomy in the University of Durham College of Medicine Newcastle-on-Tyne for the past five years has been elected to the Chair of Anatomy in succession to Prof. Dr P. H. Warden whose resignation was recently announced.

### UNIVERSITY OF LEEDS

On the occasion of the visit of the British Association to Leeds the honorary degree of Doctor of Laws was conferred by the University upon the President Sir Arthur Keith M.D. F.R.S. and that of Doctor of Science upon Prof. Dr J. S. Haldane M.D. F.R.S.

## The Services

### HONORARY PHYSICIAN TO THE KING

HIS MAJESTY has approved of the appointment of Lieut. Colonel C. P. Chittenden C.I.E. OFF. MB. Indian Medical Service as Honorary Physician to His Majesty the King with effect from February 15th 1927 in succession to Lieut. Colonel C. E. Denham C.I.E. Indian Medical Service who has retired.

### HONORARY SURGEON TO THE KING

HIS MAJESTY has approved of the appointment of Major-General G. Tate M.D. Indian Medical Service as Honorary Surgeon to the King with effect from February 27th 1927 in succession to Major-General P. Heard C.I.E. Indian Medical Service who has retired.

## Medical News.

THE annual prize distribution at St George's Hospital Medical School will be held in the board room of the hospital on Saturday, October 1st, at 3 p.m., when the inaugural address, entitled "The meaning and methods of success," will be delivered by Sir Humphry Rolleston, Bt, KCB, MD, Regius Professor of Physic in the University of Cambridge. The annual dinner of the medical school will be held at the Hyde Park Hotel on Saturday, October 1st, at 7.15 for 7.45 p.m., with Sir Humphry Rolleston in the chair.

THE opening of the winter session at the London (Royal Free Hospital) School of Medicine for Women will be held on Monday, October 3rd, at 3.30 p.m. The introductory address will be given by Mr Robert G Hogarth, CBE, FRCS, senior surgeon, General Hospital, Nottingham, whose subject will be "The doctor's high calling." Academic dress will be worn.

THE opening ceremony of the winter session at King's College Hospital Medical School will be held on Friday, September 30th, at 2.30 p.m. The introductory address will be given by Sir Berkeley Moynihan, Bt, President of the Royal College of Surgeons of England. The annual dinner of past and present students will be held at 7 for 7.30 on the same day at the Criterion Restaurant, Piccadilly Circus, when the chair will be taken by Professor G F Still, MD.

THE annual distribution of prizes at Charing Cross Hospital Medical School will take place in the outpatients' hall of the hospital on Wednesday, October 5th, at 3.30 p.m. The annual dinner of past and present students will be held at the Hotel Victoria, Northumberland Avenue, on the same evening, at 7 for 7.30 p.m., when the chair will be taken by Dr Cuthbert Lockyer.

THE winter session at the Royal Veterinary College, Great College Street, Camden Town, will begin on Tuesday, October 4th, when the opening address will be given at 3 p.m.

THE eighty-sixth session of the School of Pharmacy of the Pharmaceutical Society of Great Britain will open on Wednesday, October 5th. The inaugural sessional address will be given by Dr T A Henry, at 3 p.m., in the Society's house, 17, Bloomsbury Square.

THE Fellowship of Medicine announces that a course in cardiology will be held at the National Hospital for Diseases of the Heart from October 3rd to 15th, from 10 a.m. to 4 p.m. each day (limited to 20). The Central London Throat, Nose, and Ear Hospital will hold a three-week course from October 3rd to 22nd, the clinical and operative parts of the course may be taken separately or together. There will also be practical courses in peritoneal endoscopy, and in bacteriology and pathology suitable for DLO students. Other courses in October will include ante-natal work at the Royal Free Hospital, at 5 p.m., on Fridays, October 7th to 28th (membership limited to 10), in diseases of children at the Paddington Green and the Victoria Children's Hospital, morning and afternoon alternately at each hospital, from October 17th to 23th, in electrotherapy at the Royal Free Hospital, on Wednesday, at 5.15 p.m., from October 12th to November 2nd, in gynaecology at the Chelsea Hospital, from October 17th to 29th, in tropical medicine at the London School of Tropical Medicine, Tuesdays and Thursdays, at 2 p.m. from October 4th to 27th, and in neurology at the National Hospital, Queen Square, from October 3rd to November 25th. Copies of syllabuses and of the general course programme are obtainable from the Secretary of the Fellowship, 1, Wimpole Street, W1.

A WEEK END post graduate course at St Mary's Hospital, Paddington, has been arranged. On October 1st Professor C A Faunett will deal with minor operative problems of general practice, Sir William Wilcox, the treatment of pernicious anaemia, Dr T G Stevens, Caesarean section and after, and Mr Zachary Cope, retention of urine in an old man. On October 2nd Dr Ernest Young will discuss the duodenal tube in treatment of gastric and duodenal ulcers, Dr C M Wilson, early recognition of some common diseases, and Dr John Freeman, blood transfusion. On October 3rd Dr Wilfred Harris will deal with the significance of pain in the lower extremities, Mr S Maynard Smith with obstruction of the large bowel, and lantern lectures will be given by Mr Alec W Bonine on recent work on the pituitary and ovary, and Mr Duvern Fitzwilliams on early diagnosis of carcinoma of the tongue. The meetings are open to all medical practitioners without fee.

A SHORT course of lectures on functional nervous disorders will be given at the Lystock Square Clinic for Functional Nervous Disorders, 51, Lystock Square, London, WC1, commencing on October 10th. The fee for the course to

medical practitioners is £2.2s and to medical students 10s 6d. Tickets and full particulars of the course can be obtained in advance from the honorary secretary of the clinic.

AN international congress of hygiene will be held in Paris under the presidency of Professor Leon Bernard from October 25th to 28th, when the following questions will be discussed: Relation of insurance to public health, introduced by Kuhn of Copenhagen, Holtzmann of Strasbourg, and Brian of Paris, factors in the recrudescence of small pox and the means of combating them, introduced by Ricardo Jorge of Lisbon, Jitta of the Hague, and Camus of Paris, hygiene of education camps, introduced by Siquezee of Paris. Addresses will also be delivered by Professors Madsen and Ottolenghi. The subscription of 60 francs should be sent to the general secretary, Dr Dujaire de la Riviere, Institut Pasteur, Rue Dutot 25, Paris XV.

THE P L M Railway informs us that the through service from London to the Riviera will this winter run in connexion with the 2 o'clock boat train from Victoria via Folkestone Boulogne instead of the 11 o'clock via Dover Calais as hitherto. The arrival at Riviera destinations will, however, be only approximately a quarter of an hour later, thus shortening the total journey by two and three quarter hours. The new service will run for the first time on October 25th next, and will provide the usual sleeping accommodation and also ordinary 1st and 2nd class seats.

DR JOHN BEATTIE, research assistant and demonstrator of anatomy at University College, London, has been appointed assistant professor of anatomy at McGill College, Montreal.

A CONSIDERABLE epidemic of infantile paralysis is reported from Alberta. Fresh cases have been recorded daily, and the reopening of the schools has been postponed by the Board of Health. According to the Toronto correspondent of the *Times*, the medical authorities of Edmonton, the capital of the province, have appealed to the Rockefeller Foundation for assistance in combating the epidemic, and have asked that a representative may be sent to study the local situation.

A STATUTORY order issued by the Home Office will come into force on October 1st, requiring the provision of an adequate supply of water for washing and drinking purposes in factories and workshops in which gutting, salting, and packing of herrings are carried on. A first aid dressing station must be established within 250 yards of the factory or workshop, and be in the charge of a qualified nurse or other person trained in first aid.

THE sixth Roumanian Congress of Oto-rhino-laryngology will be held at Bucharest on October 29th and 30th, under the presidency of Professor Piedescu Riou of Cluj. Papers will be read on foreign bodies in the trachea, bronchi, and oesophagus, by Professor Belmoff of Sofia and Dr Potirade, and on syphilis of the ear by Drs Tempea and Costina, jun. Further information can be obtained from the general secretary, Dr L. Mayersohn, 81, Calea Musilor, Bucharest.

THE annual statutory general meeting of the Medical Defence Union Ltd, will be held at the Royal Bath Hospital, Harrogate, to-day (Saturday, September 24th), at 4.30 p.m.

THE annual dinner of the West Kent Medico-Chirurgical Society will be held on Wednesday, October 12th, at 7.30 p.m., at the Piccadillo Restaurant, Piccadilly Circus. Tickets 10s 6d each, exclusive of wines, may be obtained from Dr J P Purvis, 16, The Grove, Greenwich, SE 10. Ladies are invited.

THE third annual Norman Lockyer Lecture before the British Science Guild will be given by the Very Rev. Dean Inge on the afternoon of Monday, November 21st, in the Goldsmiths' Hall. Particulars will be announced later.

THE Jewish Health Organization of Great Britain is a body which has the support of a large number of well known Jewish medical men. It appears also to be a very active body, and, although the annual report just issued is only the third, it possesses already some nine different committees. It promotes health education by means of lectures and publications, it is establishing an annual Health Sabbath in connexion with the Health Week of the Royal Sanitary Institute, and it is opening a clinic for nervous and difficult children. It is also engaged in inquiries into the types of visual defect and the prevalence of left handedness in Jewish children, the mortality from cancer amongst Jews, and the comparative intelligence and attainments of Jewish and non Jewish school children.

THE centenary of the birth of Villemin (1827-92), medical inspector of the French army and professor at the Val de Grace School of Medicine, who discovered the virulence, specificity, and contagiousness of tuberculosis in 1865 will be celebrated at Paris, under the patronage of the President of the Republic, from October 15th to 18th, immediately after the French Congress of Medicine.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House Tavistock Square W.C.1**

**ORIGINAL ARTICLES** and **LETTERS** forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

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The **TELEPHONE NUMBERS** of the British Medical Association and the **British Medical Journal** are **MUSEUM 9561 9562 9563** and **677** (internal exchange four lines).

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**EDITOR OF THE BRITISH MEDICAL JOURNAL, Articology Westcent London**

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### QUERIES AND ANSWERS

#### UPINE STAINS

**INCONTINENCE** writes: A patient is suffering from precipitancy and frequency of micturition with slight dribbling after micturition dating from the passage of a cystoscope several years ago used for diagnostic purposes after a prolonged attack of renal haemorrhage the cause of which was not determined. He is greatly troubled by the consequent staining of his shirts and trousers when these are of light coloured material and would be very grateful for information of any application which would remove this staining. Ordinary dry cleaning and the application of benzol petrol and turpentine have been tried without much effect.

#### BORING THE LOBULE

**K.W.** writes: Two of my women patients insist on my boring their ears for wearing rings and I should like a few hints as to technique.

We have always looked on this procedure not as a surgical operation but as the removal of a barbaric mutilation, general some years ago but now becoming rare and usually performed by jewellers. The method as described to us long ago was as follows: The lobule of the ear was pressed against a piece of cork, the eyes of the patient were shut tight and a coarse needle was stabbed through the lobule into the cork, an open link of gold chain was then pushed through the perforation and suitable restoratives were administered. We suggest to our correspondent that in order to signify the importance of the rite he should pass a small trocar and cannula through the lobule after due aseptic and antiseptic precautions, withdraw the trocar and follow it out with a piece of silver or gold wire, withdraw the cannula leaving the wire in the lobule and then bend the wire into a ring.

#### INCOME TAX

**WEST AFRICA** inquires what tax would be payable on an income of £1900 (£875 earned) in his circumstances, he has three children the eldest of whom is under 15 and in receipt of a scholarship of £150 per annum.

The duty is as follows

		£140	£1000
		20	
			51
Taxable income	£1900		51
Tax due at 2 in the £ on £225		5 22 10	
do at 2 in the £ on £121		2 16 0	
Total tax payable		£25 6 0	

If West Africa is a widower the personal allowance is £135 and the tax payable will be increased by £13.

### DIAPHORETICS AND DIURETICS

**DR. T. G. GARDNER** (Oxford) writes in reply to **Scrutator** (JOURNAL September 10th 1927 p. 476) who asked for suggestions for making diaphoretic and diuretic mixtures palatable: "A chloroform as a vehicle will answer his purpose." "I am in my opinion" "it certainly is more pleasant—just as food is more likely to agree" when it is presented in a dainty form.

### LETTERS, NOTES, ETC.

#### TWO MEDICAL SAINTS

**DR. BASIL H. PAIN** (Southborough, Tisbury Wells) writes: While on holiday in Kent this year I found myself in the little parish church of St Cosmo and St Damian in the Bleau to give it its full name but called locally Blean. It is situated about three miles north of Canterbury. The names of the two saints are rare in English churches. A full account of their lives and doings appears in Young's *Annals of the Barber Surgeon*. There we learn that they are the patron saints of the barber surgeons that they were Ambrosius by birth but dwelt in Aegae a city of Cilicia. They practised medicine and surgery but took no fees in payment. Naturally they were in high esteem. On the title page of the old Book of Ordinances of the Barber Surgeons they are represented as supporters of the coat of arms of the barber surgeons. One of the saints holds a medical vessel in his right hand while the other saint has a box of ointment and a sprig indicative of their being professors of the healing art. The vicar of Ilean told me that there were only two churches in the United Kingdom dedicated to these saints and both were in Kent. He then showed me a stained glass window in the church St Cosmo (or Cosmas) is shown holding in his left hand a goodly box of pills with the lid removed and between the thumb and first finger of his right hand lies a well shaped pill. St Damian is shown holding a pestle and mortar. They were martyred in Cilicia in the Diocletian persecution in 303 A.D. The vicar also told me that he had returned from Greece and that there were at least fifty chapels dedicated to these saints within a few miles of Athens. I read 'they ministered to all who applied to them whether rich or poor so they deserve to be kept in memory by the medical profession. Their Commemorative Day I see happens to be September 27th.

The names of the two saints with that of the Beloved Physician are commemorated in the title of the Guild of St Luke, St Cosmas and St Damian a Roman Catholic body with headquarters in London and a considerable medical membership.

#### TREATMENT OF WHITLOW BY X RAYS

**DR. A. A. MASSER** (Penistone, Sheffield) writes to report the rapid recovery of a whitlow on his right thumb after exposure to x rays. He states that about three months ago he contracted a deep thecal whitlow which also involved the terminal phalanx. A deep incision was made but the thumb continued to discharge from two sinuses for nearly a fortnight and no radiograph was taken. Almost immediately after exposure to the x rays the pain in the thumb vanished and by the following morning all discharge had ceased the sinuses closing within twenty-four hours. The x ray examination revealed necrosis of the tip of the phalanx. The thumb is now quite normal except for a slight scar caused by the incision. Dr. Masser has been unable to find any reference in the literature to the therapeutic action of x rays in septic or inflammatory conditions and in view of his own experience he suggests that small doses might be tried in the hope of accelerating the recovery of infected wounds.

#### EFFECT OF PARIS GREEN ON MOSQUITO LARVAE

**DR. PADMANABHA MENON** of the Ross Institute London has published in the issue of the *Journal of Tropical Medicine and Hygiene* for August 1st a short account of the effect of Paris green on culicine larvae—the report of some experimental work. He found that Paris green vigorously shaken with water suks and the granules are eaten by mosquito larvae which subsequently die though in the very early stage of development they seem to escape. Paris green was not found to be toxic to mosquito pupae.

#### THE UNMARRIED MOTHER AND HER CHILD

The ninth annual report Mother and Her Child in the Leithmar Act of 1900 is legitimized by the subsequent marriage of its parents in each other provided certain conditions are observed. Similar notices did not attend the Bastardy Bill introduced into the House of Lords. The bill has now been modified in respect to the hearing of affidavits in cases before the birth of the child, the payment by the father towards the support of the mother during the later months of pregnancy and for commencement expenses, and the power to secure an affidavit in order to be given to guardians or board of guardians in the event of insanity or death of the mother. An attempt will be made to introduce the modified bill in the House of Commons.



## RELUCPENT EPISTAXIS

Dr W NUNAN (police surgeon, Bombay), having noticed several inquiries about the treatment of recurrent epistaxis, writes to suggest it is out to mental suggestion. "Anyone," he says, "who has had opportunities of observing the results of suggestion in cases of spasmodic dysmenorrhoea and menorrhagia, crinices, and pylorospasm will have no difficulty in appreciating the value of suggestion therapy in the control of contractions of unstriated muscle fibres."

## "SUBINVOLUTION PERITONITIS" (?)

Dr DOUGLAS A MITCHELL (Bath) writes. The histionic genius of the vermiform appendix is so generally recognized nowadays that it is apt to be blamed for the large majority of lower abdominal infections where no other gross lesion is demonstrable. In recent years I have seen several cases of acute abdominal crises in women necessitating operation, in which the greatest elasticity of imagination was necessary to incriminate the appendix, but in which the following triad of conditions was present: (1) A heavy, bulky uterus, with the typical "doughy" consistency of "subinvolution," and covered with comparatively listless and almost diabolically coloured peritoneum, (2) intensely red and congested, but not distended, tubes, (3) a quantity of clear or slightly sanguinous fluid in the pelvis, with hyperemic reaction in the adjacent coils of small intestine. In the last two cases of this condition of which I have notes there was an interval of four months since the last (straightforward) confinement. In such cases, though the history and symptoms may give a perfect picture of fulminating appendicitis, no pathological changes are found in the appendix. If this condition is truly one of "subinvolution peritonitis," due to the direct transmission of organisms, or even toxic material, from the uterus along the tubes to the peritoneal cavity, and if the condition is at all common, it must enhance the importance of subinvolution considerably. It would be interesting to have the opinions of surgeons and gynaecologists.

## NORMAL LABOUR AFTER CAESAREAN SECTION

Dr J L BLONSTERN (London, S.W.) writes. A woman, aged 22, had undergone Caesarean section two years ago on account of active tuberculosis of the hip joint, when a five months foetus was removed. It was her first pregnancy. She came to see me when she was eight months pregnant. She stated that three hospitals had refused to admit her, unless she again submitted to Caesarean section. I found no pelvic contraction, no signs of hip joint disease, and I decided to let her go to term. The child was in a vertex position. When labour started she had weak pains at long intervals for seven days. For two days she had strong pains at frequent intervals, but there was little progress. When I found the os dilating I gave a hypodermic injection of half a grain of morphine. She slept for an hour, and then I was sent for. Before my arrival the child and placenta were born. There was only one small tear. The child was healthy and weighed 8 lb. The puerperium was uneventful. I think this case illustrates the fact that, providing the pelvic measurements are normal and progress is carefully watched, there is no reason why a woman who has previously undergone Caesarean section should not be delivered normally.

## CARDIAC RUPTURE

Dr R B WILSON (Glengall Hospital, Ayr) writes to record the death of a woman, aged 63, from cardiac rupture. She had been in poor physical health for some months and was found dead in bed one morning. At the necropsy blood clot was discovered in the pericardium, and there was a rent 3/4 in long in the left ventricle. Further, localized weakness of the fatigued degenerated heart muscle had resulted apparently from a deep eroding ulcer, which was probably gummatous. The patient had been asleep, without any signs of distress, fifteen minutes before death, and there was no history of any undue exertion, recent or remote.

## A STAIN FOR SPERMATOZOEA

Dr S MALIHANAH (Hyderabad, Deccan) has found the following method of detecting spermatozoa in seminal stains an improvement on that of Hankin, which is commonly used in India. He cuts off a piece of cloth from the garments showing any suspicious stains of semen and places it in a sterile petri dish containing a solution just enough to soak it. After labelling, the petri dish with the number of the case and the date, it is set aside for a few minutes. With a clean knife the film is scraped gently from the cloth on to a clean slide and spread gently. It is allowed to dry in air and then fixed with the flame of a spirit lamp and covered with a few drops of carbolfuchsin. After a few minutes it is washed with distilled water and dried by being kept slanting so that the water drains away. The portion of the spermatozoon which lies between the head and the tail takes the stain more deeply and is generally semicircular in shape. The horns of this semicircular body have a tendency to unite in front and the coloration elsewhere is generally very faint. This peculiar staining characterizes the spermatozoon, which can be easily distinguished from cells and bacteria. The staining is more intense towards the tail and less towards the front part of the head. In fresh preparations, however, the tail also becomes coloured, but in actual practice, when the specimens are old, the tails do not take up the stain. Dr Malihanah adds that by this method he has obtained positive results in 85 to 90 per cent of cases, in most of which two or three males had been present.

## PREVENTION OF GOITRE

"S O" writes. The prevention of goitre is a matter of great importance to those who live in goitrous districts. Colloidal iodine and iodized sweets have been used successfully to treat goitre and many other conditions. Since iodized salt contains so small a quantity of iodine as to be useless, I venture to ask, if any reader would suggest a simple, practical method of preventing the onset of goitre and of these diseases which are said to be due to deficiency of iodine. "Irish moss" is certainly useful in the treatment of goitre, but I have not used it for a sufficient length of time to satisfy myself that it will prevent goitre. It would be interesting to know if Sir James Barr (whose letter on this subject appears in the JOURNAL of September 10th, p. 470) still uses concussion of the spinous process of the seventh cervical vertebra in the treatment of thyroid enlargement.

## DEFINITION OF INSANITY

Dr F H STEGMANN (Kingston, South Australia) writes with reference to the remarks on the absence of any definition of insanity made by Mr Justice McCardie, as reported in the JOURNAL of June 4th, 1927 (p. 1038), to say that Dr James H. Macdonald, of the Hawkshead Mental Hospital, Glasgow, gave the following definition. Insanity is a more or less permanent disease or derangement of the brain producing disordered action of the mind in such a way as to put the subject into a condition varying from his normal self and out of relation with his environment, and at the same time to render him dangerous or inconvenient to himself or his fellow men. Dr Stegmann thinks that by adopting a definition such as this medical men would save themselves from adverse cross examination tending to discredit a case.

## THE CUBAN LEAGUE AGAINST CANCER

CUBA is following the example of other countries in making efforts to reduce the mortality from cancer. It has its anti-cancer league undertaking to collect and distribute information relating to cancer, to promote the study of the disease, and to educate the poorer population in the knowledge of what science can do in the way of alleviation and cure, and recently it has given an earnest of its determination to show definite results from its mission by the gratuitous distribution to all the practitioners in the Republic of a volume of over 150 pages dealing with the important subject of early diagnosis. The book contains descriptions of the disease as it affects the principal regions of the body and is written by specialists. As it is designed for the benefit and instruction of practitioners, they are addressed with it. It is, in fact, a primer, to realize the particular is customary in other countries. In countries the practitioner is reluctant, though good nature, to hurt the feelings of his patients by making a diagnosis of cancer. This may not be the case in Cuba, but there appears to be a species of religious superstition in the island that cancer is an incurable disease. Dr Tamarro lays emphasis on the responsibility resting on the medical practitioner. He declares that the doctor who is jealous of his professional prestige must devote serious consideration to the opinion he gives, since it is better frankly to confess inexperience than to be compelled to rectify a diagnosis when perhaps it is too late. He should remember that a patient who is told that he is suffering merely from a non-malignant growth will expect a rapid cure, and if this does not follow the treatment recommended, other advice will be sought, and should there have been an error of diagnosis or an attempt to deceive this fact will not remain a secret. No less reprehensible is a rash and ill-considered resort to intervention in the form of an incomplete operation or the employment of caustics and other local applications. If a case is operable and the practitioner has not the personal equipment for performing a radical operation he should send the patient to those possessing the necessary experience or to a hospital. The volume is evidently designed to impress the practitioner with the necessity of ascertaining how far extent cancer is curable in these days, and of learning how to recognize it in the early stages instead of dallying with it in ignorance until the patient's condition has become hopeless.

## TRIATUM

IN the preliminary note on the proceedings of the Section of Mental Diseases at the Annual Meeting at Edinburgh (July 30th, p. 165 col. 2) it is stated that "Dr Groves described a case of recurrent mental illness in a girl." The speaker was not Dr Groves, but Dr T. C. Groves, medical superintendent of Rubery Hill and Hollowmoor Mental Hospitals, Birmingham.

## VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 37, 38, 39, 42, and 43 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41. A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 135.

## THE FUTURE RELATION OF MUNICIPALITIES TO VOLUNTARY HOSPITALS

### I—THE QUESTION OF CO-OPERATION BETWEEN VOLUNTARY AND MUNICIPAL HOSPITALS

BY

HERBERT L. EASON, C.B. CMG, M.D. M.S.

Senior Ophthalmic Surgeon and Superintendent, Guy's Hospital

At the outset I want to say that, much as I appreciate the compliment of being asked to open this discussion, I feel entirely incompetent to do so. The field to be covered is so vast and so varied that I doubt if any one person can cover it satisfactorily. I have moreover no confidence in my capacities as a prophet. Prophecies are always hazardous ventures so that I feel that the best I can do this morning is to express my own personal views on present conditions, and on what I hope may happen in the future. I am going still further to limit myself, and to confine myself to that part of the field with which I may to some extent be familiar—namely, the problem as it affects voluntary hospitals in London with medical schools. I do this with the hope that other speakers may attack the questions from the point of view of other institutions and other localities.

Before discussing the future, it may be as well briefly to recapitulate the existing relationship between the voluntary hospital and State and municipal institutions. Some of these relationships are official and some of them are merely matters of custom, habit and tradition.

The State itself has little relationship to the voluntary hospitals except in so far as it may control ante-natal or infant welfare centres, or may come in contact with the hospitals through their medical schools which may receive a grant from the Treasury Grants Committee. In these circumstances the representatives of the University Grants Committee or of the Minister of Health have a right of access to the hospital in order to satisfy themselves that the arrangements for the instruction of students are adequate, both from the point of view of ward and laboratory accommodation and of educational facilities.

The relationship of the voluntary hospitals to the municipality—the London County Council—is in many hospitals more intimate, particularly where the municipality finances such departments as venereal diseases departments and school clinics. A venereal diseases department is administered by the voluntary hospital which appoints the staff, arranges for the equipment of the department, and is responsible for its conduct subject to the approval of the London County Council. The County Council inspects the department from time to time and the voluntary hospital, at the end of the year presents the bill to the County Council in the form of a report and a financial statement. The County Council then makes a grant to cover if not the whole the greater part of the expense of the department.

The relationship of the voluntary hospitals to the Metropolitan Asylums Board is laid down by law—that is, certain infectious diseases must be notified to the public health authorities and the Metropolitan Asylums Board hospitals must admit such cases from the voluntary hospitals if notified.

The relationship of the Poor Law infirmaries which are in a sense municipal, though they are not as yet under the control of the chief municipal authority—and the voluntary hospitals is fairly simple. The voluntary hospitals are accustomed to transfer to the appropriate infirmary any case which in the opinion of its medical officers requires institutional treatment but for which there is no room in the voluntary hospital. The Poor Law infirmary must admit a patient so recommended, either through the relieving officer or directly to the

infirmary in accordance with local arrangements as between the hospital and the infirmary.

But well above these comparatively simple functions there has of recent years been a great development in the activities both of municipal and Metropolitan Asylums Board institutions in the direction of treating special classes or special conditions in particular institutions, thus impinging on the province of the general hospitals, and these developments are not without danger to the effective education of medical students in the schools attached to voluntary hospitals.

In this connexion I cannot do better than quote from an able leading article in the *BRITISH MEDICAL JOURNAL* of June 11th, 1927 (p. 1054).

At its meeting in April the Council of the British Medical Association approving a report with regard to orthopaedic clinics, pointed out that one of the dangers attending the establishment of such clinics is the withdrawal of a large number of cases of a special type from those hospitals in which medical education is carried on in connexion with medical schools, so adding to the difficulties of securing an adequate knowledge of such conditions among medical practitioners in general.

The anxiety is by no means premature. There are now no fewer than seventeen departments, spheres or directions of clinical activity for which provision is made in this sectional way under the auspices of local authorities. Some of these cover an extensive field of medicine and in some there has arisen the obvious and increasingly insistent suggestion that the public needs can be better met by authorization, the placing of responsibility for giving advice and treatment upon persons other than qualified and registered medical practitioners. For in a sense we have heard it claimed that midwives are quite capable of dealing with ante-natal conditions that school nurses under the purely nominal supervision of a medical officer may safely be left to treat what are called the minor ailments of school children and that dentists rather than medical practitioners should be entrusted with the administration of certain classes of anaesthetics. The pretensions of some opticians, now being pressed with a good deal of parliamentary sympathy are especially dangerous. They are a king that the State should officially recognize them and register them as being the most skilled if not the only legitimate practitioners in an extensive field of ophthalmic treatment and that their certificates within this field shall be under authority compulsory recognized by any local or central authority or Government department in any part of Great Britain.

Two interlocked vicious circles are in fact being established. There is danger that medical students may be imperfectly instructed in some part of their work owing to the withdrawal of special types of case to the clinics of local authorities and there is danger that it may become difficult properly to staff those clinics owing to imperfect training of medical students. There is danger that unqualified persons may be officially recognized in certain fields of medical work owing to alleged insufficiency in the supply of competent medical practitioners and there is danger that a progressively smaller number of qualified medical practitioners will cultivate those fields owing to their remunerative clientele being seriously diminished by the official recognition of the unqualified person. If Parliament and the Government department concerned the local authorities and the powers within the medical profession are wise however it is not yet too late to avoid these dangers.

This is neither the time nor the place to pursue all the ultimate implications of this statement but it is sufficient here to emphasize that, in all discussions as to the future, we must, in the interests both of medical education and of the public, insist that no arrangements will be approved which will destroy or interfere with the free access of all types of disease whether serious or trivial, to the voluntary hospitals with medical schools.

As an illustration of developments alluded to in the *BRITISH MEDICAL JOURNAL* I set out below some but possibly not all, of the sectional departments in which provision is now made for separate types of disease.

Small pox	M.A.B. (Metropolitan Asylums Board)
Other notifiable infectious diseases	M.A.B.
Venereal disease	L.C.C. (London County Council)
Tuberculosis	L.C.C. and M.A.P.
Ante-natal work	Municipal or Health
Maternity and puerperal pyrexia	Boards of Guardians
Infirmaries	Ministry of Health
Minor ailments of school children and babies	
Refraction and other ophthalmic work	Approved Societies and L.C.C. School Clinics
Tonsil and adenoid	Public Dental Service and L.C.C.
Anaesthetics for dental and adenoid work	
Special cases of ear disease	M.A.B.
Ringworm and treatment	L.C.C. and M.A.P. Goldsmiths' and Leigh Home, Abberley Wood.

A paper opening a discussion in the Section of Medical Sociology at the Annual Meeting of the British Medical Association at Edinburgh. The President of the Section Dr F. A. MacManus was in the chair.

Orthopaedic cases	M A B Queen Mary's Hos pital, Cusshilton
Rheumatic heart disease and choera	M A B Queen Mary's Hos pital, Cusshilton
Mental deficiency	L C C and M A B
Insanity	L C C
Ophthalmia	White Oak School, Swanley, M A B
Ophthalmia neonatorum	M A B St Margaret's Hos pital
Parturient women suffering from venereal disease	Sheffield Street Hospital, Kingsway M A B
Marasmus	Thames Inn Infirmary, M A B M A B St Margaret's Hos pital
Zybotic enteritis	M A B St Margaret's Hos pital

With this very brief summary of the existing relationship of State and municipal hospitals to the voluntary hospitals, I may proceed to the further consideration. Why is it necessary now to discuss their future relationship, and why has the question so suddenly developed such a high importance?

I think the answer to that question lies in the intention of Mr. Neville Chamberlain, the Minister of Health, to bring before Parliament later in this year some proposals for a measure of Poor Law reform.

Mr. Chamberlain's proposals are set out in a memorandum entitled "Provisional Proposals for Poor Law Reform prepared in the Ministry of Health for circulation to the London County Council, Associations of Local Authorities, and others concerned as a basis for consideration and discussion." The objects which Mr. Chamberlain seeks to attain are briefly (and apart from the reduction in the number of local elections and local administrative bodies)

1 The co-ordination and improvement of the provision made for the prevention and treatment of ill health, both institutionally and otherwise, and the inclusion in this provision of all public assistance required as the result of sickness, accident, and infirmity.

In county boroughs a complete unification of the health services can be secured, and as regards administrative counties there is contemplated a concentration in the county council of a general responsibility for the administration of health services in the hands of borough and district councils acting within the county.

2 The co-ordination of all forms of public assistance, and especially an improved correlation between Poor Law relief and unemployment benefit.

3 The decentralization of the responsibility at present falling on the Minister.

4 The simplification of the financial relations between the Ministry and the local authorities and the freeing of the local authorities from the financial restrictions in matters of compulsory detail which are a necessary concomitant of the present system.

5 The correction of certain anomalies of historic origin such as the association of the registration service (births, deaths, and marriages) with the provision for the relief of the poor.

In brief, as principally affecting hospitals, Mr. Chamberlain proposes to take the Poor Law infirmaries out of the hands of the boards of guardians and to put them under the control of the local municipal authority—in the case of London, the London County Council.

Those of us who are interested in the co-ordination and the improvement of the provision made for the prevention and treatment of ill health, both institutionally and otherwise, cannot but feel that the administration of the Poor Law infirmaries by the local municipal authority would be a reform productive of the greatest benefit to the sick, nevertheless, I should like to state at once that I entirely agree with Mr. Neville Chamberlain that these proposals must not be taken to reflect in the slightest degree on the manner in which the boards of guardians have generally carried out their duties in regard to infirmaries.

Nothing has been more striking in recent years than the steady and marked improvement of the standard of professional service both medical and surgical, provided in Poor Law institutions. Within a comparatively recent period they have risen from the position of little more than workhouse infirmaries for the destitute and incurable to that of hospitals differing little from the big voluntary hospitals. The present administration of infirmaries by the Poor Law guardians suffers, however, from two grave defects. The first is the stigma of pauperism. It is a

matter of common and constant experience that patients have the gravest objection either to being sent to the infirmary direct or to being transferred from a voluntary hospital to the infirmary. It is useless to point out to these persons that the medical service provided in these infirmaries is adequate and efficient, there still exists in their minds a deep-rooted antipathy, probably historic in origin, to the infirmary. The infirmary still appears to so many something like the workhouse, in which patients may not be treated with the same kindness and sympathy that they are in a voluntary hospital, and in addition there is that terrible stigma of pauperism. This is a matter of grave moment to patients, both as regards their own self-respect and their standing with their neighbours. The prejudice is inveterate and it is hopeless to argue with many of them. They would sooner take their children or relatives home, however inadequate the accommodation, than let them go to the infirmary, however good it may be, and however kind and efficient is the treatment that they may, and now do, receive in these institutions.

The second defect is that at the present time infirmaries are, and must be, worked in watertight compartments, and hence difficulties and problems are always arising as between voluntary hospitals and infirmaries with regard to the admission of patients. A hospital can only send a patient to the infirmary of the parish in which the patient resides, even though that particular infirmary may be much further away than an infirmary of an adjoining parish. Hence officials and medical officers of hospitals have always to keep in mind the actual road boundaries of the boroughs, and must carefully verify the patient's address, especially in cases where the boundaries of the boroughs run down the middle of the street, so that the odd numbers may be in one borough and the even in another. This meticulous accuracy is, of course, not superfluous, annoying though it may be, as boards of guardians can only provide for the residents in their own parish.

The removal of the infirmaries from the control of the boards of guardians and from the Poor Law and their centralization under the municipal authority will provide a system of municipal hospital accommodation as an integral part of the medical service of the country, supplementary to the general practitioner service of the National Health Insurance Act, and will have as its first result the abolition of the stigma of pauperism from the infirmary service. This centralization will also remedy the defect of the watertight compartments, thus making the municipal hospital service more fluid and efficient.

It appears to me, therefore, that the question of the future of the voluntary hospitals in relation to State and municipal services, except for the sectional activities which I have mentioned above, really narrows itself down to the future relationship of the voluntary hospitals to the infirmaries, if and when these infirmaries come under the control of the municipality.

I have mentioned above that there is often now little to choose between the services of the voluntary hospital and that of the infirmary. But there are differences, and it may be as well to consider what they are.

First, the fundamental difference between the Poor Law infirmary and the voluntary hospital at the present time is that the Poor Law infirmary has no out-patient department, or at any rate is not legally entitled to have one. Now it is the out-patient department of a voluntary hospital which causes the administration and the medical staff the greatest anxiety, for it is in that department that arises the great problem of the selection of those patients who shall be admitted to the hospital—that is, who shall be admitted and who shall be sent elsewhere. It is in this difficult task of selection that the voluntary hospital most commonly meets with public or municipal criticism, the question being asked why such and such a case was taken in and why such and such a case was sent away. The municipal infirmary has no such problem, as it has no out-patient department, and, as it is bound to take in every case that is sent by the voluntary hospital or by the medical practitioner, subject, of course, to the decision of the relieving officer, this problem of selection does not arise.

Secondly the voluntary hospital with a medical school does as a rule work at a higher professional standard and at a much higher pressure though as statistics as to the work of the municipal hospitals and Poor Law infirmaries are not, so far as I know available to the voluntary hospitals it is difficult to give chapter and verse for such a statement. But I think it is generally agreed that the cases in a voluntary hospital are on the average more seriously ill, and that the number of operations is proportionately higher in a voluntary hospital than in a Poor Law infirmary.

Thirdly there is usually a much more liberal provision of departments for special diagnosis and treatment in a voluntary hospital than in an infirmary.

The problem that we have to face at the present time is, therefore what is to be the nature of the co-operation between the voluntary hospital and the municipal hospital in the future? It is this problem of co-operation which appears to be causing so much alarm to many of the supporters of the voluntary hospital system.

I am a strong believer in co-operation, said the elephant, as it sat down on the pheasant's eggs in a prize-worth attempt to assist in hatching them out. Many of the voluntary hospitals look upon the municipality as the possible elephant in this scheme of co-operation and are afraid that with the unlimited funds which the municipality may obtain through the rates and other grateful municipal taxes, the municipal hospitals may eventually squeeze the voluntary hospitals out of existence.

I am not apprehensive of this result, and I do not think the Minister of Health or anyone else desires to destroy the voluntary hospitals. Mr. Neville Chamberlain himself discussing the future of the beds under the control of the municipal authorities and of the guardians has said in a recent speech with regard to the voluntary hospital beds and what was to happen to them: "Were they to be swallowed up by Lord Mayors and Mayors? Heaven forbid!"

I hold that if the voluntary hospitals continue to provide a medical and surgical service of the standard that they have hitherto provided at a cost which is less than or equal to, the cost of the municipal hospital service of the future they will survive. If they cannot then I think the time will come when the voluntary hospitals will have to go to the wall and the State or the municipality will swallow up the last remnant of a system that is peculiarly adapted to the British genius and that has been the foundation of British medicine and British nursing.

But to come to concrete proposals for co-operation between the municipal hospitals and voluntary hospitals. In this connexion I cannot do better than take as my text some questions which have been suggested to the British Hospitals Association by Sir Arthur Robinson of the Ministry of Health which as he says call for detailed and careful examination. Sir Arthur Robinson's questions are as follows:

1. Having regard to the nature of the hospital accommodation available in the area both in voluntary and public hospitals, are there any categories of cases which should so far as practicable be allocated to one type of hospital or the other?

2. Is it possible after taking stock of local need to agree on any lines of demarcation between the province of the voluntary and the public hospitals in the area?

3. Assuming that some understanding is reached as to the line of demarcation between the public and voluntary hospital in a given area to what extent would the modus schemes of enlargement in hand or in contemplation?

4. If there is a shortage of voluntary beds in what respect is the shortage most serious—for example, is it a shortage of general surgical or medical beds, gynaecological or maternity bed or orthopaedic? Is there vacant accommodation in public hospitals suitable or capable of being adapted for the type of cases for which accommodation is specially needed?

5. Could not some clearing house arrangements be established by agreement between the voluntary hospital authorities and the local authorities (including the guardian) which would ensure a better distribution of patients and the more rapid admission of cases requiring institutional treatment?

6. To what extent and under what conditions could the medical staff of the voluntary hospital undertake responsibility for cases or for a definite number of beds in public hospital so that the patient may be assured of the special type of experience required when medical or surgical without regard to whether the bed which he occupies is under voluntary or public management?

Let me, as my contribution to this discussion briefly set out how I should answer these.

1. Speaking as I have said before, especially on behalf of the voluntary hospitals with medical schools my answer must be "No," except that it is of course inevitable that the municipal institutions will receive a higher proportion of chronic and incurable cases than the teaching hospitals. To fill a teaching hospital with chronic cases is to sterilize medical education. It is essential that a hospital with a medical school attached must have the power and the opportunity to admit every type of disease whether trivial or serious, for this free selection of cases is of fundamental importance for the thorough education of the medical practitioner.

I have mentioned above the possible dangers to medical education of the existing municipal activities in the sectional treatment of disease in special hospitals. It is to be remembered that the function of the hospital with a medical school is analogous to the part which must be played more and more by the consulting physician in modern medicine, where specialism has developed to an equal extent. The tendency is growing greater every year for each specialist to look at every disease from the point of view of his own speciality. While specialism certainly improves technique and advances knowledge it also, unless carefully corrected tends to a restricted outlook, and there is therefore a greater need than ever for the general consulting physician who will so to speak put the jigsaw puzzle of all the various specialist opinions together and with the broadest outlook determine what is really the matter with the patient and what is the line of treatment which should best be followed.

Such also is the function of the general hospital—to ensure that investigators and workers in all branches of medicine shall work together in one institution and, by frequent consultation, ensure a broad outlook over the whole field of medicine and a judicious consideration of all the aspects of every individual disease.

2. I think this question must also be answered in the negative, as there are in parliamentary circles. I think it is impracticable to lay down definite regulations as to what a voluntary hospital or a municipal infirmary may or may not do. Can we say that the infirmary may operate on a simple case of appendicitis but must not do a gastro-jejunostomy, or that it may do a strangulated hernia and not a cholecystectomy? Such examples show how impossible such differentiation would be. Any attempt to interfere with the professional activities of the staff of the municipal hospital would be both impossible and disastrous. The medical staffs of the municipal hospitals must be in a position to perform any operation of medicine or surgery that is required for the necessary treatment of such patients as have been admitted. I am of course limiting my remarks to general medicine and surgery but the question does also arise as to whether the municipal hospitals will in any future schemes develop special departments for special regional diseases but it is clear that, in the main departments of general surgery, medicine and midwifery the voluntary and the municipal hospitals should, as far as possible be similar or not identical institutions.

3. As, in my opinion it is not possible to find any line of demarcation between the voluntary and municipal hospitals in a given area this question does not appear to arise.

4. There is a very definite shortage of voluntary beds, and speaking from my own experience at my own hospital I should say that the shortage is serious for general surgical cases—in some hospitals male and in some female cases—the surgical waiting list at most hospitals being considerable. The longest waiting lists however are in my own experience in the department for diseases of the throat and ear and for orthopaedics.

Whether we can ever really cope with the demand for beds for throat, nose, and ear patients is a question that I find almost impossible of solution and it will probably depend upon the future views of the medical profession as to the desirability or otherwise of removing the tonsils in nearly every living child or adult.

Orthopaedic beds are certainly hopelessly insufficient, principally because the proper orthopaedic treatment of a case is very often extremely long, and orthopaedic cases, therefore, occupy beds for a much longer period than the ordinary surgical or medical cases. If special provision could be made in the municipal hospitals for surgical, orthopaedic, and throat and ear cases, an enormous benefit would be conferred upon large numbers of the population who are now waiting week after week for beds in the voluntary hospitals. Moreover, in the interest of the public, it would be of inestimable advantage if more ample provision could be made for cancer cases, so that, if possible, there should not be a delay of more than a few days between the diagnosis of cancer and its removal.

Questions 5 and 6 must really be considered together. My ideal would be that the voluntary hospital with a teaching school should be the nucleus of the local hospital system, and should, to use a common phrase, be the "mother hospital" of the group. To ensure a proper co-operation between the hospitals in a district there must be no official machinery which will add difficulties or delay in the rapid transfer of patients from one hospital to another in the area—that is, it should be quite easy for the voluntary hospital to send a case to the municipal hospital, if there is no room for it in the voluntary hospital, and equally it ought to be as easy for the municipal hospital to transfer a case to the voluntary hospital, if there is not available in the municipal hospital the treatment necessary for the case. This can only be done if the voluntary and municipal hospitals are to a great extent under the same management. In this way alone can the perpetual discussion as to the relative rights and prerogatives of each institution be avoided.

The ideal would be that the voluntary hospital and the municipal hospital should be under some joint management both as regards the provision of the medical staff and the engagement and the training of nurses. I think it would be quite easy for the voluntary hospital to arrange for the delegation of a certain number of its visiting staff to act in a similar capacity at the municipal hospital. The municipal hospital would, of course, pay for these services, and a common visiting staff for the two institutions would ensure a common standard of treatment in each department.

In a short time the hospital-using public would learn to know that there was no essential difference between the voluntary hospital and the municipal infirmary, and, the stigma of pauperism having been removed, patients would not really mind into which department of a common institution they were admitted. Under some such arrangement it would, of course, be unnecessary for the municipal hospital to be provided with extensive laboratories for investigations, such as those which are now provided at the voluntary hospitals. Laboratory investigations for the municipal hospital could be done in the laboratories of the voluntary hospital, and by thus limiting the number of laboratories for investigations one could ensure the provision of sufficient investigations of the highest standard of knowledge and efficiency.

Assuming that this joint administration and co-operation comes into being, the final question which has to be discussed is: How is this conjoint institution to be managed? Is it to be managed by the municipality or by the voluntary hospital?

My own view is that the least destruction of the voluntary system and the greatest economy to ratepayers would be effected by the voluntary hospital having a predominant share in this conjoint administration. I take as my analogy the departments which I have mentioned previously in this paper—namely, the London County Council venereal disease departments, which exist now in many of the teaching hospitals. These venereal disease departments are managed entirely by the voluntary hospital, subject to inspection by the officials of the municipality. At the end of the year the hospital presents its bill, and the municipality pays it.

Surely this method could be amplified to include the management of the municipal hospital. The administration of the mother hospital would be responsible for the administration of the municipal infirmary, subject always

to the approval of the municipal authorities. The municipal authorities would be represented upon the governing body of the voluntary hospital, and in this way the municipality would not only have a very real control of its own hospital service, but would avoid the difficult task of instituting and maintaining a system of hospital administration parallel to and in competition with the voluntary hospital.

These ideas may be considered revolutionary, and may not meet with general acceptance, but I put them forward as concrete suggestions, as contrasted with pious generalities, in the hope that they may afford some basis for discussion.

## II—THE POOR LAW HOSPITAL AS A FACTOR IN PUBLIC HEALTH

BY

AL A REYNARD,

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THE position of the Poor Law hospital as a factor in public health is a problem which is exercising a good deal of attention at present. There is an admitted shortage of hospital accommodation, and any scheme which might have the effect of meeting that deficiency should be cordially welcomed, and the possibilities of Poor Law hospitals have not been fully explored. The reason for the neglect of this avenue of relief probably lies in the hospitals themselves, as too often the hospital is an adjunct of the poorhouse, it is inadequately staffed with trained nurses, and the medical and surgical treatment is left to part-time men who never meet the councillors whose property the hospital is, consequently they do not have the opportunity of suggesting improvements, and so soon lose interest in the administration.

While it is true that these faults exist at present, they need not remain, in the Poor Law hospitals of Glasgow they have been eliminated, and the standard of efficiency in both medical and nursing staffs is equal to that of the voluntary hospitals. The hospitals are three in number, with accommodation for 2,400 patients.

Stobhill, which is the largest, has 1,700 beds. It was, during its period of military occupation, known as the 3rd and 4th Scottish General Hospital, and as such is familiar to most of my audience. The site is admirable—an eminence four miles north of the city. The buildings are of brick, with stone facings, detached wards of two stories are connected by a corridor to the operating theatres, to the administrative block, and also to the kitchen and recreation hall. There are isolated blocks, not connected by corridor, for the treatment of skin disease, mental observation wards, wards which are at present used for the treatment of encephalitis lethargica cases, with maternity blocks. In addition to the 1,700 hospital beds, there is accommodation for a number of children. This accommodation takes the form of separate villas. The children are placed under the care of a matron in each block and they live more or less in ordinary family life.

The hospital conforms as nearly as may be to a general hospital, such as the Royal or Western Infirmary in Glasgow. It is fitted with adequate operating theatres, an x-ray department, and general medical equipment, together with a fairly adequate electrical apparatus. Work is proceeding on a new theatre, an electrical department, and ear, nose, and throat, and eye departments, the total cost of which is estimated at no less than £35,000.

The grounds extend to about fifty-four acres. A bowling green, three tennis courts, and a recreation field have been provided for the use of the patients and staff. Fourteen gardeners and groundsmen are employed in the upkeep of the grounds.

The medical staff consists of a resident staff—medical superintendent with two permanent assistants, a whole-time pathologist with a whole-time assistant, together with twelve resident medical officers, who are engaged for a period of six months with a possible extension to two years. The wards for the treatment of the various diseases are placed in charge of visiting consultants as follows: two physicians, a surgeon, a gynaecologist and



obstetric surgeon, physician to children's department, physician to mental wards, eye specialist, aural surgeon, skin specialist, radiologist, dentist. Last year the total number of patients treated was 10,290. Duke Street Hospital, which is next in size, has accommodation for 314 patients. Oakbank, the smallest of the three has accommodation for 224 cases. Except for the smaller size, each of these hospitals is staffed and equipped similarly to Stobhill.

In the three hospitals the standard of medical, surgical, and obstetric treatment is quite equal to that of the larger voluntary hospitals. The council has recently appointed two officers who will be largely engaged in research work. The nursing staff, in whose training considerable pains are taken is as competent as any. This has been demonstrated in public examinations such as are held by the Central Midwives Board, the Medical-Psychological Association, the Board of Health, and the recently appointed General Nursing Council. Further, the supply of apparatus is being continually augmented.

The co-operation between the Poor Law and the public health authorities of Glasgow is good. Long prior to the extension of the ramifications of public health authorities many cases not treated by these authorities were treated in Poor Law hospitals. For example tuberculosis was, until a few years ago, dealt with mainly by voluntary hospitals and Poor Law institutions. Public health authorities now undertake the treatment of pneumonia and, more recently, of encephalitis lethargica. In Glasgow the institutional accommodation for tuberculosis and pneumonia is inadequate and the public health authority contracts with the parish council to deal with a proportion of the tuberculous patients in all of the Poor Law hospitals. At times of stress large numbers of pneumonia patients are frequently treated in Poor Law hospitals and, still more recently the parish council of Glasgow has placed at the disposal of all the public health authorities of Scotland certain accommodation in Stobhill for the treatment of encephalitis lethargica. The demand for the admission of encephalitis lethargica cases has been so great that only the most urgent cases are accepted, the procedure is that the medical officer of the district in which the case occurs makes application to the Board of Health who selects the cases and the accommodation officers, they are received into Stobhill. Quarterly reports on progress are made by the officer of the parish council to the medical officer concerned.

Two years ago the strain on the accommodation of the Glasgow Maternity Hospital was found to be more than it could bear, and, with the consent of the Board of Health, an agreement was come to whereby patients who make application to the Maternity Hospital and for whom no accommodation is available, are treated in Stobhill. The patients receive exactly the same treatment as is accorded to ordinary Poor Law patients, the only distinction being that their bed card is of a different color and bears a note that they are Maternity Hospital patients. The Maternity Hospital authorities repay the cost of board. About for patients a week are received and the arrangement has worked both satisfactorily and harmoniously.

At the present time negotiations are proceeding for co-operation between the education authority and the parish council for the treatment in Western District Hospital of children who require minor operations, such as the removal of tonsils and adenoids.

What has been accomplished in Glasgow can equally well be accomplished in other parts of Scotland, but the fact that it has not been brought about long ago is probably due to the unsatisfactory nature of the Poor Law areas. The parish is an area which has long outgrown its usefulness. The only merit which it has is that it is a known area but many parishes contain no more than a population of a few hundreds and it is absurd that the same legal machinery should be provided for a population of a few hundreds as is provided for a population such as that of Glasgow. If the areas were increased and the demand made on the Poor Law authority for hospital treatment it would be provided, but meantime the demand on each parish is so small that the parish council are only too ready to pass on their responsibilities to voluntary agencies.

A Royal Commission, under the chairmanship of Sir Donald MacLellan, whose report was issued in 1918 recommended a transfer of the functions of the Poor Law authorities to town and county councils. More recently Mr Chamberlain has framed a bill incorporating the proposals of this report. If such should become law it will get rid of the small areas and will place the responsibility for all hospital treatment on town and county councils. To be workable, the proposal would require to ensure that towns under a certain population are absorbed in a county area, and that a county under a certain population should be amalgamated with a neighbouring county.

It may be that town and county councils are not ideal bodies to undertake the functions of a hospital authority and arguments could be adduced for the creation of an ad hoc authority whose duty this particular function would be. In any event, the creation of a hospital authority for convenient areas would be an undoubted advantage, but some form of central control would be essential, and, for rural districts, assistance would be necessary from Treasury funds. The duty of the central authority could be to see to the erection of hospital in convenient areas, to decide on the standard of efficiency of rural hospitals, to exercise control over the erection of separate small hospitals in populous districts, and to encourage the amalgamation of smaller hospitals where the area is not too great.

If efficiently managed, a large hospital can be run at a much cheaper cost per patient per week than can a small hospital. In Glasgow, for the past year, the weekly cost per patient in Stobhill Hospital where the daily average number is 1,403, was 23s 4d, in the Eastern District Hospital with a daily average number of 241 the cost rose to 32s 1d, and in the Western where the daily average number was only 184, the cost amounted to 36s 2d.

Both local authorities and voluntary agencies are too prone to build institutional accommodation for themselves alone. Many small public health authorities have small infectious disease hospitals built for the accommodation of patients from their own area alone whereas they could quite easily have amalgamated with other authorities in the neighborhood and built a larger hospital where the costs, both for building and maintenance would have been much lower. Voluntary agencies are equally prone to fall into this error. In many cases the erection of a small local hospital is just as much the desire to erect a monument as it is to provide for the need of the population.

Motor transport has annihilated distance, and a mile or two further is a small matter in the days connected with what it was in the old days of the horse-drawn ambulance. The central authority might map out a scheme of hospitals for Scotland and arrange for the small cottage hospitals in rural districts to be linked up with the large hospitals in the city and ensure that at every small hospital motor transport is provided for the rapid transit of serious cases to a central hospital.

Hospital treatment is very largely a matter of specialization, and only in the large centres, such as the cities, do we look for medical men who have specialized in particular branches of medicine or surgery. The rural hospitals would require to depend very largely on the services of the local practitioners and efficient as such local practitioners may be their knowledge and skill can scarcely be expected to equal that of specialists attached to a central hospital who are dealing daily with the disease in which they have specialized.

A branch of hospital work on which I have scarcely yet touched is that of the observation ward for the treatment of incipient cases of insanity. Glasgow provides in the Eastern District Hospital 80 beds and in Stobhill Hospital 120 beds for the treatment of such cases. Unless the case is known to the inspector of poor or to the certifying medical officer as one of recurring insanity which has already been treated in a mental hospital, no patient is sent to such an institution without a probationary period which may extend in some cases to six months, in the wards of one of these general hospitals. The patients themselves show little or no aversion to going to a general hospital but, were they told they were being removed to a mental

hospital, their reluctance would probably be very forcibly shown. During the past year there were treated in the Eastern District Hospital 650 cases, and the number of recoveries without certification and without removal to mental hospital was 271. In Stobhill the results were even more satisfactory, the figures being 534 receptions and 340 recoveries.

While these satisfactory results are largely due to the skill of the specialists to whose care the patients are entrusted, it is also a fact that, except in the few places where such aids have been provided, patients suffering from minor accompanying or following pneumonia, puerperal fever, or alcoholism are certified "lunatic" and removed to a mental hospital, with the attendant notoriety and loss of self-respect on recovery. If hospitals were erected at convenient centres throughout Scotland, observation wards could be attached to each, and, in all probability, voluntary patients would much more readily attend there than they do at present in mental hospitals.

The creation of a hospital service for the whole country would probably have the effect of drying up much of the charity which at present flows to voluntary hospitals. By many this would be greatly deplored, but if some scheme can be devised whereby the cost of hospital service falls more evenly on ability to pay, there need be no great lamentation over the loss of charitable funds. The community in general is quite able to support an efficient hospital service, and if a system can be devised whereby those able to pay are called upon to do so, it will probably prove to be a fact that such a scheme would be welcomed by the very persons who at present contribute voluntarily, since they would know the extent to which they were morally and legally liable to subscribe.

At the present time nearly all the workmen employed in industrial concerns leave a portion of their wages, amounting usually to threepence a week, as a hospital contribution. In theory this is supposed to be voluntary, but, in effect, it is as much a tax as is their national health insurance contribution. To the individual with an income approximating £3 a week, threepence a week is quite a serious matter, much more serious than sixpence a week is to the person who enjoys a weekly income of £6, and very much more serious than a contribution of £100 a year is to the person with an annual income of £5,000 or £6,000.

The imposition of a tax based on the assessable value of the hospital area may not be exactly just, and may not get at the people who are most able to pay, but it is a known method of collection, and might easily be made in addition to the public health rate, against which there is at present very little complaint.

The system of imperial grants needs a radical rearrangement. At the present time Poor Law grants are block grants for Scotland, distributed on a basis of expenditure—that is to say, for the medical relief and trained sick nursing a sum of £20,000 is available, and this was, at one time, distributed according to the proved expenditure of each parish council, but in 1915-16 and in subsequent years, to obviate the necessity for yearly calculations, the basis of distribution was stereotyped. For many years prior to stereotyping, Glasgow, through the extension of hospitals and what was, in contrast to the other parochial authorities, a very superior hospital and nursing service, laid claim to and was paid almost all of the grant.

Imperial grants are intended to encourage the creation of a particular service, and after the service has been established and is a proved necessity the claim for imperial assistance largely vanishes. Glasgow cannot be said to be a necessitous area in so far as it is unable to bear the cost of hospital service, and a method other than the present might well be adopted for the allocation of the grant. In fact, if some standard of efficiency could be devised, the central authority might make payment of a grant or reward for attainment to this standard, and so encourage the managers of hospitals in local areas to be more progressive in their provision of hospitals, equipment, and staff.

Since the inception of the National Health Insurance Act, with the payment to panel practitioners of a yearly sum for each person whose name appears on their panel,

the claims on hospital accommodation have been materially increased. This is especially marked in the Poor Law hospitals of Glasgow, and evidence can be adduced to show that, in some instances, a panel practitioner who is likely to be called on to give personal service for a protracted period encourages patients who might quite well be treated in their own homes to apply for and accept institutional treatment. The voluntary hospitals are able to guard themselves against this imposition, but where the patient could command hospital treatment, as would probably be the case under the system which has been advocated of a hospital service for Scotland, there should be some standard of necessity for institutional, as against domiciliary, treatment, and an officer whose duty would be the discrimination of treatment of patients would require to be appointed. This should not be an insuperable task, as some of the Poor Law hospitals, particularly those of Birmingham, already accept patients from general practitioners without the necessity of application being made in the first instance to the central office of the Poor Law authority. Where such a system can be efficiently worked it is undoubtedly to the advantage of the patient, but it involves a co-operation between the officers of the Poor Law authority and the general practitioners, and it also involves the adoption of a policy which hitherto has not been enunciated in Scotland.

Where institutional accommodation is provided it invariably brings with it an increased demand, and to the central authority should be entrusted the task of framing a scheme for deciding which class of patients may be received and which class of patients may safely be left for treatment in their own home. The Board of Health is already undertaking this duty so far as encephalitis lethargica is concerned, and, while what is advocated will be a very much larger task, it should not be in any way beyond its ability.

The extension of hospital service will carry with it the creation of institutions for the care of incurables. At present the voluntary hospitals rid themselves of this class by passing them on in large numbers to the Poor Law institutions, which are left with a great many chronic patients who have no hope of ultimate cure, but whose condition requires nursing and attention.

An extension of convalescent homes would also prove of immense value, and if the patients can be persuaded to accept two or three weeks' treatment in a convalescent home after recovery from a serious operation, the advantage both to the patient and the community would more than repay the outlay involved.

#### DISCUSSION

SIR HENRY KEITH (Hamilton) thought that Mr. Dixon's proposal that voluntary hospital managers should have the predominant share in administering a hospital service might be expedient where the voluntary hospital was recognized locally as the outstanding agency for remedial medicine. But it would not be suitable in every administrative area. He believed that in the end the public health authorities were more likely to be the predominant partner. Hospital cases should be divided into those to be dealt with by public health authorities and those suitable for philanthropic treatment. The training of students, being work of national importance, should not depend solely upon the efficiency of hospitals supported by voluntary effort. The higher cost per bed in teaching hospitals justified a claim for State grants. The State was gradually imposing more clinical work upon municipalities, necessitating a closer co-operation of these authorities with existing voluntary hospitals. Sir Henry Keith thought that the development of transport facilities favoured the development of small institutions, without a full time medical staff, since access to special departments in populous centres became easy. He quoted figures from reports on the cost per patient in voluntary hospitals in England and Scotland, to show that Mr. Reynard was in error in suggesting that large institutions were more economical than smaller hospitals. Scotland had, proportionately, many more beds in voluntary hospitals than England. This might be due to the Scottish municipalities having no statutory authority

for establishing general hospitals. Sir Henry Keith hoped that voluntary hospitals would be left to pursue their beneficent work unhindered, that if financial insufficiency arose the public health authorities should be enabled to come to the assistance of well equipped voluntary hospitals, and that if they did so there should be some representation of the employers on the management of the hospital. In proportion to the financial instability of the institution the public health authorities could gradually assume control.

Dr J P KINLOCH (Aberdeen) described the taking over from the parish council, free of charge, of the Poor Law hospitals by the town council of Aberdeen. The hospitals had now functioned as modern municipal hospitals. It had been found essential to secure co-operation with the voluntary hospitals and with the University medical school. All the voluntary hospitals were now being transferred to a common site, whereon would be established new university departments of medicine, surgery, midwifery, and pathology. Co-operation was to be effected by allowing for the municipal hospitals the consultative services of the professors of medicine, surgery and midwifery, an offering to the University medical school the freest access to the municipal hospitals for teaching and research. Interference of administration was not required. Dr Kinloch thought it quite unnecessary for the medical personnel to take sides in discussing the spheres of action of two administrative bodies. The medical personnel should be content if all its reasonable requests were granted. Fever hospitals should be more fully used in the clinical instruction of students, especially now that an increasing variety of acute medical cases was being admitted to these institutions. A third of the work of the general practitioner was concerned with acute infections, and these could only be studied in fever hospitals.

Parish Councillor A D DOUGLAS (Edinburgh) stated that the problem was not raised by present-day parish council administration, which was undoubtedly successful and generally approved. The two hospitals in Edinburgh were highly efficient and fully equipped. Too much was being made on the one hand, of the prejudice against entering a Poor Law hospital, and on the other, of the feeling in favour of the continuance in its present form of the voluntary hospital. If there was so much difficulty in carrying on voluntary hospitals he thought that the management should be given over to the municipality.

Dr H B BRACKENBURY (London) said that the general practitioner must not be overlooked. The Representative Body had this year again drawn attention to the fact that both the hospitals and the public health authorities had, perhaps inevitably, been encroaching on the sphere of private practice, and the last thing that was desirable was that they should combine for the purpose of making these encroachments more extensive. In this regard the practitioner was concerned not merely with the narrowing of his field of practice but with securing adequate treatment for his patients, and with maintaining his own efficiency and that of his successors in the profession. To this end two things at least were essential. (1) the grouping of hospitals, (2) the admission of the general practitioner to the observation and exercise of such forms of hospital practice as he could properly undertake. On the one hand the teaching hospital must freely admit all types of case to some extent, and must have grouped with it institutions for post-operative treatment, for convalescents, for chronic cases, and for incurables because for all these classes or else the general practitioner would be almost wholly responsible, though not for these alone. On the other hand with the large provincial general hospital must be grouped the smaller hospitals within a suitable area, the work of these latter being in the hands of general practitioners. Dr Brackenbury thought that the total shortage of hospital beds would not be found to be quite so great as had been stated if there were proper grouping and if there were a confinement of institutional treatment to those classes of case which could not be dealt with in other ways. In the present transitional period it was desirable, at least until the needs had been

more closely determined, that neither of the two groups of hospitals should be too rigidly organized, or that their relations with the local authorities should be quite fixed. They might well remain under voluntary management by experienced boards such as those which now managed the central hospitals of such groups, work done for the public authorities being paid for at agreed rates year by year.

Sir NORMAN WALKER (Edinburgh) said that the amount of co-operation—much legal, some illegal—was already going on. He recalled a statement from an American source that the more teaching there was in a hospital, the better the treatment of the patient. The doctor must gain his knowledge from the chronic case. It was two senior assistant physicians were seconded to the parish council hospital, and returned to the Royal Infirmary when their time came to be senior physicians. Co-operation would be effected. Provision for incurable cases was inadequate. Something like grading of cases would be useful as it was not fair that certain operations should be performed in cottage hospitals.

Dr DUNSMOND SMITH, M.P. (Edinburgh) said there had to face the fact that there were heavy waiting lists in the voluntary hospitals involving lack of urgently required medical and surgical care for large numbers of people. Many of these hospitals were also badly equipped. The voluntary system had done a great and beneficent work, but flag days and student stunts were not desirable ways of making provision for the sick in the community. He had no particular objection to them for supplementary purposes, but the preservation of efficiency should not have to depend on them. The voluntary principle had been modified in many directions. In Edinburgh Royal Infirmary the annual income was £130,000, of which £35,000 was got by a voluntary levy on workmen, the money being deducted from their wages each week. If the community believed that hospitals were necessary, it did not matter whether the necessary money was handed to a collector on the street or paid with the rates. Municipal isolation hospitals were generally efficient, and there was every reason to believe that general hospitals under the same management would be equally efficient, and not starved as many of them were at present. The position of medical staffs would not be essentially different from the present arrangements, except that the resident posts would have reasonable remuneration, which would enable teaching schools to have at their command promising juniors who were at present often lost. In the smaller hospitals, general practitioners should be employed when possible as part-time medical officers. The fact must be frankly faced that in the evolution of things some form of municipal hospital was inevitable.

Dr A S M MACCORMACK (Glasgow) criticized Mr. Enson's proposal to hand over the administration of hospital services to voluntary hospital managements. He thought that no such body would be able to visualize the whole needs of a city. He asked what would happen if such a body failed to concentrate upon some of the needs.

Dr STELLA CHURCHILL (London) believed that there were in infirmaries 20,000 beds empty in the winter months and 30,000 in the summer months. It would be better to equip and maintain such infirmaries adequately rather than build new voluntary hospitals at great expense. Voluntary associations should no longer be allowed to put up specialist hospitals wherever they pleased. In London it was possible to find several specialist hospitals in the same street with a big general hospital. It had been stated that 7 beds per 1,000 of the population were required in this country, but in Copenhagen the number was as high as 8.5. In the large municipal hospital at Amsterdam all types of diseases were housed under the same roof, thus promoting economy and efficiency in administration. She failed to see why money derived from municipal sources would be badly expended, and thought that some form of democratic representation on the management boards of voluntary hospitals would have long ago protested at deficiencies such as the lack of maternity beds. Insured

poisons should not be required to pay a double levy in the form of a hospital contribution in addition to their national health insurance. She deplored the amount of time and energy spent in organizing hospital carnivals, and in raising money in other even less reputable ways in aid of the voluntary hospital system.

Dr A. MAXWELL (Birkford) thought that the teaching centres had received more than their share of the discussion, to the exclusion of large centres of population where there was neither university nor medical school. By way of illustration he gave some account of the existence side by side in a large industrial centre of voluntary hospitals and a large municipal hospital. Here there were 142,000 insured persons in a total population of 289,000—almost 50 per cent. The Royal Infirmary had a waiting list, and the municipal hospital received both civic and Poor Law patients. There were also a children's hospital, the Royal Eye and Ear Hospital, and a cancer home, all on a voluntary basis. The municipal hospital, springing out of the war hospital and Poor Law infirmary, undoubtedly filled a gap, but there was great faith in the voluntary system, which was not regarded as being in any way played out, in fact, there was an appeal proceeding for a large sum of money to erect an entirely new Royal Infirmary, and building was soon to be commenced.

Mr Eason, in reply, said that the discussion had been very interesting, and only showed how important it was that the far-reaching consequences of Mr Neville Chamberlain's proposals should be thoroughly considered by all who might be concerned. It was also quite clear from the discussion that, as he had indicated in his paper, a uniform system would not be suitable for every town or every district, and that he, in his paper, was speaking for London and London alone. He also wanted to make it clear that he was not holding a brief for the voluntary system. He was merely speaking, as he had been requested to do, on the relationship of the State and the municipalities to the voluntary hospital system, should the voluntary hospitals continue as such. It might be, as he had suggested in his paper, that sooner or later the voluntary hospitals would disappear and be replaced by State institutions. If and when such a change did come his sincere hope was that the State hospitals would prove as efficient and popular as other State institutions—for example, the post office telephone system.

Mr M. A. RYLAND doubted whether the small and cheaply run hospitals advocated by Sir Henry Keith could show the same competence and efficiency in the medical and nursing staffs as the larger institutions.

## ACUTE PNEUMONIA IN EARLY CHILDHOOD

### I.—INCIDENCE AND MORTALITY OF THE DISEASE IN EARLY INFANCY

BY

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In opening this subject of acute pneumonia in children I propose to dwell on one or two of its general aspects, which I hope may lead to further discussion. The subject is a wide one, and has of course, many other aspects and points of interest. Some of these, no doubt, will be dealt with by subsequent speakers.

The great frequency of the disease in the wards of children's hospitals allows the presentation of a great number of cases, and many large statistical surveys have been made. Those of Dunlop, compiled in the Edinburgh Children's Hospital, and of Holt in New York, are well known and much quoted. For the purpose of this discussion I wish to use a series of my own cases, a total of 558, of acute pneumonia admitted to my ward during six and a half years. In the following tables, I have

arranged these figures in a particular way in order to bring out certain facts as to pneumonia which seem to be worthy of consideration and discussion. In this study of pneumonia my two colleagues at the hospital, Dr Agnes Macgregor and Dr W. A. Alexander, have been associated with me, both in clinical examination of special or typical cases and in discussion together, they have also made themselves specially responsible for the pathological investigations, both as regards morbid anatomy and microscopic studies. We have also had the assistance of Lieut. Colonel W. Glen Iston in bacteriological investigations of a considerable number of cases, both during life and after death.

Before giving the two tables of figures, one or two explanations of them may be made. I have grouped together all cases of acute pneumonia, not making the usual division into lobar and broncho-pneumonia. The reasons for this will be given later in discussing the clinical and the pathological differentiation of these two clinical types of pneumonia. Also, while giving in a separate list the cases of empyema admitted to my ward during the same period, I have in the third column of each table added the figures of empyema to those of pneumonia. Practically every case of empyema follows pneumonia, and it seems to me that my statistical survey of pneumonia is incomplete without inclusion of empyema. These figures of empyema include some cases discovered only after death, even where the effusion was small and the pneumonia minor and acute, they also include one or two cases of small non-purulent pleural effusion containing pneumococci and associated with definite pneumonia. They therefore represent as completely as is possible a list of cases of pneumonia complicated by inflammatory pleural effusion.

TABLE I—Cases of Acute Pneumonia in the Balmgate Ward of the Royal Edinburgh Hospital for Sick Children, 1920-1927

Age Period	Acute Pneumonia		Empyema		Combined Groups Acute Pneumonia plus Empyema	
	Cases	Deaths per cent	Cases	Deaths per cent	Cases	Deaths per cent
First year	110	40.0	9	77.7	119	42.8
1-2 years	145	18.5	14	42.8	160	20.6
2-3	70	11.4	9	11.1	79	11.4
3-5	70	4.0	4	50.0	80	6.2
5-12	95	1.0	25	4.0	120	1.6
Total—Birth to 12 years	497	16.7	61	26.2	558	17.9

TABLE II

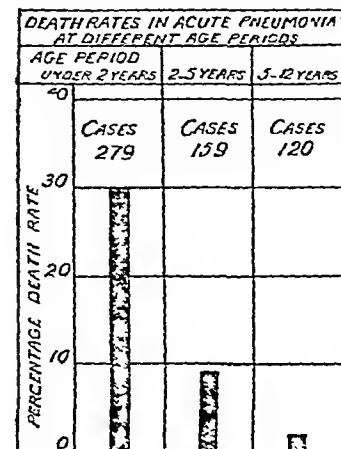
Age Period	Acute Pneumonia		Empyema		Combined Groups Acute Pneumonia plus Empyema	
	Cases	Deaths per cent	Cases	Deaths per cent	Cases	Deaths per cent
First 2 years	256	27.7	23	56.5	279	30.1
2-12 years	241	5.0	38	10.5	279	5.7

The first table, giving the numbers of cases of pneumonia and empyema at successive age periods from birth to 12 years, makes clear two facts as to pneumonia already well known—the very high death rate in the first two years (42.8 and 20.6 per cent) falling rapidly thereafter to a quite low figure after five years (1.6 per cent) and also the less striking but still definite fall in the frequency of the disease after the first two years. Although acute pneumonia after the first two years is outside our present discussion, two points seem to be suggested by a comparison of the figures of pneumonia alone and of pneumonia plus empyema. The death rate in the complete group of pneumonia plus empyema is not greatly higher than in that of pneumonia alone. In the first two years the figures no doubt show a much higher death rate for empyema than for pneumonia, but this may well be explained by the severity of the accompanying pneumonia at this period. The figures, therefore, support

\* The opening paper of a discussion in the Section of Diseases of Children at the Annual Meeting of the Association of Paediatricians, Edinburgh 1927.

the statement that has been made in recent discussions on emphysema—that in this disease the death rate is largely determined by the severity and extent of the underlying pneumonia and by the age of the child. Also this series of figures suggests that emphysema is a commoner complication of pneumonia after five years than before—1 in 5, as compared with 1 in 10.

The second table is constructed to emphasize the fact that the mortality and frequency of acute pneumonia, including emphysema, are much greater in the first two years of life than in the succeeding ten, there being an equal number of cases (279) in these very unequal age periods and strongly contrasted death rates of 30.1 and 5.7 per cent. The rate of death in pneumonia plus emphysema in this series of 553 cases from birth to twelve years may be put in another way equally striking. There were 100 deaths in all of these, 84 occurred under 2 years (279 cases), 14 from 2 to 5 years (159 cases), and only 2 over 5 years (120 cases). These figures give percentages of 30, 9 and 1.5 as shown in the accompanying diagram.



the disease that it is more common and far more deadly in the first two years of life than in the succeeding years of childhood. The facts suggest an obvious question. In these cases of fatal acute pneumonia, what is the prevailing pathological type, lobar pneumonia or broncho-pneumonia?

#### LOBAR PNEUMONIA AND BRONCHO-PNEUMONIA

The general and accepted teaching is that broncho-pneumonia is much commoner and also much more fatal in the early years of childhood. But the figures given as to the comparative frequency of these two types of pneumonia vary widely and these figures are based on clinical criteria which either vary a good deal or are vaguely stated. The statement is also frequently made that *post-mortem* examination often shows one type where the clinical examination has suggested another. Yet in medical textbooks and in the clinical statistics referred to, no author at present is made as to the frequency of the two types: lobar pneumonia and broncho-pneumonia, as shown by a large series of *post-mortem* examinations. Dr. Agnes Macgregor has investigated this point in 100 cases of fatal pneumonia, and her results give an accurate idea of the parts played by lobar pneumonia and by broncho-pneumonia in these fatal cases.

For the purpose of my contribution to the discussion I will anticipate her results only so far as to say that in fatal cases lobar pneumonia is compared with broncho-pneumonia as a rare disease. It is broncho-pneumonia which is the death-producing type in the first two years of childhood. But it need not follow that this proportion also obtains in the cases of pneumonia that recover.

#### Pathological Characters

It will be useful here to outline briefly the pathological features of the two types of pneumonia. If the pathological feature can be clearly distinguished we are more likely to obtain satisfactory clinical methods of recognizing them. The terms "lobar pneumonia" and "broncho-pneumonia" are unsatisfactory, but until better ones are adopted they must serve.

Lobar pneumonia, as a pathological process, is the simpler type. As a result of inflammation a fibrinous exudate is

poured out into the alveoli, but at this stage and later, the framework of the lung, including the bronchial walls, seems to be undamaged. At the end a rapid resolution of the alveolar exudate takes place. In children there is a great variation in the extent of consolidation and in many cases only a small portion of a lobe is involved, while in not a few clinical examinations can detect no area of consolidation. For this reason alone the term lobar is unsuitable. We would suggest that "alveolar pneumonia" is a more accurate description of the pathological process, and explains better its clinical course.

Broncho-pneumonia is a more complicated process, and also shows much variation in the extent and nature of the morbid changes. Here in addition to a varying type of exudate in the alveoli and bronchi, the interstitial framework of the lungs—the bronchial and alveolar walls—show inflammatory change. It is usual to make a broad division into primary broncho-pneumonia where the process is supposed to begin within the lung as does lobar pneumonia, and secondary broncho-pneumonia where it follows bronchitis, as in influenza, measles, whooping cough, etc. In either case interstitial inflammation is an essential and important feature of the process. We would suggest that "interstitial pneumonia" is a better term than "broncho-pneumonia" for it is this interstitial inflammation which determines the longer course of the disease, its greater immediate danger of extensive and fatal spread, its greater risk of permanent damage to the lung tissues in fibrosis, bronchiectasis and bronchiectasis. The term "interstitial broncho-pneumonia" has already appeared in medical and pathological textbooks to describe certain special types of broncho-pneumonia secondary to measles and influenza. Interstitial pneumonia seems a suitable term to describe all cases of broncho-pneumonia.

#### Clinical Features

Many points are given which may enable us to distinguish in life the two types of pneumonia—lobar (alveolar) pneumonia and broncho-pneumonia (interstitial). Thus in broncho-pneumonia we are said to have a slower onset, an antecedent bronchitis with cough prominent, of cough throughout, cramps and more difficult breathing, a less regular and sustained febrile curve, evidence of widely dispersed consolidation and extension of the lung, a longer duration of illness, a slow resolution. Lobar pneumonia is distinguished by its sudden and severe onset, its high sustained fever, a short course of a week or little more, the limitation of consolidation to one area, the dramatic termination of fever by crisis, the rapid resolution of inflammatory product. But some of these distinguishing signs may fail or may appear in a contradictory way. I would suggest that the cardinal differential sign between these types of pneumonia are only two: the duration of fever and the rapidity of resolution—long fever and slow resolution in broncho-pneumonia, short fever and rapid resolution in lobar pneumonia. Fever and consolidation persisting over a period of two weeks may be taken as indicating broncho-pneumonia. None of the other points mentioned are diagnostic.

#### Confluent Broncho-pneumonia and Chronic Pneumonia

In spite of much variation in the clinical features the differential diagnosis of lobar pneumonia and broncho-pneumonia is not difficult in many cases. But there is one clinical type of broncho-pneumonia which is not uncommon and which presents difficulty—namely where there is extensive consolidation limited to one area of the lung. This is the type sometimes described as "confluent broncho-pneumonia." Such cases, showing clinically an extensive pneumonia in one lung and the other apparently healthy if they die in about a fortnight, are apt to be diagnosed as lobar pneumonia, yet autopsy shows a massive broncho-pneumonia on one side and generally also small scattered areas of pneumonia in the other lung which seem to be of more recent date. These cases of rapidly fatal confluent broncho-pneumonia are I think especially frequent in the first year of life, they are usually accompanied by early emphysema. In no way—neither in the manner of onset nor in their clinical features and physical signs—can they be distinguished in life from lobar pneumonia.



We have seen that the pathological process in broncho-pneumonia has a longer course than in lobar pneumonia. Therefore if the child survives, broncho-pneumonia is a more chronic disease than lobar pneumonia, and the course of a recovering broncho-pneumonia may extend over months. We are all familiar with such cases, both of primary and secondary broncho-pneumonia, they are, indeed, cases true to their type, both in their long course and the disseminated character of the pneumonia. But there is also a definite and not small group of cases of localized and chronic pneumonia, these are variously named unclassified, subacute, or chronic pneumonia, and they are generally classified as belonging to the lobar type. May they not rather be regarded as cases of broncho-pneumonia, similar to, but less severe than, the fatal cases of massive or confluent broncho-pneumonia just described, and where a primary broncho-pneumonia has spread locally and has not assumed its usual disseminated character? The following case is an example of this kind.

A female infant aged 8 months, was admitted to hospital on November 1st, 1925, with a history of cough and slight malaise for two weeks, and of difficult breathing and prostration for two days. For the next two months she had intermittent bouts of fever with signs of pneumonia first in left lower and then in right lower lobe, and followed by resolution. A third area of pneumonia then appeared in the right upper lobe and slowly extended over the whole right lung. In March, 1926, a localized empyema was found in the right upper lobe and was treated successfully by repeated aspiration. Signs of resolution began in May four months after the onset of the last attack of pneumonia, and proceeded for two months, the lung clearing from base to apex. Thereafter convalescence was steady, with a little residual dullness at the apex, shown only on x-ray examination. The period of fever and consolidation of lung had lasted for eight months.

This is an extreme case of chronic pneumonia with the additional complication of empyema. But in my large series of cases of pneumonia in children there will be found a definite group of this kind, where both fever and consolidation persist for a long time, and where resolution is slow.

I would, therefore, submit for discussion a statement that in cases where pneumonia has lasted more than two weeks the process is not confined to the alveoli, interstitial inflammation has taken place, and we are dealing with a process of broncho-pneumonia, however circumscribed or small the area of consolidation may be.

Until clinicians are agreed on the clinical signs which distinguish these two types of pneumonia we must expect to have widely differing clinical estimates of their frequency. And for this greater accuracy of clinical diagnosis we need also to know more of the pathology and the bacteriology of broncho-pneumonia in children. Meantime, it would be some advantage if we ceased to use such terms as lobar pneumonia and broncho-pneumonia, which do not convey to the mind accurate ideas of the morbid processes taking place in the lungs. After our decision as to the site and extent of pneumonia, instead of fixing this misleading label, we should rather try to determine the parts of the lung affected by the inflammation—bronchi, interstitial tissues, alveoli, pleurae.

#### *The Explanation of the Frequency of Broncho-pneumonia in Early Childhood*

We have seen that the large majority of the deaths from acute pneumonia in children occur in the first two years of life (84 per cent.), and Dr Macgregor will give figures to show that the type of pneumonia in the greater number of these cases at this age is that called broncho-pneumonia. Have we any satisfactory explanation why pneumonia, which is so frequent at this age and in the hospital class of children, tends so often to assume this fatal broncho-pneumonia type? That is a question which deserves examination, but which is difficult to answer.

Does the explanation lie in a special bacterium or virus? Now the recent experience of the great camp epidemics of broncho-pneumonia following measles and influenza during the great war seemed to establish the connexion of certain types of broncho-pneumonia with certain kinds of bacteria. MacCallum particularly has taught that the nature of the organism might be predicted from the visible character of the lung lesions. It can hardly now be doubted that types of broncho-pneumonia in the adult are produced by

different organisms from those that produce lobar pneumonia. And in a considerable number of the cases of the present series of acute pneumonia in children, Colonel Glen Liston has found *B. influenzae*. Further bacteriological research in the broncho-pneumonia of children may well yield important results.

But whether the causal organism be pneumococcus or streptococcus or influenza bacillus, it seems difficult to explain by bacterial agency alone the fact of the high mortality and frequency of the disease at a special age period. Among other possible factors, the mysterious but powerful influence of constitution may play an important part. By constitution is meant the inherent nature of the lung tissues at this early age, rendering them prone to bacterial infection, and favouring also this interstitial type of inflammation which we call broncho-pneumonia. This is no new theory. It is also not a question of special inherited diathesis, but of the natural "disposition" or constitution of the human body at this age. This constitution varies with age, and its various manifestations are to be seen both in the differing states of health and the changing reactions of disease at different ages of human life. Growth is rapid in the infant, it becomes slower in the child, in adult man it has ceased. The lymphatic system, the pulse rate, the whole system of nutrition and metabolism, change as life proceeds on its course from infancy through childhood. This changing constitution finds equal expression in disease. Cancer is common at 50 years of age, and rare at 5. Rheumatic infection does not plant itself in the body of the infant and young child, in the child of 5 it secures a hold, but produces a type of disease reaction very different from that in the adolescent. So it may be that the common agent of pneumonia in man, the pneumococcus, tends to produce in the lungs of the youngest children a type of inflammation which we call broncho-pneumonia, that this tendency definitely weakens after two years, but is still evident until later childhood, say five years, and that after this age the reaction changes to the extensive alveolar exudation with little or no interstitial inflammation which we call lobar pneumonia.

But this influence of a natural age constitution is not sufficient. For pneumonia is rare in healthy and well-cared-for children of any age. There must also be a deterioration of living function produced by bad environment and hygiene, and the influence of climate and season also comes into play.

It is therefore apparent that the problem is a complex one in which there is the intricate play of many factors. At present we are not able to say definitely what these factors are, and what is then relative importance. But the high death rate and the frequency of broncho-pneumonia in the first two years of life make it a subject worthy of study and discussion, and it is particularly by further study of its pathology and bacteriology that we may hope to gain more knowledge of the disease and more control over it.

## II—PATHOLOGY OF ACUTE PNEUMONIA IN EARLY CHILDHOOD

BY

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**DIFFERENTIATION** between lobar pneumonia and broncho-pneumonia by pathological examination in fatal cases is usually a matter of no great difficulty, for most cases exhibit well defined features which enable them to be placed in one or other of these two classes. Occasional cases, however, possess atypical characters and present difficulty in classification.

#### *Definition of Terms*

The term "lobar pneumonia" is applied to cases in which there is a circumscribed area of lung tissue completely and uniformly consolidated. The area may be of the extent of one complete lobe, or more, or less. Scattered patches of pneumonia in addition to the main area are absent. Bronchitis is usually little in evidence.

The term 'broncho-pneumonia' is applied to cases in which pneumonia occurs in patches surrounding bronchi and bronchioles, either without or with confluence, the latter may lead to massive consolidation of parts of the lungs. Inflammation is more intense in alveoli closely related to bronchi. The bronchi themselves are much inflamed.

Differences in the character of the exudate are of small value in distinguishing the types. While as a rule the exudate of lobar pneumonia is more fibrinous and that of broncho-pneumonia richer in cells, this difference is not constant.

#### *Incidence of the Types*

The incidence of the types in 100 consecutive cases of pneumonia in children examined post mortem at the Royal Edinburgh Hospital for Sick Children was as follows.

**Lobar Pneumonia**—This group was represented by 11 cases, of which 8 were typical, 3 being somewhat atypical but possessing chiefly the features of lobar pneumonia. Of the 11 cases 3 were bilateral. The eldest patient was 4½ years of age, the youngest 6 months, the average age was 17 months. Six were under 1 year, between 1 and 2 years.

**Broncho-pneumonia**—This group was represented by 89 cases of which 3 were somewhat atypical. Of the 89 cases 79 were bilateral, in 11 of these one of the lungs was relatively slightly affected and in 63 the disease was extensive in both lungs, 69 showed massive confluence in one or more lobes, 20 showed no confluence in any considerable area. The eldest patient was 6 years of age, the youngest 3 weeks, the average age was 14½ months. Forty three were under 1 year, 29 between 1 and 2 years.

These figures show that in a series of fatal cases, (i) 81 per cent of all the cases were in children under 2 years of age, (ii) 89 per cent were cases of broncho-pneumonia, (iii) 89 per cent of the cases of broncho-pneumonia were bilateral, while less than one-third of the cases of lobar pneumonia were bilateral, (iv) 77.5 per cent of the cases of broncho-pneumonia were of the confluent type and exhibited massive consolidation in at least one lobe. This is an outstanding difference between broncho-pneumonia in children and in adults, confluent consolidation being relatively uncommon in the latter. It is important from the clinical point of view, as it introduces a difficulty in differential diagnosis during life.

At autopsy confluent broncho-pneumonia is distinguished from lobar pneumonia chiefly by the following features: (1) The massive airless portion is usually of less uniform consistency in broncho-pneumonia, and is produced by a combination of consolidation and collapse. (2) On section its appearance is not uniform, it shows mottling usually yellow, around the bronchi. (3) Usually it is defined less sharply than is the case in lobar pneumonia, and shades off into indefinite patches at the edges. (4) In addition discrete patches of broncho-pneumonia are present in other parts. (5) There is a more or less diffuse acute bronchitis.

A fact which ought to be emphasized is that broncho-pneumonia, at least in fatal cases, is of very much more widespread distribution than the average fatal case of lobar pneumonia. Often lobar pneumonia is confined to one lobe of the five. Broncho-pneumonia, whether with or without confluence usually attacks all five lobes and the inflammation is at different stages in the various parts. The very extensive involvement of the terminal airways which results accounts for the severe respiratory embarrassment which characterizes the clinical picture of broncho-pneumonia.

#### *Microscopic Pathology*

During the course of the research on which this communication is based a series of cases has been studied with the aid of paraffin sections extending to a whole lung. These sections can be examined under high power, or the microscope, and thus are of great value in the investigation of the distribution of inflammatory changes in various forms of pneumonia. The conclusions which are here stated have been drawn largely from a study of these sections. This study has revealed certain important differences between lobar pneumonia and broncho-pneumonia.

In lobar pneumonia as seen in the human subject, the freedom of the connective tissue framework and lymphatic

system of the lungs from inflammatory infiltration is a remarkable feature. There is no persistent lymphangitis, the inflammation is located in the alveoli, whose walls possess no lymphatics. The alveolar septa show congestion, oedema, desquamation of epithelium but the exudate is poured out into the alveolar spaces and the walls do not suffer disorganization. When recovery occurs the products of inflammation are removed by resolution. There is no occasion for a process of reorganization which would bring about permanent changes in structure and inevitable disorganization of function.

In broncho-pneumonia it is usual to find a large amount of inflammatory infiltration of the substance of bronchial walls and of alveolar walls in the centre of pneumonic patches. In the area of an early lesion on a bronchiole is present with catarrhal contents in its lumen and inflammatory infiltration in its walls and in the peribronchial lymphatics (in the severer cases the infiltrating cells are mostly polymorphs). This is surrounded by a group of consolidated alveoli whose walls are also infiltrated, and often infiltration of the walls seems to precede consolidation of the lumen, and extends beyond the edge of the consolidated patch. It is therefore evident that infection reaches these alveoli through the bronchus wall and along the alveolar septa, and not by continuity of lumen. Acute interstitial inflammation is an essential part of the process.

There may be in addition directly connected with this hyaline expansion of lumen, consolidation in the terminal alveolar expansions of the central bronchiole. When there is confluence this is always present but the interstitial inflammation persists in the peribronchial zone, and produces the mottled appearance noted on naked eye examination.

Cases exhibiting acute interstitial inflammation and lymphangitis have been described by some authors as a special type which they call acute interstitial pneumonia. We have found it to be practically constant in our cases, and have come to regard it as the characteristic lesion of broncho-pneumonia. We believe that the cases described under this name are those in which interstitial inflammation is particularly obvious and alveolar inflammation more or less in abeyance, but that the difference between these and other cases is merely one of degree and that the presence and importance of acute interstitial inflammation in all cases of broncho-pneumonia have not been sufficiently recognized.

In the involvement of the framework of the lung lymphangitis plays an important part. In ordinary cases of acute broncho-pneumonia it appears as a crowding of lymphatic channels with inflammatory cells sometimes causing enormous dilatation of the larger vessels. It begins in peribronchial lymphatics but soon spreads to perivascular and septal lymphatics also and extends gradually in progressive fashion to all parts of the lungs.

We believe that the existence of progressive lymphangitis in broncho-pneumonia accounts for the firm hold which the infection gains upon the lungs and that the absence of it in typical lobar pneumonia favours rapid and perfect recovery from the effects of inflammation.

It has, however, been claimed by Blake and Cecil that lobar pneumonia experimentally produced in monkeys begins as a primary lymphangitis to which alveolar inflammation is secondary. Further, they state that this lymphangitis passes off with the onset of lobar consolidation of the alveoli. The application of this result to human cases has yet to be demonstrated, but if it be correct it would seem to follow that broncho-pneumonia results from persistence of the primary lymphangitis.

The question arises whether all cases in which the features of confluent broncho-pneumonia are present at the time of death have possessed those features from the outset. This is important in connexion with the problem of differential diagnosis of lobar pneumonia and broncho-pneumonia during life, and the difficulty of placing certain cases in one or other of the two groups. It seems not unlikely that the lymphangitis which leads to broncho-pneumonia might develop either from bronchitis or from a localized patch of primary pneumonia. In certain cases of localized pneumonia of lobar type lymphangitis may supervene at a later development, and lead to a subsequent spread of inflammation throughout the lungs, after the manner of

**broncho-pneumonia** Such a case would be classed as confluent broncho-pneumonia at necropsy, and some fatal cases of primary pneumonia which clinically are thought to be lobar, but at *post-mortem* examination are found to be confluent broncho-pneumonia, may perhaps be explained in this way.

To sum up we regard acute broncho-pneumonia as the result of progressive invasion of the lymphatic system and interstitial framework of the lungs by the infective agent, in other words, as the result of failure of the lymphatic apparatus to defend itself against invasion.

#### *Some Further Effects of Lymphangitis*

It is widely recognized that broncho-pneumonia is more apt than lobar pneumonia to cause serious damage to the lungs, and to be followed by various undesirable results. Among the most important of these are suppuration, bronchiectasis and fibrosis of the lungs. All these may be directly attributed to effects of lymphangitis.

#### *1 Suppuration within the Lungs*

As a development of broncho-pneumonia this occurs in two distinct forms.

(a) Originating in bronchial walls, as a direct result of suppurative lymphangitis in peribronchial lymphatics. This seems to be not very uncommon in fatal cases. In our series it has been most often associated with empyema. We believe that the interference with lymphatic drainage which results from compression of the lung by a pleural effusion definitely favours the development of suppuration in the lymphatics. Suppurative lymphangitis, though most common in peribronchial lymphatics, may also cause diffuse suppuration along lymphatic paths throughout the lungs.

(b) In some cases areas of necrosis are formed in the lungs, and in these suppuration proceeds apace and gangrene may supervene. The necrosis is often associated with, and appears to be caused by, septic thrombosis in the blood vessels, and for this perivascular lymphangitis may be held primarily responsible.

#### *2 Bronchiectasis*

This important occasional outcome of acute broncho-pneumonia is usually attributed either to the persistence of chronic smouldering inflammation in the bronchi which weakens their walls and leads to dilatation, or to fibrosis of the lung substance exercising traction upon them. Observations on certain cases among our series have served to throw some light upon the sequence of changes which results in bronchiectasis following acute broncho-pneumonia.

The earliest stages of the process are met with in cases of severe broncho-pneumonia, with purulent bronchitis and lymphangitis particularly well marked. The acute peribronchial lymphangitis with associated inflammation of the bronchial walls leads to complete destruction of the whole thickness of the wall in a part or the whole of the circumference of the bronchus. The destruction may extend to and involve some neighbouring alveoli. The result is the formation of a cavity whose lumen is surrounded by exposed alveoli, which are likely to be consolidated but are usually not in a state of suppuration. In fact, the cavity is often singularly clean-cut. Every vestige of the original structure of the bronchus wall—cartilage, muscle, elastic tissue—may disappear. If only a part of the circumference of the bronchus be affected, the rest of the wall remaining intact, the result is an irregular, somewhat sacculi enlargement of the lumen.

Later healing occurs in the walls of these cavities, by means of which a new bronchus wall is constituted. Granulation tissue springs from among the surrounding alveoli; the cavity comes to be enclosed by a layer of young fibrous tissue, epithelium surviving in neighbouring parts of the bronchus proliferates and clothes this fibrous wall with new epithelium, which is usually of a modified type, composed of low cubical cells. When the process of healing is complete the bronchus is reconstituted with a new wall composed entirely of fibrous tissue in which no remnant of the original structure is left.

If the initial acute process causes destruction of a considerable amount of tissue there will be, when healing is complete, an increase in the size of the lumen of affected bronchi—that is the end-result is bronchiectasis. The conclusion to be drawn from this is that bronchiectasis following acute broncho-pneumonia is not always the result of a slow smouldering inflammation which leads to gradual dilatation, but is sometimes an acute and active process of excavation, followed by the formation of a new fibrous wall around a lumen which has been enlarged by actual loss of tissue. Obviously the new fibrous wall must lack the strength conferred upon the normal bronchus wall by its muscle and elastic tissue. Therefore there is likely to follow a gradual progressive enlargement of the lumen by dilatation and even cases where there is at first no evident bronchiectasis are probably liable to develop it in course of time.

#### *3 Fibrosis of the Lungs*

I do not propose to consider those cases in which fibrosis originates in the pleura. There is a group in which fibrosis of the lungs occurs after broncho-pneumonia, independently of pleurisy. In some of them it may be simply the result of persistence in a chronic form of that inflammation of bronchial and alveolar walls which is so conspicuous in the acute stage of broncho-pneumonia. But in some at least, and perhaps in most, the underlying pathological process is apparently the same as that which has just been described leading to bronchiectasis. If the smaller bronchi be affected in this way the result is different from that in the case of the larger bronchi. For just as a small abscess is by healing converted into a fibrous scar, or a small plethral cavity closed by fibrosis, so a small bronchus whose wall is utterly destroyed may be obliterated by proliferation of granulation tissue in its lumen. The permanent obliteration of many small bronchi by this process must inevitably lead to permanent obliteration by fibrosis of large tracts of alveolar tissue.

We suggest that the pathological process underlying many cases of chronic pneumonia which go on to fibrosis and retraction of the lungs is thus obliterative bronchiolitis, which starts with wholesale destruction of the walls of small bronchi and ends with obliteration by fibrosis of the bronchioles and of the whole of their associated alveoli. As fibrosis of the lungs and bronchiectasis can thus be traced to a common source, it is to be expected that the two conditions will usually be present together. If, however, in any case the damage were confined to the small bronchi, fibrosis might result unaccompanied by bronchiectasis.

After this brief review it is evident that the extension of the inflammatory infection from bronchial lumen to surrounding lymphatics is the cause of the characteristic changes of both acute and chronic broncho-pneumonia.

We have still to explain why the infection in this form of pneumonia results in a massive invasion of the lymphatics. Of conditions which offer a possible explanation, the one most generally recognized is that broncho-pneumonia is often a sequel to some definite infective fever such as measles. In these cases there are two infections, and that of the primary fever is in some sense a preparation for the subsequent invasion of the pneumonia infection. The primary predisposes to the secondary infection.

On the other hand, it must also be recognized that in children broncho-pneumonia is often primary and without a preparatory antecedent infection. The infection settled in the bronchi simply invades the lymphatics; there is no obvious sequence of another infection. For the interpretation of these facts various suggestions have been offered, postulating separately or together (a) a virus of specific quality and possibly of special virulence also, and (b) a condition of the patient, non-infective and yet preparing the way for pneumonia. In favour of the latter suggestion is the fact that it still maintains, though in a new form, the general principle of predisposition in broncho-pneumonia.

The conditions advanced on this hypothesis are such as (1) age—less than 2 years, (2) bottle-feeding (3) under growth, (4) poverty, (5) lack of care in upbringing, (6) rickets.

Should it be shown that certain forms of virus have a special relation to broncho-pneumonia of the primary type, it will probably nevertheless be found that these conditions are still predisposing in their effect.

The importance of the consideration of predisposition as an etiological factor is that, should the hypothesis be proved, it would follow as a general conclusion that the elimination of broncho-pneumonia from the child community will depend to a corresponding extent on the application of preventive measures for the removal of the predisposing conditions.

#### REFERENCE

<sup>1</sup> Blake F G and Cecil R. L. *Journ. Exper. Med.* 1923 vol xxxi p1 35 4-5

#### DISCUSSION

Professor LEONARD DINDLEY (Glasgow) regarded age as the chief criterion in distinguishing between lobar and primary broncho-pneumonia in early childhood because he had hardly ever detected lobar pneumonia in necropsies on children under 3 years of age, he therefore considered all primary pneumonias in children under that age as examples of broncho-pneumonia. Of 65 consecutive fatal cases 55 were of primary pneumonia, and only one of these occurred in a child of over 3 years this case, in a child aged 5, was quite characteristic of lobar pneumonia. Fifteen of the 55 were typical clinically and pathologically of broncho-pneumonia. Fourteen were diagnosed before death as croupous pneumonia, but histologically were proved to be catarrhal in type. In 5 there was some difficulty in coming to a diagnosis, but ultimately 3 of these were regarded as examples of broncho-pneumonia, one was found to show a mixture of croupous and catarrhal features and one was diagnosed as probably lobar in type. Only one of the primary group of 55 was a typical example of lobar pneumonia, and this was in an older child. These findings differed from those in Dr Macgregor's series, in which there were 9 examples of lobar pneumonia in children under 2 years of age. In any case it is obvious that the prevailing type of pneumonia in infancy and early childhood was broncho-pneumonia and this owing to the tendency for the interstitial tissue of the lung to be involved in that type that bronchiectasis was so apt to follow. In searching for an explanation of the frequency of this special type at this age he was inclined to attach importance to a variation in the host rather than in the character of the infecting agent. There were several examples of an individual contagium vivum to which the tissues at different ages showed a varying reaction.

Dr J H THURSFIELD (London) reviewed the problem of treatment from the immunological standpoint and concluded that in all primary pneumonias in children the pneumococcus was the essential etiological organism. For treatment therefore it was not of great moment to come to a diagnosis as to the type of pneumonia present. During seven years he had had 126 cases of primary pneumonia under observation, 71 being in children under 2 years of age. Fifty-eight of these were treated symptomatically (mortality 41 per cent) and 13 with a sensitized vaccine prepared from several strains of pneumococci (mortality 30 per cent). Fifty-five were in children over 2 years. 41 of these were treated without vaccines (mortality 5 per cent), and 14 with vaccines (no deaths). The vaccine-treated cases were all particularly severe. He was convinced that he had seen several children recover from pneumonia when this vaccine was used who when first seen, had very little chance of survival. These results encouraged him to persevere with this method of treatment. He also referred to an apparently hopeless case of broncho-pneumonia in a child aged 2 in which recovery had ensued dramatically after immuno-transfusion.

Lieut.-Colonel W GLEN LISTON (Edinburgh) drew attention to the difficulties surrounding the study of the bacteria living in the respiratory passages. Many strains of pneumococci existed which, though morphologically similar, presented differences in virulence and in serological and cultural characters. The problem of determining the

cruse of pneumonia was, therefore, not a simple one, and called for some skill and experience in bacteriological technique. The post-mortem appearance of the lungs in the first cases he had seen with Dr McNeil had so strongly recalled to his mind what he had frequently seen during the severe outbreak of influenza in Bombay in 1918 that he had decided to make use of a special culture medium which he had found invaluable in the cultivation of the influenza bacillus. This medium had been prepared first by Dr Soparker at the Bombay Bacteriological Laboratory and was described in the *Indian Journal of Medical Research* (vol vi, No 3, p 418). With it he had obtained in many instances, on plates prepared from fluid removed from the congested areas of the lungs, almost pure cultures of the influenza bacillus. The organism was also readily obtained from the sputum. In 21 out of 55 necropsies on cases of suspected pneumonia influenza bacilli were isolated, all except 2 of the 21 cases were typical of primary broncho-pneumonia. One of the two exceptions was classed as a case of atypical lobar pneumonia, the exact type of pneumonia of the other case was not determined, the case was complicated with empyema and cerebro-spinal meningitis. Of the 21 cases from which influenza bacilli were isolated from the lungs the heart blood was sterile in 9. A pure culture of the influenza bacillus was obtained from the heart blood in 2 of the cases, and that bacillus was present together with other organisms in 3 other cases. In 3 cases a pure culture of streptococci, a pure culture of pneumococci and a pure culture of a staphylococcus were obtained respectively from the heart blood. No culture was made from the heart in the 4 remaining cases. The 12 cases from which the influenza bacillus was not recovered were 2 cases of tubercle of the lungs, 2 cases of pneumococcus meningitis, 1 case of meningococcus meningitis, 1 case of bronchitis, 1 case of organized pleurisy showing very little pneumonia (probably a late case of broncho-pneumonia), 2 cases of septic broncho-pneumonia, 1 case of lobar pneumonia and 2 cases of primary broncho-pneumonia. In 22 examinations made of the throat in children, influenza bacilli were isolated from 6 cases, 3 of these were clinically regarded as suffering from broncho-pneumonia, 2 from lobar pneumonia, and 1 had been admitted to hospital with rickets. The 16 negative swabs were obtained from 4 cases of broncho-pneumonia, 5 cases of lobar pneumonia, 2 cases of pneumonia of undetermined type, 2 cases of bronchitis, one case of asthma, one case of ecchyma vomiting and one case of marasmus. The influenza bacillus appeared to be specially prone to attack young persons causing in them very definite lesions even in the absence of other organisms, in some way it opened a path for the invasion of the body by other organisms such as streptococci, pneumococci, and staphylococci. The high death rate from broncho-pneumonia in children was attributable to the influenza bacillus, but the organism could be obtained from patients who recovered. Much work remained to be done in determining the characters of different strains of this bacillus and its distinction from allied organisms such as that of whooping-cough and the Koch Weeks bacillus.

Dr N S CAMPBELL (Edinburgh) held that it was important to differentiate sharply primary or lobular and secondary or interstitial pneumonia. The diagnosis of the latter type as a rule was easy, the mode of onset, the associated catarrhal symptoms and signs and the course of the illness were characteristic and the infection, it was generally agreed, was a mixed one. In the much smaller group of primary broncho-pneumonia the onset was sudden, consolidation appeared early and the temperature fell by crisis or rapidly. The resemblance to lobar pneumonia was therefore close and it was often impossible to separate the two conditions, the organism responsible was the pneumococcus but other such as Pfeiffer's bacillus were sometimes also present. Was it not possible that this form of primary pneumonia was the infantile expression of lobar pneumonia. In older children the pneumococcus gave rise to distinct types of pneumonia cerebral and abdominal which could not be explained by structural effects. Might not different strains of the pneumococcus have each its own special train of clinical

manifestations? He considered that it was along bacteriological and serological lines that knowledge of pneumonia would advance.

Dr C P LANGE (Manchester) referred to the hypothesis that during the course of the disease there might be a change of type from lobar pneumonia to broncho-pneumonia. Hospital statistics could be misleading, because, even in infants, most cases of lobar pneumonia did not come to hospital. Clinical investigation should be made, not only of hospital cases, but also of those treated at home, for this the collaboration of general practitioners would be necessary. It was usually possible by a study of symptoms and physical signs to distinguish lobar pneumonia from broncho-pneumonia, and in most cases to base a prognosis on these data and on the condition of the infant. It was his firm opinion that acute lobar pneumonia occurred in infants, and that the prognosis was usually good. Repeated radiological observations might throw light on the problem of type. The nature and course of an attack of pneumonia were determined partly by variable elements and partly by predisposition. Variable elements, such as a chance mixture of infections, might affect the route of spread of the infective process and alter the character and course of the illness. Predisposition was important in relation to factors lowering the vitality. Thus diet, especially the use of unsuitable infant foods, played a prominent part in the lowering of resistance. Debilitating disease was also a factor in determining the nature of an attack, the liability of infants with rickets and "pink disease" to develop broncho-pneumonia was well known.

Dr P F ARMAND DELILLE (Paris) drew attention to the value of fluoroscopic examination as a diagnostic procedure in acute pneumonia in infants. Lobar pneumonia produced a very definite triangular shadow, whereas broncho-pneumonia gave no characteristic picture. Fluoroscopy was often the only means of clearing up the diagnosis in those cases of lobar pneumonia in infants in which there were no signs detectable by the stethoscope. In other acute respiratory cases the absence of a characteristic shadow would substantiate the diagnosis of broncho-pneumonia and be of prognostic value.

Dr H C CAMERON (London) thought that the discussion had made it clear that clinicians differed as to the value and even the possibility of distinguishing during life between lobar pneumonia and broncho-pneumonia in infants. The lobar pneumonia mortality increased steadily from early childhood, but in the first two years of life the fluid was lost in a great number of examples of broncho-pneumonia characteristic of that age. He believed that Dr Armand-Delille and Dr Lange were right in emphasizing the occurrence of typical cases of lobar pneumonia in the first two years of life. The presence of delirium was characteristic of the lobar form, as was often the appearance of dullness at an early stage, in broncho-pneumonia dullness was the last sign to appear.

Dr A G NEWELL (Haringey) referred to a paper he had read about two years previously at a meeting of the North Middlesex Division, in which he had advocated the value of vaccine treatment in pneumonia. He strongly recommended every general practitioner to try it. In his experience the clinical picture changed in a striking way within forty-eight hours of the first injection.

Dr C W VINEY (Leeds) had no doubt that there were two clinically different classes of pneumonia in early childhood, one termed lobar pneumonia, with a short course and good prognosis, and one called broncho-pneumonia, with a more lengthy course and doubtful prognosis. He suggested that empyema occurred much more frequently in the lobar type than in broncho-pneumonia, this was indicated by the infrequent development of empyema during the course of measles and whooping-cough. He was impressed by the value, even in the youngest child, of open-air and balcony treatment in broncho-pneumonia. He protested against large quantities

of milk being given to small children during an acute illness. He thought also that the continuous administration of oxygen by means of a small nasal catheter was most useful. Hitherto he had seen nothing to convince him that anything was gained by using serums and vaccines in these cases, but he now proposed to try a sensitized polyvalent pneumococcal vaccine.

Dr F M GARDNER-MEDWIN (St Asaph) advocated the injection of sodium nucleinate combined with glucose and sodium bicarbonate in pneumonia. Details of the method were published in the *BRITISH MEDICAL JOURNAL* in 1923 (vol 11, p 49). His experience was that this method was of the greatest service in curtailing the pneumonic attack and improving the general condition in children as well as in adults. In lobar pneumonia the crisis was brought about almost invariably within forty-eight hours of the administration of 2 ccm of the solution prepared by the Clinical Laboratories of Paris. In broncho-pneumonia the change was not so dramatic, but the condition of the patient was improved in nearly every case. Forty consecutive patients with lobar pneumonia treated with nuclein and intensive alkalization during the influenza epidemic of 1918-19 had responded within forty-eight hours, irrespective of the duration of the illness. Since then his results had served to confirm his former estimate of the value of this agent in inducing a leucocytosis in all cases except those in which bone-marrow response was interfered with by antecedent pathological conditions, and thus reinforcing the natural defences of the body. With regard to the suggestion that Pfeiffer's bacillus was responsible for the lowered resistance which allowed invasion by the pneumococcus, Dr Gardner-Medwin added that if a leucopenia was also observed in these cases the argument for using the nucleinate treatment was very strong.

Dr S P HUGGINS (High Wycombe) referred to the case of a child with pneumonia who had been treated with small doses of pneumococcal vaccine, and who later developed empyema. The fluid was found to be sterile, and complete recovery followed. The administration of oxygen by subcutaneous injection had been advocated on the Continent.

Dr WILKIE SCOTT (Nottingham) suggested that a classification based upon either mortality or morbid anatomy would show a very much smaller proportion of cases of lobar pneumonia than one based upon clinical evidence, since lobar pneumonia was mostly fatal by reason of complications. Clinically lobar pneumonia was common in children. Insufficient stress had been laid on the fact that lobar pneumonia was an acute specific fever, and that the local lesion in the lung bulked less largely in the picture than in broncho-pneumonia. Vaccine treatment might be worth while if begun within the first three days of the attack, in which period it was free from risk. In one case a massive dose of 10,000 million pneumococci, streptococci, and influenza bacilli was accidentally given to a patient on the second day of an attack of lobar pneumonia, with the only effect that the temperature fell to normal on the next day, and there was a corresponding improvement in the patient's symptoms. While many cases of lobar pneumonia untreated by vaccines were of very short duration, the occurrence of the abortive type appeared to be more frequent over a large series of cases treated by vaccines. He had tried the subcutaneous injection of oxygen in seven cases of pneumonia, but had not been convinced that this method had any special merit. He had also given sodium nucleinate, but had not obtained improved results.

Dr HELEN MICKLE (London) said that if the incidence of diseases of the upper respiratory tract, which were so prevalent amongst city children of the working class, could be lessened, there was little doubt that the incidence of broncho-pneumonia would also fall. Some years ago she had realized the close association between respiratory disease and an inadequate supply of vitamin D in the diet, and the possibility of lessening the frequency of catarrhal conditions by the administration of cod liver oil in the winter. There were under observation in Vienna at that time two groups of infants, one of which received cod liver



oil. The difference in the frequency of respiratory infections in the two groups was very striking during the winter, but during the summer, when all the children were much out of doors, vitamin D consequently being produced in the patients' own tissues there was little difference between the susceptibility to catarrhal infections of the two groups.

The President felt that the high mortality of pneumonia in young children did not redound to the credit of the profession, and that more active measures were necessary. He strongly recommended immunisation as a method of treatment in urgent cases of infective disease.

## THE HISTORICAL ASPECT OF QUACKERY \*

BY

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THE term quack simply means one who pretends to knowledge or skill that he does not possess, and the fact that this term has come to signify in popular usage a pretender to medical knowledge indicates very clearly that there is something about the cure of disease that particularly attracts both delusion and imposture.

The quacks who prey upon human suffering are actuated by a variety of motives the simplest of which is frank greed, and to it we owe the semi-permanent commercialized quackery of so-called patent medicines. Among the ordinary quack medicines are sensational examples of the utter carelessness and recklessness of those who seek to exploit human suffering for gain and also remarkable evidence regarding the unlimited gullibility of the general public, but these traits are exhibited in many other fields of human activity and therefore have no specific interest to students of medical history. There are, however, other aspects of quackery which I believe deserve the attention of medical historians, not because their study throws any light on the history of the development of medical science, but because it provides evidence regarding the reaction of the popular mind to the spread of this science.

The question that I wish to consider is very general, public so often turns away from the medical profession and follows quacks who pretend to the possession of cures unknown to medical science. Such pretenders usually claim direct personal inspiration and in consequence assert complete independence of medical science. The nature of the cures is so varied as to defy classification, but usually their freedom from the fetters of science causes them to be cures applicable to all diseases.

Prior to the seventeenth century the occurrence of such revolts from official medicine was not surprising for orthodox medicine was based not on experimental science but on the authority of Galen, and the recognition of any infallible authority naturally arouses the opposition of all those who wish to think for themselves. Many revolts of this nature led to valuable results because they favoured the testing of the tenacity of dogmas held to be infallible. The career of Hahnemann, however, is a striking example of the way in which a rebel against authority who commences with an appeal to reason may finish by establishing a dogmatic faith even more absurd than the orthodox traditions he tried to explode.

Prior to the nineteenth century the quack might claim that he was merely asserting the authority of his ideas against the weight of tradition, but during the nineteenth century medicine has broken away from tradition and to-day claims to be an applied art based on experimental science. This change has been accompanied by an unprecedented increase in the efficacy of medical methods and hence to-day the quack challenges not tradition but the findings of experimental science.

Another outstanding feature of the nineteenth century was the spread of popular education and many imagined that this alone would be fatal to quackery. The fallacy of this belief is, however, well illustrated by the experience of the medical profession in Germany. The laws of Prussia

forbade the practice of medicine by unqualified persons but in 1869 general liberty to practise was granted. This change was indeed supported by the physicians partly on the ground that the repressive legislation was ineffective, but also partly because it was believed that the spread of popular education would safeguard the people from being deceived by quacks. The number of quacks in Germany is known because they are required to register and their number has steadily increased until to-day the proportion in Berlin between quacks and medical men is one to three and a half, the proportion throughout the whole of Prussia is nearly one to four.

In consequence the German medical profession is now agitating to induce the Government to protect the health of the people by restricting the activity of quacks. Since Prussia is one of the best educated nations in Europe I think this is a very striking evidence of the fact that the spread of education does not influence the popularity of quackery, although it may influence the form which it assumes.

The activities of the quacks therefore have not been checked by the dramatic successes of medicine nor by the spread of popular education. At the same time there is a considerable amount of evidence to indicate that while the medical profession has become more scientific and more successful it has also become increasingly unpopular with the masses. The last century has seen the development of numerous popular agitations against medical science, such for example, as the antivaccination and antivivisection movements, and there is no evidence that the popularity of these causes is decreasing. This opposition is not confined to the uneducated but finds its leaders amongst those who claim to be pioneers of advanced thought.

The present situation is indeed rather curious, for while medical science has advanced from triumph to triumph and is ever now steadily increasing its powers to combat and control disease, yet a large section of the population appears to regard the profession with distrust and to turn eagerly to any charlatan, however ignorant, who claims to claim that he possesses special or supernatural powers of healing.

A consideration of the careers of the outstanding charlatans furnishes some clue to the factors upon which their success has depended. The common type is that of a man of unusual force of personality who in virtue of an imperfect education and ill-balanced judgement has acquired the profound belief that some direct inspiration has made him independent of the slow advance of science and has endowed him with semi-miraculous powers of healing. The list of these persons is long. A hundred years ago Perkins persuaded millions that all disease could be cured by stroking the body with two pencils of metal while to-day the followers of Abrams believe that all diseases can be both diagnosed and treated by means of two boxes containing some simple electrical apparatus.

In addition to the cures that achieve a fame there are of course an indefinite number that fail to catch the public fancy, and it is puzzling to know what are the factors that cause success, for often the failures appear to be much more ingenious and attractive than the successes. The reason appears to be that reason is not involved in the process but that the initial success depends on the personality of the healer and subsequent success is ensured by mass suggestion. The reason for the successes is that these mysterious cures provide what the public want for they furnish an escape from science and a line of retreat back to the old primitive beliefs of the cave man. The facts regarding the fundamental beliefs of mankind have been summarized by Sir James Frazer.<sup>1</sup>

When we survey the existing races of mankind from Greenland to Tierra del Fuego or from Scotland to Singapore we observe that they are distinguished one from the other by a great variety of religion. When we have penetrated through these differences which affect mainly the intelligent thoughtful part of the community we shall find underlying them all a old statement of intellectual agreement among the dull the weak the ignorant the vast majority of mankind. This universal faith this truly catholic creed is a belief in the efficacy of magic. Among the ignorant and superstitious classes of modern Europe it is very much what it was thousands of years ago in Egypt and India and what it now is among the lowest savages surviving in the remotest corners of the world.

\* Read in the Section of the History of Medicine at the Annual Meeting of the British Medical Association, Edinburgh 1927.

<sup>1</sup> The Golden Bough. Abridged edition 1925 p. 55.

It is in this universal and eternal creed that the Christian finds his support. In a civilized community the belief in magic is concealed beneath the veneer of education and does not obtrude itself in normal life, but the veneer cracks as soon as any strong emotion is aroused, and both pain and fear of death are potent causes for arousing such emotions. The exaltations of science are utterly antipathetic to the sick person, who resents being regarded as a "case" for whom the chances of recovery are so many per thousand. The more intelligent turn to religion and to spiritual healers to appeal to some higher power to intervene on their behalf and set aside the soulless laws of nature that are threatening their safety.

The less intelligent revert to the oldest form of belief and seek someone who will make strong magic for them and defeat the evil spirits by some potent charm. This is the feeling to which the quack appeals, he claims to be above the laws of science and to possess some charm for defeating disease of any variety.

The nature of the charm changes with the growth of education. A naked nigger howling to the beat of a tom-tom does not impress a European, and most modern Europeans would be either amused or disgusted by the Black Mass that was popular in the seventeenth century. To-day some variety of physical science appears to be the most popular form of incantation. But although the form is changeable yet the underlying belief is unchanging and ineradicable, and I think that the medical profession must face the fact that, although their alliance with science has brought them great material success, yet it has brought its special penalty in that it is ever alienating them to an increasing degree from the fundamental beliefs of the common man.

## THE TREATMENT OF BURNS

BY

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It is highly advisable from time to time to review our doctrines on treatment, even the most orthodox. We must be ever on the watch for discoveries in collateral science which may be applicable to our own. Many conundrums are waiting for their solution the preliminary discovery—Pain must precede Lister. In the case of burns we are confronted by several problems.

### Pain

Anyone who has been at all severely burned will at once assert that the only problem in burns is the relief of pain, and that in the quickest possible time. I readily agree that it is the most important part of the subject. If this were the only item to be dealt with there would be no difficulty, but our remedies to ensure immediate mitigation of the disaster must not endanger the future for the victim. Fortunately the perception of pain is limited by exhaustion of the nerve centres, and most of those fatally burned are ominously comfortable during the brief interval between the accident and death.

Children are peculiarly susceptible to injury from burns, and most of us have been shocked by an unexpected fatality from a trivial burn. The much disputed status of hamphlets (in the absence of more precise knowledge) brings an otherwise unwarmed death into line with other injuries. The resistance to toxæmia is in those cases much lowered, the fatty degeneration of the liver frequently found at the necropsy may have some bearing on the fatal issue.

For the majority of patients who recover extensive resort to sedatives is necessary, and it is of great importance that their remote general effects be closely watched. I might suggest that the prolonged administration of chloroform, not as an anæsthetic but as an anodyne, may be less toxic and dangerous than the corresponding amount of morphine. The inhibition of a diluted vapour may be allowed for long periods, and may be safely carried out by a trustworthy nurse.

The surgeon's visit to a ward containing the victims of burning is evidently a time of trial to the patients, they

clamour for chloroform, morphine, and death. I know of no condition which occasions such an accumulation of suffering in a single ward. The remedies we employ will require to be many-sided, more than one effect being demanded. For example, while a remedy may be soothing, it must not encourage suppuration or discharge. In exceptional instances an extensive burn is tided over the period of initial shock, and the subsequent treatment becomes daily more onerous. For these patients the continuous bath, where circumstances will permit, is a satisfactory plan, unfortunately in only a few cases can it be made available. Next to the principle of relieving the pain, the exact nature of the first dressing is of importance. Where bullæ are present it is not my practice to drain them, the effused serum being the best covering possible, when they show signs of pus formation they should be emptied. Spraying the area involved with a solution and covering it with an oily and bland substance are procedures which have rightly found a lasting place in treatment. I would suggest the value of covering the scorching surface with waxed paper, angles may be cut to allow of the discharge reaching the dressing. Such waxed paper may be sterilized without detriment. A thick tissue paper soaked in eucalyptic oil may be also similarly used.

There are few cases where good nursing is more rewarded, extreme gentleness in handling is demanded, and the raw surface should never be wiped with gauze, any discharge being washed off. I firmly believe that the pain associated with a burn, in all but the final stage, is the cause of most of the trouble met with, hence applications which relieve pain will give better results, even remotely. Thus alcohol has achieved some reputation as a suitable application, its effects are not due to its antiseptic action, but to its anæsthetic action on the nerve endings and to its dehydrating properties. The possible precipitating effect on toxins can be ignored. In picric acid we have another remedy which is very effective, not altogether because it is an antiseptic, but because it is an analgesic, and also because it coagulates albumin. By thus causing the production of a layer of sterile albumin which is at the same time emitting analgesic properties a very good effect is produced. Picric acid is one of the scheduled explosives, and can only be procured in solution or in gauze. It may be applied in a saturated solution, but should not be spread too extensively because of its own poisoning properties. Toxicity may be recognized by the onset of fever, accompanied by a rise in pulse rate and the production of a widespread itchy miliary rash. The urine becomes green tinted as in carbolic acid, and there is much general distress. After mitigating the pain future contingencies must be considered.

### Shock

The treatment of this accompanying condition should be conducted along recognized lines. Repeated small doses of opium or morphine with oral administration of alcohol should be given. If alcohol is being extensively applied as a dressing some will be absorbed, so it need not be given otherwise. In a burn the central nervous system is stimulated to the point of exhaustion, and there is no want of explanations for many of the associated phenomena.

### The Body Fluids

It has been shown that the blood tends to become—first at any rate—concentrated and less alkaline, as well as to contain more waste products. The symptoms have been explained as being largely due to absorption of substances produced in the tissues by the destructive action of the heat, but this cannot be merely a chemical reaction. Some time ago in attempting to get protein shock I injected the products of partial destruction by heat of animal tissues, but neither intravenous nor intracellular injection caused the slightest effect. It is also affirmed that the chlorides are reduced as in pneumonia, and indeed in many other diseases. A diminution in the chlorides is usually associated with an alkalosis. From whichever point of view the subject the essential treatment, whether acidosis or alkalosis be present, is the administration of fluid, this may be loaded with alkalis or sodium chloride. I do not think it matters which—provided we introduce fluids into the circulation.

\* Read in the Section of Surgery at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

### Sepsis

Some degree of sepsis is inevitable. The damaged surface is less able to resist either a fresh invasion or the growth of organisms unscathed by the heat. Powerful antiseptics cannot be applied, nor can weak ones be frequently used. In many cases the attempt to apply a theory may do more harm than good; hence digressions from established authority should be very carefully introduced. I know of no better antiseptic for a burned surface than normal sheep's or horse's serum; the cost is its only drawback. Pneumonia, which accounts for many of the deaths after burns, is probably a manifestation of sepsis, and is produced by a septic embolism.

### Duodenal Ulcer

This is in my experience, incidentally rarer among the burned than among those not so affected. I have never seen one case in patients suffering from burns. It is more the figment of the imagination of the student going in for an examination.

### Surgical Intervention

In many cases we do not apply the principles of surgery early enough. At first burned patients are unable to sustain further wound into their vitality, and later on it is sometimes forgotten that surgery may improve the outlook both as regards immediate morbidity and ultimate appearance. Where a limb has been almost denuded of skin only amputation is indicated. Short of this it will be found in many cases—and this is the experience of most of us—that an ulcer produced by surgery is much less severe than one resulting from a burn. It is the uncertainty of our judgement regarding the vitality of the section of burned surface which makes us hesitate to resort to extensive excision. It is often surprising how many islets of epithelium appear among the granulations after the slough of what we considered to be the entire thickness of skin has separated. Even though we may finally have larger areas to epithelialize than would have formed without excision we certainly lessen suffering very materially. I think the tendency hitherto has been conservative. Simultaneously with the excision provision should be made for grafting. Large ulcers are to be treated upon general lines; the longer they remain the greater will be the tendency for contractures to occur. On the other hand acquiescing in the production of a contracture may result in a rapid obliteration of the ulcer, yet such a contracture should not be allowed to develop, but the ulcer should be healed by other means.

### Grafting

Successful grafting requires careful preparation of the field; indeed until the septic process has ended grafting should not be undertaken if the Thiersch or Wolff method be adopted. Many years ago I introduced a method of grafting to which the name of 'tunnel grafting' was given; it can be applied at an earlier stage than any other and has a high percentage of successes. Narrow grafts are embedded under the surface and their locality marked by lying alongside them suture threads. After allowing for their taking root, which occurs in about ten days the covering surface is removed so as to expose the grafts completely. On account of the close resemblance of the granulation tissue developed to sarcomatous tissue in its destructive effects a thin epithelial covering is almost certain of being destroyed from time to time. This feature of constantly recurring ulceration must be familiar to all; hence a solid covering is essential if healing is to be permanent. It is interesting to note that if embedded grafts are left for any length of time under or in the granulations they entirely disappear. This is a usual phenomenon; otherwise operation implantation grafts would be commoner.

As an aid to the spread of epithelium scarlet-red applied in an ointment is a very decided stimulant. Where serious grafting is required the pedicled graft is best; it is often noticeable that sepsis tends, when these grafts are freed to light up the process of ulceration. The development sometime is the cause of failure in grafting for the relief of contracture even in cases long since healed. It would

seem that cicatricial tissue is capable of retaining encysted within its meshes, infection in an active state. The development of keloid is one evidence of such a power.

In considering burns generally we nearly always have in our minds the effects of heat, yet cold chemicals, ultra-violet rays in sunlight direct or reflected from snow or those produced electrically, induce similar disturbances. Another form of burn fortunately now less common, is that produced by radium and x-rays. Burns so caused show great resistance to healing and their tendency to become malignant is well recognized. Occasionally when an ordinary burn has been allowed to pass into a chronic ulcer malignancy may become engendered.

### DISCUSSION

Mr W. C. WILSON (Edinburgh) gave his experiences with tannic acid in the treatment of 37 cases of burns in children. He said that at the stage of initial shock tannic acid was beneficial in that it promoted a rapid and complete analgesia. In the stage of acute toxæmia the main indication was to prevent absorption of the toxin, in this respect the action of tannic acid was striking and valuable for by coagulating the tissue at the burnt area it prevented absorption of toxin into the blood stream. In the stage of septic toxæmia tannic acid by providing a firm, dry covering to the wound minimized the incidence of sepsis; it also protected the growing epithelium and promoted rapid healing. Primary shock was treated in the usual way—a small dose of morphine being given if necessary. No general anaesthesia was employed. The burnt areas were cleansed rapidly with ether. A freshly prepared solution of 2½ per cent. of tannic acid in warm sterile water was sprayed over the burnt areas at intervals of an hour and the application was dried by electrical heat. This was continued until a brownish black coagulum formed (eight to twelve times). The bed clothes were eradicated and the parts exposed to the air during this time and until the coagulum was removed. While spraying the face, the eyes, ears, and nostrils must be protected. Slides were shown to illustrate the effect of treatment on mortality, the prevention of acute toxæmia, and the improvement in prognosis thus obtained.

Mr STEWARD (London) agreed that tannic acid gave excellent results. He preferred to make a careful toilet under anaesthesia at the beginning of treatment.

Mr R. M. MANNING WHITE (Northwich) said that the three essentials of relief in burn treatment of shock and prevention of sepsis were obtained by using the pomade of Reclus which contained phenazone, salol, boric acid, iodolorm, phenol, mercury perchloride and vaseline.

## A CASE OF ABNORMAL FAT METABOLISM

BY

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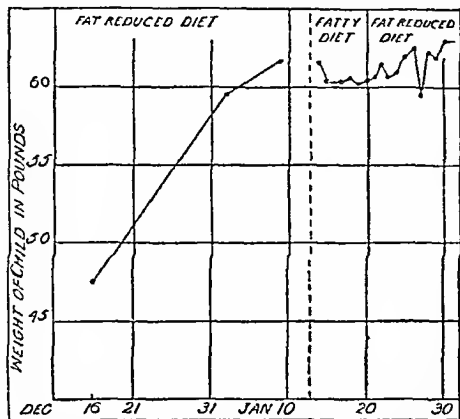
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THE clinical symptoms in the following unusual case suggested some defect in fat metabolism and in the hope of ascertaining its nature a thorough investigation was made; the results though they did not explain the mystery seem worthy of record.

A girl aged 15 was sent to hospital because her mother had noticed progressive loss of weight for two years; she had not seemed ill, her appetite was uniformly good, her bowels were open naturally, and she was quite ordinarily energetic though during the last few months she had been apt to tire easily. The mother had given the child various tonics, and had persistently tried to feed her up with cream, milk, and cod-liver oil; these extra fatty foods were taken readily and with aversion was born to any particular foodstuff. Menstruation had not started. There had been no previous illness of note.

When admitted, on December 15th, 1926 she was a small, bright, fresh complexioned, alert child, weighing 47½ lb (the normal weight for a girl of 13 is 87 lb), lips and skin rather dry, tongue clean and moist, teeth good. The heart, lungs, abdomen, and central nervous system were all normal. With the exception of the face, which appeared normal, there was throughout the entire body an almost complete absence of all subcutaneous fat, the muscles standing out under the skin as in wasting disease. This was more noticeable in the arms, thorax, and abdomen than in the legs. The muscular power was unimpaired. The urine was normal as were the stools, both to the naked eye and to microscopical and cultural examination. Clinically it seemed probable that there was some defect in fat metabolism and it was decided to try a diet in which the fat content should be materially reduced, the effect was dramatic, as is shown on the accompanying graph.



The sudden temporary drop in weight on January 27th was due to polyuria following a sugar tolerance test.

From a study of the child's weight in relation to the diet it soon became clear that on an ordinary mixed diet the weight slowly but steadily decreased, but that when the fat intake was restricted (by no means completely) there was a rapid gain in weight, amounting in one period of twenty-five days to 14 lb 6 oz, and in a later period of ten days to 2 lb 3 oz. From the clinical findings it was very difficult to suggest any hypothesis to explain these facts, so certain investigations were made to see if any light could be thrown on the cause of the abnormal metabolism. The following figures were obtained.

December 22nd (fat restricted diet) Blood sugar 0.0798 (Shaffer-Huitman) Plasma cholesterol free, 0.04904 per cent, ester 0.07224 per cent, total, 0.1213 per cent. Percentage of total as ester, 59.8. Total solids of plasma, 9.338 per cent.

January 26th (fat restricted diet) Glucose (25 grams) was administered and the sugar tolerance test performed. This showed blood sugar, 0.104, after half an hour, 0.126, after one hour, 0.155, after one and a half hours, 0.150, after two hours, 0.102, after two and a half hours, 0.093.

January 27th Urine analysis Volume in twenty-four hours, 1,095 c.c.m., specific gravity 1.0167, total nitrogen, 0.84 per cent, free ammonia, 0.032 per cent, urea, 1.325 per cent. Sulphur excretion was as follows:

	Grams per day	Normal for adult per day
Inorganic, as SO <sub>4</sub> , 0.103%	1.1865	—
Ethereal, " 0.0171%	0.1873	0.2 gm
Neutral, " 0.0295%	0.3233	0.2 gm
Total	1.6971	1.3 gm

Total N/total SO = 5.32, normal = 5

The analysis of the urine was made on the day following the sugar tolerance test, the twenty-four hour volume being as stated. The average daily volume was about 600 c.c.m.

The respiratory quotient was also determined during the period of restricted diet, at intervals after a meal consisting of 4 oz of meat, 2 oz of greens, 3 oz of potatoes, 1/2 oz of bread, 4 oz of tapioca pudding, and a glass of water. The respiratory quotient was determined on ten minutes samples of expired air, using a Douglas bag. The patient was quiet throughout the experiment and breathing normally. The meal was taken at 11.45 a.m. At 2 p.m. the respiratory quotient was 0.87, at 2.30 p.m. it was 0.87, and at 3 p.m. it was 0.86.

Fat balance experiments were also made over two periods of three days each. In the first period (December 17th to 19th inclusive) the diet was restricted as regards fats by omission of butter and eggs and by using lean meat. In the second period (January 17th to 19th inclusive) the patient had an ordinary diet including 2 oz of butter, 4 oz of milk, milk pudding, and one egg. On each occasion the same diet had been given for a few days previously and was carefully measured. Duplicate diets were collected throughout and also the faeces during the seventy-two-hour periods.

The whole of the food with the exception of the fluids and the butter, which were separately estimated, was dried and ground in a mill and a portion of the thoroughly mixed meals so obtained was analysed. The sterol balance was also determined. During the second period on the non-restricted diet, a nitrogen balance was also ascertained by analysis of the faeces and urine. The results were as follows:

Fat-restricted Diet (December 17th to 19th)		Fatty Diet (January 17th to 19th)
<b>Fat Balance</b>		
Fat intake	176.475 gm	241.86 gm
Fat output in faeces— 1st and fatty acids Soaps	2.929 0.693 } 3.619 gm	19.89 0.69 } 20.58 gm
Fat absorbed in three days	172.856 gm	221.16 gm
Fat absorbed in one day	57.618	73.70
Utilization of fat	98 per cent	91.56 per cent
<b>Composition of faeces—</b>		
Total other extract	2.929 gm	19.89 gm
Free fatty acid as palmitic	1.31	4.01
Unsaponifiable matter	1.593	1.91
Neutral fat	0.035	14.91
<b>Sterol Balance</b>		
Intake of sterol	1.1734 gm	1.1685 gm
Output of sterol	0.6152	1.0938
Difference	+0.5582 gm	+0.0147 gm
Difference per day	+0.186	+0.049
<b>Nitrogen Balance</b>		
Intake of food	—	20.78 gm
Output in urine	—	25.77 gm
Output in faeces	—	3.61 gm
Difference	—	-0.60 gm
Difference in one day	—	-0.23

### Comment

These investigations on the whole yielded normal figures. The blood sugar, total solids, and cholesterol of plasma were normal, as also were the respiratory quotients. One noteworthy figure was the high value for neutral sulphur in the urine, which is generally considered an expression of the endogenous protein metabolism.

The nitrogen balance during the unrestricted diet period showed an insignificant increase of output over intake, corresponding in direction with a slight loss in weight during that period.

The fat balances were interesting inasmuch as they showed the completeness of the fat splitting and the fat absorption from the alimentary canal. The sterol balances show a remarkable agreement with the change of the patient's weight in the two experimental periods. During the first period the excess of intake over the output was 0.186 gram per day. The gain in the patient's weight at this time averaged 307 grams a day, and if we take an average figure of 0.06 per cent for the sterol content of body tissues this would correspond to a utilization of 0.184 gram. During the second period, when there was a very slight loss of weight, the sterol balance was almost exact, the actual figure for the difference of intake and output being within the limits of experimental error.

It is very difficult to draw any conclusions as to the nature of the anomalous metabolism. Clearly the error was not one of intestinal malabsorption of fat. The clinical improvement was dependent on only a moderate restriction of fat intake from 80 grams a day to 59 grams. The respiratory quotient, determined after a mixed meal, and the evidence relating to the carbohydrate metabolism threw no light on the mystery. In the use of the two diets, in one case approximately 58 grams of fat was absorbed a day and in the other 74 grams. This latter certainly represents an unnecessarily high fat intake, but does not correspond to such marked increase of the fat to carbohydrate ratio as to suggest any failure in the efficient metabolism of fat from this cause. Acetone bodies were never found in the urine, and the glucose tolerance was quite normal.

It is to be remembered that when the observations were commenced the child was markedly under weight and the restriction in the fat intake allowed her to become more nearly normal. At a later date the ingestion of a fatty diet again caused loss of weight and appeared to act as metabolic poison. This excess of fat was well absorbed, and throughout the experiments there was no failure of alimentary function. From our evidence it seems impossible to explain why a high fat intake should interfere with the normal deposition and storage of fat in the body tissues.

## A STUDY OF EPHEDRINE

BY

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Ma Hsing has been identified as *Ephedra vulgaris*, var. *helicifera*. It is a low dioecious practically leafless shrub, 60 to 90 cm high. The stem which is green, ribbed, and channelled is the part sold in Chinese drug stores. It is usually cut into pieces, 1 to 1.5 cm long. Ephedrine, a natural secondary amine, is the physiologically active constituent and can be easily isolated from the plant by immiscible solvents. It was first discovered by Nagai in 1889 and its structural formula has been studied by different observers.

## The Action of Ephedrine

Our preliminary reports have shown that ephedrine possesses sympathomimetic actions and that its outstanding feature is its circulatory stimulation.

(a) *On Circulation*—An intravenous injection of ephedrine in an anaesthetized dog or cat always results in rise in blood pressure and increase in pulse rate for fifteen or more minutes. The site of action is not in the central nervous system for destruction of brain and cord does not prevent the rise in pressure. The acceleration of pulse is not due to depression of the parasympathetic system for atropinized animals respond just as well as non-atropinized, and in fact, the pulse is usually decreased in non-anaesthetized animals. Unlike adrenaline the rise in pressure is not due to peripheral constriction, for intestinal and kidney volumes are often passively increased. Application of the drug directly to the stellate ganglia causes a marked increase in rate and strength of cardiac contractions, but only little rise in blood pressure. When ephedrine has produced maximal cardiac stimulation by local application to the stellate ganglia, or when the latter are paralyzed by intravenous injection of nicotine, ephedrine given intravenously still elevates the blood pressure in the usual manner. It appears clear that the rise in blood pressure is mainly due to the stimulation of structures peripheral to the sympathetic accelerator ganglia—sympathetic junction or the muscle itself. Since ephedrine acts on the nervous structures of other muscular organs it is probable that it does the same thing here.

(b) *On Smooth Muscles*—The action of ephedrine on smooth muscles follows very closely the sympathetic innervation. Thus the pupils are dilated by the application of ephedrine to the conjunctival sac. The light reflex is retained and physostigmine causes prompt miosis. Bronchial spasm due to physostigmine is rapidly relieved by ephedrine. The isolated gut is inhibited and relaxed, the vessels of the perfused kidney show definite and prolonged constriction and strips of rabbit's uterus suspended in Tyrode's or Locke's solution undergo one or more powerful contractions when ephedrine is added. The site of action is apparently only concerned with the terminal nervous structures for direct application of ephedrine on respective ganglia or nicotization to paralyze the latter, does not alter the subsequent action of ephedrine.

(c) *On Secretions*—Ephedrine causes increase in secretion of several organs. In anaesthetized dogs urine and lymph are found to be constantly increased, submaxillary and pancreatic secretion usually augmented while sweat is not affected, by ephedrine. In non-anaesthetized dogs in which a Pavlov or Heidenhain pouch is made the gastric secretion is found to be definitely increased by subcutaneous injection of ephedrine. Free and total hydrochloric acid rises at the same time. Intestinal juice and bile do not start to flow after ephedrine in dogs with Thiry-Vella and bile fistulae respectively, but pancreatic juice is sometimes increased in those with pancreatic fistulae. In all cases except the submaxillary gland when ephedrine exerts influence the results may be probably referable to the changes in circulation.

(d) *Absorption and Toxicity*—Circulatory effects are immediately shown by intravenous injection, less rapidly by intramuscular or subcutaneous injection or by the mouth. Intraperitoneal injection is also effective. The

minimal effective dose in anaesthetized dogs is as small as 0.25 mg. The minimum lethal dose varies in different animals and with different methods of administration. In frogs, when injected into the anterior lymph sac, it lies between 600 and 650 mg per kilo of body weight. By intravenous injection the MLD in white rats is 140 mg per kilo of body weight, in rabbits 70 mg per kilo, in cats 75 mg per kilo, and in dogs 70 mg per kilo. By intramuscular or subcutaneous injection rabbits can tolerate a much larger dose than the MLD and by daily repeated intravenous injections they can stand a dose 840 times the MLD without any pathological changes. There is no doubt that this drug has a low toxicity.

## Ephedrine in Experimental Shock and Haemorrhage

In anaesthetized dogs, ephedrine raises blood pressure in haemorrhage and experimental shock induced by histamine, peptone, anaphylaxis or surgical violence and trauma. The rise in blood pressure is permanent under favourable conditions, and its effect is due to cardiac stimulation and not to arterial constriction. Ephedrine fails to act when the heart becomes impaired or respiration ceases, or the degree of shock is too extensive, or when haemorrhage exceeds 25 per cent of the total volume. It has however, no harmful effects. Clinical use can probably be made in the early stage and in mild forms of shock, or as a prophylactic drug against surgical shock in long operations.

## Clinical Uses

Ephedrine can replace adrenaline in several instances.

(a) *In Hypotension*—The only case of hypotension studied was that of Addison's disease in which intramuscular injections of 100 mg of ephedrine twice daily raised blood pressure from 70/40 mm to 110/68 mm Hg for about two hours and by mouth a single dose of 150 mg maintained the pressure at a high level for over twenty hours.

(b) *In Asthma*—As a broncho-dilator ephedrine appears to be very efficient. In five cases treated the results were most convincing. 20 to 150 mg given intramuscularly never failed to relieve asthmatic attacks completely. The effects come on usually within fifteen minutes at the same time as blood pressure rises. In one case adrenaline was administered before ephedrine but the patient's dyspnoea did not totally disappear until the latter was used. This is considered a temporary relief although none of our treated patients have come back with recurrence of their complaint.

The good features of ephedrine can be most conveniently summarized as follows:

1. Ephedrine is chemically stable, age exposure to light, or boiling does not alter its action.
2. It has a persistent and uniform action in contrast with that of adrenaline.
3. It has a low toxicity. The margin of safety is unquestionably very wide.
4. It can be given very conveniently either per os or by intramuscular injection. There is no local irritation.

## Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL

## ESSENTIAL HAEMATURIA

The following details of a case of essential haematuria which occurred in Wuchang, Central China in June 1926 seem to me to be of sufficient interest to merit publication.

A young and otherwise healthy man aged 29 with a negative family history for kidney trouble or any kind had one attack of albuminuria in Egypt in 1917. This was thoroughly investigated radiologically and cystoscopic examination were made without result and no tubercle bacilli were detected. The right kidney only was affected and the albuminuria was thought to be connected with a concurrent attack of appendicitis. The appendix was removed in 1919 and showed sign of previous inflammation. The first attack of haematuria occurred at the end of June 1926. The shade temperature was about 99°F and the patient was working a high pressure mentally and physically but feeling fit. He first noticed blood in his urine after a strenuous game of tennis followed immediately by a cold bath. The urine remained red that day but the following milder—it was much



clearer, and the next day apparently normal. He took his temperature and found it to be normal, and therefore concluded that there was no malaria. He had no pain or general symptoms, and did not have medical advice.

The second attack occurred ten days later, after strenuous physical exertion when the temperature was high. He had been moving boxes up and down stairs, and again had a cold bath in accordance with his habit at that time. The attack was precisely similar to the first and elevated up without treatment.

Shortly after this the patient left the plains and went up some 4000 feet into the hills, where the temperature was about 55° F. He arrived in a state of collapse, due to over exertion and an attack of enteritis on the journey, he slept for thirty six hours after his arrival, and recovered without other treatment than rest and dieting for a few days. There was no haematuria.

The third attack of haematuria occurred after he had been in the hills for three or four days. There was no assignable cause for this attack, which lasted two or three days. He returned to Harrow, where the temperature was unusually high at that time, the haematuria reappeared at once. Microscopical examination of the urine showed the presence of blood cells but nothing further. A radiological examination was negative. Cystoscopic examination revealed a normal bladder and blood stained urine issuing from both ureteric orifices. Ureteric catheterization showed that both kidneys were bleeding. Urine was collected separately from each kidney and examined, and separate injections were made into guinea pigs. Both of these died, one after a few days, and the other after three weeks, but no tubercle bacilli were found at the necropsies. The bleeding was profuse after catheterization, but began to clear up the same day without treatment, it has not recurred up to date. The patient felt quite fit throughout.

This case appears to me to deserve consideration because, in three out of the four attacks, the onset was definitely associated with a sudden change of temperature. In the first two attacks a high temperature was rapidly lowered by cold baths, and in the fourth the patient went from a comparatively cool climate to a very hot and humid one in an hour and a half.

It is obviously impossible to generalize from a few attacks in one patient, but the case is of interest in suggesting a possible type of cause in some cases of unexplained haematuria.

For permission to publish notes on the examinations made in Harrow I am indebted to Dr. Robert And.

Waldon, Essex

NORAH TREGEAR, M.B., B.S.

### NOSE BLEEDING TREATED BY MORPHINE

I desire to draw attention to the fact that hypodermic injection of morphine quickly controls bleeding from the nose, irrespective of the cause. The following cases illustrate some of the types of nose bleeding in which it has been found of use. In none of them could a local cause of the bleeding be found.

*Case 1*—A married woman, aged 30, six months pregnant, began to suffer from profuse bleeding from the nose at about 9 p.m. She was so extremely nervous that it was impossible to plug even her anterior nares, and all other methods of treatment were of no avail. Twenty minutes after the injection of 1/4 grain of morphine the bleeding had ceased and she had a good night's rest (which would have been unlikely with plugged nares).

*Case 2*—A married woman, aged 60, when recovering from influenza had for several hours slight bleeding from the nose, he bleeding became extremely profuse, and showed no diminution in spite of applying the usual remedies, including adrenaline, but fifteen minutes after injection of 1/4 grain of morphine it had completely stopped.

*Case 3*—A married woman, aged 55, suffering from chronic interstitial nephritis, began to suffer from fairly profuse haemorrhage about 6 p.m. She objected at first to hypodermic injection, but as 1/4 grain of morphine by the mouth had no effect she consented to an injection of haemoplastin (a haemostatic serum) at about 10 p.m. As the bleeding had not stopped by midnight she was given an injection of 1/4 grain of morphine and within half an hour the bleeding had stopped and she spent a good night. It is quite possible that a second injection of haemoplastin would have stopped the bleeding, but it was impossible to obtain more at that hour of the night.

*Case 4*—A man, aged 22, suffering from congenital heart disease, had bleeding from the teeth and nose. There was no history of injury. All the usual remedies had been tried, but without success. The bleeding stopped half an hour after the injection of 1/4 grain of morphine into one arm and haemoplastin into the other. It began again after about twelve hours, and he was given an injection of 1/4 grain of morphine only, the bleeding stopped but recurred next day, it ceased permanently after a further 1/4 grain of morphine given hypodermically.

In all cases the morphine was combined with 1/150 grain of atropine.

Dublin

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### APPARENT INFECTIVITY OF CANCER

General practitioners have often held beliefs which were not confirmed by contemporary research workers, though many such beliefs have since been found to be correct. On the vexed question of the causation of cancer I think most practitioners consider

(a) That cancer is an infection—that is, caused by micro-organisms or organisms.

(b) That there is a predisposing factor, particularly a hereditary predisposition, or a vocational predisposition.

(c) That cancer is communicable, directly or indirectly, from one person to another.

(d) That they therefore regard the spread of cancer from pretty much the same standpoint as that of tuberculosis.

The following is a type of the train of incidents on which these opinions are based.

Mr. X was an indulgent pipe-smoker, renewing an attractive and expensive type of pipe every few weeks. He had business dealings with A, B, and C, all fellmongers, and presented each with one of these used pipes. Unknown to all concerned Mr. X was suffering from cancer of the stomach, and died within a year. Within the next two or three years A, B, and C all died of cancer—A of the tongue and jaw, B of the stomach, and C of the bowel. One of A's family has subsequently died of cancer, another of so-called acute pancreatitis, while two surviving members are suffering from duodenal stenosis, a condition which is common in this area.

I leave the reader to make his own deductions.

J. MACLEOD, M.B., Ch.B. Aberdeen

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### ACTINOTHERAPY IN JOINT TUBERCULOSIS IN CHILDHOOD

At Alder Hey Hospital actinotherapy has been used in the treatment of tuberculosis of joints in children during the past twenty months. The type of lamps and the technique of treatment used are as follows.

The open framed carbon arc consuming 35 amps at 230 volts, general body baths exposure at a distance of 30 inches for periods commencing at five minutes and increasing to one and a half hours, a similar lamp fitted with tungsten molybdeno-coated carbon electrodes consuming the same current, general body baths at a distance of 33 inches for periods of two minutes increasing to ten minutes. Treatments were usually given three times a week.

In estimating the effects of any treatment in joint tuberculosis in childhood it must be borne in mind that the majority of patients recover under suitable hygiene and dietetic conditions, for example, in a series of 1025 cases of tuberculous hips treated without actinotherapy the case mortality was 7.5 per cent.

All our patients were under 16, they were treated on open-air balconies, and were given cod-liver oil and a diet rich in fats. Spinal and hip cases were immobilized by spinal and abduction frames, and knee cases with Thomas bed knee splints.

Hip cases (20)	Improved	Worse	No change
With actinotherapy	2	5	6
Without actinotherapy	4	3	—
Spinal cases (17)			
With actinotherapy	4	3*	—
Without actinotherapy	6	3	1
* All dead			
Knee cases (8)			
With actinotherapy	2	—	—
Without actinotherapy	5	1	—

Contrasted with other patients suffering from similar diseases, those receiving artificial light treatment on the whole did badly. When sinuses were present the exposure to ultra-violet rays increased the discharge and produced painful inflammatory changes in the surrounding subcutaneous tissue, in a few instances the treatment seemed to increase the tendency to sinus formation by producing subacute cellulitis rather than a typical cold abscess. This was particularly noticed in cases exposed to the tungsten rays. Another objection to actinotherapy is that in practice it necessitates frequent lifting and transport of the patients, who are thus subjected to repeated minor degrees of trauma.

In reviewing the records we find that some of the cases that were not making satisfactory progress under ordinary treatment were treated with actinotherapy, to some extent.

this account for the disappointing results obtained but we are convinced that radiotherapy is of little or no value in the treatment of this form of tuberculosis, in some cases it appeared to be injurious.

We wish to thank Lieut Colonel P. Macdonald the medical superintendent of Alder Hey Hospital for permitting us to publish the case.

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R. Adair, M.D.

Alder Hey Hospital Liverpool

### A PAROXYSM OF AURICULAR FIBRILLATION

In the JOURNAL of May 21st (p. 919) Dr. E. E. Lislett publishes a case of a paroxysm of auricular fibrillation caused by an electric shock. I notice that he expressed the opinion that the condition may have been "flutter" rather than fibrillation. In this connexion I would like to record the following case.

On June 13th 1927, a man aged 49 was admitted to the Waikato Hospital. He stated that ten months previously while mixing rabbit poison he was inhaling some of the powder blew up into his face and was inhaled. He collapsed (fright) and next day an attack of pain in his chest took him to his doctor. The pain passed off in three days. Three weeks later he was again attacked. This time he noticed that he was breathless and that a peculiar fluttering sensation was present in his left chest. Since then he has suffered a sequence of similar attacks at odd intervals which seemed to follow severe physical effort on his part. He stated that his pulse remained unaltered during the attack. He had a thrombosis of the right femoral vein arising from typhoid contracted twenty-five years ago together with a large mass of varicose veins extending across the lower abdomen and an unhealed varicose ulcer of the left leg.

When I saw him he was in bed and had been at rest for some hours. The heart's apex beat was regular (63 to 70) and forceful and was felt about two inches below the nipple. In the nipple line a second impulse could be seen and felt over the auricles. The blood pressure (systolic) was 130 mm Hg. The ventricular systole was 75 regular. The auricular systole was distinctly heard regular and about 200 to the minute no murmurs were heard. The Wassermann reaction was negative.

There being no electro-cardiograph available it struck me that an X-ray might be of value and the patient was removed immediately to the X-ray room where he was screened by Dr. Harris. The hospital radiologist in the presence of myself and Dr. Crawford Dr. Harris reported lateral diameter of heart increased auricles show a rapid pulsation over 200—periodic ventricles show a consistent steady beat 70 to 80.

There was no synchronism between auricular and ventricular systoles.

I demonstrated the case clinically the same night but was told by the patient that we would not see anything as the flint ring had pulled off. In this he was correct. The heart had returned to normal. Auricular and ventricular systoles were synchronous and steady at 85. He was discharged on July 4th and has had no recurrence.

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### ATRESIA OF VAGINA WITH MENSES RETAINED TO THE AGE OF 26 YEARS

This case is noteworthy in that the condition had persisted so long with trivial symptoms and that the uterus was able eventually to perform all its functions.

At the age of 15 the patient had noticed slight pelvic pain on several occasions at intervals of a month. From that time there had been no discomfort until just before admission to the hospital. There had been no disturbance of the function of the bladder or rectum. She had been aware that the lower part of the abdomen was increasing in size but this she had attributed to fat as she had always been decidedly well nourished. She had married at the age of 21. A few days before admission a black vaginal discharge had made its appearance.

The temperature was 99° F and the pulse 120. On examination of the abdomen a median swelling the size and shape of a six months' pregnancy was found. It was tense and fluctuant and rather tender on palpation. The external genitalia were rather small but otherwise normal. The remains of the hymen were seen and a finger could be passed beyond it for a distance of an inch and a half before being checked by a transverse septum. Further detail could not at the time be made out on account of the black, tarry fluid which obscured everything.

Under an anaesthetic it was found that the fluid was exuding through a pinhole aperture in the transverse vaginal septum. This was incised and the greater part of it was afterward dissected away. From three to four pints of black, grumous fluid flowed out. It had the odour characteristic of a *B. coli* infection and gave a capen along with it. Irrigation with 1% of lot on was continued until the cavity was clean. It was difficult to determine the exact state of affairs the walls of the cavity were flaccid and thin and into irregular oedematous projections the wall was thickened at the summit and very thin in the lower part. It was concluded

that both uterus and vagina had been distended to the three had certainly been no distension of the Fallopian tubes.

A swab taken from the fluid yielded a pure culture of *B. coli*. The portion of septum removed measured 4 cm in thickness. A section showed that it was composed of fibrous tissue with some non-striated muscle and was covered on either side with stratified squamous epithelium.

After the operation there was never any cause for anxiety. The temperature remained about 100° F for three days and then all went well. She menstruated three times in a perfectly normal manner and then became pregnant. She gave birth to a full term living child without any special difficulty.

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### INVERSION OF THE UTERUS

Those who have seen a case of complete inversion of the uterus are almost unanimous in emphasising the profound shock attendant upon this accident. In the case reported by Dr. Fotheringham in the JOURNAL of August 27th (p. 350) the time which necessarily elapsed before his arrival, and possibly the manipulations of the midwife, would be ample to account for the condition of the patient. It is comforting to remember that the occurrence of inversion of the third degree is not, at the moment, necessarily accompanied by shock, or haemorrhage, or great pain.

In January 1925 I was called to a young primipara healthy but not at all robust. The liquor amnii had come away twenty-four hours before. The head was well down but the patient was tired out and the pains poor. The head was delivered with forceps under CP anaesthesia and the anaesthetic then withdrawn. After birth of the child the placenta was difficult to expel and rather forcible expression was used but only during uterine contraction. The cord was not pulled upon. At the moment when the placenta appeared to be coming away the uterus was felt to disappear from above the pubes, and the inverted organ still covered by the patient's came out through the vulva. The patient was perfectly conscious complained of no great pain and might have been described as fairly comfortable. After peeling off the placenta the uterus grasped in the right hand was returned into the vagina and manual reduction effected without difficulty.

The surprising absence of shock made me wonder whether the condition usually ascribed to the patient may not sometimes be in reality the condition of the doctor himself—confronted for the first time with a complication which had been a dreaded nightmare to him since his student days.

Lancester

C. C. LILLIOTT, M.D. F.R.C.S. Ed.

### SUBCUTANEOUS DRAINAGE OF ASCITIC FLUID

The following details of a case of ascites treated by permanent drainage of the fluid into the subcutaneous tissue seem to be worthy of record.

A woman aged 35 was admitted to hospital suffering from ascites. Her general condition was weak and the liver and spleen were much enlarged but the heart and kidneys were normal. Before admission she had been tapped eight times at intervals of about two weeks and at each tapping nearly 20 pints of fluid was withdrawn.

In similar cases previously I had tried artificial drainage by a short straight cannula and also by passing silk threads through the peritoneal cavity into the subcutaneous tissue of the groin but after two or three weeks the fluid again began to accumulate. For this case therefore I devised a curved silver cannula about 2 inches long with two circular flanges at the curved end. A semi-circular incision was made in the left iliac region and a flap of skin was turned down. The muscles were split by McBurney's method and an opening was made in the peritoneal cavity. One flange of the cannula was inserted in the cavity and a purse-string silk suture was passed through the peritoneum and tied tightly round the neck of the cannula between the two flanges. In order to keep the cannula in position on it was fixed to the muscles by silver wire passed through the holes in the outside flange. The straight end of the cannula pointing downwards was inserted in a pocket made in the subcutaneous tissue. The muscles were tucked and the skin united by metal clip.

At the operation I had left half the quantity of fluid in the peritoneal cavity. This was evidently draining well as on the third day after the operation there was a marked collection of fluid in the subcutaneous tissue of the left iliac region groin and vulva. In order to relieve the excessive pressure of this fluid I tapped the patient completely of lead lotion was applied to the swollen part and the swelling rapidly subsided. The clots were removed on the sixth day and the wound was quite healed. Eighteen days after the performance of the operation the patient was discharged and her husband reported four months later that she was well and that there was no sign of re-accumulation.

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## Reviews.

### CONDITIONED REFLEXES

ALTHOUGH Professor Pavlov, together with numerous pupils and associates, has been engaged for some twenty years on the study of the conditioned reflexes, the results of these most valuable researches, which were almost entirely published in the Russian language, have hitherto been almost inaccessible to English readers. By a happy combination of circumstances the results obtained up till quite recently are now placed within their reach. With the assistance of the Royal Society, the translation of Professor Pavlov's book<sup>1</sup> on the subject, which was published in Russian in 1926, has been carried out by Dr G. V. ANREP, who combines the advantages of being a Russian-born subject naturalized in Britain and a former pupil and collaborator of Pavlov's in these investigations on the conditioned reflexes.

On reading through this remarkable book one cannot fail to feel that one is treading on fresh ground, and getting in entirely new aspects of the functions of the cerebral cortex. These functions are treated purely objectively, and even though the treatment may often be, of necessity, provisionally of an empirical nature, the advance is none the less clear. With one step, never to be forgotten in the history of physiology and psychology, this book carries us from the period of introspective observation and impotent speculation into a period of direct experimental inquiry which will extend far into the future.

The method employed in these inquiries is essentially simple in principle, in its applications there is no doubt much advance yet to be made, for almost the only unconditioned reflexes which have been studied up to the present have been those connected with the response to food or other substances placed in the mouths of dogs, the response chosen being the secretion of saliva. If the administration of food is accompanied or immediately preceded by some stimulus to which the animal is normally indifferent, this stimulus comes, after a number of repetitions of this so-called reinforced combination, itself to acquire the power of exciting the alimentary response, even though not reinforced by administration of food. The extent of this response can be measured in drops of saliva secreted in a given time. The stimulus has required the properties of what is called a conditioned stimulus. These facts form the starting-point of the investigations, by an objective method, into the functions of the cerebral cortex in the dog. Anything which can be appreciated by the cortical apparatus can be made the basis of a conditioned reflex. Thus, for instance, the passage of a certain interval of time, as when the conditioned stimulus is habitually given at a certain moment before the reinforcement, may be one of the conditions, these being called trace reflexes, and so on.

Conditioned reflexes are very readily influenced by a variety of inhibitory conditions. For instance, any unusual stimulus will, by arousing an investigatory reflex, produce what is termed external inhibition, so that the normal response remains in abeyance. For this reason the experiments must be conducted in a specially constructed laboratory, in which the animals can be isolated from all undesired stimuli, including the presence of the experimenter. Several chapters are devoted to the subject of inhibition, and it is this portion of the book which gives most food for thought. The descriptions of the spread and concentration of the inhibitory process, of the mutual induction of excitation and inhibition, of the causation of sleep, of the phenomenon of differential inhibition, etc., are all of the greatest interest, but too intricate to be even outlined here.

One or two elementary points can alone be mentioned in order merely to indicate the general nature of the phenomena. The trace reflex has been referred to above as one in which, while the reflex is being built up, a definite time elapses between the conditioned stimulus and the reinforcement. After a certain number of repetitions of

the combination, the passage of this period of time requires conditioned properties, so that when not reinforced the response will only follow after the lapse of this time. What is happening during this period to prevent the stimulus from acting? The answer is provided by the application of some mild stimulus, capable of erasing some degree of external inhibition during this latent period, the astonishing result of such a stimulus is that secretion begins forthwith. The inference is that during the interval the effects of the conditioned stimulus were being subjected to an internal inhibition, and the effect of the external stimulus was to inhibit this inhibition, and so reveal the response which was in abeyance during the interval. That this explanation of the phenomenon as due to disinhibition is the correct one there seems to be little reasonable doubt, for it is supported by much collateral evidence.

If two somewhat similar stimuli are employed, and one of them is associated with reinforcement while the other one is not, then the first becomes a conditioned stimulus and the other does not, by making the negative one nearer and nearer in properties to the positive one it is possible to investigate the powers of discrimination which the animal can exhibit, thus a great deal can be learned of the delicacy of sensation of dogs. In this way it can be shown that dogs can discriminate very small differences of tone, of shape, of direction of movement, of different rates of a metronome etc.

The state of inhibition is physiologically a condition of rest. States of excitation or inhibition have a tendency to spread in the cortex from the site where the process initiates to surrounding zones. This tendency is counteracted by the process of induction, by which an act of inhibition induces a state of excitation in surrounding areas, the processes of irradiation and of induction are thus antagonistic ones. In its functions the cortex acts as a mosaic of kaleidoscopic character, excitation, inhibition, irradiation, and induction playing off in endless variation one against the other. Sooner or later, however, owing to fatigue, the inhibitory process spreads more and more widely, and we have the phenomenon of sleep or, under particular conditions, hypnosis. Often in the performance of these experiments, when certain conditions prevailed the animals fell into a sleep so deep that they were with difficulty aroused. For instance, in trace reflexes with long delay the animals often fell asleep during the interval preceding the response. Many experiments of pathological significance have also been performed: portions of the cortex have been excised, various sense organs damaged, and other similar investigations begun.

It is pointed out that as yet all these results obtained on the dog can only be applied with great caution and much reserve to man. As the subject grows and the fundamental principles of the functions of the cerebral cortex begin to clarify, these applications can be made without doubt, but there is much yet to be done before this stage can profitably be commenced.

The editor, Dr Anrep, is to be congratulated most warmly on the excellence and readability of his translation, as well as on the skill which he has shown in adapting into English an entire new terminology in an undoubtedly difficult subject.

C LOVELL EVANS

### DISEASES OF THE TONGUE

THERE is room at the present time for a new textbook on *The Tongue and its Diseases*,<sup>2</sup> and Mr DUNCAN FITZ WILLIAMS's work on that subject supplies the want in a way which leaves nothing to be desired. It is very complete in regards the various lesions of the organ, mention being made of all the rarer as well as the more common affections, and the subject matter is presented in a manner addressed rather to the practitioner than the student preparing for examination. The recommendations with regard to treatment are put particularly well, cut and

<sup>1</sup> *Conditioned Reflexes*. By I. P. Pavlov. For Mem R S. Translated and edited by G. V. Anrep. MD D Sc. London: Milford Oxford University Press. 1927. (Roy. 8vo pp. xi + 430. 17 figures. 28 net.)

<sup>2</sup> *The Tongue and its Diseases*. By Duncan G. L. Fitzwilliams. M.C. MD. Ch.M. F.R.C.S. Edin. and Eng. Oxford Medical Publications. Oxford: Milford Oxford University Press. 1927. (Demy 8vo, pp. xi + 255, 166 figures, 6 plates. 36s. net.)

dried rules are avoided and the practitioner will find many useful hints and details such as are often missing in more formal textbooks, but which are of the essence of success in actual practice.

The author evidently writes directly from his own personal knowledge while freely inserting descriptions of cases under other surgeons wherever special points need emphasis. In his preface he appeals to medical men to instruct their public as to the curability of cancer when recognized in its early stage, advice which is so repeatedly given in these days that one may suppose that every practitioner must be alive to the importance of it. Cancer is stated to be a curable disease in 80 to 90 per cent of patients in only if it can be removed when it is still local and has not extended into the lymphatic. As regards cancer of the tongue if the operation is done before dissemination has occurred it need not be a huge one in order to establish the diagnosis, and further operation may not be required. This has been emphasized by some surgeons. Trotter for example states "I have never seen such a case in which, after suitable (limited) operation local recurrence has taken place." One of the most important points to remember both for the patient and the medical man, in order to ensure an early diagnosis is that a very characteristic feature of early cancer anywhere is its lack of symptoms—pain, for example. The following statistics are of interest. In Butlin's series of 197 cases 27.8 per cent were well after 3 years, the longest survival being 23 years. Bloodgood, in 260 cases reported that of 36 early cases he had 62 per cent of five-year cures while in 75 cases of late carcinoma he had only 12 per cent of such cures. At the Mayo Clinic, 30.8 per cent were alive after 3 years and 24.4 after 5 years but 61 per cent of these who presented themselves for examination had been rejected as inoperable. Cured in 60 cases had 24 per cent of three-year cures and Cobb and Simmons in 56 cases, reported 14.3 per cent of such cures. The only figures, therefore that give a 30 per cent cure for three years are those of the Mayo Clinic and then only after excluding 61 per cent as inoperable cases. Subsequent operations on the glands although not as promising as primary operations, are still often successful. Treatment of cancer of the tongue by x rays and radium has proved singularly unsatisfactory and it is rare even to obtain any abatement of the symptoms. With regard to the operation for removal of the growth the author remarks that probably

with the exception of a few to whom the compliment may be paid of saying that their interest in the matter is above the average. For surgeons conduct the operation along the following lines. Having decided upon an intracapsular operation they dissect out the submaxillary gland and any carotid glands they may find lie to the lingual artery and then proceed to the removal of the tongue. If the whole tongue is to be removed both sides of the neck will need to be dealt with in the above manner. It is not too much to say that the after results in these cases are as bad as any we have in surgery.

The author considers that, in the first place it is not necessary to ligate the lingual artery, and secondly that it is quite inadvisable to remove the tongue locally and dissect the neck at the same operation, the latter should be done as a distinct operation a fortnight after the local removal of the tongue when the mouth wound has healed. The best mode of administering the anaesthetic he considers to be through a small transverse incision in the crico-thyroid membrane, and he holds that laryngotomy is preferable to intratracheal anaesthesia, not only in cases of large fungating growths, but also in those of small size.

As to the best anaesthetic to use he remarks

We know that the number of deaths upon the table is greater with chloroform than with ether. I am certain however that if the deaths were taken for fourteen days from the commencement of the operation the figures would be reversed and the ether deaths would exceed those of chloroform in a most decided manner.

He remarks on the importance of having the ether warmed, and on the tendency of a preliminary injection of morphine to prevent the rapid return of the coughing and swallowing reflexes which are of such importance in operations of this character.

## THE PSYCHOLOGY OF THE EMOTIONS

*Emotion and Insanity* is the title of a translation of a monograph by Dr S. THALBITZER, chief of the medical staff in the Copenhagen Asylum. This work is essentially a contribution to academic or "pure" psychology rather than to psychiatry. A descriptive study of the variations in mood in the manic depressive psychosis is utilized by its author to throw light upon the nature of normal feeling and emotions. Dr Thalbitzer points out that we have learnt much about the centres now definitely established in the cerebral cortex, and of their tracts to and from the periphery, from the investigation of cases of degeneration of those tracts brought about by disease. Similarly, he commands no profit by the study of mental diseases in order to arrive at an understanding of the corresponding normal conditions.

The author's argument, and clinical investigation lead him to a conclusion which strongly favours the existence of a "feeling centre." He considers it to be definitely established that feeling is not a by-product of brain cells which have another function and argues that if we recognize feeling to be an elementary psychic function we must also acknowledge that it proceeds from its own cells which are collected in a "feeling centre." Furthermore from the physiological point of view this centre must, he thinks, behave in exactly the same way as all other bodily organisms especially in that its specific function can only increase or decrease the change make itself known psychically as excited feeling (pleasure) or depressed feeling (displeasure). He agrees that as to the position of this feeling centre we have no certain knowledge, but he brings forward arguments in favour of the view that it is probably situated in the occipital lobes (gyri occipitales).

The book raises problems of interest both to the neurologist and psychologist. It is eminently readable and its argument well suited. Professor Hoffding writes an appreciative preface.

## DISEASES OF THE NERVOUS SYSTEM

A new impression of the late Professor DEJEAN's well known *Sémiologie des Affections du Système Nerveux* has made its appearance. The first edition was published in 1900 and the present volume is a reprint of the second edition, published in 1914. No alteration has been made in the work as written by Professor Dejean, but the index has been made more complete. This book is not written on the usual plan of the average medical textbook, which deals successively with the etiology, symptomatology, diagnosis, and treatment of individual diseases. It assumes that the reader has sufficient knowledge of the essential facts of anatomy and pathology as they apply to the nervous system and proceeds at once to consideration of the syndromes of disease in the widest sense to include the subjective and objective symptoms, their differential diagnosis, their pathology and their mode of production. The great clinical and pathological experience of the author enabled him to carry out this plan to perfection.

The volume contains over twelve hundred pages of text with 564 figures and 3 plates, it is well produced and well bound. Detailed description of a classical work of this magnitude is not possible and is not called for. The main divisions of the chapters are into disorders of the higher mental faculties (coma, affections of sleep, apraxia, and so on), disorders of language or movement of sensibility or co-ordination of the reflexes of the vegetative nervous system, and of the special senses. One chapter moreover, is devoted to the significance of changes in the cerebrospinal fluid. In the particular copy before us an error of binding has led to the repetition of certain pages (pp 1073-1088) and the omission of others (pp 1089-1104).

\* *Emotion and Insanity*, by S. Thalbitzer. With a preface by Professor Harald Hoffding. Translated by M. G. Beard M.A. Oxford: The International Library of Psychology, Philosophy and Scientific Method. London: Hegan Paul, Trench, Trubner and Co. Ltd. New York: Harcourt, Brace and Co. Inc. 1926. (Demy 8vo pp. vi + 325, 76d. net.)

\* *Sémiologie des Affections du Système Nerveux*, by J. Dejean. Reprint of the 2nd edition. Paris: Masson et Cie. 1914. (6 1/2 x 10 1/2, pp. xxvi + 1220. Six figures on plates 1, 2, 3, 4, 5, 6.)

Dr PAUL VAN GEHUCHTEN has edited and revised a new edition of *Les-Maladies Nerveuses* of the late Professor A VAN GEHUCHTEN of Louvain. The first edition, prepared originally in 1914, but published shortly after the war, was exhausted over a year ago. The present edition maintains the same general character as the first, but much revision and addition has been necessary to bring it into line with the important extension of knowledge which has taken place since 1914. Diseases such as the Parkinsonian syndrome, the chorea of Sydenham, and the epilepsies can no longer be classified as functional disorders, though their exact organic basis is still not clearly defined. Lesions of the corpus striatum and the extrapyramidal system have been brought into prominence by the devastating effects of epidemic encephalitis. Due attention is given in the new edition to these fresh factors in neurology, as also to new diagnostic methods such as the introduction by Sierd in lipiodol in the localization of the site of spinal compression, and of ventriculography as an aid to the diagnosis of cerebral lesions. The description in the first edition of the spino-thalamic tracts as traversing the cerebellum is abandoned in favour of the modern view. The general plan of the book follows the systematic teaching given at the University of Louvain, and a very comprehensive account of nervous diseases is provided on lines essentially clinical. The printing and paper are excellent, and it is unfortunate that so important a book should be issued with a paper binding which soon parts company with the leaves and makes the handling of the book, necessarily a heavy one, awkward and irritating. The illustrations are altogether admirable, the large majority being photographic reproductions of cases or of microscopic sections.

The clinical lectures in neurology and psychiatry delivered to students of the Ecole du Val-de-Grâce (Ecole du Service de Santo Militaire) have been put together in a volume by Dr A. ROUQUIER, Professeur Agrégé in the school. It is of moderate size and is designed as a summary of modern views on neurology and psychiatry for the benefit particularly of general practitioners and junior hospital workers. It is written essentially from the clinical point of view as an aid to the investigation of cases, but considerable space is devoted to anatomical and physiological considerations which are necessary for an understanding of the abnormalities of function manifested by disease. Thus reference is made to modern work on the extrapyramidal motor system, on cerebellar function, and on the reflex functions of the spinal cord. In a book with the objects mentioned a certain dogmatism is permissible, but on the whole the author has been careful to distinguish hypotheses from facts, especially in his descriptions of recent views on the subthalamic region. One might have expected more reference to the work of Heid and Riddoch on the functions of the isolated spinal cord in man, owing to its important practical bearing. The clinical accounts of nervous diseases are succinct and clear, and the general plan of the book is excellent.

### THE PLAGUE

THE last severe epidemic of plague in London, which was followed by the Great Fire, has impressed itself so deeply on our imaginations as "The Great Plague" that we are apt to forget that it was only one of a number of terrible epidemics, just as the fire was not the only great conflagration in the city, although it was the greatest. The genius of Defoe has given us a fictitious account which has so much truth in it, and, like all his work, has such an air of fact, that the mind's eye is apt to be focused only on the nearest of the series of epidemics which ravaged Europe during at least three centuries. Readers of Dr Crichton's *History of Epidemics in Britain*, and of Mr Walter G Bell's more recent work on the Great Plague in London

in 1665, know better. Mr F P Wilson's book on *The Plague in Shakespeare's London* now comes as a useful reminder of the facts, as far as the first half of the seventeenth century is concerned, for Mr Wilson does not tie himself down to the period covered by Shakespeare's life, but includes the great epidemic of 1625, which occurred nine years after his death. In this year it is computed that more than one-sixth of the population of London died of the plague, and the impression made on contemporary writers was thus expressed by the author of *Lachrymæ Londinenses*: "to this present Plague of Pestilence, all former Plagues were but petty ones." This to future Ages and Historiographers must needs be remembered the Great Plague." The writer could not know that forty years later the pestilence was to take over one hundred thousand lives in an epidemic that would be known to posterity as the "Great" plague, and he was probably unwary of the terrible visitations which occurred before his time.

Both Mr Walter G Bell and Mr Wilson impress upon us the fact that plague was always a scourge of the poor and lowly. Hardly any persons of note died of it in all the epidemics, either because they found safety in flight or because then better circumstances protected them from the rat-flea. Yet no one in England then suspected the rat of being the harbinger of infection. Dogs and cats were condemned to death, and great numbers of the first-named were slaughtered, so great that we are led to think that London must have supported a dog population comparable with that of Constantinople in more recent days, before the Young Turks ruthlessly deported their quondam servants. Mr Wilson says that the statement of Defoe that 40,000 dogs were killed during the plague of 1665 does not sound to him extravagant. There are many interesting illustrations to this book, among which that of the rat catcher on page 37 is most attractive. This artist appears, like the Pied Piper, to be dancing, and performing a complicated cross-legged step which is hardly consistent with rapid progress, or else he suffers from ankylosis of both hips in an adducted position, which would surely hinder his success as a captor of so nimble a rodent as the rat, whether black or brown.

In his preface Mr Wilson tells us that he began this work as a commentary on some pamphlets of Thomas Dekker, the dramatist, on the plagues of 1603 and 1625, but he has gone far beyond his original intention and made very extensive researches which have resulted in the production of this learned and well documented work.

In an appendix he gives a valuable account of the origin and history of the bills of mortality, with photographic reproductions of some of the rarest of them. It will be remembered that we called attention to this interesting subject in an article under the head "Nova et Vetera," published a year ago (October 9th, p 645). Mr Wilson's chapter on the population of London in the early seventeenth century contains much that is of value, although in the absence of anything like a census all estimates before 1801 must remain more or less conjectural.

What of the members of the medical profession in the plague years? We fear they showed little more courage than the clergy, though it could be said for the physicians that most of them went with or followed their patients into the country, probably their absence or presence had little or no effect on plague mortality, for, knowing nothing of the cause or the pathology of the disease, they were quite unable to treat it successfully. Yet by unconscious suggestion the physician was no doubt able to hearten and soothe and give hope to him and his relatives. There were notable exceptions among the physicians to the rule of flight. Some of the best, such as the great Francis Glisson, stayed in the infected city and saw the epidemic through. There was, however, some provision for the medical care of the plague-stricken, for in 1625 the city spent £290 6s 8d in fees for this work, and the name of the surgeons to the pest house in 1606 and 1625 are on record.

*Les-Maladies Nerveuses*. By Professor A. van Gehuchten. New edition revised by Dr F. van Gehuchten. Louvain: Librairie Universitaire, 1926. (Roy. 8vo, pp 694, 412 figures.)  
*Travaux de Neuro-psychiatrie à l'Usage des Étudiants et des Praticiens*. By Dr A. Rouquier. Paris: Gaston Doin et Cie, 1927. (Mod. 8vo, pp 270, 9 figures.) 32 fr.

*The Plague in Shakespeare's London*. By F. P. Wilson. Oxford: The Clarendon Press, 1927. (52 x 9, pp xi + 228, 25 illustrations.) 12s 6d net.



Mr Wilson's work professes to deal with plague in London only, but other towns and even country places suffered as severely, although, being small, the mortality does not impress the imagination as do the vast totals of the metropolis. As a matter of fact and as Mr Bell has pointed out, the last epidemics of plague in England occurred after the great one of 1665 not in London but in provincial towns, among which Nottingham had the misfortune to be the last instance if, as is probable, that epidemic was really one of plague.

### X RAYS IN DERMATOLOGY

The administration of x rays in appropriate dosage forms such an important part of dermatological therapeutics that we welcome Dr O'MALLEY'S translation of the work<sup>1</sup> on this subject by Drs ARZT and FENS of Vienna. Their practice differs somewhat from that in fashion among British dermatologists, and their advice on the choice of apparatus might well have been modified by the translator to meet British requirements for the original authors have naturally considered only apparatus of Teutonic origin. Nevertheless the principles to be followed by the purchaser of an x-ray outfit intended only for dermatological therapeutics remain the same, and, *mutatis mutandis* to suit local conditions, the advice holds good. In fact, the authors evidently conduct their procedure with great care and scientific precision—precautions eminently necessary in the use of x rays, which are agents of such potency for evil as well as good—and those who follow their advice should get good results in practice without risking their own health. As the authors say, there is nowadays no excuse for the occurrence of x-ray dermatitis in those who employ x rays for medical purposes.

Like other workers, the authors recommend in almost all cases the employment of filtered rays, which they consider much safer than unfiltered. The most striking difference between their methods and those in vogue here is in the epilation of the scalp. They have modified the original Kienbock-Adamson method by dividing the scalp into six areas instead of five, and they take three days over the whole operation, as they do only two areas each day. This spreading out of the work is for the purpose of avoiding x-ray sickness and meningeal irritation. These, however, are dangers which, in our opinion, hardly exist. At all events, we are aware of long series of cases of ringworm treated in this country in which the whole scalp has been epilated at one sitting without any ill effects of any kind. Moreover, in Vienna after epilation has taken place the scalp is twice desquamated by the application of iodine. Possibly the large-spored ringworm common in Austria is more resistant than our microsporon, and requires this extra attention.

The translation is good and clear for the most part, but in a few places the meaning is ambiguous owing to clumsy phraseology. All dermatologists and radiologists will find the volume useful.

### NOTES ON BOOKS

It has been said by many people of Mellor's *Chemistry*<sup>1</sup> that wherever they glance at a page they want to go on reading. Such a compliment deserves to be recorded for it cannot often be said of an encyclopaedic work of reference. We have referred previously to the first six volumes at the time of publication and have mentioned the abundance of detail incorporated, the connected order of arrangement, the clear manner of expression and the facility with which everything sought can be found. The seventh volume is now before us and we observe that the qualities shown in the preceding six are undiminished. The seventh volume deals with titanium, zirconium, hafnium, thorium, germanium, tin, lead and the inert gases, as they are here called, following the physicist's nomenclature. It would seem more proper however, that these gases, which include helium, neon, argon and others, should be called the inert elements. The rarer elements

of the above named group offer numerous features of special interest to the chemist and thorium, which has a considerable economic importance, presents many difficulties to the technologist. To many this volume will therefore, be especially valuable for the ready access it affords to all available information concerning them. The chapters on the commoner metals, tin and lead are characterized by the variety of interests presented in different fields of study. Among these the crystallographer and the metallurgist will find a mine of information. The whole, when completed will be a monumental work of a standard of excellence worthy of the science which it serves.

Dr J. SIM WALLACE'S little work on *The Teeth and Health*,<sup>2</sup> which is one of the latest additions to the series of Modern Health Books edited by Professor D. Fraser Harris, contains a popular exposition of the anatomy of the teeth, the physiology of mastication, cause and prevention of pyorrhoea, and focal sepsis and infection. In the concluding chapter the importance of a diffusion of knowledge of the principles of oral hygiene is emphasized. The work is especially suitable for school teachers and those engaged in the education of children.

That only after nearly twenty years has the small volume *Aids to Tropical Medicine*<sup>3</sup> reached its third edition perhaps speaks for itself. In the preface to the first edition the author stated that it does not in any way aim at providing a 'text book' on the subject, but is rather intended to form a student's notebook. Frankly, however, it would not seem to serve any useful purpose to the present day student of diseases of warm countries.

The seventh edition of CURRIE and PUGH'S *Practical Nursing*<sup>4</sup> which has appeared a little more than three years after the last (see JOURNAL, September 20th 1924, p. 524) has been enlarged and revised by Dr Gordon Pugh who has added 100 pages and 50 illustrations. The principal additions will be found in the sections concerned with milk and dietetics, ward work and hospital administration, diabetes and insulin treatment, infant feeding and diseases of childhood, the nursing after special operations and of orthopaedic cases, and the use of ultra violet light and x rays in diagnosis and treatment. Another new feature is that all the questions which have been set at the various examinations of the General Nursing Council of England and Wales for the certificates of general nursing, sick children's nurses and fever nursing from the beginning to the present time have been included in an appendix.

It appears that at the Harvard Medical School it is the custom of the professor of medicine, Dr F. V. PEABODY, to address the students on 'The care of the patient.' One of the professor's little talks has been reproduced under this title in book form<sup>5</sup> from the columns of the *Journal of the American Medical Association*. Dr Peabody's text is that while the treatment of a disease may be entirely impersonal, the care of a patient must be completely personal and he asks whether it is possible for the student to form such personal relationship in an impersonal institution such as a hospital. He finds that it is possible and urges the student to approach the patient with sympathy, tact and consideration to get his confidence so that the patient may come to regard the student as his own personal physician and all the rest as mere consultants. Sickness says Dr Peabody produces an abnormally sensitive emotional state in almost everyone in major cases the emotional state repercussions on the organic disease. Even so-called functional diseases are just as real to the patient as organic disease, and the student's interest in the patient should not evaporate when organic disease has been excluded. Rather should he be stimulated to search further for the cause that has remained hidden and so prepare himself for the more personal relationships which are inherent in the private practice of medicine. The book should be not only useful to the student but also a pleasing reminder to the practitioner of one of his chief functions in curing the sick.

Dr STEPHEN KAY of Mackay, Queensland appears to dislike Jews to despise Englishmen and to loathe Spaniards. In a collection of *Travel Notes*,<sup>6</sup> originally written for the Mackay

<sup>1</sup> *The Teeth and Health*. By J. Sim Wallace, D.Sc., M.D., L.D.S. The Modern Health Books. London: Faber and Gwyer (The Science Press), 135 (Fcap 8vo, pp. 21, 8 figures, 2s. 6d. net).

<sup>2</sup> *Aids to Tropical Medicine*. By Gilbert P. B. Currie, M.A., Cantab., L.R.C.P. Ed. D.P.H. Third edition revised. London: Baillière Tindall and Cox, 1927 (Fcap 8vo, pp. x + 223, 5 figures, 1 plate, 4s. 6d. net).

<sup>3</sup> *Practical Nursing including Hygiene and Dietetics*. By the L. E. Herbert, E. Cuff, M.D., F.R.C.S., and W. T. Gordon Pugh, M.D., B.S. Seventh edition, rewritten and enlarged. Edinburgh and London: William Blackwood and Sons, Ltd., 1927 (Cr 8vo, pp. xi + 774, illustrated, 10s. 6d. net).

<sup>4</sup> *The Care of the Patient*. By Francis Well Peabody, M.D., Cambridge, Mass.: Harvard University Press, London: Milford Oxford University Press, 1927 (8vo, pp. 43, 2s. 6d. net).

<sup>5</sup> *Travel Notes*. By Stephen Kay, M.B., Ch.B., M.A., M.C. (Peabody) Sydney: J. A. Packer, 1927 (8vo, pp. 81, 7s. 6d. net).

<sup>6</sup> *Förtygen Rätt i Dermatologi*. By L. Arzt, M.D., and H. Fens, M.D. Authorized translation by C. Kevin O'Malley, M.C. London: Baillière Tindall and Cox, 1927 (Roy 8vo, pp. xiv + 232, 5 figures, 5s. plates, 13s. net).

<sup>7</sup> *A Comprehensive Treatise on Inorganic and Theoretical Chemistry*. Vol. VII. Inert Gases. By J. W. Mellor, D.Sc., London and New York: Longmans, Green and Co. Ltd., 1927 (Roy 8vo, pp. x + 771, 235 figures, 63s. net).

We will conclude with a maxim and a warning which should make a powerful appeal "When eating do not cogitate but chew" Mr Gladstone's thirty two bites at once recur to the memory Fish and flesh are not permissible at the same meal—"they do not accord" Eschew this evil custom, and relinquish it to belk'ed, who choose to live fettered with gout, racked with fever and tormented with stones"

R L S NATHALL

Drinks are extensively dealt with, except plain water, which is condemned in a chapter all to itself, disdainfully

# British Medical Journal.

SATURDAY, OCTOBER 1st, 1927

## HOSPITAL POLICY A CHALLENGE

DURING the past eight or nine years there have been many discussions on hospital policy. At the time of the formulation of the hospital policy of the British Medical Association discussion was acute. So sharply is opinion divided upon some points at issue that give fears were expressed that the pressing forward of the policy formulated by the Council of the Association, and submitted to the Divisions and Representative Body, would result in a cleavage amongst members. But the policy was accepted the fears have not been realized, the policy has stood the test of severe criticism, some of it has come into being, some of it is still an ideal to be attempted. The essential features of that policy may be summed up thus. A wider outlook for statutory hospitals, the preservation of the voluntary hospitals and their expansion for other than charitable patients, the co-ordination of all types of hospitals by advisory committees so that there shall be interaction and not competition. Short in brief, is the basis of the policy of the Association. It has received very wide acceptance and not least by the medical profession at large. It was however challenged by the Labour party in a pamphlet which urged what may be summed up in the word nationalization, yet in a conference subsequently promoted by that party, in which many other sections of the community were represented, together with our Association there was a considerable modification of this academic pronouncement, even by the Labour representatives.

A new challenge has now been made by a member of our profession, Mr E. W. Hey Groves, professor of surgery in the University of Bristol, in his presidential address to the Bath and Bristol Branch of the British Medical Association. To refresh our readers' memory, three or four salient passages may here be quoted. It is the fashion now for all speakers and writers on our present hospital system to begin by assuming that there is something sacrosanct about the voluntary hospital system and that it is our first duty to save this at all costs. Now I would begin by challenging the truth of this assumption. I should like to say boldly 'that the voluntary hospital system is dead. The system is not dead but moribund and its protracted life is kept going by stimulants and artificial respiration. The reasons given for this opinion are various. The hospital which began as a mere hostel for the sick poor has now to be a laboratory for scientific work, for prevention, diagnosis, cure, and discovery. The problem has become too vast for the voluntary hospitals. Many of our voluntary hospitals are out of date old buildings badly placed in unsuitable sites [they] have not kept pace with the growth of the population or the increasing demand for hospital treatment made by a larger proportion of the citizens. The lists of patients waiting for admission are becoming longer and the municipal and Poor Law authorities are forced to build hospitals to meet the need. Our present hospital system is radically wrong. It is wrong

because it consists of isolated units without public control. No one hospital unit is perfect or self-contained, and there exists no co-ordination between the units by which the deficiencies of one may be made good by provision in another. No financial assistance of the voluntary hospitals can make good this radical defect unless such assistance is accompanied by a condition for unification under a central control. These extracts from the paper fairly represent we believe, the gist of the challenge. A brisk correspondence followed in our columns mainly from West Country men, since Bristol was the vortex of the storm. But the matter is of more than local interest—since it may be supposed that Bristol methods do not differ essentially from those of other parts of the country.

It seems clear from the trend of Mr Hey Groves's paper that he is dissatisfied primarily because certain hospital facilities that he deems essential are not forthcoming. For this he lays the blame on the voluntary hospital system. He holds that if there were a complete and efficient State hospital system under central control all the things he regards as necessary would soon be obtainable. That there are many flaws in our hospital system or lack of system may be admitted freely. But it does not necessarily follow that another system would be better for us. Mr Hey Groves assumes that the ideal he has so clearly in mind would be attainable under a State system. This is a big assumption and we doubt the validity of it. For a couple of generations statutory authorities in this country have possessed wide powers for the provision of hospitals and already the beds in such institutions far outnumber those in the voluntary hospitals. Enormous sums are spent on them out of the rates and the unadvertised work done by them is a great boon to the communities they serve. But although the standard of professional service in these institutions is steadily improving and many of them now do first-rate work in an atmosphere of kindness and sympathy, they labour under disadvantages some of which seem inherent in any system of State or municipal control. To bring the voluntary hospital under the sway of statutory authority might not improve the voluntary hospital; it might indeed, destroy it. Further, the local statutory authorities have power to provide all that Mr Hey Groves demands and it seems rather hard to blame the voluntary hospital system for the failure.

Mr Hey Groves takes the schools as his chief home illustration of the advantage of State control. It is true that the State has an almost complete monopoly of elementary and secondary school education. Educationalists however are by no means satisfied with it; they do not get all they want. But education as a whole is not a State monopoly. The public schools and universities though many of them now receive grants from public money are not subject to State control. The foundation and corner stone of education is independent and therein as most of us believe, lies the saving grace of our educational system. We discovered during the war how harmful could be the effect of the control of a centralized State over its universities. Public opinion became machine-made. The great voluntary hospitals are in a very real sense the universities of medicine in this land and as such are better free from bureaucratic interference. This, however is far from saying that more co-ordination and more co-operation between voluntary and municipal hospitals are not to be desired. As will be gathered from Mr Herbert Mason's candid discussion on

of that question when opening the debate in the Section of Medical Sociology at Edinburgh (printed at page 575), his ideal for the London area (assuming continuance of the voluntary system) is some kind of joint management, with the voluntary hospital taking a predominant share and the municipal authorities having representation upon the governing body of the voluntary hospital. So long as the voluntary hospitals remain efficient and economical they will, he believes, survive, otherwise "the State or the municipality will swallow up the last remnant of a system that is peculiarly adapted to the British genius, and that has been the foundation of British medicine and British nursing."

It is well to bear in mind, when contrasting the state-controlled with the voluntary institution, that the Continental hospitals which have so impressed some visitors from these islands are in countries where centralization is the rule of the State. With us the reverse is the rule, local initiative is cultivated to the utmost, and the central authority is mainly advisory and auxiliary. There are two distinct principles of government, springing from different habits of mind, and the growth of centuries of custom and tradition. Both have then merits, both their defects. But readers of Bryce's classical work on *Democracy* will be left with little if any doubt that English speaking peoples have a genius for local initiative and local government, and especially for local voluntary societies, and that to this peculiar gift is due the stability of our institutions. The Prince of Wales, who has a talent for putting the common sense view of a thing in a phrase, said last year "Great Britain is a country in which voluntary causes have always flourished, and it is very desirable to foster the spirit of public service on which they are based, because that spirit is one of our best assets as a nation." Central control sometimes looks as though it could achieve wonders, but it is open to question whether life in such circumstances is always so perfect as it may appear from a distance. By one of those happy chances that are provided by the Annual Meeting of the British Medical Association, the visitors to Edinburgh last July included a distinguished surgeon from the capital city of a great Continental State where hospitals are under central control. He was much interested in our methods of electing the staffs of voluntary hospitals, and he then told of the extraordinary and seemingly inevitable things that happened under central control—things he deplored but for which he saw no cure. If this experience is at all general, then "an authoritative body, which should regulate hospital staffs" might not prove an unmixed blessing.

Many other matters of great interest were raised in the course of this address to the Bath and Bristol Branch. Several have been discussed in our correspondence columns, notably by Mr C. E. S. Flemming and Mr Charles A. Morton. In regard to the main point at issue, we may end by recalling a significant remark made by Mr Hey Groves when describing the origins of the voluntary hospitals in Bristol. "The Royal Infirmary here," he said, "was started by Churchmen and Tories, the General Hospital by Nonconformists and Radicals." Is it possible that this may have been the fruit of an attempt some centuries earlier on the part of the State to act as "an authoritative body" in one great branch of the affairs of its citizens? The State forced a central control and made a cleavage that seems irreparable. An attempt to impose rigid

uniformity in hospital affairs might do the same, and destroy for ever the beneficent association that is slowly growing up between statutory and voluntary hospitals.

## LIVER EXTRACTS IN ANAEMIA

PERNICIOUS anaemia has long been regarded as an outstanding example of those diseases in which every new method of treatment has raised great hopes—hopes which have flourished for short periods and then withered in every instance. It is therefore particularly gratifying that the treatment of this disease by liver diet which was introduced by Minot and Murphy appears to be an undoubted advance, for the optimistic claims first made have been confirmed, not only by the discoverers, but also by numerous other investigators. Minot contributed a paper on the subject to the discussion on the pathology and treatment of pernicious anaemia in the Section of Medicine at the Annual Meeting in Edinburgh. A short note on it was embodied in our brief report of the discussion published on August 8th (p. 211), and the full text will be printed in an early issue.

The history of this discovery is of interest, for it furnishes an excellent example of the way in which the results of laboratory research can be made the basis of a great advance in therapeutics. For many years Whipple and his co-workers experimented on the treatment of secondary anaemias in dogs. Their results were very remarkable, for they first showed that treatment with iron salts produced little or no benefit in such cases, and then found that diets of meat and liver produced rapid regeneration of the blood corpuscles and haemoglobin.<sup>1</sup> This work led Minot and Murphy<sup>2</sup> to try the effect of a diet containing an abundance of liver and muscle meat on blood regeneration in pernicious anaemia. The diet they used contained from 120 to 240 grams of cooked liver. This diet produced a very remarkable improvement in forty-five patients with pernicious anaemia. At the same time Koessler, Maurer, and Loughlin<sup>3</sup> reported experiments on rats which led them to conclude that a supply of vitamin A was essential for blood formation. Minot and Murphy<sup>4</sup> have this year made a further report on the results of treatment of 105 cases of pernicious anaemia. Their diet includes, besides about 200 grams of cooked liver, also plenty of fruit and at least 70 grams of red meat. Out of 105 patients, 99 reached a level of 4 million or more red blood corpuscles per cubic millimetre, and in all cases there was a general symptomatic improvement corresponding to the rise in red blood corpuscles. As far as is known the improvement can be maintained permanently, for already twelve cases have shown improved condition for two years or more. Koessler and Maurer<sup>5</sup> have made similar observations on forty-two cases treated with liver diet. These workers now agree that the improvement cannot be attributed to vitamin A alone, and admit that there is a factor in the liver which has a specific action on blood regeneration. The therapeutic value of the liver diet has been confirmed by other clinicians in America, in this country, and in France.<sup>6</sup> There is, therefore, no reasonable doubt that a very important therapeutic advance has been made, and also that our current

<sup>1</sup> Whipple, Robscheit, Robbins, and Hooper, *Amer. Journ. Physiol.*, 53, 36, 1920.

<sup>2</sup> *Journ. Amer. Med. Assoc.*, 87, 470, 1926.

<sup>3</sup> *Ibid.*, 87, 476, 1926.

<sup>4</sup> *Ibid.*, 89, 759, 1927.

<sup>5</sup> *Ibid.*, 89, 768, 1927.

<sup>6</sup> *Ibid.*, 89, 535, 1927.

beliefs regarding the factors controlling the formation of red blood corpuscles and haemoglobin will need considerable revision.

It is obviously of great importance to know the nature of the active substance in liver. This knowledge is of theoretical interest and also of considerable practical importance, because the daily consumption of half a pound of liver is no easy task for a patient suffering from pernicious anaemia and some more concentrated supply of the active principle is obviously desirable. Cobin Minot and co-workers have carried out a series of chemical investigations on this subject. Fortunately, the feeding of the active substance to a patient suffering from pernicious anaemia causes an increase in the number of reticulated red blood corpuscles within nine days, and thus it has been possible to recognize the presence of the active fraction within a reasonably short time. The liver proteins have been found to be inactive and it has been ascertained that the active fraction is insoluble in ether, acetone and cold alcohol. The active substance is free from lecithin and ordinary lipoids, it contains only traces of protein of sulphur and iron. This active fraction of liver tissue produces effects when 10 to 20 grams are given to a patient daily and therefore a considerable concentration of the active principle already has been achieved. The facts mentioned show that the active principle is not a protein or a lipid, and that probably it is not an iron compound. The paper to which we have just referred was written in April and in a private note dated August 30th Dr Minot informs us that down to that date twenty-five cases had been treated (each for over two weeks) and that all had been greatly benefited. It has been ascertained that the material is now free of iron, protein and carbohydrate and appears to be either a polypeptide or a nitrogenous base. There is evidence that the richer it is in nitrogen the more powerful is its effect and that the result is not due to any known vitamins.

Obviously the isolation of a fraction that can only be identified by its curative action on a relatively infrequent disease presents a biochemical problem of somewhat exceptional severity. Doubtless however before long biochemistry will add this to the numerous triumphs it has already achieved.

## THE PHILOSOPHY OF QUACKERY

PROFESSOR A. J. CLARK'S breezy paper on the historical aspect of quackery read to the Section of the History of Medicine at Edinburgh and published in this issue, argues that the growth of science and its increasing application to medicine have done little to influence public discrimination between orthodox practice and quackery. If this were true it would be a disquieting thought for the settled judgement of the public as a whole is rarely in error on a question of imposture. There seems however to be room for doubt whether Professor Clark has not overestimated the significance of some of the signs he has enumerated. The truth seems to be that those who are led to accept or appeal to quack treatment do not represent the opinion of the mass of their fellows nor does their action express their own permanent convictions. They are for the most part only temporary wanderers from the true path. Various and complex are the motives which determine the choice between the legitimate practitioner and the quack, one significant fact deserves attention. Nobody ever goes to a quack for diagnosis

At the sudden onset of severe illness the first appeal is almost invariably to the quibbled medical man. The fact is pertinent, for a diagnosis is always the sufferer's first desire; he wants to know what is the matter with him. If ever it appears that no diagnosis but only relief is wanted, it is either because a diagnosis has been assumed or because the impression has been formed that the diagnosis is obscure or uncertain. There are a few exceptions, for it is inevitable that the prejudices of mankind should take very diversified forms and a few individuals will adopt fantastic expedients even in acute illness, how very few these are may be adduced from the negative evidence of the coroners' courts.

But, notwithstanding all that science has done for medicine there are still cases which are obstinate and do not yield to treatment. Numerous also are the cases in which a remarkable recovery has been made after a period of failure to mend. Whoever has made a recovery in such circumstances will believe and continue steadfast in the belief that what cured him was the stuff he was taking when he got better. His gratification will lead him to extol that remedy above all others and if it happens to be a private or domestic formula his confidence in its efficacy may induce him to exploit the sale of it. Some quack remedies arise in this way not all indeed for some are founded on conscious fraud. It is a remarkable fact that for every quick medicine no matter how worthless there are always to be found a not inconsiderable number of people who honestly believe that it has cured them after the continued failure of other forms of treatment. A great many quick remedies originate from an episode of that kind. The simple fraud of obtaining money by pretence that is purely false as in selling pills of bicard crumb or pills of sugar appears now almost or entirely to have ceased. Only rarely is the cunning of the pure charlatan seen as in selling pills of some synthetic dye with pamphlet literature declaring that the colour of the urine would show the humours of which the body had been purged.

The inborn faith in the virtue of drugs with which great numbers of the people are imbued may be the heritage of a primitive instinct by which man sought to better his bodily estate with something foreign to his ordinary diet. It is invariably accompanied by the desire to prescribe for others. This faith not only fosters quackery but is the source of a perpetual and absorbing entertainment to patients with imaginary or very minor ills. Such are always to be found among the outpatients of hospitals and dispensaries. It is tellingly related of two old ladies, outpatients of a London hospital, that having tasted each other's medicine and having decided that the other was more suited to her own complaint they at once agreed to swap. In contrast to these people it is curious to find a certain number who regard everything medicinal as noxious or venomous stuff. The reaction arises from a sentiment no less human and natural than the liking for medicine felt by others. Closely related is the opposition to vaccination and it is not wholly surprising to find it among educated people. And when the educated man feels that medical science should protect him from small pox by a less obvious method than poisoning his blood with a virus he is only paying medical science a compliment dictated by his acquired confidence in its powers. It cannot be doubted however that most objections to vaccination arise in the face of danger of infection from small pox and a method of combating the spread of the disease has actually been founded on it. Although faith, hope, and prejudice



continue to offer scope for the activities of the dealer in quack remedies, yet the esteem in which rational medical methods are held is higher than it has ever been. Less than fifty years ago there were many people who obstinately refused to go to a hospital for treatment even when there was no hope in treatment at home. There is now no class of people so ignorant, but in serious illness it is their first desire to be admitted to a hospital. The interest with which medical science is followed by the public is noteworthy. Questions are asked by a patient's friends such as "Has he not been x-rayed?" or "Has his blood been examined?" When people take that amount of interest in the doctor's work it is no matter for astonishment that they are quick to recognize a lack of efficacy of treatment, and it is only human nature for the patient who is making no progress to try a little gamble in quackery. After all, he argues, did not a gipsy woman cure his warts when he was a boy with juice ofcelandine after the doctor had failed with all his caustics?

### THE COST OF INTERNATIONALISM

LINGUARY discussions (a correspondent in Geneva writes) have taken place this year in the Assembly of the League of Nations on the financial position of the League. Discussions on this subject take place every year, but this time the hand of the economist seems to have been more evident. It was only after discussion and hesitation that the Commission entrusted with financial matters granted the small credit for the assistance of health activities in Latin America. The proposed setting up of a central opium board under the Opium Convention was deferred for another year on financial grounds, and other credits for useful pieces of international work were refused. Many hours were spent by financial experts of all the nations, from Albania to Venezuela, in scrutinizing the modest budget of the League as though it were the budget of a small State with already an intolerable burden of taxation, when the fact is that the League of Nations adds scarcely a featherweight to the taxation in any country. The total annual cost of the League, including the general services of the secretariat, the special organizations, the International Labour Office, and the Permanent Court of International Justice, is some 24 million Swiss francs or, say, a million pounds in English money, and the cost is spread over fifty nations. The cost of the Health Organization, including the Lepidemiological Service, is less than £40,000, the supervision of the opium traffic and other social activities cost less than £11,000, while intellectual co-operation is purchased for even a smaller sum. It is true that these special activities are not in the main line of the League's purpose, but they are, as one distinguished statesman after another has declared at the recent assembly, most powerful auxiliaries for peace and "moral disarmament." Take intellectual co-operation—the "baby" of the League's activities. Its centre is the international institute recently created in Paris as a gift to the League from the French Government, which also affords a large sum for its maintenance, though Austria, Czechoslovakia, Hungary, Italy, Poland, Switzerland, and other States, not forgetting Monaco, make grants for this work. The work consists in the promotion of co-operation between States by exchange of publications, collaboration of libraries and museums, interchange of professors and students, the preparation of scientific bibliographies—biology is at present in hand—and annual tables of constants and mathematical quantities, and the endeavour to place intellectual rights on a secure footing. Under this last head two questions in particular have claimed attention—namely, scientific property, and improvements in the existing convention on

copyright. All is ready for the summoning of a committee of experts on the former subject with a view to the conclusion of an international convention to protect and reward scientists and their discoveries. Such work as this has to run the gauntlet of aiggardly economy, and financial questions alone prevent it from being more vigorously pursued. The spirit of peace and goodwill in the world has to be paid for. Its price is a minute fraction of the price of war, but it is not to be had for nothing. Our correspondent adds that no one has made a better impression on the Assembly than a medical member of the British Parliament, Dr. Walter Elliot, Parliamentary Under-Secretary, Scottish Office, whose utterances, both in the Assembly itself and in the various Commissions, have gained him the ear of the men of many nations in quite an unusual way. Dr. Elliot has been one of the three substitute delegates in the British delegation, the others being Dame Edith Lyttelton and the Right Hon. Sir Edward Hilton Young.

### DERMATOLOGY AND VENEREOLOGY IN GERMANY

THE fifteenth congress of the German Dermatological Society was held in Bonn on September 4th, 5th, and 6th. The membership of the society is now over 800, 550 were present at the congress, including 65 dermatologists from outside Germany. The meetings were held in the Beethoven-Halle, and the proceedings were formally opened by Professor Riehl of Vienna. Speeches of welcome were delivered by the rector of Bonn University, representatives of the German Government and of medical practitioners in Bonn, and by Professor Erich Hoffmann, who acted as chairman throughout the proceedings. As the meeting was held in the Beethoven-Halle it was thought fit to celebrate the centenary of the musician's birth by a selection from his works. Actually 115 papers were on the programme, but although the meetings began at 9 a.m. and ended at 6 p.m. some could not be read owing to lack of time. Except for the opening of the set discussions the allotted time for each speaker was ten minutes. The authors were asked to speak from notes and not to read their papers, but unfortunately most speakers did not comply, and owing to the brief time available the contributions were delivered rapidly and were difficult to follow. A discussion on the biological and pathological aspects of the action of x-rays was opened by Professor L. Grebe (Bonn), followed by Professor Hans Meyer (Bremen) and Dr. G. Miescher (Zurich). The remainder of the first day was devoted to papers relating to the same subject, to the Bucky or "Grenz" ray, and to ultra-violet irradiation. The "Bucky ray," which has a wave length intermediate between that of ultra-violet light and x-rays, is obtained by means of a modified x-ray tube and a specially wound high tension transformer, producing voltages lower than 10 kilovolts. The advantages claimed for this wave length are that it is absorbed by the superficial layers of the skin without damaging the germinative layers, thus giving greater safety and avoiding the permanent changes in the skin which follow repeated x-ray exposures. This form of irradiation has evidently aroused much interest in Germany, but there is by no means unanimity as to its practical value. The following day was devoted to papers on syphilis and gonorrhoea in the morning, and to general dermatology in the afternoon. For obtaining cerebro-spinal fluid for purpose of examination in cases of syphilis, the suboccipital route instead of the lumbar puncture was strongly advocated by the members of the Bonn dermatological clinic. The advantages claimed are the complete absence of headache following the procedure, thus allowing the operation to be carried out in the out-patient department. This somewhat formidable method has been adopted as the routine in the clinic,

and over 1,000 such examinations have been performed. On the other hand, there were two papers extolling the fine needle for subcutaneous lumbar puncture examinations. Malaria therapy is evidently much in vogue, and was even advocated for resistant gonorrhoea in women. Papers on general dermatology were of great variety, embracing amongst other subjects the pathology of the skin, the dermatovascular, cosmetic operations, and the treatment of eczema by the Störin van Leeuwen chamber. At the close of the meeting eighty patients were shown, many of whom had been collected from distant parts of Germany. The members had the opportunity of visiting the Bonn skin clinic, which is a two-story building containing 150 beds reserved for patients suffering from skin or venereal disease. It is under the charge of Professor I. Hoffmann, who has five paid assistants. In addition to the wards the building contains a series of out-patient rooms, a demonstration theatre, photographic room, a well equipped x-ray and light department, a large library of dermatological literature, cabinets containing 800 wax models of common and rare skin diseases, research laboratories and animal houses. Reviewed as a whole the impressions obtained from the meeting was that in Germany there is great activity and painstaking research by the junior dermatologists in many of the towns, they are stimulated and guided by senior men, who appear to have sufficient funds at their disposal to provide the necessary equipment. Dermatology is evidently considered an important branch of clinical medicine for each student must attend lectures and demonstrations for six hours each week during two terms. Wax models are used extensively for teaching purposes, one clinic alone is said to possess a collection of 4,000

education, and research, (4) the training of hospital executives, nurses and auxiliary personnel, and (5) the economic problem of hospital administration. It was also agreed that one session be devoted to the discussion of special problems, such as the care of the mentally ill and the comparability of hospital statistics. After Dr Dorre had thanked the meeting for the honour it had bestowed on his country and the American Hospital Association in giving them the privilege of entertaining the initial congress, Dr Sand congratulated all present on having taken a step which would not only serve the cause of the sick, but also that of international goodwill.

#### SUPERVISION OF FOOD IMPORTS

THE annual report of the medical officer of health for the Port of London, with its lists of the number of ships disinfected and the number of rats killed, is enlivened by descriptions of difficulties which arose in 1926 in regard to various imported foodstuffs. Thus we learn that in a consignment of canned lobster there were not only obviously blown cans with stinking contents, but also cans in which the strength of the tin masked early decomposition with gas formation. The decomposition could only be detected when gas escaped on puncture. The packers objected to destruction of the goods, all that was wanted, they said, was 'to give the goods a short water bath say twenty minutes and vent them and then stop them.' On this Dr Willoughby remarks that the proposal to 'vent' decomposing goods is primitive in the art of canning and outside consideration in the practice of public health. He released two cases to the Dominion Government concerned for its information and experiment. Some tins of cherries, preserved with the allowable sulphur dioxide, were found to emit on opening a strong smell of sulphuretted hydrogen. The smell evaporated in a few days, but to avoid the disgust of the private consumer on opening such a tin the consignment was released to a firm of manufacturers of delicacies on the understanding that they would air the cherries before using them. The process of airing was also applied to some meat which had become tainted by an atmosphere of oil fumes. Dr Willoughby tells us that domestic experiment was made from time to time to find out how the process of airing was proceeding. In the end the happy result was that it became possible to release the whole of the material without prejudice to the public. The experimental shipment of a cargo of chilled beef from Australia is described in the report. The difficulty in the process is to chill sufficiently to prevent the growth of moulds without freezing to such a degree as to destroy the muscle substance and cause a leak of sanious fluid on thawing. As cleanliness in a high degree is necessary in order to ship chilled meat over long distances, the consumer benefits and, as Dr Willoughby says, in this instance commerce and health run hand in hand.

#### THE IMPROVEMENT OF INNS

THE decrease in drunkenness in this country may be attributed to many causes—to trade depression, to the shortening of hours for licensed trade, to the high price of beer and spirits resulting from heavy taxation to the increase in amusements and outdoor sport, to the abolition since 1904 of 25,000 'redundant' licences, or to better education of the people in habits of sobriety. As an adjunct to all or any of the causes, the Central Public House Trust Association would like to add 'disinterested management.' The last annual report of the association records a very fair measure of success, notwithstanding the industrial troubles of 1926, so that many of the affiliated trusts have been able to pay their maximum dividend for the year. A number of the trusts, however,

#### AN INTERNATIONAL HOSPITAL CONGRESS IN 1929

ON September 19th, on the invitation of the American Hospital Association, representatives from eleven countries met at the League of Red Cross Societies, Paris, to discuss the organization of an international hospital congress. The British representatives were Mr J. Courtney Buchanan, Lieut.-Colonel Clement Cobbold, Mr W. H. Harper, and Captain J. E. Stone. Dr Rene Sand, technical counsellor to the League of Red Cross Societies, was unanimously elected chairman. Dr Joseph C. Doane, medical director of the Philadelphia General Hospital and president of the American Hospital Association, said that he and Dr Lewinski-Corwin (director, Hospital Information and Service Bureau, United Hospital Fund) had come in a very humble mood to meet the representatives of institutions which had been at work for centuries. Two years ago the Board of Trustees of the American Medical Association had appointed a Committee on International Hospital Relations, which had sent him and Dr Lewinski-Corwin to Europe with the mission to pave the way for an international hospital congress. The speakers who followed unanimously pledged the support of the countries and institutions they represented, and M. Queller, chief of the hospital service of the Public Assistance of Paris, promised a hearty welcome to the hundred institutions supported by the Public Assistance of Paris should it be decided to hold the congress in France. Invitations were also extended by the representatives of certain other countries, but at the conclusion of the meeting it was unanimously agreed that an international executive committee be set up to prepare an international hospital congress to be held in June 1929 in the United States. It was also agreed that the principal problems to be discussed at the initial congress should be limited to the following:—(1) the creation of national hospital associations and of an international hospital association, (2) the respective fields of public and private hospital work, (3) the hospital as a unit for cure and prevention of disease, medical

are fortunate in owning wayside inns in country districts, which have benefited by the enormous increase in motor traffic. The development of trusts is handicapped by the difficulty of raising capital upon which the return is strictly limited to a maximum, and by the licensing laws which base licence duty on alcoholic trade instead of on the value of the premises. So it comes about that improvements in the accommodation of the building are often penalized. In this connexion it is interesting to note that the main objects aimed at in a trust house, whether in designing a new building or adapting an old, are a convenient service from the lichen to the tea-room, dining-room, and tea-garden, and such arrangement of the bus and taproom that the manager can supervise both the customers and the bar attendants.

#### MEDICAL SOCIETY OF LONDON

THE programme has now been issued for the first half of the 155th session of the Medical Society of London. As usual, the society will meet on Monday evenings. On October 10th, after the annual general meeting, Mr H. W. Cusson will deliver his presidential address on "Surgery in the early days of the Medical Society of London." On October 24th Dr B. B. Vincent Lyon will open a discussion on the development of the duodenal tube and its practical value in diagnosis and treatment. November 14th is to be a clinical evening. On November 28th Mr T. P. Legg will introduce a discussion on the society's report on the late results of operation for carcinoma of the breast. Fellows wishing to take part can obtain copies of this report from the secretary. On December 12th a debate on insanity will be introduced by Dr Eustace Callender, followed by Dr Gordon Holmes and Sir Maurice Craig. The syllabus of the second half of the session will be published early in January. In the meanwhile it is notified that Dr F. J. Porvinton will give the Lettsomian Lectures, on February 20th and 29th and March 7th, on "Rheumatic heart disease," and that Sir Archibald Guird will deliver the Annual Oration, entitled "Lessons of rare maladies," on May 14th. As already announced in our columns, this year's David Lloyd Roberts Lecture, on "Criminal law and insanity," will be given by Lord Hewart on November 16th at 5 o'clock.

THE *Medical Officer* was founded in 1908 as a weekly journal for medical men in the Government and municipal services, under the able editorship of Mr G. S. Elliston, M.C., M.A., with the support and collaboration of public health officers. We congratulate our contemporary on reaching its 1,000th issue on Saturday last, September 24th, and wish it many more years of independent and useful life. Its editor, as many of our readers know, is a son of the late Dr W. A. Elliston, President of the British Medical Association in 1900, and a brother of Mr Guy Elliston, who was Financial Secretary and Business Manager of the Association from 1902 until his death in 1918.

THE HAUVERAN Oration before the Royal College of Physicians of London will be delivered by Sir William Hale-White, K.B.L., at the College, Pall Mall East, on Tuesday, October 18th, at 4 p.m.

WE regret to announce the death at Marseilles of Sir Peter Peck O'Connell, M.D., M.Ch., formerly senior surgeon to the Mater Infirmitum Hospital, Belfast.

THE Hauben gold medal of the Royal Institute of Public Health for 1926 has been awarded to Sir Ronald Ross in recognition of his eminent services to public health.

## THE BOARD OF CONTROL

### THIRTEENTH ANNUAL REPORT

DURING the past year interest in lunacy and mental disorder has been focused principally on the findings of the recent Royal Commission. Time did not permit of the Board of Control making a detailed examination of the recommendations of the Royal Commission in its last annual report, as the Royal Commission's report was published in July, 1926, and so special interest attaches to the Board's report for the year 1926, in virtue of the official pronouncement of its views on the Commission's recommendations. Whatever differences of opinion may exist in regard to a few of the recommendations, the report of the Royal Commission has, in the Board's opinion, been welcomed on all hands as a document of great value, and it is one which "throughout breathes a spirit of progress and humanity."

The immediate cause which led to the appointment of a Royal Commission was the uneasiness roused in the public mind by a number of charges, recklessly made, to the effect that large numbers of sane persons were being detained as insane, that the whole system of lunacy administration was wrong, and that widespread cruelty existed in public mental hospitals. In regard to these charges the Board notes with satisfaction that the Commission has spoken with no uncertain voice, and in repudiating them, has taken the opportunity of "paying a tribute to the skill, devotion, and self-sacrifice of the nursing staffs, who in circumstances peculiarly exacting are rendering great service to suffering humanity." Satisfaction is also expressed with the recommendations of the Commission on the subject of early treatment of mental disorder. Paragraph 45 of the Commission's report has this sentence—which the Board fully endorses—"Certification should be the last resort in treatment, not the prerequisite of treatment."

In giving evidence before the Commission, the Board of Control suggested that for the purpose of settling the procedure to be adopted for the reception of persons suffering from mental illness patients should be divided into three classes: voluntary, non-volitional, and unwilling.

As regards the voluntary class, the Board suggested that treatment without certification should be given in any mental hospital, public or private, or general hospital nursing home, or under private care, subject to certain provisos in regard to notification and medical reports. The Commission's recommendations followed along the same line.

As regards the non-volitional cases, the Board of Control suggested reception without certification, on the "recommendation" of two medical practitioners, into any mental hospital or suitable institution. The Commission, if it had been free to consider exclusively the medical treatment of the patient, would have had little difficulty in accepting this suggestion, but, notwithstanding its sympathy with the Board's proposals, deemed it necessary that treatment should only be given on the authority of a provisional order by a magistrate.

The Commission's expression of its desire that the law should be altered to ensure more effective protection to medical men and others in the bona fide discharge of their duties under the Lunacy Acts meets with the Board's entire concurrence.

The Board notes with satisfaction the recommendations made by the Royal Commission regarding the duties of medical superintendents that they should be relieved as far as possible of administrative details, and so devote the greater part of their time to medical questions which are more immediately their concern.

The Board endorses the statement of the Commission that the present medical staffs of some institutions ought to be enlarged, and welcomes the recommendation that systematic facilities should be given for assistant medical officers to proceed on leave for the purpose of post-graduate study, and that the staff should be sufficiently large.

Lunacy and Mental Disorder. Thirteenth Annual Report of the Board of Control for the year 1926. Part I. London: H.M.S.O. Office or through an bookseller 1927. 2s. net.

permit of this. The Board also supports the observation that, in order to attract and retain in the service suitable assistant medical officers, their financial prospects should be improved.

Entire agreement is also expressed with the Commission's recommendation that the treatment of insanity in all its stages should be divorced from the Poor Law. The Board considers that the present arrangement, under which patients are first dealt with in Poor Law institutions before reaching the mental hospitals, is open to grave objection. It is also deemed indelible that individuals should be paperized merely because they become ill mentally and are treated at the public expense.

#### Mental Disorder

On January 1st, 1927, the number of notified insane persons under care in England and Wales was 135,626, an increase of 2,745 during the preceding year while the average annual increase for the five years ending January 1st 1927, was 2,552. The relative distribution of the sexes—males 43.9, females 56.1—was the same as in each of the three preceding years.

First admissions—that is of certified patients—during 1926 numbered 17,517 or 79.9 per cent of all the direct admissions—about 1 per cent below the average of the preceding five years.

The number of persons discharged from reception orders as recovered, relieved, or not improved numbered 10,469 (males 4,279 females 6,181). Of these 6,983 were discharged as recovered, yielding a recovery rate, calculated upon the direct admissions of 31.85 per cent.

Deaths numbered 8,411 (males 4,131, females 4,280). This number was 140 fewer than in the preceding year and the death rate was the lowest ever recorded—7.3 per cent of the daily average number resident.

The question of accommodation has continued to give considerable anxiety. Quite apart from the actual growth of numbers additional buildings, especially admission hospitals and laboratories, are necessary for the more effectual treatment and classification of the patients.

#### Infectious Diseases

Euteric fever occurred in 33 mental hospitals in 1926 as against 35 in 1925. Thirteen hospitals had one case each and nine hospitals had two each. The disease terminated fatally in 10 men and 20 women patients and in 2 women nurses.

The number of cases of dysentery during the year was 515—more than double the number for 1925. The deaths, which numbered 98, were, however, only 19 in excess of those in 1925. The infection occurred in 52 hospitals, and three hospitals together accounted for 212 cases.

In spite of the increase of 2,710 in the hospitals' population in 1926 the number of notifications of new cases of tuberculosis (all forms) fell by 195, and the number of deaths diminished by 43. The rate per 1,000 of notifications of pulmonary tuberculosis for the year was 8.4 the death rate was 6.6—nearly the lowest yet recorded.

#### Mental Deficiency

The lack of accommodation for defectives becomes every year more urgent. The Board directs attention to its report of the previous year, when this subject was fully dealt with, and also to the Report of the Departmental Committee on the Treatment of Young Offenders whose opinion must carry weight with those local authorities who have made no provision for the mentally defective.

The number of mentally defective patients on January 1st 1927 was 38,852 (males 19,144, females 19,738). This total includes cases under statutory supervision. During the year there was a total increase of 2,667 patients under care.

Reprehensible as is the marriage of defectives who have been certified as unable to manage themselves and their affairs or as needing care, supervision and control it is by no means unknown but the Board whilst characterizing the practice as the height of unreason and the negation of the aims of a civilized community seriously doubts if public opinion is sufficiently informed to allow of the necessary legislative measures to be taken to prevent it.

It is pointed out that the procreation of children by

unmarried defectives, denorable as it is, has not as a rule the same evil consequences to the children as the marriage of defectives. In the former case the children are generally brought up apart from their parents and so given the chance of as full a development as possible, whilst those who are the offspring of married defectives remain under the control of persons who are incapable of taking care of them, and they are consequently exposed to hardships, neglect, and ill treatment that the mental condition or their parents renders inevitable.

The Board is of opinion that the publication of the facts discovered by local authorities as to the extent to which marriage or defecation takes place might go far to prepare the way for legislation and to justify an alteration of the law.

With regard to the bill recently introduced into Parliament to amend the Mental Deficiency Act of 1913 in respect chiefly of the definitions in that Act, the Board expresses thorough approval. The present definitions, which require that only those defectives may be dealt with in whom it can be proved that the defect has existed "from birth or from an early age" have prevented many cases from receiving the care and protection of the Act although urgently in need of them.

## THE NEW NATIONAL LIFE TABLE

### REPORT BY THE GOVERNMENT ACTUARY

A REPORT BY THE GOVERNMENT ACTUARY Sir Alfred W. Watson, K.C.B. on life tables based on the population of England and Wales as returned in the 1921 census and on the average number of the deaths recorded in the three years 1920, 1921, and 1922 has been published as Part I of the Registrar General's Decennial Supplement. Throughout the report the experience of males and females has been examined separately.

The principal table is a new national life table for England and Wales, henceforth to be known as the English Life Table No. 9. This table confirms the generally accepted view that the vitality of the nation (as measured by length of days) has been steadily improving.

A rough measure of the improvement is afforded by the following comparison of the expectations of life: the English life tables No. 7, No. 8, and No. 9 being taken as representative of the conditions existing in 1906, 1911, and 1921 respectively.

#### Expectation of Life Years

MALES				FEMALES			
Age	Engl. h. Life Table No. 7	Engl. h. Life Table No. 8	Engl. h. Life Table No. 9	Age	Engl. h. Life Table No. 7	Engl. h. Life Table No. 8	Engl. h. Life Table No. 9
0	43.43	51.59	56.62	0	52.43	56.35	59.58
10	51.81	53.68	56.67	10	54.53	56.91	57.53
20	43.01	47.21	45.73	20	45.77	47.10	47.75
30	37.75	36.81	37.40	30	37.36	35.57	40.25
40	27.46	27.7	9.19	40	29.37	30.50	31.26
50	17.70	20.29	21.56	50	21.81	22.51	23.69
60	11.49	13.18	13.36	60	15.01	15.4	16.22
70	8.49	8.53	8.75	70	9.25	9.3	9.55
80	4.8	4.90	4.93	80	5.20	5.43	5.5
90	2.50	2.87	2.82	90	2.94	3.10	3.15

Examination of the rates of mortality at individual ages shows that the improvement is especially marked at the youngest ages. The probability of a child dying in the first year of age is found to have decreased by about 40 per cent during the fifteen years from 1906 to 1921.

At the ages of adolescence and of young manhood and womanhood the new rates do not differ greatly from those on the No. 8 table. In the case of males there is no

<sup>1</sup> The Registrar General's Decennial Supplement, England and Wales 1921, Part I, Life Table. H.M. Stationery Office. (Price 2s.)

evidence of any deterioration, but it is noteworthy that for females aged between 18 and 27 the new rates of mortality are appreciably higher than those in the previous national table. In the main part of the table from ages 30 to 80 the vitality of both sexes is shown to have increased very considerably, but at the advanced ages little progress is indicated.

Rates of mortality have been calculated for women with reference to marital condition—single, married, and widowed. At the youngest ages for which comparison is possible the lightest rates are those for single women. The rates for single and married women differ but slightly between ages 24 and 37. Thereafter the rates for married women are usually lower than those of single women or widows. The rates of mortality for widows are invariably heavier than those for single women or wives.

The deterioration in the vitality of young women between 18 and 27 disclosed in the national table reappears in the spinsters' experience, but is not found in that of married women.

A special feature of the report is an investigation of the comparative mortality experience of sections of the country, according to geographical situation and density of population. For the purpose of this inquiry the country has been divided into ten geographical areas. Each of these, except Greater London, has been subdivided into three sections—county boroughs, urban districts (including municipal boroughs), and rural districts—and the experience of each section has been examined in various age groups. The results of this investigation are summarized in the following table.

*Ratios of Population Death Rates in the several Geographical Divisions and Subdivisions to the corresponding Rates for England and Wales (ages 5 and upwards) computed throughout on a Standard Age Distribution—namely, Population of England and Wales, Census 1921*

Geo-graphical Division	MALES				FEMALES			
	County Boroughs	Urban Districts	Rural Districts	Whole Division	County Boroughs	Urban Districts	Rural Districts	Whole Division
Northumberland and Durham	1.29	1.13	0.94	1.14	1.28	1.23	1.14	1.23
Cheshire and Lancashire	1.25	1.10	0.89	1.17	1.21	1.15	0.98	1.17
York (West Riding)	1.18	1.06	0.91	1.10	1.17	1.10	1.01	1.12
South Wales	1.15	1.10	0.93	1.07	1.14	1.20	1.09	1.16
York (East Riding North Riding) etc.	1.17	0.97	0.79	0.98	1.18	0.99	0.91	1.02
North and West Wales	—	0.95	0.95	0.95	—	0.95	1.03	1.03
Central Counties	1.05	0.93	0.81	0.94	1.02	0.95	0.88	0.95
Southern Counties	0.93	0.86	0.77	0.84	0.89	0.83	0.82	0.84
Eastern Counties	0.91	0.86	0.73	0.81	0.90	0.86	0.83	0.85
Metropolitan Area	—	—	—	1.03	—	—	—	0.96

It appears to be established that the rate of mortality varies both with the geographical distribution of the people and with the density of the population, and that greater variation in the death rate from the general average is attributable to the geographical element than to density of population.

In all the areas the difference between the death rate of the county boroughs and that of the rural districts is greater among males than among females. The diversity of the experience of the two sexes appears to be attributable not to the greater strain of occupational conditions as affecting male lives in the county boroughs, but to the relatively favourable mortality experience of the male population in the rural areas.

A detailed investigation has been made of the experience of the sections showing the highest and lowest death rates—the county boroughs of Northumberland and Durham, and the rural districts of the Eastern Counties—to illustrate the maximum effects of the geographical and density elements. The results of the comparison are very striking. For example the probability of a child dying within the first ten years of its life in the rural districts of the

Eastern Counties is only about half of that in the county boroughs of Northumberland and Durham. The respective probabilities of dying within ten years in the county boroughs of Northumberland and Durham and in the rural districts of the Eastern Counties are

For a man aged 20	0.052 and 0.034
" " 50	0.201 and 0.104
" " 70	0.711 and 0.535
For a woman aged 20	0.042 and 0.036
" " 50	0.159 and 0.095
" " 70	0.622 and 0.463

The effects of density of population were further investigated in the case of one area, the Central Counties.

For Greater London complete life tables, for males and females separately, have been prepared. A general survey of the experience indicates that the vitality of the metropolitan area approximates fairly closely to that of England and Wales, that of the males being slightly inferior and that of the females slightly superior to the general average. In the case of both sexes the rates of mortality for ages between 15 and 30 are found to be relatively light, a feature traceable in the experience of other populous sections, and attributable presumably to the fact that the population of the towns is being continuously recruited by the accession of healthy lives from other districts. It is suggested that the demand for domestic help may account for the fact that the fertility is more strongly marked amongst women than amongst men.

In conclusion, it must be emphasized that the rates of mortality shown in the national tables are the results of the aggregation of data relating to a number of sections with widely varying characteristics, and that the circumstances of any one particular area may not be at all accurately reflected at any point in the general experience to which it has contributed.

## MEDICAL DEFENCE UNION

### ANNUAL GENERAL MEETING

THE annual general meeting of the Medical Defence Union was held at the Royal Bath Hospital, Harrogate, on September 24th, with Sir HERBERT WATERHOUSE, the president, in the chair.

In proposing the adoption of the annual report of the council for the year 1926-27 Sir Herbert Waterhouse said that this was a record of the continued growth and progress of the Union, though limitations of space made it only possible to mention some of the more important matters dealt with during the past year. The Hume Spry case was the biggest and the most anxious case with which the council had been concerned during the year, it was also the most expensive, and, he believed, had cost more than any other action since the Union was founded. Fortunately, however, the members concerned were completely vindicated. Commenting on the case the president entered a protest against the existing judicial system which permitted medical practitioners, who had done their duty honestly in the interests of the public and of the patient, "to be subjected to a lengthy and costly trial because the plaintiff is able to produce affidavits from medical men who see him some months or even years after he was certified, testifying without any inquiry of those professional attendance on the patient at the time of, or prior to, certification that he was not insane when certified, and that those who certified acted negligently and/or in bad faith. Except for such affidavits this case would never have gone to trial. The verdict of the jury and the remarks of the judge sufficiently indicate the value they attached to such evidence."

In numerous other cases the president continued the Union had been able successfully to defend members whose professional work had been called in question. As a consequence of the satisfactory state of its finances the Union had been able to increase still further the benefits of membership. The council was now prepared to defend an action brought against a member in consequence of the acts or omissions in any case of a subordinate medical officer or a non-medical sub-editor and of a partner or assistant if he belonged to either of the two English defence societies. This constituted a material advance on the former position, and there was further innovation. A member could now obtain protection



against actions arising out of the acts or omissions of an assistant who was not himself a member of any defence society by paying an additional annual subscription of 10 in advance. Again, the Union's reciprocal arrangement with the other society as regards assistants had now been extended to partners.

Referring to a circular letter issued last February to every member of the Union on the subject of x-ray examinations in cases of injury to bones or joints the president said that this had been interpreted by some as implying that a member who had not made an x-ray examination in any such case would not be defended. That was not what the letter said, and it was not what the council intended. It was a warning that in all such cases the member should in his own interests advise an x-ray examination and that when such advice was not followed the member should for his own protection place the advice given on record by writing a letter to the patient and keeping a copy to ease of future trouble. This recommendation was based on experience of scores of cases, but was constantly ignored, thus depriving the council of the only evidence which as a rule made a successful defence possible.

Sir Herbert Waterhouse concluded by expressing appreciation of the services of Dr. James Neal, the general secretary, and Mr. Hemp on the solicitor.

The report of the council and the financial statement for the year 1926 were adopted unanimously. Dr. E. C. Greenwood, Dr. H. Robinson and Mr. W. G. Spencer, the retiring members of council were re-elected. The auditor, Mr. Lewis Hardy, was reappointed, and authority was given for the payment of the first class railway fares (with expenses if detained for the night) of members of the council attending council meetings from provincial centres. The proceedings ended with a vote of thanks to the president and council for their services during the past year.

## Canada.

[FROM OUR MONTREAL CORRESPONDENT]

### MENTAL AND PHYSICAL DEFECT

ALBERTA is the first Canadian Province to venture on legislation in regard to sexual sterilization. The criticism made at the outset, however, is that the measure proposed is not as far reaching as has been generally advocated, since it is designed to apply only to persons who have been inmates of a mental hospital. This will obviously result in a large number of feeble minded not being reached at all, whilst on the other hand many such inmates suffer from mental disease rather than mental deficiency. The administration of the Act is to be entrusted to a board of two medical practitioners nominated by the University of Alberta and the Council of the College of Physicians and Surgeons and "some person other than a medical practitioner." The three appointments are to be made by an order in council. Some criticism of the Provincial Government is also being made in regard to a travelling clinic which the department of public health has been sending to certain outlying districts where there is a lack of medical attention, and where it has been found on investigation that there are amongst the children remediable physical defect. This type of clinic has been in operation for some years, apparently successfully, but the extension of its work to larger areas is, in the opinion of some, apt to introduce an element of interference with ordinary medical practice. On the other hand, the Province claims that there is no intention of introducing any form of State medicine, but rather to provide medical aid in areas where it does not at present exist, or is at any rate inadequate in amount. It is claimed by the critics, however, that no co-operation with the medical men is being attempted. The work is done entirely through the schools (children only are treated) the parents being notified of the date the clinic is to arrive. The collection of the clinic fees is made by a local committee chosen from groups of schools. There also seems to be ground for criticism in that there is no adequate provision for the after-care of the children in such cases, for example, as the removal of the tonsils and adenoids.

### MEDICINE AND THE STATE

The question of State medicine has been brought before the profession in Canada as the result of a letter from a physician in Saskatchewan. This Province is one in which the population is spread over very large areas and medical service is not proportionately arranged. The Provincial Government has therefore seen fit to appoint salaried medical officers in certain areas. It appears, however, that State paid doctors were appointed in two municipalities which had no real need for them, and the medical men already established there felt appreciably affected. Expressions of opinion on the subject of employment of doctors by the State have been obtained from the various Provinces, and they show decided variations in the point of view. On the whole, the principle of municipal doctors for general medical work was objected to. It was admitted, however, that the distinction between contract work with the Government and contract work with companies is one which is hard to draw, and there never has been any criticism of companies employing medical men. It was hinted, too, by some that these State appointments were an expression of discontent on the part of the public with the excessive cost of sick attendance, in some parts of the country at least. This, of course, introduces another question altogether. It is quite possible that these rumblings, however faint at present, may be warnings of what the profession may have to face in its future relations with the political forces.

### THE MEDICAL SCHOOLS

There is no falling off in the numbers of entrants for the medical schools, judging by the applications received by the McGill Medical Faculty this year. Over 600 have made application, but only 120 of these have been accepted for the first year class owing to the recent decision to keep the entrance classes within reasonably handled numbers for teaching. It is remarked that a noticeable proportion of those entering medicine are the sons of physicians. About fifty students are from the United States, there being representatives from sixteen States. This is perhaps one of the more healthy forms of "peaceful penetration," providing as it does a very thorough form of mutual understanding. California seems to be unusually eager to send its sons abroad—and to Canada—since a large number of applications were received from that State six of which were accepted. It augurs well for the general educational standing of the medical men of the day that about 75 per cent of those coming in are taking B.A. or B.Sc. degrees before entrance.

### THE CANADIAN MEDICAL ASSOCIATION

The annual meeting of the Canadian Medical Association is now a good way behind us, but it has left a lasting sense of growth and expansion within the profession in Canada. It was held in Toronto, and while it would be an invidious comparison to say that it was any more successful than previous meetings, there is no doubt that it had the largest attendance yet chronicled. Since this was a jubilee year for the Canadian Medical Association Dr. Starr took the opportunity of recalling its progress since its foundation in 1867. There had been striking growth, but there were periods of depression. In 1892, for example, there seemed to be such a lack of interest on the part of the members that a proposition to disband was seriously considered. The contrast between such an outlook and the present strength of the association needs little elaboration. There is a national value in these conferences which must not be overlooked. We have an East and a West and a Middle West, too, in Canada, and, as it was well put by one member, "the country needs being together from East to West, and every social contact, every common interest, every intellectual affinity, every mental picture of the face of a friend afar, every idea gathered from someone who lives at the other side of the Dominion, is at the same time a couplet between the country's sections and a buffer between its sectionalisms." The meeting in 1928 will be held in Charlottetown, Prince Edward Island.

# Union of South Africa.

[FROM OUR PRETORIA CORRESPONDENT]

## TUBERCULOSIS RESEARCH

THE South African Institute for Medical Research, Johannesburg, has undertaken a comprehensive investigation into the causes, mode of spread, and methods of prevention of tuberculosis in the Union. The investigation is being financed in equal shares by the Chamber of Mines, the Department of Public Health, and the Native Deferred Pay Fund Board, and an advisory committee has been appointed on which all the parties concerned are represented. This research is being led by Colonel Lyle Cummins, professor of tuberculosis in the Welsh National School of Medicine, Cardiff, a well known authority on the subject, who is being assisted by Dr Peter Allan, late medical superintendent of the tuberculosis sanatorium of the Union Health Department at Nelspoort. Professor Cummins is devoting the long vacations during the next three years to this investigation. He arrived in Capetown on July 25th, and proceeded direct by the "Union Express" to Johannesburg, where he was joined by Dr Allan, who has been seconded from the Health Department for the research.

As regards natives, the scheme involves investigations, not only of the labour centres on the Witwatersrand gold mines and of the collieries and diamond mines, but also in huts and locations in the native territories. The investigators have now completed a preliminary tour of the native territories of the Transkei and Ciskei, in which they were accompanied by Dr A. I. Girdwood, chief medical officer of the Witwatersrand Native Labour Association.

## HOOKWORM IN THE GOLD MINES

Reference was made in the BRITISH MEDICAL JOURNAL of June 11th to the discovery of an unexpected prevalence of ankylostomiasis among Rand native miners recruited from Portuguese East Africa. The investigations which followed have not only confirmed this discovery, but also that the disease has spread to British South African natives and even Europeans employed in the mines. All European miners on the Witwatersrand pass through the Miners' Phthisis Medical Bureau once in six months. This procedure is designed primarily to detect and eliminate early silicosis, but it serves sometimes also to detect other conditions. It was at the bureau that European hookworm cases were discovered at the end of last year, after the sanitation department of the Rand Mines, Limited, had drawn attention to the existence of the disease among mine natives. Thereafter miners coming to the bureau who were observed to be suffering from marked anaemia were advised to consult their private doctors, it being pointed out to them that the condition might be due to ankylostomiasis. Of 66 men so advised, at least 26 were since found to be suffering from hookworm disease.

It now appears to be certain that hookworm is contracted to the mines almost exclusively by natives from the East Coast (Portuguese East Africa), some 50 per cent of whom have been found to be infected on arrival. Infection of the underground workings has been traced in all of the mines investigated, and it is clear that most, if not all, of the infected Europeans have contracted the condition from these mines. Seventy-six European cases have been reported from mines known to have soil infection. Except at the Village Deep and City Deep, the infection of the workings seems to have occurred only during the last twelve or eighteen months, and does not appear to be serious. There is no evidence that Europeans can contract the disease anywhere in the Union outside the gold mines in which hitherto have been found. Hookworm amongst Europeans must therefore be considered an occupational disease. The Chamber of Mines has now accepted responsibility for the disease amongst Europeans as an occupational disease and has not only taken steps for its eradication but is also dealing with affected cases in terms of the Workmen's Compensation Act. The Rand Mutual Assurance Company, Limited, will pay compensation for such period as the workman is medically certified to be

incapacitated for work, this will usually be for the four two-day periods in which he is receiving active treatment. No additional charge is being made by the company for this insurance.

In natives ankylostomiasis is not being regarded as an occupational disease, as they arrive at the mine in an infected condition. All newly recruited East Coast natives now receive mass treatment with carbon tetrachloride prior to and during the period of their employment. All natives admitted to hospital for any cause on the Village Deep and City Deep are examined for the presence of hookworm, and all those found infected are treated. Even in untreated cases the worms tend to die out in six to nine months, provided there is no reinfection. This natural termination, and the fact that treatment is simple and efficacious, will make eradication a fairly easy matter, the worm will have to be eliminated from its native carriers and the infection of soil prevented by the adoption of suitable hygienic measures. Destruction of the larvae in the soil by means of antiseptic has not proved successful, but they are destroyed by saturating the soil with common salt solution.

## CONTROL OF CARRIERS OF INFECTIOUS DISEASE

In the *Government Gazette* of August 12th were published regulations with regard to carriers of infectious disease made under the Union Public Health Act. Persons suspected on reasonable grounds of harbouring infection, and consequently being liable to cause the spread of disease, must afford health officers of local authorities or of the Government every facility for obtaining specimens of blood, excreta, discharges, or of other material required for examination and investigation. A suspected carrier may be taken to a hospital or other suitable place for the purpose of examination and detained there as long as required. A carrier must observe all reasonably practicable instructions given him by a local authority or Government health officer in regard to disposal of his excreta and other precautions for preventing the spread of infection. He must notify change of residence or work. He may be required to undergo treatment, to remain under medical surveillance for a specified period, to report at specified times and places, not to handle food or articles used in connexion with food intended for consumption by others. Magistrates and health officers must ensure that these regulations are carried out sympathetically and without more hardship than is unavoidable in the public interest. Penalties are provided for persons found guilty of contravening these regulations, or failing to comply with them or to assist in their enforcement.

## THE LATE DR J. M. MEHLISS

The death occurred, on July 30th, in the Johannesburg General Hospital, of Dr John Maximilian Mehliß, in his fifty-ninth year. Since 1893 until shortly before his death Dr Mehliß was medical officer to the Lazaretto and the Chronic Sick Home at Rietfontein. These two institutions—the former a Union Government concern administered by the Union Health Department, the latter falling under the Transvaal Provincial Administration—are situated close together, between Pretoria and Johannesburg. The son of an officer of the King's Hanoverian Legion, which corps provided the Eastern Province of the old Cape Colony with so many of its finest settlers, Dr Mehliß was born in Grahamstown in 1868. His early education he received in Dalo College, King Williamstown, where he was a contemporary of the fathers of several of the younger medical practitioners of the Union of to-day. He went to Germany for his medical training, passing the Staats Examens in 1892, and receiving the Munich Doctorate the following year. He then returned to South Africa and after a short appointment as district surgeon of King'sdorp commenced the appointment at Rietfontein, which he held with conspicuous success. Last February cerebral thrombosis occurred, and it seemed unlikely that he would be able to resume his duties. But after a surprisingly short time he was about again, doing his daily rounds of the wards, conducting the venereal clinics and doing the minor operations as before. Though his movements were

and weak there appeared to be no mental impairment except for one curious manifestation: he would misbehave young practitioners for their fathers, and, somewhat to their embarrassment, discuss with them events that occurred before they were born. His will required a burial at Rietonin similar to that of his pauper patients of the Chronic Sick Home.

#### RETIREMENT OF DR. L. G. HAYDON

Dr. L. G. Haydon, assistant health officer for the Union of South Africa, retired from the Department of Public Health at the beginning of September after twenty-seven years in the service of the State. He qualified in Aberdeen in 1886, took the D.P.H. of the same University in the following year, and shortly afterwards volunteered for plague duty in India. He was soon in charge of seven improvised hospitals in a district where the average daily death rate was 350. As each hospital was always full at night, and all the patients usually dead before dawn, there was little to do in the morning but have the corpses burnt and the hospitals swept out. After plague had diminished in India, his loving spirit took him to Australia. He carried with him some plague cultures, and though on arrival in Victoria he gave specimens to the health authorities, he was arrested for importing dangerous material. However, the Victorian Government relented and he was put in charge of a leper station, but soon after we find him in Durban with Buller's forces helping with the wounded from Colenso. At the end of the Anglo-Boer war he entered the Natal public health service, with which he remained until the Union Public Health Act of 1919 established a central health department for the whole Union. During the great war he served in the African campaign. On September 2nd, the day he retired, he was bidden farewell by the staff of the public health department. Sir Edward Thoinston, in making a presentation on behalf of the staff, commented on the valuable services that had been rendered to the country by Dr. Haydon. The latter responded suitably, stressing particularly the splendid team work and loyalty in the department. He leaves shortly for Australia, where he has farming interests.

### Ireland.

#### CARNEGIE WELFARE CLINIC FOR DUBLIN

In the presence of a large gathering of the medical profession and ladies interested in philanthropic work in the city, the new Carnegie Welfare Clinic, Lord Edward Street, Dublin, was recently opened by Sir Donald MacAlister, Bt., K.C.B., vice-chairman of the Carnegie United Kingdom Trust in connexion with Civic Week celebrations. General Mileray, Minister for Local Government and Public Health, who presided, extended a hearty welcome on behalf of the citizens of Dublin to Sir Donald, who he said as President of the Medical Council had done so much to establish good relations between the medical profession of the Saorstát and of Britain. As vice-chairman of the Carnegie Trust he had given a great personal contribution of service to Dublin in seeing that the grant for that magnificent clinic had been preserved until the building could be erected. They were under a deep debt of gratitude to him for this, and for his presence. Sir Donald MacAlister, in declaring the institute open, said that ten years previously, in October, 1917, the Physical Welfare Committee of the Carnegie Trust decided to employ part of its funds for the purpose of encouraging the more and to promote better conditions of life for the needy mothers and infants of Great Britain and Ireland. Progress had been initiated and fostered here and there by various voluntary societies and local authorities. Yet, although the objectives of the movement were clearly of national importance, and concerned the well-being of the people everywhere, and though laws had been made empowering local expenditure on schemes for promoting its ideals, but little was being done in the country generally, to use the powers so to establish permanent agencies for the welfare of mothers and young children particularly. The policy of the Carnegie Trust in such cases was to apply its funds, not to relieve authorities of their obligations,

but by example to show them how they might best fulfil these. The Trust was willing to act as a pioneer in certain selected areas by offering, for instance, the capital cost of a suitable building for a new institution, where lack of capital was proving a hindrance on condition that the annual maintenance costs of the work in it were guaranteed from local sources. It sought to help those who were ready to help themselves when initial difficulties of site and building had been overcome. With this end in view it had decided to offer to each of half a dozen local authorities in England, Scotland, and Ireland the gift of a model maternity centre, designed and equipped on the best and most practical lines, provided that these authorities undertook its upkeep and agreed to work it efficiently for the purpose in view. Many more such centres were, of course, required if the needs of the people were to be adequately met, but the model centres would, if successful at least afford an example which might move other authorities to emulation and imitation, and so serve to advance the national solution of the problem. The Trust's enterprise, and the hopes it formed, had not failed of fulfilment. The Carnegie model centres in Shoreditch, Birmingham, Liverpool, Motherwell near Glasgow, and at Rhondda in South Wales had been of undoubted value to these places, but, what was more important, they had been copied—perhaps surpassed—in well over three hundred other localities. It could now be said that in Great Britain the movement had at last taken firm root. The immense public utility of the maternal welfare centre had been demonstrated and recognized. A new sense of responsibility for the well-being of the present generation had been awakened in the community, and the scope of the national public health service had been widened and made more humane in its treatment of mothers and infants than ever before. The aim of the centre was not treatment of damage already done, that was the function of hospitals and infirmaries. It was the prevention of damage, the conservation of life by the diffusion of knowledge among mothers, the watchful avoidance of danger to the normal, and the healthy development of infants. On behalf of the Trust he thanked Sir Coey Bigger for his aid to the Welfare Committee in realizing its aims and overcoming its difficulties. He had more than once proved a sagacious counsellor and a tactful negotiator. Gratitude was expressed also to Commissioner Dr. Dwyer, Dr. Russell, medical officer of health of the city, and to the architects and builders. Senator Sir Edward Coey Bigger, M.D., moving a vote of thanks to Sir Donald MacAlister, expressed the hope that his valuable address would be an inspiration to all interested in child welfare work. Sir John William Moore, seconding the vote of thanks, said that Sir Donald MacAlister had protected the medical profession from ruin in Ireland. It was by his statesmanship that the authorities on both sides of the channel had been brought to see that the Medical Acts would not be interfered with and that the Saorstát should have its own Medical Council and its own *Medical Register*. The vote of thanks was passed with acclamation, and Sir Donald was presented with a silver key as a memento of the occasion.

### Correspondence.

#### THE ETIOLOGY OF EPIDEMIC ENCEPHALITIS

SIR—Might I be allowed to point out that Dr. Greenfield's criticism in the *BRITISH MEDICAL JOURNAL* of September 24th (p. 535) of some of the work done on the etiology of encephalitis lethargica is hardly in agreement with the facts. He groups the workers in this country with Loewy and Strauss and Kling and then states that the results can be completely discounted. This statement is apparently based on the fact that rabbits suffer from a spontaneous form of encephalitis due to the *Freyfalkitoxon cuniculi*.

The main facts of our experimental work on encephalitis lethargica are that during the height of the first epidemic in England inoculations into monkeys and rabbits gave numerous successful results, and in the case of the latter as high a figure as 70 per cent was reached, while

numerous control inoculations were without effect. Further, the lesions produced were indistinguishable from those of the human disease.

Dr Greenfield admits that these histological lesions are very similar to those of the human disease—"in particular foci of lymphocytic exudate and perivascular infiltration", whereas, as is well known, the spontaneous encephalitis of rabbits shows a vastly different type of histological picture, in which the parasite can readily be demonstrated. He also states that the animals show no symptoms, therefore he could not have read the account, given by us, of the experimental disease.

I might add that some time ago Flexner in America made a somewhat similar unconsidered criticism, but apparently Dr Greenfield had not seen my reply.

I think that the points raised above are sufficient to invalidate the criticism put forward by Dr Greenfield—I am, etc.,

Bland Sutton Institute of Pathology,  
Middlesex Hospital, Sept 27th

JAMES MCINTOSH

SIR,—From the second paragraph of his address on the pathology of epidemic encephalitis at the Annual Meeting of the British Medical Association (as reported in your issue of September 24th, p 535) Dr Greenfield does not appear to be fully cognizant of the recent account given by Kling of his work on this question.

Out of 204 rabbits inoculated with different strains of virus of human encephalitis, Kling found that 40, or about 20 per cent, showed the characteristic lesions. On the other hand, out of 160 non-infected rabbits, 10 of which had been kept associated with inoculated animals, none showed lesions. Therefore before concluding, from McCarty's finding of lesions in 55 per cent of the stock rabbits examined in New York, that Kling's conclusions are invalidated, it should be remembered that the occurrence of the disease "spontaneously" in rabbits varies greatly in different countries. Also in England it is met with apparently very seldom. The late Dr Dakino told me that he had never found an instance, and I believe Poirou has observed extremely few. I myself have only found one case, in a rabbit which had previously been used for experimental vaccinia. On the other hand, out of 14 rabbits up to the present inoculated with brain material—either given me by Kling, or from one of my own infected animals—4, or 28 per cent, showed the lesions.

Kling unfortunately does not give the actual number of his positive cases which showed the alleged parasite, *Encephalitozoon cuniculi*, but three of my positive cases showed these bodies (that is, 21 per cent of the total inoculated). Kling makes one very interesting and important statement. Where the histological changes appeared to be in an early stage none of the elements were to be found, they occurred in the more advanced stages, when degenerated and necrotic foci could be found. Kling concludes that the bodies are not protozoa, from which they differ also greatly as regards biological points. He regards them as reaction-products to an invisible microbe, which he compares with the Chlamydozoa. From my own observations I agree with him that the bodies are not living organisms. My own view is that they are reaction-products, a result of pathological change in the brain (and other organs) of the rabbit, which may at times be induced by more than one virus, including that of epidemic encephalitis, although this particular reaction-product is not produced in the human brain by that virus. The similarity of *Encephalitozoon* to certain stages of the negro bodies, another reaction-product to an invisible virus, is marked—I am, etc.,

September 1st 1927

H M WOODCOCK

#### OXYGEN IN ACUTE PNEUMONIA

SIR,—Many practitioners unable to be present at the Edinburgh meeting must have read with interest and profit Professor John Hay's introductory paper to the discussion in the Section of Medicine on the treatment of acute lobar pneumonia (JOURNAL, September 17th, p 477).

As winter approaches we general practitioners look forward with a certain amount of foreboding to the cases of

acute pneumonia with which we know we shall have to deal, and in which a small percentage of mortality is to be expected. Professor Hay places it 10 to 15 per cent. Our interest, however, must concentrate, not so much on the 10 or the 75 per cent who will survive "if allowed to do so," as on the remaining 10 to 15 per cent "whose chances of recovery will depend on the manner in which the case is handled."

Professor Hay excellently sums up the principles of treatment in terse and sensible phrases, but he leaves us a little vague as to some details of symptomatic treatment, especially the use of oxygen, which he calls "probably the best cardiac stimulant."

I think it is generally agreed that oxygen is useless in the later stages of pneumonia and that it should be given early. Professor Hay says, "at the first indication of cyanosis" (p 479) and continuously for an hour at a time. He adds that the funnel method is more or less futile and suggests nasal catheterization with blocking of the other nostril, although admitting that patients with pneumonia will "very rarely tolerate anything applied over the nose and mouth." The crux of the problem is "to get oxygen into the blood," and no method of inhalation can absolutely ensure that or enable us to measure the amount that is therapeutically of value.

It has been my practice for twenty years to inject oxygen subcutaneously as soon as I diagnose acute pneumonia. More than one instrument is available for the purpose, making it possible to regulate with precision the rate and the amount of injection. Surely this is the only way to ensure oxygenation of the blood, such comparatively large quantities as 300 to 500 c.c.m. injected into the outer aspect of the thigh or into the lumbar region being completely absorbed in twenty-four hours. The injection is painless and its effect is immediately seen in the lessened cyanosis of the patient.

Whether oxygen so used will further reduce the mortality of the 10 to 15 per cent "doomed from the first" is a question my experience is too limited to answer, but if it is to be given a fair chance and not condemned as in Osler, 4th edition (p 137), where we read that "it is doubtful whether the inhalation of oxygen in pneumonia is really beneficial, and the work of Lorrain Smith suggests indeed that it may under certain circumstances be positively harmful," then I think subcutaneous injection and not inhalation must be our method of choice—I am, etc.,

Glasgow Sept 19th

A I WARDEN

#### MINERS' NYSTAGMUS AND THE WORKMEN'S COMPENSATION ACT

SIR—The Compensation Act has now been in existence for twenty-one years, and no one of its many amendments or alterations has dealt with the essential causes that have led to the universal dissatisfaction which it has occasioned. These causes are two: (1) The disease is variable, all the employers and the workmen in Northumberland and Durham recognize the fact that the patients have good days and bad days. (2) It is universally admitted here that if a hewer has once acquired the disease it will assuredly recur on returning to hewing.

With regard to (1) I instance the following experience of my own:

I saw one man on three successive Thursdays at the infirmary, on each of these occasions he had persistent uncontrollable nystagmus and all the other signs and symptoms that indicate the disease. Four days after his last visit to the infirmary, on Monday, he came to be examined by me a reference to my report on his condition. He had no nystagmus whatever in daylight, no tremors, no rapid pulse and did not reel after stooping. I spent half an hour testing him in a dark room with only one dazzling little per lamp in the stooping position in the act of hewing, and asked him to put him off into any position that would bring on his symptoms. He was quite unable to do so and said he felt quite fit on that day. He only complained of a little giddiness after prolonged stooping, which passed off almost immediately when he held him self erect. On the following Saturday he showed persistent uncontrollable nystagmus in daylight when erect, and all his old signs and symptoms.

In many cases that come to me as referee the miner's representative has said, "We all agree that the man has

nystagmus", but the insurance company had taken the man from doctor to doctor until at last one was found to certify that he had not got the disease. Of course, the workman follows the same course until he can get a certificate that he has miners' nystagmus. It is just what the Act is asking for, a referee's report can only be given when there is a conflict of medical evidence. How can a referee assert that a man has not the disease after one examination? He can only say that "to-day he shows no evidence of it."

A reliable opinion can only be given after repeated examinations. My view is that all cases of miners' nystagmus should be dealt with as they are in *The Refractories Industries (Silicosis) Scheme, 1925*, a copy of which can be obtained from H.M. Stationery Office, or through any bookseller.

A joint committee of the employers and workmen (not exceeding four on each side) should be formed in each district to facilitate the working of the scheme. They should have the right of nominating two surgeons, to be appointed by the Secretary of State, to act as a medical board. All newly engaged workmen must be examined by one or more officers of the medical board before the engagement is ratified. The workmen must be examined periodically at the prescribed intervals, and the decision of the medical board be final.

In this way much unnecessary expense and waste of time will be avoided, and the interests of both employers and workmen are guarded.

At present, if a referee signs up a man as able to do light work at bank, in almost every case the employer can give the man no light work, and he is given, say, half the difference between his old wages and those which he is certified as able to earn, and with the unemployment dole he is often able to obtain more money than if he were at work.

Employment suitable for miners' nystagmus cases must be provided, and there should be industrial schools attached to them (as in the army scheme) so that each man can learn the trade which he fancies. This must be subsidized, and where is the money to be obtained?

I feel sure that more than half the money given as "the dole" is given to those who do not deserve it. It has destroyed the morale and independence of the working man, and especially of the young lad, more than anything else. A lad will keep a job for a month or two and then get turned off on purpose to get the dole. The money saved by more stringent investigation as to the urgency of the applicant's claim would be amply sufficient to provide all the funds needed.

In my district it is always the best workman who comes before me with the most advanced evidence of the disease, for he goes on hewing until he can hear no longer. I am convinced that if a man were to apply for examination within the first six weeks of the occurrence of any symptoms he would, on being given other employment, lose them in a few months, and would be quite able to do any other work away from a colliery that he fancied.

In former papers I have shown that some men acquire the disease and others escape it though doing the same work, and that the disease is increasing at an alarming rate. It seems to me that without doubt some are born with a predisposition to the disease, and this predisposition is clearly hereditary, further, that during the year 1922 I found that, in considering over 35,000 underground workers, of whom about one-third were hewers, the percentage of hewers who required the disease during that year was very nearly four times the percentage of non-hewers, hence hewing, or something connected with hewing, was far more important than deficiency of light, to which both classes were equally exposed (*BRITISH MEDICAL JOURNAL*, May 5th, 1925).

From this it follows that the pit villages are hotbeds for cultivating the disease. The only reasonable scheme for eliminating the disorder is to clear out from the pit villages all those who have acquired the disease, with their families, until eventually they are inhabited by only those who are immune.

It is a disgrace to the profession that no steps whatever have been taken or even suggested for wiping out this scourge. I should wish that, if my proposal is adopted, all new cases should apply to the medical board for examination within six weeks of the occurrence of symptoms, and only receive compensation on their signing an undertaking not to engage in any colliery work again. As soon as the workmen realize that they will be attended to and taught new ways of earning their livelihood they will be ready and anxious to do this, instead of being branded as derelicts for life—I am, etc.,

Newcastle-on-Tyne, Sept. 11th.

A. S. PERCIVAL

#### CONVULSIONS DURING ANAESTHESIA

SIR.—Since reading Dr. Pinson's article on this subject May 28th, 1927 (p. 956), and the two letters in the issue of September 10th, I have had a case of this curious phenomenon. The point of interest is that again the ether bomb was used, as in all Dr. Pinson's cases.

The case was one of a strong and healthy man, aged 50, with a perforated appendix. There was no previous history of epilepsy. While stitching up the peritoneum the convulsions began by facial twitching, "catching" breathing, and gradually extended to the arms and hands. The anaesthetic was stopped immediately and under the influence of oxygen the colour returned to normal and the twitching gradually subsided, the labial muscles being the last to become quiet.

There is no doubt in my mind that the convulsions were caused by the concentrated ether and the excess of CO<sub>2</sub> which had accumulated under the numerous coverings of the frame—I am, etc.,

DAVID C. DICKSON, M.B., Ch.B.

Dunfermline, Fife, Sept. 22nd.

#### DEATH CERTIFICATION

SIR.—In your account of Sir George Newman's annual report on the state of the public health there is a statement that I should like to see ventilated.

He compares unfavourably the present system of certification with the practice in Switzerland where the certificate is a confidential document and the friend of a deceased person has no access to the statement of causes of death.

To these words I emphatically subscribe. Particularly do I do so when I recall two cases that I was cognizant of.

The first was that of a man aged 67 to whom I was called for an ulcerated patch on the back of the pharynx. I was puzzled as to the nature of it and called in a leading laryngologist who diagnosed it as Vincent's angina and prescribed accordingly. The ulceration extended and the tongue became involved with patches of ulceration that struck me as possibly syphilitic. I accordingly brought him to see a leading authority on that subject, who at once pronounced it was syphilis pointing out further that he had syphilitic osteitis of the bones of the tibia. No cause of infection could be found at the usual site. The patient died three months after.

Here was a man, well known in his district with sons and daughters, brothers, and cousins all round him, honoured and respected by everyone, who was to be sent to his grave branded as a profligate and immoral man if I wrote on his certificate "primary caudo syphilis." I did not do it, but added "septicaemia," in the hope that the certificate would not be accepted as such by the Registrar General, but that I should bear in a few weeks, which I did, and wrote a full explanation.

The other instance (not under my care) was that of a distinguished man who, at the age of 75 developed tertiary ulceration of the larynx. The certificate was signed as such and I have never forgotten the horror of his widow when she heard the cause of his death.

I am certain that there are few medical men of standing who could not mention similar cases, and I feel that it would save a good deal of unhappiness and would lead to more accurate certificates if these were made confidential—I am, etc.,

Place, Sept. 11th.

H. J. HILDICE, M.D.



## POOR LAW MEDICAL SERVICE

SIR,—I have read with interest the letter of Dr Cyril Thomas on the subject of the Poor Law medical service (September 17th, p 519)

His experience of large mixed institutions has not been particularly fortunate, as there are examples of institutions dealing with large numbers of sick where amicable relations between the master, matron, and medical officer are maintained. The duties of each are clearly laid down in the orders of the Ministry of Health, and if the spirit of these orders is loyally carried out there are few opportunities for serious trouble.

If the chief officials are antipathetic, or if their mutual confidence is destroyed, the situation becomes very difficult. The fault is not invariably on the side of the lay staff.

Alterations in the orders are desirable to fit them for various conditions, but I question if the problem of efficient hospital management will be solved by placing all institutions of the type referred to under medical superintendents, or by appointing a doctor as both master and medical officer. In the meantime, some institutions with mixed administration provide experience for the young doctor not markedly inferior to that in separate infirmaries.—I am, etc.,

HENRY H. MACWILLIAM,  
Medical Officer, Walton Institution, Liverpool

September 21st

SIR,—At the last meeting of the Poor Law Medical Officers' Association it was suggested that I should write to you on the subject of appointments under the Poor Law Institutions Order. The Poor Law Medical Officers' Association has been discussing the matter for some time past, and has made efforts to collect opinions from men in this group—a difficult matter.

There are over 600 unions in England and Wales, and about fifty have separate infirmaries. In over 550, therefore—with a few special exceptions—these institutions are governed by the Order named. Many of the latter contain what are practically general hospitals, some of which have grown to considerable size. Actual conditions and procedure vary in them, although under one Order, and degrees of development vary. Between them—that is, of the 550 odd institutions—they contain a large proportion of the total hospital beds of the country.

There is little liaison between the three main groups of Poor Law doctors, and none at all between members of the group to which I refer specially.—I am, etc.,

Southend-on-Sea, Sept 18th

R A S SUNDERLAND

## FELO-DE-SE

SIR,—In reference to Dr S A Winstanley's most pertinent remarks on *felo-de-se* and your footnote on the same (September 17th, p 518), the essence of this case is, as you point out, Was she pregnant?

Dr Winstanley says "as a matter of fact she was not pregnant." How can he know this as a fact unless there was a *post-mortem* examination? On the other hand, how does the coroner know that as a fact she was pregnant? Unless he did so know he cannot say she was guilty of felony or *felo-de-se*. Was there a *post-mortem* examination?

The mere fact that the woman believed herself pregnant or intended to procure abortion on herself is irrelevant under Section 58 of the Offences against the Person Act of 1861. Moreover, apart from the verdict of *felo-de-se* being wrong if based merely on a presumption of, instead of the fact of, pregnancy, the whole inquest is void on the ground that a coroner sitting without a jury cannot return a verdict of *felo-de-se*. Section 13 (2) Coroners Amendment Act, 1926, amended the Act of 1887 and allowed a coroner to hold an inquest without a jury except when "there is reason to suspect, (a) that the deceased came to his death by murder, manslaughter or infanticide, (b) ... *Jeris on Coroners*, 1927, states "This appears to include self-murder or *felo-de-se* verdicts, as the form of inquisition with jury is given in the schedule to the Statutory Rules,

1927, No 344/L13. So Dr Winstanley or the relatives could appeal to the Lord Chancellor for a fresh inquest on the claim that (1) if pregnancy was not proved the verdict was misadventure and not *felo-de-se*, (2) if pregnancy was proved the *felo-de-se* verdict made a jury obligatory.—I am, etc.,

September 17th

MIDICO-LEOAL

## "HANGED, DRAWN, AND QUARTERED"

SIR,—An experience that occurred to me whilst acting as regimental medical officer during the war may be of interest as bearing on the article in your issue of August 6th (p 230) and the letter published on September 24th (p 569).

In October, 1914, a party of Germans penetrated through our very thinly held lines near Neuve Chapelle. They could not get back and were rounded up. During the scrap one received a bayonet wound in the abdomen. This man walked a hundred yards to my aid post holding the whole of his intestines in his hands. Whilst doing what I could for him he talked continuously. Shock gradually overcame him and he died about six hours later.—I am, etc.,

CARL HYLM, D S O, M C  
Great Horley, Colchester, Sept 25th

## THE TESTING OF DISINFECTANTS

SIR,—In a recent letter from this laboratory concerning the testing of disinfectants (July 9th, p 79) we drew attention to some misstatements in a standard textbook on bacteriology, in regard to a method of testing disinfectants originated by the father of one of us, in collaboration with Mr J T A Walker. We gather that this letter has caused misapprehension in certain quarters, and we wish to state that the purpose of the letter was no more than to point out the inaccuracies in the book under discussion, and there was no intention of suggesting that the method of testing originated by Dr S Rider and Mr J T A Walker had in any way been modified or altered, whilst still maintaining their names. We express regret, and tender our apologies to Mr Walker, for any apparent misstatement or ambiguity in the wording of the letter.—We are, etc.,

ERIC K RIDFAL,  
A SCIENTIST  
Chemical Laboratory, Victoria Street,  
London S W 1, Sept 27th

## Universities and Colleges.

## UNIVERSITY OF LONDON

## UNIVERSITY COLLEGE

The session 1927-28 opens at University College on Monday next, October 3rd. Students of the Faculty of Medical Sciences will be received by the Provost and the Dean on that day as follows: First year students between 10 a.m. and 1 p.m., students of later years between 2.15 p.m. and 4 p.m.

The following awards have been made: Bucknill Scholarship (160 guineas) E A Deynash 1st Medical Exhibition (55 guineas) J Apfelbaum, Second Medical Exhibition (55 guineas) R B Ogborn, *proxime accessit*, M Steinberg.

Public lectures that have been arranged for the first term include the following: The first Riekman Godlee Memorial lecture "Nations," by Viscount Cecil of Chelwood.

By President of the Royal College of Physicians on "Hydrogen ion concentration." Dr Philip M. Huggins, a lecture on "The static reflexes of Maggots: how animals get right way up and keep so," by Professor A J Hall of the University of Sheffield.

Particulars of these and other public lectures may be had on application to the Secretary, University College, London, W C 1. A stamped addressed envelope should be enclosed.

## LONDON HOSPITAL MEDICAL COLLEGE

The following entrance scholarships have been awarded at the London Hospital Medical College: Price Scholarship in Science £50 £100 K H C Hester Second Scholarship in Science £50 A J P Brown Ipsom Scholarship in Science (open to students of Ipsom College—free medical education) W A Hall of University Scholarships (open to students of the University of Oxford and Cambridge) (1) Freedom Research and Scholarship in Pathology, £100 R H Dobbs, (2) Price Scholarship in Anatomy and Physiology, £75, A Lister.

## Obituary

SIR ARTHUR SHIPLEY GBE, SC.D., LL.D., F.R.S.,  
Master of Christ's College, Cambridge

THE death, on September 22nd of the Master of Christ's though primarily a loss to science and to the University of Cambridge is also a loss to medicine because Sir Arthur Shipley was a good friend to generations of Cambridge medical students and in various ways throughout a strenuous public career, showed his practical interest in the work of our profession.

Arthur Everett Shipley was born in 1861 and left University College School in 1879 with the intention of studying in medicine. But after a year at St Bartholomew's Hospital where, with the help of Stephen Pigot, he had dissected the leg of the wife of the butler of the first Napoleon, he went up to Cambridge and (again to use his own words) "fell under the glamour of Morphology." It was about this time that Francis Balfour was finishing his epoch making work on comparative embryology. Another Cambridge professor, but requiring the older school, who influenced Shipley much in his undergraduate days was Alfred Newton, a dull lecturer but a great power in the world of ornithology and an inspiration to receptive minds. Newton's Sunday evenings in the old Lodge at Magdalene saved zoology as the science of living animals in Cambridge. Shipley gained a first in both parts of the Natural Sciences Tripos, became a Fellow of Christ's and demonstrator of comparative anatomy in the University. His own researches (for which he was elected an F.R.S. in 1904) were mainly in the field of invertebrate zoology, but he took a large share in developing the teaching of zoology generally at Cambridge. He wrote much and pleasantly on many subjects and was an admirable editor of scientific journals. He was moreover, a first-rate man of affairs, excellent on committees and such like bodies whether as chairman or ordinary member. In 1910 he was elected Master of Christ's and at once became just what the Head of a House should be in the old days, blending aulous regard for old traditions with liberal ideas and informal courtesy. By none was he better liked or more admired than by the medical students and graduates of his own college and many of them have a repertory of "Shipley sayings" for intimate occasions.

Shipley's period of office as Vice-Chancellor of the University coincided with the most difficult years of the war. Besides taking a close interest in the development of the 1st Eastern General Hospital—that town of huts on the 'Backs'—he made the Master's Lodge from 1915 a convalescent home for wounded officers, at no small sacrifice of his personal comfort. It was typical of him to find time in the enormous days to devise a dinner table plate for the use of soldiers and sailors who had lost an arm and an appliance by which an armless man could turn the pages of a book both were described by him in our columns. Encouraged and guided by the Vice-Chancellor Cambridge threw itself into the war, and the high honour of C.B.E. conferred upon him in 1920 was fitting recognition of indefatigable work for his country, both in public and behind the scenes. Shipley's very entertaining and instructive series of papers "The minor horrors of war" and "More minor horrors" first appeared in the *BRITISH MEDICAL JOURNAL* in 1914 and 1915, and were afterwards reprinted in book form. Another direction in which he served our profession was by membership of the Central Medical War Committee and in its early months he shared the duties of vice-chairman. He was also a Bent Trustee and an elected trustee of the Hunterian Collection. Of his many other distinctions and services this is not the place to speak.

We are indebted to Sir HUMPHRY ROLLESTON Bt., Regius Professor of Physics, for the following appreciation.

Arthur Shipley belonged to the new order of heads of colleges who on distinctions in natural sciences rather than in the old order of mathematics in this capacity he was

pre-eminently successful, for he took a rather lively interest in all, and especially the younger, members of the college, and, knowing them well looked after their present and future in an exceptionally sympathetic and effective manner. His genuine kindness of heart was also shown by the affection he inspired among the servants of the College. He was a connoisseur not only in the art of living but in entertaining others so as to make them feel thoroughly at home in "the Lodge"—which he had made both comfortable and impressive—as was well shown by his unselfishness in giving up the quiet Lodge to wounded officers in the war. In addition to holding with distinction the Vice-Chancellorship of the University during a critical time in the war he was a power in the outside world, much in request on committees, and thus brought influential personalities into touch with Cambridge. Keenly interested in many directions, especially in the application of biology to practical problems, such as the use of agriculture, he travelled much in connexion with his activities. Last spring he returned from such a visit to the West Indies ill and depressed with prophetic forebodings about his health, and it is sad that he has so soon followed his lifelong friend the late J. G. Adams, Vice-Chancellor of Liverpool, upon whose memoir he was engaged until almost the end. He wrote much and always in an easy and attractive style, ever a popular after-dinner speaker. He had at his command a fund of good stories which he told in an inimitable manner with great effect. It is certain that with his mine of curious information he could have written a fascinating account of Cambridge life and manners during the last forty years and indeed this would be an appropriate addendum to "J" (A Memoir of J. W. Clark 1833-1910) which he brought out in 1913. His death leaves a gap which many will long feel can never be so exactly filled.

ADRIAN STOKES DSO, OBE, M.D. DUBL.,  
F.P.C.I. M.P.C.I. Lond.

Sir William Dunn Prof. of Pathology at Guy's Hospital  
London University

THE death of Adrian Stokes at the early age of 40 robs the Empire of one of the most brilliant students of medicine of this generation and of a man with many wonderful and lovable qualities. He was born at Lausanne on February 9th, 1887. His father was the late Henry John Stokes, I.C.S., of Howth, co. Dublin. His great grandfather, William Stokes, was regius professor of medicine in the University of Dublin from 1830 to 1843 and his grandfather was the great clinician William Stokes. It is interesting to recall that in 1826 William Stokes nearly lost his life from typhus, which he contracted whilst working among the sufferers in the great Dublin epidemic.

Adrian Stokes was educated at St. Stephen's Green School, Dublin, and in 1905 entered Trinity College with which his family had been associated for many generations as Fellows, scholars and graduates. Here, and at the Meath Hospital where his grandfather had been a physician and his uncle, Sir William Stokes a surgeon, he studied medicine with distinction obtaining first-class honours a senior moderatorship and the Banks prize. While still a student he published an excellent paper on a "Rare abnormality of the heart and great vessels." He graduated M.B., B.Ch. in 1910 and proceeded M.D. in 1911, and acted for a time as demonstrator in anatomy. He obtained the diplomas F.P.C.I. in 1912 and M.R.C.P. Lond. in 1924. In 1912 he was elected to the medical travelling prize, but with characteristic generosity resigned it in favour of the 'proxime accedens.' The prize being again awarded to him the following year he went to the Rockefeller Institute in New York, where he engaged in research for eight months.

He returned to Dublin as a assistant to the late Dr. O'Sullivan, professor of pathology at Trinity College, where he continued to work till the outbreak of war. He immediately volunteered for service, and shortly afterwards went out to France with a medical unit from Dublin. He took with him his own motor bicycle and sidecar, which he packed with laboratory apparatus, thus being

<sup>1</sup> Life of Alfred Newton, B.A., F.R.S., vol. II, Chap. VII, p. 100.

the actual parent of the mobile laboratories which were to play such an important part in the army medical services during the latter part of the war. Shortly afterwards a friend had a motor caravan equipped as a small pathological laboratory for him, thus became No. 1 Mobile Laboratory, and remained with Stokes until he was demobilized in 1919.

In 1915 an outbreak of enteric fever amongst the civil population of Belgium Flanders aroused anxiety, and Stokes was detailed to cope with it. It was mainly due to the hygienic measures he took that the disease never spread to the large number of British troops billeted in the affected area. He published an account of his work in the *Lancet* under the title of "Examination of enteric convalescents." For his services in this connexion he was appointed Chevalier de l'Ordre de la Couronne by the King of the Belgians. By discovering the carrier, he was also the means of arresting a typhoid epidemic in the Guards Brigade in 1915. During most of his service in France he was attached to No. 10 Casualty Clearing Station at Remy Siding, near Popeinghe, but his influence was felt throughout the war area. Though he never neglected his official duties as pathologist, he was always ready to help in any capacity. In September, 1914, he rode 140 miles to fetch a supply of urgently needed tetanus antitoxin, and in times of stress he would act as anaesthetist or surgeon.

In the spring of 1916 an epidemic of jaundice broke out among the British and French troops in France and Flanders. Stokes was prominent among the small group of British officers whose investigations proved that the disease was caused by infection of the liver and kidneys with the same spirochaete which Inada and his fellow workers had discovered in 1914 in the blood and urine of the epidemic jaundice prevalent among Japanese miners. He found the spirochaete in rats caught in trenches in which the disease had occurred, and by showing that the infection was spread by the presence of their urine in badly drained trenches he was able to indicate how the epidemic could be stamped out. He proved that the jaundice was caused by the inflammatory changes in the liver, which produced obstruction of the smallest bile ducts, and that haemorrhagic nephritis at the same time gave rise to haematuria. He with J. A. Ryle published joint papers on the subject in the *BRITISH MEDICAL JOURNAL* in 1916, and in the *Lancet* the following year. He did work of great value in connexion with all the other infective diseases which occurred in the army. He took an active part in examining contacts with cerebrospinal fever cases, and made himself responsible for teaching the medical officers of the units of his neighbourhood the methods of diagnosis and of treatment with appropriate serum.

Stokes did much to improve the methods of preventing and treating the severe forms of wound infection, and was the first in France to isolate the organism of gas gangrene in the blood stream. When a crowd of victims of severe phosgene gas poisoning arrived at his casualty clearing station he found that the old-fashioned mask was still being employed for administering oxygen. Since it was proving both wasteful and ineffective he collected all the available rubber catheters and tubing in order that a satisfactory flow of oxygen could be given through the nose, with the result that innumerable lives were saved which would otherwise have been lost. The method he then introduced has now been widely adopted in civil practice. All who came into contact with him agree that no man did more to improve the lot of the sick and wounded than this young Irish officer, who was only 27 at the outbreak of war. He was directly responsible for the saving of countless lives.

After the armistice he served in Cologne, where he did most valuable work in helping to restrict the ravages of venereal disease. He was several times mentioned in dispatches and was awarded the D.S.O. and O.B.E. for his services with the army.

In 1919 he returned to Trinity College, Dublin, as professor of bacteriology and preventive medicine and pathologist to the Royal City of Dublin and Adelaide Hospitals.

In 1920 he was asked to go to Lagos, West Africa, with the Rockefeller Yellow Fever Commission, his investigations on epidemic jaundice in France having attracted the attention of the authorities. He accepted readily, as it was a form of work that specially appealed to him. He spent about six months on the coast, but as he only saw one case—a man who escaped into the bush to avoid examination—he had no opportunity of carrying on any investigations.

In October, 1922 Stokes was appointed Sir William Dunn professor of pathology in London University at Guy's Hospital. At that time interest in pathology among the students was at a low ebb. Naturally attracted by the living interest of clinical work, they regarded any course as sufficient for non-attendance in the department. The course then covered a period of three months, but Stokes from the first insisted that it was impossible for pathology to be taught in less than double that time. The suggestion met with considerable opposition, and it was largely due to the charm of his personality that he eventually had his way, a whole winter session being now devoted to the subject. In order to give the students every opportunity to attend he duplicated the practical classes, although this could only be done at the sacrifice of his own time. When he first came to Guy's he threw himself into the task of perfecting his knowledge of the branches of pathology with which, as a bacteriologist, he had previously been comparatively unfamiliar. Few knew what an amount of reading and study this entailed, but all appreciated the success which followed in the vast store of accurate knowledge he accumulated. The students were quick to appreciate his willingness to help them, and they soon found that his department was free from any trace of red tape. As a result the attendance at the pathology classes improved in an extraordinary way. Wherever previously the pathologists had complained that the clinicians prevented the students from giving them a fair share of their time, the complaints now came from the clinicians, who found themselves deserted by their clerks and dressers when pathology classes were being held. He arranged a weekly demonstration on fresh *post-mortem* material, which was always well attended and was of the greatest practical value. With him the interests of the students always came first, and he fought for his subject because he believed that a knowledge of pathology was essential in the make-up of a "good doctor." It was his custom to offer a prize, at the conclusion of each course, on the results of a special examination.

During his four years at Guy's Stokes made a unique position for himself. Members of the staff, house officer and students constantly sought his advice and help in the manifold difficulties they encountered in the wards, and they rarely failed to profit from his wide knowledge of the literature, great experience, and unbounded common sense. He realized from the first that a hospital pathologist should not live solely in his laboratory, but should be a regular visitor to the wards. In addition, once a week he made a round with some of his medical colleagues, joining in the discussions on difficult cases. His department was thus not merely a scientific institute, but formed a valuable unit in the everyday work of treating the sick pool of the hospital. He took a keen personal interest in any student who showed a desire to learn, and especially in those who wished to tackle a problem of their own, for he was never too busy to help or advise.

Many valuable contributions to scientific literature, generally published in the hospital *Reports*, came from his laboratory at Guy's. Without exception, however, they appeared under the names of others, the majority being students or recently qualified men, who performed investigations suggested by him and under his direction. In spite of their protests he always deleted their acknowledgments of his encouragement and help from the manuscript. Perhaps the most important investigation of this kind was that of achalasia of the cardia (so-called cardiospasm) by one of his most promising students. In every one of the eight specimens examined inflammation or degeneration was found in Auerbach's plexus in the neighbourhood of the sphincter, thus explaining its failure to relax on the arrival of a peristaltic wave during deglutition. On

investigations dealt with the infective gastritis associated with the achlorhydria of subacute combined degeneration of the cord, neutro suppurative gastritis, diffuse polyposis of the stomach, and aleukemic leukaemia.

In the spring of 1927 the Rockefeller Commission on yellow fever in West Africa again sought Stokes's assistance. Their investigation had led to no definite result and it was hoped that his clear judgement and genius for research would make it possible to unravel some of the difficult problems with which the Commission was faced. It has long been known that yellow fever, as it occurs in South America is propagated by the common domestic mosquito, *Stegomyia fasciata*, and recently Noguchi described a *Leptospira* which he believed was the cause of the disease. As the epidemiology of the yellow fever of West Africa is very different from that of South America, doubts have been raised whether the disease in the two continents was really identical. It was therefore necessary to discover whether the clinical and pathological characters of the West African disease were identical with the better known South American disease, and whether the fever was like the latter transmitted by mosquitoes. This was just the kind of problem which fascinated a man of Stokes's character, and his only doubt as to whether he should accept the invitation of the Rockefeller trustees came from his dislike of neglecting his duties at Gur's for six months, for no man ever interpreted duty more strictly or adhered to it more conscientiously. Reassured on this point he accepted the invitation and proceeded to Lagos in June. His first letter home was written from Accra a week after his arrival on the coast.\*

We bought three chumps at Freetown one tame and two recently captured. We landed here instead of going on to Lagos as there was a nice actual epidemic going on in a village about thirty-five miles away. I brought off two here and sent one on to Lagos the big wild one I need hardly say and we have attempted to infect both from three cases of yellow fever each. Neither shows any sign of doing anything. One of them is very ill with cancerum ovarii and I think will die from it but it has been for two days more it will be ten since we inoculated him and pretty certainly not a take for yellow fever. If the chump don't take we have very little to fall back on. We had two good post-mortem examinations on genuine cases with typical liver and kidneys but there seem to be fewer cases the last few days. It is very hard to diagnose and is apparently a trivial disease until you die. The natives are hardly ill at all and the jaundice is often quite unconvincing.

A fortnight later he wrote

We have infected some Indian monkeys five out of six inoculated with blood from yellow fever cases have died with a good pathology. We have failed to pass the strain to others this suggests an intermediate life history. I think it is a winner. No *Leptospira* at all found.

On July 7th he wrote from Accra

I came back here from Lagos about ten days ago as there was another outbreak on the Togoland frontier. Two early cases were tried on monkeys. One died during the incubation period and the other ran a typical fever for four days and then recovered.

On August 15th he wrote from Accra

The hunt is going all right at Lagos and I am going back on Monday. They were able to run the strain through three monkeys and then alas! had no more and we had to depend on mosquitoes to keep it till more came from home and they did

It should be noted that the following extracts are from private letters and must not be regarded as accurate reports of the investigations referred to.

the job all right so far as I can see from records they have sent me.

This proves our case fairly well and as we can get no *Leptospira* at all it seems that organism is the cause of yellow fever. The last news I had which was a cable seems to imply that we have for the first time transmitted one of four tried and that seems good enough to chance a fourpence on. The third monkey had a beautiful clinical history and jaundice and albuminuria and all the right things at the post-mortem examination and he of all showed a liver lesion that was almost typical of yellow fever with quite obvious and zonal necrosis as well as the fatty change. We still have the difficulty of not having a white man to monkey transmission and no post-mortem examination on a case that has been used to infect a monkey. That will be a question of time and fortune but I am quite confident it will be all right.

I am going up country to-morrow to get some convalescent serum from a recovered European case to do protection experiments with when I get back to Lagos. We went when he got ill and I tried a monkey but it was three and a half days after the illness started and nothing happened. One must get it in forty-eight hours to get a winner so far as we know at present. However, protections are good evidence.

His last letter was dated August 26th

'We are a bit full of ourselves as we have the fish hooked all right right down in the belly and unless we are careful and break the tackle it will only be a question of time. The time may be years but it must come. He rose to a grey monkey in May and we hooked him for early in July and now we can transfer it by blood or mosquitoes at will and can protect the animals by convalescent serum and so on. Of course the gaffing of the bug will be the thing that takes time but getting a susceptible animal is a first and essential step. We have about 90 per cent of successful transfers with blood and about the same with mosquito and we have had about a dozen animals die so we think it is very nearly certain. The pathology and clinical picture is good on the whole. What we want is another strain or two isolated from human cases and best of all a strain isolated from a patient that comes from autopsy.'

I have again ventured in cutting mosquitoes and it is interesting to know that one has the virus under one's eye and cannot see it. I am cutting them in series—a normal one fed five days and two fed twenty-six and forty-two days. You get them all parallel and cut them from before backwards in series and then gaze in rapid admiration at nothing at all to see. They have lovely eyes though and



Photograph by J.

(Elliott and Fry, London)

ADELIN STOKES

lots of other nice things to distract you.

From the meagre details available it seems probable that Stokes contracted yellow fever from the bite of an experimentally infected mosquito. He became suddenly ill on September 15th, about five weeks before he was due to sail for home. He was removed to the European Hospital on the following morning. He died on the evening of the 19th. He was buried next day at the Ilorin Cemetery after a service conducted at the Colonial Church by the Bishop of Lagos.

As a sportsman he showed just the same delightful and infectious enthusiasm that he did in his work. He was in the Trinity College XI and played hockey, lawn tennis, and squash racquets well. But the sports he enjoyed most were sailing, fishing, and shooting. His summer holiday was nearly always spent in Ireland, and he had to leave on his return to tell about his experience with the trout and salmon. During September, until the commencement of the autumn term claimed all his time, one day a week was regularly given up to shooting. It was typical of the man that on these occasions, though an excellent shot, he would always endeavour to place himself where the birds were likely to be fewest and where the walking would be most arduous. He was extraordinarily popular, everybody liked him. An impulsive, warm-hearted Irishman, he was generous to a fault, and his boundless sympathy with those

in trouble allowed him no rest until he had done everything possible to put things right. His flat at Morda Vale was a refuge for the sick in body and in spirit, he would give up his own room and, single-handed, would nurse his guest back to physical and mental health. A superficially gruff manner hid a heart of gold, and the less to the many who were privileged to be his friends is irreplaceable.

Dr T. GILMAN MOORHEAD, Regius Professor of Physics, University of Dublin, in the course of a warm tribute, writes

Adrian Stokes, one of the most brilliant of Irish students of medicine in this generation, entered the Medical School of Trinity College in 1905, he devoted himself at once with intense energy and enthusiasm to his medical studies, but also found time to take part in other activities of university life. He was a fine cricketer and an all-round sportsman, but a somewhat negligent student of Arts. For some years he acted as secretary of the Dublin University Biological Association, and was a prominent figure in directing the energies of that association in his student and also in later years. Although eminently adapted for clinical work, and especially for surgery, his real bent from the beginning was for the laboratory. He early showed a flair for research, and in his student days published in the *Journal of Anatomy* a remarkable paper on a rare malformation of the heart. Coming under the influence of the late Professor O'Sullivan, he took up the study of bacteriology, and threw all his abounding energy into this branch. As an undergraduate, almost from the moment of his entering the medical school, he became a marked man, not merely for his brilliant intellectual attainments, but also for his strength of character and his capacity as a leader of men. It was recognized by all his teachers that the genius of his great predecessor William Stokes had been reborn in him. On his return from working in the Rockefeller Institute, New York, he accepted the post of assistant in the Pathological Laboratory, Trinity College, and at the same time, with the object of bringing closer together clinical and pathological aspects of medicine, he undertook for a short period the work of an assistant physician at the Royal City of Dublin Hospital. Throughout the remainder of his life this object retained his deepest interest. He felt that clinical and laboratory work were to some extent estranged, and he never ceased in deeds and in conversation to endeavour to bring pathologists and clinicians more closely together. In the before-mentioned positions his powers as an original thinker and investigator became at once apparent, and many who came in contact with him felt that he had introduced a new stimulus into the medical life of Dublin.

At the end of the war he returned to Dublin, and for a time was professor of bacteriology in the University. During his tenure of this post he continued his scientific work, and published several papers of outstanding merit, including one with Professor Biggs on an outbreak of dysentery in the Dublin area, and one in conjunction with Professor Wigham on the sigmoid reaction. But, what was even more important, he gained a hold over the minds and thoughts of the younger generation of students, and stimulated many of them to undertake fruitful lines of research. Although he only held the appointment for a few years, his influence is still felt in the direction indicated. A hater of shams, he was satisfied by nothing less than the most rigorous proof. Careless or slipshod work was anathema to him, and no trouble was too great to ensure accuracy. His intense intellectual honesty was always apparent and nowhere more than in connection with his own particular line.

Apart from his reputation and standing as a man of science Adrian Stokes had many friends, and no man better deserved his friends or did more for them. In periods of distress he was always helpful in advice, and never spared either time or trouble to aid those who were in need. Though generous to a fault in expression of sentiment or emotion was foreign to his nature. Outspoken in criticism, he made some enemies, but no one ever accused him of unfairness in controversy or believed his criticism to be personal. There is pathos in a life cut

off with the promise of such rich fruit, had he been granted the normal span of human life he would undoubtedly have further enriched our scientific knowledge of medicine, and would probably have added new pages to medical history. Though he must be numbered among the inheritors of but half-fulfilled renown, he will be remembered as a pioneer who, like others, risked his life joyously and gave it nobly for the sake of scientific truth.

Dr CHARLES EDWARD PAGET, who died on September 11th at the age of 68, was the second of four sons of the late Sir George Paget, K C B, Regius Professor of Physics at Cambridge, and nephew of Sir James Paget, Bt, the famous surgeon. Charles Paget went from Charterhouse to St Bartholomew's Hospital, and obtained the diplomas M R C S Eng in 1882, the L R C P Lond in 1883, and the Diploma of Public Health of the English Conjoint Board in 1889. He acted for some time as private secretary to Sir James Paget, and in 1883 was appointed medical officer in charge of the Westmorland combined sanitary district. Six years later he became medical officer of the borough of Salford, and in 1897 he was appointed medical officer of health for Northamptonshire, which post he held until March, 1926. He was a Fellow of the Society of Medical Officers of Health, and president of its North Western Branch in 1893. For some years he acted as lecturer and examiner in public health at the University of Manchester. His literary contributions included a pamphlet entitled *Healthy Schools*, the handbook of the International Health Exhibition in 1884, and *The Arrangement and Construction of School Sanatoria*, he also collected and edited some of the lectures of Sir George Paget, supplying a memoir of his father. Dr Paget was for many years a member of the British Medical Association, and in 1895 was secretary of the Section of Public Medicine at the Annual Meeting, in the following year he was vice-president of that Section, and in 1910 he was vice-president of the Section of State Medicine. He leaves a widow but no children, his only son having been killed in the war.

Dr RALPH A. R. LANKESTER, who died with tragic suddenness on September 19th while on holiday at Eastbourne, received his medical education at University College, London, and at Durham University, where he graduated M B, B S in 1898. In the same year he obtained the diplomas M R C S, L R C P, and two years later graduated M D. He went to Bradford in 1899 as house-physician at the Royal Infirmary, and eighteen months later joined Dr Messer in one of the long-established practices in the city. In this practice he remained, and was at the time of his death the senior of three partners. Dr Lankester was appointed visiting anaesthetist to the Infirmary when this post was first created twenty years ago, and he was associated with the late Mr Basil Hall (President of the British Medical Association in 1924) during the whole of the latter's term as surgeon. When Mr Hall's twenty years came to an end Dr Lankester retired simultaneously, and was appointed honorary consulting anaesthetist. A colleague writes Dr Lankester was a glutton for work, and in addition to his large private practice was always prepared to deputize at the Infirmary for another anaesthetist. His services were sought on all the important medical committees in the city, he never pushed himself forward, and was as modest as he was unambitious. But his broad common sense, integrity, impartiality, friendliness, and generosity led to his being elected to the British Medical Association Executive, the local Advisory Medical Committee, the Panel Committee, and the council of the Medico-Chirurgical Society. He was president-elect of the latter society. His death comes with a greater shock to his numerous friends because he had never had a grave illness, was a man who did not look his years, and who appeared to be able to take all he had to do "in the day's work," without any show of over-effort or tiredness. He leaves a widow and young son to mourn his loss.



## Medical News.

At the meeting of the Society for the Study of Inebriety, to be held in the rooms of the Medical Society of London, 11 Chandos Street, Cavendish Square, on Tuesday, October 12th, at 4 p.m., Professor W. E. Dixon, M.A., M.D., F.R.S., will deliver the twelfth Norman Kerr Memorial Lecture, on "The tobacco habit."

**VI COUNT CANT.** Lord Chancellor of England, will open the New Reception Hospital in connexion with St. Andrew's Hospital for Mental Diseases, Northampton, on October 14th at 3 p.m. This building will be devoted to the treatment of early cases of mental disorder and can accommodate sixteen patients of each sex. The new hospital is fully equipped with an operating theatre, laboratories, consulting rooms for psychotherapy, and special arrangements for hydrotherapy and electrical treatment.

**AN** Imperial Social Hygiene Congress organized by the British Social Hygiene Council (Carteret House, Carteret Street, S.W. 1) will be held at the Caxton Hall, Westminster, from October 3rd to 7th, under the presidency of the Right Hon. Major General Seely. The subjects to be dealt with include venereal disease in the Army and Air Force, welfare work among seamen, the medical, educational and administrative aspect of social hygiene, the modern treatment of syphilis, the social problems of India, the Dominions Protectorates and mandated territories, the scientific foundation of character training, and congenital syphilis in school children.

The fifth session of the Liverpool Psychological Society will commence on October 4th when the president, Dr. Barton Hill, will deliver his inaugural address at the university on "Dreams and dreaming." This will be followed by a series of papers dealing with various scientific aspects of the subject. Inquiries may be addressed to the secretary of the society, the University, Liverpool.

A course of post-graduate lectures on infant care will be given at the Infants Hospital, Vincent Square, Westminster, on Mondays from October 10th to December 12th at 6.30 p.m. These lectures are intended for health visitors, nurses, midwives, and superintendents of infant welfare centres. The fee for the course is 7s. 6d. A syllabus can be obtained from the secretary, National Association for the Prevention of Infant Mortality, 117 Piccadilly, W. 1.

A PUBLIC conference on the subject of family allowances has been arranged, to be held at the London School of Economics, Houghton Street, W.C.2, on the evening of Friday, October 14th, and the afternoon and evening of Saturday, October 15th. Addresses will be given by Sir William Beveridge, Dr. R. A. Fisher, Professor A. H. Mottram, and others.

THE Fellowship of Medicine announces that from October 3rd to 15th there will be a whole day cardiology course at the National Hospital for Diseases of the Heart; the number is strictly limited to twenty. The Central London Throat, Nose and Ear Hospital holds its usual October courses from October 3rd to 22nd. The central part occupying almost the whole of each day may be taken alone if desired; there will also be strictly limited courses in operative surgery from 10 to 11.30 daily in practical peroral endoscopy and in pathology and bacteriology suitable for D.L.O. students. On October 4th the London School of Hygiene and Tropical Medicine will start a series of bi-weekly clinical demonstrations on Tuesdays and Thursdays at 2 p.m., continuing until October 28th. Professor A. Forster McIlroy will give a series of demonstrations in ante-natal diagnosis and treatment at the Royal Free Hospital from October 7th to 28th inclusive on Fridays at 5 p.m. Later October arrangements include courses in diseases of children at the Paddington Green and Victoria Hospital for children (October 17th to 29th) in gynaecology at the Chelsea Hospital (October 17th to 28th) in electro-therapy at the Royal Free Hospital (October 12th to November 2nd) and in ophthalmology at the Royal Eye Hospital (October 24th to November 5th). On October 3rd a two months course in neurology will commence at the National Hospital, Queen Square. November arrangements include two practitioners' courses in medicine, surgery, and the specialties in the late afternoon courses will be held in diseases of children, diseases of the chest, neurology (West End Hospital), proctology, gynaecology, and in venereal diseases. Commencing on October 17th a series of lectures arranged by the Fellowship and entitled "Practical hints on medicine, surgery, and the allied specialties" will be held on Mondays at 5 p.m. at the Lecture Room of the Medical Society, Chandos Street, W. 1. In the same week a series of clinical demonstrations will open, these and the lectures are free to medical practitioners. Copies of syllabuses are obtainable from the secretary, 1, Wimpole Street, W. 1.

THE Governor of Northern Ireland has appointed Dr. M. J. Nolan, resident medical superintendent of Down County Mental Hospital, to the Commission of the Peace for County Down.

THE Lord Mayor will preside over a meeting at the Mansion House, London, on October 13th at 3.30 p.m., in support of the Central Council for District Nursing, in London. The speakers will include Sir H. Langley Wood, M.P., and Sir William Collins, M.D.

THE Executive Committee of the Invalid Children's Aid Association has issued invitations to a garden party on the occasion of the opening by Lady Leonard of the Hospital and Home for Heart Cases (to be known as 'Heartscase') at West Wickham, Kent, on Thursday next, October 6th, at 3 o'clock.

DR. G. B. HILLMAN, M.B.E., in response to the invitation of the three parties in the City Council has accepted the mayoralty of Watfield for the coming year.

THE honorary freedom of the borough of Oswestry was conferred on September 22nd upon Dr. Robert de la Poer Beresford, the retiring medical officer of health in recognition of his fifty-nine years of service to the borough of which he was mayor in 1909 and 1910.

The Board of Management of St. Mary's Hospital have extended the term of office of Dr. Graham Fittie, M.P., as physician in charge of the dermatological department for a further period of five years as from October 25th, 1927.

A CONGRESS under the name of *Jornadas Medicas de Madrid*, on the model of those recently held in Paris, Brussels, Toulouse, Montpellier, and Marseilles will take place in Madrid from October 18th to 23rd with Professor Sebastian Peces de la Cruz, dean of the faculty of medicine as president, and Professors Gustavo Pittaluga and Dr. Jose Codina as vice-presidents. Further information can be obtained from the general secretary, Dr. Coea, Apartado de Correos, 1220, Madrid.

THE thirty-fourth Congress of the Italian Society of Surgery will be held from October 18th to 21st at Parma, where the sixth congress of the Italian Society of Urology will also be held on October 21st and 22nd.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C. 1.**

**ORIGINAL ARTICLES** and **LETTERS** forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring **REPRINTS** of their articles published in the **BRITISH MEDICAL JOURNAL** must communicate with the Financial Secretary and Business Manager, **British Medical Association House, Tavistock Square, W.C. 1**, on receipt of proof.

All communication with reference to **ADVERTISEMENTS** as well as orders for copies of the **JOURNAL** should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the **British Medical Association** and the **BRITISH MEDICAL JOURNAL** are **MUSEUM 962 9 63**, and 962 963 (internal exchange four lines).

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The address of the **British Medical Association** is 16 South Frederick Street, Dublin (telegrams: *Bacillus Dublin*) telephone 4757 (Dublin) and of the **Scottish Office** 6 Drumheugh Gardens, Edinburgh (telegrams: *Associate Edinburgh*) telephone 21351 (Edinburgh).

## QUERIES AND ANSWERS

### INTRAVENOUS MALARIA

MAJOR P. A. J. C. writes to inquire whether the treatment of malaria has been used intravenously and if so for what purpose and with what success.

A. C. E. writes: What is the objection to the routine treatment of malaria by quinine administered intravenously provided all due precautions are taken? On the face of it the introduction of quinine direct into the blood stream would appear to have great advantages over oral administration. I have frequently treated the cerebral type of malaria with intravenous quinine but I have only had experience of two cases of ordinary malaria treated by the intravenous route with immediate success and no relapse.

## TREATMENT OF FLATULENCE

"WRST COUNTRY" ask - - - "I treat recurrent attacks of gastric and a man aged 77, who is suffering from but is otherwise fairly healthy for his age. All the recognized carminatives have, he thinks been tried without success. Cardine tonics, such as digitalis and strychnine, appear to give no relief.

## BORING THE LOBULE

MR PAUL BERNARD LOTH, F.R.C.S. (London, W.), referring to the inquiry of "K W" (September 24th, page 573), writes: The best way to pierce the lobule with the minimum amount of pain is to grasp it in a pair of forceps and then thrust through the centre of the grasped portion a small trocar and cannula as suggested. The end of a gold "sleeper" is inserted in the cannula, and as the latter is withdrawn the sleeper enters in its place. The forceps holds the lobule absolutely steady, makes certain that the hole will be made in exactly the same spot in both ears, and prevents any bleeding.

## INCOME TAX

## Succession to Partnership

"H Y M" asks for advice in the following circumstances: A and B were in partnership for the four years 1921 to 1924. A then took over the whole practice, moving to the place where B had been residing. For 1925 he was assessed at £750, as for the profits of a new practice, but a new inspector of taxes now states that that was wrong and that A should have been assessed on one third of (£1,500 + £1,500 + £750 =) £3,750—that is, £1,250.

"\* \* Strictly the inspector is right in saying that the assessment should have been made on the three years' average basis, seeing that A undoubtedly succeeded to the practice, but if such an assessment had been made A could have applied under Rule 11, Cases I and II, Schedule D, for an adjustment of that assessment to the amount of the profits of the year 1925, so that the final result would have been the same. "H Y M" might put that point to the inspector, presumably he will not desire to press the matter further if "H Y M" has, in fact, discharged his time liability to tax.

## Car Replacement

"C H D R" bought a car in 1923 for £250 and has now sold it for £75, buying a superior car for £400, the price of a car similar to the original one would have been £225. What can he claim?

"\* \* Strictly, only the actual cost of replacement is allowable—that is, the net cost of obtaining a similar car, £225—£75=£150, it is just possible that the local inspector might take the more lenient view that £250—£75=£175 could be allowed. (Our correspondent holds a public appointment, and we are assuming that he does not receive a car allowance from the local authority.)

## Motor Car Allowance

"J P B" replaced his car in 1922 at a net cost of £414—£100=£314, the next replacement occurred in 1925, the cost being £270—£75=£195, and the most recent in 1927 cost (£425—£75=£350). The two earlier replacements were allowed for at the amount of the net cost. What should he claim for the 1927-28 assessment?

"\* \* The inspector of taxes takes the view that if depreciation is allowed on the full value of the car—that is, on £425—then the amount received for the car, namely, £75, should be added to the professional profits. We do not agree with that view. Presumably the car bought in 1925 had, when replaced, become by wear and tear and age unsuitable for the purpose for which it was employed—in other words, it had become obsolete so far as "J P B" was concerned. In that case the allowance fairly came under Rule 7, Schedule D, Cases I and II, as incurred in replacing the obsolete car. Whether given on the ground of "obsolescence" or "renewal expenditure" the allowance had reference to and was measured by the car displaced, and left "J P B" in the position of having incurred a total net capital expenditure of £414, that is the amount on which depreciation is due, and we can find no justification for adding £75 to the profits.

## LETTERS, NOTES, ETC

## PREVENTION OF GOITRE

SIR JAMES BARR (London, S.W.) writes: By chance I happened to notice the letter of "S O" on the above subject in your issue of September 24th. He says "It would be interesting to know if Sir James Barr still uses concussion of the spinous process of the sixth cervical vertebra in the treatment of thyroid enlargement." Concussion of the sixth and seventh cervical spines followed by concussion of the second dorsal spine, is invaluable in all cases of hyperthyroidism and in these cases you should substitute calcium for iodine. In all cases of fibroplastic goitre you should stimulate the function of the thyroid by a liberal use of iodine and concussion of the third and fourth dorsal spines, followed by concussion of the second dorsal spine—which I have termed the fixation complement. From the diet omit milk, cheese, hard water, and all preparations of calcium. As a plexi-

meter I use a conical cork with a diameter of 1 1/2 in at the broad end and about 7/8 in at the narrow end. The broad end covers the sixth and seventh cervical spines and the third and fourth dorsal, while the narrow end should be used on the second dorsal. For a plexor I devised many years ago a small mallet with a handle 7 in long, the whole weighing about 1 lb. There are a good many handsets of these floating about and they can be had for about 6d each from Mr. Winsor, chemist, Park Lane, Liverpool. I always bought them by the half gross, and made a present of a cork and mallet to the patient, and taught some relative how to carry out the concussion, which should be done two or three times daily.

## LOCAL RESISTANCE OF THE CORNEA TO IMMUNIZATION

DR MERR CORLIANS (Hendon), referring to the report by Drs. Dard and Villard of a case of accidental inoculation of the eye of a man with vaccine lymph (See *Epidemiology*, August 27th, para 189), draws attention to his own investigation of vaccine variolae, published in the *Journal of Tropical Medicine and Hygiene* April 15th and May 1st 1926. He remarks that the experiences recorded by these French observers confirm the experimental results which he obtained in the rabbit. He concluded that the phenomenon demonstrated in previously immunized rabbits of retreating sensitiveness of the corneal epithelium to vaccine inoculation while the skin remained refractory might possibly indicate the presence of a negative phase in the rabbit and the want of protection against variola in this animal.

## "SUBINVOLUTION PERITONITIS" (?)

MR T S M CONNELL, F.R.C.S. Ed. (Birmingham) writes: Dr Douglas A. Mitchell of Bath has advisedly called attention to the condition which he queries as "subinvolution peritonitis" (*Journal*, September 24th, p. 574), and he is to be complimented on his description of the physical signs. I have met several similar cases, and after careful examination and consultation with surgical colleagues in every case we have been compelled to open the abdomen on the probability of finding an appendicitis before establishing the diagnosis. While there is present a general soft, tender infiltration of the pelvic cellular tissue making it difficult to gauge exactly the size of the uterus with some irregular bleeding, the symptoms are so similar to an acute attack of appendicitis following on several slight attacks, that it is nearly impossible to avoid this diagnosis. This is explained by the involvement of the small intestinal coils. The omentum seems to take little part in confining the inflammation. I think the clue to the condition is to be found in the history of a recent confinement or abortion. Dr Mitchell apparently considers that four months is too long for an infection to be dominant, and also that an apparently straightforward confinement precludes the probability of consequent infection. My experience is that both these ideas are erroneous. It is not an extreme rarity to have a patient admitted to my care with pelvic infection usually of the fibrinolytic type, several weeks after an apparently normal confinement. I have only once been able to isolate the organism in the cases in question, and then it was a diplo streptococcus. I hope that I may be able to diagnose the next case correctly by keeping these points in mind since the usual fatal of gynaecological treatment, Fowler's position, an enema, vaginal douching, and hot applications to the lower abdomen, suffices for a cure.

## PREGNANCY AND GLYCOSURIA

DR D M MACDONALD (Ainslie, Westmorland) writes: The correspondence under the above title reminds me of a remark made to me many years ago in a ward in the Royal Infirmary, Edinburgh, by the late Dr James. He was discussing this question in relation to a patient at that time under his observation, and stated that when sugar occurred in pregnancy the subsequent birth was invariably a female. In my experience this has always been so. It would be interesting to know if other practitioners find the rule constant or subject to exceptions.

DR J BARRIE SMITH (London, S.E.) writes: The sugar can be easily differentiated by my simple method described in the *BRITISH MEDICAL JOURNAL* some months ago for alcohol. The apparatus consists of a small phial half an ounce, and a stem thermometer fitting into the preferably long and stoppered phial. The oxidizing fluid is a saturated solution of potassium permanganate 4 c.c.m. with dilute sulphuric acid 2 c.c.m. The graph, vertical temperatures, and horizontal minute observations made from the differences of oxidation of the sugars, indicate quantity and sort, 2 c.c.m. of the solutions or of the urine is sufficient. Oxidizer and oxidizable should be at the same temperature at the start. Sugar of milk and cane sugar may take twenty minutes for their maximum, glucose, eloh, minutes, maltose approximating glucose, mannite and levulose from ten to six minutes. These are not to be taken as standards, but they are quite distinctive. Potassium permanganate in dilute sulphuric acid gives a still more rapid oxidation.

## VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 38, 39, 40, 41, 44, and 45 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 42 and 43. A short summary of vacant posts notified in the advertisement column appears in the *Supplement* at page 132.

## An Address ON THE APPROACH TO SURGERY

DELIVERED AT THE OPENING OF THE SESSION AT KING'S  
COLLEGE HOSPITAL MEDICAL SCHOOL

BY

SIR BERKELEY MOYNIHAN, Bt., M.S.,

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

THIS is Lister's year. One hundred years ago Lister was born. Fifty years ago this hospital had the courage to invite him to join its staff, and on the day of his inauguration Lister delivered this annual address at the opening of the winter session. At the centenary celebrations held in London in April and in Edinburgh in July much was said of Lister's work, of the revolution in surgery of which he was the sole and direct cause and of the unequalled services to mankind which he was privileged to render. Yet there remains, I think, something more to say, and what occasion could be more fitting than this—what platform more appropriate?

The story has often been told, and there is no need to repeat it here, of the horrors and tortures of surgery before the middle of the last century. The craft of the older men was possibly in some respects superior to our own, in swiftness of movement especially; they are said to have been almost incredibly expert. If only the cinema had then been able to record an amputation of the thigh performed by Lister or an excision of the jaw by Ferguson. I think we should all be as much startled at their rapidity as horrified at the general uncleanness, at the demonstrable absence of any conception of the truths regarding infection upon which all operative methods to-day are founded. Little wonder is there that surgery was likened to butchery. Lord Thurlow, when the bill to indemnify the Surgeons Compins, and to give it greater power over the profession, was under discussion said: "There is no more science in surgery than in butchery." To which Mr Gunning answered: "Then, my lord, I heartily pray that your lordship may break your leg and have only a butcher to set it." This was the same John Gunning who is said to have given that flat contradiction to John Hunter which acted like a sentence of death. Lister himself speaks of "the bloody and butcherly department of our art."

Surgery is in these days both Science and Art. As Science it accomplishes the purposes for which every science exists—to acquire direct knowledge, to accumulate facts from a multitude of individual examples to raise a broad truth, to weave generalizations, in its highest accomplishment to link cause and effect. We bring to our aid inductive and deductive logic, recalling with pride that both these weapons of the intellect were first brought into use and established by members of our own profession. For as Hippocrates was parent of the inductive, so was Galen of the deductive method. As Science surgery has not only separate existence but in its wider sense it is related to and dependent upon, many other sciences upon biology, chemistry, physics, physiology, and the like. Discoveries in these sciences not seldom react upon surgery whose progress has in the past often taken impulse from them whose progress cannot now continue without them. But surgery is not only a man's support, an applied science. If we could conceive it bereft of the aid of all other sciences surgery would still remain a science of exact observation of inductive reasoning, of pursuit and discovery of broad truths—a method of seeking the causes no less than the remedies of many of the diseases which afflict mankind.

As Art surgery is incomparable in the beauty of its medium in the supreme mastery required for its perfect accomplishment, and in the issues of life, suffering, and death which it so powerfully controls.

The methods by which surgery both as Science and Art, could be created, directed and expanded were fashioned in early days by Hippocrates and Galen but for more than a thousand years they were discarded. The works of the great masters were erected in the intellectual market-

places of the world as idols which all men must worship, or pay the price even with their lives. It is lamentable to realize that infinite harm may in the end be wrought by great teachers when their disciples slavishly imitate and perpetuate not the methods by which they won knowledge but their so fallible doctrines.

Men have not been reluctant to pay tribute to Lister for his incomparable services to the world, through the discovery of the principles underlying the modern practice of surgery, but they have been slow to realize that the eternal truths which he expounded are no less applicable in the domain of medicine. Infection plays a part also in the causation of those diseases which remain the province of the physician. First to discover and to propound this truth was William Hunter, who, in studying pernicious anemia in the year 1800, became convinced of its dependence upon oral infection. The connexion between these two conditions—between probable cause and tardy effect—seemed so slender, so incredible, that many workers did not even pay the tribute of inquiry. In medicine a new idea rarely obtains a friendly greeting at the moment of birth. We do well to be sceptical, to demand proof upon proof, and to seek evidence in our own experience before accepting a new doctrine. But when scepticism learns to hostility and is nurtured in derision we become worthy or blamo. Quick to resent Lister's contemporaries for their disdain and incredulity of our great master, we in our day are not free from numbing and sterile apathy. Since the year 1800 Hunter has fought with belated success for the recognition of focal sepsis as a cause of far distant and seemingly disconnected disease. To read his several papers to-day is to be convinced not only of the accuracy but of the far-sighted vision of his teaching. "A voice crying in the wilderness," and, like that other, we now realize that his too was teaching a true gospel.

It is not yet realized, I think, that Lister's work has not only revolutionized the scope and practice of surgery and revealed the clue to the so-long hidden mysteries of many systemic diseases but that it has also given to the surgeon and to the laboratory worker the strong instrument of research.

So rapid has been the advance of surgery so exacting the demand made upon those who practise it to train themselves in the manipulative skill necessary for the performance of newly conceived and newly designed operations, that in recent years few surgeons have found it possible to give adequate time to laboratory research. Surgeons have been regarded and have certainly too narrowly regarded themselves as mere execrants. They are in truth experimental biologists and in the last two generations have carried out valuable researches into the etiology, clinical manifestations, and therapy of disease. Their observations of the structural changes which in the human body cause the symptoms they sought to relieve have brought about a complete revision of our knowledge of visceral disease. Their work has been research in its highest form. It has been carried out upon the bodies of men. It has afforded eagerly taken opportunities for observing a host of new facts, it has exercised the faculties of induction and deduction. It has often linked unsuspected causes with remote effects. This it has done mindful all the while of the purpose for which it exists—alleviation or suffering or rescue of threatened life.

The story of the conquests of surgery to-day would be received with incredulity by Lister himself. It is not known that the master ever performed an abdominal operation, yet he it was who made all our triumphs possible. Before Lister's day the opportunities for investigating the processes of diseases in the patient's lifetime hardly existed, and the dangers of even the slightest experiment upon animals were so formidable as to be almost prohibitive.

Research in the science of medicine it is clear, is of two kinds—direct and analogical. Direct research is carried out by the surgeon as he conducts an operation. Analogical research is conducted upon animals or in the laboratory, and its chief purpose is to test, to illustrate, to interpret, to explain, or to expand the lessons learnt by direct research, or to explore the paths suggested by it. The difference between direct and analogical research in surgery is the counterpart of the difference which existed in Galen's day

between direct and analogical research in anatomy. Much of Galen's work is based upon observation of the structure of animals, by analogy this knowledge was applied to man. Are not the physiologists to-day perpetrating the very same error as our great forerunner? Are they not neglecting opportunities for direct research and too implicitly trusting to analogical research? Anatomy is a science applied to man was firmly established by Vesalius. Do we need in physiology to-day a Vesalius to lead us to the true faith? Why, when investigations into the normal processes of physiological activity or into aberrations from the normal can be conducted upon human beings, are so many opportunities neglected? Why are animals selected for the demonstration of certain physiological truths, and why are physiologists content merely to expound truths obtained by observation and experiment, when a visit to the wards would enable the teacher to imprint in indelible characters upon the minds of his pupils these same truths demonstrated upon the human body? Why are so many anatomists content to teach only on the dead body?

Lister made analogical research safer than ever before, but he was the one and only creator of direct research. His labours freed experiments upon animals from all the risks attaching to infection, and thereby powerfully increased the opportunities of the biologists. The new weapon of direct research upon man during remedial operations or after grave injuries was forged by him alone.

The simplicity of analogical research is of immense advantage. It demands ingenuity in devising and high technical skill in executing experiments, and intellectual honesty in observing and recording results. But the whole analysis of the experiment is objective. A plain answer is given to a plain question, and interpretation should offer few difficulties to the trained mind. In direct research, observations and their interpretation present perplexities which appear to be almost beyond the reach of analysis, for subjective sensation and complex emotional states are so apt to confuse the issue. Man, being a far more sensitive creature bountifully endowed with the gifts of expression, can tell us more of himself, of his discomforts, pains, and other manifold clinical occurrences, than any animal submitted to experiment. And elucidation, not only of facts directly observed, but of sensations of all kinds, their chances and changes, as experienced by the patient, is a matter requiring great industry, the skill of an expert cross-examiner, and a high degree of intellectual integrity free from all prejudice to appraise all matters with accuracy. He who is to carry out direct research should therefore first be trained in analogical methods.

For research into the conditions and causes of disease in man both methods of intellectual approach must be traversed. We need direct research to give us our first facts, to set the problem, through analogical research we seek the solution of our difficulties, in annotation upon our disclosures, and an analysis of individual factors in a complex problem wherein many are involved.

As an example we may take the subject of gastric and duodenal ulcer. Its submission to direct research has changed the whole front of our knowledge of this disease. Duodenal ulcer, indeed, except as a pathological entity, did not exist for the clinician until the surgeon revealed it. He created its clinical existence, differentiating it from those other diseases which so closely mimic it, he has devised the methods of its surgical treatment when it has proved recalcitrant. He has not only brought duodenal ulcer into the open, he has shown its frequency is compared with gastric ulcer, he has discovered something of its most impressive antecedents, he has studied conditions which coincide with, and perhaps contribute to it. Of the morbid anatomy of gastric ulcer we had learnt a great deal from William Billroth, Cruveilhier, Brinton, and others, but its clinical recognition was fraught with grave inaccuracy. Even to-day the diagnosis of "gastric ulcer" made upon clinical evidence alone is perhaps more often wrong than right. But clinical inaccuracy and bewilderment are at last yielding to patient research by the surgeon, ably supported by the radiologist. We are substituting truth for false-believe, gradually clearing away the multitudinous errors which have so long enumbered this subject. We seek to walk by sight, not by faith alone.

In surgery the hand of the beginner is heavy. In our earliest experience of gastric operations we found not infrequently that where a confident diagnosis of "gastric ulcer" or "duodenal ulcer" had been made, based upon the clinical knowledge of the times, the stomach and the duodenum showed no slightest lesion. A few little tags between the transverse meso-colon and the stomach were held to confirm the diagnosis, or a blanched area on the interior wall of the duodenum was regarded as the seat of a superficial ulcer. Gastro-enterostomy, so miraculously successful in case of obstruction at the pylorus, was then performed for at that time the short-circuiting operation was credited with almost magical therapeutic power. When the later history of such patients was traced the results were always indifferent or bad, sometimes lamentable. It was not long before I was driven to enunciate the doctrine that a chronic ulcer in need of surgical treatment only existed when it was "visible, palpable, demonstrable," and that surgical treatment should be adopted only when the presence of the ulcer was thus indubitable. I regret to find that in all countries there are still surgeons whose practice does not endorse this teaching.

When in my own work the "ulcer" so confidently diagnosed did not display itself, wider search was made as soon as this became safe, other abdominal organs being in turn scrutinized. The results of this extended inquiry were most interesting. We sometimes discovered a gall bladder full of stones, an appendix showing advanced disease, a group of tuberculous mesenteric glands, or, again, a patch of tuberculous ulceration in the intestine, large or small. Sometimes it was an enlarged spleen of splenic infarct, and, in rarest instances, a malignant growth of jejunum or colon. And so by degrees we were brought to realize the inaccuracy of many clinical descriptions of intra-abdominal disorders, and of the estimates of their relative frequency. We learnt that many diseases betrayed themselves by symptoms confidently ascribed to defects in organs other than that attacked.

For the vague, loose, inaccurate account of symptoms something approaching precision could now be substituted, to the great advance of our clinical knowledge. This extended research was soon made a matter of routine, and, to our surprise, isolated disease within the abdomen was found to be far less frequent than we had supposed. A patient suffering from a duodenal or a gastric ulcer, or harbouring gall stones, was discovered to have a diseased appendix. And it soon became evident that this association must not be regarded as accidental—that, indeed, the infection of the appendix was certainly the precursor and very probably the cause of pathological conditions present elsewhere. We now regard all ulcers and all gall stone, except the solitary cholesterol stone, as consequences of infection conveyed from a distance. William Hunter's thesis—his application of Lister's teaching to general medicine—was true here also. For it was rare to find any patient suffering from gastric or duodenal lesions in whom a focus of infection was not present, and the evidence is now, I think, incontrovertible that it is from such centres of infection that organisms are carried to far distant parts, then to induce a gross organic lesion, whose connexion with its cause seems remote and improbable, and whose symptoms completely overshadow those of the original infection if, indeed, these latter have ever been present.

If now, this subject is submitted to experimental analogical study we find, at first, that there is an insuperable difficulty in causing conditions identical with those observed in man. The chronic gastric or duodenal ulcer with their seasonal variations in activity—period of remission alternating with periods of violence, time of healing with times of destruction—do not occur, and have not yet been artificially produced, in any animal. But the cultivation of organisms from ulcers removed by operation has had interesting results. Rosenow's work upon the elective localization of microbes indicates that certain organs provide a more suitable culture medium than others, that there is affinity between soil and seed. He and his pupils Nickel and Hufford have shown that there is a green-producing streptococcus which, cultivated from specimens of gastric or duodenal ulcers removed by operation,

has an affinity for the stomach and the duodenum. After inoculation it causes hæmorrhage and ulceration in different species of animals. These analogical researches suggest that, though other factors doubtless are at work in addition to infection in leading to the development of an ulcer, they appear to be powerless to develop the chronic form of ulcer of the stomach or duodenum unless infection is added to them or precedes them.

Experiment and observation were never more happily united than in Lister's work. The discovery by Pasteur of the fact that fermentation was due to living micro-organisms was illustrated by Lister in a variety of experiments. The method of controlling or preventing the activity of microbes within the area of operation and within wounds was studied upon man—was in fact, a piece of direct research. One germicide or one mode of dressing after another was tested and for a time adopted only to be finally discarded or retained as clinical experience seemed to decide its value. For Lister realized that it is not merely killing of microbes which is to be desired, the problem is to render them inert within a wound without injury to the sensitive tissues of the body, whose helpful activities might be lessened or destroyed by the corrosive action of a germicide. A host of observers have laboured earnestly to discover new antiseptics, bactericidal power in contact with germs in a test-tube being regarded as the index or the proof of their chemical value. We know only too well how illusory are such beliefs. For the death-dealing power of a chemical agent *in vitro* is no measure of its full value in clinical work. Wound secretions add a new factor to the problem. Indeed I have little doubt that as far as wound applications are concerned, the value of an antiseptic is not to be gauged by its bactericidal but rather by its antitryptic power. We do not so much seek to kill germs within a wound as to encourage the wound in its process of resistance to their attacks—to exalt the natural bactericidal power of wound discharges. This is perhaps not the best but at the moment it is the most apposite of the illustrations which might be given to show the mutual interdependence of clinical and laboratory work of direct and analogical research. To the clinician this needs no demonstration but I fear the laboratory worker is in danger of becoming a little too eager to exert dominion in territory which his skill has not yet conquered. Lister's work is now being enlarged and perhaps completed by Almroth Wright, who by his study of immunity has made it clear that whereas Lister sought only to diminish or to destroy bacterial attack, success may also be found in our increased defence against microbial invasion.

The changes that have taken place in surgery, the great increase in the number, intricacy, and scope of operations, have made it far more necessary than ever before that the surgeon should be a skilled craftsman. To practise the craft with something near perfection a man must surrender his whole life. To attain a certain facility in operative work is not difficult to imitate the master's methods and to follow the movements of his skilled hands is within the easy competence of many. Man Aristotle tells us, is the most imitative creature in the world, and learns at first by imitation. It is natural for us all to delight in works of imitation, but in imitation there lies a great danger. Many of the operations in surgery have now become so standardized, so perfected and simplified by a multitude of workers, that they can be imitated by others with a degree of success which, though falling short of the best, is yet, by comparison with the results of a generation ago, worthy of high praise. Thus has unhappily led to the too frequent performance of operations and to their performance by those whose judgement has not kept pace with their technical accomplishments. Perhaps the most abused operation in surgery is gastro-enterostomy. A distinguished Continental surgeon has fathered a paper by one of his pupils on "gastro-enterostomy a disease." The anastomosis is in all truth a disease when performed in the absence of a sufficient cause or in an artistic and vicious manner. That it is frequently performed when no need for it is performed by the clumsiest imitator, is certain. Many of us have read the bitter duty of undoing such anastomoses or of resecting the ulcer which has developed in consequence of them. The physician who sees

such cases condemns the operation in that, such, it is wrong, his strictures and ours should fall not upon the operation but upon the operator. I conceive that a duty rests upon the physician greater than he realizes. When a physician for whose talents and devotion I have great respect expressed his regret that he could not agree with my advocacy of surgical treatment for chronic intractable duodenal ulcer because the mortality of the operations practised upon his cases was over 10 per cent, I was constrained to say that were the mortality in my hands so high I should abandon surgery. The duty rests upon the physician, if he advises operation, to point out that the mortality of operative work varies with the operator, that though in general terms there is an average mortality for every operation, in cases of difficulty or danger where the fine issues between medicine and surgery must first be decided and much depends upon experience the choice of a competent and practised operator is necessary. Many of us, I suspect, are at times placed in very difficult positions. A patient is sent for our opinion as to whether an operation shall be performed for a certain condition and the medical man or the patient himself tells us that in the event of an operation Mr. Blank will perform it. We may agree with the diagnosis, we may agree that an operation is certainly necessary, and we may know that the suggested operator is by no means a wise choice. If it is true that all patients cannot have the best, all ought at least to have the best possible.

There is no doubt that a change in the training of the surgeon is imminent and is certainly overdue. What should be the approach to surgery? It has long been the custom for those waiting to obtain a post on the surgical staff of a hospital to spend months or years in teaching anatomy. And what anatomy have they been compelled to teach? "Descriptive anatomy" the bare record of the physical characters of the various structures of the human body. Students, in accord with modern custom must be taught the origin and insertion of muscles, the origin, course, branches, and destiny of nerves, the source, divisions and direction of vessels and the like—a dull catalogue of dead things. For descriptive anatomy has in all countries of the world for a century been divorced from functional anatomy. Sir Arthur Keith has told the story of this lamentable secession. The early English anatomists from William Harvey onwards were not content merely to say in words what any man could see with his own eyes. They were deeply concerned not only with the appearance of parts but with the meaning attached to structure. They tried to know not only how organs of the body were constituted but why they were so made. Their interest was engaged by the function no less than by form. John Hunter was intensely occupied with dissection hardly a day passed without his spending many hours in studying the anatomy of parts in man and in various animals whose bodies he could beg borrow or steal. But he sought to know not merely what and where the various structures were but even more the function they fulfilled. For him as Keith says 'it was not enough to recall that the wall of the aorta was twice as thick as that of the pulmonary artery, or that the walls of some veins were thick and of others thin, he immediately set to work to find out the significance of these facts. He appealed to comparative anatomy, to embryology to pathology and experiment for an explanation.' In February next we will be the 200th anniversary of John Hunter's birth and we hope then to display Hunter's own handiwork in such manner as to show the variety of his intellectual appetite and his unsurpassed skill in dissection. But dissection was always a search for the reasons of the actions of parts not merely for their structure.

How then did anatomy go astray? Keith rightly traces the catastrophe to the influence of France and to the delightful gifts of our Gallic colleague for systematic and logical thought with orderly and luciferous expression. It seems that the determining influence was that of Winslow (1669-1760) professor of anatomy in Paris. His teaching recounted the best in Europe was eloquent for all to hear. "Whilst merely conveying to his learners or readers what they might see with their own eyes, at a glance he left them with the pleasant impression that they were drinking



at the very fountain-head of pure knowledge." He purposely abstained from attempting to explain the meanings of the structures he described, and in doing so impoverished the study of anatomy. The standard set by him was universally followed, and was to find its highest expression in one of his successors—Biehn (1771-1892). At the time when I became a student, forty-four years ago to-day, we were taught anatomy as we should be taught the plan of a city, learning the names of houses, of main streets, of their branches and turnings, by whatever gate we entered we thus learned to find our way about. But to the people who lived in the city, their industries, their way of life, the part they filled in the community, we were hardly expected to give a thought. For all we knew the city might be dead.

It is true that the surgeon must know the formal anatomy of the human body—no very difficult attainment, though he will sometimes find that he still must make his own fresh investigations. When, for example, certain problems presented themselves in connection with the operative treatment of gall-bladder disease, my colleague Mr. Flint, at my suggestion, examined in the *post-mortem* room 200 bodies, and was able to teach us new truths relating to the vascular supply of the gall bladder and the anomalies of the ducts of the liver. But to be constrained by custom to teach successive generations of students the details of descriptive human anatomy, to be compelled day after day, year after year, to restrict one's teaching to the elementary parts of a finite subject, human anatomy, is insidiously to develop an intellectual complacency, a feeling that one is master of one's subject. Nothing so easily destroys a man's capacity for thought and his delight in indulging it (it is, alas! sometimes a torture) as the restriction of his mental efforts to a limited part of a subject now hardly capable of extension. It is difficult to imagine any training less fitted in these times for the young surgeon. Anatomy as an approach to surgery cannot long continue to be the descriptive anatomy of recent years, a sterile derivative of true anatomy which embraces a study of functional activities and purposes. We must return to the anatomy of the English school, the science founded by Harvey and pursued by Hunter, Charles Bell, and Lister: the science which stretched in the Aristotelian phrase for "final causes," and which tried to answer the question "To what end?" In my days I did my best to escape from the insipid routine teaching of anatomy by devoting a part of almost every day to original work in the *post-mortem* room and in the dissecting-room, and upon foetuses which I besought my friends in general practice to send me. I worked upon the subject of internal hernia, and upon the rarer forms of external hernia. And I was saved from the cramping influences of the dissecting-room by the surprising desire of many medical men to surrender their patients to my immature skill at a time when abdominal surgery, having survived the dangerous pioneer period through which it had just been steered by Spencer Wells, Lawson Tait, and Mayo Robson, was at length becoming so safe that many diseases hitherto beyond the reach of the surgeon were now being successfully attacked.

But all my life I have wished that my training had been different. Were my days to come again I should, after leaving examinations behind, spend the time necessary to make an adequate knowledge of human anatomy my permanent possession, and should then escape to experimental research and in a community of like minded people, endeavor to train myself for the high destiny of a surgeon, the one man who may engage in direct research. My time would be spent in the laboratory, where a youth of plastic mind may learn the methods of approach to new problems or to new extensions of old problems, where old knowledge is merely an impulse to the search for new, where intellectual dissatisfaction is victor over narrow complacencies, where the religion of research inspires him and equips him for his work in days to come. If surgery is to be something more than a wonderful craft, if it is to be the instrument of research which I believe it to have been, and to be destined to be in the future, those who practise it must have their minds shaped and strengthened by conflict with unsettled problems, not cramped and sterilized by mono-

tonous exercise within a narrow province of static knowledge. Their minds must be trained in the laboratory, in an original research, so that they may be more effectively exercised both in the operation theatre and in the ward, upon direct research, not, I need hardly say, to neglect of the dissecting-room, but to its relegation to a subordinate position. The comradeship of laboratory workers and clinicians should be intimate and unbroken. The scientist at work in the laboratory can never reap the full reward of his lonely researches without close and loyal collaboration with the clinician. Nor can those who serve the same cause in a different atmosphere give to their patients the best aid of medicine and surgery without the help of the scientist. The training of the surgeon must not only allow, it must urge, his mind to stray beyond the hard boundaries of old knowledge, over the edge of firm beliefs, into wide territories as yet unexplored and even undivined. In this way only is there escape from the danger which besets the surgeon in the future, the peril of a facile automatism. In this way may the physiologist be brought back from his vagrancies and encouraged to realize that his science best fulfils its destiny when it is applied to the understanding of the functions, normal and aberrant, of the organs of man. It is a delight to me to see that a few of the younger surgeons in this country are taking the path which I should follow if I were on the threshold of a surgical career.

Lister was thrice, four times, happy in growing up under the sway of men steeped in the old ideals of anatomy. The intellectual influences of his life came from Sharpey and from Wharton Jones—duty, despised, yet passionate in his zeal for the discovery of truth by way of observation upon living structures. Like their teacher, Alexander Monro (*secundus*), these men never wearied in the search for reasons. They were not content with mere knowledge of the construction of parts, but in that knowledge sought the clue to the several actions of which those parts were capable. In Lister's early paper, "Observations on the contractile tissue of the vis," "On the muscular tissue of the skin," "An inquiry regarding the parts of the nervous system which regulate the contraction of the arteries," "An inquiry into the functions of the visceral nerves," we see clearly that he was carrying on the high tradition in which he was trained. I have not gained the impression that Lister was a man of really exceptional intellectual gifts. Rather he was a man of great intelligence trained in the very manner which helped his mind to work to highest advantage in his special calling. Advances in medicine and surgery are made by men who to the faculty of observation add the power of conceiving and carrying out experiments, not in the laboratory only, but also in the operation theatre and in the ward. For disease and accident alike may be regarded as beginning experiments for us, and it is for us to add factors of our own devising, to exert influences designed to check or to change the course of events, and, in so doing, to judge both causes and effects and the range of our power over both.

No training of the surgeon can be too arduous, no discipline too stern, and none of us may measure our devotion to our cause. For us an operation is an incident in the day's work, but for our patients it may be, and no doubt it often is, the sternest and most dreaded of all trials, for the mysteries of life and death surround it, and it must be faced alone. Those who submit to operation are confronted, perhaps after long and weary days or months of suffering, with the gravest issues, and far more often than many of us suppose they pass into the valley of the shadow of death, and, in stark dismay, wonder with Beatrice in her chilling solitude and pain what will come to pass.

"If there should be  
No God, no Heaven, no Earth in the void world,  
The wide, gray, lampless, deep, unpeopled world,"

To give courage to those who need it, to restore desire for life to those who have abandoned it, with our skill to heal disease or check its course—this is our great privilege. Ours are not the mild concerns of ordinary life. We who, like the Happy Warrior, are "doomed to go in company with Pain and Fear and Bloodshed" have a higher duty than other men, and it is for us to see that we are not unworthy.

## TUBERCULOSIS OF THE KIDNEY\*

BY

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Tuberculosis of the kidney illustrates the advance in diagnosis and treatment in renal surgery in the last twenty-five years. The mortality of nephrectomy for tuberculosis of the kidney between 1890 and 1900 was 25.4 per cent.

At that time no adequate means of ascertaining the presence and condition of the second kidney were generally employed. The use of the ureteral catheter and the test of the renal function, together with a more accurate knowledge of the pathology of renal tuberculosis have reduced the operation mortality to 2 or 3 per cent.

## SURGICAL PATHOLOGY

Renal tuberculosis is a disease of young adult life and occurs most frequently between the ages of 20 and 40. It is rare in children, and in them is more frequently bilateral in the early stages. The disease is uncommon over 50 years, and at this age is more chronic than in middle life. The male sex is more frequently affected than the female in a ratio of about 2 to 1. In adults chronic renal tuberculosis is unilateral in from 80 to 90 per cent of cases in the early stage.

## Source and Route of the Infection

In the strict meaning primary tuberculosis of the kidney cannot be said to exist. A primary focus is always present elsewhere in the body, although it may not be discovered clinically. Biarsch places the coincident lesions discovered in 346 operated cases at 71 per cent. Others have found a lower proportion of coincident lesions in clinical work. Thus Persson\* states the figure at 50 per cent and in 193 cases operated on by himself 48.1 per cent had evidence of obsolete tubercle elsewhere in the body.

A history of pleurisy and clinical evidence of obsolete pulmonary tuberculosis is common, while *post-mortem* evidence shows that tuberculous glands of the mediastinum are present in a large proportion of cases. Active pulmonary tuberculosis is found coincident with renal tuberculosis in a small number of cases (5.3 per cent).

Tuberculous lesions—which must equally with renal tuberculosis, be secondary—are found in other parts of the body. The exact relationship of these to the renal lesion is not always clear, but some of them may be the immediate source of the tubercle bacilli that infect the kidney. In order of frequency these are genital tuberculosis in the male and tuberculosis of bones and joints. In my cases submitted to operation there were tuberculous lesions of the epididymus in 23.3 per cent, of the prostate in 15.3 per cent, and of the seminal vesicles in 7.3 per cent.

There are three possible paths—namely, the ascending or urinary by the lumen of the ureter, the lymphatic and the haematogenous.

There is experimental evidence that, under certain conditions, ascending infection by the lumen of the ureter may occur (Wildbolz†) there is histological evidence that lymphatic infection along the ureter may take place (Bauerstein,‡ Walker§) and there is pathological evidence that supports lymphatic infection from the thorax (Brongersma¶). The weight of evidence at the present time supports the view that in renal tuberculosis the tubercle bacilli are blood borne.

## VARIETIES OF RENAL TUBERCULOSIS

It is possible to reduce the many varieties of renal tuberculosis that have been described to three: (1) *milary tuberculosis*, (2) *chronic renal tuberculosis*, and (3) *tuberculous nephritis*.

## Milary Tuberculosis

This is an acute condition in which both kidneys are strewn with tubercles. It is part of a general tuberculosis and is of no surgical interest.

\* A paper read in opening a discussion on this subject in the Section of Surgery at the Annual Meeting of the British Medical Association at Edinburgh.

## Chronic Renal Tuberculosis

Under this head are included almost all forms of renal tuberculosis that come under the care of the surgeon. It includes the conditions known as apical tuberculosis, ulcerovascular tuberculosis, tuberculous hydronephrosis, caseous tuberculosis, nodular tuberculosis and tuberculous abscess.

The first change in the great majority of cases takes place at the apex of a pyramid. There is a small loss of substance surrounded by a zone of inflammation. The ulceration spreads outwards towards the base of the pyramid, and a cavity communicating with the calyx is formed. The lining of the cavity is a layer of necrotic or caseating tissue. Beyond this is a zone of inflammation which may show grey tubercles and occasionally there is a complete zone of grey gelatinous tubercle. Onward from the zone of inflammation isolated tubercles are dotted in normal renal tissue or arranged as one or more streaks radiating to the surface of the kidney. On the surface of the kidney groups of tubercles are seen in areas corresponding to the subjacent tuberculous pyramids. One or several, or all the pyramids may be affected in different degrees. Another pathological process may now become prominent in the wall of the calyx at its neck or the division of the pelvis at its outlet or in the wall of the pelvis fibrous thickening develops and contracts until the passage is finally occluded. If now the urinary secretion in the section that is gradually being occluded is maintained a localized cyst or partial or total hydronephrosis develops. If, on the other hand the secretion of urine is abolished a caseous mass surrounded by fibrous tissue is formed and the whole kidney may be converted into a mass of the caseous masses. The ureter is greatly thickened and rigid in a large proportion of cases. There is ulceration, necrosis and caseation of the mucosa and tuberculous infiltration with the formation of thick layers of fibrous tissue in the middle and outer coats. Stricture formation may affect one or several parts of the tube and dilatation of the tube occurs above.

## Tuberculous Nephritis

In cases of pulmonary tuberculosis the urine may contain albumin and tube casts and the same may also be present in the urine of the second kidney in chronic renal tuberculosis. In the latter condition the symptoms usually clear up after removing the tuberculous kidney. This condition has been regarded as due to toxic nephritis and *post-mortem* examination has shown that there was either interstitial or parenchymatous nephritis but that tuberculous changes were absent. Recently Heim† and others have described kidneys where nephritis of this character was present and tubercle bacilli were found in the kidneys without any specific tuberculous changes. In a woman aged 37 I removed the left kidney for intermittent haematuria when no bacilli were present in the urine. The kidney was small and showed interstitial nephritis and minute cysts and scattered throughout were giant celled systems. This case might be regarded as unilateral chronic *milary tuberculosis* of the kidney.

## SYMPTOMS

The symptoms of renal tuberculosis do not at first and may not at any time directly refer to the kidney. I have placed them in the order of frequency in which they occurred in the cases under my care: (1) bladder symptoms, (2) changes in the urine, (3) loss of weight, (4) haematuria, (5) renal pain, (6) palpable renal swelling and thickened ureter.

In the majority of cases irritability of the bladder with increased frequency of micturition is the first and for a long time the only symptom of which the patient complains. The irritability is slight and variable depending on the weather and diet. It increases until urine is passed every twenty or thirty minutes day and night accompanied by pain before and after micturition. The urine in the early stage is increased in quantity, it is pale, faintly acid or neutral and contains albumin and a small amount of suspended pus and fine white flakes. In uncomplicated cases a few tubercle bacilli are found, but no other bacteria.

Slight terminal haematuria is frequently observed, and an attack of haematuria is occasionally an early symptom.

Rarely, severe attacks of hæmaturia are a prominent feature. Continuous slight loss of weight is as a rule observed, but there is no rapid or severe emaciation in uncomplicated renal tuberculosis. Renal pain is usually insignificant, and may be entirely absent. With severe hæmorrhage there may be ureteric colic from clots. Fever is absent in most cases, but a slight persistent rise of temperature to 99° or occasionally to 100° F. may be observed. A high temperature, if present, is a symptom of either a mixed infection or of general tuberculosis. The kidney is felt enlarged in a small number of cases of uncomplicated renal tuberculosis. Even when it is considerably enlarged it may be adherent high up under the diaphragm and not be felt.

A thickened tuberculous ureter may be detected on deep palpation at the level of the bim of the pelvis in a thin subject, on rectal examination in the male subject, or as a thick cord in the lateral fornix on vaginal examination. It is a characteristic of renal tuberculosis that the disease may have advanced so far as completely to have destroyed one kidney without causing symptoms that attract the attention of the patient. The symptoms may vary, and in some cases may disappear for considerable periods. In the majority of cases, however, the symptoms are slowly progressive.

#### SPONTANEOUS CURE AND CLOSED RENAL TUBERCULOSIS

A condition of clinical importance has received the name of "closed renal tuberculosis" or "autonephrectomy." The latter term is incorrect and unscientific. With this, and inseparable from it, must be discussed the question of spontaneous cure of renal tuberculosis.

A tuberculous lesion of the kidney may be arrested as the result of one of two processes—namely, (1) healing of the tuberculous lesion with disappearance of the tubercle bacilli and replacement of the ulcer by a scar, and (2) exclusion of the tuberculous focus by a ring of fibrous tissue.

I have searched for many years in the kidneys I have removed for tuberculous and other diseases for evidence of healing of a tuberculous lesion without destruction of the segment of the kidney affected or of the entire kidney. I have only met with one example, and this, although it appeared perfectly healed to the naked eye, still showed some giant cell systems microscopically.

In this case I removed the right kidney of a woman, aged 40, for acute hæmatogenous pyelonephritis due to staphylococcal infection. One of the pyramids in the middle third of the kidney showed the apex cleanly scooped out. The calyx was normal and to the naked eye there were no signs of inflammation. The lining of the cavity was smooth. The pathological report was as follows: "The cavity which occupies the position of the apex of a calyx is in part lined by epithelium like cells, but at one spot the lining is composed of granulation tissue in which a few giant cells are still to be found. Apart from this there is no evidence of tubercle."

2 The form in which the activity of a tuberculous lesion of the kidney is arrested by exclusion of the focus is not uncommon (10 per cent of renal tuberculosis—Briarsch<sup>1</sup>), and has received the clinical name of "closed renal tuberculosis." It was first described as a clinical entity by Zuelcher and Lind,<sup>10</sup> and later described fully by Smirnov.<sup>11</sup> I have seen three varieties of change in the kidney that have produced this clinical phenomenon—namely, (1) tuberculous hydronephrosis, (2) massive caseous tuberculosis of the kidney, and (3) occlusion of an ulcer-cavernous focus. The whole of the kidney, or only a part of it, may be affected by the closure.

#### Clinical Aspect of Closed Renal Tuberculosis

In some cases of renal tuberculosis there has been bladder irritability for a time, but this has been neglected and has disappeared, and the condition known as closed renal tuberculosis, where the infected area is shut off from the urinary tract, has developed. No further symptom may arise, and the presence of a closed tuberculous kidney may be unsuspected during the life of the patient and be accidentally discovered after death.

The discovery of closed renal tuberculosis may be made during the routine examination of a candidate for life

insurance, or during the investigation of some condition independent of the urinary disease. Examination of the urine and x-ray examination and cystoscopy are the methods by which attention is drawn to the renal disease. There may be albuminuria, or a trace of pus, or some red blood corpuscles, and the x rays may show the shadow of caseous masses in the kidney. The kidney may be enlarged, and a thickened ureter may be felt on abdominal, rectal, or vaginal palpation. Cystoscopy and chromocystoscopy show a closed and dragged out ureter. The discovery of closed renal tuberculosis on one side may be made during the examination of a case of tuberculosis of the other kidney.

When the closed focus affects only a part of the kidney the diagnosis becomes very difficult, and may be impossible apart from operation. The x rays and pyelography may, however, give information that leads to a diagnosis. Closed tuberculosis in one part of a kidney with retro open tuberculosis affecting the remaining portion of the organ is not uncommon, and accounts for the variation and even temporary disappearance of symptoms.

A very important question arises in regard to these cases of "closed renal tuberculosis." Is the tuberculous infection of these kidneys permanently inactive, or is it still potentially active? Where one portion of the kidney is the seat of "closed tuberculosis" the remaining part of the kidney may continue to function and remain healthy, and at a later date become infected with tubercle. I removed a kidney where the upper one-third was a closed tuberculous hydronephrosis and the apex of one pyramid of the lower third showed early tuberculous ulceration. There had been a trace of pus but no bacteria found in the urine seven years previously. For nine months before operation there was loss of weight, pyuria, and tubercle bacilli in the urine.

Infection of the urinary tract may occur from a tuberculous focus which has been closed. In the following case the exciting cause of the reopening of the tuberculous focus was an injury.

A man, aged 40, had had hæmaturia fifteen years previously. Three weeks before I saw him he fell heavily down a flight of stairs. Six days later frequent micturition and hæmaturia suddenly developed and the urine was found to contain tubercle bacilli. The left ureter was oedematous, and near it was a small patch of tubercles.

Nephrectomy showed a large kidney converted into a series of round cysts, and at the lower pole there was a tuberculous cavity communicating by a narrow neck with the pelvis. Acute inflammation of the pelvic mucous membrane spread from this opening into the lower part of the pelvis and down the ureter.

Persson mentions a case where a fracture of the pelvis was followed by miliary tuberculosis and an autopsy revealed an unsuspected renal tuberculosis. Briarsch investigated five kidneys the seat of closed renal tuberculosis by inoculation of guinea pigs and found that in four the tuberculous infection was dead in one it was still active. Wildbolz found in the wall of a closed renal tuberculosis fresh tubercles in spite of the fact that the contents were sterile. In a case described by Kapsammer<sup>12</sup> spontaneous healing had lasted for many years, but eventually a perinephric abscess developed and caused death.

These cases show, and the experience of other observers confirms the view, that closed renal tuberculosis is a potential source of further infection.

#### DIAGNOSIS

##### 1 Symptoms

The spontaneous development of signs of cystitis is insidious in its onset in a young adult suggests the presence of urinary tuberculosis. Discomfort, pain, and tenderness of the kidney, and enlargement of the organ, may be present. These symptoms do not, however, necessarily prove that this kidney is tuberculous or that the other kidney is healthy. The symptoms may arise in a kidney which is hypertrophied and healthy or recently infected with tubercle when the other kidney has been destroyed by tubercle without any symptoms being noticed by the patient.

##### 2 Aseptic Pyuria and Albuminuria

Where there is pyuria and the urine is sterile it is practically certain that tuberculosis is present. Pyuria may be absent in closed renal tuberculosis. Albuminuria is a constant symptom, and its absence will raise a doubt as to whether tuberculosis is present even when other signs point to the condition.

### 3 The Tubercle Bacillus

The discovery of the tubercle bacillus is the final proof of urinary tuberculosis. The proportion of cases in which the bacillus is found in the urine is given by Persson as 65 per cent, by Beer<sup>12</sup> as over 70 per cent, and by Wildholz as 90 per cent. Hattinger<sup>14</sup> found the bacillus forty two times in the first smears and six additional times in second smears, and only failed in four cases. The tubercle bacillus is usually present in small numbers, and there may be a difficulty in finding it, so that repeated examinations are required. Hyman and Mann<sup>15</sup> state that large numbers of bacilli are more likely to be found in the earlier than in the later stages of the disease. Animal inoculation should always be made where a doubt exists.

In regard to the discovery of the tubercle bacillus in urinary tuberculosis we must contemplate two possible conditions: (a) the tubercle bacillus is not demonstrated but the symptoms point to tuberculosis, (b) the bacillus is demonstrated but other proofs of tuberculosis are wanting.

#### (a) The Tubercle Bacillus is not Demonstrated

Failure to discover the tubercle bacillus in the urine does not exclude urinary tuberculosis. In 295 cases of proved tuberculosis of the kidney Persson found that the tubercle bacillus was demonstrated microscopically in 78.3 per cent and by guinea-pig inoculation in a further 7.1 per cent—in all 85.4 per cent of cases. In 193 cases in which I performed nephrectomy for renal tuberculosis the tubercle bacillus was found in the urine in 155 (80.3 per cent). There are several reasons for the failure to demonstrate the tubercle bacillus in 20 per cent of cases of renal tuberculosis. The search must be made by a competent bacteriologist and much time and care must be spent on it, the number of bacilli may be very small and their appearance in the urine intermittent, repeated search in specimens taken at different times is therefore necessary. Again, the tuberculous focus may be shut off from the urinary tract (closed tuberculosis), when the renal lesion is closed but there is tuberculous ulceration of the bladder repeated examinations frequently fail to discover the tubercle bacillus, and the same may be true when tuberculous ulcers persist in the bladder after nephrectomy. Finally the tubercle bacillus may not be pathogenic to the guinea-pig. Cases of renal tuberculosis in man have been described by Lowenstein<sup>16</sup> and Joannovic where the bacillus of fowl tubercle has been found. This type of tubercle bacillus is non-pathogenic to guinea-pigs. Hryntschak<sup>17</sup> ascribed the failure to discover the tubercle bacillus to this cause in some cases of human tuberculosis of the kidney.

In cases where the tubercle bacillus is not demonstrated in the urine the diagnosis may be made by the symptoms, the presence of tuberculous lesions elsewhere in the body, and especially in the male genital system, the discovery of a thick ureter, the demonstration of x-ray shadows thrown by caseous masses in the kidney, or by the help of cystoscopy. In 58 of my 123 cases the tubercle bacillus was not found in the urine and the diagnosis was made by the cystoscope in 30 of these (15.5 per cent).

#### (b) The Tubercle Bacillus is Present in the Urine

The demonstration of the tubercle bacillus in the urine is usually regarded as diagnostic of tuberculous disease of the urinary tract. The tubercle bacillus may be discovered in the urine when no other symptoms of urinary tuberculosis are present—a condition termed 'tuberculous bacilluria'.

In such cases the question arises, whether a lesion of the kidney insufficient to give rise to symptoms exists or whether it is possible for tubercle bacilli to pass through the kidney without producing a focus of tuberculous disease.

Foulerton and Hillier<sup>18</sup> were the first to show that tuberculous bacilluria without a tuberculous lesion of the kidneys might occur in cases of pulmonary tuberculosis. Kiellenthal<sup>19</sup> confirmed the observations of Foulerton and Hillier, and proved that in his case no genital source for the bacilli existed. Hoob<sup>20</sup> found tubercle bacilli in the urine of 6 per cent of phthisical patients. Kiellenthal found that in all cases where a tuberculous bacilluria was

present there was albumin in the urine, and other observers have noted the presence of albumin and tube casts.

It seems probable, therefore, that a non-specific nephritis is present in all cases where tuberculous bacilluria is found. The bacilluria in these cases is probably not continuous, and may have a short duration. Nitch relates a case where tuberculous bacilluria was found in clear urine, and continued for two and a half months and then ceased, and the patient was well eleven years later.

The presence of the tubercle bacillus in the urine cannot of itself be regarded as a proof of tuberculous disease of the kidney. In clinical work the additional proof required of a tuberculous lesion in the kidney is the presence of pus in the urine. When pus is present even in microscopic amount, it is proof that there is a tuberculous lesion, where it is absent and closed tuberculosis can be excluded there is no surgical tuberculous lesion of the kidney.

### 4 Complement Fixation Reaction

Dr Megumi Takahata<sup>21</sup> has recently reviewed the value of the complement fixation reaction of the urine in urinary tuberculosis and found this test accurately indicated the affected kidney in unilateral renal tuberculosis. Kilbane used the von Pirque test and found it positive in 8 out of 10 cases of renal tuberculosis. In the great majority of cases the accurate methods of diagnosis render these tests superfluous, but cases may occasionally arise where the complement fixation test may be of value.

### 5 Cystoscopy

It is frequently possible by means of the cystoscope alone to diagnose renal tuberculosis. Changes easily recognized by the trained observer occur at the ureteric orifice and in the bladder. In 20 of 193 cases in which I performed nephrectomy for renal tuberculosis the diagnosis was made by the cystoscope, search for the tubercle bacillus having failed. Space does not permit of a description of the cystoscopic appearance in the bladder.

While examination of the ureteric orifice usually gives definite information as to the presence of tuberculous disease of the corresponding kidney there are cases where this may be unreliable. The ureteric orifice may be normal when the kidney is infected and on the other hand, the ureteric orifice may be involved in an area of tuberculous inflammation of the bladder and the kidney be free from disease.

The observation of a stained ureteric efflux by cystoscopy after injection of indigocarmine (chromocystoscopy) has little value in deciding whether the kidney is tuberculous. A deeply stained efflux may be seen when the kidney is infected.

### 6 Catheterization of the Ureters

By catheterization of the ureters a specimen of urine is obtained from each kidney. If one ureteric orifice is definitely tuberculous only the apparently healthy side need be catheterized but where a doubt exists both ureters are catheterized. The urine so obtained is examined for (1) the presence of the tubercle bacillus (2) other bacteria, and (3) the functional power of the kidney.

There are cases of advanced tuberculosis of the bladder where the ureteric orifices are involved in the inflammation and ulceration and it is impossible to pass a catheter into the ureter. Several courses are open to the surgeon. He may await improvement in the bladder condition under the influence of tuberculin. This is problematical. The bladder may be opened and the ureters catheterized through the cystotomy wound. I have found this a difficult and unsatisfactory method with little advantage over cystoscopy. Bilateral nephrotomy is recommended by some surgeons. In practice the method is not satisfactory. A tuberculous lesion situated at the apex of a pyramid is difficult—and may be impossible—to see when the kidney is opened by nephrotomy. The damage to the kidney is a grave disadvantage when its neighbour is tuberculous.

Fullerton recommends that the ureter should be exposed at the brim of the pelvis by a muscle-splitting operation in the lower iliac region. The ureter is incised and a catheter pushed up to the kidney and a specimen obtained, after which the wound in the ureter is closed with fine

cutgut. If the ureter is found diseased it is not opened. I have used this method in a number of cases and found it extremely valuable. The exposure is not difficult, and I have had no trouble with healing after the operation.

### 7 X-ray Diagnosis

According to Braasch<sup>3</sup> 20 per cent of cases of renal tuberculosis have positive x-ray data of definite diagnostic value. Small irregular shadows may be found in the kidney area. They are thrown by caseous areas in a tuberculous kidney and are sometimes confused with stone shadows. The outline of these shadows is irregular and the density low and uneven. A heavy uniform shadow is thrown by a caseous mass in the kidney. In massive caseous tuberculosis of the kidney there is a closely set mosaic of rounded or oval shadows.

A thickened tuberculous ureter containing caseous material sometimes throws a shadow. Pyelography is occasionally used to estimate the extent of the tuberculous disease. The outline of the affected calyx or group of calyces is enlarged, blurred, and indefinite, and the pelvic outline may be irregular and the cavity dilated. It is only justifiable in rare cases.

### TREATMENT

The modern treatment of renal tuberculosis is nephrectomy in all cases where the second kidney is healthy and no definite contraindication exists. This treatment is based on three postulates of the surgical pathology of chronic renal tuberculosis.

- 1 Tuberculosis of the kidney is a progressive disease.
- 2 Tuberculosis of the kidney is unilateral in the early and bilateral in the late stage.
- 3 Removal of the tuberculous kidney prevents in most cases the infection of the second kidney.

Space does not permit of further discussion of these points.

As regards operation only nephrectomy need be discussed. Partial nephrectomy has been abandoned on account of the difficulty of ascertaining on the operation table how far the disease has invaded the kidney. Nephrotomy is only performed when nephrectomy is impossible.

### Indications and Contraindications for Nephrectomy

1 *Extra-urinary Tuberculous Disease*—Obsolete tubercle in other parts of the body (lungs, spine, or joints) is no contraindication to nephrectomy and has no adverse effect on the after-history of the case. When active tuberculous disease of bones or joints is present operation on the kidney should be postponed until the extra-urinary tubercle has been successfully treated. Where active tuberculous infection of the lungs is present operation on the kidney is contraindicated. Tuberculosis of the male genital organs (epididymis, prostate, and seminal vesicles) does not contraindicate nephrectomy. In several cases I have removed both epididymes, the prostate and the seminal vesicles, and the kidney with complete success.

2 *Bilateral Renal Tuberculosis*—The removal of the kidney in which the disease is more advanced in bilateral tuberculosis is advocated by some surgeons. According to those surgeons active hyperaemia of the remaining kidney follows nephrectomy, which increases the resistance to the tuberculous infection. The tuberculous lesions become more localized and there is a greater tendency to connective tissue formation. In some cases cure of the condition is claimed.

Ekhorn<sup>4</sup> in bilateral renal tuberculosis exposed both kidneys and removed the more diseased of the two. In 20 cases the immediate result was diminution of pain and pyrexia. Subsequently 10 died, 5 were still alive, and 5 not traced. Two of the survivors were free from pain and able to work twelve years after operation and a third five years after operation.

Braasch<sup>5</sup> reports 13 deaths within one and a half years following nephrectomy in 16 patients with bilateral disease. In a series of 62 bilateral cases Israel<sup>6</sup> found about 70 per cent had died shortly after the nephrectomy.

The immediate post-operative mortality of nephrectomy in bilateral tuberculosis varies from 66 to 80 per cent, and the benefits gained in the few surviving cases have not been permanent. The procedure is only justified in the most exceptional cases where one kidney is proved to be the cause of profound toxæmia and the other kidney is in the earliest stage of tuberculous infection.

### Technique of Nephrectomy

The technique of nephrectomy for renal tuberculois requires no description, but some points call for comment.

#### 1 The Treatment of the Ureter

Many methods of dealing with the tuberculous ureter have been used.

(1) The ureter is cut across below the kidney, the end sealed with the cautery or with pure carbolic acid, and dropped back into the retroperitoneal space. In addition pure carbolic acid is injected into the ureter.

(2) The ureter is cut across below the kidney and the end sutured to the skin in the lumbar wound, or is brought up to the surface inside a drainage tube and fixed there.

(3) The kidney and ureter are removed by the lumbar incision (nephro-ureterectomy).

(4) The kidney is removed by the lumbar incision and the ureter cut across. A second small incision is made in the inguinal region through which the ureter is removed.

A ureter fixed in the lumbar wound retracts and infects the wound with tubercle. The injection of pure carbolic acid is not likely to destroy the tuberculous infection of the ureter and is somewhat dangerous.

In some patients it is possible to remove the ureter through the lumbo-iliac incision, suggested by Morris, but in the majority of cases it is not possible to remove the whole length of the ureter as far as the bladder by this incision. A stump of varying length is left attached to the bladder. The same limitations attend the removal of the ureter through a small incision in the iliac region.

The method that I have practised for many years, and that I have found satisfactory, is to remove the ureter as far as the brim of the pelvis through the lumbar wound, seal it with the cautery or with pure carbolic acid, ligature, and drop it into the retroperitoneal space. The patient is re-examined in six months, and if there is reason to believe that the disease is still active in the ureter and is infecting the bladder, extraperitoneal ureterectomy is performed through a median suprapubic incision. The cases in which ureterectomy is advisable are those where there is stricture at the lower end of the ureter and dilatation of the duct. The proportion of cases in which this is required does not exceed 8 per cent.

#### 2 Closure of the Lumbar Wound

In the majority of cases of nephrectomy for renal tuberculois I close the wound without drainage at the end of the operation. Drainage may be necessary on account of oozing or of infection of the perinephric tissues with tubercle or other bacteria. Where all cases are drained a sinus persists in some, and may take months to heal. Infection from tuberculous deposits in the perinephric fat may be the cause of the sinus, but it is usually due to a mild post-operative staphylococcal infection.

Leguen<sup>7</sup> has shown that tuberculous deposits are found in the perinephric fat, and it is suggested that the fatty layer should be removed with the kidney. This is easy in the early stage of the disease, but impossible in advanced tuberculosis where there are masses of perinephric fat extending under the diaphragm.

It is an occasional experience to find that the wound heals completely by first intention, and a few weeks later one or more weak spots appear in the scar. These are small superficial areas of tuberculous infection, and should be treated by scraping, the application of iodine, and the administration of tuberculin.

Thevenot<sup>8</sup> describes a complete breaking down of the wound from tuberculous infection (*tuberculation totale*), of which he has collected 11 examples. I have seen one case of this nature in which, after the wound had eventually healed, the patient died of general tuberculosis four months after the nephrectomy.

#### Effect of Nephrectomy on Tuberculous Infection of the Bladder

A temporary increase in the bladder symptoms is not uncommon immediately after nephrectomy. Tuberculous cystitis and ulceration gradually subside, and the bladder eventually becomes free from tuberculous infection. We have seen the bladder infection as of comparatively recent date.



bladder symptoms entirely disappear and the full capacity of the organ is restored.

Where tuberculous cystitis has been established for some time the bladder seldom regains its full capacity after the cystitis has disappeared, and a frequency of two hours becomes permanent. Tuberculous cystitis and ulceration may persist for some years when the whole of the renal and ureteral infection has been removed. The urine in such cases may be clear and contain no tubercle bacilli and only microscopic pus.

The treatment of the bladder after nephrectomy for tuberculosis consists in the administration of soothing drugs, such as sandalwood oil, and the administration of tuberculin. Washing of the bladder had better be avoided, for it does not affect the tuberculous process and may cause a mixed infection. I have not seen any permanent benefit from the injection of strong solutions of mercuri perchloride or carbolic acid. Craterization of a tuberculous ulcer with the high frequency cautery (etmellage) has been recommended by Heitz Boyer<sup>1</sup> and others, and is likely to be of assistance when the ulceration is superficial and limited.

#### Operation Mortality

The operation mortality has fallen during the last twenty five years and statistics which include only cases of comparatively recent date have the benefit of more accurate methods of diagnosis, improved technique and the fact that patients are now referred to the surgeon at an earlier stage of the disease than heretofore.

Persson calculated his operation mortality in 205 cases treated during thirty years as 7.3 per cent, whereas the 85 cases operated on in the last five years showed only 4.7 per cent mortality.

The following are some recent series of cases:

	Cases	Mortality
Suter (1923) <sup>2</sup>	204	2.5 per cent
Ferris (1923) <sup>3</sup>	89	6.5
Widdolz (1924) <sup>4</sup>	500	2.4
Hogge (1924) <sup>5</sup>	100	7.0
Gavet (1924)	100	5.0
Judd and Scholl (1924) <sup>6</sup>	683	2.7
Persson (1925) <sup>7</sup>	205	7.3
Condamin (1926) <sup>8</sup>	172	2.9
Young (1926) <sup>9</sup>	112	0.89
Thomson Walker (1927)	193	2.5

#### Late Results

The late mortality of cases of renal tuberculosis where nephrectomy has been performed, if intercurrent disease be disregarded, depends upon tuberculous infection of the second kidney and tuberculous disease elsewhere in the body. Infection of the second kidney may have been present at the time of the operation, or the kidney may be infected later from the original source of the tubercle. When complete investigation of the urine or the second kidney is carried out by animal inoculation the risk of this is very small. It is more likely that infection of the second kidney is derived from the original source at the time or soon after the operation.

The number of cases in which the patient dies of general tuberculosis is considerable. Persson points out that acute military tuberculosis occurs twice as often during the first six months after the operation as in the total of the following years.

Of 193 patients on whom I performed nephrectomy for renal tuberculosis 5 died and 188 recovered. Of the 188 survivors I was able to trace 111 and failed to obtain information in regard to 77.

Of the 111 survivors there are 67 well and without any symptoms of urinary disease at periods varying from 1 to 22 years after the operation (60.3 per cent).

The period that had elapsed since the nephrectomy in these cases was: 1 year in 10, 2 years in 9, 3 years in 4, 4 years in 1, 5 years in 1, 6 years in 7, 7 years in 4, 8 years in 4, 9 years in 3, 10 years in 5, 11 years in 2, 12 years in 4, 13 years in 3, 14 years in 4, 15 years in 4, 16 years in 1, and 22 years in 1.

There were 25 patients (22.5 per cent) who were in good general health but still had bladder symptoms. In some cases the frequent micturition was due to permanent contraction of the bladder without tuberculous disease. In other cases there was persistence of the tuberculous infection. The period of time that had elapsed since operation in these cases was: 1 year in 6, 2 years in 5, 3 years in 1, 4 years in 2, 5 years in 3, 6 years in 1, 7 years in 4, 9 years in 1, 12 years in 1, 20 years in 1.

Thus there were 92 out of 111 cases traced (82.8 per cent) where the patient was in good general health at periods varying from 1 to 22 years after the removal of the tuberculous kidney.

Of these 92 cases 35 had been operated on three years or less from the time of the inquiry and in 57 or 61.9 per cent 4 years or more had elapsed since the operation. Of the 111 cases the remaining 19 cases (17.1 per cent) had died since the operation: 4 from intercurrent disease (2 one year and 2 twelve years after the operation) that had no relation to tuberculous disease and 4 from unknown causes but probably from tuberculous disease in some form (2, 3, 6 and 10 years after the operation). The remaining 11 cases died of tuberculous disease: 6 from general tuberculosis (2 one year, 1 two years, 2 three years, 1 eight years), 2 from tuberculous disease of the second kidney (3 and 7 years) and 3 from tuberculosis of the lungs (2, 4 and 8 years).

Of the 19 patients that died after the operation 11 or 57.8 per cent, died during the first three years. This agrees with the opinion of Israel and of Persson who found that 50 per cent of the late mortality occurred during the first three years after the operation.

The late mortality from tuberculosis disease of the remaining kidney in my cases is small—namely 2 in 19 cases or 10.5 per cent.

General tuberculosis caused death in 6 cases (31.5 per cent) and 5 of these deaths occurred within the first three years. Tuberculosis of the lungs accounted for 3 deaths, 2 of which were in the second and fourth years respectively.

The following are some of the statistics of the late results:

Surgeon	Cases Traced	Dead	Completely Well	Improved but not Completely Well
Persson	182	Per cent 4.7	Per cent 57.1	Per cent 5.8
Suter	197	29.9	41.6	25.3
Judd and Scholl	611	11.0	53.6	10.0
Nitch	43	12.0	2.0	35.0
Wildbolz	—	19.4	61.5	—
Thomson Walker	111	17.1	60.3	22.5

#### Non-operative Methods of Treatment

I have treated a number of cases of renal tuberculosis with tuberculin (Koch's new tuberculin T.R.) without operation. These were cases where the patient refused operation or where the disease was bilateral and operation was contraindicated.

In adults I have seen no case of cure with tuberculin. There was frequently amelioration of the symptoms and improvement of the general health for several years, but the tuberculous disease persisted. In one child with bilateral tuberculosis the symptoms vanished, the general condition steadily improved, and pus and tubercle bacilli disappeared from the urine. In another boy the symptoms improved and the patient gained weight but the tubercle bacilli and pus in the urine persisted and the tuberculous cystitis was unchecked.

In all cases of renal tuberculosis I give a course of two years of tuberculin T.R. after nephrectomy. This has a beneficial effect on the tuberculous infection of the bladder and is given also with the hope that the primary focus of infection in the mediastinal glands or elsewhere will be influenced by it.

#### Sunlight and the Ultra-violet Rays

Tuberculosis of the kidney cannot be cured by exposure of the patient to sunlight. I have seen a number of cases where this form of treatment has been used, but in none of these has there been the semblance of a cure. Cases have been recorded where the pus and tubercle bacilli have disappeared from the urine some years after this treatment. Our knowledge of the pathology of renal tuberculosis shows that temporary occlusion of a tuberculous focus may take place without this treatment but that sooner or later the tuberculous disease progresses and destroys the kidney.

The temporary improvement that may take place from treatment by sunlight unfortunately encourages the patient to resist operation or to postpone it and thus much valuable time is lost.

Heliotherapy is a valuable method of treatment after operation for tuberculosis of the kidney, and it has also a useful field in cases where operation is contraindicated.

In an inquiry among the physicians of Switzerland, Wildbolz found that of 316 patients suffering from renal tuberculosis not operated upon 31.3 per cent died within the first two years of the disease, and 27.2 per cent within three to five years. More than half (58 per cent) died within the first five years, and only 20 per cent were alive after five years.

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## STATISTICS OF POST-OPERATIVE SURVIVAL IN RENAL TUBERCULOSIS.

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WHEN a patient is brought to the surgeon for renal tuberculosis two questions obtrude themselves (1) Is the lesion confined to one kidney? and (2) Is cure without operation possible?

Recently I set out to investigate a series of 158 cases of tuberculosis of the bladder seen over a period of twenty years. It was found to be very difficult to trace these cases, but some useful information was obtained. One of the objects of the investigation was to compare the results of operation, when the kidney was affected, with those obtained by other measures, among which the most important and the most popular was the use of tuberculin.

Of the 158 cases there was definite evidence of kidney involvement in 141. In the remainder evidence was wanting—either on account of the difficulties associated with ureteral catheterization, or because, in the early days, it was assumed, probably without sufficient justification, that the bladder condition was secondary to involvement of the epididymis, prostate, or vesiculae. Further observation has shown that tuberculosis of the sexual organs frequently coexists with or follows renal tuberculosis. Thus there were 87 males in the series, and in no fewer than 29—that is, in one-third—there were deposits of tubercle in the prostate, epididymis, or vesiculae. In only 7 out of the 141 cases was there definite evidence, at the time of my examination, of a bilateral lesion—that is, in about 5 per cent.

In all cases an attempt was made to find a primary focus. A previous history of some tuberculous lesion was obtained in 26 per cent, and in 15 per cent a focus was found at the time of examination in some part of the body outside the genito-urinary tract. In many cases, no doubt, hidden foci were present in glands, bones, etc., but they were not sufficiently obvious to arrest attention during an

ordinary clinical examination. This leads me to say that I have frequently been struck with the apparently robust health which many patients the subject of urinary tuberculosis enjoy. Many go on for years with much inconvenience and suffering before the general health becomes seriously impaired.

As opposed to the views I have long held regarding the localization of the infection to one kidney, and the prospects of cure without operation, a recent paper by Gilbert J. Thomas and Thomas J. Kinsella<sup>1</sup> is very interesting, and instructive. These authors have conducted a research in a well equipped sanatorium in Minnesota for the treatment of tuberculosis. Their conclusions include the following:

They argue that tissue destruction with renal tuberculosis is a late lesion, and that this is the lesion most frequently seen by the surgeon. They bring evidence to prove that early renal tuberculosis may end in arrest or cure. They believe that tubercle bacilli are carried to the kidney by the blood stream, and that every renal infection with tubercle bacilli must be primarily bilateral. One kidney may not overcome the infection so well as its mate, and a destructive lesion develops. They have never been able to demonstrate a case of excretory bacilluria. They have never removed a kidney which eliminated tubercle bacilli that did not contain a lesion of tuberculosis, though in some instances serial sections were necessary before the lesions could be found. Repeated urological examinations revealed many cases of unsuspected renal tuberculosis among their patients, nine-tenths of whom had active pulmonary lesions.

I have had very little opportunity of examining patients representing this class of case. Those who have been referred to me have had what these authors term "tissue destruction," and in the large majority, as I have stated, I have been unable to find evidence of bilateral infection. It is quite true, of course, that the absence of pus and tubercle bacilli in the specimen obtained by ureteral catheter from a kidney is not conclusive proof of its freedom from disease. Foci may be present in the cortex, for instance, and may not communicate with the pelvis, or an abscess in the pyramis may be shut off, only discharging into the pelvis at intervals, but the difference between the urines excreted by the diseased kidney and by the presumably sound kidney has been, in my experience, so definite and decided in almost every case examined that I cannot come to any other conclusion than that the disease is unilateral, clinically, at any rate, in the cases coming under my observation. The specimen obtained from the affected side, besides containing pus and tubercle bacilli, is, in nearly 100 per cent of the cases, of a low specific gravity. In the early cases the low specific gravity is associated with an increased flow, which may be termed unilateral diuresis. In the later stages the urine, though still of low specific gravity, may become diminished in quantity, until finally no fluid at all is secreted, and the discharge from the kidney may be represented by a cement solid ointment-like material, or the ureter may become impenetrable, and all connection between the affected kidney and the bladder cut off. The low specific gravity in the late cases is due to renal insufficiency, a condition which it may be possible, by chemical analysis, to distinguish from the hyperactivity seen in the early stages.

I have been able to demonstrate by repeated ureteral catheterization in cases of renal calculus that pure reflex unilateral diuresis occurs, with low specific gravity, and dilution of the specimen from the affected side, and that, on removal of the cause, the rate of flow, the specific gravity, and the composition of the urine rapidly return to normal, and become identical on the two sides.

A similar diuresis occurs in the early stages of tuberculosis, and appears to be due to reflex vaso-dilatation, in contradistinction to the vaso-constriction which gives rise to reflex anuria—a condition well known to occur in certain cases of calculus.

My colleague Dr. Mayrs of Queen's University, Belfast, has recently made analyses of the urines of 35 patients under my care with various unilateral kidney diseases. These analyses have been carried out in order to ascertain whether ureteral catheterization can throw any light on

\* A contribution to a discussion on renal tuberculosis in the Section of Surgery at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

the nature or extent of the renal impairment. Reflex diuresis must be distinguished from renal insufficiency, as in many cases diuresis results from increased rate of excretion alone, and it is in trying to recognize the distinctive characteristics of these two conditions that the fundamental difficulty is encountered. Owing to possible leakage past the catheters the volumes of urine from the two kidneys cannot always be compared with sufficient confidence to justify a positive diagnosis of unilateral diuresis, while, even if the occurrence of diuresis has been satisfactorily established, more serious impairment of function is not excluded.

A method of attacking the problem is to compare the concentration of various substances (chloride, urea, phosphate, creatinine) in the urines secreted simultaneously by the two kidneys. But although this has been done in numerous cases, the results fail to give all the information required, because we are not quite sure what alteration in the ratio of creatinine to urea, for example, should normally result from an increase in the rate of flow, when this is the only variable factor. At the same time, a careful study of such changes is not without value. Probably chloride excretion will afford the most reliable distinction between diuresis and insufficiency, but a good deal of work remains to be done. It is a general principle that in diuresis the composition of the urine approaches more nearly to that of the plasma and hence, if the diuresis is unilateral, the chloride concentration of the urine on the affected side should be closer to 0.6 per cent NaCl than that from the normal kidney. An increase or decrease of chloride concentration may thus result, which can be interpreted by comparison with the chloride content of the normal urine, the latter being above or below 0.6 per cent according to whether the excess of chloride in the organism is large or small. On the other hand in renal insufficiency the chloride of the urine is always low, and often considerably lower than that of the plasma.

The object of these remarks on low specific gravity is to stimulate research, so that it may, perhaps, be possible from an examination of the specimens from both kidneys, to state what degree of disorganization has taken place in a kidney affected with tuberculosis, should the surgeon be tempted to give a trial to non-operative methods of treatment.

There is another point to which I would like to direct special attention and that is the fallacies and difficulties associated with ureteral catheterization. The introduction of a ureteral catheter may upset the sphincteric mechanism of the ureteral orifice and may thereby give rise to erroneous conclusions and in addition, may entail some risk of infection of the sound kidney.

A girl aged 23 years was ex-cooped and catheters were introduced into both ureters. A small number of pus cells were found on the right or presumably sound side. The examination was repeated and the bladder was emptied during the collection of the ureteral specimens. That on the right was scanty in quantity, clear amber in colour, had a specific gravity of 1010 and was free from pus. That on the left was copious, pale and cloudy, had a specific gravity of 1005 and contained many pus cells. Fluid was now introduced into the bladder through the cystoscope. After a few ounces had been injected the patient began to complain of pain on the sound side and immediately a quantity of watery fluid appeared as a distinct layer supernatant to the amber fluid previously obtained. The fluid in the bladder had evidently reached the pelvis of the kidney past the ureteral catheter and had found its way out again through the lumen of the latter into the collecting test tube. On removing the fluid from the bladder clear amber urine was again obtained from the ureter of the sound side.

The significance of this from the point of view of diagnosis and of possible infection of the sound kidney by ureteral catheterization is obvious. I make it a rule now to empty the bladder before commencing to collect the ureteral specimens.

Again in a certain proportion of cases it is impossible to catheterize the ureters. This is due to extensive ulceration and great irritability of the bladder. Attempts to persist in cystoscopy may cause much bleeding and straining and are not devoid of risk. It is for these cases that I have suggested and carried out retroperitoneal catheterization of the ureters by open operation.<sup>2</sup> The ureter may be exposed by stripping inwards the peritoneum

after an incision in the parietes similar to that used for appendicectomy. In tuberculosis of the kidney if a thickened ureter be found on one side it ought not to be disturbed, as the small puncture made to receive the ureteral catheter may not heal and may persist indefinitely as a fistula. On the sound side with careful technique and accurate suturing there need be no extravasation of urine.

Instead of introducing a catheter the needle of a small exploring syringe may be used and the wall of the ureter punctured just as is done in withdrawing blood from a vein. To facilitate collection of the specimen, the distal part of the ureter may be lightly clamped so as to allow urine to collect in the proximal portion. This procedure should eliminate all risk of leakage, especially if the puncture be made obliquely through the wall of the ureter. By operative ureteral catheterization the exact amount of urine secreted by a kidney can be ascertained. The specimens so obtained are free from the risk of contamination by reflux of the bladder contents, and the operation is safer than sustained attempts to distend an ulcerated bladder.

I have used this method when after careful search, the opening of the ureter in the bladder could not be found and in one such case—a case of tuberculosis of the kidney—no ureter could be discovered on the opposite side, even after operative exposure of its normal position in the iliac region. This patient had only one kidney, which was tuberculous. In several other cases I have found a thickened and impervious ureter demonstrating the final stage of the process of auto-nephrectomy, which is responsible for many of the so-called cures without operation.

#### TECHNIQUE

In my most successful cases I have removed the kidney and as much of the ureter as I could reach through the lumbar wound. I have made no elaborate attempt to dissect out completely the perirenal fat. I have not found it necessary or desirable to dissect out the ureter. Indeed I have only done this in two cases and one of my worst results was in a case so treated. Some months after the operation urine began to leak from the stump of the ureter at its junction with the bladder, into the wound, which after having healed by first intention had opened up. This patient died seven and a half months after operation from uræmia following an operation by another surgeon to repair this leak. The removal of infected glands surrounding the pedicle of the kidney close to the spine is attended with risk. A large blood vessel such as the renal vein or the vena cava may be injured. I do not say that these glands ought not to be removed if possible but I have often left them untouched when clearly bound down in an inaccessible position without any obvious disadvantage to the patient.

As a rule the wound in the parietes has been sutured without drainage. In a few cases a drain was left in for twenty-four hours. In some cases the wound broke down at one or more points a month or more after operation, after having healed by first intention. Final healing was the rule after the sinus or sinuses had lasted for periods varying from a few months to a year or more.

I have tried all the recognized methods of dealing with the ureter at the point of section. My present practice is to inject with a hypodermic syringe pure carbolic acid into the lumen over an area of an inch or more before ligaturing and dividing the ureter. Catgut has been used in all cases for securing the pedicle and for the deep sutures, and silkworm gut for the skin.

#### STATISTICS

Nephrectomy was carried out in 73 out of the 141 cases of renal tuberculosis. Five died as the result of operation—a mortality of 6.8 per cent. All the deaths occurred in the first 35 cases, the remaining 38 being without operative mortality. I have been able to follow up 55 out of the 63 survivors. Fifteen have since died, four of them after long periods of complete relief. Thus one died, 12 years after operation from what was called a "cerebral attack", one 9 years after, from cerebral hæmorrhage, one 8 years after, from acute pneumonia, and one 9½ years

after, from gangrenous cystitis, probably non-tuberculous. All the cases enjoyed good urinary health in the intervals. This leaves 11 cases dying as the result, probably, of a continuance of their tuberculous infection. Thirty-one of the survivors are described as being well—on 20 years after operation, two 17 years after, one 16 years after, one 15 years, one 14 years, one 11 years, one 9 years, one 8 years, two 7 years, three 6 years, one  $5\frac{1}{2}$  years, one 5 years, three 4 years, one  $3\frac{1}{2}$  years, two 3 years, two  $2\frac{1}{2}$  years, four 2 years, and three cases from 6 months to 1 year after operation. Including the four patients who died from other causes, eight years or more after operation, we have a total of 35 out of 55 apparently cured of their urinary symptoms—that is, over 63 per cent. Of the nine survivors who cannot be claimed as cures, one still has frequency and wears a urinal, though otherwise in good health, 12 years after operation. One has frequency 7 years after operation—his lungs are now said to be affected, one is said to be fairly well 5 years after operation, but he now has deposits in his epididymis, and is said to be suffering from spinal caries, one has still frequency and wears a urinal  $6\frac{1}{2}$  years after operation, one still has frequency 2 years after operation, and deposits have appeared in epididymis and prostate, one still has frequency 2 years after operation, one still has frequency 1 year after operation, one is much improved, but not quite well, 1 year after operation, and one is much improved, with apparently normal urine, 4 months after operation.

Contrast with these the reports received of those treated by medical means, of which tuberculin was the one most frequently used. I have only been able to trace 41 out of the 68 cases not subjected to operation. These were of the usual type, and (except in 5 or 6 advanced cases) operation was not contraindicated when the patients were first seen. Of the total, 26 are dead—that is, 63 per cent. One lived for 17 or 18 years after the onset of symptoms, and died after the removal of a calculus, which had blocked the ureter of the affected kidney, and mushroomed into the bladder. One lived for 16 years. Fourteen died in from 2 to 6 years, three in from 1 to 2 years, and seven within a year after the onset of symptoms. Of the fifteen living, one is certainly well 13 or 14 years after the onset of symptoms, the urine is free from pus and tubercle bacilli, the condition of the affected kidney has not been ascertained. Another is well and free from urinary symptoms 5 years after they first appeared. The ureter of the affected kidney was exposed, and was found to be converted into a thick fibrous cord. There was no trace to be seen of its orifice on cystoscopic examination. These are the only ones, two in number, that I know of, who are really well. Of the remainder, one has carried on fairly well, with symptoms, for 16 years, another similarly for 15 years, and a third for 13 years. In none of these three cases was ureteral catheterization carried out. Deposits were present when first seen in prostate, vesiculae, or epididymis, and in all three tubercle bacilli were found in the urine. The diagnosis of kidney involvement was made by cystoscopic examination of the ureteral orifices. One early bilateral case is reported to be well except for an occasional "turn" of frequency,  $7\frac{1}{2}$  years after the onset of symptoms. Lastly, in the other survivors, symptoms remain 5 years and under from the onset of their illness.

These statistics support the contention that, with our present knowledge, operation remains the most hopeful method of treatment in tuberculosis of the kidney. If done early, before deep ulceration has taken place in the bladder, relief is often immediate. Even in late cases, if the other kidney is sound, the patient may still be cured. Deep ulceration of the bladder, and the presence of tubercles in that organ—a late occurrence in my experience—render the prognosis less hopeful, especially as regards the relief of frequency of micturition. Even if healing takes place, the scarred and contracted bladder is unable to expand, and the patient is obliged to empty it at frequent intervals.

## REFERENCES

<sup>1</sup> *Journal of Urol.* April 1927, p. 365. <sup>2</sup> See *BRITISH MEDICAL JOURNAL*, February 2nd 1927, p. 163. <sup>3</sup> *Brit. Journal of Surg.* vol. xii, No. 45, 1924.

## DISCUSSION

Dr A. ROLLIER (Leysin) thought that heliotherapy could play only a subsidiary part in the treatment of renal tuberculosis. In every case of unilateral disease he advised nephrectomy as soon as the diagnosis was established, but heliotherapy was indicated as a pre-operative treatment for patients whose condition was bad, since it improved the general and tissue resistance, thus helping to prevent tuberculous infection of the wound. It was also useful in all cases of unilateral disease when the cystoscopic and functional examinations left any doubt about the integrity of the other kidney. Heliotherapy could be employed with benefit when the seminal glands, and particularly the prostate, were the seat of extensive disease which compelled the postponement of cystoscopy owing to the risk of trauma of the prostate, with the consequent danger of general infection. As a post-operative treatment it helped to prevent the infection of the wound, and assisted cicatrization of infected wounds. In bilateral renal tuberculosis heliotherapy was the treatment of choice, since it limited the extension of the lesion and diminished the pain of bladder ulceration. To be efficacious heliotherapy must be conducted with rigorous technique and special adaptation to the needs of the patient. It should be associated as often as possible with graduated labour.

Mr HENRY WADE (Edinburgh) described a series of seventy-eight cases in which he had operated. He thought that the diagnosis could be made independently of the demonstration of the presence of tubercle bacilli in the urine, and that frequently an x-ray examination would clear up the diagnosis by revealing calcification. Pyuria without organisms in the urine and diminution of the bladder capacity were very characteristic. On cystoscopy the "golf-hole ureter" was diagnostic. He performed a bilateral catheterization and a bilateral pyelography. The pyelogram might show the drainage system of one part of the kidney to be normal and the other part excavated, irregular contractions and dilatations of the ureter were pathognomonic of tuberculosis. He had never obtained spontaneous clinical cure nor post-mortem evidence of healing, and therefore regarded nephrectomy as the correct treatment. Two of his seventy-eight patients had died. After an operation the ulcers in the bladder usually disappeared. If there was any frequency left, it was due usually to the small size of the bladder. The frequency and inability to dilate were sometimes due to a single remaining ulcer, the excision of which would bring about a rapid cure. A superadded streptococcal infection was very difficult to eradicate.

Mr J. F. DOBSON (Leeds) referred to cases where it was impossible to tell by cystoscopy whether the disease was unilateral or bilateral, and catheterization by the ureters was impossible. Opening the bladder suprapubically would not help in the difficulty, but Mr Fullerton's method of exposure of the ureters in the iliac regions was of immense assistance. Mr Dobson said that he had modified the method, he exposed the ureters and found that it was possible to tell from their appearance, state of dilatation, peristalsis, and feel of the walls whether the corresponding kidney was diseased or healthy. It was unnecessary to open the lumen of the ureter. He had used the procedure with satisfaction in four cases of advanced disease when cystoscopy was unable to furnish the required information.

Mr BERNARD WARD (Birmingham) based his remarks on a series of 57 cases. He believed that tuberculous infection started in the papillae, and that the upper papillae were affected more often than those in the lower part of the kidney. No operation should be undertaken unless the disease was limited to one kidney. A diseased kidney often secreted a large quantity of urine, and its removal threw a greater strain on the remaining organ which accelerated any disease present in it. The only certain method of diagnosis was to draw off urine from the infected kidney by the catheter. His custom was to estimate the combined renal function by means of the urica concentration.

and blood urea test, with chromocystoscopy, using indigo-carmin injection, and to catheterize the ureteric openings. The last method was sometimes sufficient in itself by revealing the presence of pus cells in the collected specimen. He had found spinal anaesthesia a great help in performing cystoscopy, it did not interfere with renal function and gave greater relaxation of the inflamed bladder than the deepest general anaesthesia. He refused to operate upon patients with active disease elsewhere in the body whether in the lungs, bones, or joints, mild infection of the genital tract however was not a bar to operation. He rejected as much as he could of the ureter at the primary operation, since he had found that high division of the ureter often left a tuberculous fistula. In one case a pronephrosis was removed unopened, but the whole wound broke down and took two years to heal. He thought infection had come from the perinephric tissues. If frequency remained after six months the patient was cystoscoped and any chronic ulcers treated by operation. In only 37 of his 57 cases of renal tuberculosis had nephrectomy been performed, with one death from military tuberculosis a few weeks later. He had traced 30 of these operation cases and found that 4 patients had since died. Of the remaining 26 20 were apparently quite well and earning their own living, 6 were unable to earn their living, and one of these developed spinal caries and a poor success but was now getting about. Of the 26 patients still alive one was operated on 15 years ago, one 12 years, one 11 years, two 8 years, three 5 years, five 4 years, five 3 years, and eight were operated on 2 years to 18 months ago.

Mr TEMPLE MURSELL (Johannesburg) emphasized the importance of a thorough investigation of all cases of pyuria, as otherwise cases of tuberculous kidney would be overlooked until they had become advanced. He had never seen a patient cured without operation though improvement sometimes occurred and persisted for as long as ten years. Early nephrectomy, followed by heliotherapy, gave the best results. He did not remove the whole ureter. Tuberculin was of great value in reducing residual bladder symptoms.

Mr GONNOR CRAIG (Sydney) had seen two cases of renal tuberculosis cured without operation. One patient had bilateral disease and a tuberculous fungus the latter was treated surgically. Tuberculin was administered and now, fifteen years later, cystoscopy of the patient revealed no signs of disease. He recommended epidural anaesthesia for cystoscopy.

Sir JOHN THOMSON-WALKER, in reply, said that he could not agree with Mr Dobson that it was possible to deduce the state of the kidney from inspection of the ureter. Nor did he agree with Mr Wade's method of diagnosis by pyelography. He said that clinical cures of tuberculosis of the kidney were always suspect pathological recovery was very rare indeed. Indigo-carmin injection was unreliable as a test for kidney function. The removal of the perinephric fat in advanced cases was impossible and removal of much of the ureter was unnecessary. He did not recommend phenol injection of the ureteric stump, for the drug did not reach the thickness of the wall where the infection lurked.

## DUTIES OF THE STATE IN RELATION TO THE NATION'S FOOD SUPPLY

### RESEARCH ON NUTRITIONAL PROBLEMS \*

BY

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SOME of those interested in this discussion must have wondered what exactly the officers of this Section of Preventive Medicine had in their minds when they used the words 'What duties has the State?' Did they mean by "duties" obligations imposed in the present time by Act of Parliament? If so, the discussion resolves itself more or less into a recital of those official activities which bear on the subject of nutrition and feeding. It must be assumed that this is not wanted, but rather the consideration of the problem as to what an ideal State should do in regard to carrying out research in nutritional matters, in the instruction of parents in maintaining food supplies, and providing cooking facilities.

In the first place it may be worth while to consider whether feeding problems are a profitable field for Government activity. Nobody would deny that State and local government interference in matters of health especially as it is affected by sanitation and drainage, water supply and limitation of spread of infectious disease has been of untold benefit to the community. Is it likely that a similar interest in feeding will be followed by beneficial results of a commensurate order? Some may think not but for myself, and speaking probably for all those in touch with modern work on nutrition, I should say that the outcome of a sane and forceful effort on the part of imperial and local governing bodies in this field would lead to as revolutionary a change in the general health of the community as has followed their work on matters of public hygiene.

In a sense the problem of correct feeding is even of a more fundamental nature than that of general hygiene, for whereas it is possible to bring about good health and perfect

development under bad hygienic conditions so long as the food eaten is very good, when the diet is defective the most perfect hygiene as we know it will not prevent had physical development ill health, and early death. Good hygienic conditions may for the moment be described as those conditions which reduce the chance of infection by micro-organisms, but nothing has been more prominent in recent work on feeding problems than the part played by correct feeding in increasing the individual resistance to infection. It is true that our knowledge of this problem is of an elementary nature but the subject is one of active interest at the moment and further facts of great importance will no doubt come to light very soon. I need only allude to the recent accumulation of facts showing the importance of vitamin A in increasing the resistance of the animal to inflammatory conditions of the respiratory passages and lungs as a forerunner of knowledge on the relationship between diet and resistance to infection. But apart from this large question of the relation of feeding to infection there remain the purely metabolic disorders which are brought about by incorrect diet among these may be instanced the bone deformities and the defective dental structure and growth of jaws which follow deficient vitamin D intake, the symptoms of scurvy due to deficient vitamin C the nervous symptoms due to deficient vitamin B the goitre due to deficient intake of iodine the stunted growth due to deficient intake of biologically good protein, and the ill effects of excessive and unbalanced cereals. These are some of the more recently established facts and, even if they are not greatly extended in the near future, they are sufficiently important in themselves to justify the belief that it is certainly a most profitable line along which the activities of the State should be directed and hastened. The question now arises as to the methods to be adopted for the acquisition and diffusion of new facts concerning nutrition, and the relation of these facts to the public weal.

With regard to research on nutritional problems, the machinery, or at least the skeleton of the machinery, is present in the Medical Research Council. Since this body was set up a large part of its activities have been directed to the solution of nutritional problems. It was a most happy occurrence for the progress of nutritional studies that the Medical Research Committee was appointed soon after the enunciation of the vitamin problem, and that

\* A paper read in the Section of Preventive Medicine at the Annual Meeting of the British Medical Association at Edinburgh in introducing a discussion entitled 'What duties has the State in relation to the nation's food supply?' regarding research in nutrition of parents, maintenance of supplies and cooking facilities.



Sir Frederick Gowland Hopkins, one of the original and present members, should have played the leading part in this work. It is true that at that time nobody could foresee what an extraordinary part the vitamins were playing in the production of disease common in this country, but at least the field was set and all the circumstances were propitious for the rapid accumulation of facts which followed.

The Medical Research Council has always been ready to support work on nutritional problems to the limit of its meagre resources. Unfortunately its limited income is not the only drawback to rapid progress in this part of its work, for the field of workers upon which it can draw is very small. Work of this type does not attract young men, and even those who have found themselves in this field have often arrived there by accident. There are many reasons for the lack of popularity of this kind of investigation, but probably the greatest of these is the spirit of scepticism and even hostility which has surrounded the subject of feeding, especially as it concerns vitamins. Many of the established physiologists and pathologists of this country have not only failed to see the scientific and practical significance of the new dietetics, but have been sceptical and often even hostile as to the existence of these substances. The popularity of the subject among the general population and the uncritical way in which vitamins have been discussed have only made the atmosphere which surrounds nutritional investigation worse.

It is possible to foresee the end of this period of unpopularity, as even the scientist with the longest latent period cannot fail to be aroused by recent work on the intracellular vitamin and its photosynthetic production by the action of ultra-violet radiations on ergosterol. These recently discovered facts must tend also to focus the attention on particular problems and prevent the loose thinking and talking that is so widespread in matters dietetic. The facilities for nutritional investigation, or at least financial facilities, have been recently greatly extended by the formation of the Empire Marketing Board. The liaison between this body and the Medical Research Council is to be highly commended, and it is to be hoped that attention will not only be given to technical problems connected with storage and transmission of food, but that an eye will be given to the more academic problems of diet which form the fundamental basis for all future advances in knowledge as to the relation of feeding and health.

Interwoven with the advances in knowledge of nutrition is the problem of animal feeding, attention to which is being given by the Board of Agriculture, whose financial resources as compared with those of the Medical Research Council are very great. Speaking as one whose time has been largely occupied in investigating problems which are certainly as important from an agricultural as from the human aspect, I have a strong feeling that the inter-relationship between nutritional research as carried on in the university laboratories of this country not primarily devoted to agriculture and that of the Board of Agriculture is not so close as it ought to be.

On the whole, so far as matters of research in nutritional problems are concerned, it is probably safe to say that the official machinery of this country is well established and likely to grow from strength to strength. Care must be taken that, as it grows, co-ordination of the work grows with it, so that not only should there be a rapid diffusion of new facts as they come to light and a limitation of unnecessary overlapping, but, what is of supreme importance, individual workers should be able to take up quickly the newer and often better point of view as it becomes established. Better co-ordination and more intimate knowledge of each other's work would not only result in more rapid progress, but would greatly reduce the hostility, too often encountered, where one group of workers denies the results of another group. The antagonism to Lister's teaching of antiseptics is only one instance of what is far too common in this country.

So far as the acquisition of new facts on nutritional matters is concerned, things are, on the whole, well, but what about the mechanism for the dissemination of this knowledge and for making full use of it? Here again the mechanism is at hand in the form of the Ministry of

Health and the Board of Education. The first of these bodies has its nutritional advisers among its officers, and in recent years has undertaken a large number of tasks which involve advice in feeding and the dissemination of knowledge of dietetics. I need only mention the establishment by local health authorities of maternity and child welfare centres. The Ministry of Health also has its Research Department, whose activities are, however, more concerned with the investigation of technical points concerning foodstuffs than with the acquisition of more fundamental facts.

It is evident that the State has some machinery for directing the dissemination of knowledge of nutrition as it is required, and the question must now be faced as to whether this mechanism is satisfactory, and, if not, how it can be improved. It is an easy matter for an outsider to criticize and suggest improvements, but before venturing to do so I should like to pay tribute to the excellent work now being carried out by the Ministry of Health and educational authorities along these lines. Nobody has a greater admiration for the civil servant of this country than I have, and this admiration extends as much to the Ministry of Health as to other governing bodies. At the same time it is perfectly certain that knowledge of dietetics is greatly in advance of the application of this knowledge and the adoption of its teachings by official authorities. The reason for this is easily understood. Government officials must play for safety, and the greatest crime in their eyes is to make a statement one day which has to be retracted at a later period. However valuable their teaching might be in other respects, a mistake is unforgivable, so that their advice must be limited to what is considered as generally accepted. This means a latent period of many years as regards most discoveries. Their task is not lessened, so far as dietetics is concerned, by the multitudinous teachings of experts and so-called experts. What, for instance, is an official to do when faced with the many suggestions as to the dietetic means of saving the rice which fill our daily papers? These suggestions are not only multitudinous but are often contradictory. They represent the views of a few who know, more who half know, and many who are entirely ignorant of the subject. The average intelligent reader smiles and rejects the lot.

Nothing is more clear than that any system must be inefficient which leaves discussion as to active policy in matters of dietetics to one or more officials whose time is largely taken up with administrative work. How to improve the situation is difficult to suggest. One obvious and essential method would be to appoint a Board of Nutrition to make recommendations to the executive officers of the Ministry of Health. This Board should consist largely of active workers on nutrition with experience of both animal experiments and the feeding of human beings. They should be chosen on the basis of their work only, and no question of representation of learned societies or of particular parts of the kingdom ought to receive consideration. It should be the duty of those members not only to sift the evidence as they read it, but to keep in touch with all those actively engaged on nutritional investigations. Speaking as a laboratory worker I am sure that a good welcome will be given to any official body whose object it is to find out the latest trend of experimental results. As it is, practically the only officials concerned with nutrition who ever visit my laboratory are those from other countries than my own, and I expect my colleagues engaged in this type of work have the same experience. In their active experimental work many investigators are years ahead of their publications, and I consider the direct personal contact with research in progress is a most important function of any official body engaged in advising a Government department. It is at least as important, to my mind, that the Ministry of Health should have a strong and representative body of nutritional experts as it is for the Treasury to have its financial experts, or for the War Office to have its Army Council.

Assuming that we had an efficient method of acquiring new knowledge on nutritional matters, and one by which the Ministry of Health received the best and the latest

advice as to the relative importance of new discoveries, the question now arises as to how such information should be dealt with so that the average citizen could profit thereby. For some people an official announcement of the facts is sufficient, especially if the pronouncement is given with adequate authority. What a boon it would be at the present time, for instance, if out of all the multitudinous teachings presented to us as regards feeding a really authoritative body issued a reasoned statement declaring the relative importance of all the points raised. While such a statement would influence many people, we must not delude ourselves into thinking that it would convince any large section of the population. I can speak with feeling on this point. It is now five years or more since I published the fact that cereals, and especially oatmeal, will, in the absence of sufficient vitamin D, interfere most potently with calcification processes and the general health, but those who realize this are very few in number, in spite of the fact that the evidence is open to anybody to examine. Prejudice and ignorance—both absolute ignorance and ignorance of the value of the scientific method—can only be overcome by time.

Another method by which the Ministry of Health could, if given the necessary authority, greatly increase its effectiveness would be to assume greater control over the feeding arrangements in all institutions run by State and I refer particularly to Poor Law institutions, prisons, welfare centres and similar bodies. Sometimes the sole controlling factor in the minds of the governing bodies is the question of cost of the food although this is by no means always the case. I do not think any local authority need fear a great increase in cost if the feeding were controlled by a wise body of experts representing the Ministry of Health. At the same time I am convinced that the results or the improved health and physique which would follow the adoption of the latest facts of nutritional science would amply repay both any possible increase in cost and any interference of the central dietetic authority.

I can imagine many medical men being alarmed at the suggestion that the Ministry of Health should advise in the feeding of children at welfare centres, but I am sure from my own observations that this would be highly efficacious in many cases—again not in all, for medical attendants at welfare centres are often very alert to new facts regarding nutrition, sometimes even too alert and uncritical, especially where patent foods are concerned.

One other suggestion can be made which would greatly facilitate the working of an authoritative body dealing with nutrition. I refer to the necessity of some scheme for standardizing foods and other preparations for their vitamin content. I am aware that this has recently been boldly tackled—much to their credit—by the Pharmaceutical Society of Great Britain in their new standardizing laboratories. This attempt should be officially encouraged to the utmost extent, and if the methods which are developed prove satisfactory, it should be as much the duty of the Ministry of Health to adopt these by legislation as it is their present duty to test foods for their purity. It ought to be impossible in the near future for people to put on the market preparations about which claims as to their vitamin content are made unless these have been officially tested.

To sum up, I suggest that the following steps should be taken by the State in order to strengthen the control and executive power of the Ministry of Health in matters of nutrition:

- 1 That the Ministry of Health should set up a Board of Nutrition consisting largely of experts actively engaged in nutritional research, whose main duties would be (a) to examine the results of the investigations carried out by those researching for the Medical Research Council the Board of Agriculture the Empire Marketing Board, and all others engaged in this field, both by studying their published work and as far as possible by personal contact with the actual investigations, (b) to advise the Ministry of Health to take action along lines which appeared to them advisable, (c) to recommend, or even to initiate,

research on practical points where there is any obvious hiatus of evidence.

- 2 That the necessary authority be given to the Ministry of Health, acting on the recommendation of its Board of Nutrition, (a) to control the feeding of Poor Law institutions and prisons, and to advise in others, such as welfare centres or wherever public grants are made, (b) to publish authoritative statements, and, if necessary, give the evidence for such, on feeding matters to the general public (c) to set up or control a food analysis department which includes not only the testing of food as at present carried out, but the standardizing of foods and other preparations for their vitamin content.

None of these suggestions is revolutionary and there are only developments of practices at present in use. They would raise the status of nutritional matters to a level compatible with its importance to the nation. They would hasten the adoption of the teachings of dietetics discovered during the past twenty years. They would lead to untold benefits to the health of the community.

#### *The Instruction of Parents*

This I imagine would be part of the duties of the Ministry of Health acting on the advice of its Board of Nutrition. It is probable that official statements made to the press would be the most important method of teaching the facts to the average parent. At the present time this work is being attempted by several well meaning health societies whose members have a strong conviction that diet is a very important subject, but whose knowledge of the facts is often lamentable. These societies would no doubt continue their well intentioned efforts, but their knowledge of the subject would be greatly enhanced and their teachings correspondingly influenced by the official statements of the Ministry of Health. All the numerous public lectures on diet at present given throughout the country would be similarly influenced. The teachings would be unified and the wheat of the subject separated from the chaff. The present method which seems to be growing in popularity of issuing manifestos, to the press on dietetic subjects is altogether wrong. These statements are often partial in their origin and are frequently signed by men who however distinguished they may be in their own lines, cannot possibly have any real knowledge of dietetics. The Board of Nutrition must supersede these well meaning efforts by better method.

#### *Maintenance of Supplies*

If by this is meant the maintenance of sufficient food in the country to supply the necessary amount of energy and protein for each individual in a position to buy it, then it would not appear desirable for the State to take any action except in times of national emergency, as in war especially war accompanied by blockade. On the other hand if it means the maintenance and increased facilities for obtaining special foods and the limitation of others, it is probably a line of action that may prove useful.

The trend of scientific work on nutrition is to divide foods roughly from the point of view of disease into three classes (1) protective or disease-preventing foods, (2) harmful or disease-producing or probably better, "protection-demanding" foods and (3) neutral foods. Among the first or protective foods, would be placed milk, eggs, green and other vegetables fruit cheese meat and fat fish. In the second or disease-producing foods are cereals and cereal products including bread of all kinds (white flour or wholemeal flour) maize oatmeal rice, etc. The third or neutral group of foods, would probably include sugar pulses (peas and beans) pork and bacon and white fish. These are tentatively arranged and it might be desirable with further knowledge to redistribute the members of group (3) among groups (1) and (2). For instance the war in which sugar seems to upset experimentally red dogs suggests that under some conditions it is a harmful food, and if there were any lack of vitamin B in the diet pulses would then pass into group (1) among the protective foods. It may be necessary to point out that the inclusion of cereals and cereal products among the

harmful foods does not mean that these substances are devoid of nutritional properties. They have many excellent qualities in this respect, and their harmful effects can be readily antagonized by some of the members of group (1), or protective foods. At the present time, however, a sufficiency of "protective" foods is often not eaten, and poor physical development and bad health result in many individuals.

In view of these facts it would be desirable for our hypothetical Board of Nutrition to consider whether it was necessary for the Ministry of Health to take steps to make the "protective" foods—milk, cheese, butter, eggs, fat, fish, etc.—more easily procurable by increasing the supplies. It would probably be undesirable at the present time to limit the quantities of the "harmful" group—that is, cereals—available, for these are the cheapest procurable foods and form the basis of the average diet in the country, and especially in view of the fact, as stated above, that they can be made innocuous.

In one other respect—namely, the maintenance of pure food, both as regards micro-organism contamination and admixture with chemicals as preservatives—the State is already active. All of us commend this work and would like to see it strengthened, especially as regards the supply of pure milk. The widespread sale of milk contaminated with tubercle bacilli is a moral and economic disgrace to the country. I think it is time the community faced the probability that the sale of milk bacteriologically clean will be an uneconomic proposition, and it only remains to be determined whether the improvement in health and physique accompanied by some monetary loss is more desirable than widespread tuberculous infection and large monetary profit. A time may come when knowledge of the factors controlling resistance to infection will be sufficiently definite to make it a matter of indifference whether milk is infected with tubercle bacilli or not. Or it may be that an adequate substitute for milk, cheaper and more easily controlled, will be discovered. This time, however, is not yet, and it is important that one of the best "protective" foods in the dietary should be so controlled as to lead to the larger consumption of a pure and better product. It would be a bold and excellent thing if some city or town would purchase and run its own herd of cows with the object of supplying its citizens with good, clean milk. Any small financial loss would be amply repaid by the improved health and increased feeling of security of the community.

Whereas the economic side of food supplies must obviously always be one of vast importance, the question of personal profit plays far too great a part in feeding arrangements. This is beginning to be recognized by the setting up of the Food Council to investigate the relation of cost of food to wholesaler and retail profits. As time goes on the importance of the question of pure food and food marketing will be more and more recognized, and State schemes for meeting the situation will undoubtedly be developed. It is neither desirable that any particular food should be reduced in or eliminated from the diet under the influence of private individuals and companies, nor that it should be foisted on to the public by other individuals for similar reasons. Both of these actions are possible. An example of the first of these is seen in the gradual reduction of an excellent food in the dietary of this country in the case of fish, apparently as the result of methods of sale employed by fish retailers. An example of the second type can be seen in the tremendous consumption of pig products and veal in Germany, as the result of the discovery by a strong agrarian movement that the production of these foods is a sounder economic proposition than the production of beef and mutton. If big dietetic changes are desirable they should be controlled by the State, each case on its own merits, after the best advice has been taken from both a nutritional and a financial standpoint.

#### Cooling Facilities

This part of the problem involves a discussion as to whether it is desirable for the State (a) to play a greater part in the teaching of cookery and (b) to provide means of cooking food for public consumption. I imagine that greater facilities for the teaching of cookery will be pro-

vided by local authorities as the demand for such by the public increases. Better education and greater realization of the importance of proper feeding will no doubt hasten this demand.

The second point—namely, the provision of means of cooking food by the State—seems to me of greater interest. It would certainly be a method by which many individuals would obtain not only better cooked food, but also one by which they would have the chance of getting a greater variety of more wholesome food. The modern practice of consuming great quantities of preserved foods, the large trade carried on by cookshops in poorer areas, the increasing opportunities afforded for the purchase of expensive cooked foods, seem to indicate the desirability of the setting up of public and official organizations where people can obtain food altered, prepared for consumption, either at home or on the premises where cooked. Experience of this type of organization was obtained during the war, and no doubt others will be in a better position for expressing an opinion as to the desirability or not of the State taking up this matter.

#### Summary

1 Increased interest of the State in nutritional matters is very desirable, and would lead to untold benefit to the community even if only the knowledge of dietetics already established were utilized.

2 The mechanism for State research on nutrition is already well established in the Medical Research Council, the Empire Marketing Board, and the Board of Agriculture, but greater activity and closer co-ordination of the investigators is necessary.

3 The present interest and powers of the Ministry of Health should be greatly extended, and the first step in this direction ought to be the setting up of a Board of Nutrition consisting largely of people actively engaged in nutritional research with knowledge and experience of the scientific feeding of human beings and animals.

4 The Ministry of Health, acting on the advice of its Board of Nutrition, should (a) control the feeding of Poor Law institutions, prisons, welfare centres, and other organizations where public money is spent, (b) issue dietetic instructions to the public, and, where necessary, give the evidence upon which these instructions are based, (c) consider the advisability of controlling food supplies, and especially of increasing the availability of the "protective" foods to the public.

#### Discussion

Dr. EUSTACE HILL (C.M.O., Durham) agreed that careful attention to diet as a result of a sane and helpful effort on the part of central and local governing bodies would lead to an improvement in the general health equal to that which had followed the attention paid to general hygiene. He quoted a remark of Professor McCullum at Baltimore, to the effect that the chief factor in human deterioration in recent times was the unwise choice of food. He cordially supported the recommendation to set up a Board of Nutrition to advise the Government. He did not, however, think that the issue of official statements to the press would be the most effective method of instructing the average parent. There would have to be more personal and intimate touch with the individual. There was an undoubted need for increasing the supply and cheapening the distribution of important foodstuffs, especially fish and vegetables. At present terrible waste occurred owing to the inordinate profits of middlemen and the preference of retailers for large profits on a small turnover to small profits on a large turnover. The development of allotments and the practical instruction of allotment holders would bring about a valuable improvement in the supply of vegetable foods. He also agreed that the making of a profit out of milk contaminated with tubercle is a disgrace to the community, since such milk is not only the cause of very many deaths but also a source of pain and misery that could not be compensated by the amount of pain and misery that could not be compensated. He was convinced of the need for additional cooking facilities in industrial districts—a need that is intensified by the excess of fried fish shops in such localities.

Dr J P KINLOCH (MOH, Aberdeen) took the point of view of the health visitor, with especial reference to the instruction of parents and cooking facilities. A fundamental duty of the health visitor was the prevention of the incomplete conclusions of research workers, not infrequently recorded in the public press being adopted by the housewives of the country, to the great prejudice of the population generally, and the infant population in particular. This point was illustrated by the article made recently on the oatmeal diet, which Dr Kinloch remarked, when balanced with vegetables and milk, ensured normal growth without rickets. An important duty of the State, as represented by the local authority was to convey through health visitors reliable information to housewives concerning the nature of the food that should be purchased and the manner in which the food should be prepared; they had also to teach mothers what was an adequate diet for a child and for an adult. There had been a large increase in milk consumption in the United States during the last two years due to the efforts of health and education authorities. It seemed essential for the health of the community that information should be given especially to mothers, on the kind of food required to maintain health especially in cases of infants and children on ways of keeping food to prevent contamination on varieties of cooking, and on the method of serving and its psychological effect on appetite and digestion. Girls should be taught the elementary principles of dietetics as part of the school curriculum.

Dr CERAUD LEIGHTON (Scottish Board of Health) insisted that the production and distribution of food was a business and the extent to which there should be interference with private enterprise was always difficult to define. The State should to some extent regulate (1) the raw material whether animal or vegetable, from which food was derived, (2) the surroundings in which they were grown, (3) the handling of the materials by people who used hygienic processes, and (4) their distribution to consumers in a clean and sanitary way. The State had already done much on these lines in connexion with the protection of the milk supply, the limitation of preservatives in food, and the Meat Regulations. Dr Leighton believed that there had been more progress in the improvement of the milk supply during the last five years than there had been in the previous fifty, and he was optimistic about the future. The regulations controlling preservatives in food had already caused a great improvement in many foodstuffs, and the inspection of meat was now better than it had ever been. All these were examples of State interference which had been more than justified.

Sir FREDERICK NEWMAN (Ministry of Health) briefly described the action which the State already took in regard to the problems of nutrition. He agreed that nutrition lay at the foundation of the national health. There was abundant evidence that the nutrition of the people was improving; in fact, there was probably no greater recent social advance in any other sphere. He illustrated the activities of the State by five examples: (1) recent legislation for the safeguarding of food supplies, (2) the existence of a special food department at the Ministry of Health, (3) the co-ordination now existing between different central and local authorities, (4) the work of the Medical Research Council and other departments, and (5) the educational work in hygiene which was aided by the State. Much depended on the medical practitioner, who had the best opportunity of teaching the people to rely less on bottles of medicine and more upon suitable nutrition.

Dr A S M MACGREGOR (MOH, Glasgow) said it was difficult to extract from the conflicting views of the experts on nutrition any clearly ascertained facts for presentation to the public as to what constituted a well balanced diet. There were still differences of opinion for instance as to the best method of feeding young children, and he found it hard to believe that Professor Mellanby could be serious in his attack on oatmeal. It must however, be agreed that great improvements in the food of the people had followed recent legislation. The reduction in the incidence

of abdominal and glandular tuberculosis in Glasgow was probably associated with the increasing freedom of the milk supply from tubercle bacilli.

Professor MELLANBY, in reply, said that his views were based on facts definitely ascertained by experiment. If people opposed to such facts their own predictions or preconceived opinions founded only on casual observation, he could not be much impressed. If anyone would demonstrate by a different or better series of experiments that his conclusions were false, he would be prepared to reconsider the whole of his previous work.

## Memoranda: MEDICAL, SURGICAL, OBSTETRICAL

### A COLOUR TEST FOR RADIO SENSITIVE SUBSTANCES

I THINK that a short preliminary note on a new colour test for irradiated ergosterol and certain other radio-sensitive substances may be useful to other workers in this field.

A small quantity of crystalline ergosterol is rubbed with a heated glass rod on a previously warmed microscopic slide, on which a thin, translucent, and adherent band of the rubbed crystals is thus formed. Half the slide is then exposed to the rays from a mercury vapour lamp (Hanovia) for half an hour at 12 inches, the other half of the film being protected from the rays. The whole film is then covered with starch solution which has been boiled in water to which about 5 per cent of potassium iodide has been added. The boiled starch and potassium iodide solution is then applied hot to the film. After a short incubation period, varying from ten minutes to three-quarters of an hour depending on the amount of irradiated sterol present and the concentration of the potassium iodide in the starch solution, the film of ergosterol on the irradiated half of the slide assumes a rich pink colour in consequence of the dissociation of the potassium iodide and the fixation and retention of the iodine as a starch iodide on the irradiated sterol smear. If the film so treated is then irrigated with distilled water the pinkish brown colour will change into the characteristic blue colour of iodized starch.

The test is a delicate one and may be used to reveal the presence of very small amounts of irradiated ergosterol; thus it shows the different intensity of radiation in ergosterol radiated through water and in the air. Some samples of cholesterol fail to give the test.

A considerable number of films of different sterols and other fatty substances have so far been tested with this iodine-starch test. Among these the pink colour changing to blue on irrigation with water has been obtained in definite amounts on the irradiated half of the film in samples of egg yolk, coco-nut stearin cream and certain other fatty substances.

In an address "On the effect of certain irradiated sterols on the cellular constituents of the blood" to the Physiological Section at the Leeds meeting of the British Association, I described an *in vitro* physiological test which depended on the haemolytic effect produced on a suspension in normal saline solution of washed red cells by contact with irradiated but not with non irradiated ergosterol. The starch iodine colour test is a further development of this investigation and will, I hope prove useful in demonstrating the presence of certain irradiated fatty substances without the necessity for resort in all cases to lengthy feeding experiments. The two tests afford mutual confirmation from different points of view.

LEIC 17

C J BOND CMG FRCS

### FOREIGN BODY REMOVED FROM EAR AFTER THIRTY THREE YEARS

THE following record may be of some passing interest. A woman aged 45, complained of deafness. On examination she was found to have wax in both ears. From one ear, as well as wax, a rounded hard black body was recovered, which had the appearance of a pea. She stated





arthrodesis of the hip was a recent innovation. The procedure which most appealed to him was that devised and practised by Hibbs of New York. Hibbs transplanted the anterior two-thirds of the trochanter, together with about two inches of the cortical bone of the femoral shaft. This bone graft was pedunculated and left with the upper part of the trochanter attached by periosteum and the free end—that taken from the femoral shaft—was laid along the superior surface of the neck of the femur bared for its reception and firmly wedged into a groove cut in the ilium above the acetabular rim. Slight abduction jammed the bone graft firmly into position. Hibbs laid great stress on the careful saving of the periosteum and relied on this structure to form new bone. He peeled it off with care, taking perhaps the outer layer of compact bone with it if it did not strip easily. The arthrodesis or fusion of the spine which Hibbs practised left, when the dissection was complete, a series of spinous processes and laminae cleared of periosteum, which periosteum formed a practically unbroken sheet lining the muscles and soft parts which had been retracted. Bone fusion was proved by clinical examination and skiagram.

The president went on to emphasize the value of arthrodesis in the treatment of painful joints following fracture or other trauma. He believed arthrodesis of the ankle the best procedure to adopt in any old malunited ankle-joint fracture when there was evidence of traumatic or mechanical arthritis. He also followed Wilson of Boston in advocating immediate arthrodesis of the subastragalo-joint for fracture of the os calcis. Arthrodesis of the spine—spinal fusion—was practised in America as the treatment for crush fractures of the vertebrae. The operation devised by Hibbs was the operation of choice, and anyone who had watched Hibbs arthrodesis a spine must feel that the operation was bound to result in solid bony ankylosis. As to the part which arthrodesis could play in the treatment of chronic painful arthritis of the hip, after an experience of arthrodesis of the hip-joints in about thirty patients he could affirm that pain was relieved, although the hip did not always arthrodesis, for the operation might, and frequently did, result in a short fibrous ankylosis. Certain considerations, however, had led him to try out the operation of reconstruction leaving a movable joint. Although reconstruction of the hip was perhaps still in the experimental stage it was well worth a trial. The after-treatment consisted in moderate fixation for a month and then the patient was allowed up. The modern operation of mid-tarsal subastragalo-joint arthrodesis was due to Dunn in this country, and Dunn's method of stabilization of the foot had stood the test of time and gave good function. The speaker's general conclusion was that, while the uses of arthrodesis in the treatment of surgical tuberculosis during the active stage had to be carefully weighed and considered, he felt that in certain directions, notably in the treatment of mechanical arthritis, it could with advantage be practised more often.

Mr R. C. ELKINS said that some seventeen years ago he collected a large number of cases of old excision of the knee, as it was then called, for tuberculosis. In those cases ankylosis had in almost all been attained but the proportion with had deformity was very high. This was due to two factors: interference with growth, and the bending of the bone at the point of fusion. He believed that damage might be caused not only by actually interfering with the growing disc, but merely by going anywhere close to it. In advocating fusion for tuberculo there was some risk of making it a routine operation, to be carried out as a matter of course, and often without care for preliminary and after treatment. Arthrodesis should be regarded as a method of internal fixation, but not as a method of curing disease.

Dr CORPOUS PUGH said that he knew no more difficult disease to control than tuberculosis of the knee which had gone beyond the erosive stage, but cases admitted early, before the disease had progressed so far as a rule gave rise to no trouble. He favoured the method of traction by suspension (described in his presidential address to the Section last year) for securing free movement of the hip-joint, the results had been most remarkable and in no case had the acetabulum wandered. With modern

administrative methods whereby cases were brought into hospital earlier, he believed that arthrodesing operations would be less called for.

Mr GIPPLESTONE held that there was no short cut of any sort to the treatment of surgical tuberculosis. An operation for fusion of a tuberculous joint should be considered only as part of the conservative treatment. He would put the fusion operation at the end of treatment, and perform it only when the joint was limited in movement or destroyed as a functioning joint and when the radiograms showed a considerable degree of diseased bone.

Mr TRETHOWAN expressed some disappointment with the results of reconstruction, on which no one had been keener than himself, and he thought it rather a melancholy confession if arthrodesis had to be acknowledged as the only mainstay in orthopaedic surgery. Mr NARRACON DENN said that arthrodesis had proved valuable in Charcot's disease. Mr ALAN H. JONES mentioned that men in the Air Force who had sustained crush fractures of the vertebrae were still apt to complain of aching even after prolonged rest upon the back followed by the provision of the most approved form of spinal support. Mr H. A. T. FARMING also spoke of the advantage of "arthrodesing" a Charcot joint case, which he had found to be an excellent procedure.

Mr ROWLEY BARTON, in reply, said that he was far from advocating wholesale operating on tuberculous joints in children, but he did not think that the best was being done for the patient if he was kept in a tuberculous hospital to which no competent operating surgeon was attached. He believed that in many cases arthrodesis was really the best treatment.

## Reviews.

### OPERATIVE SURGERY

*The Operations of Surgery*,<sup>1</sup> edited by ROWLAND and TURNER, is now in its fifth edition. The book was originally written by Mr W. H. A. Jacobson and immediately established its position as a favourite—a position which, during twenty years of unremitting revision by Jacobson himself, was steadily maintained. It is too well known to need any description of its general features, but its value is enhanced by certain special features which are scarcely indicated by the title. The operations are described in a manner such as would be expected from so gifted a teacher as Jacobson, but the book contains much more than operative technique: it is recognized that operations often appear from reading and watching to be easier than they really are, thus leading the novices to attempt more than they can manage. Stress is therefore laid upon indications for and against operations and special attention is called to the possible pitfalls and errors, difficulties and anxieties that may beset the path of the beginner. For example, under the heading of acute intestinal obstruction we read that "the grave urgency of this condition is not yet sufficiently recognized" and accordingly with a view to ensuring earlier diagnoses the signs and symptoms and the differential diagnosis of the condition are discussed in detail in addition to the technique of the operations for its relief.

A feature of the book is the evident care that has been taken to make the illustrations worthy of the text in addition to the insertion of many new figures; the previous illustrations have in many instances been redrawn, where it was deemed that improvement could be effected. Many changes have taken place in the twelve years that have elapsed since the issue of the last edition necessitating numerous alterations and additions in many parts of the work, some of which may be alluded to. In Volume I the section on transfusion has been enlarged and brought up to date, an account of wound of arteries by modern bullets has been added, the methods of bone grafting have been

<sup>1</sup>*The Operations of Surgery*. By R. P. ROWLAND and R. E. TURNER. London: F. & S. L. and Philip Hart, B.Sc. 1927. F.P.C.S. Series. Seventh edition. London: J. and A. Churchill, 1927. (Part 8 of Vol. I, pp. ix + 160, 456 figures. Vol. II pp. vi + 66, 373 figures. £3 10s. the two volumes.)

redescribed, the account of bullet wounds of the skull and brain rewritten, and a section added on the treatment of trigeminal neuralgia by injection of alcohol. Considerable additional detail has been given on the subject of plastic operation on the face, a branch of surgery which was revolutionized during the war, the section on the operative treatment of injuries of the chest has been rewritten, and recent methods in the surgical treatment of tubercle of the lung and bronchiectasis have been inserted. A section on periaortic sympathectomy for threatened gangrene of the extremities has been added, and those on operations on the semilunar cartilages and on the technique of bone-grafting have been rewritten.

The alterations and additions in Volume II include Mr. Philip Turner's description of the operation of simple removal of the sac in inguinal hernia, additional details regarding the pathology and treatment of subphrenic abscess, the cautery treatment of gastric ulcers, introduced by D. C. Balfour, and a greatly extended account of the radical operation for jejunal and gastro-jejunal ulcer. The following brief summary of the author's personal experience in the treatment of gastric and duodenal ulcers is of interest: with gastro-jejunojejunostomy for duodenal ulcer there were 85 per cent of cures (mortality 1 per cent), with gastro-jejunojejunostomy and cautery excision for gastric ulcer, 75 per cent of cures (mortality 2.5 per cent), with partial gastrectomy for gastric ulcer, 90 per cent of cures (mortality 7 per cent). In discussing the subject of peptic ulcers, the authors observe that the term "perforation" should be reserved for those cases in which there has been a local or general extravasation of the contents of the perforated organ into the peritoneal cavity, and should not be applied to adherent ulcers penetrating the adherent walls without extravasation. Statistics, especially in America, are vitiated by the loose use of this term. The Polya-Balfour method of partial gastrectomy, as modified by Moynihan, has been added to the volume, and a section on simple tumours of the stomach introduced. Experiences during the war have rendered a revisiting of the subject of gunshot wounds of the abdomen necessary, a section has been added on wounds of the diaphragm, and the account of diverticulitis of the colon is practically new.

The numerous changes and additions that have been made in the two volumes show that much care has been bestowed on the revision in order to bring it up to date. One of the main objects of the work, as stated by the authors, has been to give credit and fair criticism to any new operation that seems worthy of consideration and trial, some of the methods suggested will survive, others will be rejected after a cautious trial.

#### TUBERCULOSIS IN CHILDREN

To a "library of tuberculosis," edited by Professors Chantemesse, Poncet, and Collet, Drs. Pehu and Dufourt have added a very complete treatise entitled *La Tuberculose médicale de l'Enfance*. They furnish a synopsis of current pathological and clinical views on tuberculosis in children, with special reference to pulmonary and generalized forms of the disease. After a historical introduction, and a chapter on the frequency of infantile tuberculosis, they discuss the vexed question of heredity under the headings "Heredity of the seed" and "Heredity of the soil." Of the former kind they consider that the only mode of inheritance of any importance, though even this mode is rare, is contagion through the placenta. They describe the researches of Calmette and others on the passage through the placenta of a filterable virus of tuberculosis. With regard to the heredity of soil, the authors consider that inherited predisposition to tubercle is far from being proved, but they think that tuberculosis in progenitors is a cause of dystrophic lesions in descendants, though less frequently than has been asserted.

It appears that infection through cow's milk is extremely rare in France, but Drs. Pehu and Dufourt are not prepared to deny its occurrence, though deprecating exaggeration of the danger. They have come to the conclusion

that pulmonary tuberculosis is almost always of human respiratory origin, though sometimes arising from infection into the intestine of human or bovine tubercle. Abdominal tuberculosis, on the other hand, they find to be predominantly of digestive origin.

A large section of the book is devoted to the pathological anatomy of the disease, and this is followed by a description of the clinical features. Here a division is made into the tuberculosis of nurslings and the tuberculosis of what is called in France "second childhood," the distinction between the two groups being the far greater resistance offered to the infection by older children. In this connexion the authors assert that if it is considered necessary to retain the word "pretuberculous" it must be understood that in the majority of cases the pretuberculous person is already tuberculous in the bacteriological sense of the word and under the influence of bacillary poisons.

As the use of the word "scrofula" has been almost given up in this country, the chapter on the condition so described by foreign observers should be interesting to the Englishman. The authors are convinced that scrofula is a special affection arising from an exudative lymphatic diathesis. The cuti-reaction to tuberculin of sufferers from scrofula takes a special form, being always positive, though intense, and even violent.

Under the head of treatment the various measures commonly used are discussed. Drs. Pehu and Dufourt are strongly opposed to seaside climates for nurslings with clinical or radiological signs at the apex of the lung or in the mediastinum. Heliotherapy is not for indiscriminate use, it may be dangerous. Tuberculin as a therapeutic agent is discussed, but the authors reserve judgement since, notwithstanding optimistic conclusions reached by some who have employed the remedy, there are many detractors, though it is suggested it is possible that the opinion of those who distrust tuberculin is due to excess of prudence in its use.

The book is a useful compendium of research and knowledge of tuberculosis in children. An extensive bibliography is appended to the volume, together with a number of reproductions of many photographs of chests.

#### LECTURES TO GENERAL PRACTITIONERS

The Medical Society of the County of Kings represents organized medicine in the borough of Brooklyn of the Greater City of New York and now, after a continuous existence of 105 years, has a membership of 1,700. Among its varied activities is an annual course of lectures of practical value to general practitioners by men of recognized ability and teaching experience. The second series of these *Practical Lectures on the Specialties of Medicine and Surgery* contains contributions from thirty-seven authorities on most diverse subjects. Professor G. W. Cline gives his experience of 13,988 operations on the thyroid gland, 95 per cent being thyroidectomies for hyperthyroidism, for this condition, which is not primarily of the thyroid, and may be induced in adults with adenomatous goitres by continued iodine medication, the only satisfactory treatment is, he says, operation. Dr. M. A. Rabinowitz, in a lecture on hyperthyroidism, insists that iodine should be given only as a prophylactic and curative agent in the diffuse colloid goitre of puberty and never in localized adenomas, but he differs from Cline, who has no good word for any treatment, in recommending irradiation therapy. That surgery is the best treatment for hyperthyroidism is also the opinion of Dr. F. H. Lattes, who discusses on the varieties and treatment of goitres.

Dr. Timme, lecturing on endocrinology, discusses the bearings of the status thymico-lymphaticus, which he prefers to call the status hypoplasticus in agreement with its originator of this term, Bartels. The therapeutic value of non-surgical drainage of the biliary tract is set out by Dr. B. B. Vincent Lyon of Philadelphia, who has done much to elaborate this technique, and Dr. H. L. C. who is the author of a book on diathermy, gives a summary of

physiotherapy Dr J Eastman Sheehan's account of the present position of plastic surgery is very generously illustrated by 16 figures, and shows that, though the war gave opportunities for improvement in the technique, there is much need for plastic surgery in civil life, especially for the relief of the after results of burns. The practical aspects of the cancer problem are handled by Dr W S Brambridge, and Dr F Carter Wood describes the uses and limitations of radiation in malignant disease. Other lectures deal with the newer remedies, the colon, the doctor in court, fits, gits, puerperal infection, the toxemias of pregnancy, the cold of children, and periodical health examination. This list does not nearly exhaust the catholic nature of the lectures in this well brought out volume.

### STERILITY IN WOMEN

Dr CATTIER, to whom was awarded a few years ago the Michelin prize on the depopulation problem for an essay entitled 'Des Bebes, s'il vous plait,' has now written a book on female sterility with the subtitle "maternity restored." The very fact that it is written by a medical representative of the group in France that is trying to combat the effects of birth restriction in that country gives the book a character of its own, and it must be regarded as a medical treatise on sterility and as advocating the views of a particular sociological school.

The investigation and treatment of sterility in women is considered fully both from the preventive and curative standpoint, and with the enthusiasm of one who regards his subject as of the utmost importance for the welfare and betterment of the race. Recent methods, such as those of Rubin and his followers for investigating the patency of the Fallopian tubes by insufflation or the injection of opaque solutions, are included, as well as details of treatment by general hygienic measures, organotherapy, massage exercises, hydrotherapy, pessaries, artificial insemination and various surgical procedures. Considerable space is properly devoted to the treatment of local inflammatory conditions of the lower tracts of the genital tract in order to lessen the incidence of the chronic uterine, tubal, and peritoneal conditions that interfere with the reproductive function. There is little critical discussion of the relative value of the various procedures and forms of treatment advocated, and it is not easy to discover how much is to be expected in the way of results or how to make a selection from among so many. There is a concluding chapter on the amelioration of the race, the modern marriage, eugenic selection and prenuptial examination, for the last of which the author shows no enthusiasm.

The book is typically French in style, with many curious asides and digressions that lighten and enliven what would otherwise be heavy medical reading. It will have a particular interest for those who wish to study the question of depopulation, or to learn the views of a medical practitioner who is among those who have seen reason to take alarm at the effect of the restriction of families in a country that has practised it widely and for long.

### FACT AND FANCY

THERE are some who deny that the world is round and some who still believe in the mystery of Joanna Southcott's boxes so that it is not altogether a matter of surprise that there are others who deny the facts of physiology and of experience. There is a book before us written by one W H BATES, M.D., which for boldness of denial and strangeness of assertion rivals the others. The title of the book is *The Cure of Imperfect Sight by Treatment without Glasses*, but that on the cover is 'Perfect sight without glasses.' The author would have us throw away our useful glasses, and beguile ourselves into the belief that we see better without them. Trial shows that we do not and that his alleged treatment is no more than a beguilement of the

does not stand the test of experience. To practise judgement of what is seen is one thing to see that same thing better is another, to 'palm' the eyes—otherwise make use of familiar and refreshing magic—is one thing to alter an anatomical defect another. But then this author denies anatomical facts, and alleges that all errors of refraction are merely functional. Strangely enough, he admits the use of glasses for patients who have no lenses as the result of extrinsic operation, but denies the use of the lens in accommodation, despite the evidence of Purkinje's figures, which he has heard of, for he reproduces the classical picture in his pages. His only extension to the assertion of the value of small print, even that which is so small that it cannot be read, "those who cannot read such type may be benefited simply by looking at it." Excessive light, he alleges, is not injurious, but actually beneficial, therefore look open-eyed at the sun. Reading in bed is "beneficial rather than injurious," perhaps when the print is not seen! But, strangely, black has its virtues. It is possible to perform surgical operation without anaesthetics when the patient is able to remember black perfectly. Perhaps the author got somewhere near a truth in a sentence in the last paragraph of this book. "The fact is that, except in rare cases, man is not a reasoning being."

We met one of this cult recently a parent had been summoned to attend a certain place owing to his persistent refusal to provide his child with glasses for school use. The child had myopia of 3 D, without glasses vision was 1/60, with glasses 5/6. The child appreciated the value of the glasses but the father would not allow them to be worn, alleging other treatment. But the recalcitrant parent wore glasses himself for an equal degree of myopia. It seems a pity good paper should be wasted on such a book, or that our columns should give space to its notice. But there have been inquiries, and so this review.

### NOTES ON BOOKS

THIS is the season of mellow fruitfulness in the publishing world, when new books and new editions fall thick and fast upon us. Among the imported fruits of learning and industry we welcome a further edition the fourteenth of the *American Illustrated Medical Dictionary*. Known to many in this country as the Big Dorland to distinguish it from its diminutive elder brother the Little or Pocket Dorland. The present issue has been thoroughly revised by Dr NEWMAN DORLAND in collaboration with Dr E C L MILLER, professor of bacteriology and biochemistry in the Medical College of Virginia. It is stated in the preface that there are over 2,000 new terms in this edition and many definitions have been rewritten to bring the terminology in accord with the latest accepted ideas. The spelling of course follows American usage. Many new line blocks have been added in order to elucidate definitions and emphasize points that can be well born in this way. Since it first appeared twenty-seven years ago the work has grown continuously. The fourteenth edition contains nearly twice as many pages as the first but owing to the use of thin but opaque paper the thickness of the volume has not increased in proportion. The English speaking medical profession owes a large debt to Dr Dorland for the high standard of care and accuracy maintained through successive revisions.

The second edition of Dr ALEXANDER's textbook on diseases of the ear in childhood is really a complete work on otology with special reference to the anatomical and pathological peculiarities presented in the young. The first edition appeared some fifteen years ago. The frequency with which the ear is attacked by disease in childhood may be the justification for this rather official restriction. But as we have indicated the book is far more comprehensive than its title the only important omission to be discovered being the absence of any reference to tumours and other diseases of the eighth nerve. There is no call for criticism for the work which is dedicated to the memory of Adam Politzer is written by one of the great masters of otology is of a reasonable size and is adorned with many fine illustrations.

\* *La Sterilité Feminine. Les Maternités Pépérées.* Par Dr CATTIER. Editions Médicales. Paris. M. Maloine. 1927. (54 x 7) pp 254 15 figures. 15 fr.

\* *The Cure of Imperfect Sight by Treatment without Glasses.* By W H BATES, M.D. London. A. F. Bird. 1927. (5½ x 8) pp xx + 314 65 figures. 15s. net.

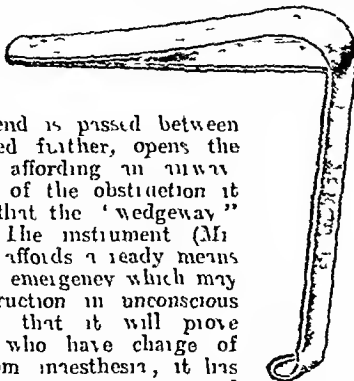
\* *The American Illustrated Medical Dictionary.* By W A Newman Dorland, M.D. F.A.C.S. With the collaboration of E C L Miller, M.D. Fourteenth edition revised and enlarged. Philadelphia and London. W B Saunders Company. 1927. (Med. 6½ x pp 1,228 11½ x 16½) with thumb index. 60 s.

\* *Die Ohrenkrankheiten im Kindesalter.* Von Dr Gustav Alexander. 2. umg. mit 1. Aufl. Leipzig. F C W Vogel. 1927. (Imp. 8½ x 11½) pp xlii + 393 100 figures 9 plates. M.33.

## PREPARATIONS AND APPLIANCES

*"The Wedgeway"*

MR. A. LOWNDES YATES, F.R.C.S. (Birmingham), has designed an instrument to replace the wedge which it is customary to employ whenever the teeth of an unconscious patient are tightly clenched and respiration is obstructed. It consists of a tongue depressor having a double duck. The thin end is passed between the teeth and, when pushed further, opens the mouth, at the same time affording an airway. If the tongue is the cause of the obstruction it can be depressed, provided that the "wedgeway" is introduced behind it. The instrument (Mr. Lowndes Yates writes) thus affords a ready means of dealing with almost every emergency which may arise from respiratory obstruction in unconscious persons. It is anticipated that it will prove specially useful to nurses who have charge of patients during recovery from anaesthesia, it has the further advantage that it is inexpensive and cannot get out of order. The wedgeway is obtainable from Messrs. Allen and Hanbury, Limited, 48, Wigmore Street, W.1



## THE LONDON MOTOR SHOW.

## SOME POINTS FOR MEDICAL MEN

By H. MASSAC BUIST

THE twenty-first international motor car show opens at Olympia, Kensington, under the patronage of the King, on Thursday next, October 13th, and will remain open, the Sunday excepted, until 10 p.m. on Saturday, October 22nd. Various changes have been made in the organization, all of which are to the good. Thus in former years the public have not been admitted to the exhibition until the Friday, the Thursday being called a trade and press view day. But what was intended to be purely a business facility was so much abused that the situation became unmanageable. Many thousands of persons concerned neither with writing about the exhibition nor with motor trading sought and secured admission. The Society of Motor Manufacturers and Traders has arrived at a happy solution of the problem. It will make no change in the charge for admission on the days which have hitherto been available to the public and will again be available, but on Thursday next the exhibition will also be open to the public, instead of closed as hitherto, and it will be possible for anybody to enter the building by paying ten shillings at the turnstiles. Thus the congestion problem will be solved, and through the added revenue still further advancement of automobilism will be possible for the only body which has the opportunity to do this, by such means as subsidizing institutions that cannot afford to pay for the investigations they were established to carry out, encouraging certain classes of competitions for the evolution of the machine, and holding exhibitions concerned with branches of automobile enterprise which do not draw large numbers of the public and on which there is therefore a loss.

## IMPROVED STAND SCHEME

Another improvement of note may be observed by anybody on entering the building. It concerns the lay-out of the stands in the car section. As far as possible island stands are being provided along a continuous central gangway from the new entrance off the main road to the central gangway in the main hall. Another set of regulations is designed to remedy the second of what I would call market-believe British motor cars. Not until this year has there been anything approximating to a satisfactory definition of what constitutes a British-built vehicle. In that connexion the society sent to America a delegation which has done very satisfactory work in clearing up some parts of the problem. Next week in respect of every motor car shown at Olympia there will be stated on every show card, price card, or other form of notice submitted the following particulars: "Chassis made in —" and/or "carriage work made in —" Where the exhibit displayed is wholly the product of one country, one announcement, "Made

in —," may be displayed. In regard to accessories, components, and tyres, similar information will be conveyed (a) by means of a card attached to every item exhibited, (b) on a schedule of all the items exhibited, prominently displayed upon the stand as approved by the exhibition manager, and (c) by one notice "Made in —," where the whole of the exhibits are products of one country. The most difficult point to settle in the past has been: "What constitutes a British-made car for the purposes alike of trading and of exhibition?" Thus some machines which have been only assembled and packed in Canada have actually entered this country as British built. The new rules lay down, however, that the chassis and carriage work of complete cars shall be regarded separately, and that the country of origin shall be that within which the exhibits have been mainly produced, except that claim shall not be made for origin of any country within the British Empire.

## GERMANY'S RE-PATRI

The forthcoming exhibition will be further notable in the history of the motor business in this country because, for the first time since 1913, German chassis and coachwork and other automobile goods are admissible and will be displayed. Thus there will be shown the six-cylinder Mercedes cars of various sizes, including the very high powered supercharged types, and which have perhaps in "academic interest" for medical men, since this year we have in the Le-Francis a British car standardized with a supercharger. Mercedes pioneered this development as far as standardized motor car practice is concerned. I could describe the effect, from the driver's point of view as being that when he has attained a certain speed and thinks he has got the utmost out of the engine, by further depressing the accelerator pedal so as to bring the supercharger into use he suddenly gets the impression that a second engine has been insinuated under the bonnet of the car. Then the need for gear changing is greatly reduced. At present, however, such a well-proved device is available only in these very expensive cars which do not come within the purse-range of the average medical man, and its use sets up a morning noise.

## THE FORD SITUATION

As in former years Ford cars will be conspicuous by their absence, because this firm has never signed the Society of Motor Manufacturers and Traders' bond. But, largely owing to an ingenious publicity campaign, many medical motorists are curious to know about the promised new style Ford car. It has even been hinted that it would be exhibited elsewhere in London concurrently with the Olympia show. This, however, will not be the case. I have stated, as a result of private (as distinct from official) information from America, that the new Ford car is not even in production there, though large numbers of some of the parts have been going through the shops. So far approximately 350 of the new engines and chassis have been built and stored, pending Mr. Ford's final decision. As engine production works in Detroit are in readiness to get going on a proposed schedule of approximately 300 cars a day, which is a very small output for Ford. Much has yet to be done before big production can be attempted. Even in America Ford agents are considering that they will be lucky if they get more than a sample car and a few spare parts during the rest of this year.

Changes are being made, and tests carried out in connexion with pistons and connecting rods. A good deal of experimental work is still going on. Instead of all the pistons, for example, come on the Lynter principle are being considered. Connecting-rod changes are being investigated, chiefly with a view to reducing cost, for it is intended to produce a better product at approximately the same price as that hitherto charged for Ford cars. Mr. Ford is satisfied with the cost price, not that everything has yet been done to effect savings that will enable the car to be marketed at as low a figure as may be possible. A very important point is that, in connexion with his engine, he has developed a new steel treatment, which is intended to produce a metal of great strength and toughness. If this is so it will be a big accomplishment, and will affect the sale of the new car just as the former method of steel

manufacture made possible the model "T." The new treatment of steel, together with the discarding of the use of malleable, in the new car has made possible a rearrangement of important parts of the factory plant, which, it is under-stood will greatly reduce overhead charges and cut down the amount of labour needed. A like procedure is being followed in regard to all details of the works equipment, machine groupings being made to effect saving in operating costs. In fact the fact that certain parts are now being made in three operations which formerly required six.

#### UNBREAKABLE GLASS AND LABORATED DYES

Again the glass plant is being employed on a much reduced scale pending the result of experiments now in progress concerning an unbreakable glass. The company is still awaiting the receipt of a number of important new machines that will play a big part in quantity production schemes. Practically all the through-over plans of production and factory equipment have now been completed. Plant for manufacturing lacquer for body finishes has been installed, and the company is making experiments on a large scale in the use of synthetic dyes from Germany. To lessen high duties on importing these materials the liquids in the dyes are evaporated off before shipment, so that large quantities may be sent across the Atlantic in concentrated form.

Seeing that the new Ford engine designed in America is 1/8 in wider in the cylinder bore measurement, and that the piston travel is half an inch longer, it would appear to be an impracticable type for sale in this country. Although it follows conventional construction and has an L-head, a pump-assisted cooling water circulation with a single piece two-bladed propeller-type fan and oil pump circulation at the base of the crank case. A five-bearing crank shaft of a much heavier type than in the model "T," and counter-balanced by the use of circular crank cheeks joining the crank pins, is another feature. But for new Fords to be built in this country and for the European markets an engine of about £12 taxation rating is in hand. The new type generator to be used on all Fords is equipped with oilers self-lubricating bearings but the old Ford starter will be retained. An improved steel selective type transmission scheme, that practically reproduces the Lincoln scheme on a lesser scale, is a feature which will be a clutch on the Lincoln principle. The front axle will be heavier than in former Ford practice, on account of the provision of front-wheel brakes of the internal expanding type equipped with two-piece steel brake-shoes on each drum and achieving a total braking surface of 144 square inches. Further what Americans call parking brakes and we call hand-controlled brakes are mounted on the two rear wheels. The radiator and hood will be larger than in the model "T" Ford and with round line. The top will be lower hanging the car nearer the ground and the springs will be flatter. The wheel base will be 110 inches, and the hubs will be larger with roller bearings in the wheels. The steering wheel will be of the irreversible type. Perhaps the most important point however is that contrary to the practice hitherto pursued by Ford plans permit of the new type of car being developed and changed in detail in exactly the same way that other motor manufacturers operate. Therefore, Ford cars may be presented in a different form from year to year, according as changes in demand come about.

#### NEW CAR WITH SIX AND EIGHT CYLINDER ENGINES

Olympia will certainly provide greater mechanical novelties than will be found in the new Ford car in spite of the fact that the notable new Durant series of 18-h.p., six-cylinder engined low priced external expanding four wheel braked Pugby cars listed at more £285 to £365 complete, will not be shown, being sixth on the society's rating list of would be exhibitors. Nevertheless, there will be many entirely new vehicles in almost all categories though the majority have six-cylinder engines. But no less a constructor than Wolseley now owned by Mr. W. R. Morris will introduce a 12/32 h.p. 1.5-2 c.m. four-cylinder engined £12 tax four-seater £315 and a four-cylinder car with an overhead valve crank shaft fitted at £235 as a four-seater. Standard will show a four-cylinder 2-h.p. car. Buick will show a four-cylinder car, and Chalmers will intro-

duce a new four-cylinder 9-h.p. car selling at £145 or as a fabric saloon at £160, and also a two-seater 2250 12/35-h.p. model. At the other extreme Daimler brings the V-type six-cylinder double sleeve-valve engined chassis within the purse running cost and coachwork range of a much viler public than the nominal 50-h.p. type. That is now supplemented by a 30-h.p. machine that will be shown at Olympia and an example of which has been ordered by the Queen. It is an admirably flexible and speedy car for the specialist.

Apart from the introduction of some new "straight-eight" American cars—as well as of the Cadillac built V-type La Salle—a notable British supplement to Sunbeam's enterprise in this connexion will be the introduction of an overhead valve eight-cylinder in-line engined nominal 20/60-h.p. Wolseley car. Perhaps I should mention that one of Mr. Morris's lobbies for some years has been the private building at great expense because on an experimental scale of eight-cylinder in-line engined cars he himself being a firm believer in the principle. This eight-cylinder Wolseley is no able for its relatively low cost the bore measurement being 2 9/16 inches and the piston travel 4 inches. The exhibit will show the chassis fitted with a smart covered saloon body of modern type, ample accommodation and luxurious upholstery in the best leather to the high waistline, the upper portion being finished in cloth. The list price is £750 only. The bucket-type front seats are adjustable independently, and the rear seat which accommodates three persons has arm rests on either side. The engine clutch and gearbox are also to be shown as a separate unit. The robust and carefully balanced crank shaft is arranged to run in ten white-metal lined bearings. The high tension ignition has both hand and automatic control, and the patent automatic equalizing carburettor is fitted with an air cleaner. Among new American "straight eights" too, will be found the Marmon and the Auburn, the latter an 8-cylinder car and the German industry contributes a fine example in the three-litre Horch.

#### WHY MORE CYLINDERS?

I indicated in these columns last year that in the near future six-cylinder engines would be in a considerable majority, not as regards chassis models only but also as regards the total number of cars to be built. We have not reached that stage yet because Ford is still rather obsessed with the four-cylinder idea though he is experimenting with six-cylinder engines but that type is being made in greater varieties and also in smaller sizes. Therefore already it is being made available in some cases at unprecedentedly low prices this year—in the new side-valve 1474 c.c.m. Renault Monoxia. Indeed, whether we turn to the American to the Continental, or to the home industries it will be found that most of the entirely new chassis to be shown at Olympia have six-cylinder engines. The reason is that no matter how quickly a four-cylinder engine is made to accelerate still this cannot be done so smoothly nor with such absence of strain to the mechanism as with a six-cylinder machine of equal power because to put the matter non-technically, with a four-cylinder engine the most that can be done is to have the explosion just connecting up whereas those explosions or power pulses, must overlap in a six-cylinder construction. Of course on an eight-cylinder engine, designed and built to possess equal merit, this advantage is still more pronounced. That is why in the luxury car class the eight-cylinder engine is coming rapidly into vogue standing to-day in much the same relation to the six-cylinder type that hitherto the latter has occupied in relation to the four-cylinder engined car.

There is of course no hint at all experimental about the six-cylinder engine. Indeed one might say that in face of our aircraft engine experience, there would be nothing experimental about making an eighteen-cylinder engined car not that such a prime mover is likely to be required for car service though the Daimler double six is not a practical expression of it. Its flexibility and therefore of more top gear drive than is possible with an eight-cylinder engine of equal capacity. The element of doubt about any new six-cylinder engined



chassis must consist entirely in this, that either the designer or the builder, or both, may lack previous experience of standardizing six-cylinder power units. This you has not been without costly illustrations of the fact that one may even have made successfully a six-cylinder engined chassis in the pre-war period, but that that experience will not necessarily suffice when deciding to return to that sort of enterprise after an interval of two or more years.

#### SOME TYPICAL NOVELTIES

By way of illustrating the quite new six-cylinder engined types that will be introduced to the public next week, I may mention the enterprise of the Peerless Motor Car Corporation of Cleveland, Ohio, one of the three foremost high-grade car builders in the United States since pioneer days, in introducing a £435 six-cylinder engined car. Auburn will also show a vehicle with a six-cylinder engine, and Dodge Brothers of Detroit and Toronto will show a new six-cylinder engined range of 224 cubic inches cylinder capacity, having a sturdily built crank shaft, the scheme being standardized with all-steel bodies by the pioneers of that system of construction now taken up by Citroën and by Morris for certain types. This is the first six-cylinder car built by an organization which has produced and sold over two million four-cylinder engined Dodge cars in thirteen years. Among other types, France sends a new 16 h.p. Darracq, and Fiat introduces an £18 tax side-valve six-cylinder engined chassis, which will be shown both in that form and as an interior driven saloon. All the German Mercedes cars have six-cylinder engines, three types—with two-litre, three-litre, and four-litre engines respectively, the two former with side-by-side valves and the last-named with the overhead form—being non-supercharged, and three overhead valve engined types of 33/140, 33/180, and 33/220-h.p. respectively, with superchargers.

New British six-cylinder engined cars of note will be shown by Alvis (a two-litre), Rover (a two-litre), Armstrong-Siddeley (a two-litre 15-h.p. type), Ariel-Aster (20/60-h.p.), Star (18/50-h.p.), and Vauxhall (£20 tax, 20/60-h.p.). The 16-h.p. Austin, announced a month ago for delivery in March, will not be shown.

#### NEW BIG SCALE BRITISH LARGE CAR PRODUCTION

From the points of view of manufacturing and marketing the most conspicuous six-cylinder engined British novelty of the show will be the new Vauxhall. It is the first-fruit of the purchase, two years ago, of that old-established company, always concerned with building a limited number of very high grade cars at Luton where the works have been enlarged to facilitate the production of this new style machine of quality at the rate of 200 cars a week, or 10,000 vehicles a year at a chassis price of £375, or as a Princeton five-passenger touring car, complete with all-welded and other equipment, for £475, as a two-seater for £485, as a coupe for £670, as an enclosed limousine for £520, and as a five-passenger Bedford saloon for £495. From the point of view of the evolution of the motor vehicle this is extremely interesting, because it might be called a Vauxhall car of Vauxhall quality, but of redistributed values. Thus in the past great expense has been incurred to achieve certain qualities required by a very limited section of the motoring public, who are prepared to pay for them and being a price drivers, do not mind changing speed frequently. But in making an appeal to justify such an output as is now embodied on we get a car which, while obviously a Vauxhall nevertheless incorporates certain phases of American practice which have been proved to appeal to the generality of motor users the world over. This is notably so in regard to getting of the back axle and engine speed. The non-technical motorist's ideal is to be able to do what is called "step on the accelerator pedal," whereupon the car should gather speed without misusing the engine. That feature pioneered by the American industry, is to be found in the new Vauxhall car. When, however, we come to such delicate matters as engine balance, engine efficiency for volume and so forth or the four wheel braking scheme or the steering or the freedom from vibration and the manner of the suspension we find American practice far eclipsed and the best European

standards maintained. In other words this is essentially not an American Vauxhall, nor a transatlantic car of any sort, since it is the sort of what American manufacturers can achieve. I consider it a very happy combination of American features that make the widest appeal with European and, especially, British features that are yet unacquainted. Undoubtedly this is a car destined to exercise a very important influence in the full six-cylinder engined car market, for it is preeminently suitable for service overseas as well as in this country. The light steering employs the Miles cam and roller principle. The gearbox gives four speeds forward, though these are controlled centrally in American style. Semi-elliptic springs are used fore and aft.

#### GENERAL DEVELOPMENTS

Incidentally, a study of the products of the American industry reveals a distinct tendency to achieve lower centres of gravity by "double dropping" the frames in the manner exploited in Europe by certain constructors for years past. In regard to covered bodies, the problem of ventilation is receiving much-needed attention in this country. Hitherto one had to get a car specially built if an and light were to be admitted through the roof. Now, however, several constructors will be found offering standardized saloons with non-rattling but movable roof schemes, whereby one can enjoy ventilation and proceed in sunshine without glare, and without draught, because all the windows can be kept closed. Undoubtedly there will be as big a vogue for these bodies as for the fabric type of covered coachwork, which comes into its own this year. We shall see it on cars of all sizes, powers, and costs. Some Americans standardize ventilators at the top of one piece wind screens, which prove admirably effective. Steel building of covered cars also gives some adherents. Liege finish is all but universal for standardized productions, and big advances will be observable—notably on the part of the British industry—in that connexion this year.

Of course, nowadays, nobody should have a car without four wheel brakes. No one system is universal, but a great number of the systems produced by accessory manufacturers, and standardized by the producers of cheap cars, exhibit much-needed improvements in detail. A good deal, however, is still to be learnt about four wheel brakes by at least three car builders out of four. The problems involved are incapable of non-technical explanation, even if a whole article were devoted to them. Suffice it to say that one of the practical features of the low priced four wheel brake equipment this year is that no attempt is made to absorb too much power through those European systems which are not absolutely scientific, and that there is therefore less chance of the driver coming to harm if anything goes wrong. A section of the American industry still continues to employ contracting hand brakes, an obsolete system that has no justification. No motorist should have any car with a contracting collar brake. Instead of checking the wheel, this type either chokes it or lets it run free, sliding being one of the unsatisfactory results.

The advantages of studying overseas conditions in view of the Dominions is revealed in the new series of Hillman cars. These remain four-cylinder engined machines, but they look at least twice as important as before, having larger wheel bases, much better balanced engines, and much better steering. They are now really suitable for service overseas. The wings can be set on without hindering them. Yet this is not an American car, but essentially a British product, as may be judged by the comfort of the seating, for designers can achieve much more accommodation within a body of a given dimension than is the custom in transatlantic practice. Pneumatic cushioning, instead of spring and bar types, gains many adherents for standard practice, and is most advantageous, it is the only type all satisfactory for such hard conditions of use as speed, heavy service. Central chassis lubrication is a notable British adherent in Armstrong Siddeley.

Incidentally, the opening of the Motor Show will coincide with the completion of the building and equipping of factories in this country by three important foreign manufacturers, so that henceforth there should be no monopoly in this industry.

# British Medical Journal.

SATURDAY, OCTOBER 8TH, 1927

## THE PATHOLOGY OF THE LIVING

For the subject of his address at the opening of the medical session at King's College London, Sir Berkeley Moynihan chose one rather larger than his title might suggest as will be seen from the full text published in this issue (p. 621) for he discussed not only the training of the surgeon, but also the way in which surgical problems should be considered and he emphasized and elaborated the theme with which he dealt in his Hunterian Oration earlier in the year.<sup>1</sup> He then insisted on the importance of observations made at the time of operation on living human bodies which have enabled surgeons to study what he happily calls the pathology of the living and which as he holds should prove of the first importance in the future advance of our knowledge of anatomy physiology and pathology.

Lord Chancellor Thurlow's rough denial of the right of surgery to be called a science to which Gunning so effectively retorted was not without some justification at that time, and despite the enormous improvement which the nineteenth century witnessed surgeons have perhaps been too ready to accept the position of mere executants and to leave science to the physiologists and pathologists. The growth of knowledge, which had become too much for one mind to grasp in detail and the necessary development of specialism in the ancillary studies encouraged this attitude. Sir Berkeley Moynihan however did not convey the impression that he would have the surgeon able to compete with the bacteriologist and biochemist in their work but that he should recognize and avail himself of the great opportunities of fruitful observation which the practice of surgery affords. It is not too far fetched an inference to conclude as Sir Berkeley Moynihan has done that such a change in the surgeon's outlook is in principle only a return to the methods of Hippocrates and Galen whom he claims as the parents respectively of inductive and deductive reasoning and as indubitable members of our profession. Whether these authors of the theory of the four humours and of all its dependencies will be accepted by philosophers and medical historians as the only begetters of these logical methods may be at least doubtful but we think that the claims of Aristotle who was trained as a physician and was a great comparative anatomist should not be passed over in this connection. Sir Berkeley Moynihan sets a high ideal before his colleagues and students when he claims for surgery the status of a science of exact observation and of inductive reasoning and asserts that it is a method of seeking the cause no less than the remedies of many diseases. Looking at his retirement in this light the surgeon ceases to be the mere handicraftsman and is able to go alone as an explorer and discoverer without diagnostic support from the physician. Experiments upon living animals have been of the first importance and the greatest value in the study of normal tissues and organs and of their reaction to injury or infection and a very large part of the advance of the last hundred years has been

due to them but those who have had to do with diseased organs and tissues have found that there are limits beyond which the analogies of healthy parts will not carry them. Very many of the causes of disease in the human body are of a chronic and often obscure kind and their conditions cannot be reproduced at will in other individuals especially when as usual, those individuals belong to another species. Just as Lister by preventing sepsis made experimentation on living animals—biological research as Sir Berkeley Moynihan calls it—safe and generally painless so also the new weapon of direct research upon man during remedial operations or after grave injuries is forged by him alone. As far as we know Lister never performed an abdominal operation, yet the most obvious triumphs of the method of direct research have been won in the abdomen where duodenal ulcer was practically unknown except as a pathological rarity until surgeons aided by radiologists, revealed the frequency of its occurrence as well as many of the conditions which favour its development or accompany it. Sir Berkeley Moynihan made an emphatic protest against the performance of short-circuiting operations in cases in which no definite lesion has been found to justify them. Such operations at one time had become far too common so much so that a French surgeon has written a book entitled *Gastro-enterotomy a disease*. The result of his study of the pathology of the living has convinced the President of the Royal College of Surgeons of the accuracy of Dr. William Hunter's observations and of the correctness of his inference that much disease in the body is due to far away and in themselves apparently insignificant foci. Yet Hunter has had to fight hard for a quarter of a century and his case should be a warning to us not to reject or neglect new ideas because at first sight they may seem strange.

Sir Berkeley Moynihan had a good deal to say about routine operations and the evils of merely imitative surgery and here we think that his saying is too hard for most of us. No doubt the man who is content merely to imitate the operations of a master and who does not want to improve upon them will not make startling discoveries or do things great in any way but in the dull round the common task a great deal of routine is unavoidable. When Sir Berkeley's colleague at Leeds Mr. A. T. McGill discovered that the enlarged prostate gland could be shelled out of its capsule he made a great and original discovery by which those who followed him have profited but they could not fail to be imitators and they and their like have sensibly diminished the mass of human suffering and lengthened many lives. The same may be said of other operations. Moreover Apollo's bow is not always strong and only the few very elect can always be striving for higher things. Therefore we would enter a plea for the capable but merely imitative surgeon for there are not nearly enough geniuses to go round and perform the batch necessary surgical operations. But as to the insufficiently trained surgeon who is unconscious of his own deficiencies Sir Berkeley Moynihan's denunciation of him and his doings will we do not doubt be generally approved. Though it is not given to all of us to be keen observers able to recognize and pick out from the myriad pebbles on the shore of the sea of knowledge the one scientific gem of purest and rarest wished up by the waves or dredged by another secker from the unathorned depths of the unknown yet all may strive to cultivate their talents so as to acquire the power of grasping truth when it is presented to them.

<sup>1</sup> BRITISH MEDICAL JOURNAL, February 19th 1927.

## FOOD SUPPLY AND THE STATE

THE Section of Preventive Medicine at the Annual Meeting of the British Medical Association at Edinburgh discussed the question "What duties has the State in relation to the nation's food supply?" Professor Edward Mellanby introduced the discussion by a paper which is printed at page 633 of this issue. The paper is so suggestive and provocative on a matter which is becoming almost daily of more and more importance, and is rapidly being recognized as such, that it is almost a duty to direct attention to it. Moreover, it may be of advantage—with a view to some practical outcome—to make certain distinctions, and clear the ground of some possible misunderstandings, if the subject is to be regarded purely as a question of preventive medicine and public health.

As Professor Mellanby points out, "the duty of the State" is an ambiguous phrase, but even if it be taken to mean "what an ideal State should do" in this matter, not everyone will agree that it is desirable for the State to perform all the functions which he would appear to assign to it. An individual's conception of the duty of the State with respect to food supply and cognate questions will necessarily vary with his general political ideas as to the relative position of the State and the individual citizen as regards other matters—as to whether, as is commonly held in this country, the State exists for the sake of the individual, or whether, as is the confessed belief of some foreign Governments, the individual exists for the sake of the State. A perfectly well nourished citizen is no doubt desirable in either case, but it may well be held that something less than perfect health with reasonable liberty of individual action is even better than perfect health secured by the almost complete suppression of individual liberty. Of these questions some are political and others economic, and they must be separated if there is to be a profitable discussion on the practical duties of the State as to matters connected with food supply in such a community as ours. As an example of such confusion of thought we may take a statement which emerged in the course of discussion at Edinburgh, though it was not made in this crude form by Professor Mellanby himself. "Making a profit out of milk contaminated with tuberculosis was a disgrace to the community, since such milk was not only the cause of very many deaths, but of an amount of pain and misery that could not be computed." Surely the deaths and the misery are caused by the tubercle bacilli, and not by the fact that a profit may be made by the sale of milk which happens to contain them, and the sale of such milk might be regarded as a disgrace to the community even if the State or a local authority were selling it at a loss. There is, too, no guarantee that a dairyman or a milk roundsman employed by the State would be any more clean or honest than one employed by a company. The question of the propriety of private trade for profit especially in those things which are necessities of life is a highly controversial political subject which it is desirable to keep quite distinct from the question of what action can be taken by public health authorities—central and local—to see that food supplies are pure. The latter is the public health problem.

Again it is no legitimate criticism of the State, or of a Government department, that it does not make itself responsible for *ex cathedra* statements of what is to be regarded as the final truth concerning dietetics, or on other subjects which are susceptible of scientific investigation and on which there is not a consensus of

scientific opinion, nor that it does not take steps to keep itself officially informed, even in advance of scientific opinion itself. Professor Mellanby seems to claim that it is the duty of the State to do both these things. He suggests the establishment of a new official "Board of Nutrition," "a strong and representative body of nutritional experts," whose duty it would be to present to the Ministry of Health "new knowledge on nutritional matters" and "the best and the latest advice as to the relative importance of new discoveries," even in advance of their publication by laboratory workers, and prior, therefore, to their discussion in scientific circles, and to issue to the public "an official announcement of the facts" and a reasoned statement declaring the relative importance of all the points raised. A strong case can be made against official action of this kind, though there is everything to be said in favour of State help towards research and State encouragement of the spread of knowledge. Such public knowledge can, however, in our view, be better secured by education and discussion than by the promulgation of official dicta, or by the enforcement of stereotyped official dietaries at prison and Poor Law institutions, and in connexion with infant welfare centres.

If these things be admitted, there still remains a vast field in which State action with regard to food supplies is necessary and can be very effective. There is the securing of a sufficient supply of suitable foodstuffs in the event of dearth from war or any other cause, the enforcement of proper conditions of transport, storage, and handling, the prescribing of a pure and adequate content and condition whether chemical, bacteriological, nutritional, or "vitaminous", the supervising of the living sources, whether animal or vegetable, from which essential food supplies are derived, the active helping of research of all kinds, the encouragement of reasonable health propaganda by public or responsible bodies, the enlargement of educational facilities with regard to domestic and personal hygiene and to the art of cookery, both through the elementary and secondary schools and technical classes, and through school nurses and health visitors and the medical profession. All these are strictly matters of preventive medicine and public health, and offer opportunities abundantly enough for action by the State and by those who are either officially or unofficially concerned therewith, irrespective of any particular political or economic faith, and for scientific discussion free from any undue regard for possibly premature pronouncements of what is to be regarded as orthodox.

## SIGHT AND DRIVING

THERE has been some correspondence lately in the Times on the relation of the sight of drivers of motor cars to accidents in driving, and our contemporary, in the course of a short leading article, said "The view is expressed that 'the vast majority of road accidents are due primarily to defective oversight on the part of the pedestrian or the driver.' The evidence on which this conclusion is based is not given, nor any attempt made to distinguish one kind of ocular defect from another in relation to the cause of accidents but even allowing for these omissions, an issue of real importance has been raised." The caution shown in this comment is wise. Certainly sight is a matter of importance in driving, but to assume that because gross defects of sight make driving impossible and dangerous, therefore smaller defects are responsible for accidents to drivers and walkers, is rash unless the defects in vision are clearly defined. The word "sight" is

connotes ability to distinguish objects of a certain size or fineness of detail. Such a connotation is altogether too limited in this regard. Safe progression for driver and walker in ordinary daylight demands that the sight should have a threefold quality: visual acuity, field of vision, and binocular vision. Obviously a driver must have acuity sufficient to see the pedestrian, but a pedestrian and even a chicken, is a relatively large object to the walker; the car is even larger. The visual acuity demanded by such recognitions is low. The field of vision is another matter. The errand boy walking along the street enthralled in a penny dreadful looks not at passers by nor at the kerbstone, yet he neither humps against nor stumbles at the kerb. His peripheral field (where 'acuity' is negligible) gives him a sense of the position of things that means safety. Binocular vision and balance between the eyes is an even finer matter than acuity or field: it gives the sense of size and distance or position the instantaneous and unconscious judgement of the eye is measured by the subtle feel of the non-ocular effects produced by the combined movements of the eyes together with the impressions of visual acuity and of position in fields. That judgement tells us where we are and where others are. It is the sense which leads to skill in many walks of life and in games: it makes the good shot with the gun, the tennis champion, and the safe flying man. It is also the chief physical asset of the good driver. Yet a fourth requisite is a good light sense—that is, ability to see in a poor light. There is as much variability in this as in visual acuity, but unlike the latter there is no correction for defect of light sense, though it may easily be depressed by poor health or indiscretions. It varies also with errors of focus for the use of glasses reduce it especially high concave and convex lenses; so that the correction of an error of focus by glasses which may give standard visual acuity does not always make the wearer of the glasses a safer driver. Such a bare sketch of what 'sight' is gives but a poor view of its complexity. Nor does it touch upon the interrelation of sight and muscular co-ordination—foot, hand and eye of driver and foot and eye of walker. Nor does it so much as hint at the overriding power of nerve control which is suggested in the term 'reaction time'—that power of response which makes two persons who show a general equality in equipment of organs apart in capability. We recall the facts of physiology because unlike these there is some sense of the complexity of 'sight' and its interaction with body movements, no standard or test of sight of genuine value will be arrived at but a test of some part of the whole will be stressed, such as defective visual acuity (so easy to determine) and a situation possibly more dangerous than the present be produced for a certificate of fitness if it is wrong is an added danger. To call upon the Legislature to institute an effective test of sight for drivers on any scientific scale would be asking an impossibility. A minimum test of acuity, of field of balance and of light sense would take a prohibitive time. But even if it could be instituted we do not believe it would materially reduce road accidents, for we cannot agree with the statement that 'the vast majority of road accidents are primarily due to defective eyesight.' Accidents known to be due to bad sight do occur but they are rare. A man steps in front of a moving car and his record shows that he has already been glaucoma; a woman does the same and she is nearly blind with senile cataract. But for the most part persons with such serious defects keep out of harm's way. Many more accidents are due to a visual anaesthesia—seeing we shall see, and shall not perceive, because the mind behind the eye is away far off from the road. Thus visual anaesthesia or wandering attention has caused the death of not a few drivers and walkers and there is no cure for it. All our reactions vary from

time to time, so that a test one day may be valueless on the next. Ill health, unwise indulgence, and fatigue (such as is caused by too long driving) produce wide variations in 'reaction time.' One driver is made jump; so he handles his car injudiciously and it skids; another becomes too slow and he runs into a collision. The driver who has done a long run has a peculiar risk on entering a vast city like London, he may be tired yet keyed up to his touring speed, and a sudden change to slow and intricate traffic is demanded. The readjustment is difficult, and some drivers are wise enough to stop a minute in order to break continuity. It may be asked: If these things be so what is the use of testing the sight of drivers of locomotives, omnibuses and trams or of 'cremen?' Sight tests for engine drivers and seamen are in a different category, these aim at ensuring two necessities for these men—keen sight for minute or distant objects and for colour. Omnibus and tram drivers' sight must be wider especially the former. Certain companies require tests of visual acuity, but in addition the student drivers are under such observation during their training that there is brought into effect a wide range of tests of field, of balance, and of judgement, so that the unwise man is weeded out early. If a test of eye drivers, besides those of public utility carriages is to be instituted it should follow similar lines. It should be a practical test, and it could be so devised as to include a judgement of reasonable acuity, of good field, of balance, and of light sense in many varying circumstances. All these reactions could be ascertained by a practical exercise not merely in a room with test types. Nevertheless, it would only certify fitness or otherwise at the time of the test and it could give no security for future fitness.

#### INDIRECT ACTION OF IRRADIATION ON THE EMBRYO

For several years before his death Dr. T. S. P. Strangeways had been engaged in the study of the action of radiation upon cells growing *in vitro* and the results of the researches were published in his book on *Tissue Culture* and in two communications to the Royal Society in association with F. L. Hopwood and H. E. H. Oakley. These researches had reference to the direct action of the rays but lately he turned his attention to their indirect action—that is to say that if any which results from the physiological disturbance of the whole organism. In this research he worked in connexion with Miss Honor Fell, Ph.D., and a joint paper has recently appeared in the *Proceedings of the Royal Society* (B vol. 102, 1927), in which the existence of an indirect action is clearly established. The experiments consisted in irradiating foetal eggs which had been incubated for different periods (twenty to twenty-five hours six days, seventeen days) and comparing the histological condition of the embryonic tissues immediately after the irradiation and after incubation had been allowed to proceed for further periods of some minutes, hours or days. In the embryos of twenty to twenty-five hours examined immediately after irradiation the only observable effect was a great reduction in the number of mitotic figures. After twenty-four hours' further incubation after irradiation the tissues had recovered to some extent development had advanced and there was a variable amount of abnormal mitosis but cell degeneration was usually extensive and more prolonged incubation was associated with necrotic and cystic changes. In six-day embryos examined immediately after irradiation mitosis was reduced and broken-down cells were numerous in all the tissues after eighty minutes further incubation mitosis was rare or absent enormous numbers of cells were broken down and the vessels were thrombosed. After twenty-four hours mitosis was absent and the majority of the cells had broken down, causing a partial disintegration of the tissues. The effects were similar, but less

pronounced, in seventeen-day embryos. Destructive changes were more marked in the older embryos, which were more highly organized and in which the circulation was established. On the other hand, it was shown by further experiments that the tissues of six-day embryos, when explanted *in vitro* soon after irradiation, still contained many cells capable of undergoing mitosis and continued growth, and that therefore the cells of a six-day embryo were no more susceptible to the action of x rays than those of an embryo of twenty to twenty-five hours. The exaggerated destructive effects in the case of the six-day embryo appeared to be due to some indirect action, and might not improbably be attributed to the thrombosis. On this hypothesis the destructive changes might be assumed to be caused by the accumulation of toxic products of metabolism or to the absence of the normal gaseous interchange in the tissues. That the former was not the case was proved by explanting normal tissue in an extract of irradiated six-day embryo incubated for twenty-one to twenty-four hours, tissue growth was in no degree hindered under these conditions. On the other hand, the results of experiments in which irradiated embryos were incubated for twenty-four hours while exposed to air (by removing them from the shell) instead of *in ovo*, indicated that the death of the cells was due, in part at least, to an absence of gaseous interchange in the tissues of the irradiated chick when incubated in the shell, the tissues exposed to the air grew readily when explanted *in vitro*. Such inhibition of gaseous exchange *in ovo* would result from the clotting of blood in the vessels shortly after irradiation as above described, although it is unlikely that it is the only destructive effect of radiation, since even in embryos of twenty to twenty-five hours recovery was only temporary.

#### MEDICAL EDUCATION IN THE TRANSVAAL

Dr. Raymond A. Dart, dean of the faculty of medicine in the University of Witwatersrand, Johannesburg, contributed to the *Journal of the Medical Association of South Africa* for July 23rd an interesting account of the development of medical education, including post-graduate teaching, in this part of South Africa. So far back as 1903 the establishment of medical and dental instruction in Johannesburg was projected, and, after some delay, a standing committee for medical education was appointed in the Johannesburg General Hospital in 1914, three years later the School of Mines became the University College, Johannesburg, and the first year of a medical curriculum was inaugurated. A complete dental course was provided in 1925. Meanwhile, regulations for the Diploma in Public Health had been drawn up, and in 1926 post-graduate courses for this diploma were started. Johannesburg offers exceptional facilities for instruction in tropical medicine and hygiene, since it is surrounded by tropical and sub-tropical areas. It is thus the one large centre of European medical training where a wide range of tropical diseases can be studied on the spot where they occur, moreover, it contains a large European population from which post-graduate students can be obtained. Dr. A. J. Oienstem was appointed lecturer in tropical medicine and visiting physician in tropical diseases, and, pending the formation of a tropical disease unit in the general hospital, arrangements have been made for a number of beds to be under his charge. The course of instruction in tropical sanitation and hygiene has been designed by Dr. Charles Porter, one-time medical officer of health for Johannesburg, and the courses in tropical pathology and pathological chemistry are being given by Dr. Sutherland Strachan, Dr. Annie Porter taking charge of the parasitology including protozoology, helminthology, and entomology. The last two teachers belong to the staff of the South African Institute for Medical Research, and are also lecturers in the medical

school. The greater part of the laboratory work of the course is conducted in the Institute buildings with the cordial co-operation of the director, Sir Spencer Innes. Diploma courses in tropical surgery, ophthalmology, dermatology, and pharmacology are being arranged.

#### THE HUMAN LIVER FLUKE

The human liver fluke—*Clonorchis sinensis*—has been known to medicine since 1875, but it is only within comparatively recent years that extensive investigations into the bionomics of this very serious parasite have been undertaken. The most recent and by far the most complete of these is a monograph just published by Drs. Faust and Khaw in Peking.<sup>1</sup> The life-history of this parasite follows the cycle now known to be typical of all flukes—that is to say, it passes an essential asexual part of its life out of the body of the host in a particular species of fresh-water snail. In this particular fluke the myriads of cercariae which escape from the snail either die or become encysted in the flesh or under the scales of some species of fish, and apparently any species of fresh-water fish will suffice as the second intermediate host. On being swallowed by the definitive host the little fluke leaves the cyst, and, crawling up the bile duct, reaches the liver, where it settles down and becomes mature. Like so many of the parasites of man, this species is apparently really a parasite of carnivorous animals, and throughout the Far East dogs and cats are extensively infected. Man is only parasitized in certain limited areas in Japan, Korea, Southern China, and French Indo-China, where he has the habit of eating uncooked fish. Northern and Central China have heavy infections in the intermediate hosts, but there are practically no infections in human beings. Drs. Faust and Khaw are mainly concerned with the infection in China, where the chief endemic centres are Canton, Hong Kong, and other parts of the Kwantung Province. The epidemiological evidence collected by these observers points to the mulberry districts as the important areas of this infection, just as Cort and his colleagues<sup>2</sup> have previously implicated these districts as the centres of hookworm infection in China. The infection is caused by eating uncooked or partly cooked fish, because of taste, or for religious reasons, or to ward off cholera, or even because the cost of fuel to cook the fish is prohibitive. The fish become infected from the snails, which in turn become infected from the mud. In those areas where the human disease is important it is, curiously enough, almost non-existent in animals, and a man must therefore provide his own infection. In India, where animals are heavily infected, fish are also, but they are always thoroughly cooked before consumption. In Southern China, therefore, it is possible to destroy the reservoir hosts in combating the disease, and to concentrate on the human infection. Prophylaxis will develop along several lines—education, sanitation, and specific therapy. Education would consist in teaching the people to cook their fish thoroughly, but as practically all species of fresh-water fish are infected, the eradication of the parasite on these lines would, it is considered, prove very difficult. Nevertheless, cooking would entirely eliminate the disease. An attack on the pre-multiplicative stage in the egg would, it is thought, be more hopeful. Sanitation and disposal of night-soil will prevent the infection of essential intermediate hosts, and Faust and Khaw point out that a considerable amount of human faeces finds its way into the fishponds, and directly or indirectly provides food for the fish. Treatment of this night-soil with 0.6 per cent of ammonium sulphate not only destroys the eggs of the fluke, but actually increases the value of the material as fertilizer. It does not seem to be practicable to attack the

<sup>1</sup> Study on *Clonorchis sinensis* (Cobbold). By F. C. Faust and A. J. Khaw. (Monographic Series No. 8) *British Medical Journal* 1927 i p. 27.



snail intermediary at the present time. No satisfactory drug has yet been found with which to treat the fluke in man, but experiments on animals suggest that gentian violet may provide such a substance. The drug definitely kills the parasite, but before it does so it causes a great rise in egg production. Though the results are promising, it is too early to advocate the use of this drug in human clonorchiasis.

#### ADRENALINE AND VASO-DILATATION

It has long been known that the injection of very small amounts of adrenaline produces vaso-dilatation, particularly in a denervated limb but it was believed until recently that the vaso-dilator effects were secondary to the liberation of histamine somewhere in the body, probably in the lung. Dale and Richards<sup>1</sup> have now shown that the injection of a small amount of adrenaline (0.0004 mg.) into the aorta of an anesthetized cat produces conspicuously larger expansion of a denervated leg than five times the dose of adrenaline injected into the jugular vein. The latent period also is much shorter when the arterial route is employed. These experimental results suggest that the vaso-dilator effects are due to the arrival of the adrenaline itself in the arterial blood of the limb. One argument in favour of the view that the vaso-dilatation is produced by a secondary liberation of histamine in some part of the body has always been the apparent impossibility of demonstrating this effect in a perfused limb. Dale and Richards have now overcome this difficulty, and have shown that when the hind leg of a cat is perfused with fresh, defibrinated cat's blood and the volume of the limb produced by the injection of minute amounts (0.0001 mg. or 0.00005 mg.) of adrenaline into the arterial stream produces definite dilatation followed by constriction. In this case as the circulation of the perfused leg is no longer in connexion with the general circulation there can be no question of the effect being brought about by the liberation of histamine in the lung or in any other organ, and it must be concluded that the vaso-dilatation is due more directly to the presence in the arterial stream of the adrenaline itself.

#### THE BIRTH OF MANKIND

SIR D'ARCY POWER, the surgical leader of those members of our profession who in their leisure hours are peacefully penetrating the realms of bibliography, has now done his colleagues (and particularly those obstetrically minded) good service in publishing, with twelve fine illustrations, the scholarly paper he read to the Bibliographical Society on January 17th, 1927 on "The Birth of Mankind or the Woman's Book". This much sought-after treasure of medical bibliophiles, and the earliest known work in English on midwifery, is a newly translated out of Latin in 1540 by Richard Jones. "A diligent and studious Clarke" from the *De partu hominis* (1532) which in its turn was the translation of *Der Schwangeren frauen und Hebammen* 160 given written in 1513 by Eucharius Rosselin the Stadtarzt or city physician of Worms. It is disappointing that nothing more is known of Richard Jones but there is good reason to believe that his original manuscript of *The Birth of Mankind* is still in existence for it was sold at Sotheby's in 1865, and is probably in a private collection, at any rate, it is not in any of the most likely libraries in this country. Sir D'Arcy Power gives a detailed description of the numerous editions which appeared between 1540 and 1654, and of the last he remarks "The living title-page, which is poorly printed and otherwise quite uninteresting" says "The Fourth edition Corrected and Augmented" It is not the fourth edition, it has not been corrected, and it certainly has not been augmented." The title-page of the first edition—

dedicated to Katherine Howard, who in July of that year (1540) was married to "the most mighty sapient Christian prince Kyngo Henry the VIII"—is extremely interesting on account of its ornaments in four panels, as is shown in one of the seven reproductions of the various title-pages. There is also an interesting account of each of the printers and publishers of *The Birth of Mankind* or *The Woman's Book*, and the reprint closes with a comparison of the ornamental initial letters as a means of distinguishing the various issues. This addendum, which did not appear in *The Library*, must have been a labour, but one of love, and there can be no doubt that this paper, like all Sir D'Arcy Power's writings, proves that the expenditure of much time and trouble on the author's part makes easy and pleasant reading.

#### REGULAR MEDICAL EXAMINATION

A Director of the Family Medical Services, Limited, has taken exception to some comments we made recently (September 24th, p. 560) on an associated scheme entitled the Regular Medical Examination Association. We remarked that there was "some lack of lucidity in the documents issued by those responsible for this undertaking", and we gave as an instance the difficulty we had experienced in finding out whence the new association derived the funds for its subsistence. We now learn that these funds are derived from the fees charged to subscribers for the medical examination, and that it is proposed to pay the doctor who examines the subscriber 6s. out of the 7s. 6d. paid for examination of the first member of the family, and 5s. out of the 6s. for each other member. In the literature submitted to us there was no hint of these deductions from the suggested fees, and in informing the medical profession of the scheme we felt entitled to call attention to this lack of lucidity. We noted also a further point—namely that it was stated in the prospectus that the Regular Medical Examination Association had no interest in the financial result of the schemes. We may leave it to our readers to calculate the financial result of the above-mentioned deductions from subscribers numbering, say, half a million. If the scheme gains the popularity of which we assume it is worthy, the numbers subscribing should be even larger. We shall watch with interest the progress of this association. But we are still of opinion that its prospectuses could be improved if the language employed were clearer.

Mr. LIONEL COLLEDGE, F.R.C.S., will deliver the Semon Lecture of the University of London in the Barnes Hall of the Royal Society of Medicine, 1 Wimpole Street, W.1, on Thursday, November 3rd, at 5 p.m. his subject being "The present position of laryngectomy for cancer of the larynx."

A short and simple ceremony of interest to lovers of Dickens will take place at the British Medical Association House, Tavistock Square, London, on Wednesday next, October 12th, when the Council of the Association and members of the Dickens Fellowship will stand on the site of Tavistock House, in which Dickens lived from 1851 to 1859, and an inscribed stone marking the site, above a portion of the old foundations, will be unveiled.

The following lectures will be delivered next month before the Royal College of Physicians of London: Bradshaw Lecture, November 3rd, by Dr. J. F. Gaskell, on "The pathology of pneumonia"; FitzPatrick Lectures, November 8th and 10th, by Dr. Herbert P. Spencer, on "The history of British midwifery (1650-1800)"; Mitchell Lecture, November 15th, by Dr. P. C. Varrier-Jones, on "Villago settlements and the tuberculous." The lectures will be given at the College, Pall Mall East, at 5 o'clock.

<sup>1</sup> *Journal of Physiol.* vol. 63, No. 3.

<sup>2</sup> *The Library* fourth series, viii, June 1927.

## Opening of the Winter Session.

### THE MEANING AND METHODS OF SUCCESS

Introductory Address given at St George's Hospital,  
October 1st, 1927,

BY

SIR HUMPHRY ROLLESTON, BART, KCB, MD,  
Regius Professor of Physic, University of Cambridge

[After congratulating the winners of scholarships, prizes, and certificates, and mentioning some of the advantages of competing for these rewards of ability and industry, Sir Humphry Rolleston discussed briefly the element of chance in the success or failure of a medical career. Looking back upon the crises of contemporary students and colleagues, it seemed to him that what might appear to the onlooker to be pure luck was often a capacity to make full use of whatever the wheel of fate brought to the feet. He then considered some of the essentials for a right conception of success in medical life, and the various forms which this success might take—the fashionable and financial, the intra-professional, the scientific and intellectual, the humanitarian and personal. The best form of success for the ordinary man to aim at was to preserve his own peace of mind and respect by the consciousness of honest work well done and duty carried out without fear or favour, by making others happier in body and mind, and by freedom from regrets for any action contrary to the golden rule "Do unto others as you would that they should do unto you"]

#### METHODS OF ATTAINING SUCCESS

The arts of success (Sir Humphry Rolleston continued), like the forms of that consummation, are so varied that it would be difficult to mention them all, there is much shrewd advice in Dr. Chesterfield's *Letters to His Son*, by the late Sir William Dalry, on the fundamental questions whether or not medical practice and, if so, which branch of it, is suited to the character, temperament, and attainments of the individual. Some may be admirably fitted to deal with the sick in body or mind, others specially suited to laboratory investigation of the causes of disease, and so privileged to advance medical science, but less adapted to the complex practice of its art in the wards and sickroom. These decisions are, of course, momentous, for to follow the wrong profession is a tragedy and a sure bid for unhappiness and failure. But when what seems to be the right choice has been made, what are the further essentials? Obviously to start with, as in other professions, a thorough knowledge of the science and art—the two Janus-like faces—of medicine, and not only this, but to remain throughout life students, ever on the look out to observe and learn, for there is no trace of finality about medicine, especially in these days, to give up the student life on qualification is not to remain stationary, it is to go back, while others are going forward.

The final examination at the colleges and the universities only qualifies you to enter on a series of further trials and testings—the equivalents of examinations—of which the candidates may be unconscious but which are none the less effective and decisive, by patients, their friends, and professional brethren, medical life, indeed, is just one examination after another. Mental ability alone is not sufficient, though it goes a considerable way towards professional success, and here it may be interesting to quote Thomas Young. In his discussion of the relation between ability and success there is the following dictum: "However inadequate the possession of superior talents alone may be to ensure the confidence of the public, it must be a mistaken opinion, although it has been asserted by persons of no ordinary observation, that a man of great abilities is morally incapable of being a good physician." The explanation of the failure of ability alone is gently but more clearly explained by that great humanist Osler: "A physician may possess the science of Harvey and the art of Sydenham and yet there may be lacking in him those

finer qualities of heart and head which count for so much in life", and more bluntly in Jacob's warning "You may be ever so learned and yet an inefficient doctor," for indeed it is easy to be too bookishly learned and deficient in the wisdom of practical life. Peter Mere Latham, one of the great clinical physicians a century ago, when our science and art were infinitely less detailed and specialized than now, expressed a view which at first may seem somewhat surprising:

"Knowledge may be an encumbrance as well as a help. Many men know more than they are able to wield. There is a point (I believe) in the acquisition of knowledge (and this point varies infinitely in different individuals) beyond which it more is acquired, the whole mass becomes useless to its possessor. I am acquainted with men who never have done, and never can do anything, because they know too much, and I am acquainted with men possessing comparatively small knowledge so dextrous in its use that they have ridden over the heads of others far, very far, then superior in acquirements."

Though reading maketh a full man, too much may induce mental dyspepsia, breed excessive obedience to authority, and so destroy any originality and independent thought. Read we should, but let it be methodical with discretion, and accompanied by critical analysis and digestion, so that the state of the stuffed Strasbourg goose be not the result. As a practical method of analysis a written abstract made at the time serves a double purpose—not only does it impress the details on the tablets of the mind much more effectively than mechanically underlining the book when sitting in an easy chair, but it is most useful for future revision. It is a common mistake to measure the amount of work by the clock, the real criterion is not the number of hours spent, but the degree of concentration brought to bear on the subject. Concentration produces the greatest effect in the minimum time and is the economical secret of the successful and busy man.

There are, in addition, other factors to be considered, especially the knowledge of men and women, which is so important in the treatment of the sick. Though, like most epigrams, "one-quarter of savoir and three-quarters of savoir-faire make the successful practitioner" may be an exaggeration, there can be no doubt of the value of the personal equation in gaining the confidence of patients, their relations, and professional brethren. A man should, of course, have the requisite professional knowledge, but he must also be able to make full use of his requirements. This necessary personality is not shown by a bedside manner with a suggestion of pompous superiority, it is the result of getting inside the patients' minds so as to think their thoughts, feel their feelings, and thus understand their mentality and anxieties so thoroughly that the medical man is obviously their friend, with their interests so entirely at heart that nothing else counts. This is not an actor's mask, but the outward and visible expression of true charity and forgetfulness of self. I would like to subscribe to the following from an address given by my father in 1874 when distributing the prizes at St Mary's Hospital Medical School:

"I believe that the rule 'put yourself in his place,' based on what modern philosophers call the principle of altruism, but what is found expressed plainly enough in much older language than theirs, is the rule which, if I were confined to the choice of one single guiding maxim to be given to a young doctor just entering upon the responsibilities of practice, I should choose for that maxim. Sympathy is truly called a divine gift, and it does assuredly give a superhuman power. I presuppose, of course, patience in investigation and carefulness in ratiocination, but such is often the obscurity, intricacy, and complexity of a medical problem that in the ultimate resort it is upon intuition rather than upon syllogism that its true solution depends. It is to the man who has the touch of genius that strength of imagination which enables him to put himself in the patient's place and thus do full justice to him, that there 'arise' up light in the darkness." It is for want of all this that 'great men are no' always wise."

It is not enough to regard the patient as a machine out of order and an interesting problem in pathology, the man as well as his malady must be studied in order to be properly treated.

The faculty of inspiring confidence, like the love of children and dogs may be unborn for them undoubtedly are men highly esteemed and of acknowledged ability but whom none of their friends think of employing professionally. A want of appreciation of the patients' state of mind which is naturally focused on their ailments may allow the doctor to discourse on his hobbies and private interests, thereby, of course important for his own well-being but from the patients' point of view his reason d'être is solely to discuss their urgent need. No doubt attempts to distract them from themselves have their place and value but the time for this is after, not before. A full—often it must be admitted, tedious—hearing and consideration of their troubles so as to unburden their minds and ensure complete satisfaction. In doing this there must be calmness without coldness, decision without dogmatism, friendliness but firmness. It may be difficult to steer between saying too little and talking too much, and while avoiding garrulosity there is the temptation to imitate those who by a sententious or somewhat cryptic phrase get out of a difficult situation for the time but seldom satisfy their patients' wants. Honesty and truth are essential but what may at the time seem the whole truth should not always, in the light of human fallibility and his best interests, be communicated to the patient, thus a death sentence given bluntly on what may prove to have been insufficient grounds benefits neither the patient nor the doctor. It is well to remember that a doctor's dictum is not forgotten easily by his audience and so though often pressed for a premature opinion it is wise to refrain from speculative prophecy which of all mistakes is the most gratuitous. In making mistake is inevitably all must it is better to err on the side of optimism than of pessimism. It was said of the late Sir William Osler that 'he never left a sickroom without leaving behind renewed hope.'

The doctor's relation with other medical men (popularly spoken of as medical etiquette or ethics with a thinly disguised dislike and a suspicion of a mysterious trade unionism) is in reality a very simple matter—obedience to the golden rule of treating other colleagues as we would wish them to treat us. In carrying out this elementary principle there is nothing more obvious than total abstinence from adverse criticism of other medical men. To maintain your own opinion is right and proper to depreciate the advocate of a different view not only savours of a weak case but is an act of treachery to a profession the motto of which should be team work. Some rather elementary people seem to have the delusion that by undermining the reputation of others their own will be left standing out in bold relief not realizing that such prominence may be of a kind other than is hoped—namely bad as well as bold and far from advantageous to their interests. Before judging of what another medical man is reported to have done or said it is instructive to bear in mind how rumour may transform your own actions and remarks out of all recognition. The expression of unkind thoughts about another is a further step and so commits the speaker that it has a booming-like effect for whenever they meet he pays the embarrassing penalty of discomfort and realizes that "evil communications corrupt good manners."

#### IMPORTANCE OF GOOD HEALTH

Almost as important as common sense and a sympathetic and healthy mind are good health and physique to withstand the strain of hard continuous work. To avoid illness is no easy matter among the numerous exposures to infection in times of epidemic disease especially when overworked. Doctors should not only advise but in their own interests set a practical example in personal hygiene, proper recreation, exercise, and holidays in spite of the numerous difficulties that surround them. From influenza, headache, and dyspepsia born of irregular and hasty meals a man may become irregular, forgetful and deficient in the qualities which make for his success with his patients. The habit of keeping fit should be maintained during student life by combining as the best men so often do, nicely organized work with active games, thus gaining,

in addition to professional equipment, experience and an unimpeachable bearing in the give and take of competition and the term work of later life. On the other hand, great things have been accomplished by medical men crippled or physically handicapped in one way or another, incapacity in one respect may, by compensation and concentration, result in a high degree of excellence in another direction, the bodily weak may become a mental giant and those ill adapted for success on general lines may, by intensive study in a narrower sphere, become specialists of eminence.

Terence's line "Homo sum, humani nihil a me alienum puto" applies most certainly to our humanitarian calling but although wide culture literary activities and hobbies are good for the soul, these are for private use and not for parade. There is widespread belief often no doubt erroneous, that a man cannot excel in more than one line and so when a doctor is known, for example as a writer of verses most people are inclined to consider him too good a poet to be their common-sense guide, philosopher, and friend in unromantic medical matters.

A method of attaining success, though it may seem rather negative and involve some repetition is to avoid the conspicuous causes of failure such as mental idleness, unbusiness-like habits, forgetfulness, unpunctuality, habitual discourtesy, drug addiction and intemperance. Against the last two rather blatant vices a warning may seem quite superfluous but unfortunately not a few able men, already in good positions and reaping the harvest, have become shipwrecked on these vulgar rocks. No doubt there are often extenuating circumstances such as anxiety to keep going when ill laid down, and exhausted, recurrent private misfortune and acute mental distress, but the cause does not concern the public who in any event would not be inclined to excuse the results on that score.

## THE DOCTOR'S HIGH CALLING

Introductory Address at the London School of Medicine for Women

BY

R. G. HOCARTH CBE FRCS, JLD

Senior Surgeon General Hospital, Nottingham Past President of the British Medical Association

I SHOULD like to begin with a brief reference to the London School of Medicine for Women itself. May I not say without presumption that a pioneer educational institution which has survived the strains and stresses of fifty years is bound to have acquired an established reputation? It either stands high or low in the general esteem. It has either made good or it has failed to rise above mediocrity. Well there is no doubt about the status of your school, which in conjunction with the Royal Free Hospital, holds its own in the best company among the medical schools of the British Empire. It is indeed an infant compared with Barts or with Queens which have their traditions of centuries. But after all when we talk about traditions in connexion with medical schools let us remember that their best traditions are scarcely older than the still recent days of Simpson and Lister, and that the London School of Medicine for Women was born amidst the epoch-making discoveries which marked the Renaissance period of British medicine. So it was under a lucky star that your pioneers burst their way through all the obstacles and vindicated the abstract right of women to enter the medical profession by proving themselves apt learners and practitioners of the art of healing.

#### FIGHT OF WOMEN TO PRACTISE MEDICINE

The root of the opposition I suppose was sex prejudice, strengthened by apprehensions of intensified competition. Not that I dislike strong prejudices, either in men or women. They are often the very salt of life. But we must not hug them too long or too close, and, above all, we must be ready to recognize when a case is really proved.

I only recall this now senescent controversy because,

after all, it was the *causa causans* of the foundation of this school, and without existing the slightest aspersion on the system of co-education prevailing in some other medical schools this great teaching school for women students alone is a proud and happy achievement. There are, indeed, some whose zeal for the equality of the sexes disdains any recognition within the profession of the differences of sex. That may be good logic, but we do not live by logic alone, and I prefer either the masculine or the feminine to the neuter gender. It is no use pretending that men are not men, and that women are not women. And the more I think of it, the more I am appalled at the waste that the world for so long has made of its women—the squandering of their rare qualities of mind and heart, the neglect of their immense capacity for service to humanity. Sex equality had to be successed when sex equality was denied, but in the future the debate should rather be as to what men can do best and what women can do best, apart from the huge common field of endeavour which is open to both. It is division of function, according to special capacity, which makes for good organization and efficient service. The widening ranges of the special diseases of women and the special ailments of children seem to belong naturally to women. But we may be sure that these divisions will not be settled by reason alone. The idiosyncrasies, the instincts, the jealousies of human nature are no less powerful arbiters.

#### ADVICE TO NEW STUDENTS

And now let me turn to those among you who are newcomers to these halls. You have made your crucial choice of a career, and I congratulate you upon having chosen Medicine. What Wordsworth in his sonnet to Byron, the painter, said of creative art is no less true of the art of healing: "High is our calling, Friend!" And not only high, but hard. You will find no soft options in the study of medicine, if you have entered here with a desire, not merely to qualify, but to excel, and to earn with your fees the goodwill and gratitude of your patients.

Your new studies will naturally engross the greater part of your time, and those who come quite fresh to science may not have much leisure for other subjects. I would urge you not to neglect altogether those studies which still bear the resonant title of "Studia Humaniora," to distinguish them alike from divine theology and the mundanities of law and mathematics. An exclusively scientific training often leaves something to be desired in the way of mellowness and ripeness, if I may so express it, and the professional man or woman of to-day suffers serious handicaps unless his or her mind is well cultured, well garnished, and sensitive to the impression of what the Greeks called "the beautiful." Do not disperse your energies too widely, but at all hazards avoid narrowness. Most of you, presumably, look forward to general practice rather than to the cloistered specialization of the laboratory. Therefore, read widely of the best. Your medical textbooks contain the rather rudimentary knowledge indispensable for the satisfaction of examiners, but they are markedly deficient in the attractive graces, the uplift, the freshness, and the inspiration that you will find in the best poets, essayists, and novelists. It is not enough for the woman doctor to be distinguished in the street by her spectacles, by her shoes, or by the attractive ease in which she carries her instruments. Apart from her professional skill, she should be known by her intellect, by her judgement and by her common sense. Mental gifts are not sufficient, though it goes a considerable way of approaching professional success, and here it may be interposed the warning of Thomas Young. In his discussion of the relation of talent to ability and success there is the following dictum: "It is never inadequate the possession of superior talents alone; your be to ensure the confidence of the public, it must be not mistaken opinion, although it has been asserted by persons of no ordinary observation, that a man of great abilities is morally incapable of being a good physician." The explanation of the failure of ability alone is gently but more clearly explained by that great humanist Osler: "A physician may possess the science of Harvey and the art of Sydenham and yet there may be lacking in him those

education is still enshrouded in that briefest, most searching, and most comprehensive of all the aphorisms, "And thyself."

Passing from these general observations, I wish specially to congratulate you on the golden moment at which you begin your study of medicine. Though in one sense the young people of each succeeding generation are necessarily the heirs of all the ages, you are exceptionally fortunate to be then inheritors now. The only time, perhaps, when the prospects of those entering the profession in the spirit of scientific adventure or with a real enthusiasm for the welfare of their fellows were in any degree comparable with the present was in the early days of Greek culture, when that "divine old man," as he has been well called, the Father of Medicine, Hippocrates of Cos, first disentangled medicine from priestcraft. He first started the medical profession on its separate individual course, with a set of ethical commandments which, after nearly twenty-four centuries, still find as general acceptance as though they had been dictated in thunder and graven in stone. Medicine was then launched under the finest auspices and with the brightest hopes, and mankind never suffered a more grievous calamity than when the new science drifted into the shoals and quicksands from which it was only effectually rescued in recent times. Medicine, returning once more to Nature, rejecting all methods save that of observation, and all interpretation save that of strict causation by natural causes, has now gloriously renewed itself. Sure of its direction, it looks forward with great confidence to an ultimate control—if the word be not too strong—of disease, though not perhaps of natural death, and to an ultimate penetration to the very springs of life and the fount of being.

#### THE CONFIDENCE REPOSED IN THE PROFESSION

The medical profession, moreover, possesses, to a degree hitherto unknown, the general confidence of mankind. Men and women in all ages have run with anxious fears to the doctor in the hour of trouble, because no Stoic doctrine has ever persuaded shrinking flesh and blood to be reconciled to pain. Yet the keenest wits were never deceived by the professional cloak of mystery with which the doctor shrouded himself from too close a scrutiny and which he dared not put off in the public eye. The reason of so marked a change from a credulous incredulity to implicit confidence is to be found in two words—scientific method.

The Temple of Healing has been rebuilt from its foundations. The fountains of pure water have been cleared from the rubbish of centuries, and through its porticoes and halls blows the fresh clean air of free inquiry. Scientists have, indeed, been driven to invent a jargon of their own, because they need such a bewildering multitude of new words with exact and precise meaning, but there is still only one set of scientific principles, and even in the labyrinthine complexity of modern medicine there is a grand and austere simplicity. The world may be able to afford the luxury of several religions, it can only afford one Science of Medicine, and the unscientific systems which survive in the Far East in their old association with religious ritual belong to another and a different category. Even if we have not cast off all our inherited errors, at least we are now emancipated from the delusory theories on which the world was doctored for centuries. Observation and experiment are the only high road to an exact science, and it was early discovered that "experiment is slippery and judgement hard."

This is the age of scientific adventure, and I should like to remind you of what Sir Isaac Newton said of his own supreme discovery of the law of gravitation. He compared himself to a child playing on the seashore who had had the good fortune to find a prettier and more polished pebble than his fellows, but he added that he had not so much as launched his boat on the broad ocean which called for more venturesome to the discovery of continents still unknown. Such pebbles are being found in increasing numbers to-day because there are many searchers, and as science knows better than before where to look. A few prophecies ago we were celebrating the centenary of Lister. Before long the minor centenaries will crowd upon

us so fast that the world will be too busy to give them due observance. Every department of medical science seems to multiply unceasingly, and still there is no hint of end or limit to the new knowledge that may be found in respect of each. It is a perpetual search for causation. There is surely a prophetic vision or the triumphs of scientific medicine in the majestic line of the Roman poet:

*Felix qui potuit rerum cognoscere causas*

"Happy is he," said Virgil, "who can pierce to the causes of things, and so to temple under foot all fear, and into inevitable and the dim of greedy Acheron." The river of death still flows dark and turbid, but the noise of its waters grows less and the Fates have been compelled to abate many of the worst rigours of their dread sentences. In the search for causes Science has found her cures.

We are not all discoverers of course, whether of pebbles or of continents. In medicine as in other professions, the majority belong to the rank and file who do the everyday mending and patching of common humanity. A vast routine of ailment slight and serious runs with the sun its appointed course. Men and women obstinately continue to transgress the laws of health and in spite of daily articles on diet we may count with certainty on the regular commission of those dietetic irregularities which produce then mixed crop of disorders in the human frame. So long as the pleasant vices are apt to be the most numerous, our professional occupation will remain. Indeed, the more people read about health and diet the more they will go-sip about their pains and symptoms, and the more assiduous clients they become. You need have no apprehensions, therefore, of any lack of patients.

#### THE MEDICAL PROFESSION AND THE STATE

Even to-day you may hear the pessimists lament that there are not enough good jobs to go round. But do not allow such dismal forebodings to depress your natural enthusiasm. Whatever mediocrity may say, there is always room for conspicuous merit at the top, even if at times the scramble is intense and the waiting tedious. In no profession I believe, is the percentage so high as in the medical of those who make a fair success out of their practice. Some forty years ago Sir James Paget used to point to follow up the careers of a thousand medical students who passed through the medical school at Bristol. He found that of those who actually reached practice 66 per cent made a very fair success of it, meaning by that that they were able to maintain themselves as professional men in adequate style. I feel sure that if a similar investigation were undertaken to-day the percentage would work out even higher, and that it could be shown to have risen in a specially marked degree as a direct result of the National Health Insurance Act, which has proved a good friend not only to those who participate in its benefits, but also to the general practitioner whose work has contributed so largely to its success. The State to-day not merely recognizes, but earnestly realizes its direct responsibility for the health of the people: if only because in ailing people means a discontented and an inefficient people and a constant drain without return upon the national expenditure. We suffer in this world for sins committed against the laws of health and decency, the resultant diseases are of human making, and not one is fairly chargeable to Providence. This may seem almost axiomatic to the younger generation, but it was a real discovery to a generation which has not yet wholly passed away. The average doctor of to-day therefore is no longer engaged in purely private practice; a considerable percentage are servants of the State in one form or another. This association of the profession with the State will increase and not diminish, and it opens out an ever widening horizon of honourable and profitable employment.

Consider too the same association of the State with the profession in connexion with the more scientific side of medicine. Research would fare very badly without the State's assistance, inadequate as it is, but those who are ambitious for large incomes had better not take up laboratory or research work, which always reminds me of the swarming activity of bees and ants, narrowly intent on the infinitely little. This work is nevertheless of infinite importance and demands a self-sacrificing devotion from which

few emerge to name and fame. The consolation of the majority must be that all scientific discovery, however humble, contributes to the imposing pyramid which the true master-builders raise. It is only when something spectacular is done, or when something fits with a click and completes the cross-word puzzle which carries the prize that the limelight is thrown on to the research worker. But the work goes on with unhesitating step, and I hope that in spite of what I have said some of you will be lured into the enchanted—if inadequately remunerated—regions which give entrance to the peritralia of Science, remote enough from the everyday world, yet subtly connected, even with what seems most distant and non-related by an endless chain of direct causation.

But no doubt the majority of you will join not the noble army of martyrs to the cause of pure science, but what I may call the goodly fellowship of practising doctors and surgeons. You will find even here scope for the exercise of all the altruism in your composition. The old idea is not yet wholly dispelled that the doctor, unlike the lawyer, ought to be so pleased with his success, if a cure results, that he might reasonably forgo his fee. Perhaps you may feel like that once or maybe twice in your early novitiate, when a doubtful and difficult diagnosis to your great relief, turns out to be correct, but with growing confidence and success you will find new beauties in the text that the labourer is worthy of his hire. I do not believe in the importation of trade union methods into professional life. Whatever is good in trade unionism, we doctors already possess, and the British Medical Association of the working of which I have had invaluable experience during the past year, exists for the protection of the just interests of the doctor. Let me urge you therefore to join the Association as soon as you are qualified for admission. It is the strongest physical bond of union in the profession. Its central administration is kept in constant touch with all its Branches, and through the Branches with each individual member. It is co-extensive with the British Empire in its organization, and while it promotes the sense of fellowship and comradeship, it also possesses a cutting edge which is kept bright, sharp, and aseptic for the occasions when the profession has to defend its rights against encroachment.

#### THE SPIRIT OF FELLOWSHIP

But there is also another and more spiritual bond between doctors, and that is the common spirit which pervades their ranks. I do not wish to pitch the note too high. It would be fantastic to pretend that doctors are immune from the ordinary failings of humanity. But I do think that their calling brings into continual play their finer feelings and instincts, and that doctors are especially sensitive to the call of duty. The public may poke its fun at the Faculty as a Faculty, especially when it is consciously playing its *beau rôle* on the raised dais, but they know that the doctor's fine coat will be off in a trice when there is emergency work to be done and seconds are precious.

The medical art can do much and will do more, and you may be sure that as you grow grey in its service you will see it held in ever increasing honour. I would only counsel you as the specialist extends his sphere on every side, not to be tempted to neglect the close, careful, and anxious method of clinical study which remains no less essential than before. The forward march of science will not abate you from hard work, and the clinical wards of a great hospital and the teaching of an expert clinician are still the indispensable foundation of the doctor's training, without which all the book learning in the world is of small practical use. The apprenticeship may seem long and the course toilsome and arduous, but it has been well surveyed, and the short cuts which look promising are apt to prove fallacious.

I began by quoting to you Wordsworth's famous phrase, "High is our calling, Friend." I will end with the three closing lines from the same sonnet, exhorting you in all earnestness:

Still to be strenuous for the bright reward  
And in the soul admit or no decay  
Great is the glory—for the strife is hard.



## MIDDLESEX HOSPITAL

ADDRESSES BY MR VICTOR BONNEY AND  
LORD JUSTICE SARGANT

THE ninety-third winter session of the Middlesex Hospital Medical School was opened on October 4th with a meeting at the Queen's Hall, when the chair was taken by Mr S G ASHER, chairman of the school council, an address was given by Mr Victor Bonney, and the prizes were distributed by Lord Justice Sargant.

Mr VICTOR BONNEY entitled his address "The paths to the stars." Life, he said, was a battle, and its weapons were a host of higher cerebral cells in the anterior part of the cranial cavity. The number of these cells in each individual probably varied little, their quality varied little also, idiots and geniuses apart, so that the result depended upon the initiative or driving power which put these weapons of the intellect into action. This power might be aspiration or, on a lower plane, ambition, or a just combination of the two. The larger portion of this cerebral army—its infantry, so to speak—must be trained to attain high technical ability, but this by itself rarely secured the highest results. An army consisting solely of infantry would be a very imperfect force. As in warfare other branches of the service were needed, so in the medical profession foresight, tact, judgement, and a faculty of sympathy must come into action. Mere professional excellence by itself would very rarely bring success. While professional knowledge must be the main object, other intellectual attainments must not be overlooked, and the main difficulty was to determine in what proportion the forces should be employed to ensure complete victory. One question to be settled was whether it was better to recruit, train, and put into active service all the intellectual units at once, and so adopt "shock tactics," or make successive drafts on the available raw material and wear the enemy down by cumulative pressure. Success was not merely a matter of getting to the front but of keeping there, though, to be sure, it was far more arduous to get there than to keep there. Of the material honours and distinctions in any profession, it was the first that needed striving for, the second was always more cheaply bought, and when it came to the fifth or sixth the professional collectors of such merely found it necessary to sit still under the flowing stream of favour. While the winning of the first position was the most important, a reserve of force must be left for the holding of this and for the advance to further positions, some mental potentialities also should be conserved for the days of retirement. Innumerable workers had built a marvellous temple of medicine, their example must be emulated, and if another lofty spire could be added by every student, let him at least add one sound stone to the structure by his individual effort. The greatest success of all was to leave one's profession better than one had found it.

Lord Justice SARGANT then presented the scholarships and prizes. He congratulated Middlesex on the great response that had been made to the appeal to the public for the half-million fund for rebuilding, and afterwards offered a few remarks on the position of medicine and surgery in general. He had had occasion to observe during the last few years what an immense amount of work and study was involved in the attainment of a medical degree, for his daughter had lately qualified for practice. It was not merely the great amount of practical work that had to be done, but also the sheer mental discipline to be undergone by those who wished to acquire a knowledge sufficient to enable them to give relief to the public at large. And what had often occurred to him, as it must to all thinking persons, was that after the qualified practitioner had gone through that elaborate and extensive course of study and practice he was met, when he actually entered his profession, by a whole host of persons who attempted to rival him. These were persons who tried to carry on what they called the healing process, whether bodily or mental, without any real and recognized test of their abilities, even in the particular subject-matter with which they professed to deal, and certainly with none of that general medical knowledge which seemed to be essen-

tial to anyone who aspired to exercise the art of healing upon his fellow creatures. Not merely did these persons run the risk of doing actual damage to those whom they affected to treat, but in almost all cases they lulled their patients into a false security, and prevented them from seeking qualified medical aid until, in many instances, the disease had made such progress that the resources of treatment were not adequate to deal with it. It seemed to him that there existed in this country a liberty, in this matter which almost amounted to licence, and which was considerably greater than that prevailing in most Continental countries. Whether there should be some legislative interference, and if so, to what extent, was a very difficult question. In the meantime, at any rate, the qualified medical profession had the protection of its own etiquette, the profession stood together as one body to resist encroachments of that sort. Hard cases had been heard of from time to time, cases boosted by the newspapers regarding someone who had fallen under the ban of the General Medical Council and had not deserved his fate. His own experience was that a great many cases which sounded very adequate on paper, or when one side only had been heard, and the facts had been loosely stated and put forward in an exaggerated way, crumbled to pieces when they came to be adequately examined and tested. In any event he felt that, even if hard cases occurred, there was truth in the maxim that hard cases made bad law, and that it was the general interest of the community which had to be considered, and not the particular hard case. Coming as he did from a profession in which a rigid etiquette was insisted upon, he felt the greatest sympathy with the medical profession when they on their side insisted on an equally rigid and effective etiquette.

Finally, Lord Justice Sargant ventured a remark on the extreme danger to which the medical profession was exposed at the present time with regard to the certification of lunatics. During the last few years there had been a number of cases in which medical men, having acted quite reasonably—having done that which ninety-nine out of a hundred reasonable men would have done in the circumstances—found themselves compelled into the courts and put to the most extraordinary expense and harassment of mind. It seemed to him that as matters stood at present the risks that these men ran were greater than they ought to be called upon to run, and he would rejoice if something were done to relieve them from a responsibility which they felt bound to exercise in individual cases for the protection of the public. No doubt, so far as the financial aspect was concerned, their defence was in many cases undertaken by the medical defence societies, but it seemed to him that those societies really ought not to be called upon to this extent, and that the necessary protection might well be given by law, at least to a greater extent than it was accorded at the present time.

The Dean of the school (Mr Eric Perce Gould) reported that very remarkable success had fallen to Middlesex in this year in the higher examinations. In the last examination for the F.R.C.S. Eng. seven out of the nine Middlesex men who presented themselves were successful. He announced that the Brien Studentship had already been awarded, and the first student had been working in the Ferens Institute for some months, and that a scheme of collaboration had been entered into between the Institute of Biochemistry and the scientific laboratories of Boots Pure Drug Company, Limited.

## WESTMINSTER HOSPITAL

## ADDRESS BY DR AINLEY WALKER

THE ninety-fourth year of the Westminster Hospital Medical School was inaugurated on October 3rd, when Dr E W AINLEY WALKER, dean of the School of Medicine in the University of Oxford, delivered an address on the scientific side of medical training.

Dr Ainley Walker said that followers of medicine had advantages over students in other professions, medical knowledge was always advancing, and work in this field must ever be full of interest. Medicine was both a science

and in art, though in this country it was to the art that the greater attention had been paid, the application of science to it had not, until comparatively recently, received the attention it deserved. But unless the student obtained a thorough knowledge of the principles or the fundamental sciences and some working acquaintance with the ascertained facts in those departments of learning, he would find himself, after ten or twenty years of practice, so completely out of touch as to be unable to apply properly new facts and new methods in the prevention, diagnosis, and treatment of disease. The speaker looked forward to a time when every student of medicine would take a degree in pure science as part of his medical studies, and in the meantime he urged that the training available in the fundamental sciences should not be unduly curtailed or hurried, all the time that could possibly be afforded should be spent on the purely scientific side.

The curriculum of the medical student had lately undergone much modification. With the growth of knowledge and the increase of specialism the subjects with which he must gain some acquaintance had inevitably multiplied and there was some danger that the balance might be upset and the student find himself less able to acquire the sound knowledge of general medicine and surgery necessary to the education of the doctor. A smattering of information about an infinitude of little special subjects must never be mistaken for the education which would fit a man to become a competent physician. It was on the scientific side of medical training that the greatest blots remained, and Dr Anley Walker referred especially to the comparative neglect of pathology and the still graver ignoring of experimental pharmacology. With regard to the former, lately there had been some awakening, though pathology did not yet take that important place in the curriculum of the ordinary medical student to which it was entitled. Experimental pharmacology was still almost unheeded, although the subject was one which to-day offered almost limitless possibilities, a wide field, for instance, had been opened by the increase in knowledge of organic and synthetic chemistry. This was a field which, because of its neglect by the medical faculty, had rapidly become commercialized in certain countries, with results which were highly detrimental to real progress in therapeutics and the treatment of disease. It was hardly too much to say that a new kind of quackery had sprung up, a quackery which was all the more dangerous because it was the doctor rather than the public who was the intended victim. The doctor's attention was continually drawn to much vaunted but ill tried remedies, and puffs and specious advertisements with regard to these invaded his breakfast table.

Dr Anley Walker urged the student whatever might be his subsequent line in medicine, to cultivate for himself as a hobby some special study in which he could take particular interest. He also referred to the pressing need for the fuller development of post-graduate study and the research. The man who had taken a degree in medicine at the beginning of the last century found that post-graduate facilities were generally very few. Many medical practitioners would sooner or later gratefully avail themselves of the opportunity of returning from time to time for the refreshment of their knowledge, the adjustment of their outlook, and the awakening of that renewed activity of mind which resulted from contact with the work and spirit of a teaching hospital. Moreover, post-graduate teaching was in a high degree stimulating and encouraging also to the teacher. Its establishment would lead to redoubled activity in the field of clinical research, a department of medicine in which at the present time somewhat less progress seemed to be made in this country than in others. "Whether in the days to come" (said Dr Anley Walker in conclusion) "you devote yourselves to the practical pursuit of clinical medicine or to the study of one or other of its ancillary sciences, let your aim be high. The lower rungs of the ladder may be crowded, but there is always room at the top. Strive to attain, but in striving still remember that it is the effort, not the attainment, that has lasting value."

After Dr ANOLPHE ABRAHAM had proposed and Mr ARTHUR FRANK had seconded a vote of thanks to the speaker the DEAN (Dr A. S. Woodward) gave some account of the work of the school, laying special stress upon the recent acquisition of a playing field. He mentioned that just under forty students had completed their training and had left the hospital during the last year, the number of students now on the roll was practically the same as a year ago. He also described the post-graduate facilities which had been arranged. Among the prize-winners whose names were announced was Mr P. A. M. SOUTHER, winner of one of the certificates and prizes offered by the British Medical Association for an essay by a fifth year student.

## ROYAL DENTAL HOSPITAL

### ADDRESS BY SIR WALTER FLETCHER

THE annual presentation of scholarships and prizes at the Royal Dental Hospital or London (School of Dental Surgery) on October 4th was made to coincide with the opening of the John Hampton Hale research laboratory, built from funds allocated by the Dental Board and equipped and endowed by Mrs Hale in memory of her husband, who was formerly chairman of the hospital. Both duties were performed by Sir WALTER FLETCHER, F.R.S., who delivered an inaugural address.

Sir Walter Fletcher said that the new laboratory was not only an important addition to the school, but one of the first outward and visible expressions of a striking movement within the dental profession itself. By means of their registration and retention fees the members of the dental profession were contributing to a fund which, on a narrow view, would seem to be damaging to their own interests, for it was used for education, which brought into the field formidable rivals, and for research, which was directed to ensuring that ultimately dental surgeons would have no work to do. In framing its research policy the Dental Board had recognized that, however precise and limited might be the particular professional and utilitarian aims to which dental research was directed, the scientific work by which alone those aims could be properly realized must have complete liberty of range. In the important field of mechanical dentistry the Board had entered into co-operation with the Department of Scientific and Industrial Research, and he believed some really valuable and practical gains had already resulted. He could speak with more direct knowledge of the similar alliance between the Dental Board and the Medical Research Council. There were very few problems in preventive medicine of more importance to the race than those concerning the proper development and preservation of the teeth. Every new gain in knowledge only emphasized the scientific and medical interest of that set of problems. It was the hope of the Medical Research Council that the new laboratory would play a distinguished part in this co-operative scheme of investigation. The value and urgency of this kind of research from the point of view of the citizen and of the nation could not be doubted. Dental imperfections and disease in this country brought, directly and indirectly, a quite colossal volume of discomfort, inefficiency, pain and ugliness while indirectly disorders of the teeth contributed in many ways besides their immediate and direct effects to specific diseases of the body. It was a commonplace now to say that the improvement of the teeth of the nation was one of the most pressing and outstanding problems of preventive medicine. But while everyone recognized the urgency of the research work, by which alone the present ignorance could be removed, it was useless—perhaps worse than useless—to call for quick and easy results from the investigations. Money was necessary to give freedom of opportunity to scientific workers and money invested in research rarely failed to gain a satisfactory rate of interest in the long run—in many cases, indeed, a rate of interest fabulously high. But new knowledge could not be bought like a commercial product. It must be the product of the right man in the right place, and of his unfettered labour. Three hundred years ago

Bishop Hall of Norwich had truly said "There was never good thing easily come by. God sells knowledge for sweat." The true limit to a research programme was fixed, not by the money at its disposal, but by the number of men and women who were fit and available for the enterprise, and those would always be scarce. He pleaded for patience in awaiting results, as well as for orthodoxy of spirit. Nature's clues hardly ever were found in the straight line. The key to some great advance in dental knowledge might be lying implicit in some work that seemed quite alien in kind.

Dental problems had lately been brought, as a consequence of scientific work, into a new atmosphere of hopefulness and interest. The study of attacks made on teeth by particular agents of disease had proved relatively barren. What was needed was not so much better knowledge of the diseases of the teeth as better knowledge of the health of the teeth and the conditions of their natural resistance. Recent work had increasingly brought dental problems into line with those of the general physiology of the body and the science of nutrition. Clear experimental evidence had been forthcoming that the normal architecture of the teeth, like that of the bones, depended to a surprising degree on the right supply and balance of diet at the time of growth. It seemed also that, whether from the intricacy of their structure or for other reasons, the teeth in their formation were even more sensitive to nutritional conditions than other parts of the body. It was by no means unlikely that dental practitioners in the future would perform a wider service to their colleagues in other medical fields in connexion with that new and sensitive index to normality—that is to say, to health—which the teeth in their formation and repair seemed destined to provide. He thought it no rash speculation that the whole medicine of the future lay in the lap of nutritional science.

Mr Norman Bennett, who presided, said that Sir Walter Fletcher had uttered a much needed word on behalf of dental research. He had given full and deserved credit to the Dental Board for supplementing the resources of the Medical Research Council in aiding dental research, but the fact was that dental research had been instituted some few years before the Dental Board came into existence. The Medical Research Council was responsible for that movement, and the principal stimulus in promoting such research came from Sir Walter Fletcher himself.

## ST BARTHOLOMEW'S HOSPITAL

### ANNUAL DINNER

THE annual old students' dinner of St Bartholomew's Hospital was held on October 3rd, in the Great Hall of the hospital. The chairman was Dr H Morley Fletcher, senior physician, and a welcome departure in the proceedings was the limitation of set speeches in order that full opportunity might be afforded for social intercourse.

After the health of the King had been honoured, the toast of "Prosperity to the Medical College of St Bartholomew's Hospital" was proposed by the chairman, who faithfully followed the instructions he said he had received to be brief and bright. Beginning with a reference to the origin of the medical college, which was veiled in antiquity, he mentioned that in 1667 an order had been issued for the formation of a library in the hospital for the use of governors and scholars from the universities. Minutes have been done, in 1840, the shortening of the medical year, suggested by those who wished to liberate the staff in the inefficient to enable them to give relief dinners on record age. And what had often occurred to conversation after all thinking persons, was that after the notice in the *Times* over had gone through that elaborate, under the name of study and practice he was met, wise grandson, entered his profession, by a whole host of wished member attempted to rival him. These were persons who at that time carried on what they called the healing process, with bodily or mental, without any real and recognition in Church, their abilities, even in the particular subject-matter, had, it which they professed to deal, and certainly with Coming that general medical knowledge which seemed to be

to more recent history the chairman referred to the late stride being made in establishing the new surgical block, this would consist of five surgical wards, each with a fully equipped theatre, and would accommodate 250 patients. Every effort was being made to ensure that this addition to an historical hospital should be the finest of its kind in existence. Dr Morley Fletcher referred appreciatively to the work of Miss Mackintosh, who had now retired from being matron of the hospital, her successor, Miss Day, returned to the institution where she had received her training in nursing, and was assured of a very warm welcome. Among the losses sustained by the hospital during the previous twelve months were those caused by the deaths of Dr Clave Shaw, who had been connected with it from 1871 to 1908, Dr T S P Strangeways, who had been junior curator of the museum before his departure to Cambridge, Dr L Phillips, Mr Alban Dorn, and Sir Arthur Shipley. Sir Frederick Andrewes, whose connexion with the hospital had lasted thirty-one years, had retired from the chair of pathology, and regret was expressed also at the departure of Sir Bernard Spilbury. Welcome was extended to three new professors—namely, Mr W le Gros Clark, professor of anatomy, Dr Hamilton Hartridge, F.R.S., professor of physiology, and Dr C H Kell, who had returned to London from Cardiff to occupy the chair of pathology. Sir Berkeley Moynihan had received the distinction of being elected to full studentship of the hospital, a mark of appreciation which had only been awarded in two other instances. Congratulations were offered to Dr Burt White, who had gained the gold medal for obstetrics in the M.D. examination of the University of London. Gratifying progress was being made in the medical school, but its expenses were increasing, and it was hoped that money might be received from outside the hospital for the endowment of the professorial chairs. The chairman added, in conclusion, that, in proposing the toast, he would emphasize the point that "prosperity" denoted the continued production of a very high type of medical practitioner, and the maintenance of the strong spirit of *esprit de corps* for which St Bartholomew's had always been distinguished.

In a short subsequent speech the chairman proposed the health of the distinguished guests, who included Sir John Rose Bradford, the Regius Professors of Medicine from Oxford and Cambridge (both old students of St Bartholomew's), Surgeon Vice-Admiral Gaskell, Medical Director General of the Royal Navy, Air Vice Marshal Munro, Director of Medical Services, Royal Air Force, Lord Stanmore, treasurer of the hospital, and Sir William Lawrence. The health of the chairman was proposed by Sir Charles Gordon-Watson, and was received with much honours. An adjournment was then made to the library, where the proceedings became even less formal and more cordial.

## ST MARY'S HOSPITAL

### ANNUAL DINNER

THE annual dinner of St Mary's Hospital Medical School was held at the Connaught Rooms, London, on Saturday, October 1st, the chair being taken by Dr Wilfred Harris. The guests included Surgeon Vice-Admiral Gaskell, Air Vice Marshal Munro, and the Mayor of Paddington. Proposed the toast of "St Mary's Hospital and Medical School," the chairman contributed some reminiscences of his early days as a student and resident before the Clarence Building was erected. He sketched the progress of the hospital briefly and remarked that the handicap of inadequacy of beds for patients seemed now at last to be in a fair way to be overcome. The recent acquisition of the "rehab site" was, he believed, an outstanding event in the history of St Mary's, it might soon become possible to provide small wards for paying patients, which would not only supply an urgent need but would also be of great value to the clinical and teaching staff. Mr A R Pridmore, chairman of the hospital board, and Dr C M Wilkins, dean of the medical school, responded to this toast. Pridmore, after a tribute to Sir Almoth Wright, president

consider the hospital extension scheme, and expressed the hope that many beds would become available before the end of October. The date for the final completion of the work was April 30th, 1928. The scheme included the provision of two operating theatres, which, thanks to the assistance rendered by Mr Maynard Smith and Professor Pannett, had risen to rank as the best equipped and most convenient in the whole country. Some sixty beds would be added to the hospital complement, bringing the total number of beds to about 350, St Mary's would thus be placed in a far better position as regards treatment than it had ever reached before. Moreover, the "island site" which would pass into the possession of the hospital in November, subject to certain limitations under the Rent Restrictions Act, would enable a great step forward to be taken, particularly with regard to the provision of beds for paying patients. It was estimated that the extensions now approaching completion would cost £50,000, of this some £38,000 had already been raised by the efforts of the hospital secretary without a public appeal, and it was hoped that the balance would be forthcoming before the official ceremony next April. Dr Wilson, confining himself more particularly to the medical school, spoke of its early days, and mentioned that the hospital was attracting an increasing number of students from Oxford and Cambridge. He enumerated the special advantages offered by St Mary's to those who studied there, and mentioned that a high proportion of recent academic successes had been won by members of the Rugby football club, showing that the increasing athletic prowess of the hospital was not interfering with medical study. The health of the chairman was proposed in a witty speech by Mr D C L Fitzwilliams, and Dr Wilfred Harris replied.

## THE BOARD OF CONTROL

### RESEARCH WORK IN MENTAL HOSPITALS

THE sociological and medico-legal aspects of mental disorder have been brought in recent years into such prominence that the scientific aspect has tended to fall into the background, with the result that scarcely sufficient notice has been paid to the steadily increasing amount of research carried on in mental hospitals throughout the country.

For some years now it has been the excellent practice of the Board of Control to publish as part of its annual report an account of this work, consisting of a digest of the annual reports of research departments of every mental hospital in England and Wales. It is embodied in Part II of the annual report of the Board, the publication of which has followed hard on the heels of Part I, of which some account was given last week (p. 606).

The digests occupy forty-four pages, and contain several substantial pieces of research, some of which have already been turned to good account in the treatment of mental disease. Many of these investigations cannot as yet be expected to yield practical results but, by adding to the general fund of knowledge, may at a later date enable positive scientific conceptions to be formulated. So manifold is the nature of mental disorder and so obscure is its etiology that, no matter along what lines research may be prosecuted, conclusions are difficult to attain.

It is natural that the majority of the work summarized should be concerned with general paralysis, as in this disease we have a known cause and a definite pathology but even here we are confronted with innumerable problems. The existence of "neurotropic" strains of the spirochaete declared by some workers to explain the vulnerability of the nervous tissues to this infection is not proved. The histopathological findings still await their definite clinical correlates. The variance of the mental states in general paralysis requires explanation, are they the inevitable outcome of the disease process, or are they the result of the accidental exposure of personal psychological peculiarities? There is also to be sought an explanation of

the differentiation of types, the classic delusional type, the depressed, the "pure" dementing type, and those showing blends of organic and schizophrenic psychoses. Lastly, and of more immediate interest, there are the problems of treatment, of the power of penetration into the nerve cells of chemical compounds, of their mode of action, whether treponemacidal or as adjuvants to tissue resistance, and of the rationale of remissions and the correspondence of serological changes with clinical improvement. Indeed, the problems are endless, and it is with interest that we turn to the results of investigation of this disease. The majority of these investigations are concerned with treatment.

From the West Riding Mental Hospital at Wakefield, of which Professor Shaw Bolton is the medical director, comes a note by Dr J F Smyth on the histopathology of general paralysis. Forty cases were examined, and each was followed clinically and verified *post mortem*. A survey of results shows that spirochaetes were most easily found in fairly rapid subacute cases with a clinical history of grandiose delusions and marked physical signs. In cases where spirochaetes were numerous plasma cell periarteritis was moderate, but where spirochaetes were scanty or absent altogether the periarteritis was gross, thus suggesting that it is a defence reaction to the invasion of spirochaetes. Vascular proliferation, particularly of the large and medium vessels, seemed to be part of a general reaction and not dependent on the presence of spirochaetes. The presence of spirochaetes in the motor cortex did not appear to bear any relation to the incidence of seizures. The important feature in these cases was the vascular process.

As regards the various forms of treatment, malarial therapy has received the most attention. Dr Golla, director of the pathological laboratory at the Maudsley Hospital, reports that it is followed by a greater number of remissions and a smaller death rate than occur in untreated cases. Complete remissions occur in about one-third of the cases, but in a much greater proportion in only cases with a history of the disease for less than eighteen months are treated.

From the County Mental Hospital, Whittingham, come observations made during the treatment of general paralysis by the "Whittingham strain" of artificially induced malaria. This strain has been transmitted by direct subcutaneous inoculation through twenty-six cultural generations comprising over 180 inoculations. The conclusion previously reached was in no way impaired—namely, that the attacks of malaria were not becoming more virulent, from the study of 10,000 blood films it appeared that the morphology of the parasite remained unaltered.

A method of treatment somewhat similar to that by malaria is described by Dr J H MacKenzie of Birmingham City Mental Hospital—the material used being T A B vaccine (Burroughs Wellcome and Co.) administered intravenously in daily doses for ten days with intervals between for the administration of A B in four weekly doses of 0.65 gram, three ten-day courses of pyrexial treatment being aimed at in each case. Severe rigors were constantly obtained and temperatures up to 106° were recorded. Vomiting and diarrhoea were prominent features during the early stages, and herpes occurred in a large percentage of cases. No permanent ill effects were noted, and in many cases considerable general physical improvement resulted without, however any constant alteration in neurological signs or serological findings in the blood or cerebro-spinal fluid.

From the Cardiff City Mental Hospital come the reports of numerous investigations. Dr Goodall and Dr Scholberg have been studying the distribution of the nitrogenous compounds in the plasma and cerebro-spinal fluid in mental disease, and Dr Stenford has been investigating the nitrogen constituents of the blood plasma, the cerebro-spinal fluid and the urine. The nitrogenous constituents of the cerebro-spinal fluid have never been systematically studied, and there is every likelihood that this work may not only bring to light new diagnostic tests for disease but that it will help to elucidate the functions of that fluid. Investigations reported from other mental hospitals

include studies of cases of pellagra, a disease now more frequently identified than formerly, of Huntington's chorea, and of epidemic encephalitis and its mental sequelae.

Altogether there is much promise in the research work which the Board of Control has here collected. We need not refer to it in detail. Necessarily much time has to be spent in routine laboratory investigations, and especially into the nature of asylum dysentery and of allied infections, where these are prevalent. But the amount of investigation into mental disease is gradually growing. The Board constantly urges that every mental hospital should have its own well equipped laboratory and that every encouragement should be given to medical officers to pursue research into the nature of mental disease. It is a matter for congratulation that the central authority, which has shown itself so constantly aware of the necessity for sociological and legal improvements, should be zealous also in the encouragement of the research workers throughout the mental hospitals in the country.

## MEDICAL DEFENCE UNION

### Annual Report

THE annual report of the Medical Defence Union, presented at the annual meeting held at Harrogate on September 24th, an account of which was published in our last issue (p. 608), states that the number of new members elected in 1926 was 1,260, a figure exceeded on only two previous occasions. The total membership now stands at 14,418, and includes 1,138 women.

The report refers to a case in which the Union was called upon to defend two of its members against whom damages were claimed by the same plaintiff for wrongful certification under the Lunacy Act. A successful application was made to have the action stayed under Section 330 of the Act on the plea that there was no reasonable ground for alleging want of good faith or reasonable care. The plaintiff, however, went to the Court of Appeal, which held that the affidavits of his expert witnesses, alleging a lack of reasonable care and in one instance bad faith, could not be ignored, and therefore the order for the stay of proceedings was set aside. The case went to trial, but was stopped before the defendants' case was concluded, and a verdict returned for the defendants. The report points out that the decision of the Court of Appeal that the case must go to trial was based solely on the affidavits made by three medical practitioners, one of whom did not see the plaintiff until nine months after the certification in respect of which negligence was alleged and the other two not until two years later. "The views expressed in these affidavits, completely negatived subsequently by the verdict, prevented a stay of proceedings at an early stage, deprived the defendants of the protection which the law is intended to give them, and in addition cost the Union nearly £5,000." The solicitors to the Union (Messrs. Hempsen) add that "These deponents made no inquiries to ascertain the plaintiff's medical history from the numerous medical men under whose care he had been, but expressed their opinion as to his mental state some years previously on the word of the patient, uncorroborated by any skilled or unbiased person."

One minor matter mentioned in the report is an interesting point touching midwives' cases. A practitioner had been asked to attend a woman in confinement, but declined to do so, and at her request gave the name of the nearest midwife. A week after the confinement the midwife sent for the practitioner under the rules of the Central Midwives Board, and he paid three visits. The local supervising authority then refused to pay the practitioner's fee on the ground that it was not empowered to pay the fee when a practitioner had been called to a case by a midwife whom he had himself recommended. The matter was referred to the Ministry of Health for decision, and eventually the fee was paid. The warning is to the need for advising patients with injury to a bone or joint to undergo an x-ray examination. It is repeated, it is stated that the council has to deal at every meeting with claims against members who have neglected to take such a precaution.

The report adds that many cases of unqualified practice and false assumptions of medical titles have been investigated

during the year, but in no case has the evidence available made it possible for the council to authorize proceedings against the offenders. This is due solely to the present inadequacy of the law. The cases handed over to the solicitors during the year numbered 91, of which 6 were libel or slander actions, prosecuted or defended, 32 were defences against allegations of malpractice, and the remainder chiefly arbitrations between members of the profession. The balance sheet of the Union shows assets amounting to £31,000, and apart from its own funds the Union has effected an underwriting policy with a first class insurance company to cover claims over a certain limit.

## England and Wales.

### MEMORIAL TO PROFESSOR ADRIAN STOKES

THE personal friends and colleagues of the late Professor Adrian Stokes (of whom a full memoir appeared in our last issue) have decided to establish a permanent memorial to him. The precise character of the memorial will depend upon the funds which become available, but the object will be to endow medical research in some form. His friends are convinced that the establishment of a Stokes Memorial Fellowship or Studentship is the only type of memorial which he himself would have approved. The funds will be controlled by Guy's Hospital Medical School, and subscriptions should be sent to the Dean, Guy's Hospital Medical School, London, S E 1.

### HOSPITAL EXTENSIONS IN STAFFORDSHIRE

H R H Prince Henry, on October 1st, opened extensions of the North Staffordshire Royal Infirmary and laid the foundation stone of the new Haywood and Tunstall War Memorial Hospital. The new buildings of the infirmary have cost about £180,000, of which £130,000 has already been raised. At the opening ceremony Lord Lichfield stated that the infirmary, which was founded in 1766, was the first hospital established in the Midlands. A new ward block has now been erected and provision is being made for the construction of additional wards on the first and second floors, at a moderate cost, should occasion arise. The windows throughout this building reach to the ceiling and open to their full extent. In unfavourable weather fresh air can be drawn into the wards and removed by means of a fan in a tower in the roof. Two electric lifts and a handsome staircase connect the various floors. The nurses' home has been enlarged to accommodate an additional sixty-five nurses, and a room is provided for instruction in the preparation of meals for patients. The staff department has been reorganized and better arrangements have been made for the protection of operators. Other additions include a new laundry and boiler house, work shops, kitchen, and dining-room, and a new mortuary. Prince Henry referred to the fact that the foundation stone of the existing infirmary buildings was laid sixty-one years ago by the then Prince of Wales, and commented on the great advance in medical knowledge since that time. The foundation stone of the present extension was laid by the King in June, 1925. It is hoped that the new Haywood and Tunstall War Memorial Hospital, which will cost about £35,000, and contain sixty-five beds, will be adequate for the needs of Burslem and Tunstall. For many years the accommodation at the existing Haywood Hospital has been too restricted for this populous area.

### THE PAPWORTH VILLAGE SETTLEMENT

Reporting on the work in 1926 of the Papworth Village Settlement near Cambridge, Dr P C Varrier-Jones the medical director, draws attention to the fact that eleven years' experience at this institution for tuberculous patients has shown that the children of infected patients do not suffer from segregation at such a colony, but actually receive benefit. No child has contracted tuberculosis at the settlement, and support is available for the contention that the family, rather than the tuberculous individual, is the unit to be treated in any scheme for dealing with this disease. Interesting details of the work carried on in the village and workshops are presented in the report, with numerous



illustrations. A sick fund started by ex-patients has been able to carry forward a substantial balance on the two years of its existence which is contrary to what might have been expected. A village hall is in process of construction and the Wesleyan Chapel is now nearly complete. A note on this Village Settlement appeared in the *JOURNAL* (April 9th, 1927, p. 656), and the important question of employment for the tuberculous, including a reference to the valuable work carried out at Papworth, was discussed at some length on July 3rd, 1926 (p. 20).

## Scotland.

### ROYAL INFIRMARY, EDINBURGH

At a meeting of the managers of the Royal Infirmary, Edinburgh, on September 26th, Dr R. A. Fleming, who had relinquished the position of physician to the institution, was appointed consulting physician and the managers put on record their regret at the loss of his services, which had lasted some thirty years, first as pathologist, then as assistant physician (1900), and afterwards as physician (1915). At the same meeting various legacies and donations to the hospital were announced, including a sum of £1,000 from Mr Thomas H. Whitehead for the purpose of naming a "Robert Burns" bed in the hospital.

### HEALTH CONGRESS AT INVERNESS

The fifty-third annual congress of the Royal Sanitary Association of Scotland was held at Inverness on September 28th. Dr John R. Currie, M.D., professor of public health in the University of Glasgow, delivered a public lecture on the subject of pestilence. The theme, he said, had at the present day lost much of its terror in Britain, and when one traced the course of the plague down to the present day its disappearance from this country was found to be due, not to any definite measures taken for its control, but to the social and unconsciously hygienic uplift which marked the transition from the Middle Ages to modern times. Leprosy had retired before the same good influences. The movement which undermined the position of typhus and typhoid fevers long before there was any accurate knowledge of their cause was an effort aimed at the conditions which attended these diseases. On the other hand, small-pox, measles, and influenza had been practically unaffected by sanitary improvement, and modern medicine had stepped in with a type of protective agency of which vaccination for small-pox and immunization against diphtheria and scarlet fever were outstanding examples. As regarded this hygienic uplift, one of the recent developments was the growing cult of the open air. This had been greatly extended by field sports, athletics, and outdoor games, which were shared by increasing numbers in every walk of life. A moor or a golf course was a safer place when infection was prevalent than a theatre or picture-house. The cult of the open air had derived a great impetus from the institution of summer time, which kept people out of doors and added an hour to the possibility of life in the open air. The recent appeal by the Duke of York for the provision of public playing-fields was a further recognition of this cult, and these would be great improvers of physique and moral. With regard to the need for better houses, it should be remembered that infection did not go through partitions, and therefore for houses of equal floor space three rooms were better than two and four better than three. With regard to infections of more modern notoriety like poliomyelitis and encephalitis lethargica, the lecturer thought there was room for an uplift among members of public health committees, who by combination and arrangement or hospital service, could place specialized treatment within the reach of those who required it.

The congress was continued on Friday, September 30th, when Dr A. S. M. Macgregor, medical officer of health for Glasgow, president of the congress, delivered his presidential address. He said that there were daily indications

that resistance to the advance of hygiene was weakening in every direction. Somewhat haphazard legislation had been evident in the last few years, induced by the need for keeping pace with advances in scientific knowledge, and there was a growing acceptance by the public of the laws of elementary hygiene and an improvement in many of their habits and customs. Public health to-day wore quite a different aspect from that it had fifty years ago. There was general agreement that the time for the unification of the health services was ripe. The essential of successful administration of health services was now seen to lie in the direction of interdependence rather than of independence. Administration in the more recent aspects of child welfare, school medical inspection, housing, and health propaganda was having a slow but sure educative effect. A result of this was the remarkable increase in the expectation of life which had occurred within the past fifty years. Between 1870 and 1921 seventeen years had been added in Glasgow. He thought that in this a large share should be allotted to increasingly high standards in general medical practice. To those whose business it was to study the factors which influenced the public health, nothing had been more remarkable than the reduction in the average consumption of alcohol.

A discussion on the future of local authority hospital services was introduced by Dr J. Parlano Kinloch, medical officer of health for Aberdeen, who said that impending reform of the Poor Law medical services had given a fresh stimulus to these discussions, but there was also a general consensus of opinion that the existing hospital situation was in some respects unsatisfactory. He had come to the conclusion that the future development of the hospital services of local authorities was to be found within a regional hospital system consisting of four systems grouped round the four medical teaching schools of Scotland. It was hazardous, he thought, to forecast in any detail the ultimate regional hospital organization that would emerge, but the affiliation of all bodies at present providing health services would appear to be the logical outcome. It was not, however, desirable that this unification should be attained by any revolutionary process, but rather by the gradual growth of co-ordination.

A discussion on the administration of the Tuberculosis Order of 1925 from the public health point of view was opened by Mr Hugh Begg, county and district veterinary inspector of Lanarkshire. The present Order, he said, should be strictly enforced throughout the country, and the Ministry of Health should give increased encouragement and financial assistance to the establishment of additional tubercle-free herds. Later on the Tuberculosis Order should be amplified to give powers for the slaughtering of all old cows unless they were certified to have recently stood the tuberculin tests. Dr Gerald Leighton, medical officer to the Scottish Board of Health, referred to the improvement of milk supplied in recent times, and expressed regret that some local authorities were slow to realize their responsibilities in regard to the Tuberculosis Order.

### DUNFERMLINE AND WEST FIFE HOSPITAL

A scheme has been on foot for some time to extend the Dunfermline and West Fife Hospital at a cost of about £50,000, and the first step was taken on September 2nd when Lady Veronica Bruce and Mrs. Andrew Carnegie cut the first sod on the site of the wards to be erected. The hospital was opened in 1894 as the Dunfermline Cottage Hospital, and since then has been enlarged on two occasions. The extension at present proposed will include two wards to accommodate forty-two patients, a new operating theatre, an out-patient department with out-patient operating theatre, bacteriological and pathological laboratory, and an x-ray room and installation. After the ceremony of cutting the first sod, Dr Allan Tulke, senior medical officer of the hospital, presented to Lady Veronica Bruce and Mrs. Andrew Carnegie miniature gold spades inscribed to commemorate the occasion. The ceremony was also made an opportunity for holding a "Students' Day" in aid of the extension fund, at which over £100 was collected in Dunfermline.

## Correspondence.

## THE ETIOLOGY OF EPIDEMIC ENCEPHALITIS

SIR,—It was hardly to be expected that my brief review of the experimental work on epidemic encephalitis should pass without criticism. It is obviously a subject on which different opinions may be held, even by those who have had time to digest the enormous mass of literature dealing with it. I am, however, sorry that I seem to have been unfair to Professor McIntosh's experiments on the transmission of the disease to animals. I passed over this work in a sentence, including it, perhaps unjustly, with that of Locwy and Strauss and of Kling and his associates. I was influenced in this by earlier reviewers and by the similarity of the cage-to-cage infection in his monkeys with the epizootics associated with the *Encephalitozoon cuniculi* which had occurred in other laboratories. I had not seen his reply to Flexner's review.

There can be little doubt that he infected two monkeys out of four with an encephalitic virus. From the first infected monkey he also inoculated three rabbits, of which one died and showed histological evidence of encephalitis, another became ill but recovered, and the third remained well. I have been unable to find any paper of his dealing with further experiments on rabbits, and therefore do not understand his reference to 70 per cent positive results on these animals. His remarks on the dissimilarity of the lesions in transmitted encephalitis with those associated with the *Encephalitozoon cuniculi* are counterbalanced by Dr Woodcock's letter, in which the thesis is advanced that the *Encephalitozoon cuniculi* is a reaction of the rabbit's tissues to a multiplicity of viruses, "including that of epidemic encephalitis." Although it is quite likely that the bodies to which this name has been given are merely one stage of a parasite which is invisible in other stages, it appears in the highest degree improbable that so distinctive a phenomenon should be common both to an epizootic disease of rabbits and to transmitted encephalitis lethargica.

I did not make it clear in my paper that the "encephalitozoon" infection might be associated with nervous symptoms, as it was in Kling's experiments. This no doubt depends on the virulence of the virus. That the "encephalitozoon" bodies were found only in his inoculated animals, and not in the controls, proves nothing except that the conditions for cage-to-cage infection were wanting in his animal house. It is, of course, possible that Kling has transmitted either herpes virus or other encephalitic virus along with the *Encephalitozoon cuniculi*. My point was that the presence of the "encephalitozoon" in the brains of a large proportion of his inoculated animals greatly reduces the value of his results—I am, etc.,

J G GREENFIELD

Pathological Laboratory, National Hospital,  
Queen Square, W C, Oct 3rd

SIR,—Dr Greenfield's remarks at the Annual Meeting at Edinburgh (BRITISH MEDICAL JOURNAL, September 24th, p 535) on the pathology of this condition were certainly as controversial as a study of the reports of other observers would appear to warrant. The present position as to the etiological value of experimental encephalitis is not easily estimated and cannot certainly be dismissed lightly.

Few observers have succeeded in isolating and transmitting a virus similar to that of Leviditz, whilst he himself claims that with his virus an encephalitis can be produced even by genital inoculation in the same manner as syphilis. It is generally agreed that a "spontaneous" encephalitis can occur in rabbits, but this epizootic type appears to be due to a sporozoon. It gives rise to renal lesions and it cannot be transmitted directly to other rabbits. McCartney, who has investigated this condition fully, failed to transmit it.

I should like to draw attention to the work of Szamanowski and Zilberlast-Zind,<sup>2</sup> who used on rabbits a number of viruses obtained from different sources—namely,

the virus of idiopathic herpes and viruses obtained from infective cerebro-spinal fluid, nasopharyngeal washing, and brain emulsions of human beings dead from epidemic encephalitis. An encephalitis, either acute or chronic, was the almost constant result of these experiments, and the rabbits showed no renal changes post mortem, and the condition could be transmitted from rabbit to rabbit. In other words, the encephalitis produced was not similar to the epizootic encephalitis of McCartney, but resembled that which has occurred in man during the last decade.

It is interesting to note that many of these animals infected with what one might call for the purposes of argument "human" encephalitis showed marked vestibular phenomena, the importance of which I have had the opportunity of describing elsewhere<sup>3</sup> when occurring clinically in man—I am, etc.,

Oldham, Oct 1st

RICHARD I POSTON, M D

## MOBILE LABORATORIES IN THE WAR

SIR,—With reference to the obituary notice of the late Professor Adrian Stokes, which appears in your issue of to-day, several statements appear therein which unfortunately have no historical basis as to fact, and, in justice both to the living and the dead, I think should be corrected.

With regard to mobile laboratories, the construction of the first of these was undertaken by the Medical Department of the War Office directly after the outbreak of war in August, 1914. In that year it functioned in battle zones north of the Lys, and thereafter was entirely responsible for the bacteriological investigations in Belgium of all cases in the outbreak of typhoid fever among the Belgian civilian inhabitants in the winter of 1914-15 in the zone occupied by the British Second Army and also by the French army on our left flank. This laboratory was in charge of a territorial officer who had been seconded from the 3rd City of London Field Ambulance, and, later, was appointed to act as my sanitary officer, and was given special authority to carry out all necessary measures for controlling and suppressing the epidemic by the Belgian Ministry of the Interior. This epidemic was considered to have terminated by the beginning of June, 1915.

The second laboratory—a converted motor caravan—was furnished by the Lister Institute, who, within a week of the declaration of war, had made a collective offer of its workers for service under the War Office, followed by an offer of a mobile laboratory, the latter being immediately accepted. This laboratory was in charge of Major S D Rowland and proceeded to France, being stationed at General Headquarters at St Omer, where it remained until its transfer to the Second Army, when it was attached to No 10 Casualty Clearing Station at Rem. Siding and opened out for work early in July, 1915. It was upon the occasion of this transfer that Adrian Stokes first came to the Second Army, he being attached to Major Rowland's mobile laboratory and acting as his assistant until 1916, when Rowland was transferred at his own request to Etampes to investigate cerebro-spinal fever, subsequently contracting the disease there, from which he died. My appreciation of Stokes's services and ability was such that I had no hesitation in securing his appointment as commanding officer to succeed Rowland, this being in fact Stokes's first command of a mobile laboratory.

By this time some five mobile laboratories had been connected with the Second Army, and I would here say that the repeated successful detection and isolation of typhoid (and other) carriers was regarded by all of them without exception as an ordinary laboratory achievement.

Owing to their increasing numbers, it became necessary in 1915 to number serially the mobile laboratories. In that year the first War Office built laboratory became known as No 4 Mobile (Hygiene) Laboratory and the Lister Institute converted caravan as No 1 Mobile (Bacteriological) Laboratory.

In justice to all concerned I would like to make it clear beyond all doubt that Stokes was not transferred to the Second Army until after the termination of the epidemic.

<sup>2</sup> Brain, 1923, 46, 49<sup>3</sup> Brain, 1926, 49, 482.

He took no part, officially or otherwise, in the operations conducted by the medical service of the Second Army under my direction for dealing with the typhoid epidemic amongst the civil population of Belgium which occurred in the winter of 1914-15.

The history of this epidemic remains to be written, it is the story of a grave and widespread outbreak—numbering thousands of cases—amongst the civil population of a foreign country in the occupation of Allied (and British) troops in an intensely active war zone, in which British medical officers were given the honour and the responsibility for conducting the whole of the operations necessary for coping with the disease. They did so successfully, and I would like to take this opportunity to make an appeal to all in possession of relevant documents and records (whether copies or originals) to communicate with me in order that some organization might be set up for duly recording its history and noting its clinical and epidemiological lessons—I am, etc.,

ROBERT PORTER

Major General (Ret.) formerly Director of  
Medical Services Second Army, B.E.F.

27 The Avenue  
Beaconsfield, Kent,  
Oct. 1st

### HOSPITAL POLICY

SIR,—The Poor Law medical service has been hitherto so comparatively marvellous that perhaps you will allow one who has had experience of several voluntary hospitals, and who is now on the staff of one of the most progressive of the Poor Law hospitals, to make a few points. The reason for this silence is not far to seek. The Poor Law medical service has had no such traditions or academic standing as those of the voluntary hospitals, and has suffered from that inertia inseparable from a whole-time service ostensibly controlled by a lay committee, coupled with the fact that only recently have the cases treated in these hospitals become similar to those in voluntary hospitals.

After reading and appreciating highly the report of papers and discussion at the Edinburgh Annual Meeting on "The future relation of municipalities to the voluntary hospitals" (October 1st, p. 575), it seems to me that a few further scarcely debatable points might be worth mentioning.

1. The actual governing body of any hospital voluntary or municipal, is, and must be, the medical staff. The voluntary hospitals have long recognized this, and the results speak for themselves. The Poor Law system has suffered from this authority being vested in only one medical man, fortunately of high capabilities as a rule, but this, of course, will change during its evolution. But in all cases (voluntary, Poor Law, or municipal services) the ostensible governing body—the lay committee, which has the last say—is composed of enthusiasm and well-meaning amateurs, whose hobby it is to devote their spare energies to such excellent work. Such a vital service as ours, however, cannot be run as a hobby. It behoves, therefore, the medical men of all services to take a keen interest in this question.

2. Mr Herbert Eason refers to the difficulty of giving chapter and verse in support of the statement that the voluntary hospital with a medical school works at a higher professional standard and at a higher *pre-sure* than a Poor Law hospital. Is it not high time that the Ministry of Health insisted on the publication of a proper medical report on the work of Poor Law hospitals, in place of the absurd travesty of an annual report at present issued to and by the guardians? It is not medical and therefore valueless, such an innovation would, I think, prove that Mr Herbert Eason's deductions are erroneous at least as regards this hospital.

3. The relations between outside medical practitioners and the members of the staff of this hospital are of the most cordial nature, largely owing to the attempts at out-patient and follow-up treatment made by the latter, entirely on their own initiative and largely at their own personal expense. No fears need exist as to the danger of antagonism from general practitioners to a further improvement in the hospital service. They have free access to the patients whom they send us and are welcomed, but very few have the time to take advantage of this.

4. The question of the control of the proposed unified system is of primary importance. I should like to suggest that Mr Herbert Eason's simile of the elephant and the eggs should be reversed, making the voluntary hospitals take the place of the elephant. Given that point No. 1 is true, this must be so, is it wise? Medical men are but human, and has it been proved that the voluntary system is exclusively for the benefit of the patient? This is the point at issue. The provision of an efficient and well paid professional staff is quite another matter. At present many patients get preferential admission to voluntary hospitals by being able to pay a consulting fee beforehand, and the livelihood of the member of the voluntary staff depends on his impressing the student, the future general practitioner, with his medical wisdom and power. Hence one of the difficulties in arranging for students to use the immense field of clinical material in Poor Law hospitals. No blame is to be attached for this, but is it perfect, and should it be perpetuated by giving the voluntary hospitals control of the unified service? I should suggest that the staffs of the Poor Law hospitals who are qualified academically and in experience should have equal voice.

Finally, have the voluntary hospitals reached such an acme of perfection as to make them the ideal? Experience of Belgian, German, and Austrian hospitals, and a credible report of American hospitals, make me answer in the negative. Surely this is the time to take a very wide view and, holding neither to the rather sentimental voluntary system nor to the matter-of-fact Poor Law system, to incorporate the good points of all systems in a new hospital service. The medical profession as a whole is ready for it, and the public would welcome it.

May I add that I hold no brief for the full-time Poor Law medical service—very strongly the reverse?—I am, etc.,

J. S. M. CONNELL, F.P.C.S.D.,  
Gynaecological and Obstetric Officer

Dudley Road Hospital Birmingham Oct. 2nd

### POOR LAW MEDICAL SERVICE

SIR,—My review of Poor Law as a medical career (September 17th, p. 519) seems to have opened up the vexed question of Poor Law medical administration in general. Dr MacWilliam (October 1st, p. 614) appears to voice some of the sentiments of the editor of the *Poor Law Officers' Journal* and of someone who writes regularly in that paper over the pseudonym of 'Medico.' Dr MacWilliam's statement that there are instances of cordial relations in large mixed institutions is probably true, but the converse is also unfortunately true. Further, he does not state whether his own appointment is full-time and resident, also, Liverpool has its separate infirmary which makes a considerable difference. He also remarks that friction is not invariably the fault of the lay staff. I will go further and say that it is not the fault of either side, but of a system which in a certain type of institution makes a nice atmosphere difficult or impossible.

Dr Sunderland (October 1st, p. 614) comes much nearer the root of the matter when he states that of over 600 unions in England and Wales only about fifty have separate infirmaries. These figures should speak for themselves. He also refers to the lack of liaison between Poor Law doctors. This point is of vast importance in the interests of professional organization.

The interests of doctors in Poor Law are not sufficiently centralized in the British Medical Association. Some of them belong to the Poor Law Medical Officers' Association, some to a medical superintendents' association, some to the Poor Law Officers' Association, some to more than one of these and some probably to none. I belonged to the Poor Law Officers' Association until I realized that in the event of a clash between medical and lay interests in Poor Law there is only one sound defence—our own Association. The Poor Law Officers' Association could not be expected by the very nature of its membership to guard our interests as our own Association could and would do. I had convincing proof of this over my own appointment. I consider that the British Medical Association should have all available information from any smaller medical association in Poor Law, and so be at all times fully informed. There

is good reason to suppose that such information will be extremely useful

In order to clarify the position in institutions as I see it, they may be conveniently grouped under three heads

1 *Large Unions*, having a separate infirmary with a medical superintendent, and a general institution with a master and matron. This is the obvious and ideal plan

2 *Small Unions*, having one general institution for all purposes, with a master and matron, no training school for nurses, no resident doctor. This system works very well, and relations between master, matron, and part time doctor are easily maintained on a cordial footing

3 *Intermediate Unions*, large enough to employ a full-time resident doctor, having a training school for nurses and frequently a consulting staff, and doing a fair amount of acute work. The number of these "mixed" institutions can be imagined from Dr Sunderland's figures, and they are the type of institution to which my original letter applied adverse criticism. My view is that, once an institution reaches the stage outlined above and becomes a recognized training school for nurses, its administration should be changed. The best remedy is the building of an entirely separate infirmary if the town can afford it, leaving the master and matron in charge of the general institution. So acute has this problem become that attempts have been made to separate the two administrations while still more or less under the same roof. This is not generally regarded as highly successful, and it is expensive for the results obtained. Failing the building of a new infirmary, I take the view that the next best thing is the appointment of a medical superintendent with the nominal title of master as well. I believe I am one of about three medical men with personal experience of this, and I believe that the result has been a smooth administration in each case. This system has now been in operation in Reading for some six or seven years. So satisfactory has it been to all concerned that when my predecessor retired some fifteen months ago there was not the smallest chance of reversion to the old type of administration.

I have been at pains to amplify my previous remarks for two reasons. First, as far as the British Medical Association is concerned, I believe that more exhaustive information on Poor Law is imperative. Secondly, my original letter has been construed in one quarter as a general onslaught on the workhouse master. Such an attack by me on another class of officer in the same service would be unfair, not to mention the waste of time. At the same time, I can appreciate the fact that my views on one class of institution would in effect deprive workhouse masters of many of the best appointments open to them. I have reached my conclusions fairly and without prejudice, from my own experiences and those of others, and I am certain that they are at least worthy of note by any prospective entrant to the service.—I am, etc.,

Battle Infirmary, Reading, Oct 1st

D CARIL THOMAS

SIR,—In view of Dr MacWilliam's letter of October 1st (p. 614) I beg further space to point out that the main regulations governing Poor Law institutions which are not separate infirmaries are contained in the Poor Law Institutions Order, 1913, issued by the Local Government Board. This order modified but maintained the general effect of the "Consolidated Orders" dating from about 1840. Any sort of division or the institution into departments is discountenanced and entire management is placed in one pair of hands. This was a workable arrangement universally eighty years ago and is still workable in undeveloped institutions, but in all others, and especially where a whole-time medical staff is employed, observance of the present regulations in detail would cause such difficulty that by tacit consent it has been evaded everywhere.

It follows that there are variations of actual procedure under the same order, and that medical officers will form varying opinions of Poor Law work. Hospitals have gone ahead most where the order was most ignored. Why should the Poor Law retain a scheme of administration which would ruin a growing hospital when observed fully, and which seriously hinders growth when it is partially observed? It would be easy to make a readjustment without costing the ratepayers a penny. The Ministry of

Health mooted this in 1922, but apparently dropped the idea later.

The real question at issue goes far beyond any alleged antipathy between masters and doctors—I am, etc.,

Southend-on-Sea, Oct 2nd

R A S SUNDERLAND

## SURGERY OF THE TONGUE

SIR,—Mr Duncan Fitzwilliams, in his textbook *The Tongue and its Diseases*, reviewed in your issue of October 1st at page 596, refers to the Butlin series of cases. In my opinion Butlin reached the acme of success, now more than a quarter of a century ago. Happily, owing to advances in the application of radium, and more especially the exact regulation of the dosage, there are no longer required surgical procedures involving various degrees of deformity, defective articulation, and difficulties in swallowing saliva and in masticating food—squamous-celled carcinoma disappears under radium without leaving such deformities. As one instance among others of the benefit reached by surgery under Butlin, I saw the other day a patient in good health twenty years after Butlin had removed half the tongue and the pillar of the fauces. Subsequently, whilst, owing to illness, Butlin had only to stand by one side of the neck was dissected down to the clavicle, including the removal of the sternomastoid and anterior border of the trapezius. There persists a defect in articulation and in the elevation of the arm above the shoulder.

On the other hand, the treatment of the infection of the neck has not yet been solved. The question includes not only the glands found microscopically to be already invaded by the squamous-celled carcinoma, but also those exhibiting a small cell infiltration, whether on one side of the neck or on both.—I am, etc.,

London Oct 1st

WALTER G SPENCER

## PIRYXIA DURING THE PUERPERIUM

SIR,—My experiences of the practical working of the new Order (1926), whereby a woman who within twenty-one days of childbirth or miscarriage develops a temperature of 100.4° F and maintains it during a period of twenty-four hours must be notified to the public health authority, may be of interest to some readers.

On August 17th last I attended a confinement, and a went well until August 23rd, when the woman got a slight rigor in the early morning. At 10 a.m. her temperature was 100°, at 10 p.m. 100°, but on August 24th at 2 p.m. it was 102°. Thus ptyxia went on till August 31st, with an average of 99° in the mornings and 101.8° at night. The only other symptom the whole time was slight headache, there were no abdominal symptoms whatsoever. All appearances the lochia were normal. The patient never felt ill, she took her food well and slept well, and her bowels were normal. On August 24th I notified the case as one of "puerperal ptyxia." I practise single-handed in a county village, and we have a trained nurse who is also trained and certificated midwife. This nurse was in charge of the case. She was at once suspended from attending midwifery cases by the county medical officer, who informed her by letter that as she was attending a case of "puerperal fever" she must not resume duty till given permission by the local medical officer of health. On September 21st, exactly one month afterwards, she was allowed to resume duty.

On August 26th, or three days after onset of ptyxia in the first case, I had to attend another confinement, and I had to send six miles to get a neighbouring village nurse. I did not attend the case myself, my friend the district medical officer of health visited it for me, and on the second day the woman had a temperature of 100° at 9 a.m. and 101.6° at night, but for the next four days it did not rise above 100.4°, except on one occasion, when it was 101.4° at 8 p.m. This woman had a good deal of abdominal pain and distension, which continued for four days till the bowels well opened, when the whole condition cleared.

up, and, rightly or wrongly, I regarded the bowel condition as the sole cause of the puerperia because the lochia were normal and the improvement began immediately after the evacuation of the foul bowel contents. Here again the district nursing inspector suspended a special men nurse who had to get to liberate the one who had to send six miles for

On September 3rd I attended personally a third confinement—they were all in the village—and another new nurse had to be got for the patient. Fortunately this case went on all right, but we had all this time two special nurses in addition to our own in this small country village and all for what? I have lived and worked here for over thirty five years, and we have carried on very well in all circumstances with one nurse and nothing has ever happened. I have never had in my life to certify a death from puerperal sepsis. Three nurses here all at once made a town's talk, and everybody wanted to know what had happened. We have a hard struggle to make up the yearly salary of one nurse, and how our nursing association is to meet the expense of all those other nurses I do not know.

It is interesting to note that our own nurse was suspended because she was in attendance upon a case of puerperal fever, whereas I notified it as puerperal puerperia. Are they synonymous terms, or what is really puerperal puerperia? My own opinion is that neither of these cases was puerperal fever in any sense of the term, and that all this notification and suspension of nurses is of no use or benefit to anybody. It causes a lot of anxiety, public gossip, and vexation, and we have a right to know where we stand. These nurses apparently take the mouth temperature of living women from the time of delivery right and morning, so no wonder if puerperal puerperia gets on the increase. Is the nurse to be suspended in every case of puerperal puerperia irrespective of the cause? It would seem that it is so.

Surely a living woman may run a little temperature during the early days of her confinement without its being due to puerperal sepsis. I venture to think the majority of medical men doing midwifery work think this meddling legislation has gone a bit too far. No wonder men are giving up the work. After my recent experience I do not blame them—I am, etc.,

FELTON Northumberland Sept. 28rd.

POET A WELSH

#### SECOND ATTACK OF PITIRIASIS ROSEA

SIR,—I am deeply interested in the memorandum on 'Pitiriasis rosea—a second attack,' contributed by Dr Gordon Edleston to your issue of September 24th (p. 549).

I have been on the look out for second attacks of this disease in the same patient ever since the publication of my paper upon pitiriasis rosea in 1914 (not 1915). In the discussion which followed my paper (*British Journal of Dermatology* 1914, p. 135 et seq.) Whitfield mentioned one experience of a second attack, Doro mentioned a doubtful instance and Gray—who was not, unfortunately reported—said that he had seen a case of pitiriasis rosea in a patient who several years previously had been under the care of Dr Radcliffe Crocker, who had diagnosed pitiriasis rosea at that time.

I am still firmly of opinion that recurrences are extremely rare, and I have not myself met with a single instance of a well authenticated repetition of the disease in the same patient since the case reported by me in 1914. The implication of infection conveyed by Dr Edleston's experience is, I think, equally uncommon. I am, etc.,

LONDON W. Oct. 3rd.

C. GRAHAM LITTLE

#### THE ASSOCIATION ANNUAL MEETINGS

SIR,—As a member of the British Medical Association of over twenty years standing I plead for a re-arranging of our sectional programme. There is too much overlapping of our more important sections. Everybody who wishes to do so should be able to attend the whole of such generally attractive branches as Medicine, Surgery, Obstetrics and Gynaecology and Children's Diseases. Overlapping there must be and Tropical Medicine and the new and promising

Historical Section may be taken as examples of secondary interest.

A large number of us attend yearly wishing to make the most of our time, but, too often, at the end of the week, we find important sections have had to be left once more unvisited. We devote a week of our time, and far more than a week of our incomes, to sit down to what is in all respects a most generous repast and—wonder how only partially satisfied, with many wholesome and much desired dishes on the menu perforce untasted. Is there any insurmountable objection to the eight most extensively attended sections being so listed that four may be taken on the four working mornings at 10 a.m. and the other four at 2.30 or preferably at 2.15 p.m.? I dare wager "a cock to Esculapius" that the two largest available halls would be comfortably filled by adopting this course, and that speakers and auditors would gain by it.

Equally important to many of us would be a modification of the present material of the sections themselves. Year by year they tend to become—each of them, I make no distinction—more and more arenas in which carefully selected and distinguished specialists present, rather to each other than to us, carefully prepared and highly advanced views on the subject laid down. We mutely watch the succession of learned enthusiasts quickly following each other with one eye on their proof sheets and the other on the clock. Over and over again my fellow members have said to me on these occasions, "What cannot a larger number of these most valuable and very technical papers be kept for the appropriate learned societies and their journals whilst we have back again the old style broad based representations and discussions of the matter in hand?"

Some of us feel that the sections are becoming too advanced. We feel there is a distinct danger of the meetings becoming the parade ground of the professors of the universities and medical schools. Direct the big 16-inch guns on the target if you like—we love to see the practice they make and rejoice in their excellence. But—give the rest of the artillery a chance to get in a few shots or it will lose some of its polish and tend to be kept away back in the arsenal—I am, etc.,

MOSCOW S.F. 6th

C. MITCHELL

#### DRIED COMPLEMENT IN THE TROPICS

SIR,—I was interested to read of Dr. Neave Kingsbury's experience with dried complement (September 17th, p. 518), as on the one occasion when I tried this material my results were no more favourable.

Having had some trouble with my guinea pigs two or three years ago in India I tried a sample of dried complement—also of German manufacture—which had recently been sent to the institute where I was working.

As in Dr. Kingsbury's case the material was put up in sealed capsules each of 0.1 gram and the directions stated that a 1/10 solution was equivalent to fresh guinea pig serum. A clear solution was obtained in this dilution, though only after a considerable time.

The test used was Method No. IV Medical Research Council (Special Report Series No. 14) in which a dilution of 1/30 of fresh serum is the lowest dilution considered suitable for use in the test proper—that is, 1/30 used without the addition of antigen in the preliminary complement titration test.

At this distance of time I fear I cannot remember the details of my results with the dried serum except that complete haemolysis was not obtained in half an hour with dilutions higher than 1/10 of the original solution of dried serum. Thereupon I concluded that either the sample was not a representative one or that the material, as prepared, was not suitable for the tropics.

Everyone I suppose knows how tricky guinea-pigs are in the matter of obtaining a satisfactory complement from them, but provided they can be got to breed, a great deal can be done by careful adjustment of their food and housing conditions, and it has been my experience that since we went into these points we have had no further difficulty with complement.

At the same time, there must be occasions when one's



guinea-pigs fail one, in spite of all efforts, and for such occasions a good sample of dried complement would be invaluable—I am, etc,

Cambridge Sept 17th

L. A. P. ANDERSON,  
Major, I.M.S.

#### FELO-DE-SE

SIR,—I would thank your correspondent "Medico-Legal" for his interesting reply (October 1st, p. 614) to my previous letter (September 17th, p. 518). The brevity of my letter appears to have left "Medico-Legal" insufficiently informed. For obvious reasons I did not ask you to publish the evidence which I gave to the coroner, though I did submit it to you for your own information; this possibly explains the fact that the reply in your footnote was more emphatic than that of "Medico-Legal". There was no *post-mortem* examination. My evidence included the statement "The operation performed proved that the deceased was not pregnant and that she had not recently been so." This statement was accepted by the coroner without question. There was no evidence of importance other than mine. The proved or accepted facts were that, though the woman believed herself to be pregnant, she was not in fact so, that it was her intention to procure abortion, and that no other person was concerned in the act which caused her death. I voted with satisfaction that "Medico-Legal" confirms my own opinion that, even had the verdict *felo-de-se* been according to law, such a verdict should not have been returned except after an inquest before a jury. It is, of course, not for me to appeal to the Lord Chancellor for a fresh inquest, and I doubt if the relatives will consider such a course expedient—I am, etc,

Manchester Oct 2nd

SIDNEY A. WINSTANLEY

#### "ETHER CLONUS" ALDEHYDE AND PEROXIDE

SIR,—In a letter under the above heading in your issue of September 24th (p. 566) Mr. H. Edmund G. Boyle draws attention to the dangers arising from the production of aldehyde and peroxide when oxygen or a mixture of  $O+N_2O$  is passed through ether during its administration for anaesthesia.

The production of peroxide under these conditions is well known to chemists, and it is important that it should be also understood by anaesthetists. There is a further point which is at least equally important—namely, that the rate of formation of peroxide increases greatly as the amount present increases, consequently an ether which contains initially even minute amounts of aldehyde or peroxide will be much more prone to this change than one which is free from it. I draw attention to this matter to emphasize the fact that an amount of peroxide which is undetectable by the *B.P.* test, to which Mr. Boyle refers, will still suffice to accelerate this change. Consequently much more delicate methods of detecting must be applied if the purity of ether is to be maintained at the standard needed for perfect anaesthesia. Details of a delicate method of testing, based on the use of ferrous thiocyanate, were worked out in these laboratories and published in the *Year Book of Pharmacy* (1924, p. 615).

The late Mr. S. R. Wilson of Manchester, in a paper on "Ether convulsions," published in the *Lancet* of May 28th, concluded that "the convulsions are toxic in origin and due to the presence of impurities in ether," and he also advocated the precautionary measure of using only pure ether.

In my view Mr. Boyle is right in drawing attention to the significance of minute amounts of impurities, but in defining pure ether we have to look to a much higher standard of purity than that secured by adopting the *B.P.* test used by Dr. W. Inglis Clarke as mentioned in Mr. Boyle's letter—I am, etc,

London, N., Sept 27th

FRANCIS H. CARR,  
The British Drug Houses Ltd

#### COURTESY CALLS

SIR,—I was interested in Dr. Rawdon Smith's letter on the subject of courtesy calls (September 17th, p. 520). Some years ago I joined an old established practitioner as

partner, and paid the usual calls on neighbouring practitioners. Not one of them returned my visit, and one gave me a very gloomy impression of the prospect of success in the district, and even recommended me to give up the idea of practising in the neighbourhood! I may have had an unfortunate experience, but if newly settled practitioners are accorded the same aloofness I was I am not surprised that courtesy calls are unpopular duties and often shirked—I am, etc,

September 18th

M.B., D.P.H.

#### Obituary

WILLEM EINTHOVEN, M.D., Ph.D.,

Professor of Physiology in the University of Leiden

THE death of Willem Einthoven, announced on September 29th, robs mankind of one of its most distinguished physiologists. Trained at Utrecht, he was appointed at the early age of 25 to the chair of physiology at Leiden; this post he held till this his 67th year. Unusually well trained and able in physics, Einthoven directed himself mainly to the development and perfection of recording instruments. Amongst these the most renowned is his famous string galvanometer. Starting his researches on the basis of the d'Arsionval galvanometer, he moved to the principle of Adair's instrument for recording submarine signals, an instrument which consisted of a very long single wire suspended vertically between the poles of a magnet. By greatly increasing the strength of the magnetic field by introducing relatively short and very thin, and therefore light, fibres, and by using an optical projection system of high magnification, he eventually constructed a galvanometer greatly surpassing all previous instruments in sensitivity and quickness of movement. More than twenty years were given to the perfection of this instrument, and of the subsidiary apparatus such as recording cameras and time signals, and he thus created a piece of apparatus which of its kind was of unparalleled delicacy and accuracy. The records yielded by his instrument directly represented in curvilinear form the changes in the flow of current from instant to instant, requiring no analysis, as did curves previously won by means of the highly developed capillary electrometer. It was this feature of quick response, with the consequent direct representation of current flow, that rendered his instrument peculiarly applicable in clinical observation. Einthoven's model formed the basis of the well known commercial model now in use in the hospitals and laboratories of five continents, but the sensitivity of Einthoven's own models has continued until the present time to outstrip by far that of all similar instruments.

Einthoven did more than place his wonderful apparatus at the disposal of other workers. He pointed to many of the ways in which it might be employed. Amongst these he called attention particularly to its capacity to portray the electrical events happening in the human heart. Modern electro-cardiography, and the analysis of irregular heart action by galvanometric means, may rightly be said to have been inspired by, and in large part founded upon, two papers of his published in 1906 and 1908. His adoption of separate leads, pairing the three sets of adjacent angles of an approximately equilateral triangle, and his theoretical calculations of the line of the heart's electrical axis from the resultant curves, has proved fundamental to much later work.

The application of Einthoven's galvanometer to the study of the physiology and pathology of the heart has followed quickly upon his description of the method, its full application to the study of electrical phenomena in other organs of the body has been more delayed. He himself illustrated the value of the instrument in recording the electrical events in nerve and other structures. For example, he succeeded in displaying impulses passing at each beat of the heart from this organ through the vagus nerve to the brain.

As early as 1894 he and Gehuk described a method of registering heart sounds. Later he adapted the string galvanometer to the same purpose, a method that has been extensively and fruitfully followed up by others. In the

last years of his life he brought sound recording to a pitch of extraordinary perfection, using to this end a film so light that it responded directly to the sound waves agitating the atmosphere in which it lay, its movements being of sufficient amplitude to be recorded photographically. These were among the greatest of his achievements though they by no means exhaust them.

Einthoven's renown grew steadily and in recent years has found expression in many public honours conferred upon him, these culminated in the award of the Nobel prize for medicine in 1924 and in this country in his election last year to be a foreign member of the Royal Society.

Einthoven's work will be remembered for all time for the greatness of its contribution to method of observation. Einthoven himself will be remembered by those who knew him personally for his fascinating personality. A man of simple, almost of humble, habits he was untrusting in his work, in its exposition, and in the study of related problems. He awakened in both friends and associates a profound admiration by his genius, by the charming simplicity of his character, by his touching if not childlike modesty of thought and manner, by his patience, by his natural and profound courtesy, by the warmth of his hospitality to those privileged to enter his home by his unswerving devotion to truth in the most exacting sense. These noble qualities endeared him to all who knew him at all intimately.

THOMAS LEWIS

Einthoven was born in 1850 in Samarang (Java), where his father was a medical practitioner. After his father's death in 1870 his mother brought her six children home to Holland and settled in Utrecht, where he was educated. He became a student of medicine there in 1878, and after completing his course was assistant to Suelling, and to Donders in the physiological department. From that appointment he was called to the chair of physiology at Leyden, where he spent the remainder of his life.

We are indebted to Dr LEONARD HILL for the following brief reminiscence of a recent visit to Einthoven's laboratory.

It is just a year ago since I stood in Einthoven's laboratory in Leyden and was shown by him his last form of string galvanometer, in which the string was stretched in a vacuum and, so light and delicate was it, that the photographs of the string showed a ceaseless Brownian movement. Einthoven had there an instrument so responsive that he needed no valves to magnify the electrical effects which he wished to record and he discountenanced the use of such valves as likely to distort the true reaction. He was then engaged in recording the electrical variations of the sympathetic system of nerves in the living animal—variations set up by natural impulses passing down these nerves—a new and most interesting field of research. And this most charming and modest man of science is now dead, and the book of his records is closed and will receive no more entries from the hand of the master, but the work which Einthoven has done in introducing the string galvanometer as a means of diagnosis, in elucidating the action of the heart in health and disease, and in recording the natural impulses coursing down the nerves stands as a pattern of accuracy and will be carried on by his pupils, using those methods which he has perfected. Einthoven is one of that band of scientific men which has made the University of Leyden so famous. He spoke English perfectly and was a most cordial friend to his English visitors, a man full of humour and a broad humanity.

#### SVANTE ARRHENIUS

Director of the Physical Chemical Department of the Nobel Institute, Stockholm

PROFESSOR SVANTE ARRHENIUS who died on October 2nd at the age of 68 is acknowledged to have been one of the masters of modern physical chemistry. This high place was achieved with one vivid theoretical contribution—his theory of electrolytic dissociation. Poincaré, in his book on the Foundations of Science writes: "There are facts common to several sciences which seem to be the source of streams

diverging in all directions. They are like that knoll of St. Gothard whence spring waters fertilizing four valleys." Such are the facts upon which is built the theory of electrolytic dissociation. No hypothesis has proved more fertile to our understanding of the behaviour of solutions. It has revolutionized our principles and methods of study. It has dominated every field of scientific inquiry in which the methods of chemistry find employment. We can afford to smile at the recollection that when Arrhenius presented the elements of his theory in a thesis for a doctorate it found small favour with his professors.

Biology has been particularly enriched by the conception of electrolytes and their ionization. Consider only the case of the dissociation of water and its relation to the activity of acids and bases. The modern technique of biochemistry, physiology, bacteriology, and experimental biology is dominated by the conception of the hydrogen ion concentration which derives immediately from this hypothesis. Building upon the foundations such men as Sørensen, Michaelis, Lawrence Henderson, Mansfield Clark, Van Slyke and J. Loeb have raised that amazing edifice of precise measurement, exact control and quantitative definition of vital phenomena such as we find at its highest in the modern statement of the intricate electrolyte equilibria of the blood and tissues. The whole complex physico-chemical equilibrium which we call the living cell will submit to no quantitative definition in terms which do not involve the principle of electrolytic equilibria. To trace in detail however the echoes of this hypothesis in physiology is, in a measure, to elude the most precious contribution of Arrhenius to biology. Arrhenius was one of those who insisted upon the imperative necessity for measurement in the study of vital phenomena. Les propriétés des corps sont les propriétés des nombres, remarked De Chancourtois. Arrhenius vigorously challenged those who contended that the notion of biology is mathematics was a mischievous thing. With the help of formulae," he wrote, "which may be empiric or rational, scientific progress will be much more rapid than without them, and as the experimental material merely the empiric formulae will probably give place to rational ones. So will new laws of nature be detected." His argument and his evidence are presented in his book *Quantitative Laws in Biological Chemistry* (1915). The same faith is seen in his collaboration with Madsen in the latter's extensive study of the chemistry of the immunological reactions. Here, again, his concern was to condense into formulae the regularities which were disclosed in the elusive reactions of toxins and antibodies, agglutinins, precipitins and lysins. The volume in which he told the story of this endeavour was quickly translated into English and published in the familiar book *Immunochemistry*. Arrhenius, who was born in 1859 near Uppsala, wrote in Swedish.

While we acclaim the imagination which gave birth to the theory of electrolytic dissociation we acknowledge the faith which taught us that although the "mathematical mill" would only grind out those same facts, which we put into it, yet would it grind them exceeding small.

R. K. C.

DR CHARLES GEORGE MACVICKER of Street who died on August 30th at the age of 64 was a native of Londonderry, and received his medical education at Belfast and Edinburgh, he graduated M.B. Ch.B., B.A.O. in 1891. He commenced medical practice at Almondsbury near Bristol, then removed to Isleham in Cambridgeshire, and from 1899 onwards lived at Street where he was medical officer to the Street district of the Wells Union and to the Abbey Grange School for mentally deficient children. He was a member of the visiting staff of the Butleigh Hospital, to which, at the time of his death, he was senior medical officer. He was a member of the committee of the Somerset County Nursing Association from its foundation. He was an ardent Conservative in politics, and for over twenty-two years had been a churchwarden serving under five successive rectors. He was vice-chairman of the parochial church council, vice-president of the Church of England Men's Society, and of the Rangers Guild, and the moving spirit in many other church activities. He was a council school manager and a member of the committee of Cox's Charity,

president of the local choral society and of the Street football club, and vice-president of the county football association and of the Street cricket club. He served as a magistrate for some years, and was an enthusiastic member of the Somerset Archaeological Society.

Dr. JOHN HAMILTON, who died on August 9th, was born in 1857, in Hamilton, Scotland, and received his medical education at Glasgow. He obtained the diplomas L.F.P.S. Glasg. in 1878 and the L.R.C.P. Ed. in 1882. He carried on medical practice in Eldon Square, Newcastle-on-Tyne, from 1881 to 1899, when he came to London, and subsequently removed to Edinburgh. After returning from practice in 1921 he visited Australia, India, and South Africa. He was acting as surgeon in the S.S. *Goolia* when she brought home the survivors of the *Ticessa* from Mauritius in the summer of 1923. For the last three years of his life he resided at Newcastle-on-Tyne.

The death took place at Edinburgh on September 16th, at the age of 84, of Dr. C. G. MACKAY, who for many years practised at Locherion, Ross-shire. Dr. Mackay was born at Dornoch in 1843, graduated M.B., C.M. at Glasgow University in 1873, and had spent most of his life in practice at Locherion, where he acted as medical officer of health for the parish. He was a great enthusiast for the Gaelic language and literature, and in a very special measure enjoyed the confidence and affection of the Gaelic-speaking patients over a very wide area of the Western Highlands.

By the sudden death of Dr. WILLIAM NEWLANDS CLIFMEY on September 27th the profession has lost one of its most energetic members. Born in Bootle in 1869, and educated at Merchant Taylors' School and University College, Liverpool, he obtained the diplomas M.R.C.S. and L.R.C.P. in 1891. After holding the appointments of junior and senior house-surgeon at the Bootle Borough Hospital, he commenced general practice locally, in 1896 he was appointed to the honorary surgical staff of this hospital. From that time to the day before his death his heart and soul were devoted to the work of the hospital, which he saw grow from year to year in extent and usefulness. He was a pioneer in x-ray photography and spent much time in developing this branch of the hospital work. During the war he served also as honorary surgeon to the Breeze Hill Auxiliary Hospital, and acted as chief medical officer to the venereal clinic at the Bootle Hospital. For some years he was a member of the borough council, he was also a member of the West Derby board of guardians. He was appointed a justice of the peace in 1903 and sat on the Bench the day before his death. He was for many years an active member of the British Medical Association. The funeral was held at St. Luke's Church, Great Crosby, on September 30th, when a large assembly of patients and friends bore eloquent testimony to the esteem and regard in which he was held by all classes of the community. He is survived by two sons, the younger of whom is a member of the medical profession.

## Universities and Colleges

### UNIVERSITY OF OXFORD

The degree days for the academic year 1927-28 are as follows at 2.30 p.m. on each occasion—*Michaelmas Term* 1927 Thursday, October 20th, Saturday November 26th Saturday, December 17th *Hilary Term* 1928 Thursday, January 26th Saturday, February 18th Saturday, March 31st *Trinity Term* 1928 Thursday, May 3rd, Saturday, June 9th, Thursday, June 28th, Saturday, July 21st.

### VICTORIA UNIVERSITY OF MANCHESTER

The following candidates have been approved in the examinations indicated:

D.P.H.—Part I J. S. Smith Part II J. Cunningham Barbara M. Angell M. V. Macdonald and S. P. Wilson

### UNIVERSITY OF GLASGOW

The following candidates have been approved at the examination indicated:

FINAL M.B. CH.B.—F. Adams J. Agnew R. W. Agnew Frances W. Anderson W. V. Ballard H. Bankhead J. Baxter W. Bowler J. M. Brewster G. Bryden R. M. Buchanan J. S. G. Burnett J. H. Cadas J. M. Chow F. Craik Margaret G. Crockett Isabella M. Currie J. Darling H. M. Davis I. M. C. Dewar F. D. J. S. Drummond J. E. Dunn L. C. Durie C. A. Ferguson H. R. Ferguson J. Fleming A. W. Fraser J. B. Fulton G. H. Gibson R. D. Gilchrist J. M. Gilston H. P. Goldman I. S. Graham J. C. Gunn T. Hamilton D. Hannah A. Hart A. K. Hill W. Hodgkison J. A. Houston W. Hunter L. L. Hurwich P. Jacob R. Jameson T. Johnston R. S. Kennedy W. M. F. Ker G. K. Kirkland I. W. Kirkwood W. B. Lyles Annie Laird M. Lakshminamma L. J. Lang J. H. B. Livingston A. McClelland A. Macdonald J. Macdonald W. Macdonald C. M. McIntyre I. C. McKay I. W. Mackay S. A. Macleod J. L. McNeill J. McWhirter H. D. Mansfield A. C. Morrison Margaret Mulvey Jessie W. Ogilvie R. A. S. Poncelet Elizabeth M. Pollock T. A. Pratt A. R. Reid J. B. Ronnie D. Roberson J. K. R. R. H. Rosenheim W. F. Sellar A. R. Shaw J. Simpson H. S. Strachan W. B. Sutherland G. W. Wanson Jean W. Sutherland Margaret W. Thomas Annie R. Thompson T. H. S. Tizzard M. Tisdale J. H. B. Wieso W. H. Wilkie A. D. Williamson Elizabeth R. W. Wilsa J. W. Wilson W. G. Wilson Elizabeth N. Young

\* With distinction in Surgery. † With distinction in Medicine. ‡ With distinction in Midwifery.

## The Services.

### VOLUNTARY AID DETACHMENTS

SUBSTANTIAL progress continues to be made in the organization of Voluntary Aid Detachments as part of the voluntary reserve of the medical services by the Crown, under the scheme which was launched four years ago with the approval of the Army Council. 321 detachments have now received official recognition, and their members number 20,077. Of these, 3,180 have undertaken an obligation to serve at home or abroad in the event of a national emergency, while the others have agreed to do duty as they may be required within reach of their homes.

### DEATHS IN THE SERVICES

SURGEON REAR ADMIRAL GEORGE ALBERT DREAPER, C.B., R.N. (ret.) died at the Royal Naval Hospital, Haslar, on June 28th, aged 65. He was the son of R. H. Draper, of Finsborough House, Colchester, co. Kilkenny, and was educated at the Carnarvon Medical School, Dublin, he took the L.R.C.S.I. in 1883 and the L.K.Q.C.P. in 1884. Entering the navy as surgeon in 1884, he became first surgeon in 1904, deputy surgeon general in 1913, and surgeon rear-admiral in 1919, he retired in 1923. He served as staff surgeon of H.M.S. *Magicienne* during the South African war, and also in East Africa in the Jubaland expedition in 1900-1, when he received the appreciation of the Admiralty, and gained the South Africa medal and the General African medal with Jubaland clasp. In 1904 he served as fleet surgeon in H.M.S. *Porpoise* in the Somali campaign, including the capture of the Mullah's stronghold at M. on April 21st, 1904, was mentioned in dispatches, and received the East African medal, with a clasp. From 1908 to 1910 he was in charge of the surgical wards at Chatham naval hospital, in 1911 he filled the corresponding appointment at Plymouth, and from 1916 to 1919 was in command of the naval hospital at Hong Kong. Subsequently he served till his retirement in command of Chatham naval hospital. He received the C.B. in 1920. In 1910 he married Constance Amy, daughter of Mr. Henry de Blaquiere of Fiddler's Gort but leaves no children.

Lieut. Colonel William Reed Murphy, D.S.O., Bengal Medical Service (ret.) died in London on August 7th, aged 77. He was educated at Clongoweswood College, co. Kildare, at Trinity College, Dublin and at the Merth Hospital where he won many prizes. After taking the L.R.C.S.I. in 1871, and the L.K.Q.C.P.I. in 1877, he entered the I.M.S. as assistant surgeon in March 1872, passed into the service second out of a very large batch (40). As the first man, the late Lieut. Colonel Alexander Crombie, C.B., had already gone through the Netley course as a candidate for the Army Medical Department in 1871 he went straight out to India and Murphy headed the Netley list and gained the Herbert prize. He attained the rank of brigade surgeon lieutenant colonel in October, 1896 and retired in July 1899. His whole career was passed in military employment, and he had a very fine war record. In 1878 he served in the Indian contingent called to the Mediterranean by Lord Beaconsfield when war with Turkey seemed to be imminent, and served in Malta and Cyprus. The expected war however, was avoided. His first active service was in the second Afghan war of 1878-80 when he took part in the action at Sufudim in the occupation of Kandahar. The action of Ahmed Khel Arzu and Patkro Shamir was mentioned in dispatches in 1878, and received the Afghan medal with patches. He subsequently served in many frontier campaigns. The expedition of 1888 was mentioned in dispatches and received the frontier medal with clasp. The Lushai campaign of 1892 (clasp) the Chin Lushai campaign (1889-90) he was principal medical officer, was mentioned in dispatches and was awarded the D.S.O. and another clasp. He was in the Chitral campaign of 1891 and the relief force (medal with clasp), the Tirah campaign of 1897-98 with the Kurram Kohat force, and a principal medical officer of the Kurram movable column. He was retired in 1913 in dispatches. Nearly twenty years after his retirement he was granted a good service pension on July 6th 1913.

## Medical News.

SIR JOHN ROSE BRADFORD, president of the Royal College of Physicians will deliver an introductory address on 'The study of medicine' at the opening of the winter session of the Durham College of Medicine, Newcastle on Tyne, on October 11th.

SIR WILLIAM WILLCOX will deliver his presidential address at the meeting of the Medical Legal Society at the house of the Medical Society of London, 11, Chandos Street W 1 on Thursday, October 27th, at 8.30 p.m.

UNDER the auspices of the Child Study Society, London a course of lectures and discussions will be held at the Royal Sanitary Institute on Thursdays at 6 p.m. from October 13th to December 1st inclusive. The first lecture will be delivered by Dr E. A. Hamilton Pearson on the subject of the normal child. On January 4th a conference of educational associations will be held at University College when the chairman will be the Hon. Sir John A. Cockburn, K.C.M.G. M.D., president of the Child Study Society, and Dr David Forsyth will speak on the subject of 'These first five years.'

THE British Institute of Philosophical Studies will hold a meeting at the Royal Society of Arts on Tuesday next at 8.15 p.m. to hear lectures on the standpoints of Freud and Jung by Drs John Rickman and H. G. Baynes. Professor C. Spearman F.R.S. will take the chair. Tickets of admission can be obtained from Mr Sydney E. Hooper, Director of Studies at the offices of the Institute 88, Kingsway, W.C.2.

DR. J. S. OWENS will deliver a lecture on atmospheric pollution under the auspices of the Institution of Heating and Ventilating Engineers at the Cotton Hall, Westminster on October 11th, at 6.45 p.m.

A LECTURE in German on Jewish health problems in Eastern Europe will be delivered by Dr Julius Brintzlin, ex-Minister of the Lithuanian Government at the Jews' College, Grafton Street W.1 on October 9th at 4.30 p.m. The chair will be taken by Mr A. H. Levi F.R.C.S.

THE Birmingham and District Edinburgh University Club will hold its twenty-third annual dinner at the Queen's Hotel Birmingham on Thursday November 10th at 7.30 p.m. The chair will be taken by Dr E. A. Milner and Sir Robert Philip. President of the British Medical Association will be guest of the evening. Membership of the club is open to all male graduates of the university, and it is hoped that gentlemen who desire to be present, but who have not received notice of the dinner will communicate with the honorary secretary Dr Ernest Bulmer 87 Cornwall Street Birmingham before November 3rd.

THE London Branch of the Bristol University Association of Alumni will hold its sixth annual dinner on Friday, October 28th, at 7.45 p.m. at the Criterion Restaurant. The Chancellor of the University Viscount Haldane will preside and Professor Francis, Pro-Vice-Chancellor, will be guest of the evening. The dinner (tickets 9s.) will be followed by dancing in the ballroom (3s. 6d. extra). Applications should be made to the honorary secretary, Dr Elizabeth Casson 10, Victoria Sanatorium, Virginia Water.

THE Caledonian Medical Society will hold its annual meeting at University College Dundee under the presidency of Dr Angus MacGillivray, chief of the Dundee Highland Society on Friday, October 14th. The annual dinner will follow at 11.15 a.m. South Lindsay Street, Dundee. On the Saturday the members will pay a visit to St Andrews in the invitation of the University Court.

DURING the winter session a series of clinical meetings will be held at the Belgrave Hospital for Children 1 Clapham Road, S.W.9 on the second Wednesday of the month at 3.30 p.m., beginning on October 12th. The meetings will be conducted by members of the staff, and medical practitioners are invited to attend.

MR. V. S. MAYOT will give a special demonstration for the Fellowship of Medicine at the Central London Ophthalmic Hospital on October 11th at 4 p.m., free to medical practitioners. A clinical course in progress at the Central London Hospital Nose and Ear Hospital will continue for two further weeks. On four successive Wednesdays at 5.15 p.m., October 12th Dr Heald will give a series of lecture-demonstrations to enable medical practitioners to familiarize themselves with recent advances in medical electrical treatment. An all-day course in diseases of children will be held by the Paddington Green Children's Hospital and the Victoria Hospital for Children from October 17th to 29th and a two-week course in gynaecology will begin at the Chelsea Hospital for Women on October 17th. During October and November a compre-

hensive course will be held at the National Hospital, Queen Square consisting of general neurology, pathology of the nervous system, methods of examination and the anatomy and physiology of the nervous system. A series of demonstrations on the diagnosis and treatment of diseases of the eye will be given at the Royal Eye Hospital on Mondays to Fridays, at 3 p.m., beginning October 24th and continuing until November 5th. On October 17th Sir Humphry Rolleston will give the opening lecture of the series of lectures arranged by the Fellowship of Medicine on practical hints on medicine, surgery, and the allied specialties, at the Medical Society of London, 11, Chandos Street W.1, at 5 p.m. he will deal with the diagnosis and treatment of some endocrine disorders. Copies of syllabuses are obtainable from the Secretary of the Fellowship, 1, Wimpole Street W.1.

THE annual Corporate Communion of the Guild of St. Luke will be held at the Grosvenor Chapel, South Audley Street, W.1, on St. Luke's Day, October 18th at 8.15 a.m. It will be followed by breakfast at Lipton's Cafe 484, Oxford Street, if sufficient members signify their wish to attend. The annual general chapter will be held on the same day at King's College Strand at 5.30 p.m. The Bishop of Southwark will preach at the annual festival Evensong in Westminster Abbey on October 23rd, at 6.30 p.m. Further information may be obtained from Miss J. S. Moore King's College Strand W.C.2.

THE congress of French specialising physicians will be held in Paris under the presidency of Professor Fossier from October 11th to 15th when the following subjects will be discussed: (1) Symptomatology of septicaemia introduced by P. Gastinel and J. Reilly of Paris. (2) Pathology of oedema introduced by F. Aubert and P. Mauriac of Bordeaux. (3) Medical indication and therapeutic value ofolecotomy introduced by N. Fiesinger and P. L. Brodin of Paris.

THE following congresses will be held in Italy this month. The 11th congress of the Italian Association of Hygiene meets at Rome from October 12th to 16th when papers will be read on hygiene and labour, by Professor A. Sclavo of Sclavo the provision of milk by Professor F. Abba of Turin the prophylaxis of typhoid fever by Professor G. Leoni of Rome the disposal of rubbish by Professor P. Pulber and Engineer G. Rodella of Genoa the rural school and the anti-tubercular campaign in the Agro Romano by Dr G. Lescar of Rome. Further information can be obtained from the general secretary Dr Giovanni Palomba, via G. Belli 27 Rome. The twenty-third congress of the Italian Society of Laryngology, Rhinology and Otolaryngology will be held in Parma from October 22nd to 24th inclusive. Details can be obtained from Professor F. Lasagna, Clinica Otorinolaringologica. The second Italian Congress for Combating Tuberculosis to be held in Milan from October 23rd to 26th, will be under the presidency of Professor E. Belloni. The general secretary is Professor Andrea Scarpellini via Palermo 6, Milan. The seventh Italian Congress of Industrial Medicine will be held at Parma, Modena and Carrara under the presidency of Professor G. Gahbi, from October 24th to 26th inclusive when the following papers will be read: (1) Pathology of electricity and x-rays by Professors G. Arellio and E. Pignatelli (2) tuberculosis and emigration by Professor G. Allevi.

THE Chief Justice Storstad Eireann has appointed Dr Edward E. Lennon to be one of his Medical Visitors in Lunacy in succession to Sir William de Courcy Wheeler M.D. resigned.

DR. H. P. NEWSHOLME medical officer of health for Croydon has been recommended as medical officer of health for Birmingham in succession to Sir John Poberison, who is retiring after twenty-five years' service. Dr Newsholme received his medical education at Oxford and St. Thomas's Hospital and has held appointments as assistant medical officer of health at Brighton, Southend and on the Surrey and Wiltshire County Councils. Before going to Croydon he was medical officer of health for the North Riding of Yorkshire.

THE Board of Education has issued two further documents (price 2d. each) in its Physical Training Series one on this training in secondary schools and the other encouraging a more extended education than that provided in the syllabuses of the Board. It has also issued a supplement on physical training, for older girls (price 4d.) and a reference book for gymnastic training, for boys (price 3s. 6d.). These may all be obtained from H.M. Stationery Office or through any bookseller.

DR. KARL SICK professor of surgery at Hamburg University, has been nominated an honorary professor by the Turkish Government for his help in the organization of medical education in Turkey.

AT the International Dental Congress recently held at Copenhagen the executive committee awarded the Miller prize, founded in 1910 to Professor Wilhelm Dieck director of the Dental Institute of Berlin University.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **BRITISH MEDICAL JOURNAL** must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are **MUSEUM 9861, 9862, 9863, and 9864** (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are

**EDITOR** of the **BRITISH MEDICAL JOURNAL**, *Antiology Westcent, London*

**FINANCIAL SECRETARY AND BUSINESS MANAGER** (Advertisements, etc.), *Articulate Westcent, London*

**MEDICAL SECRETARY**, *Mediscera Westcent, London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 4737 Dublin) and of the Scottish Office, 6, Drumshengh Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh).

### QUERIES AND ANSWERS

#### OXALURIA

"**INQUIRER**" writes: I have found oxaluria a growing trouble among my patients. Dieting gives undoubted results, but difficulty arises from the wholesale condemnation of "green and root vegetables." Years ago a French journal published an extensive list of the oxalic content of foods, unfortunately, I have lost the journal. Can any reader give a reference to information on this point?

#### EXPECTATION OF LIFE

"**M S**" wishes to know the average expectation of life of clergy men. How far down the list do they come?

\* \* We do not know of any recent analysis of the data but there is no reason to doubt that the clergy still retain their pride of place as the longest lived members of the community. According to Collis and Greenwood (*The Health of the Industrial Worker*, p. 74), who used the mortality figures of 1900-2, the expectation of life at age 20 of clergy (the census data—that is, including ministers of the Free Churches, Roman Catholic priests, etc.) was 47.1 years the greatest in their list, the next highest figure was 46.2 years for agricultural labourers. According to the mortality figures of 1910-12 (the most recent available) the rates of mortality of clergy and agricultural labourers are still the most favourable among the large groups, so that the expectations of life—which are based upon the rates of mortality—must also still be the best, perhaps a year or two better than the figures of twenty years ago.

#### A PRESCRIPTION FOR EPILEPSY

"**MEDICUS**" writes: I beg to call attention to what seems to me an excellent remedy for epilepsy. The treatment has been tried on a man, aged 42 who has suffered from petit mal for thirty-eight years, formerly having 200 attacks a year, but now only forty and improving. He had been treated by many distinguished physicians but with little or no benefit. Potassium bromide is generally regarded as the essential drug but the great difficulty in its use is the onset of bromism when the salt is given in sufficient amount to keep down the attacks. In the treatment here recommended bromide is still an essential, but combined with another drug that wards off the bromism. The patient has been under my observation for a year and is greatly improved in health. Below is given the prescription.

Pot bromid	3i
Borax	3ii
Mist pyrethri	3ii
Aquum	ad 3ii

Sig. Take one teaspoonful in a little water three times daily after food.

The "mist pyrethri" is made as follows:

Tinct pyrethri	1 an	mj
Formalin		
Tinct lavandulae	eo	ad 3ii

M ft mitte sup (ie 96 doses)

The general instructions given are: Attend to teeth and bowels, avoid red meat, which is toxic in epileptics, take ripe fruit, and plenty of vegetables and salads, attend also to mental hygiene.

### INCOME TAX

#### Liable, but not Assessed

"**J E K**" considers he has been liable to income tax from April, 1925, onwards but so far he has not received any official inquiry or request for a declaration of income. Ought he to take the initiative?

\* \* It seems that the posting on church doors of a notice to return income for assessment is sufficient to create a legal liability to render a return. "J E K's" safest course is to write to the local inspector of taxes saying that, as he may be liable to payment of income tax, he would like to receive one of the statutory forms of return for the current year. If, when the return is examined, the inspector requires particulars for previous years, they should be given, as an assessment for 1925-6 may be made at any time up to April 5th, 1932.

### LETTERS, NOTES, ETC

#### TREATMENT OF MALARIA

DR EDWIN A. NEAIBY (London, W) writes: While science in capable hands, such as those of the lamented Adrian Stokes is seeking to break the etiological chain which leads up to yellow fever and aims at the banishment of the disease from its remaining haunts in tropical America and West Africa, it would be of interest to know what treatment is commonly in use at present day. Steinberg's (mercurial) mixture and Noguch's polyvalent serum seem to be sheet anchors in the textbooks—the former, presumably, being intended to act as a parasite-killer while the latter is a direct antitoxin, introduced since the bacterial origin of the disease became known. In 1889 I was much impressed by reading an article in an American medical journal on the comparative success (in a Florida epidemic of yellow fever) of such remedies as arsenic, phosphorus and the dilute venom of certain snakes—all agents having, in substantial doses, haemolytic properties. I am credibly informed that these drugs in suitably dilute form, still maintain their reputation in the tropical and subtropical regions of the New World, where they have mostly been tested. I do not see them mentioned in modern English textbooks, or that any medicinal treatment is regarded as of much value. If this is the case, the fact that the remedies are obviously selected in accordance with the homeopathic rule of similars should not nowadays deter practitioners from using such well attested drugs, coupled, of course, with the usual nursing and hygienic measures. Such remedies should, of course, be administered in accordance with the well known toxic therapeutic indications at suitable stages for suitable features of this disease.

#### GLYCOSURIA WITHOUT SYMPTOMS

DRS A. D. MCCALLUM and FRED BRADLEY (Preston) write: Within the past six months we have been consulted by two patients, of middle age, whose attention had been drawn to the fact that their trousers legs and boots were bespattered with spots attributable to the use of a public urinal and consequent drying of urine on these parts of their clothing. In both cases no other symptom of ill health was complained of and in both cases the urine was found to be loaded with sugar. We have previously had such a complaint made.

#### HERPES AND VARICELLA

DR ERIC KENDRICK (Coventry) writes to record two cases of venereal chicken pox following shingles. In each case an elderly sister first developed intercostal herpes, the younger brother, chicken pox later. The interval between the rashes was three and fourteen days respectively.

DR E. H. SWIFT (Uckfield) reports a case of herpes and shingles occurring simultaneously in a woman, aged 52, now under treatment. A very severe herpetic eruption developed over the area of the fifth left intercostal nerve on September 22nd. The patient appeared to be more ill during the next few days than usually the case and on September 26th a dentate varicella eruption appeared all over her body.

DR J. RAGLAN THOMAS (Exeter) writes that many years ago, at Llanelli, and subsequently in Exeter, he often noticed an association of cases of these complaints. He reports a recent case of a woman, aged 80 who on September 25th, had severe shingles in the forehead and scalp, along the lines of distribution of the supra-orbital nerve. This was followed next day by an eruption of herpetic character, running into blabs in the forehead area. On October 1st she developed a typical chicken pox over the whole trunk, front and back. Dr Thomas's case of chicken pox has been prevalent in Exeter for some time but has not as yet been able to trace the infection in his present case.

### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical schools, and of vacant resident and other appointments at local hospitals will be found at pages 51, 52, 53, 56, and 57 of our advertisements columns and advertisements as to partnerships, associations, and locumtenencies at pages 54 and 55. A short summary of vacant posts notified in the advertisements columns appears in the Supplement at page 143.



## DISCUSSION ON THE PATHOLOGY AND TREATMENT OF PERNICIOUS ANAEMIA

### I—PERNICIOUS ANAEMIA A SYMPTOM COMPLEX RATHER THAN A DISEASE\*

BY

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Edinburgh

THE clinical picture of pernicious anaemia is sufficiently well established and definite, subject to almost infinite variation though it is. The variations depend on the acuteness and severity of the disease, the prominence of special symptoms according to the part of the body specially disturbed—the bone marrow, the heart, the kidneys, the gastro-intestinal tract, the nervous system (brain, spinal cord, or peripheral nerves) and sometimes even the skin—and to the presence or absence of complications which may mark the primary condition to a greater or less extent. The clue to the mazes of this labyrinth is the examination of the blood, and the diagnosis can never be made with certainty unless this is done. The principal criteria are a high colour index, the presence of megalo- and, in the great majority of cases, leucopenia. Megaloblasts, if they can be found, are helpful, and the platelets are diminished in number, and are individually larger than usual. There may or may not be poikilocytosis, polychromasia, punctate basophilia and other less important changes. The high colour index, the most important of all, is of course due to the fact that pernicious anaemia is a megaloblastic anaemia, that red corpuscle formation has to a greater or less extent ceased to be normoblastic, and that the megaloblasts, left over from embryonic life, have resumed their earlier functions and are pouring out larger red corpuscles into the circulation than the normal ones. The importance of a high colour index is perhaps best shown by remembering how difficult it is to make a diagnosis of pernicious anaemia in remission, when the index has dropped to normal or below it and if there is no properly authenticated history. Unusual anisocytosis, a little punctate basophilia and a leucopenia are all that one can expect and these justify only a conjectural diagnosis.

Probably we are all agreed that pernicious anaemia is essentially a toxæmia—a toxæmia which affects the blood and bone marrow more profoundly and more constantly than any other organ but which may and often does affect also practically every organ in the body in varying degrees. This toxæmia affects certain sets of people with greater frequency. Pernicious anaemia is much more common in people in later middle life when resistance is sapped by other degenerative processes, and the occurrence of familial and hereditary cases is much too frequent to be a mere coincidence. Possibly there is among the people in hereditary or congenital weakness of the bone marrow just as there is in others such a weakness of parts of the nervous system. I have justified myself that the etiological cases cannot be explained by similarity in conditions of life.

The real problem before us is—what is the toxin? We can postulate certain things about it but we do not know its nature. It is usually slow in action gradually accumulating till its maximum effect is produced. If the organism recovers it recovers sometimes very rapidly either because the poison is excreted or because a relative immunity is produced. Then the process begins again and may be repeated several times. The toxin is generally regarded as haemolytic but there is very little real evidence that it is so in the sense of actual dissolution of corpuscles. It is more probable that both circulating corpuscles and those in process of formation in the marrow are poisoned and therefore more easily destroyed by the ordinary phagocytic processes in the marrow, spleen, haemolymph glands, liver and else-

where. It is probable also that the toxin in some way specially interferes with the normoblastic function of the marrow and inhibits it. It is certain that it inhibits the normal development of the neutrophil series of leucocytes, it is quite common to see cases in which the white count has never exceeded 4,000 per c. mm. with a low proportion of polymorphs even though septic processes have occurred, and have been successfully overcome, and in which post mortem the marrow is full of myelocytes with hardly a polymorph to be seen. Possibly the same sort of thing occurs with the normoblasts, the first sign of improvement in the blood is often a slight drop in the colour index, because the bin has been lifted and more reds of normal size are coming into the circulation. In some way the toxin interferes with the formation of blood plates. They are few and large in the early stages, increase and become smaller as improvement takes place, and may be numerous in remission. The toxin produces sclerosis in the spinal cord and scattered necrotic areas in the liver. Other changes might be added, such as chronic inflammatory lesions in the kidney, punctate basophilia in the reds, which is undoubtedly a toxic evidence, and so on, but enough has been said to show that the toxin is capable of producing widespread changes not only in the marrow and blood, but in all the other organs which have to do with the destruction or elimination of poisons, or which can be influenced by them. Further these changes are of the same kind as those which are accustomed to associate with microbial poisons, with the single exception of the high colour index. All the other septic anaemias using the word septic in the widest possible sense show a low colour index.

Can we recall any known organism of causing the disease? The answer is I think, so far in the negative. There is certainly no organism to be found in the blood itself. Countless blood cultures have given negative results and I can certify that no known stain enables us to demonstrate organisms of any kind in the plasma or corpuscles. The first organism to be accused was the streptococcus mainly because it was found in the mouth, stomach, and faeces of cases of pernicious anaemia but partly also because of fancied success in treatment with serum and vaccines. I shall have more to say of this latter part later on, but as regards the former we know how ubiquitous streptococci are. For many years back I have records of faecal cultures in all sorts of conditions and I am convinced that streptococci are not more common or more numerous in pernicious anaemia than in many other conditions, and, according to the latest studies, they are not of the haemolytic type at all. They certainly are not constantly present. The same applies to throat and other cultures. If a haemolytic streptococcus were really the cause of pernicious anaemia we should expect and should find an entirely different series of blood changes. The same applies to the *Bacillus coli* who claims have also been mooted, with still greater force.

The most recent prisoner at the bar is the *Bacillus welchii*, a non-proteolytic spore-bearing anaerobe, which is a normal inhabitant of the intestine and which can cause gas gangrene or wounds when they become infected with it. Mouch Kuhn and Torrey led the way in the study of *B. welchii* in this connection. They demonstrated that the faeces of 33 cases of pernicious anaemia contained a high number of *B. welchii* (and also of *B. coli* and streptococci) than those of normal persons. Of the three organisms the only one really haemolytic was the *B. welchii*. The other two were of the normal intestinal type. None of the four strains of *B. welchii* strongly haemolytic though they all were very more potent in this respect than strains from normal persons. Therefore the author points out that the most virulent strain of *B. welchii* is to be regarded as an anaerobic toxin-producing anaemia. It may be rather because it either excretes a number of active in the colon or more probably in the small intestine into which they might wander, or to unusual permeability of the intestinal wall to their toxins. I frankly it is unlikely that excessive numbers of organisms in the colon could alone produce a disease like pernicious anaemia and the next step is to demonstrate that organisms of the type normally found in the colon are present in the small intestine in pernicious anaemia in

\*The opening paper of a discussion in the Section of Medicine at the Annual Meeting of the British Medical Association, Edinburgh 1917.

usually large numbers. There is already a considerable body of literature which tends to show that this actually occurs. The methods used are various, from the passage of the diodenal tube to the establishment of an ileostomy, but apparently every worker found the flora quantitatively increased, and many describe the invasion of the small intestine by colonic types. These most frequently found in excess were streptococci and *B. coli*, in most cases the technique used was not suited to demonstrate *B. welchii*. It is known that artificial stenosis of the ileum in dogs causes the flora of the small intestine to become the same as that of the colon, and Williams has shown that the same thing happens in man as the result of acute intestinal obstruction, while the striking curative effect of *B. welchii* antitoxic serum in his cases shows how potent that organism must be when it makes its way into the small intestine in large numbers. Kahn and Torrey have carried the indictment of this organism several stages further. They injected monkeys intravenously with *B. welchii* toxin in small doses, and claim to produce all the blood changes which are considered to be typical of pernicious anemia. In work which is not yet published they damaged the mucous membrane of the stomach of monkeys, and fed them with cultures of *B. welchii*. They then found in the blood and tissues changes identical with those found in pernicious anaemia in the human being. All the workers on this subject assume that the cause of the upward spread of the colonic flora is the gastric achylia which is present in the disease.

This is very strong evidence if it is confirmed, and we may be certain that the last word on the subject has not yet been said. We have all felt sure for many years that the intestine was a probable source of some of the toxins causing pernicious anemia, even though the deposit of hemosiderin in the liver is no proof of blood destruction in the portal system itself, as it occurs when hemolysis takes place in the general circulation.

It has often been suggested that some spirochaete or protozoon might be responsible, but so far no definite evidence against either has been adduced. A considerable amount of work has been done in America with the view of showing that sufferers harbour intestinal parasites of various kinds (other than bothrioccephalus), and that extinction of these is followed by cure.

A great deal of work, much of it bewildering to the non-chemist, has been done in the endeavour to show that a deficiency of cholesterol in the blood is wholly or partly responsible for haemolysis, and it is pretty definitely known that cholesterol is diminished in the blood in pernicious anemia. Unsaturated fatty acids, strongly haemolytic, are always present in the blood even in normal people, but are presumably kept in check by the cholesterol or some other antihemolytic body. It is conjectured rather than actually proved that the amount of haemolytic lipids in the blood is increased in pernicious anaemia, but there is no agreement among authors as to how the antagonism between the haemolytic substances and cholesterol acts upon the corpuscles so as to produce haemolysis. In any case, while some such action may be the means of haemolysis, it is obvious that a low cholesterol value and a high fatty acid value cannot be a primary change, but must be secondary to some general metabolic disturbance caused in some as yet unknown way. The spleen has been regarded as an important factor in this connexion, and it is stated that after removal of the spleen the cholesterol value in the blood is increased, and the fatty acids are more completely saturated, that blood corpuscles taken from the splenic vein are less resistant than those in the general circulation, and that after splenectomy in dogs the corpuscles become more resistant not only to hypotonic saline, but to other haemolytic agents. It seems to me, however, that while this may have an important bearing in such conditions as reholmic jaundice, in which the corpuscles are less resistant than normal and in which it is known that splenectomy causes improvement, it is far-fetched to transfer the conclusions to pernicious anaemia, in which the corpuscles are more resistant than normal, not only to hypotonic salt solutions, but probably to other haemolytics as well.

We must next consider the part played by gastric achylia

in the production of the disease. Achylia is practically constant, for while I have found hydrochloric acid present in a few cases in the test meal, I have sometimes also found it present in gastric cancers, in which its absence is just as much the rule. Cases are known in which, after relief lasting for years, pernicious anemia has developed. It has been shown that among the relatives of patients achylia is relatively frequent, though it must be admitted that achylia has not been sought for with the same keenness in the relatives of patients suffering from other diseases. It is, of course, known that it is of frequent occurrence, not only among normal people, but in a host of debilitating conditions of the most various sorts. Obviously the evidence I believe that achylia is the primary factor will hail with delight the recent work which I have quoted on the transformation of the flora of the small intestine. But there are many difficulties which have to be met. It must be demonstrated that persons with achylia show this intestinal transformation before they develop pernicious anemia, otherwise the change in flora might be secondary to the disease, and not its cause. Some explanation must be found for the fact that the achylia secondary to various debilitating diseases do not develop pernicious anemia, and that is especially the case with gastric cancer. I have only seen two cases of pernicious anemia associated with gastric cancer—an infinitesimal fraction of my experience of the disease, and as certainly accidental as its occasional association with cancer of the breast, the larynx, and other organs. One can imagine no other condition so likely to lead to floral transformation as gastric cancer, and yet the anemia which it produces is always one of low colour index. One of the most striking facts about pernicious anaemia is that it does not develop out of an anaemia of low colour index, but, as far as I can judge, is primary in the sense that it is megaloblastic from the beginning.

We must remember that what we may call cryptogenic or idiopathic pernicious anaemia is not the only form in which the disease occurs, but that there are large groups of cases in which the cause is known, though we do not always know how the causal condition acts.

I may cite first bothrioccephalus anemia, with a blood picture and symptoms identical with those of pernicious anemia, and in which cure follows the removal of the worm. Only a few of the persons harbouring the worm develop the disease, and it is suggested, on the one hand, that it is only those who have a pre-existing hemolytic weakness who do so, on the other, that it is only when segments of the parasite are digested, possibly because the worm is dead or enfeebled, that the toxic agent is set free in the intestine and absorbed from it. The toxic agent in this case is believed to be cholesterol oleate, which is not only haemolytic, but probably inhibits the normal blast function, and so fulfils two of my main postulates.

In contradistinction to this are the observations on the pernicious anemia of horses. The disease is believed to be due to the infestation of the gastric mucous membrane of the horse by the larvae of certain flies. A toxin apparently protein and not lipid is produced, which is carried in the blood, and can cause the disease when the blood is injected into other horses. In one case a human being is believed to have been infected from a horse. Here we have two different toxins of quite diverse character apparently producing the same effect in the blood, bone marrow, and other organs.

It is definitely established that a certain proportion of cases of sprue are also cases of pernicious anemia. I think the larger part of the anemic sprues that I have seen have had a low colour index, but it is possible that they may have been in remission so far as the pernicious anaemia was concerned, or may not have developed it. I have given details elsewhere of a number of cases in which the blood and other evidences were typically those of pernicious anemia, with the same tendency to remission and relapse, and many others are known. The cause of sprue is definitely established, a yeast (*Monilia*) has been considered to be the causal agent, but there seems grave doubt whether it is not a secondary saprophyte. In this connexion another group of cases, of which I have seen four examples, is of interest. These were persons who had either never been out of this country, or at least had never been in

any country where spruce is endemic. They were all typical pernicious anaemias, as far as their blood and symptoms could guide one—one of the severe fatal type, the other three milder and more chronic but with the usual tendency to remission and relapse. They all had stools like those of spruce, two had sore tongue, two had not. The pancreatic insufficiency, so far as one could judge, had preceded the development of pernicious anaemia. Indeed, in one of the patients a man of 34 pancreatic defect was known to have existed since he was 3. The blood had never been examined until I saw him first, a few months ago. Are we to enlarge the definition of spruce to include these cases? If not, in what way does the pancreatic defect act? Does the interference with digestion allow of the formation of a protein or of a lipid poison, or does it encourage the growth of organisms?

Other groups of cases are those caused by seplulis and malaria, in both of which the marrow is probably primarily affected, and both of which can be cured by curing the original disease.

A different type is that associated with pregnancy. It is not very uncommon and in my experience is not usually fatal though it may be so. No organismal infection has been demonstrated, and there is a general tendency to regard it as due to some metabolic disturbance interfering with the marrow. The cases that recover seem to do so completely, but some have been known to develop pernicious anaemia again in a later pregnancy.

Another condition which can produce the blood picture of pernicious anaemia is over radiation. It may do so in normal persons but seems more likely to do it in leukaemic patients in whom the marrow is already disturbed. An actual aplastic anaemia may be produced. Here there is no evidence of haemolysis, so far as is known but rather of normoblastic exhaustion. A considerable proportion of primary aplastic anaemias show a high colour index. We know nothing of the cause of the condition, whether it is a toxin or a depressing marrow reaction, a congenital marrow defect or a combination of the two. There are other poisons such as benzol and trinitrotoluene, which may have a similar effect.

The sum of all this is that there are many conditions known and unknown which can produce a megaloblastic anaemia that we cannot hope to discover the cause of pernicious anaemia because there are many causes. In other words pernicious anaemia is a symptom complex rather than a disease. What we hope will happen will be that gradually the great group of cryptogenetic cases which includes by far the largest proportion, will be eaten in on by discovery. Some error in the intestinal canal is probably the starting point of most of the cases of this group, but it does not follow that the error is always the same error and it seems to me that underlying its operation is probably the power of resistance, congenital or acquired of the blood and bone marrow to its influence. This determines whether, in two persons with the error  $x$  one shall develop pernicious anaemia, the other a secondary anaemia or none at all.

#### TREATMENT

The treatment of pernicious anaemia is unsatisfactory, as we all know from the point of view of ultimate cure, but it is possible to do a great deal for these cases, and it is most important to approach treatment in a hopeful spirit and not to allow oneself the patient, or his friends to be daunted by the unfortunate name of the disease. Nearly 100 per cent recover, or should recover, from a first attack the great majority will from a second. It is in the later relapses that real difficulty arises, and that our therapeutic resources are tested. But even then no stone should be left unturned, for there are many cases on record of complete recovery, and many more of very long remissions. My own best case is that of a lady who from 48 to 50 was very ill required several transfusions removed and has remained well till her present age of 70.

Past sunlight, fresh air, cheerful surroundings, general tone measures are as important as in any other toxic condition. Diet requires to be regulated by the patient's alimentary condition, and has to vary between the severe

simplicity of peptonized milk in cases with much distress, and a practically full diet when the stomach is not disturbed. Minot and Murphy have recently suggested a diet with a high complete protein value in which the main ingredients are liver meat preferably bullock's heart, fruit, and so on. My experience of this diet is limited, several patients who have had the courage to persevere with it have done well—one case is still in remission after two years—but it must be confessed that none of the cases had gastro-intestinal disturbance at any time and they had all been able to take large doses of arsenic in the early stages so that they would probably have done well in any case. Other cases have not borne the diet well or have rebelled against it. It is very important to regulate the bowels and vents cases that can stand it are always the better for colon lavage. Hydrochloric acid is used as a routine measure for in medium doses it certainly helps appetite and improves digestion, but I find that the huge doses that Hirst would have us use are not well borne, can hardly ever be persisted with, and have no advantages to compensate for the discomfort they cause. Of course, in cases associated with severe gastric catarrh the acid is not tolerated at all and one has to fall back on ordinary sedative measures.

Arsenic remains our standby and there is no doubt in my mind that the best way of giving it is as the hydrochloric solution by the mouth gradually increasing the dose till the patient's limit of tolerance is ascertained and continuing with the largest dose that can be taken with complete freedom from arsenical symptoms until in favourable cases a colour index below unity is attained. It should then be stopped and iron given instead. Iron is only useful in this disease at this stage and should never be given earlier. The tolerance of arsenic is one of the most useful prognostic indications we have. Patients who can take 10 minims three daily will almost always do well those who cannot get up to 5 minims generally will not. We do not know with certainty how arsenic acts. It is a stimulant to normoblastic regeneration and must be useful in that way, but I think most of us feel that it has some further action either antiseptic or toxic or antibacterial. If a patient cannot take arsenic by the mouth after the stomach has settled down his chances of recovery by the use of arsenic given in any other way are small indeed. I have satisfied myself by repeated clinical observations that cases recover more quickly with arsenic by the mouth than if it is given intravenously or intramuscularly either in simple solution or as the organic arsenics, and I have. I think, given a fair trial to all the latter. Therefore I am apt now only to turn to the organic arsenics when arsenic by the mouth has definitely failed—very rarely do they then succeed.

Mercuriochrome has been tried. I have given it intravenously in five cases. In three it had no effect beyond giving the patients very sore mouths in one it did not prevent a speedy fatal issue in the fifth it was brilliantly successful. It was a puerperal case the patient was very ill, could not take arsenic and was running a high swinging temperature without any discoverable cause. A single injection of mercuriochrome brought the fever to an end, and the patient began at once to improve under the usual treatment. Probably she was suffering from a septicæmia in addition to the pernicious anaemia, although the blood culture was negative.

Transfusion of blood was discussed in this Section last year at Nottingham and I need therefore only quote my conclusion then that it is not curative is sometimes not even useful but may be of great service in helping the patient round a critical corner when his vitality is exhausted by toxæmia, and may give him a chance to recover himself.

Curiously enough, normal horse serum given either intramuscularly or by the mouth sometimes seems to be of service when arsenic fails. I was led to try it originally by reported successes with anti-treptococcus serum. I could not persuade myself that the anti-treptococcal part of the serum could be of value and the occasional good result from the unfiltered serum justified that feeling. I understand that many cases are still treated with vaccines usually streptococcal, made from the patient's faeces or

stock. I tried these at one time, as I have tried almost everything that has been suggested as treatment for this disease, but satisfied myself that they were of no value. They are very apt also to cause severe reactions, even with the greatest care in dosage, which always throw the patient back. I have already given reasons for believing that streptococci play no part in causing the disease.

Intestinal antiseptics are not curative, but are often useful as adjuncts.

Splenectomy has come into vogue of late years, especially in America. It is a purely empirical procedure, for we really know nothing of the part which the spleen plays in the disease, and it can be done with fair safety, for it is extraordinary how well cases of pernicious anaemia will stand operation. But I have never been able to satisfy myself from published reports that the cases did any better than those treated in the ordinary way, or, generally speaking, so well, and I have never advised this operation. One observer has noted that if a relapse occurs after splenectomy it is usually the last.

Many other drugs and substances have been used which I forbear to mention. In no disease is it more difficult to estimate the effect of treatment, unless one has dealt with large series of cases, because of the tendency to remission which may come on at any moment without warning, and without cause. A recent case impressed this on me afresh.

A lady of over 70 was admitted to a nursing home delirious, febrile, sick and thoroughly poisoned looking with red cells numbering 760,000, and haemoglobin 20 per cent. She was so ill and feeble that even transfusion was not thought to be worth while, and she was treated simply by careful feeding and nursing and a little arsenic by the mouth. Within three days, far too soon for the arsenic to have acted, she had greatly improved, the haemoglobin had risen to 33 per cent., and within a month she was practically well with haemoglobin 76 per cent.

Had anything energetic been done—transfusion, splenectomy, massive doses of a serum or vaccine—she would have been hailed as a brilliant success for that particular line of treatment. The real truth is that if a case has made up its mind to have a remission it will have it, and no treatment, not even wrong treatment, will prevent it. These dramatic recoveries are more common in first and second attacks, but may occur even with later ones. One is inclined, therefore, to be sceptical about the result of any new line of treatment unless a large number of cases have been dealt with, and it has been found to be as useful in late attacks as in early ones.

Theoretically we ought to keep our cases under observation during remission, but we all know how difficult it is to do this. It is the time, however, in which anything that will build up the patient's resistance should be undertaken, and when we get a real explanation of the cause of the erythropoietic group, we may hope that remission will be the time when the cause or causes may be dealt with. So much attention is now being focused on the disease that we may surely hope for advance, though it will be made more probable by the chemist or the bacteriologist than by the clinician.

## II—HAEMOLYSIS AND THE BONE MARROW IN PERNICIOUS ANAEMIA

BY

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PROFESSOR GULLAND's statement that the clinical picture of pernicious anaemia is well established and definite is true, but there is this difficulty—that the term, as used by different writers, has not always the same significance. For instance it is not that the proportion of recoveries in pernicious anaemia is at least 10 and possibly 20 per cent. again, that it is only one half per cent., and yet again that if a patient recovers the disease was not pernicious anaemia. These different writers have apparently a different conception as to what exactly constitutes pernicious anaemia. In considering the pathogenesis of the disease, however, we are mainly concerned with the interpretation of the symptoms and *post-mortem* appearances, and these, I think, are not in dispute.

Now the two most notable features in pernicious anaemia, from the point of view of its morbid anatomy and also of its symptomatology, are (1) the evidence in the liver and other tissues of increased destruction of red corpuscles, and (2) the marked changes, both macroscopic and microscopic, which are found in the bone marrow. It is on the latter points that the discussion as to the pathology of pernicious anaemia must centre. The two are doubtless related, but what the relation may be is not certainly determined. It has been held that the haemolysis is the primary event, and that the marrow change is due to an endeavour on the part of the blood-forming organs to compensate for the cells lost. A second view is that the marrow change is the primary one, and that the haemolysis is due to abnormal blood cells from an abnormal marrow undergoing destruction more rapidly than normal. The third view suggests that the haemolytic changes and the changes in the marrow are more or less coincident. All these theories presuppose the presence of a toxic substance acting on blood or marrow, or on both blood and marrow. In the pernicious anaemia due to the bothrioccephalus we know the source, and perhaps the nature, of the toxin, and we are aware that appearances like those of pernicious anaemia can be produced experimentally by certain haemolytic serums and by several chemical poisons. But the nature and source of the toxin in the vast majority of cases of pernicious anaemia are unknown. Many theories have been advanced. Predisposition without doubt must count for something. Professor Gulland has mentioned the occurrence of the disease in two or more members of the same family. There is the absence of free hydrochloric acid, which not only determines loss of an antiseptic to the stomach, but is often associated with the less vigorous and milder type of individual. Pernicious anaemia is a disease of late years, and I would emphasize the comparative frequency with which it is met in advanced life. I have noted, too, how often in cases of pernicious anaemia, in women at least, there is a history of "bloodlessness" during adolescence. As showing the tendency to "disturbance" of the marrow in the same family, I would quote the case of a woman with polycythemia rubra vera who inquired whether she had pernicious anaemia, as her brother had died of that disease three months previously.

As regards the exciting cause in pernicious anaemia, I always think of this disease as a subinfection of some sort, somewhat analogous to what is found in the marrow and biliary tracts, and possibly in diseases so different as Hodgkin's disease and disseminated sclerosis. All the conditions have periods of improvement and exacerbation, and in all of them the disease is most difficult to eradicate. The fever which is so frequent in the more acute phase of pernicious anaemia suggests an infective process, and when a patient with pernicious anaemia has fever the condition has usually become more or less critical, for the anaemia is then often rapidly progressive. In one typical case of pernicious anaemia under my care, this fever ultimately took on the characters of the Pel-Ebstein type of Hodgkin's disease.

With reference to the relation of the haemolysis to the megakaryoblastic marrow, I cannot satisfy myself that the haemolysis is simply due to the presence of immature cells in the circulation, these being more vulnerable and so readily dealt with by the normal haemolytic apparatus. There are cases of profound anaemia of the so-called secondary anaemia type where similar immature cells are in the circulation, and in which no such haemolysis occurs. And so, while the immaturity of the red corpuscles may be one factor in the increased haemolysis of pernicious anaemia, I think the evidence favours the view that there is also a definite haemolytic agent present, which is not in most other anaemias, as well as in the normal individual. There is little evidence that this haemolytic substance acts directly on the red cells. It seems more probable that it acts by stimulating the normal phagocytic process in the spleen, marrow, and other tissues.

That the megakaryoblastic marrow is entirely due to the increased destruction of red cells also seems to me improbable. Formerly it was held that the megakaryoblastic marrow was the result of the great overactivity of the marrow, the type of cell becoming more primitive so that it multi-

pl's more rapidly. But in polycythæmia, where there is apparently a great demand for the production of red corpuscles (sometimes there being three times the normal number of red cells in the circulation, and thus over a period of many years), there is no megaloblastic marrow. The same applies to acholuric jaundice where judging from the amount of bile pigment in the blood, the haemolysis must be at least as great as in pernicious anaemia. It must be remembered also that there is presumably a megaloblastic marrow in the earliest recognizable stage of pernicious anaemia at a time when there is very little anaemia of any sort. This is perhaps best seen in cases of acute combined degeneration of the cord, where with an anaemia of not more than is represented by 80 per cent of corpuscles, the blood is megalocytic in character. Consequently, the change from a normal to a megaloblastic marrow, which occurs, at least to some extent, when the patient has his remission, is of importance in this connection for it apparently must be initiated in many cases when the anaemia is still very profound, and a high degree of need for red corpuscles. It would seem that the megaloblastic change in marrow is more or less an initial change, produced possibly by the toxin which determines the increased haemolysis.

The following clinical details are of interest in this connection.

In a patient with polycythæmia who has been under observation for the past five years the red corpuscles ranged at first from 15 million per cubic millimetre, but under treatment with iron the number was reduced to 61 million. He took blood transfusion doses for four years and seemed to get on fairly well. He was reported again early in May 1927 he had been having drug treatment for about a year and the red cells were now 11 million. He was given phenyl hydrazine 4 grains daily and 14 days later the dose was increased to 8 grains. In three weeks time the red corpuscles had fallen to 4½ million with a colour index of 1.0. The films now showed the appearance of megaloblastic anaemia of moderate degree. The drug was then stopped and the megalocytes gradually lessened in number. On resuming treatment with smaller doses the megalocytes seemed to become more evident again. There was practically no bile pigment in the blood during treatment as shown by the van den Bergh test. Before treatment the serum was estimated at 1 unit and during treatment it did not rise higher than 1.2 unit. Before treatment the tests for urobilinogen and urobilinogen in the urine were negative and during treatment there were never more than faintly positive.

This case, in conjunction with the observations quoted above, seems to suggest that in certain toxic states there is an inhibition of normoblastic marrow with a corresponding anaemia, and that the megaloblastic marrow is consequent on or associated with this inhibition. The period of improvement in pernicious anaemia would thus be due to the withdrawal for the time being of the toxin which causes the disease. We know that the blood-forming organs are very sensitive to stimuli of one sort or another as illustrated by the leucopenia and the different forms of leucocytosis—polynuclear, eosinophile and mononuclear—which are met with in various morbid conditions. In pernicious anaemia the white cells are affected in this way but not the red cells. Certain other organs are readily disturbed by toxins, for example, the thyroid gland will hypertrophy or such stimulus, and sometimes this hypertrophy is an abnormal one—as for instance, in Graves's disease. A somewhat analogous to this occurs possibly in the marrow in pernicious anaemia.

It has also been suggested that this megaloblastic transformation in the marrow is the primary event in pernicious anaemia, the megaloblasts replacing the normoblasts much in the same way as the myeloblasts and myelocytes replace the erythroblastic marrow in leukaemia. I do not think this explanation helps us much, other than by suggesting an analogy, for we do not know the cause or the nature of leukaemia, whether leukaemia is regarded as neoplastic or hyperplastic in origin, there must be a stimulus of some sort producing such abnormal growth in the marrow. What that stimulus is remains a mystery. The fact that the extent and activity of the marrow varies greatly in different cases of pernicious anaemia, sometimes seeming almost aplastic and in other cases highly cellular, would seem unfavourable to this view of replacement of normal marrow as an initial event and so I think the evidence is rather in favour of inhibition

tion of normal marrow as primary, with megaloblasts in marrow as a secondary development.

In dealing with this megaloblastic reaction in pernicious anaemia I have spoken of it as being present in the bone marrow. But certain writers have described in the liver little intra-vascular areas which, they say, produce megaloblasts. They hold that these cells are formed locally, and are not simply convected there from the marrow by the blood stream. In other words they indicate that there is a return of the primitive blood formation in the liver, such as is met with in the embryo. Indeed, Piney seems to insist that in pernicious anaemia the liver is the only seat of origin for the true megaloblast, the large nucleated red cells formed in the marrow being what Nigeli called macroblasts—that is, cells as large as the megaloblast, but with a "cartwheel" nucleus and cytoplasm showing various degrees of polychromasia. These two cells are supposed to belong to different generations, the megaloblast representing the primary blood formation in the liver of the embryo, the macroblast the secondary formation of the bone marrow. The macroblast develops into the normoblast, but with the megaloblast there is no such relationship. Piney states that the large nucleated red cells found in experimental anaemias of the haemolytic type are macroblasts and not megaloblasts.

These views, if confirmed, open up a question of much interest in regard to the relation of the various cases of anaemia included under the symptom-complex pernicious anaemia but it is a matter for the skilled histologist rather than the physician. But in spite of such changes in the liver there exists in pernicious anaemia a marrow which we still call megaloblastic, and in which we find little groups of cells of primitive type—megaloblasts, megalocytes, and perhaps still more primitive cells, all cells such as are met with in the embryo. This marrow is not normoblastic and it presents one of the most constant and notable features in the pathological anatomy of pernicious anaemia. Such a marrow must be taken into account in discussing the pathogenesis of pernicious anaemia.

At the same time, I must emphasize the point that, since pernicious anaemia can be produced by several different toxins, so this megaloblastic marrow will be evolved in response to a variety of stimuli. There seems, too, no reason why there should not be lesser degrees of megaloblastic change without producing the complete picture of marrow and blood characteristic of pernicious anaemia. It is a question of inhibition of marrow there may be degrees of this inhibition, and degrees of megaloblastic response. In that way might be explained the profound secondary anaemias of long standing where at times there is a high colour index and megalocytes in the blood. In aplastic anaemia little areas of megaloblastic marrow have been noted *post mortem* in an otherwise aplastic marrow and a similar megaloblastic reaction has been found in the marrow of some patients dying of acholuric jaundice. I saw recently a woman, aged 34, who had been suffering from purpura of moderate severity for twelve years. The red cells numbered just over 1 million, with a colour index of 0.8, and there were numerous megalocytes and megaloblasts in the films, giving a picture more typical than in many cases of pernicious anaemia. The so-called pernicious anaemia of old age I think, can best be explained in this way. The following case illustrates this.

A man aged 78 complained of loss of strength and rheumatic pains for which he had been treated at Harrogate. His blood count was 70 per cent of the normal and had the characters of a secondary anaemia. Five weeks later and without obvious cause the red cell count had fallen to 1½ million with colour index 1.5. The films now presented the appearance of a typical pernicious anaemia. That is, I am unwilling to label a pernicious anaemia. I think it is more likely of the aplastic type.

Professor Gulland has said that pernicious anaemia is megaloblastic from the beginning and does not develop out of an anaemia of low colour index. But we so seldom have an opportunity of examining cases of pernicious anaemia in the initial phase of the disease that it is difficult to find evidence for or against that statement and so I record the following case.

A woman aged 31 was under observation in the hospital for three different periods in the course of two years. There was no obvious



cause for her anemia other than oral sepsis, which was pronounced, and perhaps poverty and ill feeding. When first examined the red cells were just under 2 million, with a colour index of 0.55, and the films gave the appearance of a secondary anemia. The patient was treated with iron, and in the course of the next ten days the red cells had increased to nearly 3 million, and the colour index was now 0.64. During the following six weeks the red cell count fell till it reached 1.1 million, the colour index being 1.6, and the films typically those of pernicious anemia. From that time onwards the course was that of pernicious anemia, with two periods of very marked improvement. She ultimately died with a count rather over half a million.

It is difficult to insist that this case, when first seen, was not pernicious anemia with a remission, but the age of the patient, the count of two million red cells and very low colour index, and the appearance of the films, were much more suggestive of a secondary anemia.

I have seen a number of cases of pernicious anemia associated with syphilis, but I could not satisfy myself that the syphilis was the causal agent in producing the anemia, for in none of the cases did antisyphilitic treatment produce a cure. In one case there was improvement coincident with the giving of mercury, but the patient about the same time had also a blood transfusion, and anyhow the anemia recurred and proved fatal some two or three months later. Mercury in this case did not seem to affect the course of the anemia to any material extent.

### III—TREATMENT OF PERNICIOUS (ADDISONIAN) ANAEMIA WITH A DIET RICH IN LIVER

BY

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SINCE Addison in 1849 first described under the title "idiopathic anemia" the disease now known as pernicious anemia or Addison's anemia, it has received much study and many forms of therapy have been advised. The spontaneous remissions of the disease and the bizarre course it often runs have made it notoriously difficult to determine accurately the effect of any procedure upon it. Even so, there has not occurred heretofore a prompt, rapid, and marked increase of the red blood corpuscles to a level of 4 million or more per cubic millimetre in essentially all cases following a given form of treatment. Our experience<sup>1,2,3,4</sup> with 125 cases of typical Addisonian pernicious anemia has taught us that this is made possible by the daily ingestion of large amounts (150 to 225 grams) of mammalian liver, together with an adequate well balanced diet. The 125 patients have been treated with the liver diet for from three months to three and a half years. The health of all has been distinctly improved. Not only has nearly every one of the patients responded promptly to the liver diet, but if they have continued to take it satisfactorily their red blood cell count has remained elevated, and in almost all instances above 4 million, and usually above 4.5 million, per cubic millimetre.

Liver was selected as a food that might benefit patients with pernicious anemia for various reasons. Among others it was chosen because we thought it might stimulate the maturation of the megakaryoblasts that crowd the bone marrow in aplasia. Peabody's<sup>5</sup> excellent studies upon the pathology of the bone marrow obtained by puncture indicate that liver feeding probably does act in this manner. We have shown<sup>6</sup> that after feeding with large amounts of liver there occurs with extraordinary regularity a prompt temporary, often marked increase of the young red blood cells (reticulocytes). This behaviour of the reticulocytes also suggests that liver stimulates the maturation of the megakaryoblasts. Approximately the reticulocyte increase is inversely proportional to the height of the red blood cell count. This is to be expected because there are fewer megakaryoblasts in the marrow when the count is relatively high than low. When the count is about 1 million per

cubic millimetre the reticulocytes start to rise (from a level about 1 per cent of all the red blood cells) in from three to six days after eating an adequate amount of liver. The peak of their rise occurs a few days later, reaching often 15 per cent and sometimes above 40 per cent. By the end of about sixteen days these cells usually have returned close to their normal percentage. When the red blood cell count is about 3 million per cubic millimetre the reticulocytes rise only a few per cent. The increase is much about, and then only in special circumstances.

The beneficial effect of eating liver can hardly be attributed to stopping a hemolytic process. It has seemed to us that the dysfunction of haemoglobin pigment metabolism is a secondary phenomenon, and that the anemia is primarily not due to a hemolytic process, but to a defect in the manufacture of the red blood corpuscles.

The nature of the material effective in pernicious anemia is being investigated by studying the influence of giving fractions of liver. Dr. Edwin J. Cohn has isolated an effective fraction, and with him and our associates we have made preliminary reports concerning it.<sup>7,8</sup> This fraction represents about 1 per cent of the liver. It contains nitrogen, but is non-protein in nature, is precipitated by alcohol, and soluble in water. The indications at present are that its effect is not due to known vitamin. A few grams of the purest fraction taken daily by mouth as a powder or in an aqueous solution is followed by a prompt and marked increase of reticulocytes and a rapid rise of the red blood corpuscles, and in a similar manner is as beneficial to patients with pernicious anemia as whole liver. This has been the effect in twenty patients treated recently with a potent fraction, including two in whom the disease was so far advanced that they were in a comatose condition when treatment was begun. Only two other patients have been given an effective fraction, and these were in a state of coma and died within four days after the treatment was started. During the time of our studies West<sup>9</sup> has also obtained a potent fraction. Knowledge of the precise nature of the effective material which appears to act in a rather specific manner, may lead to a better understanding of the mechanisms of the disease.

The details concerning the effect and use of the liver fraction will be presented at a later date, but summarized statements concerning the 125 patients treated with the liver diet are given. There has been little difference in the rate at which the red blood corpuscles rose or the level they reached when the diet was started in a first relapse or a subsequent one. The increase of reticulocytes occurs before there is a definite rise in the red blood corpuscle count.

Table showing the Rate of Increase of the Corpuscles for all of the 108 of the 125 Patients whose Red Blood Cells rose below 1.5 million per cubic millimetre when they were first placed on the Liver Diet—no matter whether they took it well or poorly

Time of Observation	Average Red Blood Cell Count in million per cubic millimetre
Before diet begun	1.50
After diet taken about one month	3.36
After diet taken about two months	4.10
After diet taken from four to six months	4.45

Accompanying the rise of corpuscles the excess of heme pigments in the plasma rapidly decreased so that after within three weeks the icterus-index has become less than commonly observed in normal people. Macrocytosis of the red blood cells decreased as the counts rose, so that the average diameter of the cells often has become normal and sometimes smaller.<sup>10</sup> Furthermore, as the red blood cell counts rose to over four million per cubic millimetre and haemoglobin approached normal, the colour index frequently became less than one and sometimes below normal.

The red blood cells of 119 patients have reached 4 million or more. They have remained at or above this level except for temporary, seldom marked drops in about 15 per cent of the cases. The decreases were not

<sup>1</sup> From the Medical Service of the Collis P. Huntington Memorial Hospital of Harvard University; the Medical Clinic of the Peter Bent Brigham Hospital, and the Department of Medicine of the Harvard Medical School.

always associated with a partial or complete omission of the prescribed amount of liver. Failure to take a sufficient amount of liver or the presence of a complication, such as an infectious process, may cause the count to fall, or may cause it to rise less rapidly than might be expected. Damage to the bone marrow from multiple transfusions of blood may be a reason for an unsatisfactory response to liver feeding.

The health of the six patients whose counts have not reached 4 million per cubic millimetre has been distinctly improved. In at least three the count has not risen above about 3.5 million per cubic millimetre because the patients have not taken the liver diet satisfactorily. In the other three, probably because of complications, the count has risen unusually slowly and only to about 3.75 million in two and 3.3 million per cubic millimetre in the other. Experience with patients who have responded slowly indicates the importance of perseverance and the desirability of forcing large amounts of liver for months, 100 grams a day may produce rapid improvement, but double this amount is more apt to do so.

The ultimate effect on patients of continuing to take liver, or something contained in it together with an adequate diet can only be determined in the future but it has already been ascertained that the benefit derived from such treatment is not limited to a few months.

At the end of a year the average red blood cell count for all of the 60 patients who have taken the diet for this length of time was 4.52 million per cubic millimetre. This includes the counts for 8 who took the diet unsatisfactorily, particularly because they were not advised to eat a sufficient amount of liver, being among the first patients treated. Eighteen of the patients have taken the diet for two years or longer, 3 of whom have done so for three years. At two years the average count was 4.65 and at three years 4.81 million per cubic millimetre. These high average counts have been persistently maintained, and the average for the patients who have taken the diet particularly satisfactorily is even higher. At any given time after the patients had taken the diet for three months the counts of over one third, including those taking it poorly, have been 5 million or more per cubic millimetre.

The symptomatic improvement is usually rapid and striking. It is often evident in a few days or before a definite rise in the red blood cells can be demonstrated. As a rule the patients have felt and appeared well, except for disorders of the central nervous system two months after starting the diet. The appetite has improved rapidly and often become ravenous. Gastro-intestinal symptoms have decreased quickly. Tongue symptoms usually vanished soon after liver was first taken and have not recurred in patients who have continued to take the diet well. The tongue has frequently become normal in appearance. Achlorhydria, however, has persisted in the 20 cases examined. Symptoms referable to the neural system have not definitely progressed or developed under adequate dietary therapy. Numbness has disappeared often and occasionally bone vibration sense has increased. Of course, altered reflexes persist, but co-ordination of the extremities has improved frequently. This decrease of neural symptoms has often been gratifying to the patient. It is reasonable to attribute the greater part of such improvement to increase of muscular strength secondary to the continuous high level of the red blood corpuscles. Exercises to restrain and develop muscles are helpful for these patients.

It will require often much time, tact and sympathy to persuade the patient to take the correct food. Giving little other food than liver—by stomach tube if necessary—has enabled individuals soon to take the full amount (150 to 225+ grams cooked weight) and an adequate diet. Patients able to take more than 200 grams of liver a day may regain health faster than if less than this amount is taken. Cooked liver may be served in any way that pleases the patient, but prolonged boiling is to be avoided. The broth in large amounts is efficacious. Raw liver served as a finely divided pulp has been found particularly suitable. Many patients have preferred this to cooked liver

because it is simple to take and can be swallowed rapidly. One hundred and eighty grams of the pulp (about equal to a similar amount of cooked liver) a day, divided into two portions, and taken mixed with orange juice or water mid morning and mid afternoon, is recommended. The juice pressed from raw liver is effective if taken in large amounts. The possibility of parasitic infection is to be recognized but seems remote.

The problem of how much liver the patient should continue to eat after his red blood corpuscle count has become normal remains unsolved. In some cases as little as 150 grams three times a week has apparently been sufficient. There is evidence, however, that some patients require more liver than others to keep them as well as possible. The necessity of prolonged continuation of liver or a fraction of it is emphasized.

It is advised that the diet be rich in fruits and green vegetables and that it contain red meat. No unusual amount of protein or number of calories are necessary. Excess of fat has not inhibited a rapid growth of the blood cells but in large amounts it may upset digestion and cause undesirable gain in weight. For these reasons and some theoretical ones large amounts should be avoided.

It is desirable to curtail sweet foods and those rich in starch, especially sugary ones. Such food has no favourable effect on blood formation and often intensifies the colic on which frequently occurs in pernicious anaemia. The diet for each patient should be prescribed for that person, and must contain large amounts of liver, or its equivalent, and foods which will supply liberally but not excessively, all requirements of the body. Treatment other than dietary and the administration of a preparation of liver is subsidiary.

A diet rich in liver may benefit patients other than those with pernicious anaemia, but it is not effective in all anaemias. This topic, however, is not pertinent to the present discussion.

Although administration of liver to patients very ill with pernicious anaemia has often been followed by rapid improvement in some far advanced cases death may occur within a few days after treatment is begun, before sufficient time has elapsed for the ingestion and potent action of an adequate amount of liver or liver fraction. It is highly probable that if a patient supposed to have pernicious anaemia has shown no improvement after taking liver in adequate amounts for about four weeks the diagnosis has been incorrect. Our experience appears to justify the assertion that if the therapy described is properly carried out a great improvement in health follows in practically all patients with pernicious anaemia.

#### SUMMARY

The study of 125 cases of pernicious anaemia treated with regularity for from three months to three and a half years with a diet rich in liver (180+ grams daily) indicates that practically all patients with this disease are benefited, usually markedly and promptly. In almost all instances the red blood cell count has risen above 4 million per cubic millimetre and if the diet has been taken continuously and satisfactorily the counts have remained above this level to the present time.

Recent studies with Dr Edwin J. Cohn indicate that the ingestion of but a few grams a day of a certain non-protein fraction of liver acts in pernicious anaemia with apparent specificity, as does whole liver. This fraction increases the red blood cells of these patients promptly and rapidly. The use of such a liver fraction should simplify treatment. Even if the patients must take an adequate, well balanced diet.

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#### IV—THE PATHOGENESIS, PROPHYLAXIS, AND TREATMENT OF PERNICIOUS ANAEMIA

BY

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##### PATHOGENESIS

In a discussion on Addison's anaemia (A.A.) subacute combined degeneration of the spinal cord (S.C.D.) should also be considered, as signs or symptoms of the latter appear sooner or later in about 85 per cent of cases of A.A., and some degree of A.A. almost invariably appears during the course of S.C.D. Since the haemoglobin percentage may be 90 or even 100 in well developed S.C.D., cases of the latter afford admirable controls, such as Professor Gulland required, for the investigation of the achlorhydria and intestinal bacteriology in the pre-anaemic stage of A.A. In 53 out of 54 cases of A.A. and in all of 33 cases of S.C.D. in the Medico-Neurological Clinic at Guy's Hospital and in New Lodge Clinic since 1921, achlorhydria was present, and the collected results of other investigators give something like 99 per cent as the frequency of achlorhydria in A.A. This is in striking contrast with carcinoma of the stomach, in which achlorhydria was only present in 59 per cent of my 32 cases. Moreover, it is present at the very earliest stages of A.A. and S.C.D., and 22 cases have now been recorded in which achlorhydria was known to have existed for one to twenty-five years before the onset of symptoms, whereas in cancer of the stomach, as in tuberculosis, the development of achlorhydria can be watched as the disease progresses.

I believe that the absence of hydrochloric acid from the gastric secretion is the one essential predisposing cause of A.A. and S.C.D., and that the cause of the achlorhydria is immaterial. The most common cause is probably constitutional achylia gastrica, an inborn error of secretion, which is often familial. Thus in 12 out of 43 private cases of A.A. (28 per cent) of my own, and in 65 cases recorded by others, there was a history of A.A. in one or more members of the family in one, two, or three generations. In 3 of my cases of S.C.D. and in 3 other recorded cases one or more other members of the family had had A.A. Still more conclusive are the 6 cases of my own and 26 others, in which achylia gastrica without A.A. or S.C.D. was present in other members of the family of patients with A.A., in 5 of these more than one member had A.A., and in 1, different members of the family had S.C.D., A.A., and achylia.

In 6 of my 43 private cases there was a clear history of acute gastritis, which had led to the achlorhydria, and I have seen 3 others in which the chronic alcoholic gastritis so often associated with cirrhosis of the liver was the cause. Like Professor Gulland, I have only seen 2 cases of A.A. associated with cancer of the stomach, but the rarity of this is due to the achlorhydria being secondary to a rapidly fatal disease, so that there is generally insufficient time for A.A. or S.C.D. to develop. Very significant are the 3 cases of achlorhydria after gastro-enterostomy and the 4 of achylia following complete gastrectomy, in which A.A. or S.C.D. followed after an interval of from one to ten years.

The achlorhydria does not only act as I believed at first, by allowing the small intestine to become infected with swallowed streptococci derived from infected teeth, tonsils, or nasal sinuses. For Knott has recently shown that the abnormally alkaline contents of the small intestines in achlorhydria form a particularly good culture medium, so that in addition to the streptococci, which reach the duodenum from above owing to the loss of the

acid antiseptic barrier of the stomach, *B. coli* invade it from the colon. In 37 of my cases of A.A. and S.C.D. Knott found that the duodenal contents, which were sterile or almost sterile in over 400 controls with normal gastric acidity, gave cultures of *B. coli* in 94 per cent of cases and streptococci in 97 per cent, and that one or both of these were haemolytic in 90 per cent of cases. Staphylococci, which were rarely haemolytic, were found in 44 per cent of cases, and anaerobes, but not *B. welchii*, were often present, possibly the latter would be found in excess in the lower parts of the small intestines. Our conclusion is that any haemolytic organism which invades the small intestines owing to the presence of achlorhydria may give rise to A.A., but probably the associated neurotoxin which produces S.C.D. is the product of a specific bacterium.

##### PROPHYLAXIS AND EARLY TREATMENT

Prophylactic measures should be taken in all patients in whom achlorhydria is found in the course of a routine investigation of some digestive disorder, achlorhydria is present in no fewer than 150 out of 1,000 consecutive patients who were given fractional test meals at New Lodge Clinic. Not only does elimination of dental and nasopharyngeal sepsis and the constant use of hydrochloric acid generally cure or improve their digestive symptoms, but it also removes the danger, however remote this may be, of the later development of A.A. and S.C.D. I think, too, that the near relatives of patients with A.A. and S.C.D. would be wise to have test meals, and to take acid for the rest of their lives if they are found to have achylia.

Early treatment entails early diagnosis. It is time that all pathologists realized that the one essential feature in the blood picture of A.A. is megalocytosis, this often precedes actual anaemia and may persist after recovery from it. I often see private patients with severe A.A. in whom a correct clinical diagnosis, made by the general practitioner many months before, had been rejected because the blood picture did not conform with the pathologist's idea of A.A., which is too often derived from the examination of cases in the most advanced stages.

It should be remembered that the commonest cause of persistent paraesthesia of the feet and hands is S.C.D., and that this may be present for a considerable time before any physical signs of nervous disease appear. The symptoms should at once suggest the desirability of giving a test meal and examining the blood, the presence of achlorhydria, which we found in only 1 out of 25 cases of disseminated sclerosis and tabes (that is, the frequency as in normal individuals), would strongly point to a diagnosis of S.C.D., the probability of which could be greatly strengthened by the discovery of megalocytosis with or without reticulocytosis.

I wish also to draw attention to the great importance of the characteristic glossitis described by William Hunter, as this is frequently the first symptom of the disease. I have been consulted by 3 patients and passed by 2 on account of a sore tongue, in whom achlorhydria and very early A.A. were discovered on further investigation. Most patients with glossitis consult first their general practitioner and then their dentist after that they may consult a surgeon or a dermatologist. It is to these members of the profession that we must look for early diagnosis in such patients, they have in the past escaped recognition until months or even years later, when the disease was well advanced. A German dermatologist, Heyn, was specially interested in the condition, and recognized 20 cases of Hunter's glossitis. All had achlorhydria, and 39 per cent gave evidence of the presence of A.A. on more careful investigation. Within five years no less than 55 per cent more had developed the disease and 21 per cent showed suspicious signs, leaving a single case in which the glossitis and achlorhydria were still the only symptoms.

If S.C.D. were more often diagnosed before the presence of abnormal physical signs and if all patients with suspicious glossitis had their gastric contents and blood examined, it should be possible to cure the disease in many patients in its very earliest stages.

## TREATMENT

The first essential in treatment is to remove the cause. All foci of infection in the mouth, throat and nose should be eradicated as completely as possible—but very gradually and only after preliminary autogenous vaccination as otherwise severe haemolytic or neurotoxic reactions may occur. The achlorhydria should be treated by the administration of large doses of dilute hydrochloric acid. If properly prepared a beverage containing 2 drachms of dilute hydrochloric acid in about 12 oz of water is so palatable that I have never found a patient unwilling to drink it regularly three times a day. The following printed instructions are given to patients for preparing the acid drink; it is sometimes necessary to begin with 1 drachm and gradually increase to the full dose of 2 drachms.

*Instructions for taking Hydrochloric Acid*

Add two tea-spoonfuls of the acid to about half a pint of water to which the juice and pulp of an orange and some sugar have been added. This should be drunk fasting in the morning one hour before breakfast, the same quantity of the same strength should be taken as a beverage with lunch and again with dinner. To the latter two a small spoonful of pepin should be added.

Lemon or other fruit juice can be substituted for orange for a change or syrup of grenadine without the addition of sugar. A little wine can be added to the mixture. The simple addition of sugar without fruit juice is sufficient, but is generally less palatable. Barley water or cider may be substituted for orangeade or lemonade.

*Tea orangeade*, an effervescent orange drink with a tea-spoonful of acid to each 6 ounces can be obtained in syphons from Messrs. Alcock and Hobart.

In order to prevent any deleterious action of the acid on the teeth the mouth should be thoroughly washed as soon as possible with water in which a little sodium bicarbonate may be dissolved. Alternatively a second tumbler containing water should be provided at lunch and dinner so that a small mouthful can be taken immediately to wash away the acid every time some of it has been drunk.

Lastly a vaccine prepared from the bacteria isolated from the duodenum—not a stock vaccine nor one prepared from the stools which rarely contain the organisms found in the duodenum—should be given but the dose should at first be small, and it should only be very slowly increased so as to avoid any reaction.

The anaemia requires treatment by transfusion, arsenic and diet. I first tried the liver diet after reading the experimental work of Robbins and Whipple in 1925 but the amount I gave was quite insufficient. The remarkable results obtained by Muot have been fully confirmed in my own experience since I have given the large quantity of liver recommended by him. My impression is that many patients now get well who formerly would have died before the other treatment of the intestinal infection had time to be effective so that it should in the future be possible to cure the vast majority of cases by a combination of causal treatment with liver diet. The good effect of the liver soup which has for many years been given to patients with sprue many of whom suffer from a form of anaemia very similar to A A, is doubtless due to its specific action on the anaemia.

I believe that what is generally regarded as a remission of A A is often really recovery, but as the conditions are still present which led to the first attack, a new attack is almost certain to occur unless the exciting causes are removed. Hence it is essential to see that the mouth and nasopharynx are kept free from sepsis and that hydrochloric acid should be taken continuously for the rest of the patient's life, however well he may be and however long he may remain free from symptoms except in the very rare cases of which I have only seen one example—in which the achlorhydria is due to gastritis, the treatment of which is followed by a return of normal gastric secretion. The future will show whether it is also advisable to continue permanently with the liver diet.

I think it is clear that we know more about the pathogenesis of A A and that the results of treatment are more hopeful than might be assumed from the opening address of the President of the Section.

## DISCUSSION

PROFESSOR VAN DEN BIEREN (Utrecht) emphasized the importance of achlorhydria since with few exceptions the presence of hydrochloric acid excluded a diagnosis of pernicious anaemia. He had observed that a great number

of the red cells in pernicious anaemia were elliptical in shape a condition which he had not found in marked degree in any other disease. Another point of importance was the bilirubin content of the serum which was nearly always increased in pernicious anaemia. They would agree that a great increase in the haemolysis was the basic pathological event. By the word haemolysis was meant not a humoral haemolysis, but a cellular destruction of the red corpuscles with a breakdown of the haemoglobin molecule; it was this that gave rise to the abnormal bilirubin content of the serum, urobilinuria and in severe cases to the presence of haematin in the blood. He had demonstrated long ago that the spleen was the site of blood destruction, his experiments showing that blood from the splenic vein was richer in bilirubin than blood from the splenic artery or peripheral blood. He suggested that a microbial cause of the true cryptogenic Addisonian anaemia would be more likely to be found among the protozoa than among the bacterial micro-organisms the long course the relapses and remissions the moderate pyrexia the leucopenia and the response—albeit temporary—to arsenic all seemed to him features common to protozoal infections.

DR. IRON SCHIFF (Cincinnati) said that it was generally agreed that bile pigment was formed from haemoglobin chiefly in the bone marrow also in the spleen and to the least extent in the liver the function of the liver was chiefly one of excretion. In pernicious anaemia the bilirubin content of the serum was greatest during the active stages with a low red cell count and low haemoglobin percentage and it decreased during remission with a rise in the red cells and haemoglobin. This was, in his experience in sharp contrast with the findings in secondary anaemia. In the Cincinnati General Hospital they had found that those patients with enlarged spleen tended to have a higher bilirubin serum content than those without splenomegaly. He recalled the observations of Brown, Ames, Warren and Peabody, that following blood transfusion in pernicious anaemia there was a fall in the serum bilirubin which, contrary to what happened in spontaneous remissions, might be unaccompanied by evidence of increased bone-marrow activity.

DR. W. E. COOKER (Wigan) confined his remarks to the polymorphonuclear leucocyte as he believed that an alteration of this cell led directly to the primary etiological factor in pernicious anaemia. The leucocyte was derived from the haemocyctoblast which was also the parent of the secondary erythroblast and the megakaryocyte. In the marrow the polymorph cell had a single lobed nucleus, in the blood stream the nucleus became more lobed as its age increased. He divided the cells into five classes according to the number of lobes in the nucleus: class 5 containing all cells with five or more lobes. In infections the older cells died out, and there was a great increase in classes 1 and 2 this was a constant finding in microbial infections, but in pernicious anaemia the opposite occurred and there was an increase in classes 4 and 5. Polymorph cells with more than five lobes were rare in normal blood and except as macrophages never occurred in infective states, in pernicious anaemia they were common. The explanation of this phenomenon he believed to be that the cell was endowed with an abnormal life by inheritance from its parent the haemocyctoblast. This view was supported by the presence of leucocyte which did not conform to any normal type. There were two types of giants—one an enlarged edition of the polymorph occasionally found also in acute infections and in carcinoma the other of megakaryocyte type found only in pernicious anaemia, and corresponding in size and nuclear conformation to the megakaryocyte of the marrow. In the terminal stages of pernicious anaemia this type was sometimes very numerous. The only explanation covering the facts was that the haemocyctoblast as the result of change in the environment or of inherent reversion to an ancestral type gave to some myeloblasts a duplex biophore which resulted in a hybrid cell type. Polymorphocyte it has was leucocyte or the megakaryocyte type if it has was megakaryocyte. The question whether the old blood megakaryoblast and the megakaryocyte type of macrophocyte were endodermal or

mesodermal in origin or, conversely, whether they were produced in marrow, liver, or other haemopoietic organs, did not affect the argument that the primary etiological factor in pernicious anaemia was in the haemocytoblast

Dr STANLEY DAVIDSON (Edinburgh) criticized Dr Huist's observations on the bacteriological side. He was not surprised that Dr Huist had never found *B. welchii* in cultures from the duodenum, since the alkalinity of the upper part of the small intestine was most unfavourable for the growth of that organism, nevertheless, he had himself obtained it twice in that situation in cases of pernicious anaemia. In the large intestine, however, *B. welchii* was always present in enormously increased numbers in cases of pernicious anaemia, and although other organisms, such as streptococci, were also present in greatly increased numbers, the increase in *B. welchii* was always considerably larger. He also gave a brief summary of some unpublished results of Torrey and Kohn, who had produced a typical pernicious anaemia in monkeys by means of a *B. welchii* infection.

Dr SALISBURY SHARPE (London) said that he had been firmly convinced for some years that pernicious anaemia was a spirochaetral disease. Two Addisonian anaemias had all the characteristics of a protozoal, and especially of a spirochaetral, disease. In support of this suggestion, Osler had noted the occurrence of fever, the remarkable remissions, the nervous lesions, and the value of arsenic in treatment, to these he would add certain characters of the blood picture which occurred in other protozoal diseases, such as relative lymphocytosis, the occurrence of megalocytes and "ghosts," and the usually late onset. According to McEwen, spirochaetes had been observed in the blood in cases of pernicious anaemia.

## NEUROLOGICAL AND MECHANICAL FACTORS UNDERLYING IMMOBILITY OF THE VOCAL CORDS

### I—THE NEUROLOGICAL ASPECT

BY

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IMMOBILITY of a vocal cord is a danger signal which should at once arouse in us a keen sense of responsibility. Occasionally it is the result of a morbid process which has become quiescent, oftener it is an early manifestation of grave disease. Our first aim is to discover the cause or, in many cases, "to know the worst," so that we may be in a position to form an opinion as to the patient's future outlook, to offer advice as to how he should live, and to suggest suitable treatment. Although this discussion is to include the prognosis and treatment of the conditions giving rise to immobility of the vocal cords, I intend to devote all the time at my disposal to the problems of diagnosis.

The immobility of a cord may be due to fixation produced by mechanical factors or to paralysis. Mr Herbert Tilley has undertaken to deal with the subject from its mechanical side, my duty is to present its neurological aspect.

In order to determine the etiology of a case of paralysis of one or both cords it may be necessary to pass in review the lesions to which the laryngeal motor nerve supply is liable at different levels between its origins in the cortical and bulbar centres and its endings in the larynx. I shall make a brief survey of this kind, beginning with the nerve centres.

#### The Cortical and Bulbar Laryngeal Centres

The larynx subserves two great functions—namely, respiration and phonation—each of which is represented by bilateral centres in the cortex and medulla. The chief respiratory nerve centres are seated in the medulla, and

their activity is manifested in the larynx by the tonicity of the abductors, whereby the vocal cords are kept in or near the respiratory position. By means of the subordinate respiratory centres in the cortex further slight abduction can be effected at will, as on deep inspiration.

The principal phonation centres are cortical, and the less important are bulbar. Stimulation of the phonatory cortical centre in either hemisphere produces bilateral symmetrical adduction of the vocal cords. When the cortical centres on both sides are destroyed the vocal cords continue their respiratory movements, but the animal has no control over these, so that volitional phonation is lost. Complete paralysis of a vocal cord cannot, therefore, be produced by a cortical lesion.

#### Laryngeal Paralysis of Cerebral Origin

How, then, are we to account for the fairly numerous cases on record in which cerebral disease was regarded as the cause of a laryngeal paralysis? The main objection to recognizing this relation has been the incompleteness of the examination. In order to establish the alleged connection it is not sufficient to diagnose during life paralysis of a vocal cord and to find after death a lesion of the cortical centre of phonation. One must be able to exclude the presence of disease in the medulla, vagospinal and recurrent nerves, and muscles of the larynx, to any of which conditions the vocal cord paralysis may be due.

Broeckert, who studied this question with great care, expressed the opinion that laryngeal affections of cortical origin would cease to be rare when, instead of looking for paralysis of a cord, we search systematically for the slightest alteration in mobility or sensation in the larynx, and for functional disturbances in articulation and voice production.

#### Laryngeal Paralysis of Bulbar Origin

Disease in the medulla may be limited to a small area of the laryngeal centres so that only one muscle is affected—for example, the abductor. As the morbid process advances the centres for the adductors and tensor, and those controlling other branches of the vagospinal and adjacent cranial nerves, may be successively involved on one or both sides. On the other hand, pathological changes in the laryngeal centres may be secondary to those in neighbouring centres.

The chief diseases of the medulla which, by involvement of the laryngeal centres, give rise to immobility of the vocal cords, are tabes, progressive bulbar paralysis, syphilis, arteritis and gummatous, syringobulbia, disseminated sclerosis, and haemorrhages and softening from thrombosis and embolism.

Laryngeal paralysis is met with in about 40 per cent of cases of tabes. The paralysis, almost invariably adductory (Burger), may be the first sign. The diagnosis is aided by the association of laryngeal crises.

#### Lesions of the Roots

The roots of any or all of the last four cranial nerves are liable to be damaged simultaneously or successively by meningitis, fractures at the base, abscess, tumour, aneurysms, etc. Gummatous and tabes are the common causes.

#### Associated Paralysis

Owing to the close grouping of the centres and roots of the ninth, tenth, eleventh, and twelfth cranial nerves and of the trunks of the ninth, tenth, and eleventh nerves for a short distance below the jugular foramen, damage or injury of one is liable to implicate one or more of the others, and thus give rise to an associated paralysis. In knowledge of the commoner varieties may be of assistance in determining the exact site of the nerve lesion producing immobility of a vocal cord. Associated paralysis is comparatively rare in civil life, but was not infrequently met with during the war in the wounded sent home. An extraordinary feature in these cases was the proximity of the path of the projectile to large vessels, injury to which would have immediately proved fatal.

In discussing the syndromes arising from the laryngeal associated paralysis it is convenient to regard the purely sensory and the spinal accessory as entire

\* Report of a discussion in the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association at Edinburgh. Mr A. Logan Turner, F.R.C.S. Ed., President of the Section, was in the chair.



In the undernoted associated paralyses the vagus may or may not be implicated. A lesion when present gives rise to symptoms indicating either excitation (hyperaesthesia) of the larynx, cough, acceleration of respiration (etc.) or inhibition (anæsthesia or hypæsthesia of the palatal, pharyngeal, and laryngeal mucous membranes, and slowing or difficulty of respiration).

*Paralysis of the spinal accessory and glossopharyngeal (ninth and tenth).—*These nerves, with the vagus, pass through the jugular foramen together, and a lesion involving them gives rise to the syndrome of Veret which is characterized by laryngeal palatal pharyngeal, and shoulder girdle (sterno-mastoid and trapezius) paralysis. The chief distinguishing features of the syndrome are due to involvement of the glossopharyngeal, in consequence of which taste at the back of the tongue is blunted or abolished (best tested by a solution of quinine) and the posterior wall of the pharynx is seen during phonation or retching to glide horizontally towards the healthy side ("curtain movement" of Veret). A vocal cord paralysis associated with signs of implication of the ninth nerve may therefore be regarded as due to a cause seated in or above the jugular foramen, for on emerging from this the ninth passes away from the vagus.

*Paralysis of the internal and external branches of the spinal accessory (eleventh complete)* is due to a lesion situated at or above the base of the skull but unlikely to be at a lower level as the external branch on emerging from the jugular foramen leaves the vagus and passes to the sterno-mastoid and trapezius. A non-lateral laryngeal palatal, and shoulder girdle paralysis (syndrome of Schmidt) results.

*Paralysis of the internal branch of the spinal accessory (eleventh incomplete)* is due to a lesion above the origin of the pharyngeal branch. It is characterized by paralysis of a vocal cord and the corresponding half of the palate (syndrome of Arellis).

*Paralysis of the spinal accessory below the origin of its pharyngeal branch and of the hypoglossal (eleventh and twelfth).—*A lesion may involve these two trunks when close together below the lower ganglion of the vagus. A glossopharyngeal paralysis results (syndrome of Tapia). In several cases the wound is produced behind the ascending process of the lower jaw by the goring of a bull or by a dagger.

*Paralysis of the spinal accessory above the origin of the pharyngeal branch, and of the hypoglossal (eleventh and twelfth)* gives rise to paralysis of the palate in addition to that of the larynx and tongue (syndrome of Hughlings Jackson). The shoulder girdle may or may not be involved.

*Paralysis of the four lost nerves (Collet-Sicard syndrome)* is rarely encountered.

*Paralysis of the sympathetic eighth, seventh and sixth nerves* may be associated individually or in any combination with any of the syndromes.

#### The Thyroid Gland

Vocal cord paralysis may be caused by disease of the thyroid or by operation for its removal.

Enlargement of the gland can readily damage one of the recurrent nerves by pressure, traction, torsion or ulceration. The pressure affecting the nerve is usually exercised by the postero-mesial angle of the growth. Bilateral paralysis almost invariably denotes a malignant thyroid. A goitre which is small and hard or sits on the trachea is capable of doing more injury than one which is large and soft or situated further from the middle line. In consequence of displacement of the trachea the nerve implicated may be on the opposite side to that of the enlarged or larger lobe. Damage to a recurrent nerve is more apt to be caused by an intrathoracic than by a cervical goitre. The left recurrent nerve, owing to its longer and more exposed course is oftener affected than the right.

The paralysis commonly produced by a goitre is the unilateral abductor variety, and as this does not give rise to obvious symptoms it readily escapes notice unless the larynx is examined. The onset is usually gradual but may be sudden as when bleeding takes place into a large cyst in the goitre. Complete recurrent paralysis with loss of voice

is occasionally caused by a break in the continuity of the inferior laryngeal nerve—for example from ulceration.

Dyspnoea, which is the commonest symptom of an enlarged thyroid is generally produced by narrowing of the trachea from pressure of the gland. Slight shortness of breath on exertion may also be due to narrowing of the glottis from unilateral abductor paralysis. When the paralysis is bilateral the dyspnoea is pronounced and the obstruction is evident on laryngoscopic examination. In some cases of goitre in which sudden death has taken place the cause would appear to have been suffocation following spasm of the glottis (Berry).

The percentage of cases of goitre in which pre-operative laryngeal examination revealed vocal cord paralysis has been estimated by several surgeons. J. M. Welch considers 10 per cent as approximately correct. In the Jackson Clinic Barlow noted 6 per cent in 300 patients. A. S. Jackson states that in 15 per cent of intrathoracic cases unilateral paralysis is found and in 462 similar cases in the Mayo Clinic partial or complete paralysis of one or both cords was noted in 10 per cent but hoarseness in only 29 instances.

Operation on the goitre has an uncertain effect on the paralyzed cord. The longer the paralysis has been present the less likely the recovery. After operation on the thyroid the patient may be slightly husky or even aphonic for a few days owing to transient partial or complete paralysis following traction or undue compression of the nerve. On the other hand the voice may be normal after the operation, but subsequent cicatricial contraction of the tissues in the vicinity of the nerve may lead to a vocal cord paralysis. This may occur although the nerve has not been damaged by the surgeon. Division of the inferior laryngeal nerve during the operation is at once followed by complete paralysis of the corresponding cord and aphonia. The old statistics show this to have been a frequent accident in this Billroth had laryngeal paralysis in over 30 per cent of his extirpations. The results obtained by Jackson Pemberton, Berry and other operators have proved that large series of thyroidectomies may be performed without any apparent injury to the recurrents. Improved technique, a fuller knowledge of the anatomical relations, and especially the recognition and avoidance of a danger zone in which the inferior laryngeal nerve crosses the inferior thyroid artery or passes between its branches should prevent the occurrence of vocal cord paralysis after this operation.

Other nerves may be pressed upon by a goitre—namely, the vagus, cervical sympathetic and cervical and brachial plexuses.

From what has been stated it is evident that all cases of goitre should be examined laryngoscopically before undergoing operative treatment. An abductor paralysis may be discovered the responsibility for which the surgeon is then in a position to disclaim. Moreover his knowledge of the presence of the paralysis will lead him to take special care neither to injure further the affected nerve and thus convert an abductor into a recurrent paralysis with aphonia nor to damage the nerve on the opposite side and thus give rise to a double abductor paralysis with dyspnoea.

#### Lymphatic Glands

Lymphatic glands which have become enlarged or sclerosed or have undergone a malignant or tuberculous invasion may readily compress and injure a neighbouring nerve.

The left recurrent laryngeal nerve in its upward course in the thorax and neck is in close relation with the left tracheo-bronchial glands which are seated in the angle between the trachea and left bronchus, and the paratracheal glands which lie in the furrow between the larynx and trachea anteriorly and the oesophagus posteriorly. All these glands receive their lymph from the mucous membrane of the trachea and oesophagus. The stream from the former group flows upwards and that from the latter downwards, and they converge to the supraclavicular region, where they discharge into the venous system directly or through a neighbouring supraclavicular gland.

The right recurrent in winding beneath the subclavian artery passes immediately above a gland which rests on the cervical pleura and apex of the lung posteriorly. Dickey found that in a considerable proportion of the cases of enlarged caseous or calcareous glands in contact with the cervical pleura posteriorly (cervico-pleural glands) associated pulmonary disease was well marked in the underlying lung apex, he is therefore of opinion that a causal connexion between the two conditions is probable, and that either may be primary, but favours the glandular infection as the more reasonable. Paralysis of the right cord always suggests involvement of the right apex, but even if no disease is discoverable in the lung we should keep in view the possibility of neuritis or atrophy of the right recurrent in consequence of a gland pressing upon the nerve close to its origin from the vagus.

Malignant lymphatic glands in the neck and mediastinum not infrequently involve the recurrent laryngeal nerves. We are indebted to our President for tracing a number of these cases to cancer of the mamma, and thus establishing the sequence—cancer of the mamma, secondary glandular enlargement, vocal cord paralysis. If we may judge from the number of cases that have been published since Dr Logan Turner's paper appeared in 1921, this group is not inconsiderable.

The paper referred to was based on 6 cases (5 scirrhus and 1 sarcoma) in all of which the breast and axillary glands had been removed. Leaving out of account the case of sarcoma which affected the right cord, hoarseness set in from two and a half to five years after the operation, and was found to be due to complete recurrent paralysis of the left cord. In two of the five cases, however, the cancer had been in the right breast and was thus contralateral.

In homolateral cases the lymphatic pathway of infection from the cancerous mamma is probably either by way of the axillary or retrosternal glands to the supraclavicular glands, and thence by permeation into the tracheo-bronchial or paratracheal glands which accompany the recurrent. Contralateral vocal cord paralysis is explained by the passing of lymphatic trunks from the inner periphery of the mamma to the axillary and supraclavicular glands of the opposite side. The supraclavicular glands are thus an important junction in the lymphatic circulation of the regions under consideration. A fairly constant member of the group should be sought in the angle between the inner end of the clavicle and the posterior edge of the sterno-mastoid. The axilla should also be examined, and, when the paralysis is on the right side, the apex of the right lung.

#### *Aneurysm of the Arch of the Aorta*

Of all causes of paralysis of the left vocal cord aneurysm of the arch of the aorta is the commonest. As long as the bulging in the convexity of the arch is slight the physical and x-ray examination may give indefinite or no signs of its presence. Increase in the diameter of the vessel at the arch by irritating the recurrent laryngeal nerve may excite neuritis, or by stretching it may cause more or less interruption in its continuity. Similar effects may follow the action upon the nerve of calcareous deposits in the wall of the aorta. The resulting vocal cord paralysis is of the complete recurrent type in the great majority of cases.

#### *Mitral Stenosis with Dilatation of Left Auricle*

The left recurrent nerve may be damaged beneath the arch or in its immediate neighbourhood from other causes than the above mentioned. Of these, perhaps the most discussed is the enlargement of the left auricle following mitral stenosis. In 1897 Ortner reported two cases of recurrent paralysis of the left cord in which at the *post-mortem* examination stenosis of the mitral orifice with great dilatation of the left auricle was found. The auricle passed forwards and upwards, produced some flattening of the left main bronchus, and compressed the left recurrent against the arch. The nerve was thinned and its fibres degenerated at the seat of pressure.

Since the publication of Ortner's paper a considerable number of cases of recurrent laryngeal paralysis attributed

to mitral stenosis have been recorded, in 1924 Vaquez estimated the total at 116. The writers have differed, however, in their explanations of the manner in which the recurrent laryngeal nerve is injured in this condition. Alexander and others accept Ortner's views as to the pathogenesis of the paralysis provided that the left auricle is enormously dilated. Certain observers, on the other hand, maintain that it is not possible for a dilated left auricle to reach the arch and to exert there sufficient pressure on the recurrent nerve to affect it injuriously. Among these was Killian, who stated that it is only necessary to be acquainted with the topography of the heart to be convinced of the impossibility of the relation. Lian and Marceilles likewise believe that the necessary compression is not obtainable unless the wall of the left auricle is rendered more rigid by a lining of organized clot or is surrounded by resisting bands due to chronic mediastinitis. Garland and White support this view, and think that auricular fibrillation, which was present in four of their nine cases, is probably an important additional factor.

Other authorities hold that the distended left auricle transmits pressure through the pulmonary artery, or that this vessel itself when dilated compresses the recurrent (Alexander). Vaquez, and several writers quoted by him, regard the latter mechanism as not unlikely. In Kahler's opinion, based on bronchoscopic investigation, the enlarged left auricle compresses the antero-inferior quadrant of the left main bronchus, which in turn presses the recurrent nerve against the aortic arch. A similar but less marked effect may be caused by the enlarged ventricle pressing the left auricle upwards.

It should further be stated, regarding the part played by the enlarged left auricle in the production of recurrent paralysis, that according to some writers the two conditions are independent, that when found together the association is accidental, and that the recurrent paralysis in these cases is always due to a cause which has no relation to the mitral stenosis—for example, enlarged lymphatic glands and pericarditis. These views gain support from the clinical histories of several cases—one reported and several referred to by Sobernheim and Caro—in which the laryngeal paralysis passed off although the enlargement of the heart persisted.

#### *Ligamentum Arteriosum*

The ligamentum arteriosum passes from the bifurcation of the pulmonary artery to the under surface of the arch of the aorta, and the left recurrent nerve runs immediately to the left of this ligament, or duct—if it retains its prenatal patency. Cases of disease of the heart with laryngeal paralysis are on record in which at the *post-mortem* examination the nerve was found to cross and to be stretched upon the displaced ligament (Kraus) or the duct (Gerhardt, H. v. Schrotter). Such cases must be rare, and can arise only with a greatly dilated right ventricle in a heart lying transversely, which offers resistance at the diaphragm to lateral displacement. The ligament then passes from below outwards and upwards in a plane more nearly horizontal than usual. In v. Schrotter's case the duct was not only patent but widely dilated.

#### *Kyphoscoliosis*

This deformity may be an important factor in the production of recurrent paralysis, either by bringing the arch closer to the distended left auricle, which then presses upon the nerve, or by causing sinking and rotation of the arch so that the nerve is stretched or torn.

#### *Pericarditis*

Recurrent paralysis was first attributed to pericarditis in 1867 by Baumbler. In his case both recurrents were affected on the fourth day of the illness, and about four days later the exudation cleared away and the paralysis passed off. The patient died shortly afterwards, and at the *post-mortem* examination Baumbler concluded that the increase and diminution of the pericardial exudation responded with the development and recession of the recurrent paralysis, also, that the paralyses were due to mechanical pressure. Somewhat similar cases have been reported by

Y. Zinsssen, Biner Iori and others. The paralysis is usually stated to have been caused by pressure of the nerve against the arch by the distended pericardium but it is difficult to see how this could take place. On the other hand pericarditis readily passes into mediastinitis which, as shown below, would account for the paralysis. Certain acute infections which give rise to pericarditis may at the same time cause neuritis.

### Mediastinitis

From what has been stated it is apparent that writers in attempting to account for the laryngeal paralysis in mitral stenosis and pericarditis have assigned the principal etiological role to pressure. In not a few instances this explanation is obviously unsatisfactory and demands too great a stretch of the imagination as to the topographical anatomy of the region in question. This objection has been overcome in a large measure by Adam who has shown that involvement of the recurrent in acute cardiac and pericardial affections is traceable in most cases to inflammation in the mediastinum and is independent of dilatation of the heart.

Paralysis of the left recurrent nerve may therefore be due as has been indicated, to the following cardiac conditions: (1) enlargement of the left auricle exercising pressure on the left recurrent nerve either directly or indirectly through the pulmonary artery or the left bronchus; (2) stretching of the nerve upon the ligamentum arteriosum or ductus arteriosus; (3) kyphoscoliosis; (4) pericarditis; and (5) mediastinitis.

It is evident that the precise cause can be determined only by necropsy. The careful examination of the chest, the consideration of the history and symptoms and of radiographs should assist however, in establishing the connexion. In making a differential diagnosis aneurysm of the aorta enlarged tracheo-bronchial glands mediastinitis and neuritis of toxic origin should be excluded.

It should be noted that the hoarseness may exist before the mitral stenosis has been detected but generally it develops with other symptoms of failure. The hoarseness may be preceded for years (Linn) or only for a night as in one of my cases by a period marked by violent coughing suggesting irritation of the recurrent. At first the hoarseness may be intermittent or the onset may be gradual or sudden. After the apnoea or hoarseness has been present for some time it may become less noticeable owing to the compensatory action of the right cord. The paralysis is always or the complete recurrent type; it is commonly on the left side but may occur on the right. There would appear to be no doubt that the paralysis occasionally passes off when the circulatory conditions improve.

### Oesophagus

Malignant disease of the oesophagus is often complicated by paralysis of one or both vocal cords. The inferior laryngeal nerve may become involved in an extension of the disease from either the wall of the gullet or the adjacent paratracheal lymphatic glands. The left cord due doubtless to its greater length is oftener affected than the right and the paralysis which follows is usually of the complete recurrent type. On the other hand when cancer of the cervical oesophagus gives rise to laryngeal paralysis it is in my experience more commonly of the right cord and of the abductor variety. A possible explanation of the greater susceptibility to cancer of the right side of the gullet in the neck is that the trachea in its downward course is displaced to the right and somewhat twisted so that more or less of the left side of the oesophagus remains uncovered while the right side is not only covered but compressed and irritated by the right edge of the trachea.

The preponderance of abductor paralysis in cancer of the cervical oesophagus may be due to the symptoms being produced either when the disease is in this situation than when it is intrathoracic, and consequently the patients are examined when only the abductor fibres are implicated.

A vocal cord paralysis associated with dysphagia should at once raise the question of an oesophageal tumour. In such case the dysphagia usually precedes the paralysis but not invariably. Oesophageal cancer affords special

opportunities of observing the successive implication of the cords and of their passage from the abductor to the complete recurrent stage.

### Peripheral Toxic Neuritis and Myopathic Paralysis

The reliable information we possess as to this part of our subject is still scanty and of doubtful value.

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## II—MECHANICAL IMMOBILIZATION OF THE VOCAL CORDS

BY

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It must be some thirty years ago when a man was brought into the London Throat Hospital Great Portland Street, London suffering from a severe degree of laryngeal stridor. We found his cords in complete adduction with slight swelling of the arytenoids. His distress was so urgent that I performed a low tracheotomy at once, and without local or general anaesthesia. The wound having healed, the patient left the hospital wearing a cannula and this he has been obliged to retain ever since. Meanwhile his general health has been excellent.

A year or two after this experience I was consulted by a medical man who had been hoarse for a week, and in addition was suffering from pain in the larynx and in some of the larger joints. I found the left vocal cord motionless in the middle line and its corresponding arytenoid was swollen and oedematous. He went home and to bed was treated for acute rheumatism and made a rapid recovery. Two months later I found his vocal cord had regained its normal mobility and his natural voice had returned.

The possibility of an immobile cord being due to fixation of the corresponding crico-arytenoid joint had not previously come within the compass of my experience. Hitherto I had been taught that such a condition of vocal cord inaction was caused by paralysis due to pressure on the recurrent laryngeal nerve in some part of its course, or less frequently to a lesion in the central nervous system. Hence if it were impossible to establish the presence of an intrathoracic aneurysm or new growth or to obtain evidence of some gross changes in the cerebro-spinal nervous system the cause of the laryngeal symptom remained in doubt the prognosis was considered to be serious and the patient was at least condemned to a more or less inactive life.

In those days the roentgen rays were unknown and physicians were entirely dependent upon their skill in the detection and interpretation of abnormal physical signs and symptoms of disease. They were masters or an art which seems to be in some degree of extinction, because of the present tendency to allow physical and laboratory tests to supplant rather than to supplement keen observation and clinical methods of investigation.

I do not wish to underestimate the value of the hand-arms of medicine, without which our science and art would

indeed be in a very perilous condition. Of such aids radiography is one of the most helpful, in that it will often not only confirm a clinical diagnosis, but give to it details of exactitude otherwise unobtainable. It may be of even greater value still when it discovers the early stages of a lesion before it has had time to produce physical signs capable of detection by inspection, palpation, percussion, or auscultation. A commencing aneurysm of the aortic arch with paralysis of the left recurrent nerve is a case in point.

But many laryngologists must have seen an immobile vocal cord for which every clinical and physical method of examination, often repeated at more or less prolonged intervals, has failed to discover a cause. I wish to emphasize the not infrequent occurrence of such cases because it is obvious that, as between them and cases of true paralysis, the diagnosis with the consequent prognosis places a very serious responsibility upon whoever has the final decision as to the course to be followed by the patient.

In my student days, and for a long time afterwards, a patient with an immobile vocal cord was condemned for many months, or sometimes permanently, to a life of inaction, because such a symptom was considered to be due to a serious paralytic factor, even when this could not be ascertained.

I will give the brief histories of twenty-four patients in whom inflammatory or other factors brought about a temporary or permanent fixation of the crico-arytenoid joint. These cases were included in a series published in the *Journal of Laryngology* (June, 1918), and formed the basis of a communication entitled "Some clinical observations on the significance of paralysis of the left vocal cord." Since then I have seen others which have not been followed up in their subsequent history.

To each of the twenty-four patients I wrote asking for a complimentary visit, or, if that were impossible, for a report as to their condition. I received no reply or only indirect or unsatisfactory information from ten. But one of these was an Austrian, aged 67, who consulted me in 1910, and whom I saw on a golf links in 1915. He had consulted many physicians, laryngologists, and radiographers, but the cause of the immobility of his left vocal cord had never been discovered. He was in perfect health when I last saw him, so it would seem reasonable to assume that he had no serious lesion involving his left recurrent nerve.

Three patients had died, one from aneurysm of the aorta, and one from pneumonia three years after my first examination, but his daughter assured me that in the meantime his voice had completely recovered. The third died from pulmonary tuberculosis, and it is possible that the immobility of his left vocal cord was due to tuberculous infection of the corresponding crico-arytenoid articulation. Four patients remained *in statu quo ante*. The oldest of these was 78, and each patient was seen at least two years after the first examination. Seven patients had completely recovered the mobility of the left vocal cord. (These figures do not quite correspond with those in my original contribution, because then subsequent histories have necessitated one or two of them being moved from one category into another.)

For my present purpose it is only those cases of cord immobility not due to true paralysis which are of interest. Of these there are nine, three remained *in statu quo* and six completely recovered.

Of the three, one is the case of bilateral fixation already mentioned, the man who has worn his cannula for more than fifty years. The second, a man aged 72, was seen in December, 1915, with fixation of the left vocal cord, but was alive and well in April, 1918. The third—a young man aged 27, with adduction of the left cord—was seen in November, 1916, and the condition was unaltered in April, 1918.

Of the seven patients who recovered the use of the left cord, the first was the case already mentioned which proved to be a chronic inflammation of the crico-arytenoid joint. The following details about the other patients are of interest.

2. A married woman, aged 36, consulted me on February 10th, 1908, for loss of her singing voice and inability to speak plainly, the symptoms had lasted a fortnight. The left vocal cord was

motionless in the middle line but there was no swelling of the corresponding crico-arytenoid region. I could detect no physical signs in the chest, and Sir John Broadbent to whom she was referred for examination of the chest, reported that it was normal. Some twelve months later I found that the voice had returned and the action of both cords was quite normal. She died from a cerebral tumour a year or two after she had recovered the use of the left vocal cord.

3. A man, aged 53, consulted me on February 19th, 1910, for loss of voice of two months' duration which dated from a "touch of influenza." No other local or general symptoms were discovered. On March 11th, 1918, both vocal cords were normal in action and appearance. The patient says the voice returned two or three months after his last visit to me.

4. A man, aged 49, consulted me on July 7th 1913 for loss of voice. The left vocal cord was in the position of adduction. There were no physical signs in chest, and no evidence of any central nerve lesion. When re-examined on December 19th 1913 the vocal cords were normal. The patient is still well and in full work as a solicitor.

5. A man, aged 67, consulted me on June 21st, 1915, for loss of voice of three months' duration, it came on after showing on phonation the left vocal cord remained motionless in the middle line. There were no physical signs in the chest and no evidence of any central nerve lesion. On March 5th, 1918, he reported that his throat trouble had disappeared, so that he could talk or sing as well as ever. He douches the throat frequently with cold water and applied a cold water pad at night. In about three months he began to get better, and at the end of four months was quite well. Altogether he was without his voice for about eighteen months.

6. A married woman, aged 29, was seen on February 3rd, 1915, the left vocal cord was motionless in the middle line. Re-examined on April 9th 1915, no change was seen. The patient was a particularly fine and healthy looking woman, but a short time after her second visit she had severe pain in her left heel, and was advised to go to Bath for treatment of her gout by the mineral waters. Her foot recovered, the voice slowly returned, and in July, 1915, I found the left vocal cord had completely recovered its mobility.

7. A man, aged 68, consulted me for loss of voice. His left vocal cord was motionless in the middle line, there was a history of syphilis and patches of leucoplakia on the tongue. The left arytenoid was slightly fuller than the right. After appropriate treatment for six months I examined the larynx again, and found it normal in every respect, and his voice correspondingly improved.

So far as I know, six of these patients are alive and well to-day.

8. In April of this year I saw at the hospital a fine healthy looking man whose right vocal cord was, and still is, immobile and in complete adduction. No physical signs have been detected in the chest, nor has the radiographer found any abnormality therein. He has no difficulty in swallowing, and, but for the alteration in his voice, he declares that he never felt better in his life. It is, of course, too early to make a diagnosis, but the absence of any other lesion is, so far, in favour of a good prognosis.

9. On May 20th I saw a man, aged 84, of whom Dr. de Hallowell Hall reported that about thirty five years previously there had been ankylosis of the right crico-arytenoid joint. I found definite movement on phonation of both the right arytenoid and vocal cord, but there was paresis of the internal tensor causing definite adduction, and hence the huskiness of the voice. It would seem, therefore, that there has been a substantial recovery from the ankylosis noted by Dr. Hall, but there remains a weakness of the tensors of the cord which is probably the result of long continued disuse.

One of the outstanding clinical facts in the first seven cases just reported is that in each of them the left vocal cord was temporarily immobilized. How are we to explain this? Naturally, we shall at once remember the long course of the left recurrent nerve compared with the right, and possibly we may be tempted to speculate as to whether this would render the left nerve more subject to a temporary neuritis than the right. But in my series of seven cases which recovered cord mobility, the first was an acute rheumatic inflammation with oedema of the crico-arytenoid joint. No 6 was probably of gouty origin because it was associated with gout in the foot and recovered concomitantly with the latter. Case 7 was due to tertiary syphilis of the left arytenoid and was cured by appropriate treatment. Obviously, it is not necessary to invoke a neuritis for these cases, in which I was fortunate in seeing the local lesions in their early and more or less acute stages.

It is curious that such obviously local lesions should be so apt to affect the left side of the larynx. To me it is inexplicable as the fact that post-cricoid carcinoma is far commoner in the female sex, or that in prethoracic of the vocal processes the prominence is generally on the left and the depression on the right side.

Testing the mobility of the immobile arytenoid by means of a laryngeal probe has not given me any definite

as a diagnostic measure, but possibly the experience of others may have been more fortunate.

I have said nothing of case of mechanical fixation of a vocal cord due to trauma, or septic infection following injuries by impacted foreign body, nor of the infiltrations produced by tubercle or malignant disease. Instances of these factors are well known and when present are generally easy of detection. In the literature of the subject I can find very little bearing on the type of case to which attention has been drawn.

I venture to hope that my experience may emphasize the fact that an immobile vocal cord is not necessarily due to a grave and often quick fatal lesion. Of course, this contingency must be foremost in our minds when we are confronted with an inactive cord, but if every means of examination should fail to detect such a serious factor it will be our duty to give a guarded diagnosis, a hopeful prognosis and these must be combined with a duly watchful or expectant treatment.

#### DISCUSSION

SIR JAMES DUNDAS GALT (London) referred to the exhaustive exposition of the nervous affections of the larynx by the late Sir Felix Semon, who had drawn attention to the occurrence of crico-arytenoid arthritis as a cause of immobility of the vocal cords. Among the possible sources of error was the fixation of a cord from early post-croupous erysipelas. Bilateral fixation with the cords in adduction was in one case quite inexplicable though possibly gouty, and in another it was due probably to chronic osteo-arthritis. In one case the aphonia and immobility disappeared after bronchocopy being probably caused by a transient inflammatory rigidity of the joints. The speaker recalled two cases of paralysis of the left vocal cord which he had fully reported before the Laryngological Section of the Royal Society of Medicine and which appeared to be due to alcoholism, complete recovery following abstinence.

SIR STCLAIR THOMSON (London) said that Dr Kelly had shown how the subject had been clarified since the British Medical Association last met in Edinburgh twenty-nine years before. Last century was a time when laryngologists still proved each other orthodox by apostolic blows and brocks and their senior in those days Sir Felix Semon used to collect the scraps of those who differed from him in laryngo-neurological righteousness. The subject was in those days, in so much confusion that the writing of the chapter on nervous affections of the larynx in his textbook had given the speaker more trouble than any other. The present generation had only to read the succinct introduction by Dr Brown Kelly to realize how the subject had been made clear. The title of the subject "Immobility of the vocal cords," indicated a final and complete paralysis but the important and interesting cases were those of simply impaired movement. A better title would have been "Defects of mobility, or "Palsy and paralysis." His only personal contribution to the subject had been the publication of observations made on some thousands of cases of a tuberculous sinatorium. During ten years he had found about twelve cases of palsy or paralysis of a cord in cases with pulmonary disease but without laryngeal tuberculosis. Whether this was due to a pleuritis or to a glandular deposit was still unknown. One half of his patients recovered completely, the remaining ones were going about the world with fixed cord, and if they presented themselves without giving their past history the original cause might be overlooked. He suggested that the most likely explanation of the more numerous lesions on the left side was the greater length and exposure of the left recurrent laryngeal nerve. He was inclined to the conclusion that atypical causes of impaired movements were rare and that neurological causes were much the most frequent.

Professor F. R. NACER (Zürich) referred to the involvement of the function of the vocal cord in goitre and stated that in Switzerland generally a distinct vocal palsy would indicate malignant degeneration. Only in very rare cases of sudden enlargement, such as hæmorrhage after

great strain might temporary immobility be observed this disappeared after operation. After greater operations even the best statistics indicated an average of about 8 per cent. of vocal cord affections, but not all would be constant, they were not always due to operative lesion and might be caused by hæmorrhage or the formation of scar tissue. The speaker mentioned a case he had seen of palsy of the vocal cord due to aneurysm of the innominate artery, in which the diagnosis was extremely difficult because there were no further symptoms than compression of the lower part of the trachea.

Dr V. T. LAMBERT (Manchester) gave an analysis of 189 cases of paralysis of the vocal cord (or cords) which he had compiled from the ear and throat department of the Royal Infirmary, Edinburgh during the years 1907 to 1925 (inclusive). These patients had been under the care of Dr A. Logan Turner or Dr J. S. Fraser. Only cases in which the larynx was anatomically normal were included. Cases of immobility of the cord due to tumour or perichondritis were not dealt with. Of the 189 cases, in 181 the paralysis was unilateral and in 8 bilateral.

#### Unilateral Paralysis

Case	Left	Right	Total
Aneurysm of aorta	21	1	22
Operative trauma	5	4	9
Pulmonary tuberculosis	7	6	13
Pleural effusion	1	—	1
Doubtful pulmonary lesions	1	—	1
Influenza (?)	1	—	1
Malignant disease of lung	3	1	4
Wassermann reaction positive (no other cause found)	6	—	6
Syphilis of mediastinum	2	—	2
Tuberculosis of apex with Wassermann reaction positive	1	—	1
Post-diphtheritic	1	—	1
Mitral stenosis	—	1	1
Simple goitre	1	4	5
Toxophthalmic goitre	1	—	1
Malignant goitre	1	3	4
Malignant tumours of neck	3	8	11
Mediastinal neoplasm	15	3	18
Disease of central nervous system	10	5	15
No cause found after investigation	1	5	6
No record of therapy, all of the medical investigation sent to throat department	18	8	26
Totals	135	45	181

Twenty-three of the cases were seen in the adductor stage of these three were later noted as having gone on to complete paralysis (radaric position). In one case of adductor paralysis on the other hand complete recovery was noted at a later visit.

#### Cases of Bilateral Paralysis

Aneurysm of aorta	1
Operative trauma	2
Locomotor ataxia	1
Bulbar paralysis	3
Atrophic lateral sclerosis	1
Total	8

Dr Lambert emphasized the need for better co-operation between the physician, radiologist and laryngologist in determining the causation of motor laryngeal paralysis.

Dr W. S. STARR (Glasgow) said that he had seen a case of right recurrent paralysis due to aneurysm of the innominate artery and three cases of laryngeal paralysis due to invasion of the mediastinal glands in breast cancer. Probably these cases were more frequent than had been thought and it was suggested that a laryngo-optic examination should be made in all cases of cancer of the breast before they were submitted to operation. In some cases of slight paresis of a cord this was present at times and then absent. It would be interesting to have light thrown on the causation of this. While not denying the existence of cases of defective mobility of a cord due to lesions of the crico-arytenoid joint he thought such a diagnosis should be made with reservation. It seemed probable that the cause of these was to be found in the vulnerable position of the left recurrent nerve as it lay in the confined space enclosed by the arch of the aorta and the ductus arteriosus. Short of aneurysmal dilatation demonstrable by clinical examination or x-ray examination it appeared to him that



in many cases there must be such increased pulsation and movement of the vertebra, which by the constant rubbing on the nerve or fretting it caused thickening of the sheath and resulting pressure on the nerve fibres.

Mr C A S RIDOUT (Portsmouth) described two cases. The first was that of an elderly woman with a history of long-continued otorrhoea on the right side which had received intermittent treatment. She came to hospital complaining of aphonia and difficulty in swallowing. On examination it was found that the right vocal cord was immobile. There was no evidence of any lesion in the throat or chest. She came again a month later, when the sixth and seventh cranial nerves were paralysed, she had some difficulty in swallowing and speaking, and complained of severe pain in the right mastoid. A diagnosis was made of malignant disease of the petrous bone on the right side. This was confirmed on opening up the mastoid and at necropsy subsequently. The second patient was a woman with aphonia following "influenza." The right cord was immobile, but no gross lesion was discovered. A few weeks later the right cord recovered but the left remained immobile longer, though it subsequently became normal and the symptoms disappeared. The cause was thought to be neuritis.

Mr M E VLASTO (London) referred to Dr Syme's suggestion that a cause of recurrent nerve paresis might be a fretting action on the nerve due to aortic pulsation, and said that there was a parallel condition in the lower animals. The phenomenon "roaring," which occurred in horses, was known to be due to a left recurrent palsy in an animal usually of the hunter class.

Professor H S BIRKETT (Montreal) stressed the importance of impressing upon students that the larynx should always be examined in the event of even the slightest disturbance of the speaking voice. This statement was illustrated by the examination of a patient whose voice was very slightly affected, the laryngeal mirror showing an abductor paresis of the left vocal cord which was diagnosed as probably a laryngeal manifestation of syphilis. This opinion was corroborated by the subsequent development of all the classical symptoms of the disease. An example of a peripheral lesion involving the nerves at their exit from the jugular foramen was cited, the local manifestations of which were contraction of the pupil, paralysis of one side of the soft palate, hemiparesis of the tongue, and paralysis of one vocal cord—all on the left side. The speaker did not agree that true involvement of the crico-arytenoid joint seldom if ever existed except in that due to malignant disease or tuberculosis, and mentioned a case in which there occurred an involvement of the left crico-arytenoid joint during the course of gonorrhoeal rheumatism with arthritis of the knee- and elbow-joints on the same side. He did not think that most cases of vocal cord paralysis occurring in gonorrhea were apt to be malignant, as he had seen a large number of cases of enlarged thyroid amongst French Canadians, in whom such paralysis without malignancy was fairly common. Paralysis of either one or both cords caused by exposure of the neck to a very cold wind while driving in an open motor car had been seen by him in several cases, the cause being a peripheral neuritis. Recovery ensued in all.

Mr W G HOWARTH (London) thought that the duration of the conditions in each class was of interest. He mentioned a case of right recurrent paralysis due to bulbar palsy which he had followed for twelve years, the patient was still at work, and the lesion had only gradually produced a weakness of the palate, hemiparesis of the tongue, and weakness of the trapezius. As regards the group due to toxic neuritis, he had kept under observation a patient whose recurrent paralysis of the right side began after an acute attack of influenza, the cord did not recover complete mobility for eleven months. He wondered if this was unduly long. He suggested that the temporary paresis mentioned by Dr Syme might be due to early myasthenia gravis. It was important that these cases should be examined by a skilled neurologist, since early cases were very difficult to detect.

Dr DAN MCKENZIE (London) said that the discussion seemed to have dealt chiefly with vocal cord paralysis in which no obvious cause for the symptom could be found, there were undoubtedly many cases of that kind. Middelton and Hunt had stated that most of these proved ultimately to be cases of aortic aneurysm, and certainly vocal cord paralysis nearly always indicated some serious lesion. Nevertheless, there were many which, after lasting for several years, recovered entirely, and there were others in which, although the paralysis continued for a lifetime, no cause was ever found. A puzzling variety was the association of right-sided paralysis with aneurysm of the aortic arch. This was difficult to account for anatomically, but Dr F G Croft had suggested that the vocal cord paralysis might in such cases be due to syphilitic mediastinitis with cervical changes.

Dr ANDREW WYLIE (London) agreed that immobility or impaired mobility was a serious symptom, but it should not have excessive importance attached to it, and only tuberculosis or malignant disease be postulated. Very many patients recovered, and certain toxic cases might escape notice, thus impaired mobility was often a sequel of malarial fever. He had seen cases which were diagnosed as due to enteric fever, and had reported two cases of marked lead poisoning with bilateral immobility which cleared up completely.

Dr T RITCHIE RODGER (Hull) emphasized the necessity of investigating the condition of the adjacent cranial nerves when attempting to explain a laryngeal paralysis. He referred to two cases seen in the same week two months ago.

In a woman, aged 31, the left vocal cord was fixed in the cadaveric position. The left half of the tongue was markedly atrophied, so that when the tongue lay at rest in the floor of the mouth it presented an appearance suggestive of tumescence of the posterior half of the right side. On protrusion, however, the atrophy of the left side was very apparent. The left palate was not very active, but there seemed to be no difference in the two halves. There was well marked wasting of the sternomastoid, deltoid, pectorals, and the supra- and infraspinatus muscles on the left side. There was an almost complete nerve deafness on the left side, but the caloric test yielded normal responses on that side. The voice change and the defective responses on that side the patient had noticed, and these had been present for two years. There were none of the signs of congenital syphilis and Wassermann tests of both the blood and the cerebrospinal fluid were negative, but her father had died of "cerebral tumour" and her mother of "abscesses of the sternum" at the age of 57. The latter condition was particularly suggestive of gummatous disease. Dr Muir who examined the patient thought that syphilitic nuclear disease was the most likely diagnosis. He entertained the idea of bulbar syringomyelia and the bulbar form of progressive muscular atrophy as alternative diagnoses but discarded the former because he could find no dissociated anaesthesia, and the latter because the seventh nerve had escaped altogether and the lesion had remained unilateral for such an extended time.

In the second patient, a woman aged 35, the change of voice had been noticed only six months. The right vocal cord was fixed in the cadaveric position, there was marked wasting of all the muscles of the right shoulder, as in the other case, and there was atrophy of the corresponding half of the tongue. There were no signs of syphilis, and the Wassermann reaction was negative. A ray examination of the chest and neck was negative.

In these cases of involvement of several cranial nerves the lesion might be nuclear, or it might be situated at the point of exit of the nerves from the skull, where cranial nerves had a common or approximate exit. Dr Rodger referred to an article by Dr Veinuro on Verré's syndrome—the common involvement of the spinal accessory, pneumogastric, and glosso-pharyngeal nerves—in which two cases were recorded, one due to inflammatory process in the region of the jugular foramen consequent on a phlebotomy of the jugular bulb, the other due to pressure in the same region from extension of a cylindrical sarcoma of the nasopharynx. In both cases laryngeal paralysis formed part of the picture. The cases described by Dr Rodger differed from the syndrome of Verré in that the hypoglossal nerve was involved, and in the first case the fourth cranial nerve. Although the hypoglossal nerve did not emerge through the jugular foramen until the ninth, tenth, and eleventh nerves it was near enough to be involved in a fairly extensive lesion in that area, and the proximity of the nuclei of the tenth, eleventh and

to fifth nerves, as also of the area acoustica—explaining the deafness—seemed to point to a nuclear lesion as being the more probable explanation.

Mr JOHN T O'MULLIN (London) thought that it was becoming clear that the causes of vocal cord immobility or partial immobility were predominantly neurological. In many cases they could be elucidated, yet there was a large residue for which no explanation could be found. It was obvious that traumatism, disease, aortic aneurysm, and poison (either metallic or pathological) might be concerned. Reasoning by analogy, peripheral neuritis due to exposure to cold was quite conceivable as a cause, as in Bell's palsy of the face. After treating the cause, as it was possible to do in a vast number of cases of vocal cord paralysis, the gravity of the latter symptom could be apportioned, where no such grave cause could be found the prognosis would be favourable.

Dr BROWN KELLY, in his reply, considered that in a case of immobility of the vocal cord when every means had failed to reveal the cause, the possibility should be kept in view of one of the following conditions being present: (1) a sclerosed lymphatic gland which could exercise pressure on the recurrent nerve throughout life and give rise to no other signs; (2) central nervous disease, of which for years the vocal cord paralysis might be the sole manifestation; (3) neuritis due to such causes as alcohol and (4) myopathic disturbances following influenza and other infections. The term "fistling" of the recurrent laryngeal seemed to describe suitably the irritation to which this nerve was exposed when as had been recorded, a temporary increase in blood pressure, presumably accompanied by increased distension of the aorta, gave rise to a transient paralysis which it was recognised by calcareous plates in the convoluted arch. Dr Birkett's description of laryngeal paralysis produced by cold winds was of interest and added another to the category of possible causes.

Mr TILLEY in reply emphasized the early appearance of the local lesion, swelling of the arytenoid as proving the cause to be articular and not neurological in origin. With regard to fretting by the aorta in transient cases he advocated a more thorough examination of the chest by the surgeon and deprecated the too hurried transference of cases to others before any further attempt at investigation was made.

## THE FAILED FORCEPS CASE AND ITS TREATMENT

BY

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Of the many types of grave obstetric emergency with which in large maternity service has to deal there is none which so taxes the judgement and skill of the attendant or occasions more anxiety in the days which follow delivery than that which comes under the category of the "failed forceps" case. On reviewing a series of five hundred emergency admissions to the Edinburgh Royal Maternity Hospital it was found that in eighty-eight or 17.6 per cent. forceps had been applied and efforts made at extraction without the desired result.

An analysis of these cases shows that the commonest individual cause of failure was disproportion due either to abnormal size of the child or to contracted pelvis the latter being found in varying degrees in about 40 per cent. of cases. The pelvis was for the most part of the generally contracted and flat rachitic types although in seven out of a total of thirty-four cases in this group an outlet deformity was responsible for difficulty. I would especially direct attention to the treacherous nature of this last type of pelvic abnormality—treacherous in that as in five of the seven cases, the measurements of the pelvic inlet may be normal, the head may engage in the brim in a normal

manner, and a good prognosis as regards spontaneous birth may be formed only when the head is arrested at a low level in the pelvis is the abnormality recognized, as a rule the opportunity for Caesarian action has passed, and craniotomy, or at best a difficult forceps delivery is inevitable. Serious outlet contraction of course not commonly encountered in general obstetric practice but the high proportion of cases of this type (seven in thirty-four) in the present series indicates how readily the deformity may go unnoticed.

A posterior position of the occiput was found to be an almost equally common cause of difficulty. In the majority of cases the malposition had not been recognized, and there has commonly been a history of forceps having been applied several times without success. Many of these patients showed severe laceration of the soft parts probably from slipping of the forceps, and in one case rupture of the lower uterine segment had occurred. On admission to hospital the position of the occiput varied in some the head was still in the oblique diameter of the pelvic cavity, in others posterior rotation to the hollow of the sacrum had occurred while in several forward rotation was in progress. In a few cases the head was still riding free above the pelvic brim.

A third group comprised cases in which no abnormality of the pelvis was present, the child was of average size, presentation and position were normal. It is possible that some of these were patients in whom an occipito-posterior position had been present when forceps delivery was first attempted, rotation of the occiput to the front having occurred during the patient's transit to hospital. In a large number of cases in this group, however, no obvious explanation of failure could be found and it was difficult to avoid the conclusion that anxiety to relieve suffering had prompted an attempt to assist delivery before complete dilatation of the cervix and adequate moulding of the head had been allowed to take place. As in many instances of contracted pelvis and the occipito-posterior position above referred to, intervention was unsuccessful largely because it was premature and needlessly entailed not infrequently, serious injury to cervix and vagina. Finally in a small group in which forceps delivery was unsuccessfully attempted there fall to be catalogued two face cases, one of them a menoposerial one brow presentation, and one case of ovarian tumour obstructing labour.

### TREATMENT

Hyperbole might be exhausted in emphasizing the value of prophylaxis. It is however sufficient testimony to the value of antenatal supervision to record that whereas approximately one-third of the cases in this analysis were seen by a doctor for the first time after the commencement of labour, there were on the other hand only three failed forceps cases so far as information is available among more than 6,000 patients who during the period under review, attended the hospital antenatal clinic.

Where moderate forceps traction fails to effect delivery, further treatment will naturally be governed by conditions present in the individual case and in particular by the information which the following lines of investigation afford: (1) What is the nature of the obstruction? (2) Is birth of a living child *per vias naturales* possible? (3) If delivery by the natural passages is contemplated is immediate intervention in the interests of mother or child desirable or not? (4) If delivery of a living child *per vaginam* is impossible do the conditions present warrant or forbid Caesarian section?

### The Nature of the Obstruction

The commoner causes of the obstruction have already been detailed. Careful abdominal examination, accurate measurement of the bony pelvis including the pelvic outlet and vaginal examination preferably under anaesthesia with the whole or half hand will usually yield the information required. Diagnosis of the occipito-posterior position in particular is often difficult especially in those instances in which a large caput succedaneum has obscured the usual landmarks. By the introduction of the hand the position of the head can be determined without doubt, and the existence and degree of pelvic deformity

ascertained. The following test may occasionally be of value in the diagnosis of an occipito-posterior position. If the fore and middle fingers are placed one on either side of the frontal suture the frontal bones may be alternately depressed one on another. As the result of moulding, the occipital and frontal bones are overlapped by the parietals, and one parietal overrides its fellow, so that at the frontal suture alone can this mobility be elicited. The advancing sinciput can thus be readily recognized.

#### *Is Birth of a Living Child by the Natural Passages Possible or Not?*

If the child is dead, or from repeated ineffectual attempts at delivery and obvious signs of foetal distress survival seems improbable, the immediate problem is simplified, perforation being as a rule indicated. Whether or not this should be followed by immediate extraction will depend on the condition of the patient and the degree of dilatation of the soft passages.

If the child is still in reasonably good condition, the possibility or otherwise of vaginal delivery must next be determined. Where dystocia is due to abnormal presentation or position alone, correction of the abnormality is as a rule followed by a rapid and easy termination of labour.

Where, on the other hand, there is disproportion, due either to pelvic contraction or to abnormal size of the child, the following points must be taken into consideration in assessing the possibility of vaginal delivery: (1) Pelvic measurements. (2) The relative sizes of head and pelvis and the degree of engagement as estimated by the Muller-Munio Keri method—a manoeuvre most satisfactorily carried out under anaesthesia with the aid of an assistant. (3) The patient's previous obstetrical history, if she is a multipara. (4) Whether or not the patient has had a real test of labour. It is obvious that where in addition to pelvic deformity labour is complicated by malposition or malpresentation, such as anterior parietal advance in a flat pelvis, the prospects of successful vaginal delivery may be seriously compromised.

#### *Is Immediate Intervention Advisable or Not?*

Where delivery of a living child by the natural passages is considered feasible the important question arises as to whether immediate intervention is desirable or not. In an earlier paragraph it has already been indicated that a premature attempt to effect delivery may not only defeat its own end, but also inflict serious injury on the maternal soft tissues. The ability of Nature to deal successfully with considerable disproportion, if given time, has been repeatedly demonstrated by cases of different types in this series, which were ultimately delivered spontaneously or by an easy low forceps operation, while intervention some hours earlier had completely failed. Moreover, while signs of maternal or foetal distress or arrest from such conditions as face or brow or occipito-posterior position may at any time demand active intervention, the results, both to mother and child, have unquestionably been best in cases in which it has been possible to delay intervention until full dilatation of the passages and the maximum degree of head-moulding have been allowed to occur.

#### *Caesarean Section versus Craniotomy*

Where obstruction is such as to preclude the possibility of successful vaginal delivery there arises the controversial question as to whether, in the presence of probable infection, Caesarean section or craniotomy is the correct line of treatment. Fairquhar Murray has recently drawn attention to the difficulty and danger which craniotomy entails in the presence of serious disproportion, and has strongly urged more frequent resort to Caesarean section in such cases, even where there is undoubted infection and the child is dead. On the other hand, the statistics of Holland and Kerr and of Routh indicate clearly how much more grave is the prognosis where Caesarean section is done in the potentially septic than in the "clean" case, the mortality in the former varying from 10 to 34 per cent. Moreover, Schauta's analysis of 5,000 cases of contracted pelvis shows a maternal mortality of approximately only 4 per cent in 158 cases delivered by craniotomy. The Edinburgh Royal

Maternity Hospital figures over a number of years show a rather lower Caesarean section mortality and a distinctly higher mortality percentage in cases delivered by craniotomy.

While statistical evidence is fallacious, the figures referred to are in accord with the general body of obstetric opinion that where gross infection is suspected as the result of repeated handling, a rising temperature, offensive liquor amni or the development during labour of a purulent discharge, craniotomy entails less risk than Caesarean section.

In no class of case is it less possible to lay down any rule-of-thumb method of treatment. All that I would suggest is that where the child is dead or dying, and disproportion not pronounced, or where major surgical facilities are not readily accessible, craniotomy is the proper procedure, where, on the other hand, the child is alive, the degree of infection slight and disproportion considerable, Caesarean section is warranted. In borderland cases between these two extremes the choice of procedure must depend on the varying conditions present in the individual case and on the personal experience and judgement of the operator.

#### *The Place of Internal Version*

Twenty-five years ago obstetric literature was much occupied with discussions regarding the relative merits and demerits of forceps and version as competitive procedures in labour complicated by contracted pelvis. Partly as the result of ante-natal recognition of disproportion, and partly because of the increased safety of Caesarean section, that type of case in which internal version might be considered the treatment of choice is encountered less frequently than formerly. In Edinburgh, at least, the recognized dangers to the child of a head first labour have resulted in a tendency to restrict version to a small selected group of cases. If such operative procedures as Caesarean section and pubiotomy are inadvisable or not feasible, and the head is riding free above the brim of a moderately contracted flat pelvis, there are three options of treatment—high forceps, internal version, and craniotomy. The high forceps operation almost necessarily entails a faulty and insecure application, large diameters are brought to bear across the pelvic brim, and delivery, if possible at all, can be effected only by the exertion of great force, the usual result being a dead child and a badly traumatized birth canal. Where internal version and craniotomy, and where the above conditions obtain, version may occasionally succeed in saving the child, where the operation is not foiled by severe infection, too great disproportion, or a dangerously thinned out lower uterine segment. I would not put the case for internal version more strongly than that, in the last twenty-six cases of this type in which internal version has been done in the Edinburgh Royal Maternity Hospital all but five of the children were stillborn.

#### *END-RESULTS*

In conclusion, I would refer briefly to the tragic end results of many of the cases in the present series. Seventeen of the eighty-eight patients died—a mortality of 19 per cent, and one which is scarcely exceeded if that associated with any of the major complications of pregnancy or labour. The individual causes of death were sepsis 12, rupture of the uterus 2, post-partum haemorrhage and shock 2, and eclampsia 1. In addition, in thirty-nine (44.3 per cent) the puerperium was morbid according to the British Medical Association standard, many of the patients recovering sufficiently to leave hospital only after exhausting illness, fever. Few patients escaped without more or less laceration of cervix, vagina, or pelvic floor. Slightly more than half the vaginal tissues with fistula formation occurred in the cases. Further, it will be appreciated that primipara was seldom feasible or successful. Many patients were perforce discharged only to face many weeks or months of further ill health, and in a few the future was permanently invalidism. Including stillbirths and neonatal deaths, forty-six of the infants were lost—a mortality of 52 per cent.

## CONCLUSIONS

The conclusions suggested by this clinical analysis may be summarized as follows:

1 The overwhelming evidence in favour of careful ante-natal examination, particularly in primigravidae and in multiparous women with an unsatisfactory previous obstetric history.

2 The importance of careful routine measurement of the pelvic outlet, which may be contracted in spite of a normal superior strait, and is thus a deformity specially liable to be overlooked.

3 The grave danger entailed by non-observance of elementary rules with regard to the application of forceps through an incompletely dilated cervix or in the presence of marked disparity in the relative sizes of head and pelvis.

4 The necessity when moderate forceps traction fails of recognizing the nature and degree of obstruction and of determining whether vaginal delivery of a living child is possible or not.

5 The remarkable capacity on the part of Nature, if given time, to overcome considerable disproportion by moulding of the head and the realization that the condition of mother or child rather than the actual number of hours passed in labour, should constitute the indication for assisting delivery.

## DISCUSSION

Dr BETHEL SOLOMONS (Dublin) did not quite understand what treatment had been given to those patients who had died. He personally had a very decided preference for pubiotomy or lower segment Caesarean section to craniotomy on a living child.

Mr R H PARVORE (Rugby) referred to his experience in cases of pubiotomy.

Professor FLETCHER SHAW (Manchester) regretted that this very important paper had been crowded into the end of a long morning's work. It was most unfortunate that this could not be given to his discussion and he urged that this subject should be fully dealt with at the meeting next year at Cardiff.

Professor McILROY supported Professor Shaw's proposal and the PRESIDENT (Dr Hug Ferguson) agreed that the suggestion should be made in the right quarter.

## Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL

## FORMALIN POISONING RECOVERY

As poisoning by formalin is a rare accident according to the textbooks of toxicology, the following details of a case of poisoning may be of general interest.

On September 5th I was called to see a boy aged 7 who was showing symptoms of poisoning after drinking some disinfectant. Arriving at the house about fifteen minutes after the poison had been swallowed I found that the patient had entered a room which was being disinfected by a workman by orders of the local sanitary authority, seeing a bottle on the floor containing a liquid which he took to be lemonade he drank the remainder of the contents of the bottle assuming to possibly halt an ounce of the liquid.

I found the boy somewhat collapsed though quite sensible he complained of a burning pain in his throat and epigastrium. His pulse was rapid and weak he had vomited once bringing up a quantity of clear greenish fluid and he was gasping for breath. The nature of the disinfectant was unknown to the workman who had gone away to inquire as to its composition. I smelt the vomited matter and at once detected that pungent odor so familiar to those who have frequented a dissecting room. I decided that the poison must be formalin. This conclusion was subsequently confirmed by the workman on his return the disinfectant being commercial formalin a 40 per cent solution of formaldehyde in water.

The treatment I adopted was washing out the patient's stomach through the pyloric tube, I then introduced a quantity of very dilute solution of ammonium which was left in the stomach. The latter procedure was an attempt to produce the well known reaction by which ammonia and formaldehyde unite to produce the condensation product hexamethylenetetramine more familiarly known as urotropine or hexamine a harmless compound. I also caused the patient to be put to bed with hot bottles and enemas in traction for the administration of demulcents. The child

now appeared fairly comfortable. On the following day the patient was in his usual health except that he complained of slight pain in the throat on swallowing he has since made an uneventful recovery.

From a study of the literature available, it appears that one ounce of commercial formalin has proved fatal for an adult. From what I was told the quantity swallowed by the boy would probably have been a half dose for a child of the patient's age.

Lettering

G H March, M.B., Ch.B. (Vind)

## A CASE OF SIMPLE CLEFT STERNUM

Cleft sternum is a sufficiently rare condition to justify a record of the following example.

The subject was a healthy girl aged 11 with an uneventful medical history. Though the deformity was noticed at birth particular attention was not drawn to it until the girl was examined at a school clinic and doubt was then expressed as to whether she was fit to play games owing to the risk of a blow on the chest.

In the anterior wall of the thorax there is a marked depression due to complete absence of the pre-sternum. The ends of the clavicles are separated by a gap of about two inches during expiration which increases to two and a half inches on inspiration. The cleft extends down as far as the fifth costal cartilage the ends of the upper four costal cartilages on each side being connected by a fibrous or cartilaginous strip. The cleft narrows as it approaches the fifth costal cartilage where the two halves of the metasternum become joined by a band of strong fibrous tissue from the fifth to the seventh costal cartilage. A xiphisternum could not be felt.

There is a slightly asymmetrical appearance of the chest but measurement does not confirm this, both sides being equal and no kyphosis or scoliosis being present. In the depression formed by the absence of the sternum the pulsation of the aorta is very marked. The heart is normal in size and position and no cardiac murmurs are audible.

During coughing or forcible expiration the anterior edges of each lung herniate through the cleft, this produces an alarming swelling on the front of the chest. This condition gives rise to no discomfort to the child except if pressure is applied such as would be present if the sternum were complete.

Dr W Greig has collected from the literature twenty cases of simple cleft sternum. Six of these cases had concomitant anomalies. In the one here described no other abnormalities could be detected apart from an unusual amount of extension at the elbow.

I am indebted to Mr F Cyril Dobie senior honorary surgeon to the Chester Royal Infirmary for permission to publish this case.

W GRIFFITH LOVE

M.B. Ch.B.Fd.

Late Senior House Surgeon Chester Royal Infirmary

## ACUTE PULMONARY OEDEMA RECOVERY

During the last few months several cases of acute pulmonary oedema have been reported and therefore the following details of an instance of recovery following an attack seem worthy of record.

A man aged 60 was seen at the end of June 1927 on account of an attack of follicular tonsillitis which responded rapidly to treatment. He did not feel ill in himself and remained at work. During the night of June 12th I was called to see him. He was sitting in a chair very anxious, breathing rapidly and with great difficulty and expectorating large quantities of blood-stained sputum. His chest was full of moist rales and the heart sound was very weak. His pulse was 140 and thready. The attack had come on about a quarter of an hour previously following sudden diarrhoea. He was given 100 grains of atropine sulphate and 180 grains of strychnine hypodermically at once and propped up in bed with his water bottles to his feet. He improved and was then given hypodermic injections of 1/12 grain of heroin and 1/100 grain of atropine sulphate. In about half an hour his breathing became more comfortable and the frothy expectoration almost ceased. He slept at intervals for the next twelve hours. He was kept under morphine for forty-eight hours and by that time his chest was quite clear of rales and his pulse rate had fallen to 80.

The attack in this case was probably brought on by distension of the stomach following a heavy meal just before bedtime. The patient's cardio-vascular system and urine showed nothing abnormal. He was quite fit three weeks after the attack and has kept well ever since.

Wincheer

C B S FULLER M.D., M.R.C.P.

## Rebichus.

### THE HEALTH OF THE NATION

THE strategic front in the campaign for the common health is held in the centre, as is necessary and proper, by the medical profession. It has many brigades and numerous methods of warfare. At the moment the most needed and effective of these methods is the spreading of knowledge among the public on health matters, and a new weapon for this offensive will be found in a book entitled *The Health of the Nation*,<sup>1</sup> just published, by Dr F E FREMANTLE, M.P. These military metaphors are not inappropriate in the case of an author who has seen so much service both in actual warfare and in the party strife of the House of Commons and the constituencies. These experiences, together with those of a county medical officer of health, have enabled Dr Fremantle to take a wide view of the position from some unaccustomed angles, and the result is a piece of work well worth doing, admirably done, and likely to be of real value to several classes of readers.

Publications, whether books or articles, on health matters intended for non-medical readers are of various kinds. Many of them have a tendency to be mere chatter, mostly platitudinous or futile, and the chatterer, even if a member of the medical profession, often has no particular qualifications for speaking with any authority on the matters with which he deals. Such publications are, on the whole, a hindrance rather than a help in any campaign. Then there are a number of little books on personal hygiene intended mainly for use in the junior classes of schools. These, however good in themselves, are largely wasted efforts, for such instruction is much more effective when given orally and practically by a teacher than when gathered from any book or pamphlet, however simple and elementary. There are also admirable textbooks on domestic and public hygiene for use by senior pupils and in technical classes. These are founded on the basis of physics and chemistry, and are, in fact, textbooks of elementary applied science, leading up to those larger volumes which are necessary for all who intend to make sanitary science their life work. Dr Fremantle's book is none of these things. He approaches his subject not as a branch of science, but as a branch of civics. It is, as he tells us in an introductory note, an attempt to "bring together in right proportion the main facts and factors in the health of the people and the general system of law, authority, and administration affecting each issue", or as Mr NEVILLE CHAMBERLAIN, the Minister of Health, describes it in his foreword, "a useful and comprehensive review of the organization and purpose of our public health service".

The book begins with a very brief history of public health organization in this country. There follow chapters dealing with statistics and problems of population and with the records of births, sickness, and death. Dr Fremantle then considers what he calls the "economics of health" in the form of a profit and loss account, showing on the debtor side the loss due to absence or lessened efficiency owing to ill-health, the cost of care and treatment, the indirect loss from epidemics, and the maintenance cost of health services, and on the creditor side the profit from lives saved or prolonged. We may well doubt, with Mr Neville Chamberlain, whether such financial calculations "provide a true value for things which in themselves are incapable of measurement," but there is a certain order preserved to which monetary considerations make the more frequent appeal, and there is no reason why some attempt even where it is made to impress such minds by estimates on dead. On those which Dr Fremantle gives. The author Keir and of him account of the constitution, powers, and is the prognosis of health authorities and officers, and potentially septid these operate in regard to pure food and in the former va mill, light and air, questions connected Schauta's analysis.

<sup>1</sup> *Nation*. By F E Fremantle M.P. M.B., M.Ch.  
With a foreword by the Rt Hon Neville  
Chamberlain, Minister of Health. London: P. Allan and Co., Ltd.  
209 8s 6d net.)

with maternity and infant welfare, school sanitation and medical services, the Poor Law, hospitals of different types, old age pensions and the various social insurances, including national health insurance. He then deals with the attack on certain special diseases, particularly infectious fever, tuberculosis, cancer, venereal disease, and the effect of alcohol and the regulation of its sale. Some administrative and legal points connected with mental disorder and deficiency, and with industrial disease and venereal and the employment of various classes of persons, are touched upon, and there follows a description of the regulation of the medical, dental, nursing, and veterinary professions, and of the work and training of pharmacists, sanitary inspectors, and health visitors. The special conditions which prevail in Scotland under all these headings are set out, and a concluding chapter briefly deals with the Navy, Army, and Air Force Services, with the Indian and Colonial Service, with the work of the Ministry of Pensions as regards health, and with the health organization of the League of Nations.

The comprehensive character of Dr Fremantle's survey is thus evident, yet it is made within moderate compass, perhaps too small. The method is to give the bare fact, frequently with statistics wherever this has seemed desirable. The various problems that present themselves are never really discussed, and even expressions of opinion are not very frequent. This leads to conciseness, but it is of interest. The method was no doubt deliberately adopted in view of the main purpose for which the book was intended. The book is, indeed, so good for its purpose and so certain to require revision for future editions that it may be worth while to point out a few minor blemishes and to make a suggestion or two for the author's consideration. The historical chapter is really too meagre. It should not be long, but the historical method of approach to any branch of civics is usually most effective and illuminating. One small illustration may be given. Edwin Chadwick is mentioned. The dates of his birth and death are given, and the fact that he was a barrister. And this we are told merely that he was the founder of our system of public health, and that Disraeli considered him "a monster in human shape." This must be tantamount to those who know no more of Chadwick, and his importance in the scheme of things clearly justifies Dr Fremantle's readers in asking for more than this. Very curious, again, considering the author's own close parliamentary association with the matter, the main paragraphs on the registration of deaths appear to describe the old and not the recently enacted methods, and more might have been said about stillbirths than the mere statement that their registration is now required. The description of "national benefits"—especially those known as National Health Insurance Acts requires expansion, for the Act is becoming of great importance. Again, merely as an example of the kind of thing which might be done here and there in various chapters, if to such a paragraph as that dealing with the employment of children on page 143 there were added the general nature of the by-laws made by the best local authorities, thus indicating some of the dangers from which children were being protected, interest would certainly be increased.

Lastly, one point of a different kind may be noted. Every now and then when health proposals or facts are mentioned there is reference to a commendatory tendency to one political party, whereas in similar circumstances other parties are ignored or are very occasionally alluded to in a depreciatory tone. This does not loom very large in the book, and if it is to be regarded as a superior and excellent piece of political propaganda, and is so recognized, no harm is done. These things are, however, not so useful to a textbook, and if, as we hope, this volume becomes a largely used textbook or handy reference book for students of civics, for members of Parliament, of town and county councils, of committees and associations interested in health and social welfare, and also perhaps for medical students and qualified practitioners, very few alterations will do all that is needed. In any case the book can be strongly recommended to all these persons.



## A TEXTBOOK OF UROLOGY

Dr O S LOWLER and Dr T J KIRWIN are well known by genito-urinary surgeons on this side of the Atlantic for their pioneer work in regional anesthesia and their numerous important contributions to urological literature. They have now crystallized their laboratory and hospital experiences of the last eighteen years in *A Text-Book of Urology*.<sup>1</sup> In writing it their chief difficulty has been to compress what they have to say within the covers of a single volume so as to produce a work of dimensions suitable to the needs of students and practitioners. In order to economize space the historical survey of urology has been cut down to a single chapter and, instead of quoting the work and opinions of other authorities, a bibliography has been attached to the end of each section. The arrangement is that which is most usually employed. We have a preliminary chapter on history-taking, physical examination, cystoscopy and radiography, followed by sections dealing with the various diseases that may affect the genito-urinary organs grouped according to their anatomical relation. In a chapter on diseases of the testicles, epididymis, vas deferens, and seminal vesicles a considerable amount of space is devoted to the subject of operations for relief of sterility. Martin's operation is described with the various modifications of his technique introduced by other surgeons. It is a pity, however, that no indication is given as to the prospects of success offered by these procedures, for there is little to be gained by studying details of technique if attempts to cure sterility by surgical methods are foredoomed to failure. In England the operation or epididymo-vasostomy has to all intents and purposes been abandoned, as no surgeon has yet been able to publish a successful instance of its employment.

Dr O S Lowler's researches on the embryology of the male urethra and the development of the prostate are widely known, and the chapters on the male urethra and the prostate are therefore of particular interest. The authors, although they are in the main partisans of perineal prostatectomy, are of the opinion that the urological surgeon should be prepared to adapt himself to the individual need of the patient and to carry out either perineal or suprapubic prostatectomy. Their preference for the perineal route is based on the fact that it causes less shock. In combating this shock, should it occur, they recommend the use of a 5 gm glucose solution as suggested by the late Sir William Baylis in his memorandum on the treatment of shock following war wounds.

The bladder and its associated pathological conditions are dealt with in chapter xi. The description of the anatomy and embryology of the bladder is excellent and so in the main is the account of its surgery. The criticism may, however, be made that the account of per-urethral methods of treating bladder growths is not so complete as it might be. Recent years have been productive of so many advances in the way of new forms of operating cystoscopes and new methods of applying diathermy that more space might well have been given to this important subject.

The illustrations have been well selected and have been derived from the researches and from the patients of the authors. Their work appears to have been done mainly at the Bellevue Hospital and in the Department of Urology at the New York Hospital. The volume should be a useful addition to the library of any genito-urinary surgeon or any general surgeon undertaking genito-urinary work.

## PHYSICO-CHEMICAL EQUILIBRIA IN THE ANIMAL BODY

We share with the author the difficulty of finding a brief title which will adequately convey the scope of the small but crowded volume *Factors Affecting the Distribution of Electrolytes, Water, and Gases in the Animal Body*.<sup>2</sup> Dr

Dr D D VAN SLIKE. It forms the latest addition to the stimulating series of Monographs on Experimental Biology. The author's subject might be described as the regulation of the acid base neutrality of the organism, and such it is yet it is so very much more. The neutrality of the body is not to be measured in equivalent of acids and bases. It involves the whole intricate balance of electrolytes and colloids in the serum, blood cells, and tissues. It casts the versatile haemoglobin in a dominant role, it takes account of permeability, and it demands a just appreciation of the activities of the respiratory apparatus and the kidney. "One thing leads to another" and a change in the composition of the alveolar air or in the acid base equilibrium of the blood reverberates through the whole physical structure of the animal, so that every physiological function seems to give back some echo of the disturbance. Here we find physical action and vital reaction reduced to quantitative definition in the language of physical chemistry with a compelling precision. The author writes:

The resultant picture is not complete and probably never can be. Nevertheless, so many once inexplicable processes have been found to occur in accordance with the recognized laws of physics and chemistry and such an extent of correlation amongst processes in the body has been observed that one may hope by a casting of accounts at the present moment to add more order than confusion to physiological thought.

The claim is modest. No geographers of the dark places of physiology have given us a more complete map of their territory than the nomograms which Professor L. Henderson has constructed from the data arduously collected in the laboratories of Dr Van Slike and others. They go far towards reducing to two dimensions the complex traffic in gases, water, and electrolytes which is the constant burden of the living organism.

The story told by the author is fascinating, though a little too austere and concise. Students of biology not deeply versed in the precepts of physical chemistry would enjoy his book the more had he mitigated the severity of his argument with a greater expansiveness. One or two of the diagrams have been reproduced in a fashion which does credit neither to the investigations which they exemplify nor to the series of monographs to which this volume belongs.

## NERVES FOR THE LAYMAN

Professor FRANK HARRIS is the general editor of a series of excellent and popular health books, some of which have been reviewed in our columns. He has now written a book himself which is the twelfth of the series. He has attempted what is, we believe, one of the most difficult pieces of popular health instruction for he has written on *Nerves, Voster System of the Body*,<sup>3</sup> is the title of his book, and in it he points out that whereas the layman has some knowledge of his muscles, for he can feel them and of his skeleton for like reason, and of his digestion (and sometimes too much of that) he knows very little of his brain and of his nerves, for these are hidden and impenetrable and therefore mysterious. So the author has set himself to tell the layman what this great system is and how it is the true master of his body from the physiological point of view, and often from the psychological. He first gives a general sketch of the anatomy of the brain, spinal marrow, and the nerves then proceeds to afford a general idea of how the nervous system works, how impressions enter through its parts, how they react in pain, and what pain is and to what it is due. His description of the nerve centre is particularly good as is his exposition of reflex actions which form so great a part of our activities, but there is a slip on page 107 where the papillary light reflex is said to be "the effect of light on the iris." Finally he discusses the physical bases of consciousness, and explains what are the effects of fatigue, what is the nature of sleep of dreams and of those waking dreams of hypnotism.

The discussion of recent psychological theories of the unconscious mind and its effects will be really informing to the layman, somewhat—perhaps completely—banned.

<sup>1</sup> *A Text-Book of Urology*. By Oswald Swanner Lowler, A.B. M.D. F.A.C.S. and Thomas Joseph Kirwin, Ph.D. B.S. M.A. M.D. Philadelphia and London: Lea and Febiger, 1926. (6 x 9 pp. xviii + 679. 25 figures. 15 plates. 10 do. line.)

<sup>2</sup> *Factors Affecting the Distribution of Electrolytes, Water, and Gases in the Animal Body*. By Donald D. Van Slike, Ph.D. Sc.D. Monograph on Experimental Biology. London: J. B. Lippincott, 1927. (10 x 6 in. pp. vi + 62. 15 figures. 10 do. line.)

<sup>3</sup> *Nerves, Voster System of the Body*. By David Frank Harris, M.D. D.S. Birm. B.Sc. Lond. The Modern Health Book. London: Faber and Gwyer (The Scientific Press), 1927. (Fcap. 8vo. pp. 222. 14 figures. 32 do. line.)

with the gushings of the novel writer. The last two chapters are devoted to considerations of mental hygiene, to explaining what nervousness, irritability, and melancholia are, and the best way of maintaining neural health. He is a firm believer in the dominance of the first seven years of life, when the health of the nervous system is made or marred, for as the child is directed in these early years so will he incline for the rest of his life.

Professor Fiasci-Harris has undertaken a difficult task, but he has done it uncommonly well, and produced a book that is readable, informative, and balanced.

### MILITANT MEDICINE

THE title *Aesculapius Armaque*, which Major RITCHIE of the Royal Army Medical Corps has chosen for his series of articles on military medical subjects, provides the "arma virumque" of our school-days, but is neither so euphonious nor so robust as the Virgilian original. Be that as it may, everyone who is interested in the author's criticisms on war and the medical service, which have already appeared in the *Journal of the Royal Army Medical Corps*, will be glad to have them published in one handy volume, for the articles are full of excellent ideas, afford much food for thought, and are written in an incisive and distinctive style.

There are a dozen articles in all. The first two are the longest and are, perhaps, the most interesting. *Mars et Hygea*, the heading of the first—we are thankful it was not *Hygea Marsque*—contains a series of paragraphs on the relationship of preventive medicine to the conduct of war. The author foreshadows a time when men with medical qualifications will study war in all its branches at military schools, until the greater part of the duties and responsibilities of the administrative services will rest in the hands of the medical officer. The historian of the Trojan war described the medical officer as *αἰνὴν πολλὴν ἀνδρείου ἔχων*. Thus do Homer and Major Ritchie think alike. "Hygiene," according to the author of *Aesculapius Armaque*, "may become Q." We cannot follow him so far. He refers to hygiene as having been misused in penury, and implies that good sanitation in the field is largely a matter of cupidity, its appliances being constructed from the leavings of other services, such as empty ration boxes, oil drums, and petrol tins. This is all very true, field sanitation being essentially a matter of improvisation. But it scarcely amounts to the elaborate and complicated functions of a quartermaster-general's branch. Other paragraphs of this chapter wander in an easy saunter through wide fields. They touch on evolution of armies, fashions in fighting "as variable as women's clothes," types of transport, the Geneva Convention which may "pete out," and skin affections, culling their flowers of diction where they may. Prophetic and somewhat gloomy visions of future warfare end in a well deserved eulogy of the work of the army medical service before the war. "The foundations of its fame were carefully laid during the years of peace, its preparations were remarkably complete, it saw big and thought big, and it was perhaps the keenest branch of a keen pre-war army." "*Sententiae vagae*," the heading of the next article, would have been more appropriate for the first, and scarcely indicates its character, for it is concerned mainly with army medical organization before during and after the war, and the various modifications induced by circumstances or suggested by a hypothetical future.

The remaining articles refer to similar subjects, such as the efficiency value of a wider outlook for the medical and other services of the army, the pros and cons of chemical warfare, a vigorous policy in hygiene, bacteriology in the next war, and certain domestic matters affecting the Royal Army Medical Corps. They are all well worth reading if only for the enjoyment of Major Ritchie's arresting style of writing. It is not too much to say that *Aesculapius Armaque* shines as a new constellation in the firmament of army medical literature, and brightens a type of writing that has seldom emitted sparks from its somewhat massive solidity.

*Aesculapius Armaque*. By Major M. B. H. Ritchie, DSO, R.A.M.C. London: J. Bale, Sons and Danielson, Ltd. 1927. (Demy 8vo pp. 112 5s. net.)

### NOTES ON BOOKS

A VALUABLE service has been done by Dr R. H. A. Plimmer in the production of his textbook on biochemistry. Biochemistry has been generally somewhat hampered through a lack of books devoted expressly to the subject. The necessary literature for a vigorous pursuit of the study was too much scattered for easy access. Authors of textbooks were formerly too reluctant to specialize. The older school adhered to the view that chemistry could not be properly understood if the study were confined to a single branch of it. This view was proper when the whole range of chemistry was shorter, and it is still true that the foundation of chemistry is the same for all its branches. But as chemistry extended its boundaries its branches became more disconnected, and it is now almost impossible to deal with any one of them except as a unique subject. In this development there is, it is evident, a danger that the fundamental principles of chemistry may also be made sectional for different groups of students. Dr Plimmer has deliberately avoided this danger, and has emphasized his action in the title he has chosen, which describes the volume as a textbook of organic chemistry directed to its biological aspects. It conjoints practical and theoretical treatment in a well connected arrangement, thus facilitating as well as encouraging careful and thorough work. The present form of the book is a development from earlier editions, revised in accord with the dictates of experience.

Yet another small manual comes from the indefatigable pen of Dame MARY SCHARLIEB. It is written in conversational style, but with the clarity which characterizes all her books. It is entitled *The Psychology of Childhood*, but the preface states that it is not intended to be a treatise on the psychology of children, but as a popular guide for parents in their difficult and important task of preparing the children of the present day to be the parents of the future. The early pages are devoted to a consideration of the development of the senses of the infant, the links between mind and spirit, and the child's religion. Chapter IV deals with parental duties. After quoting the present birth rate the author says: "To whatever cause we attribute this enormous falling off of citizens to our shores, and whether we consider this condition an asset or a detriment it is surely evident that the smaller number of children on whom to be more carefully guarded and more wisely instructed if we are to have an adequate supply of healthy, well trained and spiritually satisfactory citizens." The remainder of the book, with the exception of the final chapter, is given to the consideration of the various groups of abnormal children. Dr Scharlieb explains the accepted definitions of "idiot," "imbecile," "Mongolian," etc., and quotes figures showing the percentage proportion of each to the population. This is a very useful part of the book, and should clear away much misapprehension on the subject. The last chapter deals with suggestion, discipline, and punishment, and should be helpful to all who have any dealings with children.

Dr T. M. DISHINGTON has written a little book which seems to be his confession of faith in the system of medicine to which he adheres. It is cast in the form of a novel—*The Patient's Dilemma*. The novel is slight, the most of it a dialogue between a doctor perplexed with the problems of sickness and one who is filled with a sublime confidence in the powers of the simulum. Assuming that the expert is put in the mouth of one of his characters are those who author holds, Dr Dishington is a whole hogger for the cause of homoeopathy. For the most part the argument is what we have heard before, the revelation of the simulum, and the defence of the infinitesimally small dose, whose power is held to be proved since it is alleged that in such diluted the drug assumes a colloid form and therefore is the assimilable and potent. Sometimes his argument runs away with him. The treatment of insanity by this system is well discussed, and on one page we read, "A healthy boy receives a head injury becomes an uncontrolled fiend. The surgeon, by merely restoring the internal plate of the skull to its proper alignment may cause a complete disappearance of every morbid mental process." On the opposite page we read, "A person with a frail physique and a tubercular lung may have a clear brain, and the natural sweet disposition may have full expression, but if the lung state has been healed by local means, the disease force, not neutralized, cured, may expend itself on the brain and insanity is the ultimate end of the patient." This is a strange doctrine.

\* *Practical Organic and Biochemistry*. By R. H. A. Plimmer. 1926. (Royal 8vo pp. 74 + 563, 67 figures, 1 plate. 21s. net.)  
 \* *The Psychology of Childhood: Normal and Abnormal*. By Mary Scharlieb, D.B.E. M.D. M.S. Lond. London: Constable & Co. 1927. (Crown 8vo, pp. vi + 194. 6s. net.)  
 \* *The Patient's Dilemma, or Why not Homoeopathy?* By T. M. Dishington, M.B., Ch.B. Glas. London and Glasgow: George & Co. Ltd. 1927. (Fcap 8vo, pp. 166. 2s. 6d. net.)

The cure of a local lesion of the brain brings sanity, but the cure of a local lesion of the lung brings insanity! Considering the known frequency of healed tuberculous lesions of the lung in the population generally most of us should be insane. The humorist says we are! It is not clear for what class of reader this little book is written, the layman would scarcely understand it though he might be mystified, for the medical reader (and since the dialogue is between medical men it would appear to be for them) it is somewhat thin.

### IMPERIAL SOCIAL HYGIENE CONGRESS

An Imperial Social Hygiene Congress, organized by the British Social Hygiene Council, was held in London, under the presidency of the Right Hon. Major General J. E. B. SEELY, during the first week of October. It was attended by delegates from Government departments, home and overseas, certain international bodies, such as the League of Nations Health Organization, six British and three Indian universities, about forty local authorities in Great Britain, and a large number of medical and educational societies and societies interested in social welfare. The British Medical Association was represented by Dr. H. G. DAIN, Dr. C. E. S. FLEMING and Mr. Bishop HARMAN. The Congress did its work in six sections which had for their subjects the medical, the educational, and the administrative aspects of social hygiene, and the problem of venereal disease in India, in the colonies, protectorates, and mandated territories, and among seamen.

The Congress opened with a banquet at which Mr. Neville Chamberlain, Minister of Health, was the principal guest. Mr. CHAMBERLAIN, in proposing the toast of "Health and Empire," referred to two health projects which, centering in London, had much imperial significance. One of these was the London School of Hygiene and Tropical Medicine, which, when housed in its new building in Gower Street, would make London more than ever a world centre for the study and control of the scourges of the tropics. The other was the project, now at the point of realization for a post-graduate school in London thanks to an arrangement between a committee over which he himself had presided and the authorities of the West London Hospital. Such a school would afford far-reaching opportunities for medical men from all parts of the Empire. The toast of "Delegates and guests" was in the hand of Mr. E. B. TURNER who referred with great gratification to the growth and the widening scope of what was originally the National Council for Combating Venereal Diseases. Among those who responded were Professor JADASSOHN, president of the corresponding German organization and Sir FAZL-I-HUSSAIN, a member of the Indian delegation to the Assembly of the League of Nations, who emphasized the high qualifications of the men in control of public health in India.

#### *The Modern Treatment of Syphilis*

The medical session, under the presidency of Mr. DAVID LEES, produced two outstanding contributions. The first was by Colonel L. W. HARRISON, who spoke on the modern treatment of syphilis and its results. He emphasized the importance of starting treatment before the serum reactions became positive. The minimum amount of treatment for a sero-negative primary case, in his experience at St. Thomas's, was twenty injections, totalling 10 to 12 grams of "914," with mercury or with bismuth and for sero-positive primary and early secondary cases, quite 50 per cent more. The method of administering mercury or bismuth simultaneously with arsenobenzol had advantages over that of following a course of one by a course of the other, especially from the point of view of preventing neuro-recurrences. The coincidence of negative reactions in serum and positive in cerebro-spinal fluid was so uncommon, and two inconveniences attending lumbar puncture were so great that routine examination of the fluid might safely be omitted in cases which run a straightforward and satisfactory course from the serological point of view.

The other paper was by Professor F. J. BROWN, director of the obstetric unit, University College Hospital, who spoke on the management of cases of venereal disease in ante-natal and post-natal clinics. He laid down a series of principles which he regarded as the minimum necessary

for the proper diagnosis and treatment of venereal disease in pregnancy, and advocated compulsory notification of pregnancy at an early period, say the third or fourth month, only in that way could all cases of syphilis in pregnancy be discovered at a stage when effective treatment might be carried out.

#### *Administrative Aspects of Social Hygiene*

The session dealing with the administrative aspects of social hygiene was presided over by Dr. T. F. DEWAR, medical officer of the Scottish Board of Health, who said that in Scotland the incidence of venereal diseases was regarded as being still far too high, although there were indications that syphilis at least was less common and formidable than it was ten years ago. The need for further legal powers was being considered in Scotland cautiously but earnestly. Dr. J. R. KAYE, medical officer of health for the West Riding, referred to the special administrative difficulties with regard to gonorrhoea, and especially in that large class of married women suffering from this disease with whom the authorities found it exceptionally difficult to get into touch. One solution might be to have clinics open for admission at any time of the day, and to provide special facilities at child welfare centres, so that the women could attend with due regard to their household duties and without fear of neighbours' comments. There were other persons who were totally indifferent to treatment, for them probably the only incentive might be the visualization of museum specimens showing the results of venereal diseases, as in the Hunterian collection. The following up system in the past had not been adequate, for 20 per cent or more had relinquished treatment prematurely. Some means such as notification, and, if necessary, threatened publicity, was indicated in his opinion, particularly when the lapse might mean infection for others.

Dr. T. FERGUSON, venereal diseases officer at Darlington, read a paper on congenital syphilis as a problem in public health administration, and deplored the delay which was common before the infected child received treatment. For the administrator, he said the two salient facts concerning syphilis in the pregnant woman were that active specific treatment of the mother during pregnancy could almost eliminate congenital syphilis and that the earlier in pregnancy the treatment was instituted the greater was the certainty of securing a healthy child. Every ante-natal examination should be made with the possibility of syphilitic infection prominently in the mind of the examining physician, and when practicable a syphiligraphist should be in actual attendance at the ante-natal centre. Dr. Ferguson pleaded that a systematic campaign against congenital syphilis should be a routine function of the public health department.

#### *Venereal Disease in the Navy*

Half a dozen papers were read on the welfare of seamen from this point of view, and Surgeon Captain T. B. SHAW, R.N., communicated some observations on the incidence and prevention of venereal disease in the Navy. He pointed out the steady drop in incidence in the Navy up to 1915, and that now, once again after a rise stimulated by the war, the figure was falling to pre-war level. The percentage rate of gonorrhoea was increasing. Fifty years ago gonorrhoeal infections accounted for about half the total but 72 per cent of the cases entered on the sick list for venereal diseases in 1924 were due to gonorrhoea or its sequelae. This was due largely to the fact that no specific treatment for gonorrhoea had as yet been evolved. Of the stations China had the highest incidence of venereal disease and the home station the lowest. He discussed means of prevention in the Navy including education, local disinfection, early diagnosis and treatment, recreation and physical training, quarantine and restriction of leave.

A large proportion of the papers read at the Congress had to do with the state of affairs in India and other parts of the Empire, and on another page we refer to Sir Frederick Lugard's contribution on the training of the African in medicine which if a little aside from the main theme of the congress is interesting especially in view of Sir Frederick's long record as an administrator of British protectorates.

## THE LONDON MOTOR SHOW.

### MORE POINTS FOR MEDICAL MEN

By H. MASSAC BUIST

A FURTHER study of the motor-car designing, manufacturing, and marketing situation as it is revealed at the Exhibition which closes at Olympia, Kensington, at 10 p.m. on Saturday evening next, October 22nd, reveals an average slight reduction in prices, although it had been given out at the end of last summer that these would tend to rise. Inasmuch as vehicles costing less than £150 have been available for over a season, a more practical point is that machines are being offered in a still wider variety of forms, many of which will appeal to the medical man.

### NIGHT SERVICE PROBLEMS AND SOLUTIONS

Take the question of night driving. The dipping headlight device is employed to proportionately a greater extent for the sufficient reason that no "dimmer" scheme is really effective against dazzle, whereas the dipping headlight is a convenient compromise. It gives clear illumination when that is practicable, yet it enables the considerate driver to spare oncoming traffic or pedestrians from being dazzled by his approach. Hence some of the largest as well as some of the smallest cars are fitted with dipping headlights. Among those that are not, however—and these are the majority of standardized products—nearly all have a dimming device of some sort. Although these have been developed in detail it cannot be recorded that any one solves the problem. Curiously enough, one of the likeliest solutions—namely, the momentary drawing of the bulb in and out of focus by Bowden wire control—has not been taken up by the industry. But the new Lucas scheme of tilting the reflector, and the bulb held in it, by pneumatic means is standardized by several car builders and is both convenient and effective, as is admirably illustrated in the standard equipment of the developed Hillman cars.

A useful device for night driving is seen on some of the new six-cylinder engined Rover models. This takes the form of a light, controlled by a switch convenient to the driver's hand, and set on the near side at shoulder height, at the extreme back of the body. Merely by touching this switch full illumination can be obtained instantly in a rearward direction. This is very convenient in manoeuvring in a garage, and particularly in strunge and circumscribed areas, as when backing in a patient's carriage-drive.

But one notices that for the most part illumination of the instrument board is either neglected or is done on an unsatisfactory system, as by having an ordinary top light. Why this should be so—seeing that in several American and in a minority of British and Continental examples the instruments on the board can be illuminated by diffused light, whereby only the face of each instrument shows up and there is no reflection in the driver's eyes—is a mystery. The system most generally exploited on European and even on American constructions really illuminates the floor-board and, particularly, the change speed gear lever, which is quite unnecessary, since the light radiates from the face of most of the instruments. Nor does the diffused light scheme, which solves the problem, lead to extra expense. It is merely a matter of designing the floor-board to take it as a standardized fitting. It will be appreciated that when the face of an instrument only is lit up a clearer result is obtained for an equal volume of illumination. It is also important from the driver's point of view that inside the car there should be no reflections of light to the prejudice of his clear vision of the road ahead and of the surroundings on either side.

As regards car types, undoubtedly the vogue for covered coachwork will enjoy the greater patronage through the introduction of roofs that slide or are otherwise partly removable. They are even likely to have in effect on the demand for landuletto type bodies because the latter are apt to develop leakage, greater or less, with long use. But with some of the sliding, non-tilting roof schemes there is no such likelihood. Further, should any small part get damaged or worn, permitting a leak, it is very cheap and easy to make good. But experience so far does not

indicate that in the best and most practical of the arrangements there is likelihood of any such wear or damage.

### SILENCING

Noise, which is one of the great problems of the car in all forms of human enterprise, has been receiving attention as regards engine exhaust. The chief method exploited for achieving quieter car running is to employ lower geared back valves, which is rather a means of evasion than a solution. Unfortunately, in general the question of the noise of the exhaust has not been sufficiently investigated. It is to be hoped that heed will be paid to the Home Secretary's recent memorandum on this matter.

Admittedly, silencing the exhaust presents quite a pretty problem. Thus, although the intake manifold from the carburettor the gas is drawn into the cylinders at a regular rate. But for every cubic foot that so enters about 5 cubic feet of gas will issue from them, by reason of the much higher temperature of the exhaust at the moment of its expulsion. Therefore its passage through the exhaust pipe has to be very much faster than the intake of the gas, which is, nevertheless, also very rapid. Moreover, the exhaust does not issue from the engine in an even flow, like the feed from the carburettor, but in a series of blasts. Theoretically the easiest way of solving the problem would be to reduce suddenly the temperature of these burnt gases and, therefore to shrink their volume before they enter the silencer. But there is nothing in the current motor-car show at Kensington to suggest that that theory has been worked out in a practical fashion and the result incorporated in standard car practice. All the cars shown have conventional exhaust boxes. More might be done, one would think, by employing at least a fish-tail silencer terminal in the manner required by the Brooklands Automobile Racing Club's regulations. Undoubtedly the improvement in regard to quiet on the track is quite remarkable since these rules came into force. Yet there one is dealing with a more difficult problem, for the engines are of a higher compression and run even faster than do those of the average touring car. We cannot, of course, add an indefinite number of baffles prior to silencers, because that would merely choke the issue of the exhaust from the engine. The burnt gases must have a free exit from the exhaust ports. But many standardized cars, particularly of the cheaper sorts, could be provided with silencers each having two more baffle plates, and that without prejudice to the functioning of the power unit.

As for noise from the gears, little progress has, on the whole, been made in this direction. What has been attained is due, not to the employment of expensive methods of gear production such as Rolls Royce, Bentley, or Daimler use, but merely to the tendency to use a central, or cheaper, American form of change speed gear. Manufacturers are not to blame for seeming to neglect the problem: its solution always involves high cost on one count or another. In cheap car construction, and even in regard to most full scale chassis, it is not a selling point to have quieter gears, the fact being that "bodies" sell now a days, at least in regard to 90 per cent of transactions. But the industry has the gear problem constantly in mind, and would act promptly if a solution were offered.

### GLAZING AND ACCIDENTS

Apart altogether from the attainment of better vehicles—considered possible in no better degree than by the coachwork, which grinds adherents, and by the mere employment of the one panel windscreen, which is expected to come into far more general use twelve months later—one finds, nevertheless, that in standard practice the various forms of safety glass are not widely used. The best scheme is the best known in this country. On the "Safety" Statute, among other transatlantic cars that used a type of glass which appears to have been first used at intervals horizontally through it, and incorporated entirely within the sheet, so that one can see as it were, with a windscreen scored for venting rain. The objection to the former is that it does not give the view in full natural colours, to the latter, the view of fine roads divides the roadscape.

As to glazing no form of safety glass has yet been devised which is as transparent as ordinary glass, and flexible or unbreakable glass is still in the experimental stage. Therefore one notices in some coachwork constructions this and that the front panel or windscreen is made of ordinary glass and that safety glass is used for the rest of the glazing. This is not a mere conceit to the natural desire to behold scenery as it is, it is also based on the fact that, as regards full scale cars, at least, the experience of the repair shops of most of the big manufacturers reveals the lead on collision as the exception rather than the rule, most of the damage being done to the side or rear. Therefore, it is argued, it is not so important to have the windscreen of safety glass as to have the windows made of it.

#### PROMINENT NEW CAR TYPES

The surprise created by the announcement that General Motors' English factory, the Vauxhall Company, of Luton, had introduced a 20/60-h.p. six-cylinder engine car built on an output basis of 10,000 a year—and for which it is understood that the General Motors Corporation which will market it overseas has placed an order for 15,000—is followed this week by the announcement of a larger Morris model, in other words, the arrival of the inevitable six-cylinder engine Cowley built car. While this is something in the nature of a harem machine for the specialist or for the medical man who has to make frequent long distance journeys, nevertheless the average medical man will observe two things: first that this is not a cheaper Morris car, and secondly, that it does not make the six-cylinder engine available for Morris cars of the 11.9 and 14/28-h.p. types. Instead it is a 17.7-h.p. machine of approximately the same engine volume as the new 17-h.p. Fiat which comes in "the two litres and a bit" class. Therefore an even greater number of medical men will be interested in the lowering of the Morris prices in respect of the four-cylinder engine car which are shown also in improved condition, with four-wheel braking on all types. An interesting example of the all-steel body, cellulose finished is the 14/28-h.p. Morris-Oxford saloon in elaret at £250. This model is well worth the extra money in spite of the remarkable value of the 11.9-h.p. Cowley type, which is available as a four-door coachbuilt saloon at £185—a well ventilated vehicle with good visibility. Beige is the new coachwork colour introduced for these cars. It is illustrated effectively in the 11.9-h.p. Morris Cowley four-door four-seater listed at £152 10/- with four-wheel brakes. The tool accommodation has been improved.

Perhaps the Standard Motor Company's announcement of wide interest concerns its re-entry into the light car field with a 9-h.p. four-cylinder side-by-side valve engine machine, which is shown with a four-seater body and also as a fabric saloon, Standard being a recruit to this system of covered body construction. The taxation rating of this vehicle is £9 a year, the side-by-side valve engine having 1154 c.c.m. cylinder volume. The chassis is listed with tyre, tools and spares, at £165. The four-door four-seater is catalogued at £190 complete and the saloon on the same chassis at £215 complete. Unit construction is employed for the engine, clutch and gearbox. The design may be studied in detail, because different parts of the assembly are shown separately. They are sturdy. The complete cars reveal that Standard adheres to its praiseworthy policy of providing roomy accommodation giving in the 'Falmouth' fabric saloon as well as in the 'Selby' open four-seater ample width and leg room for four tall adults. It is understood that at the end of the month a two-seater type with a dickey, will be available though it is not shown. In regard to this firm's other exhibits of six-cylinder engine types it is observable that they are now available, at choice with a gearbox giving four speeds forward, among other variations from the earlier model. The "Folkestone" six-light fabric saloon on the re-rated six-cylinder engine 18/42-h.p. four-speed model has two additional lights, and a front seat adjustable as to both leg reach and angle of back rest. The exterior is pleasing in outline, having a well rounded roof and rear corners, there is a single panel windscreen hinged at the top and having a central adjustment within reach

of the occupants of either of the front seats. The bonnet is finished with cellulose. The price is £440 complete. Corresponding coachwork on a three-speed chassis is listed at £395 complete.

The extraordinary progress made in motor manufacturing is well illustrated in the 12/24-h.p. all-steel Citroën four-door saloon do luxe with rounded back and curved window frames, separately adjustable front seats, and triple cellulose finish, at £225, the chassis embodies sundry refinements such as oil and air purifiers, a very neat steering wheel, control for the lamps and horn, an electric starter button on the facia-board and so on. The point of this development is that here we find a big scale manufacturer making no attempt to offer the lowest priced car on the market by process of economizing this way and that. Instead, the product has been improved certainly out of recognition if we measure progress in this case during so brief a period as twenty months only. Mechanically, the design is vastly better artistically the complete car suggests that its cost must be at least £100 more even when put in competition with American prices, and as regards accommodation this is now ample.

How many people are aware that about 12,000 parts go to the making of one of these chassis, which are among the simplest on the market? From now on every part in this chassis is displayed separately without fee, at Devonshire House, where also the mechanically minded and those who know nothing of such matters may learn "the anatomy of the motor car." In this case the average price of a car part from cylinder casting to a split pin is about fourpence. Here the visitor may see even the components of electrical accessories including engine starting and ear lighting equipment the various processes of building all steel bodies, the different stages of cellulose finishing all the components of the upholstery scheme, and the extraordinary number of parts which it is possible in big scale production programme to make strong, light, and simple by pressing processes.

An idea of the variety of the new style of cars offered by established manufacturers may be indicated in tabular form, thus:

Maker	Country	Cylinder		H.I. Rating	Annual Tax	Price	Body Type
		No.	Vol.				
Alvis	Br	6	c.c.m.	17.5	£5	£595	Open 5-seater
Armstrong	Br	6	1913	15	1s	400	Saloon 4-seater
Arrol-John	Br	6	3018	21/0	21	750	Saloon 5-seater
Austin	Br	6	2,4	15	15	350	Saloon 4-seater
Bean	Br	4	2,37	14	0	320	Saloon 4-seater
Bentley	Br	4	4,33	21.8	25	1,250	Open 4-seater
Beriet	Fr	6	1,811	14.40	15	460	Saloon 4-seater
Clyno	Br	4	951	9	9	160	Saloon 4-seater
Clyno	Br	4	1,533	12.5	12	250	Saloon 4-seater
Daimler	Fr	12	3,7	40	32	1,570	Complete saloon
Darracq	Fr	6	1,093	10	11	615	Saloon 5-seater
Dodge	Fr	6	2,170	17	15	625	Saloon 5-seater
Dodge	U.S.A.	6	3,556	—	2	400	Saloon 5-seater
Fiat	It	6	2,24	17	17	4	Saloon 5-seater
Hillman	Br	4	1,914	14	12	320	Saloon 5-seater
Horh	Gy	8	1,37	21.60	21	350	Saloon 5-seater
La Salle	U.S.A.	4	9,57	—	32	325	Saloon 4-seater
Lea-Francis	Br	6	1,695	14.0	14	600	Saloon 5-seater
Marmion	U.S.A.	8	3,110	—	2	600	Saloon 5-seater
Mercedes	G	6	6,2	33.0	33	2,150	Saloon 5-seater
Morris	Br	6	—	17.7	—	—	—
Peerie	U.S.A.	6	3,25	32.62	6	475	Saloon 5-seater
Pengoe	Fr	6	1,921	15.7	15	325	Saloon 5-seater
Renault	Fr	6	1,427	12	13	290	Saloon 5-seater
Piley	Br	4	1,037	9	10	425	Saloon 4-seater
Rover	Br	6	2,025	—	16	425	Saloon 5-seater
Standard	Br	4	1,154	9	9	215	Saloon 4-seater
Star	Br	6	2,453	18.50	18	49	Saloon 5-seater
Triumph	U.S.A.	4	6,37	—	40	1,500	Saloon 7-seater
Vauxhall	Br	4	1,37	19	8	190	Saloon 4-seater
Volvo	Br	6	2,2	19.0	20	425	Saloon 5-seater
Volvo	Br	4	1,533	17.5	17	315	Saloon 5-seater
Volvo	Br	8	2,814	21.0	21	750	Saloon 5-seater

The specification of the new 6-cylinder engine Morris had not been issued at the time this article went to press, the cost of the chassis is £21 of the 5-seater version £320 of the 5-seater saloon £320. Some American manufacturers do not give their cars any h.p. ratings.

Owing to changes of price and equipment details at the last moment, in some cases it is impossible to ensure that every particular set down holds at the time of publication. But every care has been taken to achieve accuracy.



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## TREATMENT OF PERNICIOUS ANAEMIA

ARSENIC as a therapeutic agent has undergone many vicissitudes since Hippocratic days. Its reputation became slightly sinister when La Spina sold it to the young matrons of Rome as a cure for their matrimonial troubles, and it fell into complete disgrace when its use as a secret poison became widespread in other circumstances. Nevertheless it has survived these abuses, and in pernicious anaemia it has been recognized as the one drug which has some benign influence on the course of the disease. Professor Gulland, opening the discussion in the Section of Medicine at Edinburgh on the pathology and treatment of pernicious anaemia, of which a report appears at page 669, goes so far as to assert that in this disease arsenic is still our standby. Its action, however, is uncertain, it is too often transient and ineffective, and so it is not surprising that other methods of treatment have been tried from time to time, though until recently without much definite success.

Many of these therapeutic procedures owe their origin to the commonly accepted doctrine of the pathogenesis of the disease, which declares the primary fault to be a toxæmia resulting in an excessive haemolysis, some of them have involved dietetic measures with a view to lessening abnormal bacterial activity in the alimentary canal. Attempts have also been made to stimulate the activity of the bone marrow by some form of general forced feeding, or by including in the diet some special substance, such as marrow, which might act specifically on the haemopoietic function. Additional interest was given to these efforts by the experimental work of Robscheit-Robbins and Whipple,<sup>1</sup> who showed that the administration of beef liver to dogs with severe experimental anaemia markedly increased the rate of blood regeneration. No very striking clinical results were evident until Minot and Murphy<sup>2</sup> of Boston published their first paper on "The treatment of pernicious anaemia by a special diet" in 1926. The essential part of their procedure was the inclusion in the daily diet of 120 to 240 grams of cooked liver, and the results which they have obtained in a series of 125 cases observed over a period of one to three years will be found in Dr. Minot's paper printed at page 674. Briefly, their experience is that in practically every case where the liver is satisfactorily ingested the red cells and the haemoglobin regenerate rapidly, the patients recover their health, and no relapses occur while the diet is being taken. In a smaller series of cases examined in greater detail it was shown that the blood picture returns to normal under this treatment, and, in particular, that the curve of the diameter of the red cells is no longer of the abnormal type shown by Pucc-Jones to be characteristic of pernicious anaemia. These observations, especially when taken in conjunction with Peabody's investigations on the bone marrow, suggest at first sight that the diet has some direct action on blood formation, they will therefore be very closely scrutinized by those whose investi-

tions have led them to discard faulty blood formation as the primary lesion. Nevertheless, there has been a considerable amount of confirmation by other workers, and there appears to be agreement that liver diet is frequently accompanied by most beneficial effects, there is already a gradually increasing number of patients in this country who have made a very gratifying response to the treatment without relapse. In these, as well as in Minot's cases, time alone will show how permanent the effect is. In this country the scattered results, which are all that are as yet available, do not seem to be quite so uniformly good as those of the Boston series, for one thing, there is apparently greater difficulty in getting the patients to take the rather unpleasantly large quantities of liver, and in some cases there has so far been definite failure to respond even to adequate diets. These difficulties may be overcome with more experience, we are admittedly a long way behind our American cousins in the art of preparing special diets in a palatable form, and when the deficiency is recognized it may be speedily remedied. Attention was drawn to the possibility of combining fresh calf-liver with anchovy paste in sandwiches (*Epitome*, October 1st, para 291), and in the issue of the *Journal of the American Medical Association* for September 17th, under the intriguing title of "A liver cocktail," there appears a recipe which includes tomato catchup, lemon juice, Worcester sauce, and chives. It is mentioned, however, that time must be allowed each patient to "develop a taste" before large amounts are added. It may also be possible before long to replace whole liver by an extract, since Cohn<sup>3</sup> has already succeeded in isolating a non-protein fraction which has given comparable therapeutic results, as was stated more at length in a leading article published a fortnight ago (October 1st, p. 603). It is, however, not necessarily fair to expect all cases to respond to one form of treatment, though Minot and Murphy suggest that if a patient does not react to liver diet the case is not one of pernicious anaemia. Looking at the matter from this angle, it may be that pernicious anaemia has yet to be subdivided into several groups of different etiology, we already know that the typical pernicious blood picture is seen in sprue, bothrioccephalus infection, and in obstruction of the small intestine, and there may well be other groups, some of which respond to liver diet while others do not.

Although Minot's investigations provide us with the most outstanding results in the treatment of pernicious anaemia to day, there are others which possibly merit a place in practical therapeutics, and which may serve as a signpost when the time comes to consider what bearing the therapeutic results have on our views as to etiology. In some investigations of the toxicity of certain blood serums for plants Macht<sup>4</sup> found that the serum of patients with pernicious anaemia was peculiarly toxic for certain seedlings. He subsequently discovered that irradiation with ultra violet light detoxified the serum, enabling the seedlings to grow as well in it as in normal serum, moreover, this effect was intensified by sensitization with various dyes. Practical application of this work showed that the treatment of patients with pernicious anaemia by ultra violet light, particularly when combined with the administration of eosin, was attended by promising clinical results. The serum of these treated patients showed very definite improvement as judged by the phytopharmacologic test, the serum of patients ir-

<sup>1</sup> Robscheit-Robbins and Whipple *Amer. J. Med. Sci.*, 1926, 121, 403.  
<sup>2</sup> Minot and Murphy *Journ. Amer. Med. Assoc.*, 1926, 470.

<sup>3</sup> E. J. Cohn and others *Journ. Biol. Chem.*, July 1, 1927.  
<sup>4</sup> D. Macht *Journ. Amer. Med. Assoc.*, 1927, 157.

with liver diet alone sometimes showed a similar response but in other cases a marked toxicity persisted in spite of the diet.

The intelligent use of any new therapeutic agent must include a consideration of its bearing on the etiology of the disease, and these new methods of treatment of pernicious anemia undoubtedly open up fresh ground for debate and new paths for experiment. At first sight they may seem to be opposed to the older views. When this is the case we must proceed with caution, remembering Professor Wenden Bergh's warning that newly established remedies must be correlated with the old they cannot replace them. Here, however, we need only call attention to the much more hopeful outlook now of the treatment of a disease which has hitherto marched sometimes quickly—sometimes with halting steps—but almost always inevitably to a fatal end.

### THE TREATMENT OF FRACTURES

At the last annual session of the American Medical Association, held in Washington, the chairman of the Section of Orthopaedic Surgery, Dr. John Prentiss Lord of Omaha, chose for his subject the advancement of orthopaedic surgery. After giving a short sketch of the history of orthopaedic surgery he went on to raise and discuss the interesting question of the treatment by general surgeons and practitioners of fractures and some other injuries, and he pleaded with much force for the specialization of this branch of practice in the hands of orthopaedic surgeons.

The interest of Dr. Prentiss Lord's address is much enhanced by quotations from replies to a questionnaire which was addressed to various surgeons throughout the United States concerning the status of orthopaedics in the leading universities. The writers of these replies are all or nearly all engaged in the teaching of surgery as a whole, and not specialists. Their evidence is therefore not to be suspected of any bias in favour of specialism. It would appear from these quotations that there is a widespread tendency in America to associate orthopaedic specialists with general surgeons in the treatment of fractures by some such scheme as that known as the Fracture Service at the Massachusetts General Hospital in Boston which was described in the book on fractures by Dr. Wilson of Harvard and Mr. Cochrane of Edinburgh<sup>2</sup> while at the Mayo Clinic according to Dr. M. S. Henderson the orthopaedic service handles all the fractures both recent and old and all the joint conditions both acute and chronic.

This question was debated at length at a joint meeting of the Sections of Orthopaedics and of Surgery during the Annual Meeting of the British Medical Association at Bath two years ago when even such a deprecator of specialism as Mr. Gask said that he would welcome the foundation of a special hospital in London for the treatment of fractures under the care of specialists, a hospital in which the best methods could be shown and from which light would spread. Since that time nothing—so far as our knowledge goes—has been done to reach the consummation which was acknowledged at Bath as so devoutly to be wished although with the steadily increasing stream of motor accidents it each year becomes more desirable. It may not be a good time for the foundation of another hospital in London but a beginning could

surely be made by setting aside wards in an already existing hospital for the treatment of recent fractures and the prevention of deformities resulting from imperfect treatment. Such a hospital or such wards would set a standard for all surgeons to aspire to emulate and would prove of incalculable benefit to the community at large by reducing the amount of suffering and disability caused by fractures.

One of the stock arguments used by the opponents of specialization is the fear that by transferring any department of surgery from the general surgeon to the specialist the student might become indifferent to the specialty and cease to receive instruction in it. This might possibly be true of some special department already existing but it is in our judgement a baseless fear as regards the treatment of fractures. The plain fact is that as things are at present in London the student gets little instruction in the treatment of fractures of the upper extremity and no experience in the treatment of the much more important fractures of the lower extremity for the simple reason that such cases are not usually admitted to the wards of the great teaching hospitals. The demand for beds in these institutions is so urgent that acute diseases and conditions affecting the cavities of the body have preference and abdominal sections, which can be sent to convalescent institutions or to their own home a fortnight after operation occupy the beds used for fracture cases which would probably on the average require at least six weeks' treatment.

### LORD IVEAGH AND THE LISTER INSTITUTE

The memory of Lord Iveagh the head of the Guinness family who died on October 7th in his eightieth year, well deserves to be cherished by the medical profession especially those who are interested (and who is not?) in the prevention of disease through the study of pathology. The greatest proof of his own interest in this department of theoretical and applied science was the gift by which he put the Lister Institute in a sound financial position. Sir Charles J. Martin the director of the Institute, has been good enough to write the story for our readers in the following words: "Lord Iveagh" he says, "was in the habit of sharing a good deal of his wealth with his fellow men. In doing this he exercised discrimination, and continued to interest himself in the administration of his various benefactions. All of them were directed to the betterment of our social organism and particularly to the improvement of the conditions under which the poorer members of the community have to live. Lord Iveagh also made large donations to Trinity College, Dublin, and to the hospitals in that city and elsewhere but it is as the largest individual contributor of our generation to the endowment of medical discovery in the British Isles that he is distinguished. In 1898 he gave £250,000 to the Lister Institute of Preventive Medicine then the Jenner Institute, and about ten years later he in conjunction with the late Sir Ernest Cassel provided the funds for the creation of equipment and endowment of the Radium Institute in Rider Street for the prosecution of research into the possibilities of radium as a therapeutic agent and for the treatment of patients whose means did not permit of their receiving the benefits of radium treatment without financial assistance. From a conversation I had with Lord Iveagh many years ago I gathered that the idea of endowing medical research occurred to him originally owing to the circumstance that a labourer upon his estate was bitten by a rabid dog. Lord Iveagh was informed of the accident and directed that everything possible was to be done for the unfortunate man, but was surprised to learn that the

<sup>1</sup> See also in the *Advancement of Orthopaedic Surgery* *Journal of the American Medical Association* vol. 40, no. 6, p. 652.  
<sup>2</sup> *British Medical Journal* 1925, vol. 1, p. 323.

prophylactic treatment for hydrophobia could only be secured by sending the patient to Paris. This was done, and no further ill results ensued, but the novelty of the treatment and the absence of facilities in England for the prosecution of researches such as had led to Pasteur's fruitful discovery, made a deep impression on his mind. In 1898 Lord Iveagh visited the Pasteur Institute, and the project of endowing a similar institute in London began to take shape. He consulted Dr. Thoinot Thoinot, the principal medical officer of the Local Government Board, who pointed out that there was an institution with the objects he had in view—the Jenner Institute. It had recently erected a good building on the Chelsea Embankment, but was so short of funds that its activities were severely limited. Dr. Thoinot suggested that it might be wiser to help the Jenner Institute than to found another separate institution. Lord Iveagh visited the Jenner Institute, and subsequently interviewed its chairman, Lord Lister, and Sir Henry Roscoe, its treasurer. At the interview Lord Iveagh was accompanied by his private secretary, Mr. J. Luard Pattison, who afterwards became the honorary treasurer of the Institute and was for many years one of its best friends. They made searching inquiries concerning the ideals, administration, and financial position of the Institute. Some years afterwards Lord Lister described this interview to me as a very critical examination, and was quite sure he had failed to satisfy the examiners. However, before many months were past Lord Lister, to his surprise and gratification, received an intimation from Lord Iveagh that he desired to endow the Institute to the extent of £250,000, subject to certain alterations in its constitution and government. The Lister Institute is doubly indebted to Pasteur's discovery of the treatment of hydrophobia. It owes its inception to a meeting at the Mansion House in 1889 to present M. Pasteur with a grateful acknowledgement of his gratuitous kindness to 200 British patients bitten by rabid animals, and its chief endowment to the impression made upon a receptive mind of the possible benefits to mankind of researches such as those which led to the successful combating of this dreaded disease."

#### MEDICAL SERVICE IN MANDATED AFRICA

SIR FREDERICK LUGARD, formerly Governor-General of Nigeria, who was one of the sectional presidents at the Imperial Social Hygiene Congress held in London last week, made some interesting remarks on medical problems in those huge rivers of Africa which are now under British administration. He said that while the British Government had declared that it regarded itself as exercising a trust on behalf of the African population, it was difficult, if not impossible, to get the medical staff required. He quoted Mr. Omsby-Gordon, Parliamentary Secretary for the Colonies, as reporting, after his missions to East and West Africa, that he had found a district in which there was a single medical officer in charge of three-quarters of a million natives. Even before the war, when Britain had not assumed the great added responsibility of the mandated territories, it was not easy to obtain the medical staff required, and the matter was so important that it was worth very earnest attention. But Sir Frederick Lugard went on to speak of another deficiency which was graver, and which ought to be more easily remediable—namely, the lack of a trained African staff. In his view there ought to be a steady supply of Africans trained in four categories: (1) hospital attendants, (2) sanitary inspectors and dispersers, (3) subordinate medical officers, and (4) fully qualified medical officers. These needs could only be met, he said, by popularizing the profession of medicine among those attending the secondary schools, and by assuring appointments to those who qualified for either of the last two grades. He was afraid there was no hope at present

of seeing trained Africans serving as private practitioners in rural districts, for the Britisher's preference for a congenial and much more lucrative European practitioner. But until this is changed, it is premature for him to talk of self-government. Speaking as a member for the British Empire of the Permanent Mandates Commission of the League of Nations, Sir Frederick Lugard said that two schemes of medical service had attracted his attention in that Commission, and possibly medical officers abroad might regard them as worthy of consideration. The first was the medical patrol adopted by Australia in its mandated territory of New Guinea. This patrol toured slowly from village to village, equipped with a van containing all the necessary apparatus and drugs. The other was a system adopted by Belgium in its mandated territory of Ruanda, whereby a few selected natives were trained up to a standard approaching professional skill in the treatment of a very limited number of prevalent diseases. These men were then sent for a year's work among the rural population, after which they returned for a renewed training at headquarters. As vaccination, and in the treatment of venereal diseases and of hookworm, as well as in propaganda with regard to preventive measures against insect-borne diseases, such men, said Sir Frederick Lugard, might do much good, and the information which they brought back was likely to be of service. The conference of governors of British dependencies, which took place in London last May, expressed the view that "no activity of government is more likely to win the confidence of the natives than successful medical work", confidence could better be won by providing an adequate professional and subordinate staff which understood the native and could speak his language, which was constantly touring the villages, and was not liable to frequent change, than by building fine hospitals which were shunned by the natives, and which could not be staffed except by depleting the district of its doctors.

#### CONGENITAL STEATORRHOEA

CONGENITAL steatorrhea, in which the faeces contain oil that solidifies on cooling, was first described in 1913 by Sir Archibald Garrod and Dr. W. H. Hurley.<sup>1</sup> The condition is very rare, and it was not until 1920 that a second case was placed on record by Drs. R. Miller and H. Perkins.<sup>2</sup> A third case has now been detected by Drs. A. Soehnle and F. Thoenes,<sup>3</sup> who describe the condition as familial insufficiency of the pancreas based upon a constitutional anomaly; they definitely relate it to the congenital steatorrhea of Garrod and Hurley. A brief note on this third case had been previously published by Thoenes.<sup>4</sup> The patient, a boy, was 17 months old on admission to hospital, an elder brother (who was mentally deficient) and a sister had similar fatty stools. The mother had noticed the peculiar odour of the faeces and their fatty content when the child was aged 13 months. Investigation showed that there was optimum utilization of the carbohydrate, with much fat wastage, and a negative nitrogen balance, owing to loss of this element in the stools. The fat excretion was restrained and the nitrogen balance restored by the administration of "pankicon." There was also in this case cretinism—passage of meat fibres in the stools when a meat diet was employed. Although Soehnle and Thoenes definitely associate their case with those previously recorded, there are some differences, for in the two first instances no evidence was obtained of failure of true digestion, although Garrod and Hurley suggested pancreatic insufficiency as a probable factor. In this third case the patients were first cousins, and Garrod and Hurley

<sup>1</sup> Quarterly Journal of Medicine vol. vi p. 22.

<sup>2</sup> Ibid. vol. vi p. 1.

<sup>3</sup> Jahrbuch für Kinderheilkunde Bd. cxxv, 1927, p. 17.

<sup>4</sup> Monatsschrift für Kinderheilkunde, Bd. xxxiv, 1926, p. 1.

patient, a boy, was also the offspring of a marriage of first cousins, his younger brother, who had been similarly affected, had died from measles at the age of 18 months, but three other children in this family were normal. The parents of Miller and Perkins's patient were not related. No post mortem examination was held in any of these cases, but it may be noted that Passini described in 1919 the case of two children in a family who died at the ages of 9 months and 2 months. During life the impairment in fat utilization was conspicuous, and the necropsy revealed atrophy of the islands of Langerhans, with cystic degeneration of the shrunken pancreas. Passini's cases show that gross changes in the pancreas can occur at a very early age, but without an adequate clinical investigation it was not possible to decide whether they were examples of congenital steatorrhea. The occurrence of several cases in a family with normal but consanguineous parents tends to confirm the view that it is a Mendelian recessive condition.

#### LEAD PAINT FOR BUILDINGS

In 1911 the Home Office appointed two departmental committees to investigate the incidence of lead poisoning among persons employed in painting buildings and vehicles. Both committees recommended that the use of lead compounds should, with certain minor exceptions, be prohibited for all work. In 1921 it was agreed at Geneva that white lead and lead sulphate and their products, with certain exceptions, should be prohibited, not in the internal painting of buildings only. In the meantime controversy had arisen on the recommendations of the two departmental committees, and the Home Office, in 1921, had appointed another committee, which declared itself against the departmental committees and in favour of the Geneva convention. In the end the Government decided that regulations should be tried in preference to any prohibition. The Lead Paint (Protection Against Poisoning) Act was passed in 1926. It empowered the Secretary of State to make regulations preventing danger from lead paint in connection with the painting of buildings, including fixtures. The Lead Paint Regulations, 1927, made under the Act came into operation on January 1st. Among their chief provisions are (1) that, unless for stopping or filling, lead may not be used for the painting of buildings except in the form of paste or paint ready for use; (2) that the lead sprays may not be used inside buildings; (3) that no lead painted surface other than iron or steel work may be rubbed down or scraped by a dry process and that no lead painted iron or steel work may be rubbed down or scraped by a dry sandpapering process; (4) that there shall be provided for the use of employees sufficient washing facilities; and (5) that arrangements shall be made to prevent clothing taken off during working hours from being soiled by lead paint. Provision is made further for the periodical medical examination of all employees if the incidence of lead poisoning is excessive. Employees are required to wear overalls, to protect their ordinary clothing from lead paint, to use the washing facilities provided and to appear for medical examination when required. The Act excludes women and young persons from the work, with some exceptions. An instructive commentary on the regulations is supplied in a recent Home Office report by Sir W. W. Mackenzie. The dust set free by the dry process of rubbing down old paint with a view to repainting has been one of the chief sources of lead poisoning in the past. This process is now required to be done in the wet and a waterproof sandpaper is available. Iron and steel work may still be prepared for repainting by the dry method. The chipping hammer employed liberates scales of lumps not dust, and the wire brush, also employed, has not yet been proved to have caused lead poisoning. The provision which figured in the draft code, that five minutes should be allowed to each person for washing before each

meal time and before leaving work, has been deleted in the regulations as issued, and is left to be dealt with by mutual agreement between employer and employee. The Lead Paint (Protection Against Poisoning) Act may be criticized by some on the ground that it falls short of prohibition. It may, on the other hand, be justly claimed that it strikes at the principal sources of danger in the painting of buildings, the process with which it deals. In any case, it is to be regarded as experimental. If it fails the Government is prepared to bring in prohibition.

#### BRITISH INSTITUTE OF RADIOLOGY

THE negotiations for the amalgamation of the Röntgen Society and the British Institute of Radiology, which were initiated by Sir Archibald Reid before his lamented death in 1924, have now been brought to a successful conclusion, and the event will be celebrated in London next month. The object of the Röntgen Society, the first radiological society to be established, was to promote the study of radiation from the physical side, it included medical men and manufacturers of apparatus, as well as physicists. The British Association of Radiology and Physiotherapy, founded some years later, consisted of medical practitioners. In forming the British Institute of Radiology Reid had a vision of a central clearing house for all things pertaining to x-ray work, where every aspect of it, including its application to medicine, engineering and other practical matters, could be combined and co-ordinated. In order that the Institute should have a local habitation, where its members could meet and where lectures and instruction could be given, he made himself responsible for the purchase of the house the Institute now occupies in Welbeck Street. The combination with the Röntgen Society is a great step forward, we heartily congratulate the promoters on it, and have no doubt that the combined body will make important contributions to science and practice. It should be noted that the Society of Radiographers will continue to be affiliated with the society now established. The celebration of the amalgamation will begin on Thursday, November 17th, when Sir Humphry Pollard, Bt., M.D. (President Elect of the new body) will give an address at a general meeting to be held at 2.45 p.m. at the Central Hall Westminster on the following morning there will be discussions on x-ray and radium protection, and on an international x-ray unit. In the afternoon the value of opaque injections as an aid to x-ray diagnosis in disorders of the nervous, urinary, and pulmonary systems, and in gynaecological conditions, will be dealt with. In the evening there will be a dinner at the Great Central Hotel, Marblebone. The vice presidents of the amalgamated body are Sir William Bragg, F.R.S. Dr. Alfred F. Bridley (Manchester), Mr. Thurstan Holland (Liverpool), and Dr. Robert Knox (London). The honorary treasurer is Dr. S. Gilbert Scott, and the secretary Dr. John Muir, from whom, at the house of the British Institute of Radiology, 32 Welbeck Street, London, W.1, further information can be obtained.

#### HEROISM IN THE SHIP SURGEON

STOICISM'S appreciation of the medical man is not common in the lay press. The *Journal of Commerce*, published in Liverpool, has, however, been struck by the frequency of reports of assistance rendered by the ship surgeon to sick or injured members of the crew or a vessel other than his own. Our contemporary is surprised that so little, if any, public recognition is given to these services, and it has devoted a leading article to the praise of this admirable officer. The state of affairs is compared with the publicity and awards which accrue "from other forms of life-saving at sea," and it is asserted that the risks undertaken by the ship surgeon—who is not trained in the seaman's facility for "hanging on by

his eyebrows"—in transferring a sick or injured person to the hospital of another ship, and often just as serious as those incurred in rescuing men from a sinking ship. In addition to this, the ship surgeon has much preliminary work in communicating by wireless appropriate treatment while the ships are converging, and he may be called upon to perform an immediate operation under the difficult conditions which are unavoidable at sea. The *Journal of Commerce* suggests that the Royal College of Surgeons or some similar body should undertake the task of according recognition to the devotion to duty shown by ship surgeons. The body named may not be appropriate, at the same time, there seems no reason to think that our contemporary is right in supposing that the etiquette which hedges the medical profession is a deterrent to the honouring of its worthy members. It is pleasing to learn from correspondence published in later numbers that shipmasters and others concur with the views expressed by the *Journal of Commerce*.

#### EXCLUSION, NOT CLOSURE

THE general improvement of living conditions in this country which distinguished the course of the nineteenth century, and continues even more notably during the twentieth, has led to the reduction or abolition from our midst of a number of communicable diseases which had been the standing or recurrent scourges of previous ages. Medical science has impressed on the public the importance of pure water, household cleanliness, or restriction of overcrowding, the benefits which have resulted from them are manifest. Some epidemic diseases, however, including not a few of the most common—like measles, diphtheria, and scarlet fever—have proved intractable in the face of hygienic progress. These diseases, transmitted by spray infection, are usually highly infective, and are liable to spread on the ordinary occasions of life wherever people meet together. They are for the most part infections of childhood, and the gathering of children together in schools has long been thought to offer facilities for their transmission. During the earlier currency of the legislative measures for the control of infection mass action was favoured in dealing with schools. If the infection was slight or incipient no effective steps were taken, when it became substantial the whole school was closed, greatly to the detriment of the primary object for which the school existed, and frequently without the slightest effect in checking the spread of the malarial. The modern policy of exclusion, not closure, which endeavours to focus on the individual child, is well portrayed in the Memorandum on Closure and Exclusion from School, issued jointly by the Ministry of Health and the Board of Education, in which the following sentence occurs: "If, during epidemics of infectious disease, the power to exclude individual children from school be used to the best advantage, it is only in special and quite exceptional circumstances that it will be necessary to close a school in the interests of public health." The memorandum urges that the problem of school infection can be successfully approached only in the knowledge of the natural history of each disease, and after inquiry into the special circumstances of each child concerned. The principal diseases are taken up in order, and the rules of procedure stated for each. The difficult questions raised by the infectious diseases of the central nervous system are helpfully summarized. The exclusion of susceptibles is not referred to, it cannot be applied to children living at home and attending public elementary schools. Disinfection of special class rooms on occasion, is cautiously authorized. No reference is made to the general disinfection of schools, which thus receives, although in a tacit form, an obituary notice. Leonard Hill should

concur in this attitude, for he says in his address to the Sanitary Inspectors' Association: "The fumigation of a room after occupation by a case of infectious fever is a futile." The joint memorandum comes with authority, conveying to the mind in succinct and lucid manner what every medical officer should remember and every teacher seek to understand. The statements made have obviously been carefully weighed, and on the medical side are practically flawless. Unless in accordance with the principles of the memorandum, the Board of Education and the Ministry of Health will not accept the closure of schools for reasons claimed to be medical.

#### PROFESSIONAL OPPORTUNITIES OF THE SERVICE MEDICAL OFFICER

LIKE his two predecessors in the chair of the War Section of the Royal Society of Medicine, Surgeon Vice Admiral Arthur Gaskell, F.R.C.S., devoted his presidential address on October 10th to a discussion of the professional opportunities of the service medical officer. He set out to combat the widely prevalent notion that the services offer only very limited professional opportunities. The first opportunity he mentioned was that for reading. The man in civil practice, he said, was almost necessarily condemned to a more or less monotonous routine, with very rare interregnums, whereas the service medical officer's career included spells of regimental work or work on board ship, as the case might be, alternating with periods in hospital, and in his less strenuous periods he had abundant opportunity for reading and study, perhaps with a view to a Fellowship or special diploma. Even apart from this initial advantage of time for reading, the service officer had other opportunities for obtaining higher qualifications. In civil life, once a man was well launched in the practice of his profession he seldom had time, without undue sacrifice, to enter for the higher examinations. But in the services a man might, while still on full pay, obtain special leave for this purpose. The services offered opportunities also for training in methods of clinical examination. In civil practice, except perhaps in the school medical service, a practitioner was not usually able to carry out repeated examinations, and therefore he was denied a certain knowledge of the normal. The service officer, again, had access to a large and varied quantity of clinical material. It might be thought that in large service hospitals, where there was quantity there was not quality, but this was quite a mistake. The patients taken into the service hospital included not only men from the active list, but from the retired list, and a very wide range of material was at hand. The opportunities for major surgery were constant and every branch of specialist work was available, and in connexion with venereal and with tropical diseases opportunities were unequalled elsewhere. Specialists were encouraged in the services, and those who had taken specialist diplomas were given specialist work to do. Service medical officers were given specialist work to do, and were paid specialist allowances. Though the pay of a service medical officer was not high, it did not compare unfavourably with the remuneration of the civil practitioner. He was told that a very successful minor practitioner in an industrial district might expect to receive £1,000 a year by the time he was 30, but it had been remembered that in order to achieve such a result he was compelled to live in expensive surroundings and to devote his time almost entirely to routine. It was only by a struggle that the civil practitioner was able to save from his earnings enough to purchase a pension, and it was to that enjoyed by the service officer, and as the pension was deferred pay the remuneration in the services was not, after all, so disadvantageous. In fact, at the end of the address Lieut.-Colonel Sir Martin D.G.A.M.S. spoke of the way in which the chair of medicine is now concentrated in the large army hospitals.



of being scattered over a number of small units. Air Commodore David Munro declared that in many ways the opportunities given to service medical officers were more varied than those which fell to the lot of civil practitioners, and that the keen man in the service was given full liberty to pursue his opportunities on his own lines. Surgeon Vice-Admiral Sir Joseph Chambers emphasized the value of post-graduate work, the opportunities for which were afforded liberally in the services, and Mr T B Layton speaking as one who had experience of the services during the war, said that one thing of really great value to be learned therein—a thing which the civil practitioner was rather apt to disregard—was the accurate filling in of documents and careful keeping of records.

#### ADOLF KUSSMAUL.

PROFESSOR T H BAX of the University of Wisconsin Medical School has now republished, with additions, his article on Adolf Kussmaul in the *Annals of Medical History*, and thus for the first time supplied in English an account of this distinguished physician, who represented the best German type. Born in 1822, Kussmaul, early in his professional life (1845), worked hard to construct an ophthalmoscope and actually made one but unfortunately it would not work, or he would have anticipated Helmholtz. Believing firmly in the beneficial effects of induced vomiting, which he practised on himself in an illness self-diagnosed as "meningitis lumbalis," he is often credited with the invention of the stomach pump, but it is pointed out that in this he had been anticipated by Dr Dorsey (1809) and the latter's uncle P S Physick, professor of surgery in the University of Pennsylvania (1812), and Jukes (1822), an English surgeon whereas Kussmaul first employed gastric lavage in 1857. It is perhaps worth noting that the two portraits of Kussmaul (1822-1902) in the volume bear a slight resemblance to those of the late Sir Clifford Allbutt, who was one of the first to practise gastric lavage in this country and in 1869 invented a stomach siphon instead of the clumsy and formidable stomach pump. In 1853 Kussmaul was the first to use a gastroscope, and in 1873 described the paradoxical pulse in mediastinopericarditis, which, however, had been previously noticed by Griesinger and recorded by Videumann in 1856. His description of air hunger in diabetic coma often called "Kussmaul's respiration," appeared in 1874. He taught clinical medicine first at Heidelberg then at Erlangen, Freiburg, Strasbourg, and finally, in 1888, returned as emeritus professor to Heidelberg, where he wrote his autobiography. On his eightieth birthday a special volume of the *Deutsches Archiv für Klinische Medizin* containing contributions from thirty-three former associates, was dedicated to him, and a few months later he died after half an hour's agony from what has been called the doctor's disease—an angina pectoris.

As already announced, the Harveyan Oration before the Royal College of Physicians of London will be delivered by Sir William Hale-White K B E, M D, at the College on Tuesday next October 18th, at 4 p.m. It is anticipated that he will deal with the possible influence of Francis Bacon's views and writings on Harvey, and will refer also to the work of Gilbert of Colchester, whose great book *De Magnete* was published in 1600 the year in which he was President of the Royal College of Physicians. It is true that Harvey was then still in Padua but he settled in London only two years later, and the book had attracted a great deal of attention. The annual sermon under the Sadler Trust will be preached in the church of St. Martin-in-the-Fields at noon on October 18th.

## Scotland.

#### PUBLIC HEALTH ADVANCE IN SCOTLAND

DR W E LILLIOT, M P, Under Secretary of State for Scotland, recently addressed a meeting in Eden on the task before the Scottish Board of Health. He said that a healthy people was the greatest asset a nation could have. The Board of Health had a great responsibility in seeing that each generation of children was better than that which had gone before. As a proof of this he said that in Scotland in the year 1840, out of every five children that were born, four died before reaching the age of 1 year. At the present day they could claim that not more than one out of every ten died before reaching the first birthday, and the ideal before the Board of Health was to reach a figure in which fewer than one in twenty would die before reaching age 1. Last year, despite the great trade dispute, was the healthiest when Scotland had ever known. The figures in regard to tuberculosis were so promising that he was hopeful that within twenty or thirty years tuberculosis would, like typhoid fever at the present day, be one of the rare diseases. The real way to fight disease, he said, was by fresh air and plenty of food. Fresh air was represented in housing, and in this respect the Government had a splendid record. In 1924 in Scotland 4,000 houses had been completed, 8,000 in 1925, and 12,000 in 1926, and by the end of the present year he expected that the number would reach 18,000 or 20,000 houses. It would be their housing policy to repeat that figure next year.

#### ROYAL SANITARY ASSOCIATION OF SCOTLAND

At the fifty-third annual congress of the Royal Sanitary Association of Scotland, held recently at Inverness, Dr A S M Macgregor, medical officer of health for Glasgow, delivered his presidential address on "Modern tendencies in public health." He referred to the weakening, observed on all hands, of the resistance to health reforms. Medical science and the humanitarian movement had effectively joined forces, and broad and bold constructive recommendations were being put forward as a result. The need for a complete and adequate medical service, developed on the preventive side, was in principle recognized, and the road along which future progress should be made seemed clear enough. Large ideas of this kind required for their fruition not only the support but the active co-operation of the people, and the people in general were becoming well aware of their indebtedness to medical discovery, and the consequent increasingly high standards of general medical practice. The health crusade was influencing legislation, and had found expression in the new form taken by the Annual Reports of the Scottish Board of Health, in which a vivid and suggestive narrative had taken the place of a statistical compilation. There were some who maintained that much of what was being attempted now was based on a sort of pseudo-science, and went beyond ascertained knowledge. It was true that a large group of diseases—immaturity, debility, and prematurity—classified at present as inevitable causes of infant mortality, had hitherto baffled inquiry. They were, however, being submitted to investigation at the research laboratories of the Glasgow Maternity Hospital. Another inquiry at Glasgow had made it plain that the severity of measles was abnormally great among young children in crowded tenements. This was an ascertained fact, and the sickness and death rate at young ages in congested areas was the main justification for slum clearance schemes. Scientific investigation must precede or endorse well directed public health measures. Bacteriology, for example, had aided in the repression of many diseases, and immunotherapy was its latest development. Physiology, too, exploring the great laws of physical fitness, had furnished principles of the widest significance, which it might take years to put fully into practice. The new Factory Bill from beginning to end was applied physiology. The wide acceptance by the nation of such principles as these was the most important movement in public health to-day. That fresh air, smokeless air, sunshine, good houses, and good ways of living were highly valued by most was due in part

The Life and Times of Adolf Kussmaul. By Thomas H Bax. Ph.D. With a foreword by William Snow M.D. D.Sc. New York: Paul B Hoeber (Inc.) 810 Fifth Avenue, 123, 150 de la Salle.

to quiet sinister propaganda, especially that which radiated from child welfare and tuberculosis clinics and from school medical inspection centres. Where good houses had been provided under slum clearance schemes the proportion of people who were trying to maintain hygienic standards had been above expectation. If any failed it was the local authority's duty to bring them up to standard. Hygiene appealed to the best instincts of mankind and was helping to solve social problems. It was ready to join forces with any great moral or spiritual movement it might, indeed, only exert its highest influence when so allied.

#### *Housing in Scotland*

The association concluded its congress by a debate on the housing programme in Scotland. Dr G V T McMichael, M O H Paisley, opened a discussion on slum clearance and rehousing schemes. He said that, although a great deal was taught and written by medical officers, politicians, and the press on this subject, a great gap existed between precept and practice. The slums still remained a standing reproach. As health officers they were primarily interested, of course, in the problem of the slum from the point of view of its effect on the public health, for the environment of the working classes was the most important of their health problems, and the continued existence of the slums constituted the most serious obstacle to all efforts at improving that environment. The grave insufficiency of fresh air and sunlight, together with the evils—physical, mental, and moral—due to overcrowding, were the special factors in the slum areas. The national exchequer paid large sums of money to provide free treatment for venereal disease, but they still shut their eyes to the overcrowding in slums, which made the practice of morality extremely difficult. Hospitals and asylums were full of victims of alcoholism, which, however, to some extent at least, was due to appalling home conditions. The speaker referred to a rehousing experiment at Paisley, where the local authority provided thirty-four municipal furnished dwellings at rents varying from 8s to 13s 6d per week. Central heating was provided in these by radiators. It was said that money could not be afforded for providing new housing accommodation, but the reply must be that millions of money were already being spent to deal with the end-results of many diseases which were in the main the inevitable outcome of slum environment. The direct material loss in England and Wales due to sickness and disability was estimated at £150,000,000 per annum, and this estimate had never been seriously challenged. There was much grumbling at the present amount of social and industrial unrest, but he asked what thinking persons condemned to live in the sordid atmosphere of the slums could fail to be revolutionaries. Mr A G Dutch spoke on the shortage of housing accommodation for the small-wage earner, and suggested that they leave the higher paid workman, the well-to-do middle class, and owners of businesses to look after their own requirements meantime and erect buildings to meet, to a reasonable extent, the demand of the small-wage earner. He spoke on behalf of the lower paid wage earner who was anxious to work and was able and willing to pay rent and rates with unfailing regularity. He thought the standard of housing should be raised from its lowest to its highest point, not in one effort, but gradually and step by step. Mr Frank A B Preston, in opening a discussion on the effect of the relaxation of building regulations, said that the modifications allowed by the Board of Health had been frequently resisted by local authorities with good purpose. Adequate supervision during building operations would lead to lower maintenance costs, and adequate repair during occupancy would tend to lengthen the period of habitability of houses. Councillor W J Harvey said that the question had been asked whether the housing situation had improved appreciably since the Royal Commission of 1917 had reported. The figures spoke of a methodical and creditable achievement in the last four years, which had been unparalleled in the history of housing. These figures showed that 20 per cent of unsatisfactory houses reported by the Royal Commission were now being dealt with. In Edinburgh 25,000 people would be rehoused within the next year, and at present

1 in every 17 of the population of Edinburgh had better housing conditions as the result of the progress in the last four years. They were entitled, in view of this experience, to say that the slum conditions in Scotland were "on the run." With regard to the provision of houses for lower paid workmen, he thought the solution of the question was an economic one that could be solved when times were better and the worker was able to earn a higher wage.

#### *HARVEY LITTLEJOHN*

The new number of the *Edinburgh Medical Journal* contains a very cordial and knowledgeable tribute by Sir George Newman to the memory of Professor Harvey Littlejohn. He says of him, very truly, that he liked to be what he was, a man of the world in the best sense, happy to meet and co-operate with all sorts and conditions of men—an ambition, it may be observed, more easily to be fulfilled in Edinburgh where most of the members of the learned professions have been boys in the same schools and have attended the same university, than in some larger city. Another characteristic mentioned by Sir George Newman was Harvey Littlejohn's gift of exposition. "There was logic, reason, intellectual grasp, and there was an appealing and persuasive charm for assent. His historical sense and his love of books made him a discerning companion." The final sentence of this charming tribute may be quoted in full.

"Harvey Littlejohn was a good man and a master workman. He was not always easy, not addicted to conventionality, sometimes perverse or inclined to mischief, but a big hearted man, a courageous and dauntless personage, bristling with physical durability with a scroll of high thought and purpose coiled within. He had disappointments, yet he overcame them all. He was not embittered, he was a bachelor yet enjoyed the affections and regard of women, he was witty, a dramatic reciter, vivacious, energetic, but at root kindly, gentle and sympathetic, he was a medical man, yet he had the sense of justice and responsibility of a Judge, he was a Professor but his sociable, unthwarted, he excelled yet was not contented. He was democrat in sympathy and austere in perception. He was both proud and humble. Gay, affable, whimsical, reliable, a man among a thousand, given to hospitality, one who had known great men, a delightful companion, a dear friend. When, far away, he learned he was dead a light seemed to go out and the joy of the world was less."

The same issue of the *Edinburgh Medical Journal* contains the full text of the first Alexander Black Memorial Lecture, which was delivered before the Royal College of Physicians of Edinburgh last June by Dr C F Douglas of Cupar, a member of the Council of the British Medical Association, it dealt with the family doctor as specialist and a fairly full report of it was published in our issue of June 18th (p 1120).

#### *POST-GRADUATE COURSES IN GLASGOW*

The following arrangements have been made for post-graduate teaching in Glasgow during the winter months under the auspices of the Glasgow Post-Graduate Medical Association. Recent advances in medical, surgical, and the various special departments will be dealt with in a series of demonstrations on Wednesday afternoons, from November 2nd to May 30th, the fee for the course is three guineas. Special courses have been arranged in ophthalmology, at the Glasgow Eye Infirmary, and in a slit-lamp course for ophthalmic surgeons in November and December, and a diploma course from January to May. Eight demonstrations on chronic diseases and endocrinology will be given at Stobhill Hospital on Monday and Tuesday afternoons, during the month of February, the fee is one guinea. A limited number of clinical assistantships will be available during the winter months in the various institutions connected with the Post-Graduate Association. Further details may be obtained from the secretary of the association, the University, Glasgow.

#### *TRIBUTE TO THE LATE DR J C McVAIL*

In a preface to his annual report for the year 1926-27 the Stirling County Council and district committee paid a tribute to the late Dr J C McVail, medical officer of health for Stirling. The death of his predecessor, Dr J C McVail, in

one of the first county medical officers appointed consequent upon the passing of the Local Government (Scotland) Act in 1889. Dr. McNeil held that post from 1889, 1891, until the beginning of 1912, when he was appointed deputy chairman of the Scottish National Health Insurance Commission. Dr. Adam writes: "In a word it may be said that Dr. McNeil was one of the chief pioneers of public health. He indeed was a great man, whose interests covered the whole field of public health, and his writings on small-pox and vaccination are quoted as authoritative wherever the subject is discussed."

## England and Wales.

### THE WELSH SCHOOL OF MEDICINE

A CONFERENCE of representatives of the University of Wales and the University College of South Wales and Monmouthshire was held at the College, Cardiff, last week. Both sides were fully represented and the conference was prolonged. It is believed that substantial progress has been made towards a settlement of the question at issue. The decisions, it is said, were unanimous, and will be reported by their representatives to the two bodies concerned.

### RHEUMATIC HEART DISEASE IN CHILDREN

On October 1st a meeting was held at the Bristol General Hospital to consider a scheme which has been in preparation for some time for dealing with cardiac disease due to rheumatism. It was attended by the officers of the school medical services of Bristol, Gloucestershire, Somersetshire, and Wiltshire, including those of county boroughs within the border of these counties and by consulting physicians practising within the same area. The objects of the scheme are research into the conditions under which children contract rheumatic heart disease, and assistance in the treatment of such children. Practitioners within the area have been invited to send brief notes of cases arising among their patients. The scheme is to apply to children between the ages of 5 and 14 years inclusive and is to apply to cases of heart disease arising in connexion with rheumatism, chorea, or scarlet fever, and to cases which though not arising in connexion with rheumatism or chorea are nevertheless rheumatic in type—that is, ventricular enlargement with mitral incompetence with or without aortic incompetence or acute pericarditis.

It is believed that close attention to the problem of diagnosis of the disease in its early stage will be of immediate value to the school medical service. This has been the experience in Bristol, where the plan about to be described has been on trial for several years. It has been found that reference of children with signs suggestive of cardiac rheumatism to hospital physicians interested in the matter has resulted in the removal of restrictions with regard to school attendance, game, drill, etc., in a large number of instances, in others it has been the means of directing children in the early and more tractable phases of the disease into channels of treatment that might otherwise have been missed. The local authorities in the areas named have decided to make arrangements by which children, if the school medical officers think it desirable, may be seen at convenient places by physicians with special experience in the disease. The plan has the support of the Board of Education. The area comprised within these three counties is fortunate not only in having at its centre a city in which work of the kind has already been done, but also in possessing medical officers in all the areas who have already had administrative experience of similar organizations; moreover, they have undertaken to conduct inquiries into the conditions under which the children are living at the time of onset of the disease. Since the district includes wide varieties of soil, altitude, density of population, and so on, information of value should be forthcoming. The investigation, which was initiated by the subcommittee of the Science Committee of the British Medical Association appointed to inquire into rheumatic heart disease in children, has for its focus the University

of Bristol Centre of Cardiac Research. This is based at the Bristol General Hospital, equipped by the University of Bristol, and maintained by several grants. Among these may be mentioned one from the Medical Research Council for clerical expenses, also a Research Fellowship provided for two years by the Colston Research Society, a Bristol organization. To complete the machinery which is being set up, it is hoped to devote a number of beds in the country hospital shortly to be built at Winford, near Bristol, to the treatment of cardiac rheumatism in childhood. The site has been carefully chosen, and is believed to be the best within a convenient distance of the city.

### PRESENTATION TO SIR JOHN ROBERTSON

The conclusion of Sir John Robertson's period of service as medical officer of health for Birmingham was made the opportunity by the staff of the Birmingham Public Health Department to present him with a motor car "as a token of their proud remembrance and good wishes." The Lord Mayor of Birmingham, who presided at the presentation, said that of the many distinguished city officials it was the privilege of Birmingham to employ none was more respected than Sir John Robertson. He hoped that many opportunities would still present themselves for the continued enjoyment of his advice and the social services he had rendered to the city with such satisfaction to all. The Lord Mayor called attention to the great fall in the death rate in the city during Sir John Robertson's term of office. In 1903 it was 16 per 1,000, while at the present time it was only 11 per 1,000—an approximate saving of something like five thousand lives annually. Dr. W. H. Davison, senior assistant medical officer, speaking on behalf of the staff of the Public Health Department, said it was in consequence of Sir John Robertson's sound common sense, his insatiable appetite for work, and genius for administration that such a public health organization had been built up in Birmingham. The Lord Mayor, after making the presentations, handed to Lady Robertson a medallion portrait of her husband as a souvenir of the occasion. Sir John Robertson, in acknowledging the gift, referred to the splendid team work of the staff during his twenty-four years of office.

### QUEEN CHARLOTTE'S HOSPITAL MOTHER SAVING CAMPAIGN

By the kindness of Lady Howard de Walden, a meeting was held at Seaford House, Belgrave Square, on October 6th, in support of the Mother Saving Campaign of Queen Charlotte's Maternity Hospital. This campaign has for its object the raising of a quarter of a million pounds for the erection of new wards at Queen Charlotte's, where an intensive study of puerperal fever and other conditions which lead to maternal mortality may be carried out. The chair was taken by Dr. T. Watts Eden, and there were present a number of mayors of metropolitan boroughs and medical officers of health. Dr. Eden said that between three and four thousand women in England and Wales lost their lives in childbirth every year. The remedy for this grave situation was to have doctors and nurses trained to the utmost degree of efficiency, an adequate and universal ante-natal service, and ample hospital accommodation for all who could not be adequately treated at home. The duty of prevention was equally pressing. In respect of some of the conditions which might attend pregnancy—ectopic, for instance—the task of prevention was comparatively easy, given efficient medical supervision, but, on the other hand, the prevention of puerperal fever was extremely difficult and it was a melancholy fact that during the last fifteen years the mortality from this cause, so far from diminishing, had shown a slight increase. A study of the maternal conditions which bore upon the liability to contract puerperal fever could only be carried out by prolonged and elaborate research. One of the objects of the present appeal was to provide facilities for such research and to bring into closest collaboration the research worker and the bedside physician and surgeon. The Bishop of Wiltshire proposed a resolution pledging the support of the meeting to the campaign and urging the metropolitan authorities to establish committees for the purpose of awakening the public to the importance of the continuing high maternal mortality and the need for collecting funds

for Queen Charlotte's. This was seconded by Dr F E Scrase, chairman of the Metropolitan Branch of the Society of Medical Officers of Health, who stated that that Branch had recently passed a resolution welcoming the campaign. The resolution was supported by Dr T G Stevens, senior consulting obstetric physician of the hospital, who pointed out how difficult it was, now that midwifery had passed so largely into the hands of midwives, for the young doctor to gain sufficient practical experience to do what was required of him when he was called in by a midwife to a difficult case. The mayoress of Paddington and Fulham, Dr Charles Porter, medical officer of health for Marylebone (the borough in which Queen Charlotte's is situated), and others spoke in support of the resolution, which was adopted, and the mayor of Westminster and Mr Alck Bonine proposed and seconded a resolution of thanks to the hostess of the occasion.

#### EXTENSION OF THE GENERAL LYING-IN HOSPITAL, LAMBETH

The General Lying-in Hospital, Lambeth, traces its origin to 1765, when the "New Westminster Lying-in Hospital" was founded, largely owing to the efforts of Dr John Leake, a lecturer in midwifery. This institution, which was situated near the south end of Westminster Bridge, was completed in 1767. In 1824 the present site in York Road was obtained, new buildings were erected, and were taken into use in September, 1828. It is interesting to recall that in March, 1879, Lister became consulting surgeon, and his connexion with the hospital continued in this capacity and as president until 1911. Moreover, in 1880 the late Sir John Williams and the present president, Sir Francis Champneys, were appointed physician-in-concubitus to the hospital, and under their auspices antiseptic midwifery was introduced. In 1879 the systematic training of midwives was begun and grew eventually into the present training school. In 1907 two houses adjacent to the hospital were included in a new lease, under the terms of which rebuilding was ordered before the end of 1930. These premises were at first used as a nurses' home and subsequently for an ante-natal clinic and infant welfare centre, a clinic for mothers, they also accommodated some of the nursing staff and pupils. An appeal has now been issued for £30,000 for rebuilding. The proposed extension will cost some £40,000, towards which about £10,000 has already been given or promised. It is hoped that greatly improved accommodation for the nursing staff and pupils will thus be obtained, and better facilities created for out-patients and for teaching. This is the first public appeal for funds by the hospital since June, 1765. Subscriptions should be sent to the honorary treasurer, Dr J S Furburn, at the hospital.

## Ireland.

### TUBERCULOSIS MEDICAL ASSOCIATION Milk Infection

At the annual meeting of the Tuberculosis Medical Association, held recently in University College, Dublin, when Dr M J Cuffe presided, Dr Boyd Barrett of the Local Government and Public Health Department read a paper on infected milk, in the course of which he said that since it was clear beyond doubt that bovine tuberculosis was prevalent and was the cause not only of disease, but of death in man, there were two problems to be solved: (1) Bovine tuberculosis must, if possible, be eradicated, and (2) the infection of human beings by milk must be prevented. The ideal solution of this problem would be the establishment of herds of non-tuberculous cattle, and all measures now tried should have that ultimate object, and facilities for the bacteriological examination of milk should be provided. The powers available for the examination of milk for dilution and fat deficiency should be in some way applicable to the test for tuberculous infection. He suggested the application of the Swedish law which made it imperative that persons working in dairies or concerned with the sale of milk should be in possession of a medical certificate delivered less than a year before the time of their engagement,

stating that they were not suffering from contagious tuberculosis, with severe penalties and stoppage of sale of milk for non-compliance. Every dairy farm and dairy should be registered, and registration should be followed by inspection by a veterinary surgeon, so that all diseased animals might be discovered. In this way the chance of advanced cases of tuberculosis could be begun, leading eventually to the separation of healthy from tuberculous reacting cows. Thus also a basis would be laid for attaining the ultimate object of the rearing of tuberculous free herds. The next step would be the testing by tuberculin of the remainder of the herd and then the milk of cows giving the reaction of tuberculosis should be tested for the presence of tubercle bacilli. This investigation should be followed by the pasteurization of all milk intended for public consumption which had been found to be infected. In general about 10 per cent of milk, milk contained tubercle bacilli. The percentage varied in different countries, and it had been found that 8 per cent of Dublin milk was infected.

#### Costs of Tuberculosis

Dr Patrick J Burke, tuberculosis medical officer for county Sligo, read a paper on the costs of tuberculosis directed to answering the criticism that the tuberculosis schemes in the Irish Free State were expensive without giving any returns. Since the establishment of the schemes there had been a great decrease in the number of deaths from tuberculosis. In 1915 there were, in the present area of the Free State, 6,723 deaths from tuberculosis, while in 1925 there were 4,675, a decrease of 2,052. He quoted various estimates of the value of each life lost to the nation by tuberculosis. The lowest estimate he could find was £500, but to remove any suspicion of exaggeration he would take as a basis £300. Taking with Sir George Newman, the average duration of illness prior to death from tuberculosis is three years, with loss of wages at £20 a year, and cost of sickness at £100 a year, the cost of disability in each case would be £360, making with the loss by death a total of £660. The reduction of death in the Free State in 1925 as compared with 1915 meant a saving for that year of £1,354,320. On the other hand the annual loss to the country by disease and death due to tuberculosis could be calculated at £4,347,272, while the present expenditure on county schemes was about £75,000 a year. Dr Burke claimed that although his figures might look extravagant, they were based on calculations made by responsible statisticians, his part being only to apply them to the conditions of the Irish Free State. Dr J McMahon, a well known New York authority, delivered a lecture, illustrated by lantern slides, on tuberculosis treatment in America.

## Correspondence.

### CATARRHAL VACCINES

SIR,—A letter was published in your issue of June 4th 1927 (p. 1033), from Dr N A Spott, giving some statistics of the incidence of influenza in inoculated and un inoculated boys at St John's College.

The figures in that letter refer to three houses only, and since they may create a somewhat partial impression of the results of inoculation in that school, the figures for all houses, including those already mentioned, are given below.

The inoculations were carried out during the autumn of 1926, mostly in the latter part of September and the first half of October, "antitubercular" vaccine of St Mary's Hospital being employed in most cases. A few boys had autogenous vaccines, and a few had stock vaccine. All the St Mary's "antitubercular", 227 boys received three injections at weekly intervals, the doses varying with the age and size of the boy, 28 had only two injections and 14 had only one. 16 others had from twelve to fifteen injections each.

In January, 1927 immediately after the school recess a widespread epidemic broke out, and the incidence of disease amongst the inoculated and un inoculated is given in the accompanying table.

The epidemic was of a mild type, and complications were few. There were no cases of pneumonia. One boy had bilateral otitis media which extended to the mastoid cells, and necessitated surgical treatment on both sides. Two others had extensive bronchitis, which necessitated prolonged sick leave. One boy got better and relapsed several times. All the patients had been inoculated. Two boys who had not been inoculated had otitis media, from which they recovered after paracentesis.

It would have needed more clerical work than was possible to estimate with accuracy the number of school days lost by inoculated and uninoculated boys respectively.

The table shows that there was very little difference in the incidence of the disease in the inoculated and uninoculated groups. It is apparent that the percentage of boys attacked is greater in the inoculated than in the uninoculated group, but this may be accounted for by the fact that the inoculated group contains most of those boys who are particularly subject to influenza and other catarrhal infections.

It is interesting to compare the figures in the table with those collected from another school, and published in the Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1926 (p. 64).

Out of a total of 47 boys 144 (32 per cent) were inoculated and of the 54 (33 per cent) were attacked 333 boys were not inoculated and of the 109 (36 per cent) were attacked. The attack rate for inoculated boys and for uninoculated boys was therefore practically equal. The results seem to show that no protection against influenza was afforded. On the other hand all the fifteen cases of pneumonia occurred in boys who had not been inoculated (one case uncertain) so that it appears that inoculation may have had some protective value against this serious complication.

Table showing Attack with Reference to Inoculation

House	No of Boys	Boys Inoculated		Boys not Inoculated		All Boys To all not attacked
		No	Not attacked	No	Not attacked	
1	43	9	3	31	7	19
2	41	13	7	23	11	18
3	45	13	6	0	15	21
4	38	8	5	33	11	16
5	45	12	6	23	4	10
6	47	11	7	23	12	19
7	47	11	7	23	10	13
8	40	10	1	25	8	9
9	34	8	3	29	6	9
10	41	17	9	29	10	19
11	39	6	1	33	10	11
12	38	10	4	28	9	15
13	39	10	4	13	15	17
14	35	12	6	21	6	12
15	6	11	5	22	5	10
16	43	11	5	32	9	14
17	67	21	14	46	26	49
18	42	16	8	37	8	16
19	44	7	5	37	9	27
20	37	15	8	22	12	17
21	37	8	3	29	12	15
22	41	18	11	23	12	23
23	33	9	6	24	17	23
24	40	16	7	4	15	22
25	37	15	5	21	12	17
26	35	11	7	25	15	22
School to all	1019	402	193	717	794	443
Percent		29.6	49.3	70.3	41.0	44.4

—We are, etc.,

W. ATTLEE  
M. AMSLER  
D. C. BEAUMONT

From Oct 6th

### CONVULSIONS DURING ANAESTHESIA

SIR—I have read with interest the reports of cases of convulsions during anaesthesia which have appeared in the JOURNAL and have been struck by the fact that all of them, except those reported by Dr Hornabrook (September 10th) and attributed by him to overdose of atropine, have occurred where ether was administered by the bomb method. Dr Pinson (May 28th) reports fifteen cases, eleven or which occurred in his own practice, giving an incidence of 1 in 1000 and four other cases, and Dr Dickson (October 1st) reports one case. Dr Sington, in his letter

of September 24th, disposes of the theory that atropine is the cause.

It would be interesting to hear from other anaesthetists if they have experienced this complication when administering ether by other methods. Personally I have never seen it, and venture to suggest that the bomb is the source of the trouble—whether, as Dr Dickson hints, due to a high concentration of ether or an excess of carbon dioxide, or, as I think, to something inherent in the superheating of the ether which the bomb method involves.

My own experience of the bomb extended over some two hundred cases, and, although no convulsions occurred, I was led to give it up because of the higher proportion of respiratory complications which followed than when ether was given by one of the ordinary open methods. Possibly the cause of this, as well as of convulsions, is to be sought for in the action of relatively high temperatures on ether vapour. It seems to me that there is a field here for chemical research—I am, etc.,

Glasgow Oct. 4th.

H. P. FAIRLIE, M.D.

SIR,—In the discussion upon convulsions during ether anaesthesia two correspondents have suggested that the cause is an excess of carbon dioxide. This appears to be an untenable hypothesis for two reasons. In the first place, other spasm has occurred during endotracheal ether anaesthesia, where the carbon dioxide content in the alveoli is less than normal. Secondly, several cases of severe ether spasm have been treated by the inhalation of a mixture of 90 per cent oxygen and 10 per cent carbon dioxide. This treatment appears to be the most efficient at present known in restoring regular deep respiration—I am, etc.,

C. LINGTON HEWER, M.B., B.S. Lond.

London N.W.1 Oct. 6th.

### ACTINOTHERAPY IN JOINT TUBERCULOSIS IN CHILDHOOD

SIR,—The results mentioned in the memorandum of Dr Crosbie and Aidin in the BRITISH MEDICAL JOURNAL of October 1st (p. 594) are so unusual that it would perhaps be instructive to compare them with those obtained at the Finsen Institute, Copenhagen.

Site of Tuberculosis	Improved		No Change		Made Worse	
	Alder Hey	Finsen Institute	Alder Hey	Finsen Institute	Alder Hey	Finsen Institute
Knee	100%	79%	—	20%	—	2% (died)
Hip	15%	68%	45%	26%	33%	5% (died)
Spine	57%	74%	—	13%	43%	13% (died)

\*Two cases only.

The Finsen Institute figures are also classified as follows

Site of Tuberculosis	Cases Cured				Cases Improved
	Total	Free Movement	Partial Movement	Without Movement	
Knee	71%	31%	15%	2%	8%
Hip	64%	5%	26%	37%	—
Spine	60%	60%	—	—	9%

The Finsen Institute results are based on fourteen years' experience and the 6 from Alder Hey on just over one and a half years.

In the cases from Alder Hey no mention is made of the duration of the course of treatment, and it is fair to infer that it is unlikely that all the cases commenced treatment at the same time. This would mean that conclusions, in some cases, were arrived at after (for tuberculosis) a comparatively short period of treatment.

I would also suggest that the writers are mistaken when they state that they have used at Alder Hey an open arc with an arc voltage of 250 volts.

Dr Crosbie and Aidin state that they are convinced that



actinotherapy is of little or no value in the treatment of tuberculosis of the knee, hip, and spine, and that in some cases it appeared to be injurious.

I would suggest that this opinion is unwarranted, especially when the Alder Hey results are compared with those from the Finsen Institute—I am, etc.,

Newcastle on Tyne Oct 1st

W KERR RUSSELL, M D

SIR,—We feel that the memorandum by Drs Croshaw and Aldin on "Actinotherapy in joint tuberculosis in childhood," published on October 1st (p 594), cannot be allowed to pass unchallenged.

It would appear that the conclusion reached—namely, "we are convinced that actinotherapy is of little or no value in the treatment of this form of tuberculosis"—is somewhat hasty, considering that the total number of cases under review was only 45. The figures quoted show that, as a result of treatment with or without light, 33 per cent of all cases did not benefit, the statistics of this hospital show that, out of 785 cases treated between the years 1914 and 1924 and manifesting similar lesions, all but 14 per cent responded satisfactorily to treatment without actinotherapy. Subsequent to this date actinotherapy was introduced, and the response to this adjuvant method has been observed, and will be recorded in detail in the future.

Whilst it is admitted that there are certain cases (notably those complicated by sinus formation and secondary infection) which do not benefit by light treatment and no more worse thereby, the response observed in uncomplicated cases of tuberculous joint lesions has been such as to justify the continuance of its use.

In conclusion, it must be added that the type of case to which the memorandum refers is treated in this hospital by immobilization on similar splints to those mentioned, and it has not been found that frequent lifting and transport in any way produces minor degrees of trauma, nor does it militate against the success of the fixation for which these splints were specially devised.—We are, etc.,

T HARTLEY MARTIN, M B, Ch B,  
JOHN D CRAIG, M B, M R C S,

Medical Officers, Liverpool Open Air Hospital  
for Children, Leasowe

October 4th

#### "THE HISTORICAL ASPECT OF QUACKERY"

SIR,—After reading Professor A J Clark's address under the above title, I have come to the conclusion that it might be well if he would follow the example, so far as in him lies, of some of his predecessors, and try to make history, as he seems utterly incapable of accurately recording a historical fact.

He says, "The term quack simply means one who pretends to knowledge or skill that he does not possess." With such a definition I do not quarrel, as it certainly includes a large number of professors and leaders in the orthodox medical profession. It would seem to me that in this country there are more qualified than unqualified quacks, though possibly, from what Professor Clark tells us, the reverse may be the case in Germany. Albert Abrams, who is Professor Clark's *bête noire*, said that "there is no harm in being called a quack, the mischief is in being one." A statement worthy of the thoughtful consideration of everyone who assumes the role of teacher.

Professor Clark says "The question that I wish to consider is why the general public so often turns away from the medical profession and follows quacks who pretend to the possession of cures unknown to medical science." He miserably fails to give a satisfactory answer to his own question, but I shall try to do so for him. The fact is undoubted, and is frankly acknowledged by Professor Clark, that the public is drifting away from orthodox practitioners. It is much better to face the true facts and try and remedy them rather than rest content with Professor Clark's palliative, "that, although the alliance [of the medical profession] with science has brought them great material success, yet it has brought its special penalty in that it is ever alienating them to an increasing degree from the fundamental beliefs of the common man."

Who enjoys the *great material success* in the form of the current coin of the realm?—certainly not the general

practitioners, for whom this special dose of soothing syrup is prepared. The plain and obvious facts are that the general practitioners in the present day are imperfectly taught by many quack professors who neither know how to prevent or cure disease. In an address at Montreal in 1911, on Preventive Medicine, I said that there was not a Medical School in the British Empire where Preventive Medicine was taught as it should be taught, and I say so still. No teacher or medical head professes to cure disease, he only draws the fees, while watching Nature do the job. If you look over the *Quarterly Journal of Medicine*, you rarely find more than a few lines on treatment. No wonder, then, that general practitioners often fail to deliver the goods, and allow the quacks to romp in. Almost universally the orthodox practitioner has the first innings, and he ought to be ashamed of himself when he is woisted by the quack.

Professor Clark talks largely about Medical Science, but where is it? There is a large amount of scientific work going on in physics, engineering, radiation, aviation, bacteriology, and physiology, but pharmacology and clinical medicine have not yet touched the fringe of science. The treatment of disease is not a science, nor a refined art, but it is a thriving industry. The pharmacologist has usually got a whole-time job and he may know something about a rabbit or the very rapid beats of the heart of a canary, but the only treatment he has got for fibrillation of the human heart is poisonous doses of digitalis and quinine.

Sir Arbuthnot Lane once said, what I have often said in more forcible language, that surgeons make their living out of the ignorance and utter incompetence of physicians, while Sir Almroth Wright thinks that in 200 years the chemist may have acquired such a knowledge of his subject as to be able to prognosticate with some slight degree of accuracy. Albert Abrams said that our advance in medicine which is not in conformity with physical science is doomed to perdition. This is the man whom Professor Clark links up with a certain Eliza Perkins. I know very little about Perkins, except what Professor Clark has told us on more than one occasion, but his version seems to vary very considerably. On the 1st occasion, Perkins's instruments or tractors were made of wood, and sold at £10. Now this marvellous Perkins "persuaded millions that all disease could be cured by stroking the body with two pencils of metal." If he ever sold two million pencils at £10 the pair, he would be a very wealthy man, even Harley Street would not be in it with him. I should like to devote a whole chapter to this wonderful persuasive individual, but I must pass on to Albert Abrams, about whom and his work I know a great deal.

The men who are carrying out Abrams's method of diagnosis and treatment are qualified medical men and therefore if they be quacks, they are quacks within the fold. I happen to know a good many of them, and I can truthfully say that every one I know is as honest as Professor Clark, and not one of them charges extortionate fees—in fact, they have often to go without fee, as many of their patients have parted with almost their last shilling before coming as a *dernier resort*. Are the following practitioners of Abrams's methods quacks? Proctor Hall of Vancouver, of whom I stated that he combines in his own person the qualities of the physician with those of the scientific physicist, and I may add, from my personal appreciation, those of the Christian philanthropist. Dr M C Hardin of Atlanta, Dr Francis Cave of Boston, Dr Jules Regnault of Toulon, ex-Professor d'Anatomie at l'Ecole de Médecine, author of *Les Méthodes d'Abraham*, Dr H Verploegh of the Hague. For obvious reasons I do not mention the names of any who are practising Abrams's method in this country, as, one and all, they obey the advertising—they allow their work to advertise them.

I have often said that Abrams is the greatest genius that medicine has produced during the last half-century, and I say so still. Take every really great man who has had his intellectual followers who were outnumbered by the virulent infuperators of the *American Medical Association*, who saw their craft in danger. There were his exponents or camp followers who thought that in an easy way of making money. These latter have followed that Abrams's methods were a difficult path to tr

they have all gone back to their Matera Medea. On more than one occasion I told Abrams that he stood in greater danger from his friends than his enemies, as the latter could be easily refuted, *Magna est veritas, et prevalebit*, but the public were apt to judge a man by the character of his followers. I believed Dr. Francis Cave and others spoke to him in similar terms.

I have often said that if Abrams had done nothing more than discover the cardiac and pulmonary reflexes, he was entitled to a prominent niche in the temple of fame. I also say that the man who does not know the whole of Abrams's spinal reflexes is badly handicapped in the practice of his profession. This almost universal ignorance often enables the osteopath to score over legally qualified medical men. In this city a well known artist who regularly exhibits in the Royal Academy was under the care of highly qualified medical men for six months with "neuritis of right arm." The loss of the use of the right hand stopped her work, and as she could not afford to be out of action any longer, she went to an osteopath, who put her right in three weeks. Such reasons for the public drifting to "quacks" could be multiplied almost ad infinitum.

It puzzles me that Abrams's critics always jump at his last work, about which they know nothing, and never read his monumental work on spondylotherapy, which might come within their comprehension. Professor Clark tells us that "the followers of Abrams believe that all diseases can be both diagnosed and treated by means of two boxes containing some simple electrical apparatus." The pharmacologist deals in simples, but this will be news to Abrams's followers. Abrams's diagnostic apparatus does not contain any electricity, unless such as is supplied by the magnetic currents of the earth, and that in the body of the subject under examination. The oscilloclast is a broadcasting machine though it could not carry Professor Clark's address to say, the *Irish Times*, in which it appeared. With a pair of earphones, having a resistance of 2,000 ohms you can hear the electro-magnetic impulses singing through all parts of the patient's body. Moreover I have often tuned my wireless set to receive and deliver these vibrations through the loud speaker after they have travelled more than 200 feet and passed through a thick brick wall in order to reach the aerial.

In Dr. Brunori's new instrument if a small lamp is moved close to the treatment lead, it lights up at the crest of the wave and in this way you can easily discover the length of the wave.

A statement by Herbert Spencer I can commend to Professor Clark and company, though I can scarcely hope that they will profit thereby. "There is a principle which is a bar against all information, which is proof against all argument and which cannot fail to keep a man in everlasting ignorance. That principle is condemnation before investigation."

I am amazed and amused at Professor Clark's confession of faith in Sir James Frazer's twaddle about magic. According to this authority, it would seem that two existing races of mankind, while differing in religious beliefs, are united, not by a belief in a Supreme Being but by "a solid statement of intellectual agreement among the dull, the weak, the ignorant, the vast majority of mankind." This universal faith, this truly catholic creed, is a belief in the efficacy of magic. It would seem, according to Professor Clark, that "in a civilized community the belief in magic is concealed beneath the veneer of education and does not obtrude itself in normal life, but the veneer cracks as soon as any strong emotion is aroused, and both pain and fear of death are potent causes for arousing such emotions." It would appear that it is not the fear of God or of the devil that makes people anxious to live, but merely the love of life. So when the veneer, which of course, is of various thicknesses, is cracked, the solid substratum of the belief in magic oozes out, and then all savage and civilized man, rich or better shelter in search of a magician, every one seeks out a different magician, according to his taste. Those who rush off to the Abrams Cult would seem to be the more intelligent with the thickest coat of veneer and I hope, unlike the savage, are not naked, but clothed and in their right mind.

The Abrams practitioners should be very pleased that they are reckoned among the Magi, but they must recognize that when literary men in the front rank, judges, barristers, members of Parliament, clergymen, and even medical men, come for their "magic box," they all have had their veneer cracked, otherwise they would have gone down to perdition like sensible men, under the care of an orthodox professor.

I most unhesitatingly say that if anyone gave such evidence of his belief, as is portrayed by Sir James Frazer and Professor Clark without a shadow of proof, in any court of law in the world, he would not only be laughed out of court, but be rightly adjudged a greater fool than he looked. I presume Professor Clark would assume that Comm. Doyle was suffering from a delusion when he heard Abrams's oscillophone regularly hiss whenever a piece of cancer tissue was brought near it. Many of us think that it is a melancholy calamity that Abrams was virtually killed by his enemies before he had perfected that instrument.

Abrams's work has progressed more rapidly and more widely since his death than it did in his lifetime. In the large Central Hospital of Philadelphia, which is a general medical and surgical hospital with special departments, one floor has been specially installed for Abrams's work. The literature is rapidly increasing: there is a monthly journal. In addition to the work now in the second edition, which I had the pleasure of editing, there is one in Spanish, one in French, by Dr. Jules Regnault, and in my opinion the best of all is a large volume in Italian by Dr. Brunori. The feeble bleat of a professor is not likely to arrest the progress of this great work for a second—I am, etc.,

JAMES BARR

London O. 2nd.

SIR,—Although in your leading article on quackery (October 1st, p. 603) you clearly distinguish between the quack and the qualified practitioner, I am disappointed that you allow Professor Clark to ignore the distinction without specifically pointing out his error. I can scarcely think that this means that you tacitly approve of an attitude which, however atractive to the ultra-orthodox, is logically indefensible. But I should like to have your assurance on this point.

From Professor Clark's analysis of quackery it obviously emerges that a quack may be fully qualified in medicine and surgery. It is only necessary for a qualified practitioner to be a homoeopathist or follower of Abrams—"that is to say for his theories and practice to seem absurd in orthodox eyes—for him to be a quack."

What, then, is the significance of "qualification"? The idea that it implies the possession of sufficient knowledge and skill by an individual to justify his using his own discretion in the conduct of medical practice must be erroneous. The official regulations which recognize professional freedom must be all wrong.

Is this indeed the authoritative point of view? If it is, does it not give quackery great power, for according to it there must be hundreds of professional men and women (even in the British Medical Association) to whom the opprobrious term may be applied? Then again, if it is, how shall we all agree as to the permanent criterion of quackery, and which of us shall judge the rest?

I beg to differ from Professor Clark and suggest that a quack cannot usefully be defined as "simply one who pretends to knowledge or skill which he does not possess" without reference to medical qualification, because not only is proof of such pretence practically impossible to obtain, but the question as to who is to be authorized to convict anyone of the pretence is insoluble save by reference to some sort of "qualification."

"Quack," in my opinion, can only be the term applied by a body of people, qualified for healing work in a certain way, to others who attempt healing without this special qualification which they (the qualified) consider essential.

In order to illustrate how impossible Professor Clark's position becomes, I may remind him that he admits that such methods as that of Abrams may produce results but only through a psychic process, thereby clearly showing that he has no suspicion that any "followers of Abrams" may agree with him on this broad issue for he could hardly condemn them as quacks if he thought they agreed with him.

Thus is afforded excellent proof of his imperfect knowledge of the theories of certain doctors whom he calls "quacks." Personally I use Abrams's method and believe in the psychic rationale of the system, although my conception of this rationale is probably widely different from that of Professor Clark. So possibly I am in favour. But what of those who do not explain the Abrams phenomena on a psychic hypothesis? There should be no difficulty for Professor Clark. He has illustrated very well his capacity for judging without obtaining full evidence in one instance. What is to prevent his doing so again? From his sweeping statement about the extravagances of the "followers of Abrams," it appears that he has not even cursorily read the only book on Abrams written by British doctors (*Abrams' Methods of Diagnosis and Treatment*, published by Hahnemann), for the writers of this book do not commit themselves to any special theory and are careful to repudiate all fantastic claims—I am, etc.,

London W 1, Oct 3rd

J KENILM REID

SIR,—In the article with the above title in the JOURNAL of October 1st appears the following sentence

The career of Hahnemann, however, is a striking example of the way in which a rebel against authority who commences with an appeal to reason may finish by establishing a dogmatic faith even more absurd than the orthodox traditions he tried to explode.

I presume that Professor Clark, the author of the article, is not here referring to Hahnemann's teachings concerning dietetics, personal and municipal hygiene, the management of epidemics, or the treatment of the insane, as these teachings, revolutionary as they were in his time, are now accepted by the profession as a whole, although the part which he played is conveniently forgotten.

Professor Clark is evidently referring to the principle of similars, and in referring to it in such terms he is himself filling the definition of a quack, which he postulates at the commencement of his article—that is, one who pretends to knowledge which he does not possess.

Hahnemann's first publication on the principle of similars followed twenty years' careful experimentation. He stressed over and over again the need for experiment, and repeated experiment. Surely in these scientific days it might be expected that those who attempt to refute his findings would base their refutation also on experiment.

Those who, like myself, are experimenting daily with ample clinical material, and accept the principle of similars as a working basis in prescribing, do not "challenge the findings of experimental science." On the contrary, we welcome them, but we cannot discover anything in those findings which contravenes in the least the principle by which we are guided. Rather, indeed, is the converse true.

Finally, Sir, might one be permitted to point out that at no time, either in your JOURNAL or in any other medical publication, has there appeared a scientific refutation of homeopathy. You have steadfastly refused to print anything which has the appearance of supporting it, whilst you have admitted to your pages scathing references which are totally unsupported by any scientific evidence. Those who accept the principle make their appeal to experiment. If it is refutable, let it be so refuted. To act otherwise is to be guilty of intellectual dishonesty.

I dare to hope that you will have the fairness to print this letter—I am, etc.,

Liverpool, Oct 1st

F B JULIAN, M B, Ch B, M Sc

#### DEATH CERTIFICATION

SIR,—The Births and Deaths Registration Act of 1926 has been in force now since July 1st, and most of us in practice have had to fill in one of the new death certificates. Apart from having to fill in two certificates now instead of one as before, we have to watch our step warily in case we cross out the wrong "did not" or "was held."

This I mention as a locumtenent of mine, in excess of professional zeal, crossed out the wrong "not," indicating thereby that a post mortem examination was held. The result was the return of "informant," greatly agitated, from the registrar's, the hasty scribbling of a "private" certificate refuting the suggestion, and much grumbling all round. Again, the certificate was duly posted, but not delivered in time to the registrar, and this led to telephone

messages from the exasperated friends. The result, I am informed, is that I may hand the certificate, finally sent to the friends, as the Postmaster-General's efforts at this position locally are unsatisfactory.

The details of cause of death are supposed to be very private and confidential, yet the friends may obtain a copy of the certificate from the registrar for one shilling or have I left out the sixpence?

Again, when filling in cause of death we are advised to think backwards, but the end-result does not appear to differ materially from the "primary" and "secondary" of the old certificate.

Providence knows we are harassed enough with certificates of various kinds, but this latest outgrowth on the official tree of 1910 and refreshing fruit makes one long for a hatchet—I am, etc.,

VINCENT P NORMAN, M D, F R C S D

Bradford, Sept 27th

#### MOBILE LABORATORIES IN THE WAR

SIR,—In your issue of October 8th (p. 660) Sir Robert Porter writes that certain statements made in the obituary notice of Adrian Stokes which you published the previous week "have no historical basis as to fact." I had not the privilege of knowing Stokes before he came to Gm's, so I had to depend upon information gained from various sources for what I wrote about his services, and particularly from Dr J A Ryle, who lived in the same house with him for more than two years, both before and during his services with the Second Army. I naturally took every precaution that the information should be trustworthy, and further investigation convinces me that my statement is accurate in every detail. There is no doubt that Stokes, through his own enterprise and initiative, discovered the typhoid carrier in the Grenadier Brigade in 1914, thereby anticipating the functions of a mobile laboratory, which was not apparently then available to do the work. It was not implied that Stokes instigated the creation of mobile laboratories, but merely that he anticipated the idea. It was nowhere suggested, as Sir Robert Porter seems to think, that Stokes's work in the Belgian epidemic was done during service with the Second Army. Dr J A Ryle, who worked intimately with him at the hospital at Malpassé near St Omor, to which some 800 Belgian civilian cases of typhoid fever were evacuated, tells me how he witnessed from day to day the ready enthusiasm with which Stokes co-operated with the officers of the Friends' Ambulance Unit and the sanitary officer of the Second Army, and the thoroughness with which he and his colleague, the late Cecil Clarke, worked in their laboratory to ensure that no civilian carriers should be returned to the occupied areas to cause further damage to the troops. For these reasons the remarks concerning Stokes's participation in this not unimportant episode of the war are fully justified. As Dr Ryle has said, Stokes acted as "an unofficial liaison officer," for at this period as well as later at the casualty clearing station, although employed in a specialist capacity, he was continually consulting all those with whom he came in contact, whether civilian or military, in their joint task of helping to protect the British forces from infectious disease. The hospital at Malpassé was not under the medical control of the Second Army, but it played a very important part in dealing with the typhoid epidemic amongst the civilian population in the early months of 1915, and no history of the epidemic would be complete if it omitted to record the invaluable services of the bacteriologists at that time.

—I am, etc.,  
October 12th

ARTHUR I HERBERT  
(Writer of the obituary)

#### THE TESTING OF DISINFECTANT

SIR,—Referring to our letter dated September 27th (p. 614) we much regret that we omitted to state that we were not the originators of the Rideal-Walker test as stated in our letter of July 9th last (p. 79), which was originated by Dr Samuel Rideal, the father of us, and Mr J T Ansie Walker, to whom we tender our sincere apologies, and much regret our mistake.

—We are, etc.,  
London SW 1 Oct 27th

J R K. P. WALKER  
A. C. WALKER

## Obituary

### HENRY EDWARD ARMSTRONG D.H.,

Formerly M.O.H., Newcastle-on-Tyne

On October 5th there passed away Dr Henry Edward Armstrong the first medical officer of health for Newcastle-on-Tyne. He came of old seaman stock and was born in 18-3, at Chipchase Mill in the beautiful North Pine Valley. On leaving Brampton School he served his apprenticeship at the Newcastle Dispensary, studied at the Newcastle College of Medicine (Neville Hall), and took the diploma of M.P.C.S. in 1864, and that of L.S.A. in 1867.

His first appointments were as resident medical officer to the old Newcastle Dispensary, City Road, and medical officer to the old fever house, the centre of the provincial fever hospital (1867). In 1875 the city council of Newcastle-on-Tyne resolved to appoint its first and whole-time, medical officer of health and after much formal calling upon electors, and interviewing candidates, Armstrong was selected. He held office until the end of 1912, when he retired on pension.

Armstrong's life history is inseparably associated with the rise of sanitation in England and he was the intimate friend of such men as Buchanan, Thorne Thorne, Power and Murphy.

In spite of intense prejudice and frequent opposition at first, Armstrong ultimately carried his council with him. When he first took it in hand Newcastle was an ancient city clinging desperately to the past centuries in its narrow stifling courts and acres of crumbling tenements and its citizens held most of the prejudices which are to-day regarded as the merest essentials of healthful living. It is due to Armstrong's persistence that practically all the old noxious areas are now swept away, and that Newcastle, although it has an acute housing problem of its own, has to-day singularly few slums.

Armstrong was well in advance of his time, and it is only now ready to grace at his early reports to receive something of a shock on finding many of the newest ideas of to-day advocated by him (and probably laughed at) forty years ago. In 1882 Newcastle obtained powers which anticipated some of the most useful sections of the Public Health Acts Amendment Act, 1907—for example that empowering the local sanitary authority to deal directly with condemned property, instead of having to refer to the magistrates.

Armstrong was one of the earliest and keenest pioneers in the campaign against bovine tuberculosis in meat and milk, and as far back as 1892 Newcastle obtained powers limited it is true to deal with tuberculous milk. It was for many years his practice to condemn and seize the whole carcass of a food animal in which any visible evidence of tuberculosis appeared on the ground that "there is no such thing as 'localized' tuberculosis, but that the disease germs must reach the sites of the various vulnerable lesions through the circulation—a theory that has since been proved correct. He drafted a bill long before John Burns's Milk and Dairies Bill, that anticipated the essential principles of the latter, and went even further, but it was considered so drastic at that time that no one dared take it up.

In connexion with epidemiology Armstrong was among the first to study the influence of the tramp in the spread of disease and his reports on small pox and varicella in 1893 and 1904 provided much new information which had been laboriously collected. The City Hospital for Infectious Diseases was opened in 1888 and has served as a model for many fever hospital elsewhere. In it a proper service of nurses was substituted for the attendants in the old fever house whose sole qualifications for appointment were that they should have had "the trophies" and that they

Dr Armstrong was medical officer of health to the Tyne Port Sanitary Authority from 1881 till 1896. He made various contributions to the literature of marine hygiene, the need for which is hardly to be said to have been recognized in those days. His resignation was due to difficulties created for him by strong local interest as the result of his bold denunciation of the conditions on many ships sailing out of the Tyne. He was unbending in his honesty and had the courage of his convictions, to which he adhered with tireless tenacity.

With the late Dr H. J. Yeld of Sunderland Dr Armstrong was responsible for the founding of the Northern Counties Association of Medical Officers of Health in 1875. This died or merged in 1882, in spite of the efforts of its energetic secretary. He was twice president of the Society of Medical Officers of Health—in 1889 and 1890—and from 1891 till 1893 was president of its Northern Branch which met in his office for over thirty years. After the reconstitution of the society he was elected an Honorary Fellow in 1920. He was also a corresponding member of a number of foreign medical societies. Dr Armstrong was a member of the British Medical Association, and at the Annual Meeting at Newcastle-on-Tyne in 1893 he was president of the Section of Public Medicine and opened a discussion on cholera.

Dr Armstrong was intimately associated with the University of Durham College of Medicine from 1878 to 1887, he was its honorary secretary and was subsequently a governor. He was lecturer on botany from 1873 till 1877, and on hygiene and infectious diseases, from 1877 till 1912. He had high ambitions for the College and was chiefly instrumental in bringing it about that the University of Durham was the first to grant a degree in hygiene. He himself was the first recipient of the D.H. conferred on him, *honoris causa*, in 1891.

Armstrong had a strong literary taste, and was a scholarly and widely read man himself a purist in style, a piece of scholarly composition in the report of a subordinate would cause him acute irritation. He was melodious and precise in his work, and insisted upon absolute accuracy and punctiliousness in all office affairs. He dabbled in music and art, was a keen photographer, an enthusiastic angler and a well-travelled man. At the age of 65 he took up roller skating

and spent much of his spare time for some years subsequently in that vigorous pastime. He was an excellent raconteur, with a strong sense of humour, and there never was a more delightful host. He was hard-working, energetic, and impulsive and a fair dealer. He was loyal to his friend and kindly and condescending to those under him. He had the warm affection of his staff, and his was always a happy department no matter what troubles assailed it from without.

We who knew him only in his later years are perhaps a little apt now to forget his active and successful career, so short is our memory of men once they drop out of their accustomed place. But he who has just gone to his long rest was by no means the least of the stalwart pioneers of the latter half of last century who by their patience and tenacity gained so much that has made life more comfortable and more secure for us and for succeeding generations.

H. K.

### Sir THOMAS OLIVER WRITES

By the death of Dr Henry Armstrong the last link in the chain of a particular generation of teachers in the College of Medicine has been severed. Petting from the post of medical officer of health for the city in 1912—an appointment which he had held for thirty-nine years—he found great pleasure in the books of his well-chosen library and by remaining in touch with the hygiene problems of the times, largely through the friendly association which existed between himself and Professor Kerr, who succeeded him in



H. E. ARMSTRONG  
(Portrait by James Watson and Sons  
of Newcastle-on-Tyne)

the health appointment of the city. A few years ago it was apparent that the physical changes incidental to advancing years were making silent encroachments upon his frame and were limiting his capability for outdoor exercise. He thus gradually fell out of the ranks, but he always had a warm welcome for any friend who went to see him. By this means his interest in passing events was kept alive.

Before his appointment as lecturer on public health in the College of Medicine, Armstrong for a few years discharged the duties of the chair of botany. When I became connected with the College of Medicine at the close of the late seventies there were on its council George Yeoman Heath, Philipson, Gibb, Arnison, Page, Gibson, McBean, Luke Armstrong, and Henry Armstrong, and there had just been introduced into the College men of a younger generation—Purmond, Murphy, and Meais.

At the College of Medicine was adjacent to the Mining Institute in Orchard Street, and its secretarial duties had been entrusted to Dr. Henry Armstrong, who was scrupulously careful in recording the minutes of the meetings and conducting the special affairs of the College. When in 1873 he became medical officer of health for Newcastle-on-Tyne the public health movement had only recently taken shape, and he felt that a large field of usefulness lay in front of him, and that it could only be tackled by an all-time appointment. His residential position at the dispensary, and that of visiting physician to the Fever Hospital, gave him opportunities, not only of seeing and treating the various types of epidemic disease, but of studying disease generally. On relinquishing the dispensary appointment he became medical officer of health to the River Tyne Port Sanitary Authority, and a few months afterwards was made medical officer of health for the city. At that date typhus fever was not an uncommon endemic in our large seaport towns, and to this as it affected Tyne-side Armstrong devoted considerable attention. Armstrong was painstaking in the preparation of his annual reports, he was a stickler for accuracy and persistent in his opinions, which were frequently disputable. When, through his agency, notification of epidemic disease became compulsory, it was resented by a considerable portion of the medical profession of the city, but the medical officer of health dealt with the opposition in a tactful and successful manner. He was patient with and most willing to assist medical practitioners, especially the younger men, by placing his services at their disposal and by helping them in doubtful cases.

In his early years he was a keen angler, and for many summers in succession he made his way to the North of Scotland, his companions in sport being Dr. Wilson, formerly of Newcastle, and the late Thomas M. Dodd and Dr. Calcott. Dr. Armstrong wrote several songs in praise of angling, some of them of considerable merit.

On October 8th his body was laid to rest in Benwell churchyard beside that of his wife, who predeceased him by many years. The funeral was attended by the Lord Mayor of Newcastle-on-Tyne, by several of the city councillors and officers of the health department, also by the president, professors, and lecturers of the College of Medicine. Professor Kerr and Dr. Ranken Lyle were unavoidably absent from the memorial service.

Armstrong left two daughters, one married to Dr. Henry Davison of Wylam-on-Tyne, and the other to Mr. Winter Blith, son of one of his old friends.

#### HENRY BRUNTON ANGUS, M.B. M.S. DURHAM, F.R.C.S. (LOND.)

*Emeritus Professor of Surgery, University of Durham College of Medicine, Honorary Consulting Surgeon, Royal Victoria Infirmary, Newcastle-on-Tyne.*

MR. HENRY BRUNTON ANGUS died on October 4th, 1927, at his residence, 5 Edlington Road, Newcastle-on-Tyne. For more than a year he had been in failing health, and for many months the shadow of his approaching end, which from the nature of his illness seemed inevitable, had been on the hearts of his friends. A man of strong physique and commanding presence, his term of life might have been expected to be long, and his death at the early age of 59 years, although long awaited, has come with an element of shock to his colleagues.

Henry Brunton Angus was born on December 7th, 1867. He was the son of James Ackworth Angus, a well-known Newcastle medical man. He was educated at the Newcastle Royal Grammar School, and afterwards became a student at the Durham University College of Medicine in Newcastle, taking the degrees of M.B., B.S. in 1890. Making up his mind early to take up surgery, he worked for the Primary Fellowship, and to this end took out courses of study at St. Bartholomew's Hospital and at Cambridge. In 1891 he obtained the diploma of M.R.C.S., L.R.C.P. (Lond.), in 1900, the degree of M.S. Durham, and in 1902, the diploma of F.R.C.S. (Eng.). A keen anatomist, he was for some time a demonstrator of anatomy at the College of Medicine, Newcastle. Beginning in 1891 as house-surgeon, he was continuously associated with the Royal Victoria Infirmary, Newcastle-on-Tyne, until his resignation in April last on account of ill health. In his earlier years he served as resident medical officer at the Newcastle Dispensary, and as resident house-surgeon at the Southport Infirmary and Dispensary. At the Newcastle Infirmary he was appointed an assistant surgeon in 1895, and became a full surgeon in 1905. On his resignation, in recognition of his services to the hospital he was elected an honorary consulting surgeon. At the Newcastle Infirmary he was a conscientious member of various committees, and devoted his time unsparingly to matters relating to the general management of the institution. He was honorary consulting surgeon to the Thomas Knight Memorial Hospital at Blyth. At the College of Medicine he was appointed lecturer in surgery in 1909, and on the resignation of Professor Rutherford Morrison, in 1921, was elected to the chair of surgery. When his illness caused him to resign the chair he was elected an emeritus professor of surgery. In 1910 he became a member of the Senate of Durham University, and from 1919 onwards was a member of the Council of the College of Medicine. An active member of the local medical societies, to which he was often to be seen, he had held the office of president of the Newcastle Clinical Society and of the Northumberland and Durham Medical Society. He was a loyal member of the Durham Medical Graduates' Association, and had filled the office of secretary and president.

At the Newcastle Meeting of the British Medical Association in 1921 Professor Angus was vice-president of the Section of Surgery.

Throughout the great war he did good work as a surgeon at the 1st Northern General Hospital, in Newcastle, and held the rank of lieutenant-colonel.

As a surgeon he was a striking example of a man who, having determined to specialize in surgery, and although, by constitution and temperament, not readily taking to academic study, by sheer determination and application not only obtained the highest diploma, but made himself a most competent practical surgeon. Faithful and devoted in his hospital duties, the institution which he served so long always had the first claim on his time. The hospital, its staff and students, formed the main interest of his life, and this not only in his work, but also in his recreations. His colleagues on the staff felt his loss keenly, for by all he was implicitly trusted, and to many of them he was a dear and intimate friend. He was a sound general surgeon, thorough and methodical in all his work. The surgery of the bones and joints interested him particularly, and of late years he exercised his skill in this direction as a surgeon to the Newcastle Pensions Hospital. By precept and example he was always striving to improve the treatment of fractures in the accident room and wards of the Infirmary.

In private work he held the confidence of the public and of a large circle of practitioners. The son of a doctor, he had strict views on ethical conduct, and was particular in his dealings with his professional brethren and patients. An expert in medico-legal work, as it relates to injuries under the Workmen's Compensation Act, his help was often sought in the courts, where his reputation for wide surgical knowledge and absolute fairness gave great weight to his testimony.

His surgical writings are characterized by the thoroughness and accuracy that marked all that he wrote. Most of his papers are to be found in the files of the



the local medical journals and in the Durham University College of Medicine Gazette. To the *British Medical Journal* he contributed, in 1912, "A method of treating damaged intestine without resection" and to the *Lancet*, in 1913, "A case of subcortical cerebral tumour—tuberculous—successfully removed."

His unaffected manliness made a strong appeal to successive generations of students. A good sportsman himself, he was a keen supporter and advocate of all manner of athletics. Jealous for the success of college teams he was always ready to encourage and quick to admonish if he thought the standard of achievement was falling. Himself a notable example of the *mens sana in corpore sano*, his persistent sympathy with every form of student activity earned for him a well-deserved popularity with undergraduates.

By the death of Mr Angus the profession in the North has lost a distinguished ornament and Newcastle one of its most loyal sons. Many of us have never known our college and hospital without his staid figure and we all long miss his kindly smile and cheerful greeting. Modest in the expression of his opinions he could be blunt and outspoken when the occasion demanded. Never failing in an old world courtesy, he was respected by all for his almost boyish candour and a downright straightforwardness and honesty. Free and open in his nature he was endowed at the same time with a gift of dignity that kept away familiarity. He had a wide circle of friends both in the profession and out of it. Though a hard worker he could always find time for play. In his youth he was a prominent Rugby footballer, and later employed his leisure in golf fishing and shooting. Indeed until his last illness overtook him he was remarkable for youthfulness or both body and mind.

Just a week before his death he was made the recipient of a presentation from his colleagues on the hospital staff on the occasion of his retirement. At a largely attended meeting of the House Committee of the Royal Victoria Infirmary two days after his death tribute was paid to his work for the hospital and to his character by Mr R C E Mortimer, the vice-chairman, and by Mr Martin chairman of the staff. Both speakers referred in feeling terms to the loss the hospital had sustained and spoke of his unswerving loyalty and transparent honesty.

A striking evidence of the high esteem in which he was held by the public and the profession was seen in the large attendance at a memorial service held on October 7th at

Jermond Parish Church. His remains were followed from his residence to the church by a large number of his colleagues of the college and hospital staffs and a gathering of students. The church was filled with a sympathetic congregation of mourners drawn from all ranks and classes, including doctors, nurses, and laymen. A number of his patients from the Pensions Hospital, in hospital blue, were present. After the service his remains were taken to Darlington for cremation.

It is on a note of affection for a loyal colleague and friend that we would bring this record of a well spent life to a close. The sympathy of all who knew him will go out to his widow and his two daughters.

A P



H B Auer  
(Dr. H. B. Auer, J. R. C. S. E., Newcastle  
Daily Journal)

Sir Thomas Oliver, consulting physician to the Newcastle Infirmary has been good enough to send the following tribute to the memory of Professor Angus.

The passing of this well known and much esteemed surgeon on October 4th, although not unexpected from the many months of indifferent health it was known he was experiencing owing to a progressive form of aneurism has cast a gloom over the medical profession of the city. Of a bright and happy disposition, fond of sport of which golf and fishing were in recent years most followed, Mr Angus manfully fought the malady which was silently undermining his physique and undoing his strength. During his long illness there occurred from time to time those remissions which are characteristic of the malady and which temporarily raised the hopes of his family and friends. In my friendly visits to him I never found him dispirited nor broken. His courage was an example and a discipline, and will remain a memory. He was one of my old pupils so I followed with considerable pleasure and pride his progress from the time he held his first professional appointment as resident medical officer to the Newcastle Dispensary. I often thought that the occupancy of this post was of great assistance to Angus in subsequent years when he had given himself solely to the practice of surgery. Angus was a popular teacher and a sound and reliable chairman. A good operator, his services were much in request and were appreciated alike by his professional brethren and by the friends and relatives of the one to whom he had had occasion to minister. He was perfectly straight in all his dealings with his fellow men he won and retained the respect of all with whom duty or a friendly gathering brought him into contact. To the widow and her two daughters the sincerest sympathy is extended.

#### WILLIAM SMITH PORTER M.D.

Consulting Physician, Sheffield Royal Infirmary and  
Sheffield Royal Hospital

We regret to record the death of Dr W S Porter at Sheffield on October 5th. His father was a practitioner in Sheffield, where he was born in 1855. After studying medicine at the Leeds Medical School King's College Hospital and Durham University he obtained the diploma M.R.C.S. Eng. in 1878 and the L.R.C.P. Lond. in 1879 graduated M.B. Durolm in the same year and proceeded M.D. as gold medalist in 1881. During his student days in London he acted as dispenser to Lord Lister.

Dr Porter commenced practice in Sheffield and was appointed to the staff of the Sheffield Dispensary now the Royal Hospital. In 1887 he became physician to the Sheffield Royal Infirmary, from which post he retired in 1920. He lectured in medicine and physiology in the Sheffield University College prior to the foundation of the University. He took an active part in the Sheffield Medical-Chirurgical Society, and when honorary secretary in 1890 he travelled with the late Dr Dinnern Burgess to Berlin to investigate and report on Koch's work on tuber-

closis. He was subsequently elected president of the society. In 1890 he was one of the first to draw attention to the prevalence of lead poisoning in Sheffield, this was subsequently traced to the water supply. During the war he served on the staff of the 3rd Northern General Hospital, with the rank of lieutenant-colonel.

When the British Medical Association met in Sheffield in 1908 he was invited to edit the Handbook of the meeting, which work he undertook with great enthusiasm and did extremely well. He wrote the general introduction dealing with the principal events of the city's history and also acted as chairman of the Local Publications Subcommittee. He was an authority on the archaeology of Sheffield and the surrounding district, and published many valuable papers on this subject. In 1926 he was president of the Sheffield Literary and Philosophical Society, and a lecture he delivered was published afterwards under the title of

"Notes from a Peakland parish." This was based on his research into the history of the village of Hope in Derbyshire where he had resided for many years. Dr Porter had been president of two other local societies, the Sheffield Microscopical Society and the Sheffield Press Club.

In his early days he was a keen Alpine climber, and until recently his favourite recreation was long walks over the Derbyshire hills and moors.

A COLLEAGUE writes: By the sudden death of Dr W S Porter the medical profession of Sheffield has lost one of its oldest and most respected members, his loss will be felt most keenly. By common consent he stood for and personified the highest ideals of our profession. A man of wide general culture, the soul of honour, a model of courtesy, and kindly consideration for patients and colleagues alike, he possessed in an eminent degree all those qualities of mind and heart which go to make an English gentleman. Those who can look back to the days when he was their chief, and later their colleague, at the Royal Infirmary, think of him with very great affection, and during the later years of his life, after his retirement from the active work of the hospital, his help and advice were often sought by his professional brethren, when difficulties had to be straightened out, or decisions made, with the certain knowledge that the help and advice he gave would be based upon wide experience, sound judgement, and, above all, a disinterested love of truth and right. We revere his memory, and his death recalls to the mind of the writer an epitaph on the tomb of a doctor of old time, whose high character was commemorated on the walls of the cathedral near which he lived, as one "qui Rem Medicum in hoc clauso et civitate adjacenti per quinquaginta annos probe et feliciter exercebat."

Dr NEWCOMB WHITELAW BOURNS died on October 2nd at Wincanton, after an illness of nine months. He was born at Crick-on-Shannon in 1852, and received his medical education at St Bartholomew's Hospital. He took the diploma of M.R.C.S. in 1879, that of L.R.C.P. Ed in 1880, and the degree of M.D. Brux. in the same year. At St Bartholomew's Hospital Bourns learnt from the senior anaesthetist, Mills, the administration in sequence of nitrous oxide, ether, and chloroform, which he adopted in hospital and private work with great success and with remarkable safety to patients. After settling in South Kensington he was appointed anaesthetist to the Cancer Hospital, and in 1887 became the first regular anaesthetist to Westminster Hospital. With these duties he combined private practice, and his competence and pleasing manner were highly appreciated by his many patients. On retiring he joined some long-standing friends in Somersetshire, where in the Blackmoor Vale he had scope for his hobbies, particularly gardening and shooting. An unfortunate motor accident laid him by for a year, but he recovered to enjoy life again.

## Universities and Colleges.

### UNIVERSITY OF LONDON MATRICULATION EXAMINATION

At the September matriculation examination of the University of London 48 passed in the first division and 413 in the second division, in addition 25 took the supplementary certificate in Latin.

### UNIVERSITY COLLEGE

A public lecture, with cinematograph illustrations on the static reflexes of Vagus—How animals get right way up and keep so—will be delivered by Professor Arthur J. Hall, M.D., on Tuesday next October 18th, at 5 p.m. The chair will be taken by Dr F. M. R. Walsh. The lecture will be given in the Physiology Theatre (entrance Gower Street). It is open to the public without fee or ticket.

### KING'S COLLEGE

Dr Duncan MacCallum Blair, lately lecturer on regional anatomy in the University of Glasgow, has been appointed Professor of Anatomy at King's College London in succession to Professor J. Barclay Smith, retired. Professor MacCallum Blair gave an inaugural lecture at King's College last week entitled "The brothers Hunter—A hindmark in anatomy." His main thesis was that the abiding lessons of Hunterian anatomy were twofold: first, there was a living anatomy—form was studied in an effort to elucidate function; secondly, John and William Hunter gained their knowledge of form and function by repeated direct observation and careful experiment in both human and comparative anatomy. They established anatomy as an

experimental science. When the Hunterian principles had dropped out of sight, then anatomy had suffered if it was to remain a living progressive science it must be pursued in the spirit of the brothers Hunter.

## Medical News.

DR DOROTHY C. LOGAN ("Miss Mona McLennan") succeeded in swimming across the Channel from Cap Gris-Nez to Folkestone during the night of October 10th, her time 13 hours 10 minutes, which establishes a "record" for women Channel swimmers. The shortest time in the case of men swimmers is 11 hours 5 minutes, which was taken by G. Michel in September, 1926. Dr Logan graduated M.B. B.S. Lond. in 1912, and proceeded M.D. in 1915. She has appointments at King's College Hospital, the London Dispensary Hospital, and the Mothers' Hospital at Charing Cross, and is a member of the British Medical Association.

THE annual meeting of Fellows and Members of the Royal College of Surgeons will be held at Lincoln's Inn Hall on Thursday, November 17th, at 3 p.m.

THE Chadwick Trustees announce that the second annual Malcolm Morris memorial lecture will be given by Dr W. G. Savage in the Hastings Hall of the British Medical Association's House, Tavistock Square, on October 17th at 5.15 p.m. Dr Savage has chosen food poisoning for his subject. On October 27th Mr W. Hiles, curator of the Chelsea Physic Garden, will give a Chadwick lecture on tropical vegetation and some of its uses to man. Major H. Baines will lecture twice in November on the history of housing, and early in December Professor Lelean will give a dissertation on the mind and health.

THE thirty-ninth Congress and Health Exhibition of the Royal Sanitary Institute will be held at Plymouth from July 16th to 21st, 1928, under the presidency of Viscount Astor. At the meeting of the Royal Sanitary Institute on Friday, October 28th, in the council chamber, Town Hall, Newcastle-on-Tyne, discussions will take place on the influence of overcrowding upon tuberculosis, with special reference to the new housing schemes, on the new Factories Bill, and on the smoke problem on Tyneside. The chair will be taken at 4.30 p.m. by Dr Charles Porter.

THE Lancashire and Cheshire Society for the Permanent Care of the Feeble Minded will hold its annual meeting at the Manchester Town Hall at 3.30 p.m. on Friday, October 21st. Persons interested are invited to attend.

THE West Riding Association of Graduates of the University of Edinburgh will hold its annual general meeting at the Great Northern Station Hotel, Leeds, on Friday, November 4th, at 6.30. It will be followed by the annual dinner, at which Professor Edwin Bramwell, M.D., professor of clinical medicine in the University of Edinburgh, will be the guest of the society. Further particulars can be obtained from the honorary secretary, 33, Manor Row, Bradford.

At a meeting of the Royal Microscopical Society, Hanover Square, on October 19th, at 8 p.m., Dr A. J. Grant will describe a simply made hot plate for flattening preparations. A paper on stereoscopic vision with the microscope will be read by Dr Oskar Heilmann, and Professor J. L. Vonwiller will discuss the application to living organisms of microscopy with incident light.

A MEETING of the Society of Superintendents of Tuberculosis Institutions will be held at 122, Harley Street, Friday, October 21st, at 3 p.m. Dr J. Graves, of Charing Cross, will speak on the surgical treatment of tubercle of the pleura, and Dr Konnon Dunham, Cincinnati, will read a paper on various types of tuberculous lesion, as seen in a dry plate, in the child and the adult, with illustrations.

THE course of lectures at the Royal Institution in November and December will commence on November 1st at 5.15 p.m. with the annual course of three Tyneside lectures which will be delivered by Sir John Herbert Parsons on the subject of Light and Sight. On November 22nd will be the first of four lectures by Sir William Bragg on the work in x-ray crystal analysis. The Christmas lectures for juveniles will be delivered by Professor L. N. da Costa on "Engines," commencing on December 23rd at 3 p.m.

THE St Thomas's Hospital old students' dinner will be held on Friday, October 28th, at 7.30 for 8 o'clock, at Thomas's House, Lambeth Palace Road. The club for students which was opened by the Archdeacon of Canterbury last April. The chair will be taken by Charles Billance, consulting surgeon to the hospital.

THE opening lecture of the series arranged by the Fellowship of Medicine on practical hints on medicine, surgery and the specialties will be given by Sir Humphry Rolleston at the Medical Society's House, 11, Chandos Street, Cavendish Square, W., on Monday, October 17th, at 5 o'clock. The following demonstrations have been arranged by the Fellowship: On October 19th, 4 p.m., Mr. Davenport, Central London Ophthalmic Hospital, October 20th, 3 p.m., Mr. Attwater, Mr. Answorth Davis, Mr. Coote, and Mr. Longhurst, All Saints Hospital, October 21st 3 p.m., Dr. Bernard Myers, Royal Waterloo Hospital, all these lectures and demonstrations are open to members of the medical profession, without fee. An all day course in diseases of children has been arranged from October 17th to 23rd by the staffs of the Laddington Green Hospital and the Victoria Hospital for Children. On October 17th a two weeks course in gynaecology will be given at the Chelsea Hospital for Women. From October 24th to November 5th a series of demonstrations on the diagnosis and treatment of diseases of the eye will be given by the staff of the Royal Eye Hospital, Southwark, at 3 p.m. A two months comprehensive course is in progress at the National Hospital, Queen Square, of which any part may be taken separately. The following courses will take place during November: two practitioners courses, Hampstead General Hospital, October 31st to November 12th, and London Temperance Hospital, November 21st to December 3rd, medicine, surgery, and gynaecology at the Royal Waterloo Hospital, November 14th to December 3rd, diseases of the chest at the Brompton Hospital, November 7th to 12th, neurology at the West End Hospital for Nervous Diseases, November 21st to December 17th, urology at St. Peter's Hospital, November 14th to 26th, proctology at St. Mark's Hospital, November 28th to December 3rd, and venereal diseases, October 31st to November 26th, at the London Lock Hospital. Syllabuses etc., may be had from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

STARTING on October 25th lectures and demonstrations will be given at the Royal Northern Hospital on Tuesdays after noons at 3.15 p.m. There will also be an intensive course in the afternoons during the week November 21st to 25th the subjects to be dealt with include: the epilepsies, tuberculosis of the genito-urinary tract, ringworm, recent work on the acute specific fevers, head injuries, failed forceps cases and acute ear infections. Both courses are free to medical practitioners. Details will appear in our Diary column each week and further information may be obtained from the dean, Royal Northern Hospital, Holloway, N.7.

THE HUNTSMAN Society of London will hold two general discussions before Christmas. The first, on the legal perils of the doctor, will take place on Monday, November 7th at 9 p.m., in Cinders Hall. The second, on baculæ, will follow a dinner at Simpson's Restaurant, Chesham, on December 5th.

THE Society of Public Analysts will hold a meeting on November 2nd at St. Mary's Hospital, Paddington, by invitation of the Pathological Institution there.

THE Liverpool Annual Medical Service will be held in Liverpool Cathedral on Sunday, October 16th at 3 p.m. The Bishop of Chester will be the preacher and the Lord Mayor and Lady Mayoress will attend the collection will be given to the Royal Medical Benevolent Fund. The service has been held each year since the beginning of the century (with the exception of one year during the war). Tickets for the part of the cathedral reserved for the profession may be obtained from the honorary secretary, Dr. John Owen, 13, Rodney Street, Liverpool.

THE council of the Royal Institute of Public Health, in co-operation with Alpine Sports Ltd., has arranged a tour for medical practitioners and their relatives to visit the principal Swiss stations for the treatment of tuberculosis during the Christmas holidays. The party will leave London on Sunday, December 18th and visit Zurich, Chur, Arosa, Davos, and St. Moritz. Christmas Day will be spent at Maloja and other places to be visited include Milan, Montagna and Leysin. It is estimated that the inclusive cost of the tour will be about £23 second class rail, or £28 first class. Further information may be obtained from the honorary secretaries, the Royal Institute of Public Health, 37, Russell Square, W.C.1.

THE Master's Day dinner of the Society of Apothecaries of London was held in the hall of the Society at Blackfriars on October 11th. The Master, Dr. R. Whiteside Statham, I.P., taking the chair. In proposing the first toast of the evening 'The Health of the Master' the Senior Warden, Lieut. Colonel C. T. Stumm, referred to the distinguished connexion of the Statham family with the Society, a point to which the Master subsequently returned. The toast of 'The Royal Colleges' was proposed by the Master in a humorous speech, Dr. Sidney Phillips, replying for the Royal College of Physicians referred to its present situation in space as the centre of a circle of continuous motion, while Mr. F. J. Steward

responded for the Royal College of Surgeons. The toast of 'The Guests' was in the capable hands of the Junior Warden, Dr. H. J. Hott. Sir James Berry, President of the Royal Society of Medicine, replied gently twice in his fellow guest Sir Henry Curtis Bennett, B.C., who, after satisfactorily establishing the claim of the legal profession to the appellation 'learned,' commented on the sympathy for humanity in distress which resulted from the work of both the medical and legal professions. Admiration was generally expressed at the great improvement in the appearance of the handsome hall of the society, as the result of recent cleaning and restoration measures.

THE Grand Council of the British Empire Cancer Campaign, at its meeting on October 10th, made a grant of £500 to St. Mark's Hospital, London, for the continuation of special investigations into cases of cancer. Reports were received on the progress of the organization of the United Lancashire and Cheshire appeal for funds further to develop cancer research at special research centres at Liverpool, Manchester and Chester. The High Commissioner for Australia (Sir Granville Pym, B.C.M.G.) was elected a member of the Grand Council as the representative of the University of Sydney Cancer Research Committee which is affiliated to the campaign. It was reported that the Governor of Queensland (Sir John Goodwin) had become a patron of the Cancer Campaign Committee being formed in that State, and that the Federal and State Governments had each given £500 to the fund.

DR. ARTHUR HASTINGS BOSTOCK has been chosen as the Mayor of Chichester for the ensuing year. He was a member of the City Council some years ago, but not at the present time, so that his choice to be mayor is all the greater compliment. He is surgeon to the Royal Sussex Hospital at Chichester for which a centenary extension scheme is in contemplation. Dr. Bostock has been once home physician to St. Bartholomew's Hospital served as a civil surgeon in South Africa in 1900 and was attached to the P.A.M.C. in France during the war. His father also a medical man was twice mayor (1884 and 1891).

PROFESSOR H. R. KENNEDY, B.C.M.G. who recently retired from the office of medical officer of health for St. Leonards, after thirty three years' service, was entertained on October 8th by the members and officers of the council and friends at a complimentary dinner and was presented with an illuminated address.

DR. W. PRINGLE MORGAN, who recently retired after forty one years of practice at Seaford has been presented at a public meeting with an inscribed silver salver. Mrs. Morgan received a tortoiseshell toilet set, Miss Morgan a gold wristlet watch, and a joint gift to Dr. and Mrs. Morgan consisted of a silver tea service. Dr. Morgan was president of the Sussex Branch of the British Medical Association in 1925.

THE programme of the congress known as the Journées Médicales d'Egypte which is to be held at Cairo from December 15th to 24th will include a variety of discussions on diseases in temperate and tropical countries. There will be sixteen sections—namely ophthalmology, medicine, surgery, bac teriology, urology, gastro-enterology, hygiene, pharmacology, parasitology, dermatology, oto-rhino-laryngology, pediatrics, obstetrics, neurology, tuberculosis and veterinary medicine. Papers will be read on alimentary troubles in infancy, heliotherapy in pulmonary tuberculosis, the treatment of diabetes, the blood groups in biology and medicine, liver abscess, the serology and prophylaxis of leprosy, malaria, trachoma and Malta fever. The languages of the congress will be English, French, German, Italian and Arabic. An international exhibition is being arranged and among the extensions is a visit to Luxor and Assuan. Further details of the congress and the special facilities available for travel may be obtained from the general secretary, Dr. Zeitoun, 32, Rue Gay Lussac, Paris 15.

THIS week's issue of the *Autocar* is greatly enlarged and contains a strand to stand guide to the cars now on view at the Olympia Motor Show. Advance details are given of all the new models for 1928 together with plans showing the position of every exhibit and a price classification of cars.

PROFESSOR T. SHENKIN of Aberdeen University has prepared a new edition of his book *Lost Mortems and Morbid Anatomy* which has been out of print for some time. It will be published during October by Messrs. Faber and Gwyer. The book has been enlarged to make it a textbook of special pathology as well as a manual for use in the post mortem room.

MESSRS. J. AND A. CHURCHILL announce for early publication a volume entitled *Recent Advances in Tropical Medicine*, by Sir Leonard Rogers.

A REVISED and enlarged edition of Dr. Dan McKenzie's *Diseases of the Throat, Nose and Ear* will shortly be published by Wm. Heinemann (Medical Books) Ltd.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

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EDITOR of the **BRITISH MEDICAL JOURNAL**, *Anthology Westcent, London*

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 4737 Dublin), and of the Scottish Office, 6, Drumshough Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh).

### QUERIES AND ANSWERS

#### MENSTRUAL "UNCLEANLINESS"

DR ROBERT HITCHISON (London, W) writes: I have recently discovered that there exists a belief, even amongst educated persons, that if meat is handled by a woman during her menstrual period decomposition of the meat is apt to result. I should be glad if any of your readers can inform me whether this superstition is at all widespread and, if so, how it arose.

\* \* Some kind of an explanation of how it arose may perhaps be found in Leviticus, chapter 15, verse 19 et seq. The belief that milk may be spoiled if a menstruating woman handles the udder of the cow or the teats is certainly very widespread.

#### "FILLETING"

"J E P" writes: The following is an extract from the church warden's and overseers' account for the year 1680: "Paid for five yd of filleting and for sugar, which was used about setting Peter Smith's leg, 0-0-6." "Filleting" I am told, is a kind of lace and was probably used for a bandage. I should be interested to learn for what purpose the sugar was used. Was it to "stiffen" the bandage?

\* \* This is probably a variant spelling of "filleting," which is synonymous with a bandage. The two small "f's" represent a capital letter. In the *New English Dictionary* we find under filleting:

"2 A woven material for binding, tape, a piece of the same, a band or bandage."

Examples of its use are:

1639 De Gray *Compt Hoisem* 79 'Taken a piece of Filleting and bind it above the Pastern joint

1658 A Fox *Wurtz Surg* II, xxviii 197 'I tied on the rousers two filletes'

There seems no connexion between filleting and lace on record. In any of the dictionaries consulted. It is perhaps suggestive that "fillet" was also, and more commonly, used to denote a bandage, and that one meaning of this word, which is still in technical use, is a thin narrow strip of any material. The *New English Dictionary* has the following:

Fillet b *Carpentry* A narrow strip of wood fastened upon any surface to serve as a support etc. or to strengthen an angle formed by two surfaces.

It is tempting to suppose that this word may have been used for a light splint and the following quotation from Paley's *Natural Theology* supports such an interpretation:

"We cannot hardly help [sic] comparing this (the ligation of the bones) with the binding up of a fracture where the fillet is almost always strapped across for the sake of giving firmness and strength to the bandage."

Sugar may have been used as a poultice. We have known it so used abroad since either alone or mixed with salt, and when mixed with soap it is a popular application for boils. Perhaps it acted as a hypertonic solution when wet. The eighteenth

century surgeon, William Cheselden, used white of egg to stiffen a bandage for fractures, etc., but we have no record of reading of sugar being so employed. As Cheselden states that he got the idea from a bonesetter, the method may have been in use for centuries, handed down as a trade secret, and 1680 was not so very remote from his time.

#### TREATMENT OF FLATULENCE

DR P H COURT (Norton Cuckney, Mansfield) writes in answer to "West Country" (October 1st, p 620), who asked for advice to the treatment of recurrent attacks of gastric and intestinal flatulence, to recommend "Laxol," a French preparation. The makers state that it consists of extracts of intestinal bacteria of bile, together with lactic ferments, and, as a result, Dr Court recommends that it should be given after meals, and that the dose should be from one to six tablets, according to the results obtained.

DR C C ELLIOTT (Leicester), in reply to the inquiry from "West Country," sends the following suggestions: (1) Diet, if oral sepsis is present, (2) give 2 grains of tannic acid with each meal, (3) if still unrelieved, give also colloidal iron of aluminium, two tablets before and two tablets after each meal.

#### INCOME TAX

##### Car Replacement Average Basis

"W L A" replaced his car in 1925 and, owing to the depreciation of the three years' average, has so far received a benefit of one third of that amount. As the assessment for 1927 is based on the 1925 figures he is losing the benefit of the remaining two thirds. The Inspector of Taxes offers to cancel the £69 deduction and allow percentage wear and tear on (apparently) the new car (Section 29, Finance Act, 1926, giving the election to compute the average does not apply).

\* \* In our view the deduction of the 1925 expenses, giving an effective relief of £69 only, can properly be treated as a grant of the "obsolescence" allowance. In that case there is no reason why the depreciation allowance on the new car for 1927 should be reduced. The 1926-27 claim is now out of date. The equities of the case are so strong that the Inland Revenue might reasonably be pressed to deal with it on this basis.

### LETTERS, NOTES, ETC.

#### INSURANCE AGAINST ACCIDENTS TO DEPUTIES

"SHEFFIELD" writes: On inquiry I find that a medical man who employs a locum tenens is liable for accidents (1) under the common law, (2) under the Workmen's Compensation Act. Under the latter Acts if a locum tenens meets with a fatal accident, when so employed the employer may have to pay as much as £300. This year I insured my locum tenens for three years. There were the usual forms to be filled up and a payment of 10s 9d, also a wages book had to be kept showing the wages paid to the locum tenens, and finally I had to fill up a form for the use of the Government Inspector giving particulars of wages paid, costs of board, lodging, etc., at the time of termination of contract, etc. I intend in future to enter this trouble out by only engaging a locum tenens who has insured himself already against all risks.

#### MEDICAL GOLF

THE autumn meeting of the Medical Golf Society was held at Rye on October 8th and 9th, by kind permission. The day was in beautiful order and every arrangement was made for the comfort of the competitors. The thanks of the society are certainly due to the secretary Major Reeves. The dinner and selling sweep were a great success. The results of the competitions were as follows:

Singles v *Dogey*—1st W H Lamplough 1 up 2nd H C 1 down G Dawson and G Hebert tied for third place 2 down 4  
*Fourstones v Dogey*—1st L Bromley and Surgeon Compt 2 down 2  
 1st Lveridg and M S Mason J C Lee and D L tied for second place 3 down  
 The *Canny Rival Cup* was won by J D Gray with the score of 71  
 T A Torrance J W Harrison and M S Mason tied at 73 for place. Won on replay by T A Torrance.

#### BAG FOUND

A BLACK Gladstone bag was picked up and handed to the Rye on August 22nd on the Maidstone Road, Last Station, near the stone. It is 15 in by 9 in, has become almost worn from use and contains various surgical appliances, bandages, etc. Communications should be sent to the Kent County Council, Wrens Cross, Maidstone.

#### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical schools, and of vacant resident and other appointments in hospitals will be found at pages 39, 40, 41, 44 and 45 of our columns, and advertisements as to partnerships and locum tenencies at pages 42 and 43. A short summary of vacant posts notified in the columns appears in the *Supplement* at page 101.

## The Harveian Oration

OR

## GILBERT, BACON, AND HARVEY

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS  
OF LONDON, OCTOBER 18TH, 1927,

BY

SIR WILLIAM HALL-WHITE, K B E, M D LOND,  
M D DUB LI D Ed

CONSULTING PHYSICIAN TO GUY'S HOSPITAL

THERE are two reasons why Harvey should be placed in the select class of really great men. One is, because he discovered that the blood circulates, being compelled to do so by the contraction of the heart, the other—even more powerful—is because he was among the earlier scientists to show the value of properly conducted experiment.

Every man's mind is compounded of what is born within him, modified by impressions received from without. Therefore it is of interest to see who were the men around Harvey who might have influenced him. At Padua there were his teachers, many Harveian Orators have dealt with this part of his life, but I propose to see if any of his own countrymen perhaps without his knowledge, can have helped to mould such of his thoughts as led to his great discovery. I shall make many quotations, but this, I trust, you will pardon—first, because in my argument, it is necessary that the premisses should be precise, secondly, because the language of Bacon is like music to the ear.

Inasmuch as Harvey and Francis Bacon—commonly called Lord Bacon, which is wrong (his titles were Baron Verulam of Verulam and Viscount St Alban)—were contemporaries, we must consider whether it is likely that he swayed Harvey.

## "The Advancement of Learning"

Harvey published his discovery in 1628, and tells us that he had, for many years and more, in his lectures, confirmed "these views by multiplied demonstrations in your presence, illustrated them by arguments and freed them from the objections of the most learned and shrewd anatomists." His first mention of it is in his notebook dated 1616. *The Two Books of Francis Bacon of the Proficiency and Advancement of Learning Divine and Humane*, were first published in 1605 when Harvey was 27 years old twenty-three years before the publication of his discovery and several years before he made it. *The Advancement of Learning*, the first great book in English prose of secular interest" (Church), had many readers for three editions quickly appeared. When his *Instauratio* was issued Bacon sent the King a copy, with a letter saying he thinks it will find many readers "because I hear my former book of the *Advancement of Learning* is well tasted in the Universities here, and the English Colleges abroad and this is the same argument sunk deeper." The *Advancement*, which we thus see was widely read in the years immediately following its publication implores those who wish to delve into the secrets of nature to discountenance mere authority and not blindly to believe what they are told, but to seek knowledge for themselves by observation and experiment. It teaches how properly to use induction, it points out the hopelessness of the false methods of reasoning commonly used. It has much in it about medicine. It is a noble work devoted to the lofty purpose of increasing knowledge. Its language is so beautiful and dignified that it may be placed second to that of Shakespeare.

The first book contains an oblation to James I, because Bacon longed to persuade the King to be interested in learning. In this he failed as he had with Elizabeth.

Passing to the second book I will by direct quotation,\*

\* All quotation unless otherwise indicated are from *The Works of Francis Bacon*, collected and edited by Spedding, Ellis, and Heath (fourteen volumes London 1901). Reference to volume and page is given at the end of these quotations.

try to prove that the *Advancement of Learning*, so immediately popular that Harvey must have known of it, would have appealed to him. Much of the argument is directed to show that a reform of method in the pursuit of knowledge is necessary. Thus

For as things are now if an untruth in nature be once on foot what by reason of the neglect of examination and countenance of antiquity and what by reason of the use of the opinion in similitudes and ornaments of speech it is never called down" (Vol 3 p 331)

"For the handling of final causes mixed with the rest in physical enquiries hath intercepted the severe and diligent inquiry of all real and physical causes to the great arrest and prejudice of further discovery and have brought this to pass that the search for Physical Causes hath been neglected and passed to silence" (Vol 3 pp 337 338)

It being the nature of the mind of man (to the extreme prejudice of knowledge) to delight in the spacious liberty of generalities and not in the enclosures of particularity (Vol 3 p 359)

Where there is much controversy there is at many times little enquiry (Vol 3 p 403)

They listened to their theories and dogmatical and were unperceptive and scornful toward particulars (Vol 3 p 337)

Next listen to a few quotations illustrating Bacon's plea for the experimental method

I find some collections made but commonly with a rejection of experiments familiar and vulgar. For it is esteemed a kind of dishonour unto learning to descend to inquiry upon matters mechanical [for as we should say nowadays experimental] (Vol 3 p 332)

"All true and fruitful Natural Philosophy hath a double ascent or ladder ascending and descending according from experiments to the invention of causes and descending from causes to the invention of new experiments" (Vol 3 pp 351 352)

"Those experiments he not esteemed which have an immediate and present use but those principally which are of most universal consequence for instruction or other experiments (Vol 3 p 352). The use of History Mechanical [that is experimental] is of all others the most radical and fundamental towards natural philosophy (Vol 3 p 332)

Then there is a fine passage emphasizing the value of experiment, too long to quote in full, it begins

But here was their chief error they charged the deceit upon the senses which in my judgement are very sufficient to certify and report truth though not always immediately yet by comparison by the help of instrument (Vol 3 pp 338 339)

Nowadays it is recognized that those who spend their lives investigating nature should be paid. Bacon anticipated us, saying

There will hardly be any man proficience in the disclosure of Nature except there be some allowance for expenses about experiments and therefore as secretaries and spies of princes and states bring in bills for intelligence, so you must allow the spies and intelligencers of Nature to bring in their bills or else you shall be ill advertised (Vol 3 p 325)

The *Advancement* tells us that medicine "is a most noble art" its object being "to tune this curious harp of man's body and reduce it to harmony." The author pities the physician, for he is judged by the event, "which is ever but as it is taken for who can tell if a patient die or recover whether it be art or accident?" And therefore many times the impostor is prized and the man of virtue taxed. Nay we see the weakness and credulity of man is such, as they will often prefer a mountebank or a witch before a learned physician" (Vol 3 p 371). Consequently physicians say to themselves, "If it befall to me as befallth to the fools why should I labour to be more wise?" (Vol 3, p 372)

Bacon criticizes the doctors of the day quite fairly, he finds that comparative anatomy, physiology, and morbid anatomy are not studied as they should be, that no use is made of vivisection and that if "a man look into their precepts and ministrations he shall find them but uncertainties and every day devices without any settled providence or project" (Vol 3, p 377). His attitude to medicine is shown in the sentence, "There is one thing still remaining which is of more consequence than all the rest—namely a true and active Natural Philosophy for the science of Medicine to be built upon" (Vol 4, p 336), and his attitude to science may be summed up in two sentences. "And this is the very thing which I am prepping and labouring at with all my might,—to make



the mind of man by help of wit, a match for the nature of things when he uses some direction and order in experimenting, it is as if he were led by the hand" (Vol 4, pp 412, 413)

Surely, after these extracts, we must believe that Bacon's own physician, Harvey, was influenced by his patient's book, which was widely known, was published some years before Harvey began his researches, contains much about medicine, and preaches reform of method and the use of experiment, in both of which Harvey's strength lay. I do not like to think that he was so ill educated as not to have followed other learned people in reading the *Advancement* by the author of the already popular *Essays*, for Bacon's contemporary, Ben Jonson, in a review of the great English writers, says of him "he who hath filled up all numbers, and performed that, in our tongue may be compared or preferred either to insolent Greece or to mighty Rome," and in these days we have Abbott speaking of Bacon's unique mastery of the English language. If we remember that these words are said of a man writing at the time of Shakespeare and the Authorized Version, then we get a measure of Bacon's greatness as a writer.

Another work of Bacon's that must have been known to Harvey before he made his discovery is *De Sapientia Veterum*, issued in 1609, it was much appreciated, and was soon reprinted and translated. Its general trend is welcome to a man well disposed towards experiment, for the proper investigation of Nature is recommended in it.

### The "Novum Organum"

In 1620 a book was published which began thus "The Great Instauration Prooemium. Francis of Verulam reasoned thus with himself and judged it to be for the interest of the present and future generations that they should be made acquainted with his thoughts" (Vol 4, p 7). He tells us that the human intellect makes its own difficulties and hence ignorance and mischiefs innumerable. Therefore the author is "to commence a total reconstruction of sciences, arts and all human knowledge" (Vol 4, p 8). Lest he should die before the work is finished, it was to be published in six parts. The first, which appeared after the second, was *De Inuentis*. The second, issued in 1620, was the *Novum Organum*, not quite completed. Only fragments of some of the other parts were ever written, Bacon calculated that his work when finished would be sixfold as voluminous as Pliny. If this estimate is correct we only have one-twentieth of the whole.

The *Novum Organum* has all the beauties of the *Advancement*, it is a masterpiece of condensed writing, without a word too many and each word precisely right. As with the *Advancement*, I will give extracts which will show that it also is just such a book as would help to form a mind like Harvey's. In the "Plan" introducing us to the *Novum Organum* we find this:

The subtlety of experiments is far greater than that of the sense itself. I contrive that the office of the sense shall be only to judge of the experiment and that the experiment shall judge of the thing" (Vol 4 p 26)

Those however who aspire not to guess and divine, but to discover and know who propose not to devise and mimic fabulous worlds of their own, but to examine and dissect the nature of this very world itself must go to facts themselves for everything" (Vol 4, p 28)

In the preface is this eloquent exhortation:

But if any man there be who aspires to penetrate further to overcome not an adversary in argument but nature in action, to seek, not petty and probable conjectures but certain and demonstrable knowledge with me that pressing by the outer courts of nature which numbers have trodden, we may find a way at length into her inner chambers" (Vol 4 p 42)

In the *Novum Organum* itself we are warned not to pin our faith to the syllogism, for the premisses being only words often there is no firmness in the superstructure—our only hope lies in a true induction. We are reminded that we can only progress by the study of particulars. We are told that "it is the peculiar and perpetual error of the human intellect to be more moved and excited by affirmatives than negatives, whereas it ought properly to hold itself indifferently disposed towards both alike" (Vol 4,

p 56) "What a man had rather were true he readily believes" (Vol 4, p 57) We suffer from "the mischievous authorities of systems, which are founded either on common notions or on a few experiments or on superstition" (Vol 4, p 66) Then follows advice to physicians to renounce all varieties of false reasoning for "the entrance into the kingdom of man, founded on the sciences, being not much other than the entrance into the kingdom of heaven, whereto none may enter except as a little child" (Vol 4, p 69) "The manner of making experiments which men now is blind and stupid" (Vol 4, p 70) "Men are inclined to turn aside from their experiments for some practical application of them, like Atalanta, they go aside to pick up the golden apple and let victory escape them they should seek for experiments of light, not for experiments of fruit" (Vol 4, p 71)

A few pages further on we find this beautiful passage:

"And an astonishing thing it is to one who rightly considers the matter, that no mortal should have seriously applied himself to the opening and laying out of a road for the human understanding direct from the sense, by a course of experiment orderly conducted and well built up, but that all has been left either to the rule of tradition, or the whirl and eddy of argument, or the fluctuation and mazes of chance and of vague and ill digested experience" (Vol 4, p 80)

"No one has yet been found so firm of mind and purpose as resolutely to compel himself to sweep away all theories and common notions and to apply the understanding thus made free and even, to a fresh examination of particulars" (Vol 4 p 81)

"A greater abundance of experiments is to be sought for and procured" (Vol 4, p 95)

Then to magnify the dignity of investigation Bacon quotes the proverb of Solomon, "The glory of God is to conceal a thing the glory of the king is to search it out" (Proverbs, 2)

Bound up with the first edition of the *Novum Organum* Bacon published a *Description of a Natural and Experimental History such as may serve for the foundation of a True Philosophy*. The introduction contains some of his most magnificent writing. Read this:

"Meanwhile what I have often said I must here emphatically repeat that if all the wits of all the ages had met or should hereafter meet together, if the whole human race had applied or shall hereafter apply themselves to Philosophy and the whole earth had been or shall be nothing but academies and colleges and schools of learned men, still without a natural and experimental history such as I am going to prescribe, no progress worthy of the human race could have been made or can be made in philosophy and the sciences. Whereas, on the other hand, if such a history be once provided and well set forth, and if there be added to it such auxiliary and light giving experiments as in the very course of interpretation will present themselves, as in this way, and in this way only, can the foundation of a true and active philosophy be established and then will men wake as from a deep sleep, and at once perceive what a difference there is between the dogmas and fictions of the old and a true and active philosophy and what it is in question of nature to consult nature herself" (Vol 4, p 252)

One more quotation from the same source I cannot resist "Away with antiquities and citations or the monies of authors" (Vol 4, p 254)

### Was Harvey indebted to the "Novum Organum"?

But, some may say, all this is beside the mark, for before this book appeared in 1620, Harvey, for at least four years, had been teaching that the blood circulates. Thus in a leading article in the *BRITISH MEDICAL JOURNAL* we find "a comparison of dates shows that Harvey could not owe anything to the *Novum Organum*". On the face of it this appears a fair inference, but it is probably incorrect because of the following considerations. The most trustworthy account we have of Bacon is that by his chaplain Rawle, who says:

"His book of the *Instauratio Magna* was the product of many years labour and travel. I myself have seen at least twelve copies of the *Instauratio* revised year by year, and another, and every year altered and amended in the first thereof, till at last it came to that model in which it was committed to the press. He would often ask if the meaning was expressed plainly enough."

Further, many tracts, which are trials for the future, were found among Bacon's papers after his death. Some were written as early as 1603 1605. I need not say

them as they can all be found in *The Works of Francis Bacon*. A quotation from the *Copitations* will suffice.

And it were shame that men should have examined so care-fully the tinklings of their own voice and should yet be so ignorant of the voice of nature. (Vol 5 p 425)

We see, therefore, that for many years before the publication of the *Novum Organum*, and before Harvey began his experiments, Bacon's mind was much occupied with it, and that he worked hard at it, making numerous trials. He certainly talked about it with his chaplain, consequently it is likely that he talked about it with his physician, of whom as we shall see presently, he probably saw much, for there was no secret about Bacon's philosophical work, he invited criticism from several friends, many had already read the *Idemneement* published earlier. He often spoke of his desire to study, and it was well known how he busied himself in his leisure. We can hardly err if we conclude that not only the thoughts expressed in the *Idemneement*, which we have seen Harvey had ample opportunity of reading before he began his experiments but also those which summered in Bacon's brain between the publication of this work and that of the *Novum Organum*, in which they were embodied were known to and affected Harvey, to whom they would have been particularly congenial, for he became one of the greatest of discoverers because he experimented and disregarded mere authority.

#### *Effect on Science of Bacon's Teaching*

If I have carried my readers with me so far, they are with me in thinking that Bacon's teaching touched the mind of Harvey. Yet it will be an advantage to see if this opinion is strengthened by what others have thought of the position of Bacon's writings in the history of science. Aristotle and Leonardo da Vinci had experimented, and several others such as Albert the Great, Vanini, Campanella, and Pamon Lull, as may be seen in Professor Peers's recent translation of *Blanquerna*,<sup>4</sup> saw that mere authority was allowed to override reason. Roger Bacon had laid down precepts that might have guided men aright but so abstract and dogmatic was the ordinary teaching up to the time of Francis Bacon that these examples bore little fruit being stifled under the mass of theological metaphysical and commentatorial literature with which the Middle Ages abounded. It was Francis Bacon who caused this deadening fog which bemused all originality to roll back when he directed men to discard authority and to seek out nature by proper observation, proper reasoning and proper experiment. People of his own time saw this. Rawley says "if there was a beam of knowledge derived from God upon any man in these modern times, it was upon him." Peter Heylin who was a young man when the *Great Instauration* was first published, tells us

The Lord Chancellor Bacon was a man of most strong Brain and a chymical Head. Pity it was he was not entertained with some liberal alary ab traeted from all Affairs both of Court and Jurisdiction and furnished with sufficiency both of Means and Help for the going on of his Design. Which had it been he might have given us such a body of Natural Philosophy and made it so subservient to the public good that neither Aristotle nor Theophrastus amongst the ancients nor Paracelsus or the rest of our latter chymists would have been considerable.<sup>5</sup>

#### *Sprat writes*

I shall only mention one Great Man who had the true Imagination of the whole extent of this Enterprize as it is now set on foot and that is the Lord Bacon. His Genius was searching and inimitable.<sup>6</sup>

The enterprize was the foundation of the Royal Society and it is generally allowed that it was Bacon's *New Atlantis* and the thoughts inspired in others by him which led to the foundation not only of the Royal Society but also of several foreign scientific associations. Metaphysical Fowler in his poem to this Society writes thus

Bacon like Moses led us forth at last  
The barren Wilderness he past  
Did on the very Border stand  
Of the blest promisd Land  
And from the Mountain's top of his exalted V'it  
Saw it himself and shewed us it

So much for the past opinion of Bacon's influence. During three centuries it has remained unchanged. We

find Leibnitz' remarking "We do well to think highly of Verulam for his hard savings have a deep meaning in them." Whewell mentions no other author in his preface and begins his book with a quotation from Bacon, and Macaulay writes that Bacon "moved the intellects which moved the world." Space allows me to quote only two modern writers. Professor Fowler<sup>10</sup> tells us "What Bacon says of Plato is preeminently true of himself, he was 'a man of a sublime genius who took a view of everything as from a high roel'." He popularized and dignified experimentation and the study of nature. "It would hardly, I think be an exaggeration to compare Bacon in the intellectual sphere with Luther in the sphere of religion." Church<sup>11</sup> writes that Bacon "had the brightest, richest largest mind but one, in the age which had seen Shakesperro and his fellows." Later on he says, "in temper, in honesty in labour in humility, in reverence he was the most perfect example that the world had yet seen of the student of nature, the enthusiast for knowledge." In the introduction to Fowler's edition of the *Novum Organum* will be found a long list of testimonies by many writers to the extraordinary power that Bacon's teaching has had upon scientific thought and production. The chief claim that Bacon made for himself is quaintly expressed in the letter he wrote to Dr Playfer "I have only taken upon me to ring a bell to call other wits together (which is the meanest office), it cannot but be consonant to my desire, to have the bell heard as far as can be." Truly its peal has been heard all over the world and has reverberated for three centuries, and surely these references suggest that Harvey must have heard its call.

#### *Bacon's Personality*

Having shown that Bacon's teaching was available to Harvey, as well known while he was a young man, and would be attractive to him, let us see whether the last is true also of Bacon's personality. Nobody is more likely to know him well than his secretary Meautys and his chaplain Rawley. Both were devoted to him and the first says his sole ambition is to grow up only under his Lordship and, come what come may to serve him with his life and fortune, laying down all he has at his feet.<sup>12</sup> The second shows us that Bacon must have been a delightful conversational companion.

His meals were reflections of the ear as well as of the stomach. "wherein a man might be refreshed in his mind and understanding no less than in his body." In which conversation he was no dashing man as some men are but ever a countenancer and fosterer of another man's parts. Neither was he one that would appropriate the speech wholly to himself or delight to critic others but leave a liberty to the conversators to take their turn.<sup>13</sup>

Tobias Mathew son of the Archbishop of York says of Bacon "It is not his greatness I admire but his virtue. It is not the favours I have received of him that have enthralled and encharmed my heart but his whole life and character which are such that if he were of an inferior condition, I could not honour him the less and if he were my enemy I should not the less love and endeavour to serve him."<sup>14</sup>

Ben Jonson tells lovingly of his virtue and thus of his speech

No man ever spake more neatly more pressly more weightily or suffered less emptiness less idleness in what he uttered. No man had their affections more in his power. The fear of every man that heard him was lest he should make an end.<sup>15</sup>

His secretary and apothecary, Boener, hoped that a statue of him would be put up not because of his learning, but on account of his being "a memorable example to all of virtue kindness peacefulness and patience."<sup>16</sup>

We know a man by his friends. Bacon drew them from everywhere. There were many abroad and in this country—Essex Buckingham, Lancelot Andrewes, Selden, Bodley, Hobbes, Jonson, Mathew and George Herbert the poet, who helped in the translation of the *Idemneement* into Latin and who wrote verses in praise of Bacon who in his turn dedicated his versification of the Psalms to Herbert saying he was his affectionate friend. Bacon had few enemies, the chief was Coke, his professional

antagonist. He was popular, as we learn from the fact that when he took his seat as Lord Keeper, besides the servants, the Judges, and the Inns of Court, he was accompanied by most of the nobility, with other gallants to the number of two hundred horse.

All this shows him to have been a lovable, charming person with whom everybody would enjoy talking, and it is incredible that his physician did not converse with him and that he was ignorant of his teaching.

#### Bacon's Health

On the whole, Bacon's health was good, nevertheless he was a chronic dyspeptic, giving considerable thought to his symptoms and indulging abundantly in remedies. He has left us very particular accounts of how he took these and how they acted.<sup>18</sup>

In 1617 he had an illness thought to be gout, but it only lasted a few days. A contemporary letter<sup>19</sup> says, "he hath so tender a constitution both of body and mind that he will hardly be able to undergo the burden of so much business." This surmise was incorrect, for during the next four years Bacon worked very hard. Two years later he was away from work for a time, probably owing to an attack of stone, "which held him in great pain two or three days."<sup>20</sup> That he was very fond of taking medicine is shown by these and other references, and by a letter written in 1623, which is of interest as having to do with the separation of the "Company of Potteryers" from that of Glocers, in it he says "You may perhaps think me partial to Potteryers, that have been ever puddering in physick all my life."<sup>21</sup>

Bacon depended on his physicians. When he was let out of the Tower he was not allowed to come within the verge of the Court, and thus he could not live in London. In some moods he thought the Tower preferable to such liberty, for he wrote in his petition to the House of Lords, "tho' I could have company, physicians," and he said the same in two letters to Buckingham, to whom, in a letter two years later, he again speaks of his physicians, whom he calls strange creatures. It is difficult to conceive a patient more likely to consult his physician frequently than one who was a chronic introspective dyspeptic, rejoiced in purgatives, had gout and a stone, especially as we have just seen that this patient was one with whom the physician would have delighted to talk, and many statements in *Sylva Sylvarum* suggest that Bacon often discoursed with doctors.

Further, apart from the relationship of patient and physician, Bacon and Harvey must have seen much of each other, for London was no bigger than a large provincial town of to-day, both moved among the Court and nobility, and both were in the small class of the well educated.

#### Harvey's Mind similar to Bacon's

I have now finished what may be called the Baconian side of my argument. The Harveyan side will be much shorter. The philosopher said observe and experiment properly, deduce scientifically, without attention to mere authority, no one could have done this more rigorously than the physician, whose mind was in this matter the counterpart of that of the philosopher, for Harvey said to Ent, "I have oftentimes wondered and even laughed at those who have fancied that everything had been so consummately and absolutely investigated by an Aristotle or a Galen or some other mighty name that nothing could by any possibility be added to their knowledge."—In the introduction to his work on the *Generation of Animals* he writes "Without the due admonition of the senses without frequent observation and reiterated experiment, our mind goes astray after phantoms and appearances." Further on "The method of investigating truth commonly pursued at this time therefore is to be held erroneous and almost foolish, in which so many inquire what others have said, and omit to ask whether the things themselves be actually so or not." Or, to take a passage from the introduction to *De Motu* "It will be proper to look more narrowly into the matter, to contemplate the motion of the heart and arteries, not only in man, but in all animals that have hearts, and further, by

frequent appeals to vivisection, and constant ocular inspection, to investigate and endeavour to find out truth."

Really, except that the language has not the mighty grandeur of that of Bacon, it might be his writing. So do the minds of Bacon and Harvey jump together that we are constrained to believe that the elder influenced the younger, particularly when we recollect the other reasons already given for this belief.

#### Value of Evidence that Harvey was not Influenced by Bacon

The view here put forward of the relationship between them is not that held by many writers, several of whom speak of Harvey's contempt for Bacon, or state that he can owe nothing to him. Those who maintain the latter have forgotten the *Advancement* and the history of the *Noëum Organum*. All who profess the first base it on the following Aubrey<sup>22</sup> tells us, "He [Harvey] had been physician to the Lord Chancellor Bacon, whom he esteemed much for his wit and style, but would not allow him to be a great philosopher. 'He writes philosophy like a Lord Chancellor,' said he to me, speaking in decision, 'I have cured him.'"

Assuredly this anecdote does not justify the belief that Harvey was not affected by Bacon. Aubrey tells us that it was not until 1651 that he became acquainted with Harvey, who was then 73 years old. Aubrey's statement is probably muddled, for, as Bacon had been dead twenty-five years, Harvey most likely said "he wrote," and for the same reason should have said "I cured him," and Aubrey does not make it clear whether Bacon was cured of a bodily ailment or of writing philosophy like a Lord Chancellor. Harvey, who according to Aubrey was very choleric and was certainly aged, was speaking of a patient dead twenty-five years before, and, being choleric, may easily, for mere argument's sake, have taken the other side to Aubrey in not allowing Bacon to be a great philosopher, and we must also remember that, even if this were Harvey's deliberate opinion, others have thought so too, but have, nevertheless, considered that Bacon did more than anyone to point the way to the proper mode of scientific research. We only have Aubrey's statement that Harvey spoke in decision of Bacon's way of writing, but, even if he did, we can only have meant that Bacon wrote in a stately, dignified, perhaps rather pontifical way, if he meant anything else he was very foolish, for, as already shown, it was allowed when Bacon was alive, and has been ever since, that few can match his prose. Certainly there is nothing in this story to suggest that Bacon did not influence Harvey, indeed, it is the other way, for he must have read the philosopher before he could give an opinion as to how he wrote, and we are told he esteemed his wisdom and style.

But quite apart from this argument there is another reason why we should not pay any attention to this anecdote—namely, that Aubrey is quite unreliable. He did not begin his *Lives* till 1680, when he put each name in a book then under it, when anything came into his head, he wrote hastily without reference to notes his recollections of the person, this was usually done in the morning, often in the midst of sickness following a night's drunk and debauch, and rarely revised. Harvey had been dead twenty-three years when this oft-quoted tale of that he said about Bacon, who had been dead fifty years, was jotted down in this manner by a gossiping drunkard who owns that he wrote "tumultuously." Look at it as we may, it is worthless as evidence as to what say Bacon had over Harvey. Indeed, Andrew Clark, Aubrey's editor, says "Aubrey's *Lives* supply an inviting field for comment, correction, and addition. But, even so treated, they will never be a biographical dictionary. Their value lies not in statement of biographical or other facts."

It has been implied that, because Harvey is so little mentioned by Bacon, we may infer that the two were far apart in record. In a notebook of Bacon's under the date of June 26th, 1608, he says he must ask for opinions about his scientific work from the physicians Poe, Padder, Hamond, but there is nothing to show that he ever did this. He would hardly have asked Harvey, for he was then only 30 years old, and probably was, at that time, un-  
known.

to Bacon: "I have looked through everything he wrote and it is clear that he was interested chiefly in physical science especially astronomy, but hardly at all in physiology. Many phrases having a physiological bearing are to be found in his writings, but they are all curious isolated statements if an explanation of them is given it is not Bacon—he merely reproduces the popular explanation. He collected hundreds of the statements for future investigation. Most we now know to be fantastic nonsense."

*De Motu* was published in 1628. Bacon died in 1626. Therefore he could not have alluded to the book. Harvey in his Lumleian Lectures began to teach his new doctrines not earlier than 1616 but there is no evidence that Bacon was ever present at these lectures. Indeed, from 1616 to 1620 he was at the very busiest part of his career, and he certainly had no time then to attend lectures nor to pay much attention to rumours which might come to him saying that a great discovery had been made especially as Harvey's experiments were then unconfirmed; indeed, if Bacon had asked doctors he would probably have been told that the new doctrines were nonsensical for we know that many of the medical profession did not think Harvey's views worthy of discussion. So far from it being surprising that there is nothing in the *Novum Organum* published in 1620, about Harvey's discovery which he began to teach, but only orally some four years before it would have been astonishing if there had been anything.

In *The History of Life and Death*, published in 1623, Bacon says, "the blood is that which irrigates the juices and membranes" and "the blood of the veins supplies the blood of the arteries." "It might be thought that these sentences show that he knew something of the circulation of the blood, but my strong opinion judging by the context is that he still knew nothing about it. Nor is this to be wondered at, for Bacon after his release from the Tower in 1621 lived a lonely life away from London and so would not hear of Harvey's lectures. To sum up the neglect of Bacon to mention Harvey is easily explained, and is of no value as indicating that the two were antipathetic."

It may be said that I have brought forward no direct proof of any influence of Bacon on Harvey. All my evidence is circumstantial. But two things are to be remembered: first, circumstantial evidence is often much stronger than direct; secondly, how little we know of the daily doings of people who lived three hundred years ago. Over and over again there is a reference in a letter to something Bacon had on hand but of the outcome of which we are completely ignorant. Speeding writes:

It is singular that of two men so remarkable in their several ways as Bacon and Coke whose fortunes objects tastes ideas and dispositions crossed each other at so many points and whose business must have brought them so continually into company and so frequently into conflict the personal relations should be so little known. No anecdote have been preserved by the news writers of the day which enable us to form a clear idea of their behaviour to each other when they met—the style of their conversation or the temper of their courtesies.

This being so it is not strange that we have no direct proof of Bacon's influence upon Harvey.

#### Gilbert's Influence

Everything goes to show that Harvey was regarded with affection by his own profession. He speaks of his "very dear friend Dr Argent" we know of Ent's tenderness for and admiration of him, of Prujean's esteem for him. His generosity to this College tells us that the Fellows of it were his friends whom he much loved but there is no indication that among these medical friends there was anyone of sufficient originality to help to mould Harvey's thoughts—with a single exception namely William Gilbert one of the great original geniuses among the famous Elizabethans.

He was born in 1540 at Colchester went to Cambridge took his M.D. there became a Fellow of St John's travelled abroad settled to practise in London in 1573, ultimately living in Wingfield House Peters Hill. Sylvanus Thompson's statement that his relations with English physicians were intimate and extensive must be correct for Gilbert held several offices at this College,

becoming President in 1600. He was well known outside his profession for he attended many celebrated people and was physician to Queen Elizabeth, the story that she left him a legacy shows her liking for him. Gilbert and Dr Lancelot Browne, in 1584, together signed a medical certificate which is preserved in the Records Office, in 1588 both were selected to advise the Privy Council about the health of the navy and Browne held various offices at the College of Physicians so in one way and another, he must have known Gilbert intimately. Lancelot Browne's daughter married Harvey in 1604. Gilbert died in 1605. Considering the close acquaintanceship between Gilbert and Browne Harvey must have heard much of the first and quite likely he met him when he was courting anyhow it appears that he knew a good deal about him, for Sylvanus Thompson tells us that according to Harvey, Gilbert expended no lesser sum than five thousand pounds on his researches. Therefore we may conclude that for both professional and family reasons Harvey would be inclined to pay attention to anything Gilbert said.

Gilbert's outstanding position is due to this. He broke away from tradition, he challenged authority, he went to Nature herself, investigating her by experiment, and he employed proper inductive reasoning. The first words in the preface of his famous book on the magnet are:

In the discovery of secret things and in the investigation of hidden causes stronger reasons are obtained from sure experiments and demonstrated arguments than from probable conjectures and the opinions of philosophical speculators of the common sort. But if any one be fit not to agree with the opinions here expressed and not to accept certain of my paradoxes still let them note the great multitude of experiments and discoveries—those it is chiefly that cause all philosophy to flourish and we have dug them up and demonstrated them with much pain and sleepless nights and great money expense."

This book made Gilbert the father of experimental philosophy in this island it is the earliest known work treating of both magnetism and electricity, few finer examples of inductive reasoning have ever been presented to the world, there is abundant testimony that it produced a deep impression not only in this country, but throughout the civilized universe it places Gilbert on a level with Harvey, Galileo, Grassendi and Descartes. Galileo says:

I extremely praise and admire and envy this author for that a conception so stupendous should come into his mind. I think him moreover worthy of extraordinary applause for the many new and true observations he has made."

Sir Kenelm Digby writes "by means of whom [Gilbert] and of Doctor Harvey our nation may claim even in this latter age as deserved a crown for solid philosophical learning."

Coming down to modern times C. W. Coole tells us that *De Magnete* inaugurated a new epoch in physical science its author announced discovery after discovery, all made by a series of experiments conducted in a most philosophical manner. He was the first electrician, he was the first to investigate electrical phenomena and the word 'electric' was coined by him. Sylvanus Thompson considers that Gilbert made twenty separate experimental discoveries in electricity alone.

It will not be amiss before we leave *De Magnete* to glance at the short reference to medicine to be found in it. In Book I Chapter xiv and xv Gilbert ridicules the medical nonsense which has been talked about the loadstone—such as that in small doses it preserves youth, that smeared with garlic it ceases to be active that when pulverized and then buried in a plaster it will draw an arrow from the body that it will cure all sorts of headaches. He sums up by saying "Thus vainly and preposterously do the schoolists look for remedies when ignorant of the true causes of things." Chapter xv treats of the medicinal virtue of iron. Gilbert is aware of its use in chlorosis for "it restores young girls when pallid sickly and lacking colour, to health and beauty." Malaria was very common in England in his time, hence we find Gilbert advising iron for enlarged spleen the patients improved probably because the iron benefited their anaemia. He notices that it is astringent. These are its only medicinal virtues. This is an excellent account

of the therapeutics of iron, we know but little more now. Gilbert is very sarcastic about the many ridiculous claims made for it by doctors. He says "Thus do the smatterers cross swords together, and puzzle inquiring minds by their vague conjectures, and wrangle for trifles as for goats' wool, when they philosophize wrongly." In Book II, Chapter III, he points out that Galen errs in believing that whatever agents draw out the venom of serpents exhibit the same power as the lodestone, he is emphatic that drugs do not act in this way. These extracts show him to have been what was very rare in his day—namely, a scientific physician, believing no more than he sees, and scornfully disbelieving the rubbish that passed for medicine.

*The Advancement of Learning* appeared in 1605, two years after Gilbert's death, so it cannot have been of use to him, and the only one of Bacon's writings which can have been published before 1600, when *De Magnete* appeared, is *Partus Masculus Temporis* (The Male Birth of Time), but the date of this, which is only a fragment, is doubtful. There is no trace of any acquaintance between Gilbert and Bacon; therefore we must admit that there is nothing to show that the last can have affected the elder, consequently the glory of being the first, in this country at any rate, to break through the bonds of authorities and properly to use experiments and induction belongs to Gilbert. Considering his professional position, his sound mediocrity, his close acquaintance with Harvey's father-in-law, the fact that his arresting book appeared just when Harvey was beginning his medical work, that it was just such as would appeal to the discoverer of the circulation (for it, by example and precept, taught that the right way to investigate nature was by experiment and induction), and that Harvey's recreation in mind all this, it is not that Gilbert helped to direct

Harvey's thoughts

#### *The Atmosphere in which Gilbert, Bacon, and Harvey lived*

Hitherto we have only considered Bacon, Gilbert, and Harvey individually, but in what atmosphere did they live? Sir John Edwin Sandys tells us that "the love of discussing on learned and philosophic topics was one of the characteristics of serious society in the Elizabethan age."<sup>36</sup> Sir Sidney Lee and Dr. Furnivall both say that the era of Elizabeth was that of learned culture and a desire for knowledge among large numbers of the people.<sup>37</sup> Several accounts have been given of the Society of Antiquaries, founded in 1572. It was a great success. "Peers and commoners, diplomatists and exchequer officials, heralds and city tradesmen, country and town gentlemen, schoolmasters, lawyers and clergymen, all met together, week by week to discuss archeological and constitutional problems."<sup>38</sup> At the same time there was another learned society which met at Gilbert's house on St. Peter's Hill. Sir Humphrey Gilbert, half-brother to Sir Walter Raleigh, had before Queen Elizabeth a scheme for the erection of "An Academy for education of her Maesties Widows and others, the youth of nobility and gentlemen." It was to have been a real University of London, there were to be dozens of well paid teachers, including one in natural philosophy, and there was to be one doctor of physic. His duties I will give in the old spelling. One day he was to read physic and another surgery, in the English tongue. He was never to allege any medicine of any kind, but that he was to declare the reason philosophical of every particular, and he was to show how the medicine was made and all the instruments used in making it. The physician was to practise surgery because there were very few good surgeons, for surgery was only to be learned in barbers' shops, which was most dangerous. The physician was continually to practise with the Natural Philosopher to try and search out the riddles of nature, they were to share a garden for the growing of simples, and for this they were to have an extra allowance.<sup>39</sup>

Learning was evidently much in men's thoughts and in their conversation. Therefore on this ground also we may reasonably conclude that Harvey would have knowledge of the teaching of Gilbert and Bacon.

Many who have written about the glorious Elizabethan renaissance have told us of its literature, its theatre, its politics, its statesmen, its voyagers, and its romances. A few have dwelt upon its science. Until the closing years of the great queen's reign ignorance, superstition, tradition and false reasoning darkened understanding, but that with other branches of human activity, so with science, great lights arose in this country—Gilbert, Bacon, Harvey, men's minds awoke, the science of electricity was founded, we were taught how to reason, and modern physiology was born. English science dates from the three who were contemporaries, fortunately they were not like Galileo, Bruno, and others, persecuted on account of the novelty of their pronouncements. The Elizabethan era is an example of the well known, singular phenomenon that there are no periods in which a cluster of geniuses appear, and this College can justly be proud that two of its fellows may be grouped with Shakespeare and a few others among the greater Elizabethans. Harvey's supreme eminence among scientists is so well acknowledged that there is no need for me to extol it. Rather have I tried to show that not only was he a star of the first magnitude himself, but he was also part of one of the brightest constellations the world has seen. No man can certainly say what makes any man's mind, but for the reasons brought forward in this article it does seem likely that, as Harvey was the youngest of these three, the other two had some directing effect, of which Harvey was perhaps unaware, in steering his thoughts correctly towards that goal the reaching of which has made him one of the great men of all time.

All three were pierced with a thirst for knowledge, and it would be difficult to find a better epilogue to this article than a quotation from the *Praise of Knowledge*, a poem written by Bacon and performed before Elizabeth in 1572.

"Therefore no doubt the sovereignty of man hath had in knowledge wherein many things are reserved which kings with their treasure cannot buy, nor with their force command it, and intelligencers can give no news of them, their sense and discoverers cannot sail where they grow. Now we govern men in opinions but are thrall to her in necessities. But if we be led by her in invention we should command her in action."

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## THE TOBACCO HABIT

BEING THE NORMAN KERR LECTURE DELIVERED BEFORE THE SOCIETY FOR THE STUDY OF INEBRIETY,

BY

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NICOTINE, next to caffeine, is the alkaloid most widely used by man, and as in the last twenty years a truly enormous increase in the consumption of tobacco has occurred, it is right that a society like this, which concerns itself with every form of inebriety, should interest itself in the effects of smoking both on the health of the individual and of the population as a whole. Disraeli said "the youth of a nation are the trustees of posterity", and if the numbers of men rejected as unfit for military service in the late war form any criterion of the physical efficiency of our sons few can doubt that British stimulus leaves much to be desired if it is not indeed on the wane. I believe that no excuse is necessary for calling attention to certain known facts concerning tobacco smoking. The late Dr Norman Kerr, whose memorial lecture I have the honour to deliver to-day, wrote on some of the evils of tobacco, and especially its action in producing eye defects.

### HISTORICAL

Europe learned the use of tobacco from the American Indians. Tobacco is an Indian word, but nicotine is named after the French Ambassador in Lisbon, Jean Nicot. He grew tobacco seed in his garden and vainly tried the leaves as a cure for all external diseases. Snuff obtained from Nicot was introduced by Catherine de Medici at the French Court about 1560 as a specific for headaches.

Tobacco was brought into this country by Ralph Lane in 1585. He taught its use to Raleigh, who became a devotee, did much to popularize it, and carried his habit even to the scaffold. By the seventeenth century the use of tobacco had spread to almost every European country.

A reaction against its use arose in the fifteenth and sixteenth centuries. James I. published in 1603 a pamphlet entitled *Monopsonus seu de abusu Tabaci* in which he says:

*O cives si quis pudor rem insanam abiecte ortem ex ignominia receptam errore frequentem stultitia unde et ira numini accenditur dignitas gentis senescit domus videscit foris rem seu turpem olfactu insuavem cerebro noxam pulmonibus damnosam et si dicere liceat atrii fumi nebulis tartareos vapores proxime repræsentantem.*

The Tsar Michael punished his soldiers with the rack and knout for smoking; Urban VIII. forbade the use of tobacco in any form in church during divine service. How serious must have been the abuse of tobacco in Spain in 1642 may be judged from the apostolic brief which tells us that the priests chewed tobacco during service contaminated the vestments with expectoration and filled the church with fumes. Benedict XIII., himself a snuff-taker, rescinded the prohibition in 1724, but ordered that the use of tobacco in the Church of St. Peter at Rome should cause no disturbance, smoking was consequently excluded though I believe that the use of snuff is allowed in Catholic churches to-day. Nevertheless, neither the King's hook, the Czar's knout, nor the Pope's proclamation seriously affected the use of tobacco.

To the Puritans in England of the seventeenth century smoking was the mark of the drunken Cavalier. Nevertheless the Roundheads later indulged, since Evelyn states that the soldiers took tobacco at Cromwell's funeral. The association of smoking with the roisterer and drunkard prevented its acceptance in society till the end of the eighteenth century. During the Regency the meerschaum and cigar appeared in the streets, but in no clubs except the military. Cigarettes reached us from Spain. A Greek, John Theodoris, who settled in Leicester Square in 1851,

was the first to make them in this country, and, being more portable and easily concealed, they quickly invaded the home. Nevertheless, it was not really till post-Victorian days that the respectability of smoking was established. Women were the most bitter opponents of tobacco till this time with their emancipation about a third of the women started to smoke, and now it is even unusual for either a maid or matron to abstain.

The use of tobacco then, has become universal throughout the world. In this country no serious attempt has been made to determine its effect on the public health. America has been more active. Miss Luer Gaston, under the auspices of the Anti Cigarette League, has been instrumental in organizing several national congresses. The twentieth amendment to the Constitution of the United States of America, which has never been ratified provides that (1) The manufacture sale transportation, inhalation or otherwise consumption of cigars, cigarettes pipe tobacco cut plug and snuff is hereby prohibited. (2) The Congress and the several States shall have concurrent power to enforce this article by appropriate legislation, and to appoint enforcement officers in every community.

### COMPOSITION OF TOBACCO SMOKE

The smoke emitted from any smouldering vegetable matter, including tobacco, contains ammonia gas and pyridine or pyridine derivatives, and it is these substances which produce the irritation of mucous surfaces not infrequently observed in those who smoke. These bodies are responsible for the morning cough, the irritation of the throat and tongue and the conjunctivitis of the cigarette smoker. They are in every respect objectionable products and add nothing to the pleasure of smoking. If they could be excluded from the smoke it would be all to the benefit of the smoker. Other dried herbs—such, for example as coltsfoot leaves at one time sold as a boys' tobacco which was harmless—often produce more pyridine when allowed to smoulder than tobacco but they have none of its irritating effects.

The pyridine bases are oily volatile liquids, intensely irritant, but compared with nicotine, of a relatively low toxicity. Their poisonous nature I have demonstrated on young volunteers, who were required to smoke coltsfoot leaves after smoking for some time (twenty to thirty minutes) they suffered from nausea vomiting and diarrhoea, with all the signs of early shock. Nevertheless in tobacco smoking the only serious effect of these bodies is the local irritation since their specific effects are insignificant in comparison with those of other substances which are present in this smoke.

### CARBONIC OXIDE

Another substance obtained from the slow combustion of almost any vegetable matter including tobacco, is carbon monoxide which is also the poison of coal-gas and the exhaust gas from motor cars.

In New York and Newhaven where the motor traffic is dense CO can be detected in the air of the streets. The traffic control men not infrequently suffer from headache, slight nausea muscular weakness and rapid pulse which are the usual symptoms of CO poisoning. Wilson and others<sup>1</sup> examined the blood of fourteen foot traffic patrol men and found that it contained from 0 to 30 per cent of CO whilst six of these men showed values of from 20 to 30 per cent. Two other symptoms which are also prevalent are dizziness and more rarely dimness of vision.

The United States Bureau of Mines made experiments to determine the CO present in a confined space after intensive smoking and found that the CO concentration of the air of the room did not rise to more than 0.01 per cent and the maximum blood saturation of the subjects exposed to this atmosphere was only 5 per cent. Nevertheless this is more than enough seriously to affect sensitive people. When the amount of this gas is determined in the smoke of cigars, cigarettes and pipes under conditions simulating as far as possible those obtaining during ordinary smoking the figures obtained are somewhat alarming. The cigarette smoke yields from 0.5 to 1 per cent the pipe 1 per cent or more and the cigar 5 to 8 per cent, this last, as

Professor Armstrong points out, is roughly the proportion of CO in the coal-gas of the South Metropolitan Company. The amount of CO varies naturally with the rapidity of the smoking and the closeness of the packing—the quicker the smoking the more CO.

Tobacco smoke, however, reaches the mouth freely diluted with air, and the amount of CO absorbed from the buccal cavity is negligible, so that pipe and cigar smokers who do not inhale have little to fear from this poison. Cigarette smokers who inhale would absorb a large proportion of the CO which reaches the lungs, since the affinity of CO for blood is more than two hundred times that of oxygen. Cigarette smoke as it reaches the mouth of the smoker may contain as much as 72 to 25 parts of CO in 10,000 parts of air (Baumberger). Inhaled for one hour at the rate of five puffs a minute this should be enough to affect appreciably the blood haemoglobin. Many years ago Fokker asserted that animals placed in an atmosphere containing tobacco smoke died from CO poisoning. Hartidge<sup>7</sup> found 6 per cent CO in the blood in one cigarette smoker who was by no means excessive in his habits. The normal healthy man does not in most cases show symptoms of CO poisoning until 15 to 20 per cent of his haemoglobin has been fixed and put out of action. Yet there are many people who show a supersensitiveness to this poison, just as some of us have some idiosyncrasy for quinine or iodides, and so it is not difficult to appreciate why cigarette smokers may exhibit a syndrome indistinguishable from that of mild CO poisoning.

The toxic concentration of CO in the atmosphere is about 0.05 per cent, in men exposed to dilute concentration, such as 0.02 per cent, the degree of haemoglobin saturation would be perhaps somewhere near 20 per cent.<sup>7a</sup>

#### NICOTINE

The third and by far the most important constituent of tobacco is the volatile alkaloid nicotine. The effects of cigar and pipe smoking are due practically entirely to nicotine, which exists in tobacco combined with organic acids. During smoking these salts are largely dissociated, a part of the nicotine being burnt and a part passing in the smoke as free nicotine. The drier the tobacco the greater the destruction of the nicotine. Moist tobacco produces much more serious effects than dry tobacco, and it has been stated that the moistness of the tobacco is responsible for many of the evils. The water content of the tobacco is much more harmful to the smoker than the original nicotine content of the tobacco.

During the slow combustion of a cigar as in ordinary smoking there is an area immediately behind the point of combustion in which the water and other volatile substances condense. During aspiration the hot gases are drawn through this hot moist area and carry with them the volatile principles, of which nicotine is the most important. Hence the smaller this moist area behind the point of combustion—which means, the cooler the smoke or the more complete the combustion—the less likely is the smoke to contain volatile toxic bodies. It follows that a cigarette or slender cigar which is well cooled will yield fewer of these products than a thick cigar, and many smokers can testify that a fat cigar has a much greater effect than a long slender cigar of similar tobacco. This also explains the unpleasant effects of relighting a half-finished cigar or pipe.

The same principle is exemplified by the following fact. Virginian tobacco leaf from which cigarettes are made often contains double the amount of nicotine that is present in Manila cigars. Yet when an equal weight of the cigarettes and cigars is smoked the total cigar smoke contains double the amount of nicotine present in the cigarette smoke. The condition of the tobacco and the form in which it is smoked are more important factors in determining the amount of nicotine in the smoke than the amount of nicotine present in the original tobacco.

The species of plant mostly used is *N. tabacum*, but several other species are employed, thus *N. rustica* yields Turkish tobacco, different varieties of tobacco from the same species also show different amounts of nicotine. During the process of curing the leaves, which consists

in exposing them under cover to a considerable degree of heat, important chemical changes occur, the leaves become moist and their fragrance alters. There is much reason here for further investigations, with a view to producing a tobacco which when smoked would yield in the smoke the minimum of alkaloids, pyridine, etc., whilst retaining its aroma. Tobacco may contain anything from 1 to 8 per cent of nicotine, Havana tobacco has about 1.5 per cent, Maryland 2 per cent, Virginia 6 per cent, Kentucky 8 per cent.

#### AMOUNT OF NICOTINE IN SMOKE

The amount of nicotine in tobacco is no criterion of the amount in its smoke. For example, mild honeydew contains only 1.6 per cent, whilst Cavendish may contain as much as 3.8 per cent, if these two are smoked under identical conditions the Cavendish naturally yields the larger amount of nicotine in the smoke. But Cavendish smoked in a cool pipe or one provided with a filter will affect the smoker less than the honeydew smoked in a hot pipe. In the churchwarden pipe the opportunity for the nicotine to condense is such that the smoke is almost freed from the alkaloid, and I have already pointed out that in cigar and cigarette smoking the degree of moisture, the tightness of packing, and the thickness of the cigar or cigarette are the most important factors in determining the amount of nicotine which will be present in the smoke. Harbermann<sup>8</sup> and Eichenfeld<sup>9</sup> state that two-thirds of the nicotine of some kinds of cigars passes over in the smoke, with other brands as little as one twenty-fourth passes over.

Lehmann<sup>9</sup> obtained nicotine from the air of a room in which tobacco was being consumed, showing that the smoke is by no means denuded of all its alkaloid. He thinks from his calculations that only about 1.4 mg nicotine is absorbed from a cigar. This figure depends on so many conditions that it cannot be accepted—for example, the length of time that the smoke is held in the mouth, the affording time for absorption, would exert an enormous influence. Our own observations suggest that the figure is ten times too small. The collapse which I have seen in youths smoking a Manila cigar could not have been produced by the absorption of such an amount.

Ashorton (1919) says that 6 to 8 mg of nicotine reach the mouth from a cigarette smoked in the usual way. We are not told, however, how much of this is likely to be absorbed. In our own observations, using a standard Virginia cigarette weighing 1 gram and aspirating the smoke through solvents once in twelve seconds, and using only three-fourths of the cigarette, it was found that 3 mg of nicotine were absorbed. It must not be assumed that this is necessarily absorbed into the system, but in the case of an inhaler most of it certainly is, perhaps 75 per cent, since expectoration is no longer permitted and loss occurs through the exhaled smoke only. Hence if a cigarette smoker were to puff ten cigarettes on end he would certainly absorb 20 to 30 mg of nicotine—enough to produce a profound physiological effect, though, administered in this way, perhaps ten to fifteen times under the lethal dose. The amount of nicotine in pipe and cigar smoking is much higher. In our experiments cigar smoke contains about twice as much nicotine as cigarette smoke.

Other constituents of tobacco smoke are less important. The solids of cigarette smoke weigh about 10 per cent of the tobacco burned—that is, 80 mg for each cigar. Cyanides and sulphocyanides are present in trace, and is a constituent of American tobaccos in amount 10 times greater than those permitted in foods. Pipe tobacco is reported to contain the equivalent of from 0.6 to 0.27 grains As<sub>2</sub>O<sub>3</sub> per lb.<sup>10</sup> When smoked probably half this will be absorbed.

These facts show that nicotine is a most important constituent of tobacco. It is one of the most fatal and rapid poisons known, it acts as quickly as prussic acid and two drops placed on the tongue of a dog will kill it almost immediately. The lethal dose for a man is 120 mg. The nicotine present in one cigar if injected intravenously would represent two fatal doses to man. It is therefore somewhat remarkable that fatal nicotine poisoning is not more common. Nevertheless the careless

tobacco infusions in enemas, the occasional swallowing of tobacco leaves, or even carrying tobacco leaves next to the skin for smuggling purposes, have all led to fatal results.<sup>11</sup> Tobacco has also been used for criminal purposes,<sup>12</sup> but as it does not appear to undergo fermentative changes in the cadaver it can be detected in the bodies of animals three months after death.

#### DENICOTINIZED TOBACCO

If tobacco is heated at a temperature over 100° it gives off an empyreumatic oil which was official in the *L. S. Pharmacopoeia* of 1870 as *oleum tabaci*. This oil is rich in nicotine, has an odour resembling foul pipes and is extremely toxic. Various methods have been adopted to eliminate the nicotine from the smoke and the juice which is apt to form in pipes. A porous substance may be put into the stem of the pipe, the space for cooling and condensation may be increased, or some substance which facilitates oxidation may be placed in the bowl of the pipe. These last pipes are called catalytic and the bowls are lined with some metallic oxide, like that of platinum in a fine state of division. By passing tobacco smoke over the catalyser formol is formed and the nicotine and pyridine derivatives are decomposed. The c pipes have not, however, found favour.

Another method of improving tobacco consists in removing some of its nicotine by means of solvents. These so-called denicotinized tobaccos have 50 per cent. or more of their nicotine removed, and have been regarded therefore by physicians as relatively harmless at all events as far as their nicotine is concerned.<sup>13</sup> Unfortunately this is not the case because it has been shown that these denicotinized cigars yield in their smoke as much nicotine as was present in the same class of cigar before denicotinization.<sup>14</sup>

Improved methods of removing the nicotine are however now being experimented with abroad. Boxes or cigarettes and tobaccos in various forms are treated with superheated steam by this means practically the whole of the nicotine is said to be removed and the tobacco is left nicotine free. The nicotine has a ready sale for agricultural purposes. I have had no opportunity, however, of experimenting with these products.

It will be obvious from this that great opportunities exist for investigating and improving tobaccos. Tobacco is a substance foreign to the body and its alkaloid is poisonous, the user pays heavily for his vice in raves, and it is entirely not unreasonable that he should have some further guarantee of the quality of the material which he buys than that provided by the 1842 Act. I am not suggesting that tobacco should be guaranteed to contain not more than a specified amount of nicotine in the same way as spirits are standardized for alcohol, but as tobacco is similar to alcoholic beverages in that excess of both leads to serious result the public should have some sort of guidance or protection. It is almost certain, for example that it is the nicotiness of the tobacco which is indirectly responsible for many of its most serious effects: that the pyridine derivatives are largely responsible for morning cough which leads later to chronic bronchitis and cardiac failure. These are conditions which at least are capable of improvement. The Minister of Health which has already done much for providing pure foods of a certain standard, will, I hope, not long see in tobacco an important factor in the public health.

#### ACTION OF TOBACCO SMOKE

Tobacco used in any form possesses irritant properties, this is of course obvious with snuff, the use of which depends on stimulation of the fifth nerve endings. The same action occurs in chewing which excites reflex salivation. If five or six grains of tobacco are swallowed vomiting occurs. Tobacco is irritating also to the skin, and the alkaloid in it is readily absorbed. Many cases of poisoning are on record, and I have in mind particularly a child of 8 years suffering from *tinca capitis* to whose head the expressed juice of tobacco leaves was applied, the treatment was shortly followed by death. Several cases of tobacco poisoning through the skin are reported in the *British Medical Journal* for 1926. Carlin in 1913

described the case of a girl aged 6 years who died forty five minutes after receiving an enema of 24 grains of tobacco. From an examination of such cases it is clear that death may occur from three minutes to several hours after using tobacco as an enema or for application to the skin.

Continuous smoking for several years not infrequently produces signs of chronic irritation in the month, throat, and larynx—sore tongue, morning cough, hoarseness, tonsillitis or chronic bronchitis. I believe that these effects are most marked in the cigarette inhaler. When the smoke is concentrated on one portion of the tongue for many years, which may occur especially in pipe smoking this constant irritation is said to favour the formation of epithelioma of the lip and tongue if the quantity consumed is large or the smoker predisposed.<sup>15</sup> The evidence in support of nicotine taking any part in this action is certainly not conclusive. Nevertheless, Bottini mentions one hundred cases of cancer which he saw including three women, which were caused by smoking or chewing tobacco. On the other hand, the Registrar General's report shows a remarkable fact to which attention has not been drawn previously—that tobacco manufacturers have a lower death rate from cancer than those of any other trade.

Smoking is reputed amongst the public to have an antiseptic action, and is sometimes indulged in nominally for this purpose. Pepys describes the use of tobacco during the plague, and its use was compulsory at London in 1721 as a prophylactic against 'the apprehension'.<sup>16</sup> Pantoni<sup>17</sup> and others have shown that tobacco smoke has a strong disinfectant action *in vitro*. When the smoke is drawn into the month however, the action is attenuated by the saliva and mucus, and its antiseptic effect is negligible. The action *in vitro* is not influenced by filtering the smoke free from nicotine by passing it through cotton wool.

#### SPECIFIC ACTION

Smoking is, however, indulged in by man because of its sedative action and this is due solely to nicotine absorption. Nicotine stimulates all nerve cells throughout the body without exerting any kind of selective action and the stimulation is followed by depression. The time the stimulation lasts depends on various factors but as a rule it coincides with the absorption of the nicotine—that is, with the period of active smoking. Both the pleasures and evils of smoking are intimately connected with nicotine. Morphine, heroin, cocaine and other drugs of addiction have a selective action on the central nervous system alone nicotine is different: it acts also on the autonomic nervous system, and it is this action which produces objectionable effects in the sensitive or excessive smoker.

#### ALIMENTARY CANAL

The commonest symptoms of smoking are loss of appetite and chronic intestinal catarrh. The smoker's lack of appetite Sir Humphry Rolleston thinks is not altogether an evil, since it limits the consumption of unneeded articles. Nicotine and tobacco smoking by stimulating the autonomic ganglia, increase the secretion of the alimentary glands, and later, after the smoking has ceased depress them: hence the salivation during smoking and the dry mouth the following day. The same fact is true of gastric secretion. Experiments have been made on dogs with a Heidenhain's fistula by means of which the secretion of gastric juice may be collected and examined as desired. Injections into these animals of nicotine or saline solution through which smoke has been passed afford a means of determining accurately the effect on gastric secretion. Both affect the dog in the same way, and cause at first a decided increase in gastric secretion.<sup>18</sup> It is well recognized that in certain persons excessive smoking leads to this gastric hypersecretion, hyperacidity is the most common disturbance and gastritis acid is one of the most frequent results. Hurst<sup>19</sup> believes that tobacco smoking is one of the most frequent causes of hyperchlorhydria. Rolleston<sup>20</sup> lays considerable stress on the relative sensitiveness of the individual as an important factor in determining whether or not a heavy smoker will pay the penalty of gastric disease.

On the musculature of the alimentary canal the action

of tobacco is equally well marked, the automatic movements are first inhibited and later augmented, as a result of stimulation and later depression of the autonomic nervous system.<sup>19</sup> The inhibitory stage is almost coincident with the period of smoking, and is associated with contraction of the pyloric and ileocolic valves. Stimulation of the sympathetic nerves causes inhibition of the whole alimentary canal with the exception of these two valves, which are contracted. The dyspepsia often following on a hypodermic injection of morphine is probably due to this pyloric contraction, which delays the passage of food. Morphine in this respect shows some similarity to nicotine. The mild laxative action of tobacco smoke may be explained by the ultimate depression of the inhibitory cells whereby the motor nerves assume an undue influence on the automatic movements.

Hunger is due to certain well recognized automatic contractions of the stomach, smoking definitely inhibits these. Hence continuous smoking stifles off the pangs of hunger, and acts in this respect like the drugs of addiction—cocaine and morphine. Careful experiments which have been made on habitual smokers and non-smokers with the aid of bismuth and x-rays show that the effect of smoking a cigar is to stop the normal automatic movements of the stomach within fifteen minutes. The inhibition continues until about three minutes after smoking has ceased, when the contractions begin again.<sup>20</sup> In these experiments it was also shown that nausea and vomiting from excessive absorption of nicotine may occur at a time when the stomach movements are completely inhibited.

Tobacco smoking, then, has a very definite action on the alimentary canal. In certain sensitive people it produces effects which, according to Huist, from the production of duodenal ulcer, whilst Wagner<sup>21</sup> insists that excessive smoking can produce all the subjective and x-ray appearances of this condition.

#### CIRCULATION

The considerable use of tobacco in any form invariably produces certain definite effects on the circulation which cause no inconvenience of any kind to the subject, these should be distinguished from other effects which only occasionally occur, but are then often sufficiently distressing to induce the sufferer to seek medical advice.

Under the first group must be included changes in the pulse rate. All observers are agreed that the use of tobacco increases the pulse rate from five to ten beats a minute, and in the case of the man who is continually smoking the increase of rate becomes permanent, but this condition produces no apparent disadvantage.

When the novice or moderate smoker puffs a cigar the rate of the pulse increases in a few minutes. Lee,<sup>22</sup> working in my laboratory, demonstrated this clearly both in the novice and moderate smoker under strict experimental conditions. In another series of experiments twenty-eight young healthy smokers were required to smoke a single Turkish cigarette, the pulse rate increased in all but four, and sixteen showed an increase of more than eight beats a minute.<sup>23</sup> Hesse<sup>24</sup> obtained similar results with cigars on twenty-five patients suffering from various chronic diseases.

During the war it was generally asserted that excessive smoking, particularly of cigarettes, was the common cause of the so-called D.A.H. Observations were made which showed that the average pulse rate of the patients during smoking was nine beats a minute higher than before smoking, in ten healthy controls it was six higher.<sup>25</sup> As there can be no question that the effect is due to nicotine, inhalers of cigarette smoke should show more acceleration than non-inhalers. In Paulson's twenty patients the ten inhalers showed an average increase of pulse rate of eleven a minute and the ten non-inhalers of seven.

This increase in the pulse rate is associated with a small rise in blood pressure for the moderate smoker the rise does not usually exceed 20 mm of Hg systolic, and 8 mm of Hg diastolic, and is usually even less. The rise begins a few minutes after the smoking has commenced and is maintained throughout the smoking period.<sup>26</sup> It is only in the case of the novice or after excessive smoking that

the blood pressure falls, to any extent below normal after the smoking has ceased, but under certain conditions the fall may be so severe as to cause all the signs and symptoms of shock or collapse.<sup>27</sup>

Observations have also been made to determine the effect of smoking continued over a period of six months. Nicolai and Strehlein smoked six or eight cigars a day for six months. They then gave up smoking, except for an occasional cigar, for a further six months. Their average pulse rate was 74.5, compared with 81.8 during the smoking period.<sup>28</sup>

These changes from the normal are, after all, usually small and give rise to no symptoms, but the evidence available suggests that they cannot be regarded with indifference. It is a maxim with those who are in training for athletic events that smoking must be entirely eschewed. This prohibition, no doubt adopted in the first place as the result of experience, has become a tradition. In Nicolai's experiments the acceleration of the pulse which occurred after the performance of a measured amount of work with the ergograph was considerably greater during the smoking period, while recovery to the normal rate was much slower than during the period of abstinence. Paulson and Koefod also showed that smoking a few cigarettes can render healthy men more breathless on exertion, and that this effect was marked in soldiers suffering from D.A.H. This means that the heart even of the moderate smoker is less efficient in periods of strain. It is possible, then, that the prohibition of smoking for athletes is dependent on this vascular effect. With present knowledge it would be mere speculation to attempt to gauge the significance of this factor when continued over many years.

#### MORE SERIOUS CIRCULATORY EFFECTS

Of the more definite effects which cause patients to seek advice are palpitation and arrhythmia, which are relatively common in the young, they disappear if the smoking is stopped, though in pronounced cases, as the late Sir Clifford Allbutt pointed out, only after the abstinence has been continued for many months. The arrhythmia is functional and is usually due to extra-systolic beats. Neuhof mentions fibrillation and flutter and sino-auricular block also, the block in the case he illustrated disappeared three days after smoking ceased,<sup>29</sup> but such cases must be very rare. Rolleston says that arrhythmia may occur at any age but is more noticeable after 50, this may be due to a loss of tolerance which is known to occur in later life.

Another symptom which may arise from excessive smoking in later life is anginal pain, which, according to Osler, much approximates to true angina. Taine says that it is associated with vasomotor disturbances and tends to occur after meals or in the night rather than after exertion.

Arterio-sclerosis is easily produced in animals, especially rabbits, by the injection of nicotine, and we have ourselves produced marked arterial changes in the aorta and larger arteries of animals by administering to them "smoke water", but I do not think that these experiments are proofs that smoking leads to arterio-sclerosis in man, although there is a consensus of clinical opinion that immoderate smoking favours arterio-sclerosis. Pawlowski<sup>30</sup> states that 42 per cent of 1,000 cases of coronary sclerosis had histories of immoderate smoking.

In severe cases the evidence irregularities may lead to syncope, and an undue proportion of sudden deaths during the middle period of life, without any definite lesion found *post mortem*, is said to occur in heavy smokers.<sup>31</sup> As even the most moderate smoking, places some disability on the heart, trifling though it be, it may well be that this view deserves serious consideration.

#### CENTRAL NERVOUS SYSTEM

Nicotine is essentially a nerve poison, but so far consideration has only been given to its action on the cells on the course of the autonomic system, and this action is responsible for the digestive and circulatory effects. But nicotine affects the brain and cord also. It increases spinal reflexes and removes certain inhibitions. I have already drawn attention to some of the effects

or excessive cigarette smoking in the young the attacks of giddiness, and the tremors. A large experience of examination papers of medical students enables me to pick out with certainty the heavy cigarette smokers from the irregular character of their writing. If the habit is broken the writing at once improves and the vertigo disappears. The effects are exactly those of CO poisoning and I believe can be explained on this basis.

Habitual smokers are agreed that the weed acts as a mild sedative to the central nervous system the type of action is of a somewhat remarkable character and may offer in explanation of the widespread use of tobacco. Physical fitness or well being is determined by our feelings which are the result of sensations. If response to sensation varies from the normal, whether on the hypo or hyper side it causes a return towards the normal and smoking is said to exert a similar effect though of a more marked description, hence the sedative effect of tobacco in conditions of irritation and the stimulating effect in the case of nervousness and depression. The experiments from which these statements were deduced consisted in determining the threshold to single brief induction shocks of two fingers immersed in saline solution. After this figure was determined the subject smoked two cigarettes and his threshold was re-examined. If the initial threshold was low smoking depressed it on an average 72 per cent. On the other hand if the initial threshold was high, smoking lowered it on an average 28 per cent. Suitable controls were made with cubb cigarettes which always acted as a stimulant. This shows also that the tobacco action is due to nicotine.<sup>20</sup> In the same way smoking tends to nullify the slight sensory depression produced by the veronal, antipyrine and other hypnotics.<sup>21</sup> So that it may well be that tobacco is helpful when the sensory threshold is abnormal.

#### MENTAL EFFICIENCY

Mental efficiency tests on the whole have not been very convincing. In Berry's experiments<sup>22</sup> smoking enabled his subjects to do more rapid and correct arithmetical addition but the nicotine here was not the determining factor, the aroma and holding an unlighted cigar or chewing substances like gum all had some effect. Turner lays much stress on the importance of these facts. Carver's experiments consisted in applying eight established psychological tests in a number of people to determine whether cigars or cigarettes would influence their judgement and response to stimuli. The results suggest that smoking lowers the accuracy of finely co-ordinated reactions and association-thought processes. The speed of complicated reactions was however unchanged. The habitual smoker, when deprived of his smoke for some hours, showed diminished accuracy.<sup>23</sup>

Many observations have been made by merely comparing the efficiency mental or physical of smokers and non smokers. All these experiments seem to me so difficult to interpret that their value is negligible. Generally they show some inferiority of the smokers. This is true of observations of scholarship<sup>24</sup> endurance of telegraph workers<sup>25</sup> scholarship and physical efficiency<sup>26</sup> and resistance to tuberculosis. The apparent inferiority may be the cause or the effect of the tobacco habit. Those who are handicapped by neurosis or other form of inferiority would succumb most easily to the euphoria of smoking.

The action of smoking on the performance of routine muscular work has also been examined, and it has been found that habitual smoking has no obvious effect on the output of work amongst glass-blowers, a moderately strenuous physical occupation, although chewing greatly diminished the output.<sup>27</sup> On the other hand, Lombard's experiments show that smoking diminishes muscular endurance both at the age of 35 and 60.<sup>28</sup> Using the ergograph, Palmán found that cigarette smoking at first increased muscular work, but that fatigue set in earlier and the total work was less. A curious periodicity occurs in the ergograph records after smoking due to fatigue or depression of the central nervous system.<sup>29</sup>

It must be conceded that ordinary smoking in normal people does not lead to nervous disturbances. Excessive

smoking is another matter, and may produce nervousness and insomnia. Every smoker knows that a stronger cigar than usual may keep him awake though usually the effects of smoking are soothing and favour sleep. Neurasthenic subjects are easily affected by smoking they are continually breaking off their smoking and returning to it again in a few weeks. They suffer from headaches, dizziness, and sudden sharp attacks of pain in the head, over the pre-cardial region, or in the stomach which cease when the smoking is stopped.<sup>30</sup> Neuralgias generally stated to be localized about the intercostal, humeral and scapular region are rare but of importance, as the pain continues until the cause is removed.

The action of tobacco then on the central nervous system, when used in moderation, on the whole does no harm, and in subjects showing deviations from the normal it makes for good.

#### AMBLYOPIA

Tobacco amblyopia stands alone in my chief so grave. It was noticed by Mackenzie in 1835 and observed accurately by Hutchinson in 1864. The sight gradually becomes dim with central scotoma, some derangement of accommodation, and often dilatation of the pupil. This condition is associated with retinobulbar optic neuritis and recovers if smoking is stopped when degeneration has set in however abstaining from nicotine will only arrest further progress.<sup>31</sup>

At one time those engaged in the manufacture of tobacco, in consequence of the absorption of powder, suffered from visual troubles. Dr Norman Kerr stated. In 3000 workers in a tobacco factory 150 had eye defects, 45 being seriously affected. Galzowski, de Selverwitz and many others have verified the facts. Nevertheless with improved sanitary arrangements the effects have now disappeared.

Androgné, in a critical analysis of 48 cases of amblyopia from axial neuritis due to nicotine saw the quality of the tobacco as at fault it was imperfectly dried which means that the percentage of nicotine in the smoke is much greater than usual.<sup>32</sup>

#### TOLERANCE

The rapidity with which people become accustomed to nicotine is well known, but is none the less remarkable. The degree of tolerance varies in different people, but it is never absolute. Wahl in 1920 found that non smokers suffered from nausea and vomiting after taking by the mouth 1 to 2 mg. of nicotine. On the other hand, smokers required more than 8 mg. to produce the same effect.

Various methods are known by which tolerance to drugs may be attained. Habitual dosing with a drug is sometimes met by diminished absorption, or the drug may combine with some substance which renders it non toxic. Salicylic acid is rendered inactive by combining with glycocoll, though whether it is possible to attain a tolerance by this means is not known. Tolerance can also be attained by destruction of the toxic agent. Hence alcohol affords an example for whilst it is true that all mammals can oxidize this body the rate of oxidation may be increased by habit. This method of obtaining tolerance by destruction applies to alkaloids also, as was shown by Faust<sup>33</sup> for morphine and Cloetta<sup>34</sup> for atropine.

Many investigators claim that tolerance to nicotine cannot be produced in animals but the methods employed were not of the kind which would show small degrees of tolerance. All the experiments however, show that whatever the condition of the animal as regards tolerance if nicotine can reach the tissue upon which it acts—that is nerve cells—it produces its normal effect. This leaves only two probable explanations of the tolerance in man. The first is that nicotine is not absorbed in the tolerant man. Clinical evidence rebuts this supposition it is well recognized that excessive smoking may produce toxic effects—alimentary cardiac and nervous—even in the most inveterate smokers. The second explanation is that the nicotine is destroyed as an active substance, but that the rate of destruction is limited.<sup>35</sup> If the destruction were carried out only slowly by the tissues like the oxidation of alcohol and sugar, that would not necessarily prevent the nicotine exerting a physiological action, and if the rate of absorption exceeded that of destruction, a nicotine



action would certainly be obtained. When nicotine is introduced directly into the circulation the destruction within a few seconds would be negligible, and so the whole of the specific action would be obtained, no matter what the degree of tolerance.

The experiments of Lee and myself<sup>16</sup> were made on rabbits, and showed that repeated injections of nicotine into an animal give to the tissues, and especially the liver, an increased power of destroying the toxicity of the nicotine. It is easy to conceive of several ways in which this might be brought about, but some of these possibilities may be eliminated by experiment.

The loss of activity proceeds very slowly, this might be anticipated, for if it occurred rapidly a high degree of tolerance would be expected, and this never occurs. It does not then, *a priori*, seem likely that the cause of the loss of activity can be explained on the supposition of a chemical combination. The evidence rather points to some form of destruction of the nicotine, the process being possibly of the nature of a ferment action.

Although strong evidence exists in support of the view that tolerance means increased rate of destruction, yet there is some evidence suggesting that the nicotine is taken up specifically by certain tissues, Hegei and others have shown that when nicotine is injected into the circulation of animals it disappears quickly from the blood and is taken up by the liver, from which it can be obtained by distillation.

Edmunds<sup>17, 18</sup> made similar experiments to ours on dogs. He showed that the livers of all dogs possess some power of destroying nicotine, and suggested that the destroying agent is probably a ferment. Further, he says that it is possible that this ferment may be increased in quantity by the constant use of the alkaloid, but his experiments on dogs failed to prove it. The success or failure of these experiments depends, however, entirely on having adequate controls, and these are more difficult to obtain with dogs than rabbits. Fuhner<sup>19</sup> thinks it is entirely unnecessary to assume tolerance at all. He points out that nicotine is excreted in the urine and that it is not cumulative, he neglects the clinical evidence.

Several clinicians have recorded cases showing a gradual drop in tolerance with advancing years. Turney and Rolleston both lay some stress on this. Finkelnburg says that patients, when once they have experienced symptoms of poisoning by nicotine, the particular form of which is immaterial, become more susceptible to the action, so that a smaller quantity of tobacco will reproduce the toxic symptoms. In this respect nicotine poisoning differs from most if not all chronic toxicities produced by drugs. Rolleston also draws attention to the fact that disease—for example, influenza—may destroy an acquired tolerance.

Tolerance can exist also against CO. Animals such as guinea-pigs will live for months in an atmosphere in which as much as one-quarter of their blood haemoglobin is put out of action by combination with CO. They require a tolerance which is due to an increase in the corpuscles and haemoglobin, so that the oxygen capacity of the blood becomes almost normal. If such an animal is placed in a normal atmosphere it slowly loses its CO, its available haemoglobin increases, and it appears to suffer some discomfort. It is possible that the craving of the cigarette smoker after a period of abstinence may be not unconnected with this.

#### WHY WE SMOKE

I suppose few things are more difficult to analyse than the complex which gives rise to content, satisfaction, or positive pleasure. Any incident which breaks some simple habit acquired by long usage causes not only inconvenience but positive annoyance. The ritual of the pipe and cigarette soon becomes a most pronounced habit. The short duration of the cigarette leads to the frequent repetition of a series of complicated acts, culminating in the lighting up. The ritual of pipe smoking is even more likely to lead to a tie. To finger or suck an inlet pipe, to fill it, or to be repeatedly lighting it becomes in time a series of complicated reflexes which all go to make up the tie. I am informed that tobacco put up in cartons containing sufficient to fill the pipe, thus depriving the habitue of the ritual of filling, is not popular among smokers.

The element of rhythm plays its part. It is well recognized that with certain people some form of rhythmical movement facilitates thought and gives satisfaction. Dancing, singing, and chewing gum give satisfaction partly through their rhythm, and rhythm enters largely into smoking.

Sight and smell are other important factors. Sir Robert Armstrong-Jones<sup>20</sup> says that the cloud of white smoke rising before the smoker is soothing and companionable, and it is well known that people who become blind generally, but not quite invariably, give up smoking, and that smoking in the dark does not give the same satisfaction as smoking in the light. The fragrant smell and taste of good tobacco are also stimulating, so that taste, smell, and sight all take their part in the content. The amount of nicotine in the smoke is certainly not the determining factor in the pleasure, were this so we should employ moist cigars and so the more quickly satiate our desires, aroma is more important.

Pleasure, then, depends upon at least these factors: (a) reflex stimulation from the mucous membrane of the mouth and nose, (b) the tie complex, (c) the drug action, due mainly to nicotine, and perhaps to a smaller degree to the CO in the case of the cigarette smoker. The principal action of tobacco depends on the narcotic effect of the nicotine, it produces repose and calm—what I should term a stabilizing action. The cigar and pipe smoker, during a period of abstinence, feels the want of this customary effect.

The habit of smoking is sometimes referred to as an addiction. Rolleston<sup>21</sup> discusses this question, and all it is necessary to say here is that addiction is a relative term, the most powerful drug of addiction is probably heroin, and then follow cocaine, morphine, Indian hemp, opium, alcohol, and last tobacco.

A drug addict wishes to be freed from the cares and worries incidental to existence. To do this a drug must either depress the higher faculties of mind—judgment, self-control, inhibitions of all kinds—leaving free play for the lower and emotional centres, or the more primitive and emotional centres of the brain must be excited. Nicotine would most certainly be a drug of addiction were its action confined to the central nervous system, but it also acts on the autonomic system, so that when smoking is pushed—that is, when larger amounts of nicotine are absorbed—nausea, vomiting, diarrhoea, faintness, prostration, and collapse follow. The true addict is held in bondage by the fear of withdrawal and the craving which follows it. With tobacco this does not exist, the loss of one's smoke is an annoyance, but hardly a tragedy, and few cannot, when necessity arises, entirely abstain.

#### ON CERTAIN ECONOMIC FACTORS

During the last fifteen years an enormous increase has taken place in the consumption of tobacco. In America the number of cigarettes consumed in 1914 was 3,000 million, in 1918, after the war, this had increased to 46,000 million, but the figure continues to increase, and in 1921 it reached 52,000 million. The per capita consumption of tobacco in the United States of America in 1920 was 6.3 lb., in Great Britain it was 3.17 lb. Increased consumption appears to obtain in all European countries. In Holland smoking is especially prevalent. In 1924, 2,500 million cigarettes were consumed at a cost of 33 million pounds, some statistics show that of 100 boys aged 6 years, 30 smoked, of boys between 9 and 10, 50 smoked, and of 250 boys more than 11, 220 smoked.

In Austria a pamphlet was published in 1924 by several of the most distinguished Viennese doctors to their country, which states that "Nicotine promotes arteriosclerosis and nervous diseases. In our country the cost of tobacco for one day equals the total annual deficit of all our tuberculosis sanatoria which it was necessary to close for the economy." In Germany the total expenditure for the German army in 1912 was less than its smoking bill. As a further example of the cost of tobacco to a nation, Professor Graham of Yale University has estimated that the United States of America in 1921 spent well over 300 million pounds on tobacco.

The Governments of the world are slowly appreciating

that the tobacco habit is not an unmixed blessing. England has passed legislation prohibiting the sale of tobacco to all minors under 16. Japan has a law prohibiting smoking by all persons under 20. The Austrian and German Republics are showing active interest against the further expansion of the tobacco habit, and most of the States in America have some form of legislation aimed at limiting the tobacco habit.

#### CONCLUSION

Tobacco smoking serves as a mild stimulant followed by a slight degree of narcosis, the supersensitive become calm and lose their irritability, and the dull and apathetic are stimulated. The physiological evidence clearly points to this effect, but the explanation has yet to be learned. Smoking, however, leads to digestive and circulatory disturbances. There is an increasing impression amongst clinicians that the insidious action of nicotine spread over many years of continuous absorption is responsible for at least some of the cardiovascular diseases so common in middle and later life.

It may be argued that if nicotine adds to the agreeableness of life why not use it with so pleasant? In persons of vivid sensations, to calm the commotion of conflicting sensations may be beneficial, even to the higher faculties, in the dull and listless to stimulate thought must be beneficial. It may well be that living in a civilization such as ours under the conditions of strain imposed by residence in cities the ordinary man shows in his nervous responses variations from the normal, and on such tobacco exerts a beneficial function. To what extent strict moderation in the use of tobacco leads to vascular degeneration is uncertain, is it the rule or the exception? This is the vital question to which we require an answer, and upon this answer something of the well being of the nation depends.

In conclusion I venture to suggest that the collective sagacity of this society, and that of the medical profession as a whole, could occupy itself with no subject more important to the nation than that of tobacco smoking.

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## X RAYS IN THE DIAGNOSIS OF INTRATHORACIC GROWTHS

BY

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(With Special Plates)

In the pre-radiological days there were but few publications and very few discussions on intrathoracic neoplasms. Such references as there were dealt with the matter only from the standpoint of morbid anatomy. Out of 174 cases reported in 1904 by Schrit, in six only had a correct clinical diagnosis been made. It is certainly less than a hundred years since neoplastic diseases of the chest were first subjected to any systematic examination, and less than thirty years since any such examination was possible in vivo by means of x rays. In 1810 Bayle, a favourite physician of Napoleon, in his *Recherches sur la Phthise Pulmonaire*, coined the term "phthise cancéreuse," showing that even at that time morbid anatomy was not unaware of the relationship between the two diseases. The symptom complex of increased intrathoracic pressure was pointed out by Bell or Glasgow and by Stokes of Dublin, but this was as far as our forebears would go in the way of clinical diagnosis. Nor is this attitude to be wondered at, in the first place, intrathoracic new growths were regarded as being of extremely rare occurrence, and, in the second place, the hopelessness of the prognosis was not conducive to any great enthusiasm.

It is customary to divide intrathoracic new growths into two classes (a) benign, and (b) malignant. But it is only in the pathological sense that this distinction can be drawn, for every intrathoracic new growth, however benign in its pathology, will in time deprive the patient of life by a process of pressure. It seems well to appreciate this point, if for no other reason than that clinician and radiologist may be alive to the vital necessity for early diagnosis. Unfortunately, even true malignant neoplasms, as a rule, give so little evidence of their presence until they have grown to such a size as to cause pressure symptoms, or increasing breathlessness. Am I wrong in suggesting that on the very first evidence of even occasional breathlessness that cannot be accounted for the aid of the radiologist should be asked? It is said that the day is approaching when every clinician will be so alive to the interpretation of a radiograph that the radiologist will no longer be asked to carry out his proper function. I shall not live to see that day, but I am sufficiently optimistic to feel that it will be many a long day before such a complete revolution takes place, and that the wiser the clinician, the more will he demand all the expert assistance possible in arriving at a diagnosis.

#### BENIGN NEOPLASMS

The care for the most part extrapulmonary

#### Fibroma

The x ray evidence that of a well defined more or less rounded opacity, which can be shown to arise from the posterior wall of the thorax, pushing in front of itself the lung and not directly invading it. Owing to the non-irritant nature of the structure of the fibromata, there is seldom any pleural adhesion, the lung surrounding the growth but able to be separated readily. Any further growth of the tumour tends to depress the diaphragm, push the heart and mediastinum to the opposite side, and to cause compression of the adjacent lung tissue.

Diagnosis is rendered easy by the simple expedient of collapsing the lung by the production of artificial pneumothorax, when the evidence of an isolated and free tumour, which is extrapulmonary, can be made out. This expedient of compressing the lung by the admission of air into the pleural cavity has not been utilized as much as it

\*The opening paper in a discussion on this subject in the Section of Radiology at the Annual Meeting of the British Medical Association in Edinburgh July 1927.

might have been. In this country and in France it is of daily usefulness, in Germany it does not appear to have received the attention it deserves, and I venture to suggest that as a consequence many cases of fibroma have been mistaken for fibro-sarcoma, thus erroneously increasing the number of cases of primary sarcoma of the lung.

### Teratomata

Teratomata, or congenital inclusion cysts, may occur anywhere. In the thorax the most common (though the total number is not very great) are of the type of dermoid cysts, which are epiblastic in origin and contain any of the constituents of skin (hair, sebaceous material, teeth). They grow from the third bronchial cleft or from the remains of the thymus gland, and are in consequence anterior in position, differing thereby from the fibromata which practically invariably grow from the posterior ends of ribs. By a curious chance we have seen no fewer than five of these cysts at Brompton Hospital in the last twelve months, so we feel ourselves in the position of authorities on the subject (nowadays one can assume authority on such slender basis).

The dermoid cyst differs from the fibroma in being more mobile, consequently, it not only pushes the lung in front of itself, but is apt to set up adhesions between itself and the pleura, making it more difficult, if not impossible, to shell it out easily from the enveloping lung.

The diagnosis of a fairly well defined, though often markedly irregular, tumour is readily made by examining in the dead lateral plane—a matter of course nowadays, but one upon which the differential diagnosis depends. In the films which I show it will be noticed that the tumour lies close to the sternum and nearer the front than the back of the chest, when viewed in the lateral plane.

It is unfortunate that the early clinical diagnosis in intrathoracic new growths is indefinite and even misleading. In one of our cases of dermoid cyst the only clinical evidence was that of a sudden and somewhat severe hæmoptysis, indeed, the occurrence of hæmoptysis is not infrequently the sole clinical evidence, though it does nothing to assist the diagnosis as to the nature of the tumour. This is a pity, for, having regard to the positive fact that a fatal termination has to be anticipated, it follows that if surgery is to be of use the earlier the diagnosis is made the smaller the tumour and the better the outlook.

### MALIGNANT NEOPLASMS

#### 1 Primary Carcinoma

In another place I asked the opinion of my colleagues as to their experience regarding the apparent increase in the number of cases of primary lung cancer. In my own work I had to admit that this increase must be real. Nor is this contention without support, and in the following table you will see that primary lung cancer is placed, according to various observers in Germany, as high as about 4 per cent of all carcinomata found in the body.

#### Statistics of Pulmonary Carcinoma

Goldstein		127
1886	Fuchs	185
1896	Passler	127
1897	Perutz	43
1901	Feilchenfeld	38
1902	Reichelman	33
1907	Otten	63
	Redlich	35
1913	Mielecki	56
1914	Brinckmann	48
1919	Bejach	45
1920	Brieso	
Schmoller		63
1924	Bejach	56
	Brinckmann	60
1907-11	Kolszewski (Berlin)	

*Fortschritte f. R., January, 1924*

"The figures represent the percentage of primary lung carcinoma relative to primary carcinoma of all other organs. The figures correspond to the year in which the statistics were compiled and the name of the compiler. Reckoning from the post mortem statistics a similar increase appears to have occurred in the total number of lung carcinomata. According to the comprehensive statistics from Kries's *Ungesch. prim. Lung. Carcinomata* is four times as common as primary lung sarcoma."—*Fortschritte f. R.* March, 1924.

The question to which I would invite discussion is as follows: Is this increase real, or can it be that many cases which we now recognize as carcinomata have in the past been mistaken for pulmonary tuberculosis, and especially of the fibroid type? There is some trustworthy proof of this. Friedländer and others have found squamous-celled carcinomata in the walls of an old tuberculous cavity. The experienced chest clinician, and radiologist too, knows that tuberculous infiltration may accompany neoplastic disease. Following irritative conditions, as, for instance, in the cobalt miners of Schneeberg, the subjects of chronic interstitial pneumonia and pneumoconiosis, primary lung carcinoma is not uncommon. This possibly helps to appreciate the German figures.

Almost without exception new growths of the lung have an acute history to start with, or set up acute bronchial conditions. Primary cancer of the lung usually starts in the mucous membrane of a large bronchus close to the bifurcation of the trachea. A malignant growth may be of quite large size before it gives any positive evidence of its presence. As it grows outwards it tends to compress the lung above itself, the limit of the neoplasm and the adjacent lung tissue being difficult to make out, the growth at first is strictly delimited by the interlobar fissure. From the situation of the growth it will be appreciated that the earliest clinical evidence is that of bronchial stenosis and the presence of "silent" lung above the growth. There is a definite tendency for the heart and mediastinum to be drawn towards the affected side, and this is a diagnostic feature of no little importance. Involvement of the phrenic nerve frequently follows, the diaphragm being raised and finally paralyzed. A primary carcinoma in the upper part of the chest is more readily recognized than when the lower zone is the seat of the trouble. The density of the mass and its sharp delimitation by the interlobar fissure can only be confused with a massive lobar pneumonia, in which, however, the history will assist. In the lower zone, however, there is much more rapid pleural involvement, the growth is less sharply defined, and the occurrence of secondary degenerative changes is much more rapidly met with. In all cases pleural involvement and degenerative changes, simulating bleeding down and abscess formation, tend to make the distinction between cancer and other inflammatory affections more difficult. The degenerative processes are by themselves impossible to distinguish from those of gangrene or bronchiectasis.

#### 2 Sarcoma

I am anxious to learn whether primary sarcoma of the lung (as opposed to lymphosarcoma arising from the mediastinal glands and therefore primarily mediastinal) does really exist. Adler entirely examined ninety cases, and came to the conclusion that hardly any of them appeared to justify their separation from carcinomata. A metastasis from some undiscovered primary focus (for example, the prostate) may well account for some of the suggested primary lung sarcomas.

#### Hodgkin's Disease

The diagnosis of this disease is not, as a rule, difficult, for it is but seldom that glandular enlargements are met with only in the mediastinum. The blood picture is not of great assistance, but moderate eosinophilia, progressive anaemia, with increase in the leucocytes, and frequently pyrexia, are all helpful in the diagnosis. The x-ray picture is that of a fairly well defined mass in the mediastinum, simulating any other mediastinal growth.

#### New Growths of the Mediastinum

Surely the most difficult part of our work is the differential diagnosis between the various tumours which may be encountered in the mediastinum. Some years ago the best and kindest thing that could be said of the radiology of the chest was that it was of great value in the diagnosis between aneurysm and neoplasm, and that the diagnosis was simple. All one had to do was to place the patient in front of a fluorocent screen and the diagnosis was simple. How delightful if this were so! But I am leapt out! How delightful if the radiologist, and all speaking to learned and experienced radiologists, and all will agree with me that the matter is not quite so simple.

as it seems. How often have not we had to wait in order to decide whether a large pulsating tumour in the mediastinum would turn out to be a large aneurysm of the arch or a sarcoma growing from the mediastinum? And mind you not infrequently the matter was further complicated by there being a positive Wassermann reaction. Not does the clinical examination assist us. Most of the signs are alike in both, and these are due chiefly to pressure effects. Cyanosis, venous engorgement, and signs of collateral circulation are possibly more common in neoplasm. The time factor is of service. If signs have persisted for eighteen months or thereabouts, the evidence is in favour of aneurysm.

Hare, in an excellent analysis of 520 cases of mediastinal disease gives the following table:

Cancer	134
Sarcoma	90
Lymphoma	21
Dermoid	11
Hydatid	8

The rest were composed of inflammatory disease, and included instances of hyponia, enchondroma and gumma.

There are three tumours in the mediastinum which I should especially like to mention: (1) Aneurysm of the thoracic aorta (arch). (2) Sarcoma growing either from the mediastinal glands, or (as in a case under my care) as arising from the remains of the thymus gland. (3) Malignant tumour growing from the thyroid.

(1) *Aneurysm of the thoracic arch*.—I need not labour the question of diagnosis in this condition. It is obvious that the history must be taken into account, the absence or presence of a positive Wassermann reaction noted, and examination in the lateral oblique as well as in the postero-anterior plane, the former showing marked tendency to "clubbing" and thereby differentiating it from anything else.

(2) *Sarcoma of the Mediastinum*.—In this condition there is often a pulsation (transmitted) equal to, if not greater than that in the case of a large and consolidated aneurysm. To decide whether pulsation is transmitted or not is truly a difficult matter. A large mediastinal sarcoma frequently invades both sides of the mediastinal space, causing compression or deviation of the trachea, definite signs of compression, interference with the circulation, etc. Differing from aneurysm, it seldom causes erosion of the bony structures; indeed, the diagnosis of aneurysm is frequently determined by this result.

(3) *Tumour Growing from the Thyroid*.—Examination in the lateral plane will reveal a tongue-like process growing downwards and forwards and depressing the arch of the aorta. Such growths are of extreme rarity, but the foregoing evidence clearly demonstrates the situation of the growth.

At the conclusion of his paper Dr Stanley Melville put forward the following three questions for discussion:

Is it held that there is any definite relation between primary carcinoma and pulmonary tuberculosis?

What is the opinion of the Section on the rather vital question of the increase of malignant disease? Is his real or are we now beginning to diagnose tumours of the lung, which in pre-radiological days were regarded as pulmonary tuberculosis and especially of the fibrotic type?

What evidence is there of definite primary sarcoma of the lung?

#### DISCUSSION

Mr C THURSTAN HOLLAND (Liverpool) said that too much was expected from radiology as regards the differential diagnosis of conditions of the chest. It was easy to demonstrate various growths in the chest by radiography, but differential diagnosis was extremely difficult, and in some cases impossible. In the attempt to distinguish between aneurysm and growth mistakes had often been made both ways. In doubtful cases he ascertained whether in any position of the patient wave-like pulsations could be seen on the edge of the shadow, if such were present he reported that it was a case of pulmonary aneurysm but it did not follow when these were not seen that there was

no aneurysm there. It might not be possible to get the patient into such a position that the wave-like pulsation was visible, or there might not be any wave-like pulsation. With regard to the first of Dr Melville's three questions, Dr Thurstan Holland had never seen anything either in the x-ray department or in the post-mortem room which would have led him to believe that there was any direct connexion between pulmonary tuberculosis and primary carcinoma, nor that malignant disease of the lung was increasing. It was much more likely that accuracy in diagnosis had improved so that more cases had been collected, and thus the increase was apparent rather than real. He did not think he had ever seen a case of primary sarcoma of the lung though he had seen secondary sarcoma many times. He agreed with Dr Melville about differential diagnosis, but one or two points had not been mentioned—for example the drawing off of fluid in the chest, which had often obscured a growth. Certain American workers had recently stated that, by giving doubtful cases a definite dose of x-rays and taking radiographs under standard conditions as a result of the action of the rays on the presumed growth they had often been able to make a differential diagnosis and had frequently obtained valuable information. There were a large number of intrathoracic cases of the kind not diagnosable by x-rays alone. Only by the collaboration of the clinician and the radiologist and only when the greatest care was taken, was accurate differential diagnosis possible.

Dr A I BIRCHALL (Manchester) emphasized the absolute need of co-operation between the clinical side of medicine and the radiologist. The radiologist who worked merely in his own department would make mistakes, and on the other hand much clinical medicine should be rewritten nowadays in the light of radiology. He asked whether anyone present had demonstrated tracheal tugging in the case of an aneurysm.

Dr D CAMPBELL SCOTIE (Glasgow) said that as a radiologist at a children's hospital his experience gained in dealing with perhaps 14,000 chest cases in children up to the age of 12 was that primary tumours of the chest were very rare; he had seen only one case of secondary tumour.

Dr L A ROWDEN (Ireels), speaking of the diagnosis of chest tumours, said that radiologists in his part of the country always gave an opaque feed to see what effect the growth had upon the oesophagus. The method was very helpful in certain cases.

Sir HUMPHRY ROLLESTON (Cambridge) agreed that it was important that the clinician should go into the radiological department and the radiologist into the post-mortem room. With regard to tracheal tugging he had always had a doubt as to whether he was applying the test in the proper way, and he believed that the difficulty was not so much in saying whether there was tracheal tugging as in deciding whether it was due to an aneurysm, or to mediastinitis or to a mediastinal tumour.

Lord DAWSON OF PENZANCE suggested that it would be worth while trying conjoint teaching. When there were clinical lectures in the wards the radiologist might be invited to come to discuss the matter from his own point of view. The radiologist was however apt to think that an audience in front of him was a meeting of radiologists and he did not always sufficiently realize that clinical teaching had to be short and succinct so as to allow five or six cases to be dealt with in two hours. The difficulty would disappear with more frequent co-ordination which would benefit both clinician and radiologist, each being able to see the difficulties of the other. Tracheal tugging existed but no one would be so foolish as to diagnose an aneurysm by this alone, since aneurysms often occurred without it. The advances of radiology were greater than those of almost all other branches of medicine, but the great difficulty was the expense. Unless a picture was extremely good the clinician was apt to be misled. He had found it very difficult sometimes even to tell an advanced case of tuberculosis from certain types of growth.

Dr N S FINZI (London) said that it was very difficult sometimes to decide whether a sarcoma started in the mediastinum or in the lung, whether it had involved the lung and spread into the mediastinum, or vice versa. One case he had encountered was very definite because the growth was in the apex of the lung. On other occasions he had felt almost certain that the primary growth was in the lung and had spread into the mediastinum and involved the walls of the aorta. He had seen at a necropsy a case in which the walls of the aorta and of the oesophagus were involved, and it was very difficult to prove that the condition did not start in the mediastinum.

The PRESIDENT (Dr Woodburn Morrison) said that radiology was a definite part of clinical examination—an extension of the method of inspection, he would like to see it mentioned in all textbooks under the head of "physical examination for clinical diagnosis." The radiologist was purely a clinician, and the clinician was only occasionally a radiologist. The ideal would be for the clinician to be an expert radiologist, but until that time came, and until the clinician would willingly undergo the labour of acquiring a knowledge of radiology, the only course was co-operation. The term "radiological diagnosis" was often used and seldom justifiable.

Dr MELVILLE, in reply, doubted whether his questions had been answered. Dr Finzi was the only speaker to tackle the question of the site of origin of a sarcoma, and his conclusions were disappointing—merely that the sarcoma might have started in the mediastinum. So much was heard of primary sarcomas of the lung, and yet hardly anyone in that meeting could say definitely that he had seen such a thing. It was quite conceivable that a small focus in the postero-lateral ovary might have been overlooked, and metastases in the lung, which would be more evident, had occurred. True primary sarcoma of the lung was, he maintained, to use a Scottish term, "not proven."

## X RAYS AND RADIUM IN THE TREATMENT OF CARCINOMA OF THE BREAST \*

BY

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(With Special Plate)

Certain considerations, as to the natural history and spread of cancer of the breast, influence so largely the question of treatment that we must spare a few moments to discuss them.

With the rarest exceptions, medical men are agreed that cancer starts as a local disease, or at any rate a local manifestation. In most types of the disease it tends sooner or later to spread—at first by the lymphatics and lymphatic glands, and later, in some cases, by the blood stream. If the disease is completely removed while it is still local, whether by surgery or by radiation, the patient will be cured. When, however, the disease has spread beyond the area removed, or beyond the area to which a sufficiency of radiation has been given, it recommences to grow, and tends subsequently to kill the patient. In rare cases, in old people, the disease remains localized, and shows no tendency to any distant spread.

In an occasional case, of the most extraordinary rarity, the disease, though well advanced, may completely disappear, perhaps for a time only. I have seen two such cases in the course of many years, during which I have seen thousands of breast carcinomas. One of these cases was shown at a society, and the other occurred in my practice at St Bartholomew's Hospital. We have reason to fear that, after being well for more than two and a half years, the latter is beginning to recur.

Obviously the mode and directions of spread are extremely important, and we must therefore carefully consider the lymphatic supply of the breast. It must be remembered

that the disease can pass either with or against the direction of lymphatic flow, and it has been shown by Sampson Handley that cancer cells may die out in one part of a lymphatic and cause it to shrink down to a fibrous thread, while further on, in the same lymphatic, they may develop into a tumour. The fact that cancer cells can be traced along the lymphatic channels seems to show that it is the cells themselves which spread the disease for the cells of normal tissues do not appear to enter the lymphatics.

The lymphatics from the mamma pass mainly into the pectoral group of axillary glands, and occasionally directly to the subclavicular glands. Lymphatic cells also pass from the inner part of the mamma into the intercostal spaces and so into the sternal lymph glands. Lymphatic vessels from the upper part of the pectoral region also pass directly to the supraclavicular glands. The lymphatics from the pectoral group pass to the rest of the axillary glands, the subclavicular glands, and the supraclavicular glands, and thence to the glands in the posterior mediastinum. Those from the sternal glands pass into the anterior mediastinum and thence into the posterior mediastinum. The lymphatics on the surface of the upper abdomen are also connected with the pectoral lymphatics.

Thus it will be observed that, when the primary growth is in the outer part of the breast, further trouble may be first expected in the axillary and the subclavicular glands, and later in the supraclavicular glands and the posterior mediastinum. If it is in the inner part of the breast, the inner end of the intercostal spaces and the anterior mediastinum are the danger zones. If in the upper part of the breast the supraclavicular glands must be suspected. In practice a recurrence under the costo-cornoid ligament, very difficult to feel but causing much swelling of the arm and forearm, is very common, probably almost all, if not quite all, the cases of great lymphatic obstruction in the arm after carcinoma of the breast are due to this cause. In advanced cases the disease often invades the pleura, possibly by the sternal glands or the intercostal glands, possibly by way of the mediastinum. It is obvious that the cells will eventually reach the blood stream by the thoracic duct.

Involvement of the mediastinal and tracheo-bronchial glands may often be discovered by a skiagram, as also pleural metastases and blood disseminated metastases in the lungs. They obviously cannot be seen in the earliest stages, but only when they have formed definite tumours. They tend to have a typical rounded appearance. For this reason, and also for future reference, skiagrams, both anterior and antero-lateral, should be taken of every breast carcinoma before a ray treatment.

### ACTION OF RADIUM RAYS AND X RAYS IN CARCINOMA

The alpha and the beta rays of radium need only be considered shortly. The former have, as their low penetrating power would indicate, apparently no value in the treatment of carcinoma of the breast. With beta rays the matter is not so definite, but anyhow much better results have been obtained by gamma rays and by x rays in this disease, so that I shall not deal with the beta rays in this paper.

*In vitro* it is found that there is a certain minimal dose which, when applied to experimental growths, will inevitably prevent their development. This is the "lethal dose," and will cause the growth to be absorbed by the tissues of the animal into which it is implanted, and it will then immunize this animal against future implants of a similar growth. Larger doses of rays will equally prevent development of the irradiated graft, but will not immunize to the same extent, so that, when about twenty times the lethal dose has been given, the graft no longer immunizes. Doses smaller than the lethal dose will reduce the ratio of successful implantations without preventing them in every case. The lethal dose is much higher than can be applied to living tissues without causing their necrosis.

The irradiation of the tissues into which a cancer graft is to be made will reduce the percentage of successful takes compared with controls. When the tumour and growth are irradiated together the latter will disappear with a dose of the order of half the lethal dose.

\* The opening paper of a discussion in the Section of Radiology at the Annual Meeting of the British Medical Association, Edinburgh, 1927.





FIG 1—Primary bronchial carcinoma



FIG 2—Primary bronchial carcinoma Note para-lysed diaphragm on affected side.



FIG 3—Primary carcinoma (same case after in-jection of lipiodol and production of artificial pneumothorax) showing tension of bronchus



FIG 4—Metastatic carcinoma of lung Secondary to a primary focus in ovary



FIG 5.—Dermoid cyst.



FIG 6—Dermoid cyst (Same case in lateral plane.)



FIG 1—Acute burn Before treatment

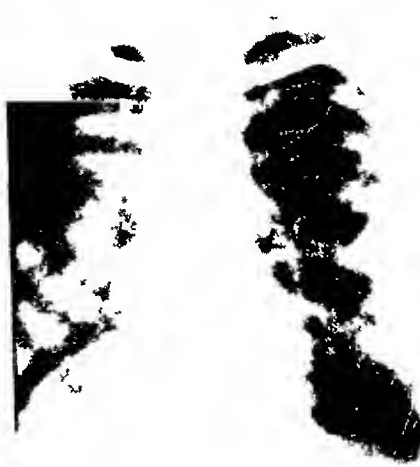


FIG 2—Acute burn Three weeks after treatment



FIG 3—Acute burn Six weeks after treatment



FIG 4—Acute burn Two and a half years after treatment



FIG 5—Chronic burn Three months after termination of six months treatment



FIG 6—Chronic burn Same case two years later

The action of the rays in a human being varies with the type of disease. In general the more rapidly growing the neoplasm the more readily will it succumb to irradiation but, as the rapidly growing forms spread more quickly a wider area and more distant glands will need to be treated in such cases, and a greater number of successful results will subsequently be spoiled by distant metastases. With the rapidly growing forms the effect of the rays is rapid, a change being seen in a day or two, while in the more slowly growing forms the changes may take a good many weeks.

The type of ray used also has an influence on the type of reaction. As the wave-length of x rays decreases so their effect takes longer and longer to appear. With gamma rays, however, the effect appears in about the same time as x rays produced by 150 kilovolts continuous current. I am distinctly of opinion that the carcinomata and epitheliomata respond better to x rays, the shorter the wave-length if full doses are given. Consequently the radium gamma rays are the best provided that they are applied in sufficient quantity. With some types of sarcoma it is probably a different story. The lymphosarcoma probably responds at least as well to medium wave-lengths if applied in sufficient concentration.

#### *Comparison of Radium Gamma Rays and X Rays*

With modern apparatus x rays can be obtained in large quantities to rival which we should have to use what we at present regard as enormous quantities of radium. On the other hand, this can to a certain extent be counteracted by the facility with which the radium can be applied for prolonged periods, even continuously for many days. In the rare instances in which comparatively large quantities of radium can be secured and they are used in a similar way to x rays they are not concentrated into a point focus, but spread over a large radiating surface, with the result that the relative depth dose is greatly increased. Much more commonly the radium is used considerably nearer the surface than an x ray focus can possibly be placed but spread over a large area. It is left in place usually for a number of days or even weeks.

The radium rays are much more penetrating and for the same amount of damage to healthy tissues seem to exert more effect on carcinomata than x rays. However, with radium used in this way, the underlying lung must get a large dose and subsequent lung damage may be expected. With x rays on the other hand the use of a glancing method (subsequently described) will to a large extent prevent this.

Radium used for external applications therefore has the advantages compared with x rays, of more penetrating rays of a more suitable wave-length, multiple foci or a series of large foci, and continuous application. Its disadvantages are that it is not so easy to give an even dose over the large deep area required in breast carcinoma, and that it is not possible to avoid injury to the lung.

Radium is used also in quite another way—namely by burrowing a number of radium containers in the tissues. As a rule hollow needles containing either radium salt or radon are employed. When small quantities are used in each needle for a week or more the radon is at a very decided disadvantage compared to the salt, for in order to obtain the same total dose a considerably larger amount of radon has to be used at the start and the effects are different. The needles are used deep to the growth if possible or in its deeper layers not in the middle of it. The gland areas are of course needled at the same time. X rays are not used in any way comparable to this.

I have an impression that the results with buried radium are better than with external method provided that the wound remains aseptic. This can only be accomplished by meticulous care owing to the damage inflicted by the radium on the tissues. I have advanced in explanation the hypothesis that around the radium needles there are zones in which the cells of the growth receive a true "lethal" dose and that the absorption of these may weaken the resistance of the remaining cells to smaller doses of rays.

#### *TREATMENT BY IRRADIATION ALONE*

##### *1 Primary Growth Localized in Breast no Palpable Glands*

(a) *Operable* (as far as local condition is concerned).—Should we treat an operable case with radiations when surgery is not contraindicated? The answer is. At present, only if the breast is subsequently removed. The loss of time possibly two months, is probably more than compensated for by the diminished likelihood of dissemination of the growth at the operation. So far we have treated very few truly operable cases either with radium or x rays, and we have not yet had the breast removed after complete disappearance of the growth and so proved the absence of cancer cells\*. Therefore we cannot say that our technique is yet good enough to recommend the treatment of the disease by irradiation alone when it is operable. When other causes contraindicate operation the case must be considered as inoperable and treated as such.

(b) *Inoperable*.—We have succeeded in a number of cases in rendering the growth inactive for long periods by x rays but we have seldom observed its complete disappearance. With radium needling, properly done, our results are more encouraging. In a large proportion the growth completely disappears, and the only questions then are whether all the cells have disappeared, whether the gland areas have received a large enough dose, and whether the mediastinum is also involved.

##### *2 Primary Growth in Breast Palpable Glands in Axilla*

The radiation treatment of such a case depends largely on the x-rayographic evidence. If the typical rounded mediastinal glands are seen nothing but mediastinal treatment is of any value and as this usually prevents a sufficient dose being given to the breast and axilla the question of surgical help must be considered. If the mediastinum is not demonstrably involved, it is best to assume for the time being that it is free and treat the breast just as if operable with the exceptions that the subclavicular and probably also the supraclavicular regions must be treated and, if the growth is in the inner part of the breast, the inner ends of the intercostal spaces also. If the mediastinum is subequally found to be involved, it can then be treated by x rays.

##### *3 Primary Growth with Supraclavicular Deposits on the Same Side*

Such cases must always be regarded as having the mediastinum infected even when too early to show with x rays and unless mediastinal treatment can be adopted together with correct dosage of the breast, axilla, and supraclavicular regions with x rays no permanent success can be hoped for. Combined radium and x ray treatment might be used in some of these cases.

##### *4 With Definite Mediastinal Involvement*

Until comparatively recently I regarded these cases as almost hopeless and attempted nothing radical. I have, however, had several cases which have done so extraordinarily well that I no longer despair. It is now more than three years since I treated the first by my present technique and the patient is still well. Another has been under treatment over two and a half years and has had very extensive recurrences but has recovered in a miraculous way.

##### *5 Treatment of Distant Metastases*

Bone metastases are usually very painful and there may for a time be only one or two. Treatment of such metastases gives so much relief that it cannot be refused even though it is certain that the patient will ultimately succumb to other metastases. Even when the pelvic bones are riddled with disease I have observed much relief from radical treatment lasting often for six months or more. There are of course limits and generalized disease, masses in the liver, and so on, should not be treated by irradiation.

\* This has now been done (October 1927).

## RECURRENTS AFTER OPERATION

**Local**—The general lines of treatment of these will be similar to the methods of dealing with a primary growth detailed already.

**Distant**—In the axilla, the coracoid region, and in the mediastinum, the treatment will be as when the primary growth is present. Metastases in distant parts must be dealt with on their merits, they are worth treating on account of the great relief from pain and disability, though when once they are deposited in distant bones there is no hope of ultimate cure. In that band of us all, the recurrence in the sternum, pelvic bones, and lumbar spine, complete relief of pain can often be given for many months, and I have seen a patient live for three years after a recurrence in the lower end of the femur had been cured by x-ray treatment.

## TREATMENT BY RADIATION COMBINED WITH SURGERY

There are many problems to be discussed under this heading.

## 1 Radical Operation Preceded or Followed by Irradiation

Surgery has had so long an innings, and the procedure has become so standardized, that the statistics should be fairly definite. There are, however, only few figures giving five-year results, and these seem to vary considerably. With radiation used in addition, it is extremely difficult to determine the results. To start with, the procedure is not standardized, consequently if it is any good at all, obviously the best method will give the best results. It is my personal belief that thorough irradiation improves the results, but that small and ineffective dosage hastens the appearance of recurrence, though it probably cannot induce it. One great difficulty in treating these patients is the mental attitude. The surgeon may make the patient believe that it is necessary to do a big operation to remove a "harmless little growth" or "an inflammatory focus," but this leaves the radiologist little chance of explaining that radium or x-rays, with all their attendant expense, must be used to diminish the possibility of its return, especially if radical methods are used.

The Erlangen school holds that irradiation after a radical operation is of no value owing to the disturbance of the blood supply, but the rarity of local recurrence in treated cases, compared with its comparative frequency in untreated cases, leads to the belief that the treatment is beneficial.

The prophylactic use of x-rays may be either pre-operative or post-operative.

(a) **Pre-operative**—The basis of this treatment is that the rays will damage the carcinoma cells and so prevent their development if any are scattered in the wound. The use of large doses, however, may prevent the wound from healing, especially if there is much tension on it, and there may result either sloughing or complete failure of the cut edges to unite. Having had two cases in which one of these events occurred, I have not dared to employ it again, though the principle seems sound. The use of small doses to stimulate the defence mechanism is a very questionable proceeding.

(b) **Post-operative**—Radium can be used either in some form of moulded apparatus or in the form of plaques. It is advisable that there should be a space between the radium and the skin in order to get even irradiation at the deeper levels. It is doubtful, however, if the axilla will get so effective a dose as with x-rays, and it is not possible to protect the lung. X-rays are applied to the pleural area by a glancing method, and to the supra-clavicular and coracoid regions from the front and back. I prefer to separate the two treatments by an interval of three months so that the axilla is treated twice, the first area being that in which recurrence is the more likely from the original position of the growth.

As to dosage in prophylactic treatment, I hold very strongly the view that the methods used should be exactly the same as when a demonstrable recurrence is present, and the doses just as full. We assume that there still remains some disease and use the most thorough methods to eradicate it. It has lately become the custom in

Germany to split the dose into smaller treatments at long intervals. This is based on the following theory. Experiments with beans have shown that there is a certain minimal dose which will kill a growing bean. If one third of this dose is applied and repeated on two subsequent occasions at some weeks' interval, the bean grows normally. Now, if a resting (dys) bean be treated in the same way with three fractional doses it will fail to develop. It is assumed that the cancer cells in a prophylactic treatment are in a similar resting stage and that they can be killed by summated doses without harming the remainder of the tissues. I disbelieve this theory because I think it is wrong to consider the cancer cells as in the same state as the resting bean.

A quite different method of prophylactic treatment is the leaving, during the operation, of small radium tubes in places where recurrences are most likely to take place, or rather, in the lymphatic path along which the cells are most likely to spread. The placing of the radium tubes will depend upon the position of the primary growth. They are most usually placed in the supraclavicular and the subclavicular regions, and in the muscles at the inner ends of the upper three or four intercostal spaces. My only criticism of this method is that its zone of action is limited, and, to get at all a large dose, it is necessary to give too much in the immediate neighbourhood of the radium.

## 2 Local Removal of the Growth and Irradiation

My view on this is that, if we can get rid of the deposits in the axillary glands, it is almost certain that we can also get rid of the primary growth, and its surgical removal is therefore an unnecessary disturbance. When the mediastinum is involved, however, it may facilitate the technique to remove the breast without doing an extensive dissection. It is best done after the radiation treatment to diminish the likelihood of insemination. Each of such cases should be carefully considered by the surgeon and radiologist in consultation. Local removal may also be performed in cases apparently cured by radium or x-ray treatment, in order to be sure that the technique is good enough to cause all the carcinoma cells to be absorbed, but if once this fact is established it will no longer be necessary.

## 3 Exposure of the Growth, Irradiation, Closure

This method has been proposed to get over the difficulty of the dose of medium x-rays being limited by the sensibility of the skin. I have no experience of the use of x-rays or radium in this way, radium buried in the tissues will be considered separately. Similarly the open wound might be treated after a radical operation, but anything like a full irradiation would probably prevent proper healing.

## 4 Radium Surgery of Access

The technique for the introduction of the needles in a breast case is not simple and considerable practice is needed to get satisfactory results. Only a study of the skiagrams of his cases will enable a surgeon to realize how difficult is the position of the needles from what he had imagined. The supreme importance of asepsis cannot be magnified. The supreme importance of asepsis cannot be too greatly emphasized, and it is no ordinary asepsis that is needed. Normally the tissues can deal with quite a large number of bacteria, but they are rendered much more vulnerable to bacterial attack after being exposed to more vulnerable to bacterial attack after being exposed to large doses of radium. Therefore far radium rays in the large doses required. Therefore far greater precautions must be taken than with healthy tissues—as much care as is necessary to keep the tissues of a diabetic free from sepsis in an operation.

The treatment of recurrences by radium needling is only sound when the recurrence is absolutely local. Multiple recurrences are generally evidence either of some deeper focus or of extensive superficial invasion, and need to be treated accordingly.

## AFTER-EFFECTS OF RADIATION

## Immediate

Some patients suffer from sickness, which may be considerable if the dose is large. This can be much diminished or even abolished by certain precautions. In the first

place spreading the treatment over several days is very effective. Next the avoidance of direct radiation passing through the chest helps a great deal when it is feasible. Then having well ventilated treatment rooms, from which all corona discharge is eliminated also assists considerably. The administration of 10 grains of chloroform before the treatment, and three times a day during it, is also of assistance. Lastly, the patient should be advised to drink plenty and to eat very little during the course of treatment. When the treatment is divided, the amount of radiation must be increased.

#### Subsequent

A certain amount of erythema of the skin must be obtained if the results are to be successful and this should be just short of vesication. If the treatment is repeated, telangiectases may be expected to form a year or two afterwards and if several times repeated in full doses, they are inevitable.

When the skin is much changed by several treatments it is very susceptible to damage by any trauma—even a very hot bath will do it—and to infections when so damaged. These infections cause a very intractable ulceration, and the best treatment is to get them in the early stage, cultivate the infective agent, and then give the patient vaccines from this. Zinc ionization is also useful in healing the ulcerations.

When effective doses of rays are used on the chest wall, it is difficult to avoid the lung receiving such doses. Many such cases will then develop a characteristic lesion of the lung. It does not occur in all cases unless the dose has been very large, and it may be due to the waking up of old disease foci which exist in most lungs. The acute form is produced by a large dose of radiation delivered over a few days, and shows itself first of all as a pneumonic patch in the lung with slight displacement of the heart and mediastinal contents towards the affected region. This displacement gradually becomes more marked and eventually typical mottlings appear in the affected lung. Later the typical appearance of bronchiectasis develops, generally however without the symptoms of this condition (Figs 1, 2, 3, 4). In the chronic form, caused by irradiation at intervals over a long period, the changes are similar except that the pneumonic stage is not observed. In the final stage the patient is unconscious of any abnormality as a rule, but in one rare case a typical bronchiectasis remained (Figs 5, 6).

#### TECHNIQUE

##### X Rays

In order to avoid the lung damage referred to I devised a method with x rays, which I published at the Bilingual Congress of Radiology in London in 1922. Holfelder of Frankfurt subsequently devised a similar method which in some ways is an improvement. The principle of each of these is to use the rays at a tangent to the chest and so to avoid damage to more than the superficial parts and the apex of the lung in both of which it is inevitable. The rest of the lung is protected by lead or other opaque material. The disadvantage of this method is that rays are kept away from the mediastinum so that skiagrams of the chest must always precede the treatment to show whether there is any obvious mediastinal involvement and if such be the case a different technique is employed. If the mediastinum is not involved the tangential method has the advantage that it is much less likely to cause radiation sickness than large doses on the mediastinum.

The supraclavicular region is treated by separate fields, front and back, either at the same time as the pectoral region or at a different time. I prefer the latter method, because I then give the axilla and coracoid regions a second dose and as these are the parts most infested by recurrences, the results are better. Ten or twelve weeks should elapse between the two treatments.

The focus skin distance I use in each of the above is 50 cm., but more will be required if the radiation is less penetrating. I use continuous high tension current at 170-185 kilovolts (Peeke tables) which is the limit that most tubes will stand. It is found that above 160 kilovolts the dose which will give a skin erythema is enormously larger than below.

For mediastinal treatment I use a number of fields converging on the mediastinum for preference giving half the treatment on one pattern and the other half on another pattern over-

lapping this. The focus skin distance is only 30 cm., and it is not found necessary to give a full erythema dose to any one area. The supraclavicular regions are taken in, whether enlarged glands can be felt in them or not.

Whatever method is employed I have obtained the best results, so far as x rays are concerned, with the hardest rays.

#### Radium

(a) *Needling*—Long radium needles of an active length of 6 cm if possible, are introduced into the deeper part of the breast or of the tumour in parallel formation being adhered to and each needle being about 1 cm from the next those, however, on the outer edge being slightly closer together. Needles are also introduced into the axilla in similar formation when a primary tumour is being treated, and if possible into the coracoid and supraclavicular regions, especially if the axillary glands are palpable because the disease has always passed beyond the palpable glands. The needles are made of platinum, with a wall 0.5 or 0.6 mm thick and contain 0.5 or 0.6 mg of radium per cm active length. They are left in for from six to ten days.

(b) *Combined Method*—After a radical operation tubes are left at the inner end of each of the upper intercostal spaces—say 10 mg with a 0.5 mm platinum filter for two days—two or three others in the supraclavicular region, and another tube below the clavicle.

(c) *External Applications*—Either a mould of special wax is made to fit tightly on to the whole breast area or a splint in some light material such as celluloid or special thin wood, is made. In the former case the radium tubes or needles are distributed evenly on the wax which is usually some 3 cm thick or even more. When the splint is used little blocks are stuck into it which carry the radium at the requisite distance from the skin. When very large quantities of radium are used necessitating considerable protection, they are usually carried on a separate apparatus allowing universal movement—something like an x ray tube stand. Placing the radium directly on the skin does not relieve a sufficiently large depth dose and is out of date.

#### RESULTS

On the whole the material with which we have to deal is so bad that our results cannot be good. By the use of radium needles, however as described above, in a series of cases not so advanced as the bulk of cases supplied, the results are very hopeful indeed. With x rays we have generally had later cases to treat, and while the disease can usually be kept in check for a long time, complete disappearance of the growth is uncommon. Many such cases also are subsequently lost from distant metastases, usually in the pelvis and lumbar spine. A local recurrence of the disease, after apparently complete disappearance, makes us think that the technique is at fault and we wonder whether it would not be wise in all cases to give a second treatment, possibly using a somewhat smaller dose than the first time as a prophylactic.

I have seen several cases with what seemed to be definite mediastinal spread, generally with deposits in the supraclavicular glands or other places as well, in which all external evidence of the disease has disappeared, the shadows in the mediastinum have become smaller and lost their characteristic outline, and so far the patient has remained well for two or three years or more. These are rather unexpected and I think we must regard them as lucky, though we always expect to see improvement.

On the whole therefore, palliation and prolongation of life are the rule, cure the exception. From what we have seen it is obvious that better results may be expected by obtaining the cases in an earlier stage.

When a case is not too far advanced radium seems to give better results than x rays.

There is no question that we could be supplied with a better type of case. The surgical waiting lists at most hospitals are long and a certain number of cases have advanced beyond the curable stage in the weeks during which they wait for a bed. The comparatively short time required for their irradiation would spare more beds for keeping the waiting list short, and eventually more lives would be saved. The use of radium needling in earlier cases has immediately shown marked improvement in the results and such methods, followed by extirpation if desired, seem to offer a better chance of cure than operation with subsequent irradiation. On the other hand, prophylactic radiation must not be withheld when operation



is the method preferred. So long as surgical removal of a cancer is a recognized method of treatment radiation must also find a place.

## DISCUSSION

Dr J H DOUGLAS WEBSTER (London) advocated the closer co-ordination of radiological and surgical treatment. He thought that increased emphasis on the value of radiology, by diminishing the certainty that operations would be advised, would result in nervous patients seeking treatment earlier for small, painless lumps in the breast, and would thus improve the chances of cure. He believed that in many cases surgical intervention hastened a fatal issue. Local recurrences were less frequent when radiation treatment was commenced within two to four weeks after a surgical operation. Prophylactic x-ray therapy was of the greatest value after admittedly incomplete operations—as, for example, when the axillary glands could not be wholly cleared. Local improvement followed radiation treatment, even in inoperable cases, when surgical treatment was sometimes rendered possible thereby. The speaker pleaded for the extension of facilities for x-ray and radium treatment of cancer of the breast, since the results were often better than those of surgery. In his opinion operations ought to be forbidden in the case of active tumours which had not been sterilized by preliminary radiation.

Dr A E BIRLEY (Manchester) expressed his admiration of Dr Finzi's work, and recalled a memory of seeing him in the midst of a litter of broken x-ray tubes and other apparatus making an effort to get more intense radiations. Everyone had seen marvellous results with x-rays and radium, and occasionally people had seen similar benefit without either. There were many types of cancer, and some were amenable to quite local radiations, while others were not. He mentioned two cases which had been operated on many years before and in which there had been supraclavicular recurrence. He decided to treat one patient with rays of ordinary wave-length and the other with deep therapy. The second improved remarkably, and they were very cheered to see the growth disappear, but the patient was dead within six months. The other patient, who was treated superficially, lived much longer. It often happened that the immediate results were good, but the ultimate results poor, he had therefore become conservative and could not share the optimism of either Dr Finzi or Dr Webster. While all could obtain wonderful results with x-rays, it was essential that before they tried to do any good they must ensure that they did no damage. With regard to post-operative treatment, he noted that Dr Finzi used the maximum dose which the tissues would stand, the speaker could not see the necessity for going to the length of damaging the skin. One extremely important point in post-operative treatment was the period when x-ray treatment should be started, if begun within a fortnight or three weeks of the operation there seemed to be a far smaller number of recurrences than in cases in which it was delayed longer.

Professor M R J HAYES (Dublin) submitted figures showing the period after operation at which recurrence took place, and the site of recurrence in fifty-three consecutive cases of mammary carcinoma which had had no post-operative x-ray treatment. The period of recurrence in the 53 cases was as follows: 2 weeks in 1 case, 1 month in 5, 2 months in 4, 3 months in 7, 4 months in 2, 5 months in 1, 6 months in 2, 8 months in 2, 10 months in 1, 11 months in 2, 12 months in 7, 18 months in 3, 2 years in 2, 3 years in 9, 4 years in 2, and 5 years in 3. The site of recurrence is shown in the following table:

Site of Recurrence	First Year	Second and Third Year	Fourth and Fifth Year
Local	12	3	1
Supraclavicular	10	4	3
Axilla	1	—	—
Local and supraclavicular	6	3	—
Local and axilla	4	2	—
Supraclavicular and axilla	1	—	—
Spine	—	1	—
Thorax	—	1	1

The prevailing surgical practice was to regard supraclavicular involvement as a contraindication to operation, but it was apparent from the figures given that in the first-year recurrences there was apparently no clinical manifestation of supraclavicular involvement at the time of the operation, nor was there any evidence of it in the cases which occurred within three years. It was reasonable to suppose that the earlier the recurrence the more malignant was the character of the disease. It might be contended that all the cases in this series were of a very malignant type, and therefore had surgical risks, nevertheless, they indicated the advanced and almost hopeless stage in which the average patient with recurrent mammary carcinoma came to the radiologist for treatment, they showed also how essential it was always to include the supraclavicular space in prophylactic treatment as well as the pectoral region and the axilla. Such treatment was started usually in the second or third week, and most of the cases were treated according to the older methods, but during the past three years high-voltage rays had been employed. Time was too short and cases too few to compare the results of the newer with the older technique, but his impression was that for the prophylactic treatment of mammary carcinoma massive doses of highly penetrating rays were not only unnecessary but harmful, he believed, as Wintz had stated, that by their injurious effects on the healthy tissues they helped rather than hindered the recurrence of the disease. For precise measurements and accurate dosage on the surface and in the depths of the tissues the newer technique had obvious advantages, but for the prophylactic treatment of mammary cancer he considered that the rays produced by 135 to 155 kilovolts were the most effective. Of fifty patients who had prophylactic treatment seven were known definitely to have had recurrences, and of these seven one died within one year, four in the second year, one was doing badly from a deep-seated recurrence after five years, and one had recurrence after eight years which responded to further treatment, but she died later from the disease. In eleven cases the result was unknown, and thirty-two were known to be alive and free from recurrence after the number of years shown in the following table:

Years	1	2	3	4	5	6	7	8	9	10	11
Cases	1	5	4	4	6	3	2	3	2	1	1

The radiologist should have more information than was sometimes forthcoming about the histology of the cases he treated, for there was much evidence to suggest that there might be an optimum quality and quantity of radiation capable of producing a maximum inhibitory or lethal effect on a particular type of neoplastic cell. It was mainly along biological lines that future researches must extend, and the first endeavour should be to discover the relationship which existed between the quality of the radiation employed and the biological effects which were produced not only in the particular type of neoplastic cell, but also in the normal cells surrounding it.

Dr W M LEVITT (London) said that Dr Finzi had asked him to report on the histological examination of these cases after intensive radiation had been applied. Four patients had been investigated histologically, they had received intensified treatment by a method which gave them the full tolerance dose for about a fortnight. The histological examination was made about three months after the radiation. In one case it was found that there had been a most remarkable decrease in the number of malignant cells, and that there was a complete absence of mitosis in the cells which remained. In two cases there was very little decrease in the frequency of the malignant cells, but a complete absence of mitosis, and in the fourth case apparently there was no change in the character of the malignant cell. The obvious question related to the essential element in the malignancy of a tumour, was it the presence of a mitosis or some other characteristic? It was impossible to say. In one of these cases the tumour on removal had been cut right through, and what appeared to be malignant tissue had been left behind, but without mitosis, and the portion of tissue which had been cut through nine months before had not continued to grow. In connexion with the pre-operative treatment of malignant

disease, Dr Levitt suggested that local excision after irradiation might give a more satisfactory result. With regard to post-operative irradiation, if it was agreed that the selective sensitiveness of the carcinoma cells over the normal cells was proportional to their vital activity, then post-operative irradiation for prophylactic purposes was contraindicated altogether because any malignant cells which were left after complete operation were in a sort of hibernating condition. They did not commence to grow for quite a time afterwards perhaps as long as two or three years. In the bulk of cases he thought that pre-operative radiation was preferable to post-operative.

Dr R. F. ROBERTS (Liverpool) said that the treatment of malignant disease was one of the most depressing occupations anyone could undertake. In any large hospital the x-ray department was the dumping ground for all the surgical inoperabilities. It might be hoped that life was being lengthened, but it was a question whether it was not rather a case of prolonging death. No one could foretell exactly what response would follow from treatment. It was most disappointing when good curative or perfect prophylactic results followed operation that the patient should die after twelve or eighteen months from secondaries. The speaker thought that the secondaries must have been present from the time of the operation. The question of voltage was a very difficult one but he thought that Professor Haves had hit the nail on the head when he stated that for each type of malignant disease there was an optimum voltage, some cases responded best to high voltage and others to medium. The type of treatment had to be gauged by the general condition of the patient. In Liverpool a good deal had been done in the treatment of malignant disease by injections of lead and in the treatment of several of those cases subsequently by x-rays he had found that the lead injections appeared to assist the x-ray action the patients doing better than those who were subjected to x-rays without having had the lead treatment, there was a more intense secondary radiation.

The PRESIDENT (Dr Woodburn Morrison) asked what it was they were attempting to do when they irradiated breast carcinoma. If they were trying to destroy every individual cell in the breast they were committed to what was physically an impossibility. This could be easily demonstrated from the standpoint of pure physics. It would be found that calcification had taken place in some areas approximating quite unchanged cancer cells. From the physical point of view they could never accomplish in that way the pure destruction of a breast carcinoma. Dr Barclay had mentioned two patients, one of whom treated with deep therapy, had improved at first but died within six months and the other, treated superficially had lived much longer but his comparisons were not complete. He should have taken an untreated patient and observed how long life lasted. He wondered what would be the general average duration of life if a case of cancer were left entirely alone and how it would compare with the duration in cases in which operative followed by radiological treatment had been applied.

Dr FINEZ in reply, said that he believed it to be correct that every tumour had an optimum wave-length at which the treatment would do more harm to the carcinoma with less harm to the surrounding tissues than at any other wave-length. So far as he had gone it seemed to him that with the pushing up of the voltage better results were obtained in carcinoma and he still thought the optimum wave-length had not been reached because it was at present above the range which tubes would stand. Dr Barclay had suggested that the immediate results were good and the ultimate results bad the speaker thought that this was simply because the right technique had not yet been worked out. He denied that he was an indiscriminating optimist with regard to radiant treatment of breast cancer. He was an optimist in the case of localized breast carcinoma but the trouble was that they did not get cases like that to treat. In the cases described in his paper as having been treated with radium needles the results had been so satisfactory that at present the surgeon had refused to remove the breast because he could not feel

anything at all. Thus there could be no actual proof that in these cases the carcinoma cells had disappeared, but it was known that in the cervix every carcinoma cell could be made to disappear, that had been shown by others, using either radium or x-rays. He rather thought that that was the objective in breast carcinoma. As to massive doses for prophylaxis, he would retain his view, he believed in the hibernating cell, and that it was ready to grow. Dr Roberts had asked whether any good at all was being done but the older radiologists had seen patients who had remained well for five to ten years after treatment. He regarded the skin erythema as necessary because the dose which produced it was about the optimum for eradicating carcinomatous disease—he would not use the term “carcinomatous cells.” Some had maintained that carcinoma started as a generalized disease with a localized manifestation, Dr Finez did not believe that the disease originated in the blood or tissues generally, but that it started locally and subsequently became general otherwise, how could any disease at all be treated? He did not now get burns in the lung, because he had improved his technique. The goal of their attempts was to destroy all evidence of disease and so to treat the patient that no carcinoma cells would develop. It was possible that there might remain encysted hibernating carcinoma cells in the tissues, but so long as these did not develop it was well.

#### The Section of Radiology

At the conclusion of the meeting Dr L. A. Rowden (Leeds) made a protest against the confinement of the Section proceedings to one day only of the Annual Meeting, Dr A. E. Barclay associated himself with the protest, which the President of the Section promised should be conveyed to headquarters.

## Memoranda.

### MEDICAL, SURGICAL, OBSTETRICAL

#### CHRONIC FIBROUS EPILOITIS

THE publication by Mr R. Charles B. Munnell in your issue of June 11th (p. 1051) of his article on chronic fibrous epiloitis prompts me to record a case which presents many similar features.

A Chinese boy aged 10 was brought to me with symptoms of intestinal obstruction of three days duration. A large hard tender mass occupied the lower portion of the abdomen and extended from just above the umbilicus to the symphysis pubis.

The abdomen was explored by a right paramedian incision below the umbilicus. On opening the peritoneal cavity a dense tough membrane was found spread out in front of the abdominal viscera in a manner very similar to that described by Mr Munnell. This membrane was divided in the line of the peritoneal incision thus exposing the intestine. About two feet of small bowel were found to be gangrenous. Strong septa similar to suture to the membrane lying in front of the viscera passed backwards from it to the posterior abdominal wall thus dividing the abdominal cavity into a series of loculi and binding down and constricting the intestines. One of these septa had by obstructing the upper part of the ileum resulted in the gangrenous condition of the two feet of gut immediately below it. The septa and adhesions were divided sufficiently to free healthy bowel above and below the gangrenous portion preparatory to resection. At this point however the patient suddenly collapsed. A Pauls tube was inserted into the ileum proximal to the gangrenous portion and the patient was returned to the ward. Subcutaneous saline injection and the administration of glucose solution by the mouth and rectum resulted in so great an improvement that although by no means optimistic as to the chances of ultimate recovery I opened the abdomen again through the original incision on the third day following the first operation. It was found that the gangrenous portion of intestine had walled itself off from the rest of the abdominal cavity occupying a loculus of which the wall were largely formed by the adventitious membrane. The afferent and efferent healthy gut passed through the wall of this loculus to join with the gangrenous portion. The gangrenous intestine was resected the cut ends closed and side-to-side anastomosis was performed. Unfortunately however the extensive nature of the reaction proved too much for the patient in his debilitated condition and he died a short time after the completion of the operation.

Microscopical examination of a piece of membrane removed for section showed that it was composed of fibrous tissue upon which were superimposed the changes of acute inflammation. These changes which were secondary to the gangrenous condition of the intestine prevented any conclusions being reached as to the intimate structure of the fibrous membrane. The thickness of the membrane was approximately 1½ mm.

I think that the points of similarity between this case and that described by Mr. Munnell are sufficient to allow of their being considered as examples of the same pathological condition. In both there was present an adventitious membrane of similar characteristics, specialized portions of which were causing intestinal obstruction. It is perhaps suggestive that Mr. Munnell's patient, a European, should previously have suffered from bowel disease of a type very prevalent in the tropics.

Shanghai A. C. MACONIE, M.B. Lond., F.R.C.S. Eng.

#### DEATH AFTER ANAESTHESIA STATUS LYMPHATICUS

The following case, having some instinctive and extraordinary features, is, I think, worth recording.

A boy, aged 7, with well marked signs and symptoms of enlarged tonsils and adenoids was operated upon. He had the usual pre-operative preparation—namely, an aperient the night before and no food before operation. Anaesthesia was induced with a mixture of C and L (1/3) followed by pure ether, and was not remarkable in any way; the operation was successfully performed and there was no excessive haemorrhage. The patient had sufficiently recovered from the anaesthesia to cry out after the operation was concluded, and he afterwards sat up and talked to the nurse in charge. An hour after operation he suddenly turned a "nasty" colour, and when seen, immediately, by the house surgeon was rather of a blotchy purple blue but not generally cyanosed. He was pulseless and respiration had ceased. The usual remedies were tried—namely, artificial respiration, camphor oil, etc., cardiac massage, intracardiac and adrenalin injections were not used—without any response.

**Autopsy**—The body was of average size and conformation and of average weight. It showed, generally, a blotchy purple discoloration, very much like ordinary *post mortem* staining. The heart was empty, the lungs were not congested and were well aerated. There was a small amount of blood-stained fluid in the trachea, but no clot. No sign of embolism was noted. The liver appeared normal. There were no petechiae anywhere. The thymus, triangular in shape, covered the palm of an average hand ( $2\frac{1}{2} \times 2\frac{1}{2} \times 3\frac{1}{2}$  in). There was general enlargement of mesenteric glands, several being the size of an average walnut. The cervical glands were appreciably enlarged, but not matted or showing obvious signs of inflammation. The cause of death was given as "status lymphaticus."

The length of time before death after anaesthesia, and the lack of incident in the induction of anaesthesia, seem so extraordinary as to merit record, and the whole sequence of events, particularly the sudden and simultaneous cessation of all the vital functions, suggest the cause as being a vagotonic action due to hypersecretion of the thymus gland.

York

J. ACOB, M.B. B.S. Lond.

#### CHOLECYSTITIS WITH ASSOCIATED PANCREATITIS

The following details of a case in which cholecystitis was associated with pancreatitis seem to be worthy of record.

A married woman, aged 58, first attended as an out-patient in December, 1926, with a history of recurrent attacks of pain and tenderness in the right hypochondrium accompanied by vomiting, jaundice, and clay-coloured stools; she complained of flatulent dyspepsia aggravated by taking meat. These attacks had been intermittent for a period of five years, during which time glycosuria had coincided with the abdominal pain disappearing in the intervals. She had had dietetic treatment but no insulin.

On admission to hospital on April 4th, 1927, in addition to the preceding signs and symptoms, she was extremely tender over the gall bladder and there was slight jaundice. She weighed 8 st 5 lb. The urine contained 26 per cent of sugar and gave a faintly positive reaction with ferric chloride. There was hyperglycaemia, the actual figures of which unfortunately cannot be traced. A diagnosis of cholecystitis with associated pancreatitis was made, and it was decided to operate as soon as the urine could be rendered sugar free, as administered in doses of 25 units twice daily.

On May 2nd Mr. C. performed the operation, which was small and shrunken and contained a few faceted stones; there was definite pancreatitis. The wound healed by first intention, and three weeks later the patient was discharged on a slightly modified diet and twelve units of insulin twice daily.

Three months after the operation she was perfectly well, taking an unrestricted diet, and had increased 2 st in weight; there was no acidosis, and only an occasional trace of sugar in the urine.

The glycosuria in this case was apparently due to pancreatitis secondary to chronic inflammation of the biliary tract, and, although of five years' duration, cleared up after cholecystectomy.

I am indebted to Dr. Carey Coombs and Mr. Clifford Moore for permission to publish the notes of this case.

Bristol

PERIS BRIDGEMAN, M.B., M.R.C.S.

## Reports of Societies.

### SURGERY IN THE XVIII<sup>TH</sup> AND EARLY NINETEENTH CENTURIES

The first meeting of the 155th session of the Medical Society of London was held on October 10th, when Sir HUMPHRY RORTSTON relinquished the chair and inducted into it the new President, Mr. HERBERT W. CARSON.

Mr. Carson took as the subject of his address from the chair "Surgery in the early days of the Medical Society of London." He began with a sketch of the troubled political and social conditions of the last quarter of the eighteenth century, and said that during the first forty years or so of the Society's existence (from 1773 until Waterloo) England was in a state either of war or of social unrest which seriously affected all scientific pursuits, surgery included. The French Revolution was stated to have put back the progress of surgery in France so materially that France as a consequence lost the premier place in surgery, which before the revolution it had held. An interesting feature of surgical life at this time was the visits paid by surgeons to other countries. Not only did surgeons visit their colleagues abroad, but they expressed very frank opinions on what they saw. Cheselden (1688-1752), who was probably the best known surgeon in Europe in his day, received a deputation from Paris who had come to watch his operation of lateral lithotomy. Benjamin Bell of Edinburgh went on a tour in 1771, for which he asked his father for £150, stating that if he had intended to confine himself to medicine he would have been content to stay in Edinburgh, but as he was going to take up surgery a visit to London and Paris was essential. Another traveller was Astley Cooper, who in early life went to France, Italy, and Germany, and Abernethy at about the same time took a similar tour. Roux, the great French surgeon, in a book containing his observations on surgery in London, could not give greater praise to Charles Bell than to say that he "operated in the French manner." John Cross, visiting Paris in 1815, had many appreciative things to say of French surgeons. He watched Dupuytren operate on strangulated hernia, the operation taking place in the middle of the night, in a crowded ward, where the surgeon was surrounded by a press of students holding candles.

With the increase in the number of hospitals in London as the eighteenth century advanced more facilities were available for students, but teaching made slow progress. Even in 1816 Roux, comparing the opportunities for students in London and in Paris, said that in London the students gave considerable sums for liberty to frequent the hospitals. None of the courses in London was gratuitous even to those of the students who had the right of frequenting the hospitals where the courses were given, and Roux considered that the College in London was not to be compared with the corresponding Faculty in Paris. The museum in London, he said, was less a museum of anatomy than a collection of natural history, or it all events contained a collection of private classes. William Hunter, the surgeons arranged for private classes. William Hunter had founded his school of anatomy in 1770, John Hunter had his own school, and Hewson also founded a very successful school.

In trying to form a picture of the surgical work of the period it must be remembered that the surgeons suffered from two great handicaps—the absence of anaesthetics, and the absence of means for preventing sepsis. It followed that the scope of operations was limited by the speed factor, and that the great majority of the operations done to-day would have been impossible, not only because of the need for haste, but because of the inevitable infection. Some attempt was made, by compressing the sciatic and cranial nerves by means of a clamp, to numb sensation for an amputation, but this was given up. There were long arguments as to the right time to amputate. On the whole, surgeons were agreed that to amputate in spreading gangrene was fatal. Lithotomy was a great test of the surgeon's skill, and in most of the books of the period the operation was described in the minutest detail. Operations

for hernia were limited to reduction of strangulation. Pott in 1769 referred to "rupture doctors" as "murderers who ought to be hanged." Surgeons at this time did their own eye work. Not until the foundation of Moorfields in 1810 did specialization arise and thus specialization did not plea a Roux who said that it tended to consolidate what ought to be prevented—the separation of ocular from general surgery. Abdominal surgery until the nineteenth century was practically non-existent, except in the treatment of perforating wounds nothing was done. Hunter discussed the possibility of washing out the abdomen in peritonitis but never did it.

Mr Carson concluded his survey by quoting Sir William Ferguson who stated that about 1825 there was a period of calm such as there had not been for many years, and such as a later generation of surgeons had never seen. There was nothing new in British surgery, and little from abroad to attract attention. Nevertheless the scientific method was creeping into teaching, and for this development the first credit was due to John Hunter the bicentenary of whose birth would be celebrated in February of next year.

### PITUITARY DISEASE

At a meeting of the Manchester Medical Society on October 5th, with the President Dr J. Gray Clegg, in the chair, Dr CORNOR HOLMES gave an address on pituitary tumours.

He said that recent investigations went to show that many of the functions which had been attributed to the pituitary belonged to the nervous structures in the base of the brain especially in the hypothalamus. At present the only function that could with certainty be ascribed to the anterior lobe of the pituitary was an influence on growth, but it probably also controlled the development and activity of the sexual organs. Though extracts of posterior lobe had obvious effects when administered by injection its normal function was still unknown. The clinical symptoms of pituitary disease could however be still most satisfactorily divided into those attributed to an overfunction of the gland or rather of its anterior lobe and those resulting from its destruction or deficient activity. The chief symptoms of hyperpituitarism were acromegaly when the disease commenced after adolescence and gigantism, with which certain features of acromegaly or of hypopituitarism were often associated, when it began before normal growth was completed. The symptoms of hypopituitarism were more common and more varied. Dwarfism, usually associated with underdevelopment of the sexual organs and absence of the secondary sexual characters, resulted from destructive lesions of the gland before the age of puberty. It was usually due to extracranial tumours and other conditions that compressed the pituitary, for adenomata of the gland were rare at this age. Metaplastic adenomata developing after puberty produced Frohlich's syndrome or dystrophia adiposo-genitalis which was characterized by obesity, absence or regression of sexual development and of the secondary sexual characters, disturbances in carbohydrate metabolism, and frequently somnolence and polyuria. In addition to these symptoms, which were usually regarded as a direct result of the pituitary disease, other symptoms due to the pressure of the tumour on neighbouring structures were often present. At first the intracranial tension and later the increase of general intracranial pressure produced headache and occasionally vomiting while the compression of one hemisphere or of the cerebral peduncle might give rise to a hemiplegia. More characteristic symptoms were due to compression of the usual paths, which produced more or less characteristic defects in the visual fields, the type of which depended on where the pressure acted. When the chiasma was situated posteriorly one optic nerve generally suffered first so that unilateral blindness resulted, this was usually followed by a temporal hemianopia in the other eye when the tumour extended back to the chiasma. When the chiasma was first involved an irregular bitemporal hemianopia was found while the loss was mainly of the homonymous hemianopia type when the tumour compressed one optic tract. One early and frequent feature of the

visual defects, which was often forgotten, was the occurrence of scotomata, either central, when the optic nerve was compressed or more commonly paracentral in the temporal fields. The ocular nerves were frequently involved too, causing squint and diplopia. At present the most reliable treatment of pituitary tumours was operation, which had become a moderately safe procedure in skilled hands but good results had been obtained by radiological treatment, and it seemed that further development of this method might be expected. Glandular treatment, either to control the growth of the tumour or to relieve the symptoms of deficiency, had rarely given satisfactory results, but recent experimental investigations gave promise of greater success in the future.

### ELECTRO-CARDIOGRAPHY

At a meeting of the Brighton and Sussex Medical-Chirurgical Society on October 6th Dr DONALD HALL delivered his presidential address, entitled "Some help obtained from electro-cardiography."

Dr Hall's address was based on the examination in private practice of 419 patients during a period of 3½ years, and a short description was given of the method of examination and the normal electro-cardiogram. The speaker said that this method of examination supplemented but did not supplant ordinary clinical methods and no claim was made that electro-cardiography uttered the final word in diagnosis. Information regarding disorders of rhythm was given equally well or better by the electro-cardiogram than by the polygraph and in the case of the myocardium the polygraph was silent. In graphic methods the electro-cardiogram had superseded the polygraph in all pathological conditions except pulsus alternans, in which the sphygmograph was the more reliable. The various types of cardiac irregularities were demonstrated by lantern slides of electro-cardiograms and it was shown that the differential diagnosis of all these varieties could be obtained with absolute precision. One woman, aged 26 consequent upon the diagnosis of "heart strain" had assumed an invalid's life but the electro-cardiogram had disclosed a striking example of sinus irregularity, it was evident that the original diagnosis had been incorrect and upon it by suggestion, followed the patient's illness, which yielded to appropriate treatment. This was the only form of cardiac irregularity which was purely physiological. While premature beats were in many cases of but minor importance each case had to be considered on its merits. In general terms auricular and junctional premature beats were more frequently due to extrinsic causes, and in many instances the patient was unaware of their presence, while the ventricular premature beats were intrinsic in origin and the patient was usually cognisant of them. At times multiple premature ventricular beats might be the main cause of the patient's subjective symptoms particularly of giddiness and faintness, these symptoms disappeared on restoration of the normal rhythm. Simultaneous electro-cardiograms and pulse tracings demonstrated that, although the premature beats gave large complexes in the electro-cardiogram they were dynamically but feeble contractions, and thus while "extra-systole" was a misnomer, the term "dropped beat" was often correct so far as the pulse at the wrist was concerned. Dr Hall then discussed the probability of the QRS complex being able to give information otherwise unobtainable of the state of the myocardium. Electro-cardiograms were shown of two patients who were known to have had auricular fibrillation for fifteen years. In both of them the QRS was of normal outline in one the T wave was unchanged but in the other it showed the negativity of digitalis control. Slides were also shown of fibrillation before and after treatment by quinidine. Dr Hall explained the essential difference in the treatment of auricular fibrillation by these two drugs and also criticized the indiscriminate use of digitalis in cardiac affections, whether functional or organic. Observation of alteration in the ventricular complexes had given really important information sometimes where clinical evidence was but scanty or had been absent. Sixteen instances of right bundle branch block had been met with in the series the lesion affecting the left division in

three, and the right in thirteen cases. In his hospital practice the lesion of the right division had also been more numerous. In the series under review there had been thirty-five patients in whom the T wave was negative in Lead I or Lead II or in both. Three cases were untraced, but of the remaining thirty-two patients, sixteen were alive and sixteen were dead. Thus T negativity he had found relatively frequent in cases of angina pectoris, and examination by the electro-cardiograph had proved useful in strengthening the medical attendant's hand in the treatment of refractory patients. Slides were shown of heart-block, complete and partial, of the former one instance had been met with in a woman of 25, in whom the block seemed to be an isolated lesion. When young women complained of such symptoms as pain, faintness, palpitation, and shortness of breath, and on examination yielded little or nothing in the way of physical signs, and mitral stenosis could be excluded, it was safe to assume that the chest pain, which typically was submammillary and not retrosternal, was not of cardiac origin. A demonstration was given of the large P wave met with in mitral stenosis, but it was emphasized that with this one exception the electro-cardiogram was not concerned with cardiac murmurs. Middle-aged people, particularly men, were the most difficult cases of all, help was often obtained from the blood pressure and from the urine, but in a residue information could only proceed from an electro-cardiographic examination.

#### JAMES MACKENZIE INSTITUTE

This winter course of lectures at the James Mackenzie Institute for Clinical Research, St. Andrews, was opened with an introductory address by the honorary director, Dr. A. MITCHELL RIMSY, on the ocular manifestations of gastro-intestinal disorder. He pointed out that in gastro-intestinal diseases the causal relationship between the general disorder and the ocular symptoms was not nearly so direct and intimate as it was in the case of cerebral, renal, or circulatory affections, but that in an indirect way, through the agency of micro-organisms and of bacterial or biochemical toxins, gastro-intestinal disturbance played an important part in causing or in aggravating diseases of the eye. Attention was drawn to the reflex disturbances in the eye caused by dental caries or septic tonsils, which were also mentioned as the cause of acute or of chronic inflammation of the eyeball. A careful distinction was drawn between chronic intestinal auto-infection and chronic intestinal auto-intoxication, and in this connexion reference was made to the work of Desgeorges. Disordered metabolism was regarded as the underlying cause not only of inflammation of the nasal tract but also of acute glaucoma and of toxic amblyopia, and the influence of persistent constipation on the occurrence of intra-ocular hemorrhage in young adults was fully discussed. The attention of the general practitioner was directed to the possibility of atrophy of the optic nerve following severe haematemesis. The retinal ischaemia was regarded as a favourable condition for the action of a toxic or other infective agent, whose existence may be assumed although it did not admit of strict scientific proof. The lecturer concluded with a description of a group of eezematosus affections of the eye associated with disordered carbohydrate metabolism, and said that in the treatment of these conditions it was necessary to pay special attention to the diet, and also to take means to promote free elimination of the metabolic toxins which had accumulated in the blood.

Dr. SOUTER, in opening the discussion, referred to the wide experience of ophthalmology and of general medicine that Dr. Rimsy could draw upon. Dr. Souter touched on several of the points raised in the address and gave a short summary of those varied gastro-intestinal disorders, functional, organic, and toxic, in which eye features were likely to be met with, illustrating his remarks by reference to personal experience in several instances, special emphasis being laid on the help obtainable from an examination of the eyes in cases of unsuspected lactic affections.

## Reviews.

### ANGINA PECTORIS SURGICAL TREATMENT

In an elaborate work on angina pectoris Professor DANIELOPOLU expounds the rationale of the surgical treatment of the disease. The book, however, is not confined to that topic, but forms a complete treatise on the subject of angina pectoris, its etiology, symptoms, and pathogenesis, and the pathological anatomy is considered at great length. With regard to surgical treatment, the author states that the first suggestion of sympathectomy was a remark of François Franck's at the Académie de Médecine in 1899. "This new idea of acute sensibility transmitted by the cervico-sympathetic suggests the possibility of practising its resection in angina pectoris." The first operation of the kind was performed by Jonnesco and Gomoin in 1916, but the results being by no means encouraging, Jonnesco inclined to the opinion that the suppression of the angular attacks required division, not of the sensory fibres proceeding from the heart, but of the efferent fibres to the heart passing from the bulb and spinal centres, which would include the accelerator nerves and some of the coronary vasomotors. The attacks being regarded as due to a reflex from the heart, the object was to cut the afferent (Franck) or the efferent (Jonnesco) limb of the arc. Other operators endeavoured merely to relieve pain by the free division of the sensory fibres, without regard to the reflexes, the results were not of a kind to encourage a continuance of the practice.

Danielopolu's contribution to the subject consisted in the propounding of a theory of the pathogenesis of angular attacks, based on his own and others' experience, and, secondly, in defining the limits of safety in operating in accordance with the theory—a problem mainly of ascertaining the precise anatomical routes followed by the nervous impulses passing to and from the heart. His theory is that owing to defective blood supply (for example, from coronary disease) fatigue products accumulate in the heart when they reach a certain amount they irritate the sensory nerves, and these results not only pain, but also reflex stimulation which he considers to be predominantly pressor (that is, raised blood pressure, acceleration of the rhythm, increased force of contraction, and probably coronary vaso-constriction), the diminution of the heart is exaggerated by these pressor effects, the sensory nerves become still more irritated, and thus a vicious circle ("reflex pressor circle") is established, which culminates in the angular attack. The author contends that the proper treatment for this condition is to suppress the pressor circle by intercepting as many of the cardio-vortic sensory fibres as possible while preserving the efferent fibres passing to the heart from the medulla and upper part of the cord, since interference with the latter would be dangerous to the patient by destroying the pressor mechanism altogether. A large part of the book is devoted to a description of the nervous mechanism of the heart and to tracing the routes of the various impulses passing to and from it. From a minute investigation of the existing evidence on the subject—anatomical, physiological, pathological, and that derived from comparative anatomy and from incidental observations in the course of operations on the human subject—the author concludes that some of the sensory fibres pass along the inferior cardiac sympathetic nerves to the stellate ganglion, thence down the sympathetic trunk to the ram communicans of the second, third, and fourth dorsal spinal nerves, and that the pressor fibres descending from the medulla traverse the same route to the heart. These structures, therefore, it is dangerous to touch. But a number of other sensory fibres, avoiding this route, pass by way of the stellate ganglion, and in the upper and middle cardiac nerves of the sympathetic and branches of the vagus, these can be divided without endangering the pressor mechanism. Danielopolu therefore advised an operation in two stages: first the division of the sympathetic trunk above the



inferior cervical ganglion, of the upper and middle cardiac nerves of the sympathetic, of the vagal branches descending in the thorax of the rami communicantes of the last three cervical and first dorsal nerves, and of the vertebral nerve running from the inferior cervical ganglion of the sympathetic. In the second operation the trunk of the cervical sympathetic is removed above the inferior cervical ganglion. Thirteen cases in which the operation had been carried out are described, and appear to justify the author's opinion as to the advantages to be anticipated from it.

Danielopola's book is a genuine contribution to the subject: it is a serious attempt to discover guiding principles in operating for triguna, to replace the empirical division of this or that nerve in the hope that some benefit will accrue.

### CLINICAL PHYSIOLOGY

Is an interesting volume not too long entitled *Clinical Physiology in Relation to Modern Diagnosis and Treatment*, Professor McDOWELL has brought together a large proportion of those facets of the science of physiology which are particularly relevant to an understanding of the manifestations of disordered function—the concern of the art of medicine. He takes a wide view, for he devotes chapters not only to topics commonly treated in textbooks of physiology, but also, for example, to "Life as a clinical entity," "Consciousness." Some physiological aspects of psychology and psychotherapeutics, and "Protection against disease." But it is not to the choice of material, but to its disjunctive treatment that we look for characteristics justifying the recognition of a definite subject—clinical physiology. With the sciences of medicine, pathology and physiology well established it may perhaps be questioned whether such an addition to the ordinary classification is profitable. Professor HALLINGTON in a short introduction, expresses the opinion that those who give instruction in physiology cannot teach what will later be of use to the medical student in the wards and that clinical teachers are not always capable of inculcating physiological knowledge if it deals with recent discoveries and views. This book is intended to remove these difficulties.

The immense number and variety of conditions of medical interest discussed in so short a volume entail a mode of approach which is inevitably sketchy. The physiological "explanations" of symptoms, for example are in terms of conclusions reached by physiologists concerning the mechanisms they have studied. The further step of relating these hypotheses to the experimental facts they summarize is rarely attempted, since a knowledge of textbook physiology is taken for granted in the readers to whom the book is addressed—senior medical students and practitioners. If the wisdom of undue emphasis on incomplete correlations of this kind is to be questioned it would be partly because the student already has opportunities of hearing just such sketchy presentations at the bedside, and partly because facile judgements may be based on explanations in which the standards of evidence are not sound to the detriment of the progress of medicine and of the repute of physiology. Is there a class of readers for example that needs to be told what are the Ewald and Rehfuss methods of investigating gastric contents and that can usefully apply a discussion of the mechanism of duodenal regurgitation described by Bolton and Goodhart, without the further information here omitted as to the evidence on which the discovery rests? The omission of figures and curves from the text has saved space but has obscured crucial steps in some of the author's arguments.

The work, in spite of a good many misprints of some ambiguous phrases and a few notable omissions—as of Chvostek-Stokes respiration—is full of valuable material, which will enrich the medical experience of a reader who has not had recent opportunities of watching physiological developments.

*Clinical Physiology in Relation to Modern Diagnosis and Treatment* By P. McDOWELL, M.D., F.R.C.P. With an introduction by W. D. H. Hallington, M.D., F.R.C.P. F.R.S. London: E. Arnold, 1927. (Demy 8vo pp. xiii + 412 net.)

### VACCINE THERAPY

THE scope of LEONARD S. DEDMON'S *Bacterial Vaccines and their Position in Therapeutics* is well summarized in the preface: "No attempt has been made to review the literature of this vast subject."

I have attempted to place on record my direct personal observations, based on twenty years' experience of the vaccine treatment of acute and chronic bacterial infections. There is little doubt that many of the views and conclusions recorded in this short monograph on vaccine therapy will not be in agreement with the much too optimistic statements so frequently made on the subject. No one who has studied vaccine treatment seriously can question its value, but it is equally important to understand its limitations. The selection of cases suitable for vaccine treatment requires much experience, while the problem of dosage, which is different in every case, is still far from understood. In prophylaxis vaccine therapy has done great work. The book is divided into nine chapters, the first three dealing with the principles, production and standardization, the fourth with prophylactic inoculations, the fifth with acute generalized bacterial infections, and the others with infections of the genito-urinary system, of the gastro-intestinal system, of the mouth and respiratory system, and of skin, connective tissue, bones, and joints. The book should prove most helpful to all who are interested in the subject.

### TROPICAL MEDICINE

To the series of books published by Masson of Paris under the general title *Precis Medicines* there has been added a volume on tropical medicine, by Professor JOVEUX, now of Paris, making a companion volume to Brumpt's well known *Precis de Parasitologie*. It is divided into two parts: the first deals with diseases of the various systems and organs of the body, the second with tropical fevers. To the English reader such an arrangement whereby amoebic hepatitis and liver abscess are divorced from intestinal amoebiasis, will perhaps appear unsatisfactory. Agranulocytosis follows in sequence after the flagellate diarrhoeas. Familiarity with this plan is, however, soon gained and the subject matter is excellent. What shall and what shall not be included in a textbook of tropical medicine is a difficulty every author has to meet and the author, in his preface, quotes Manson as his guide.

If tropical diseases be meant diseases peculiar to and confined to the tropics then half a dozen pages might have sufficed for their description. If on the other hand the expression tropical diseases be held to include all diseases occurring in the tropics then the work would require to cover almost the entire range of medicine.

Joveux has therefore followed very much the lines of our own well known textbooks but there are certain differences. Systematic parasitology and bacteriology find no place in this volume, a departure which, for the English student of tropical medicine brought up on what may be called the "Manson tradition" must appear a retrogression. On the other hand the clinical descriptions are good in the main though perhaps greater clearness would have been attained had such diseases as malaria, trypanosomiasis and recurrent fever been described in separate paragraphs under the several varieties of parasite.

Alastrim, scurvy, Malta fever and trench fever are dealt with but not pellagra and it might have been well to have embodied some notes on syphilis, tuberculosis, and pneumonia as seen in native races.

The book on the whole is up to date but here and there is a failure to note recent work such as the treatment of malaria by plasmochin or the treatment of climatic bronchitis by the method advocated by Hanschell. It is interesting however to see references to the fever caused by the bites of amblyomma, to the epidemic jaundice of spirochaetal origin described by Blanchard at Brazzaville, and to the

*Bacterial Vaccines and their Position in Therapeutics* By LEONARD S. DEDMON, M.D., F.R.C.P. London: Modern Medicine Monographs. Edited by H. H. MacLachlan, M.D., D.Sc. London: Cassell and Co., Ltd., 1927. (Demy 8vo pp. vii + 271 net.)  
*Precis de Médecine des Tropiques* Par Ch. JOVEUX. Paris: Masson et Cie, 1927. (5 x 7 1/2 pp. 651. 130 figures. 60 fr. an majoration.)

condition called "halzoun" in Libia, due to the ingestion of goat's liver harbouring fasciola hepatica. The author also appears to accept a spirochaetal etiology for blackwater fever. Most of the illustrations reproduced from photographs are good, some others are poor.

It is always interesting to read a textbook in another language, but, while the present volume will prove of great value to those for whom it has been written, the English student will probably prefer the books with which he is already familiar.

### INJECTION TREATMENT OF VARICOSE VEINS

To those interested in the treatment of varices by the injection of sclerosing substances we can recommend a small book, *The Modern Treatment of Varices*,<sup>1</sup> a translation into English by Dr T. C. MERRILL of an essay by Dr Louis HUMBERT.

The author bases his recommendations on seven years' experience, the best method in his opinion is the injection of sodium salicylate into the veins. He follows this up by applying strapping, a procedure other surgeons have not considered necessary. Adhesive bands, consisting of strips of gauze smeared with Unna's paste, are applied from the root of the toes to the popliteal space. It prevents swelling of the limb, abolishes distension of the varices, and relieves congestion through the dehydrating properties of the glycerin present in the paste. The patient may continue his regular occupation with the strapping on. Ascending and descending injections are made, the latter are more commonly used. The manner of making the injections, the position of the patient, the disadvantages, contraindications, and the practical applications of the method are all described in detail.

To those who prefer the sodium salicylate injection this book should especially appeal.

### CRIMINAL PSYCHOLOGY

An important study of criminal psychology, entitled *The Psychology of Murder*,<sup>2</sup> by ANDREAS BJERR, Professor of Criminal Law at the University of Dorpat, has been translated from the Swedish with the idea of spreading in foreign countries a knowledge of Swedish legal methods. The work in the main is made up of a very detailed study of the life history of three murderers. The author claims that if the comparatively new subject of criminal psychology is to advance, it must be by personal observation and personal contact with individual examples of crime. Whilst believing that in the case of theft and of offences against public decency and morality it is possible to make out groups or types, Bjerr states that so far it has not been possible to do this where murder is concerned. The careful histories of the three criminals in this volume bear out this conclusion. There is nothing from which it would be possible to draw any generalizations. A very much larger series of investigations is necessary before the aim of the author to find types can be realized.

The method adopted by Bjerr is to throw as far as possible a clear light on the determining factors in the psychic development of the criminals from a period as far back in their childhood as he could reach to the day they committed their crime, and then to advance to psychic facts and processes of which the poisons under observation had either never been conscious themselves or of which they, at any rate, had lost recollection and which they would therefore deny if presented to them. The author does not claim that by this method he has reached any very decisive results, but he believes that in this way there is a possibility of piercing the psychic life of an individual and discovering what is or has been in his mind.

In the course of his investigations the author arrived at certain definite conclusions. He is firmly convinced that all attempts to explain the psychic life of criminals by assuming sexuality is the primary and determining

force in their lives is doomed to be either a superficial and often unworthy juggling with words, or else, by arbitrary and fundamentally misdirected surmises, to divorce investigation from reality. He has formed the definite opinion that conscious and unconscious deviations from normal sexual development, i.e., apart from certain forms of homosexuality, only symptoms or effects of deeper-seated psychic defects and are never primary causes of the growth of criminal qualities. He does not accept the popular view that the confessions of criminals are either the result of remorse or a realization that further denial is useless. In the case of murderers he believes that without exception they confess because they expect to obtain some advantage or because they recognize the justice of their sentence. He is of opinion that the anthropological school of Lombroso may, as the result of further investigation, be justified in their view that there is an affinity between the lowest and most primitive races and criminals.

This study of criminal psychology reveals many interesting points in the mental outlook of the three convicted murderers and in the motives which led to their crimes. The author had hoped to continue his investigations, and possibly arrive at a stage when he could make a more definite pronouncement on the question of types or groups in the case of murderers. His early death has unfortunately precluded the realization of this wish. The work is well worth the study of all interested in criminal psychology.

### SIGHT AFTER MID-LIFE

As we have already had occasion to mention, the staff of the medical school of Harvard University give public lectures in medical subjects of general importance, and a number of them have been published under the general title "Harvard Health Talks." The fourteenth of the series is by Dr J. Herbert Warte, instructor in ophthalmology in the medical school. It is entitled *Saving Eyesight after Mid-Life*.<sup>3</sup> He begins with the statement that 55 per cent of cases of total blindness result from causes within the body, which operate silently at all before the fortieth year, but with increasing frequency as age advances. After a sketch of the processes of sight, he proceeds to the chief cause of the loss of sight in age—glaucoma. He states that in the United States it causes one-third of all blindness arising after the fortieth year. Yet this disease practically always yields to certain forms of treatment provided the patient receives the treatment early enough. He then shows how the circulation of the fluids within the eye is maintained and what tends to check the balance of the flow, producing that excessive pressure which is so injurious to the sensibility of the retina. Considering treatment, he urges that the drug method of controlling glaucoma is at best only a temporary expedient, and its exclusive use justified only in people so old that their expectation of life is less than the period of effective action of the drug. As de Wecker said, "If motile drugs have never cured a case of glaucoma, they have prevented many glaucoma patients from being cured." Next he shows how vascular changes induce cataract, and explains the risks of growths in the eye, not only to the eye but to the body generally.

He sums up thus: To save eyesight after mid-life, remember (1) That periodic examination by an oculist is necessary, because of the insidious onset of degenerative disease of the eyes. (2) That cataract may be part of a process, not limited to the crystalline lens, but heralding the presence of a more deep-seated and serious disease of the eye. (3) That blindness from glaucoma, which at present amounts to one-third of all blindness arising after mid-life, can usually be held in check if the patient will only co-operate with his oculist.

The little book is well done, and would be a useful gift to one worrying as to what course to take when the existence of glaucoma is known. We think the author might have made some note on the benefit which proper reading glasses bestow on old folk, but perhaps he thought that so well known as to be self-evident.

<sup>1</sup> *The Modern Treatment of Varices. The Treatment and Cure of Varicose Affections by the Simultaneous Use of Sclerosing Injections and Adhesive Bandaging.* By Dr. Louis Humbert. Translated by Dr. T. C. Merrill. Paris: La Revue Médicale Universelle, 1927 (42 x 7 pp. 93).

<sup>2</sup> *The Psychology of Murder.* By Andreas Bjerr, Doctor of Laws. Translated from the Swedish by E. Classen M.A. 11 D. M.R.S.L. London and New York: Longmans, Green and Co., Ltd. 1927 (Demy 8vo, pp. xi + 164, 3s. net).

<sup>3</sup> *Saving Eyesight after Mid-Life.* Harvard Health Talks, 14, by J. Herbert Warte M.D. 3 M. Cambridge, Mass.: Harvard University Press, London: Milford Oxford University Press, 1927 (Fcap. 2vo, pp. 48, illustrated 4, 6d. net).

## NOTES ON BOOKS

PROFESSOR M. R. DRENNAN of the University of Capetown has published a small book of forty pages entitled *Short Course on Human Embryology* which will be found useful by teachers of that subject in this country and by students. It is the course which is given in the University to medical students and may be taken as a good example of the kind of course which may be introduced into the already somewhat crowded syllabus of anatomy. It has the special merit of presenting the complicated subject of human development in a manner that is at once very concise and yet readable and interesting and the material is arranged under headings following one another in a natural order of sequence which greatly facilitates the comprehension of the whole. The descriptions also are excellent—full of essential detail and free from redundancy. The student can use this small work as a stand-by and first textbook of the subject giving him a good grounding from which he may proceed to the study of larger and more detailed works. As a companion to the short course the author has published a pamphlet of sixteen pages of *Illustrations for a Short Course on Human Embryology*. This consists of photographs and diagrams designed to illustrate the descriptions. Figures of this kind are usually incorporated in the text but there is a certain advantage in having them separate and arranged in serial order so that the stages of development can also be followed pictorially apart from the text. The two booklets are published by the author from whom they may be obtained, the price for the two being 5s.

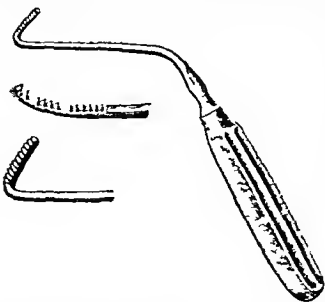
*Antigenotherapie de la Tuberculose* is an account by Drs. Nègre and Boquet of their researches at the Institut Pasteur for the production of an antigen for tuberculosis and of the results of its use in man and animals. The authors found that an extract in methyl alcohol of tubercle bacilli previously treated with acetone formed a very sensitive antigen of fixed stability. When freed from the methyl alcohol suspended in normal saline solution and injected into healthy animals the extract produced antibodies which were considerably increased if the extract was injected into animals infected with tuberculosis. In tuberculous guinea pigs and rabbits the evolution of the disease was retarded—it did not tend to become generalized, often it remained localized in a single organ and after a treatment of several months duration a process of sclerosis set in. Similarly in man many mucous glandular and osseous articular and peritoneal lesions retrogressed or disappeared entirely though in some cases the extract failed to act. Drs. Nègre and Boquet are not able to write with so much certainty about pulmonary cases but they state that several clinicians have observed improvement of the general health, a lowering of temperature, a diminution of sputum and an improvement in auscultatory signs. There is a preface to the book by Professor Calmette who is of opinion that antigenotherapy should take a place of greater and greater importance in the treatment of tuberculous diseases, especially if they are afebrile.

\* *Antigenotherapie de la Tuberculose*. Par L. Nègre et A. Boquet. Préface du Dr A. Calmette. Paris: Masson et Cie, 1927. (5) 1/2 x 7 1/2 pp. 158. 2 plates. 16 fr. sans majoration.

## PREPARATIONS AND APPLIANCES

## Maxillary Antrum Rasp

Mr. ARBAN EVANS, surgeon to the Ear, Nose and Throat Department of the Swansea General Hospital, has devised two rasp



forward and backward cutting respectively which he has found most useful for opening up the maxillary antrum beneath the inferior turbinate bone in cases of empyema. The first is a modification of Dr. Watson Williams's instrument for the intranasal operation on the frontal sinus. In both directions consideration has been given to the angles between the inner wall of the antrum and the anterior and posterior boundaries. The rasps, as shown in the illustration were made by Messrs. Mayer and Phelps, 59 New Cavendish Street, W.1 several years ago and Mr. Evans states that they have been used in a great number of cases with satisfactory results.

## A MEDICAL REVIEW OF SOVIET RUSSIA

## VI—WORK OF PAVLOV AND OTHER SCIENTISTS

BY

W. HORSLEY GANTT B.Sc. M.D. VIRGINIA

(Formerly Chief of the Medical Division of the American Relief Administration, Leningrad Unit)

## PART II—ORBELI, SPERANSKY, AND OTHER INVESTIGATORS

## ORBELI'S WORK ON THE SYMPATHETIC NERVOUS SYSTEM

THE work of Professor Orbeli is entirely independent of that of the Pavlov laboratory, but he is none of Pavlov's oldest pupils, and Professor Pavlov told me that he considered his work extremely important. A description of some of Orbeli's work was given in the *BRITISH MEDICAL JOURNAL* of September 20th 1924 (p. 533). He has been kind enough to give me a summary of all he has done since and to demonstrate his new work to me. The following account is founded on what I have seen and the written account Professor Orbeli has given me. Part of this has been published in Russian and part is as yet unpublished.

Langley supposed that the autonomic nervous system has no influence on skeletal muscle. Orbeli, in an article in the jubilee volume presented to Pavlov, says:

'In the last twelve to fourteen years this point of view about the sympathetic nervous system has been subject to doubt and revision. On the one hand the histological findings, in a series of motor end plates nerve endings of the second order, more delicate and finer plates connected with unmyelinated fibres indicated on the basis of regeneration experiments that they were sympathetic. On the other hand physiologists have recorded various experiments explaining the sympathetic innervation of skeletal muscle.'

A few years ago unaware of the anatomical experiments of Boeke and Aghdur and the accompanying physiological investigations I on the basis of a number of considerations suggested that the sympathetic nervous system is truly universal and must have a direct influence on skeletal muscle as on all other systems in the organism and that this effect might be expressed with such variations in the properties of muscle as first described by Pavlov and Gaskell for heart muscle and later described by Englemann under the terms bathmotropic, inotropic, dromotropic and tonotropic.

From experiments by Ginetzinsky on the frog Orbeli is led to conclude that the sympathetic nervous system has two antagonistic influences, and that a certain relation exists between the functional disturbances produced by irritation of the sympathetic and the chemical processes which underlie muscular rigidity. In poisoning with chloral hydrate, following stimulation of the sympathetic tonic contractions supervene, beginning after a long latent period, and continuing as an after effect. Apparently we have to do here with an easily reversible form of those changes which if of greater intensity lead to muscular rigour (Streloffi).

The electrical conductivity of resting muscle and muscle fatigued by tetanizing was compared by Lebedinsky. The recovery of the tetanized muscle was hastened by stimulation of the sympathetic. Tetanization lessened the resistance of the muscle to the electric current but in the majority of cases the stimulation of the sympathetic accelerated the return to the normal.

Orbeli and Fiedelholz have investigated the "pseudomotor" or "tonomotor" effect of the lingual nerve on the musculature of the tongue. Opposing explanations of this have been given by Van Rynerk and by Frank. The hypoglossal nerve was cut about two weeks previous to the experiment to give the fibres time to degenerate. By trying the effect of stimulation of the lingual nerve at various periods after its section, the pseudomotor and the vascular phenomena can be independently elicited. From this it may be concluded that the tonomotor and vasodilator effects are to be assigned to different nerve fibres. Adrenaline was injected intravenously to reinforce the action of the sympathetic on the tonomotor influence. In these experiments the effect of the lingual stimulation.

Part I of Section VI of this series was published in the *JOURNAL* of June 11th 1927 at page 1070.

was indisputably strengthened and was especially marked when the lingual fibres began to degenerate. The results obtained are in full agreement with the behaviour of the sympathetic in other forms of motor innervation.

Ginetzinsky, in Orbeli's laboratory, repeated the experiments of Elze on the frog, with certain modifications designed to give more definite results. Ginetzinsky eliminated the influence of the afferent nerves, and showed that the sympathetic alone was responsible for the effect. Both suprarenals were removed and the sympathetic chain was cut on one side. The muscles which had been deprived of the sympathetic innervation were more quickly exhausted and the height of the contraction was less.

In June, 1925, Dr Tonkikh reported from the Orbeli laboratory the effect upon spinal reflexes of experiments on the sympathetic. By stimulation of the lower end of the sympathetic trunk an inhibition or augmentation of the spinal reflexes was produced and paralysis followed. This was analogous to the ascending paralysis which Professor Pavlov had at first described as an accidental result of the operations, but which he later attributed to the presence of trophic nerves. He stated in 1920 that the existence of such trophic nerves had been proved only in the case of the heart, but that they might be supposed to exist for other organs, to exert a definite and final control over the metabolism and the mechanical processes occurring in the various tissues. It thus appears that the experimental work of Orbeli may give an actual foundation to the hypothesis of Professor Pavlov in regard to trophic innervation. Orbeli summarizes his work as follows:

"The sympathetic nervous system exerts a profound influence over the chemico-physical changes occurring in skeletal muscle, accompanied by a modification of its functional ability. These changes influence, it seems, the conditions of the motor end plate, call forth changes in the efficiency of the corresponding muscles, and form a sort of regulatory mechanism for the expenditure of muscle strength and govern the conduction of impulses by the motor nerves. From this point of view the sympathetic innervation of skeletal muscle is an adaptive innervation through which the functional ability of the muscle is determined."

#### OTHER NEW WORK OF ORBELI

Further experiments from Orbeli's laboratory show that the efferent sympathetic fibres have a direct influence on the central part of the spinal reflex arc. The work was carried out on completely bled frogs from which all the viscera and the heart had been removed.

After demonstrating the direct effect of the efferent sympathetic fibres on the central part of the reflex arc of spinal reflexes, there arose the question of a possible influence of the central part of the sympathetic system on the spinal reflexes. To solve this problem Tonkikh made an experiment by Setchinov's inhibition method—the stimulation of the optic thalamus with sodium chloride, on the assumption that the centre of the whole sympathetic system lies in the subthalamus region. Orbeli concludes from these experiments that in this case there is no direct reciprocity between different parts of the central nervous system, but that there is a regulating activity of one part of the central nervous system by others through the sympathetic.

Experiments of Ginetzinsky performed in an atmosphere of hydrogen prove that the effect provoked in skeletal muscle by stimulation of the sympathetic cannot be explained exclusively by the augmentation of the oxidation of the products of metabolism. Other experiments demonstrated that the effect of the sympathetic in skeletal muscle occurs in that place where the stimulus from the nervous tissue is transferred to the muscular—that is, in the peripheral apparatus of the motor nerve.

Experiments on dogs showed that when the left abdominal sympathetic trunk was resected the thresholds of stimulation on the two sides differed, thus lends support to the hypothesis of Orbeli that the sympathetic contains regulating fibres for the motor as well as for the sensory end apparatus.\*

#### CEREBRAL PATHOLOGY

Much interest has been aroused by the researches of Dr A. D. Speransky, formerly a surgeon, conducted in his own laboratory, as well as in Pavlov's. He produced an auto-neurotoxin giving rise to epileptic convulsions and death in dogs by freezing a small part of the brain. Immunization against the symptoms of freezing has been partly successful by freezing the brain gradually in increasing doses. If the frozen brain emulsion in a dying animal was injected subdurally in a healthy dog it could resist larger doses of freezing. Recently he has been concerned with the pathology of the cerebro-spinal fluid in encephalitis. He says (personal communication):

"In local disease of the nervous system a destruction of the brain substance occurs in the affected parts. The products of destruction are transported into the cerebro-spinal fluid and through it poison the brain. In such a way local disease becomes general, and to this mechanism is due the development of diffuse encephalitis."

"The greatest quantity of the cerebro-spinal fluid comes into relation with the brain substance in the region of the ventricles."

This is why subcortical destruction often occurs earlier than cortical. The structural changes in the brain and the clinical symptoms in all toxic encephalitis, as tetanus, hydrophobia, diphtheria, epidemic encephalitis, toxic encephalitis from freezing the brain cortex, have many things in common. In all of these the parts of the brain lying in the vicinity of the ventricles are affected, in all are observed changes in the cornu ammonis, in all there is an infiltration of the shallow parts of the brain substance near the ependyma. The internal brain substance in nearly all of these cases has an infiltration in a circle of cells, not around the blood vessels as was formerly supposed, but around their adventitious sheaths filled with cerebro-spinal fluid."

Speransky, during the summer of 1926, devised an operation to isolate for study small sections of the subarachnoid and subdural spaces without disturbing the rest, in a way somewhat analogous to that by which Pavlov isolated a miniature stomach for collection of the gastric secretion. His recent work with the cerebro-spinal fluid has led Speransky to form the following conclusions as to the haemato-encephalic barrier: its site is uncertain, but it is known that substances in the blood do not occur in the cerebro-spinal fluid. Although ordinarily it has a defensive action, in pathological conditions it may have an undesirable action. Thus some toxins, as that of tetanus, are not arrested by this barrier, but the antibodies and specific serums are. The toxins which reach the brain are fixed there and are not eliminated, but the antitoxins are quickly destroyed, and their return to the blood is prevented by this barrier. The introduction of specific antibodies in the subdural and subarachnoid spaces does not ensure penetration into the brain. His results with rabies, diphtheria, tetanus, dysentery, scarlatina, measles, and meningitis are as follows:

**Rabies**—Speransky says that rabies is a disease of the brain only, and can be treated by passive or active immunization. Ordinarily antirabic serum injected into the subarachnoid space cannot penetrate to the interior of the brain, but if hyperemia is produced artificially by removing all the cerebro-spinal fluid penetration begins. Under such conditions the action of the antirabic serum is specific—the same *in vivo* as *in vitro*, because it comes into contact with the virus. Subdural injection is efficacious clinically, whereas intravenous is not, because of the haemato-encephalic barrier. Speransky has overcome this obstacle by withdrawing cerebro-spinal fluid at the same time as the injection is made. He considers that the tons of the cranium and of the brain substance are complementary, and that the pressure in the latter is dependent upon the pressure of the surroundings. He was led to this view by observing that there was no bleeding during trephining if the cerebro-spinal fluid had been withdrawn, and that after removing a large amount of cerebro-spinal fluid the next portion, instead of being colourless, was yellow. Antirabic serum was injected into the ear veins of twenty rabbits, and then in ten of them 1 to 1.6 c.c. of cerebro-spinal fluid was removed by aspiration and reinjected several times before final removal. After one to two hours the brains of all twenty were inoculated with

\*For details of these last experiments see W. H. Gantt, Work of Pavlov's School, *Arch. of Neurology and Psychiatry*, Chicago, April 1927. For a full bibliography concerning the sympathetic and muscle tonus, consult Stanley Cobb, Review on the Tonus of Skeletal Muscle, *Physiological Reviews*, October 1926, p. 519.

the virus of rabies. Those in which the cerebro-spinal fluid had been removed remained healthy, while all the others developed rabies. This process of aspiration and re-injection I shall refer to as re-aspiration.

**Diphtheria**—Eighteen pairs of rabbits were injected with diphtheria toxin, and, after an hour, with antitoxin. The 18 controls died on the third day. In the other 18 the cerebro-spinal fluid was aspirated and re-injected five to ten minutes after the antitoxin. Five of these remained healthy, 11 outlived the controls by three to five days, and 2 died at the same time as the controls, but when the re-aspiration was done, not one hour, but forty-five minutes after the injection, all the animals survived.

**Tetanus**—Re-aspiration lengthened the life of the animals, but did not prevent death, owing as Speransky believes to the early fixation of the tetanus toxin in the brain. Six clinical cases of tetanus have been treated by re-aspiration. The antitetanus serum was introduced in five cases intraspinally after withdrawal of 40 to 110 ccm. of cerebro-spinal fluid, which amount can be aspirated under narcosis without unfavourable results. The operation was repeated after one to two hours and was done four or five times. Five of the cases recovered gradually, but in the sixth no fluid was obtained, and owing to this failure to produce hyperaemia by aspiration death occurred.

**Dysentery** also was treated by this method. In animals which had already developed diarrhoea and paralysis the best results were obtained by simultaneous injection in the blood and in the cerebro-spinal canal, in no case did intravenous injection alone produce a cure. Although the union of the dysenteric toxin with the brain substance does not appear to be so stable as that of other toxins, Speransky concludes that the penetration of the specific antibodies into the central nervous system is necessary for the serum to produce its curative action. He suggests also that the difference between the action *in vitro* and *in vivo* of many other serums (anticholera, etc.) is due to the failure of contact between virus and serum. Anti-diphtheria serum has nearly the same effect, whether it is introduced subcutaneously, intramuscularly or intravenously, because diphtheria toxin can destroy the barrier, it leaves the gate open" while all other toxins which pass this barrier "close the gate behind them," so that antibodies cannot enter.

**Scarlatina**—Eight grave cases were treated by aspirating 15 to 20 ccm. of cerebro-spinal fluid and injecting 4 to 10 ccm. of serum,\* five of these completely recovered (disappearance of fever, exanthem, and symptoms), in two there was an incomplete effect, and in one there was no effect. Injection of the same amount subcutaneously into the blood or muscles was without effect, although the use of 100 to 200 ccm. by these routes is effective. The best results were obtained by simultaneous introduction on both sides of the barrier.

**Meningitis**—Speransky's method of re-aspiration led, in four grave clinical cases of acute epidemic meningitis, to recovery commencing simultaneously with the procedure. Re-aspiration was repeated every two to four hours, and 10 to 20 ccm. of fluid was withdrawn.

Speransky holds that the appearance of "general" symptoms of a disease indicates penetration into the central nervous system, and that many local lesions are due to an affection of the corresponding parts of the central nervous system. The rapid oscillation of pressure caused by re-aspiration changes the circulation in the blood vessels of the brain to such an extent as to permit antibodies in the blood to pass through. Although Speransky has never seen any diaphoretic effects from the use of this method, he says that his clinical material is too small to draw a conclusion, and he cautions against its indiscriminate use, since it may be very dangerous to remove too much cerebro-spinal fluid in some cases.

#### PREVENTION OF NEURO-MUSCULAR FATIGUE

Professor A. A. Bogomoletz of the Second University of Moscow, who has made many contributions to contemporary

The Russian serum is considerably weaker than the product of Fatae Davis.

Russian pathology, recently called attention to the importance of the mesenchyme in determining constitutional types, a healthy reticulo-endothelial system is, he states, the best protection against cancer and this he has substantiated by preventing the development of experimental cancer through the use of a cyto-stimulant of the reticulo-endothelial system.

In 1925 he reported that neuro-muscular fatigue in horses can be lessened by the administration of sugar. This received practical confirmation during the Moscow races of 1926, when a horse which had always lagged behind was treated by Professor Bogomoletz, with the result that it won first place and the professor the prize of 30,000 roubles given by the Government for scientific research.

Chemical examinations of the blood of race-horses showed that the variations were constant in each individual. Three groups were distinguished: (1) those with normal content of blood sugar, (2) those with hyperglycaemia, (3) those with hypoglycaemia. The latter were found quickly to become fatigued, and to show slight hyperglycaemia after the race. The administration of 500 to 1,000 grams of sucrose daily increased the blood sugar, and simultaneously bettered the horses' racing time and diminished the subsequent fatigue. Professor Bogomoletz has informed me that in some horses which could not even finish the course he succeeded, by changing the diet on the basis of the blood analyses, in improving their general condition to such an extent that they often won first place. On the other hand, the administration of sugar to those of the first group often caused a reduction of the blood sugar, which is explained by Professor Bogomoletz as due to a probable interference with the function of the islands of Langerhans.

The amount of phosphorus in the blood after racing showed an increase parallel with the hyperglycaemia. It is possible, according to Bogomoletz, that we have here an automatic chemical regulation of the production and destruction of lactacidogen and that phosphoric acid ( $H_2PO_4$ ) quickens the breaking up of glycogen. It was found in large quantities in fatigued isolated muscle.

The increase in the concentration of  $H$ -ions and the reduction of those of  $Cr$  formerly observed in athletes was found also in horses during the races. Bogomoletz considers this to be an important factor in fatigue. The prevention of fatigue should have regard not only to the above facts, but also to the aeration of the blood before exercise by thorough ventilation and the administration of oxygen.

#### CANCER

Several methods of treating cancer have been tried in Russia since the revolution. Besides the Molotkov method, which has been published, and which consists in cutting the sympathetic nerves in the cancerous area, Dr. Spasokukotsky, professor of surgery in the University of Moscow, is trying a procedure based on the researches of Lintvarev of Saratov. Spasokukotsky has not published his results as he does not wish to be swamped with useless requests from patients, but he has given me the following verbal account for this JOURNAL.

Lintvarev has shown that in disease the red blood cells contain a larger percentage of toxins than the blood serum. We have treated three cases of inoperable cancer by re-injecting them with their own blood cells. About 40 ccm. of blood are withdrawn from the patient, the red blood cells are separated and washed and then injected subcutaneously. There is no reaction (rise of temperature, chill or convulsion) whatever although severe symptoms are observed if the blood serum is injected. The first case was an inoperable cancer of the breast. A year ago we gave her ten injections of her own red blood cells and she is still living and even better although untreated she would surely have been dead. She now has free use of her arm and the cancer is smaller. The second patient who had cancer of the oesophagus, a condition usually rapidly progressive and fatal, received three injections, the course of the disease has apparently been arrested as the patient is no worse. The third case (inoperable cancer of the breast) was almost cured by our injections but when we endeavoured to hasten the treatment by using for injection the red blood cells of another cachectic cancer patient she became rapidly worse. This method of treatment the auto-injection of washed erythrocytes has given excellent results in



cases of surgical tuberculosis, especially in tuberculous peritonitis. Rapid improvement has followed in every case in which we have tried it."

A. A. Bogomoletz has retarded the growth of cancer in mice in the following way. The spleen, bone marrow, and omentum (tissues rich in reticulo-endothelial cells) of mice were macerated and made into an emulsion. This was then injected into a number of rabbits, four or five injections at intervals of five days. After a month the blood of the rabbits might be expected to contain antibodies for the reticulo-endothelial cells of the mouse—hemolysins, agglutinins, etc. To see which rabbits had actually developed these antineoplastic bodies they were tested by the Bordet-Gengou method. Small doses of this rabbit serum were found to stimulate, and large doses to depress or "block," the reticulo-endothelial system of the mouse. A batch of over 500 mice was divided into three groups. All the groups were subcutaneously injected with cancer cells from other mice. Group I was used for control, 50 per cent of them developed cancer. Group II was injected with small (therefore stimulatory) doses of the rabbit serum containing the antineoplastic bodies for the reticulo-endothelial cells of the mouse, only 10 per cent developed cancer. Group III was injected with large (therefore depressing) doses of the same rabbit serum, and 70 per cent developed cancer. These data support Bogomoletz's theory that the growth of cancer is dependent upon the health of the reticulo-endothelial system\*.

#### WORK OF CHALATOV

By transplantation of the testicles of young cats to very old ones and ligating the vas deferens at the same time, Chalatoz obtained a growth of new incisor teeth in three cats, 12 to 14 years old. His further studies with cholesterol show that in starvation the blood cholesterol is diminished, but that it rises again just before death. Removal of the thyroids caused a diminution, but extirpation of the kidneys or parathyroids a great increase of blood cholesterol (Nekudov). Resistance of the red blood cells was found (Frankel) to be less in the hepatic than in the peripheral veins, a fact which he considers in favour of the view that haemoclastic function resides in the liver rather than in the spleen, as formerly thought.

#### DIGESTION

##### *Effect of Mineral Waters on the Gastro-intestinal Tract*

The Caucasian mineral waters, taken with food, markedly augment the secretion of gastric juice and shorten the whole period of digestion. The same waters taken half an hour to an hour and a half after food have an inhibitory effect on the secretion of the stomach, due to the water having passed into the duodenum, where it acts when food is taken into the stomach. These waters do not increase the secretion of the bile, but it seems that they hasten its expulsion from the gall bladder into the duodenum (Fursikov, Martinson, et al.). All these waters contain calcium, magnesium, iron, sodium, and free carbon dioxide, some are radio-active.

##### *Effect of Vegetable Juices on Gastric Secretion*

In 1917 it was shown in Pavlov's laboratory by Volborth and others that vegetable juices have a great effect on the secretory action of the stomach. K. M. Bykoff found that vegetable juices taken with meat and other proteins greatly increase the flow of gastric fluid. This was held to afford a scientific basis for the use of the soups made of meat and vegetables which are so popular in Russia. When vegetable juices were taken with carbohydrates the flow was also greatly increased. Bykoff found also that during the first hour fatty foods inhibit the action of the gastric glands, but that if given with vegetable juices the inhibitory phase of the fat completely disappears, and the total quantity of the stomach juice for the whole period is much greater than with fat alone. This experiment explains the use of fatty foods and vegetables together—

for example, butter and cooked apples together give a great flow of stomach juice. From the secretory effect and from the composition of their ferments, vegetable juices must be considered as energetic stimulators. The work was done on dogs with pouches isolated according to the method of Heidenhain and Pavlov.

Later studies showed that tomato juice was the strongest of all known natural stimulants of the gastric secretion, including even meat extracts. During the two and a half hours after giving 250 c.c.m., 163 c.c.m. of gastric secretion was obtained from the little stomach of the dog, 200 c.c.m. of distilled water gave during the same time only 13 c.c.m., and 250 c.c.m. of cabbage juice 8 c.c.m. The juice of cauliflower caused a secretion somewhat larger than that of cabbage, watermelon juice, two or three times greater than distilled water, the juice of cherries and grapes produced the same amount of secretion as distilled water. The simultaneous administration of 250 c.c.m. of tomato juice and 250 c.c.m. of warm mineral water ("nauzui," similar to Apollinaris) called forth a much larger secretion than even the tomato juice alone. When mineral water was added to watermelon juice the secretion was greatly increased. When vegetables and mineral water were given together the combination produced more secretion than either alone.

#### CONCLUSION OF THE SERIES

In concluding this series of articles I desire to reiterate my point of view—that is, I have had no political end to serve, and I have had nothing to prove. My original idea was to present the general medical and scientific facts that I had collected in Russia, in order to give information on an important subject, and at the same time to balance these facts so that the whole series of articles would convey to the careful reader an accurate conception of the situation. The perusal of isolated passages will not, I think, produce a correct impression of the events.

The following conclusions even, I think, be safely drawn. There has been in Russia, from the medical point of view, a truly appalling calamity—intense suffering, indescribable horrors of severe famine, wholesale ravages of disease, extreme general poverty, and bestial conditions of living. Although the effects of this will continue for a long time, the acute stage is passed, and is being followed by one of slow but gradual reconstruction. The disaster was probably due in the main to the accompanying disorder and prolonged deprivations of continued war and revolutions in an already demoralized country. The sweeping political changes came at a time unfavourable for the experiment, and it is therefore more difficult to judge accurately of their effects than of those of the war on disease during this destructive period, but it can be seen that they have already initiated profound general mutations, the full force of which will not be manifested perhaps for a generation—such as, for example, the difference in moral standards and education, the substitution of community and club life for that of the family, and so on.

As the period of destruction has been the most prominent and has had its acute crisis I have devoted more space to it than to that of the subsequent reconstruction, which is only just beginning and is occurring along various lines. Although I have included some recent scientific achievements, these, though given official encouragement, have been mostly in the nature of individual efforts. I intend to treat in more detail later on this stage of reconstruction.

I desire to express my gratitude to Sir Dawson Williams for his consideration in having first helped me with the outline of the material I had collected. To Dr J. W. McNee I am indebted for suggestions about the present article, and to S. G. Kuzanov and I. Guerbatov for assistance in the preparation of material from the Russian.

*Note*—In order to avoid any confusion that might arise from the reference to Pavlov's two books in the footnote to my article published in the *BRITISH MEDICAL JOURNAL* of June 11th 1927 (p. 1070) I desire to say that the volume there mentioned (*Activity of the Cerebral Hemisphere*) is that published by Oxford Press in July 1927, under the title *Conditioned Reflexes*, while the one called *Conditioned Reflexes* in my article is another book, which has not yet appeared in English.

\* Personal communication of unpublished work.

# British Medical Journal.

SATURDAY, OCTOBER 22ND, 1927

## HARVEY, BACON AND GILBERT

THE *Harveian Oration*, which dates from 1656 and has now been delivered on 208 occasions, has often made the distinguished holders of this high office feel that they are freed with the recitation of an oft told tale, and that the exertions of their predecessors have left them few, if any, new avenues of approach to Harvey's discovery. It is of course true that in founding it Harvey left certain directions, such as a commemoration of all benefactors by name, and an exhortation to the Fellows and Members to 'search and study out the secrets of Nature by way of experiment', but these have been so dutifully followed, especially with regard to the commemoration of benefactors—for example by the late Sir Norman Moore in his Oration (1901)—that recent orators have sometimes been constrained to go rather far afield and to content themselves by references here and there to Harvey's inspiring example and experimental methods. Sir William Hale White in his *Harveian Oration* this year (p. 713) has taken as his thesis one which, at any rate for many years, has not been attempted by his predecessors—namely, the influence exerted on Harvey by his senior contemporaries in this country, Francis Bacon (1561-1626) Lord Chancellor and philosopher, and William Gilbert (1540-1603) President of the Royal College of Physicians (1600), and the Father or experimental philosophy in this country, whose *De Magnete Magneticisque Corporibus et de magno Magnetic Tellure Physiologia nova* (1600), declaring the earth to be a magnet was the first great scientific book published in England.

As Harvey was in Padua from 1600 to 1603 it has naturally been assumed that he was stimulated there by the Italian atmosphere to research on experimental lines. In a lecture at the Royal Institution on Harvey on January 25th, 1878 the year in which the tercentenary of Harvey's birth was celebrated in London the late Professor F. H. Huxley considered the question whether or not Bacon had influenced Harvey's mind and method of investigation and very definitely decided against this possibility on the grounds that there is not any trace in Harvey's works of Bacon's writings and that Bacon's *Novum Organum* (1620) was not published until some years after Harvey had given his demonstration of the circulation of the blood in his *Lumleian Lecture* on April 17th 1616 at the Royal College of Physicians, the setting of which Sir William Osler so graphically painted in his *Harveian Oration* twenty years ago. With a wealth of argument and quotation Sir William Hale White contends that there is much circumstantial evidence though admittedly not any direct proof of Bacon's influence on Harvey. In so doing he brings out his sincere admiration for both the man and the manner of Bacon's writings and incidentally throws some interesting light on Bacon's personality, his introspection and sufferings from the goit and the stone, thus recalling Swedenborg's afflictions and Erasmus's epigram: 'I have renal colic, you have gout, we have married sisters.'

Stress is skillfully laid on the probability that Harvey

had read and was influenced by Bacon's *Advancement of Learning*, which came out in 1605, before Harvey had started on his experimental investigation of the circulation and that it mentored the experimental method which Harvey later practised with such efficiency and excellent results. Sir William Hale White meets the objection raised by Huxley and reiterated in a leading article in our columns a year ago (1926 p. 311), that as the *Novum Organum* was published in 1620 Harvey could not have been influenced and stimulated by it in his methods of investigation. He points out that while engaged in his writings Bacon freely discussed their substance, certainly with his chaplain and probably with his medical attendants, of whom Harvey was one though it is not claimed that Bacon utilized Harvey's professional services before the delivery of the *Lumleian Lectures* of April 1616, when Harvey first demonstrated his discovery, it is argued that it does not follow that the contents were unknown until the masterpiece was printed. Later on, however, the orator explained the absence of any reference by Bacon to Harvey's discovery by the death of the fallen Lord Chancellor in 1626 before the publication of the *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus* in 1628 so by parity of reasoning it might be suggested that Harvey, his physician had verbally told him some details of a matter of such absorbing scientific interest. From consideration of Harvey's writings Sir William Hale White infers that, except for the grandeur of Bacon's language Harvey's opinions might well have been expressed by Bacon and that the minds of these two outstanding men of their time ran on similar lines so that they thought alike. The evidence adduced from the famous quotation by John Aubrey who as a gossip has been described as 'a kind of immature Boswell', to show that Harvey was not influenced by Bacon is criticized with much ingenuity and effect.

Turning to the question of the influence exerted by William Gilbert on Harvey, the orator makes it abundantly clear that as a friend of Dr Lancelot Browne, whose daughter Elizabeth became Harvey's wife in November, 1604 Gilbert must have been well known to Harvey by repute, though perhaps not in person (for he died in 1603), as a leader in medicine as well as in science and the author of his great work which burst upon the world just when Harvey was in a particularly receptive state of mind and full of energy for his future life of epoch-making research. This interesting and closely documented Oration, a labour of love and dictated by respect for the father of modern physiology, closes with a brief sketch of the scientific atmosphere in the early years of the seventeenth century which leads up to the conclusion that Harvey must have been familiar with the teaching of Gilbert and Bacon.

## THE SEROTHERAPY OF POLIOMYELITIS

PROFESSOR G. ETIENNE of Nancy has devoted much attention during recent years to the subject of poliomyelitis and its treatment by serotherapy. The use of convalescent serum was suggested so long ago as 1910 by A. Netter and subsequent investigations have shown that this procedure is efficacious in certain cases. Professor Etienne has now published in the issue of the *Revue Médicale de la Suisse Romande* for August 25th, a careful summary of what is known about myelitis and its treatment. He prefers the term 'myelitis' to the more classical one of 'poliomyelitis' because

in the adult, with whom he has been mainly concerned, the infective process is more diffuse than in the infant, in whom myelitis is limited more definitely to the anterior cornua. In his present contribution he draws attention to the striking analogy between the clinical evolution of anterior poliomyelitis and that of paralytic rabies. Research along the lines of Pasteur's classic study of rabies has established experimentally the specific action of the virus of anterior poliomyelitis on the nerve centres, the filterability of the virus, its biological characters, its extension along the nerve trunks, the possibility of its transmission to monkeys and of immunizing them by successive doses of virus, and the neutralizing power conferred on the blood of these animals. Monkeys may be inoculated by intraperitoneal, intradural, subcutaneous, intravenous, or intraintestinal injection, also by the nasal route. It appears that the virus is eliminated by the pharyngeal mucosa and the tonsils. This is an important point, in view of the fact that myelitis may follow cancrina or sore throat, and that "carriers" may constitute a danger in epidemics. Although the infective agent has not been definitely isolated, it has been shown that the blood of apes which have survived an attack of paralysis can neutralize the virus, and that the serum of convalescent patients has the same power, provided that the injections of serum have been commenced within eighteen or twenty-four hours of infection.

Professor Etienne describes the application of serotherapy in three periods of the infection: in the initial pre-paralytic phase, in the stage of extensive paralysis, and in that in which the palsies have become established. Several observers have found that the majority of patients who are treated with the serum of convalescents during the first phase do not develop paralysis to any great extent. When injections are given during the second stage striking results have been reported. In most cases there is definite arrest of the paralytic process, and very often recovery, sometimes rapid, from an existing paralysis. In regard to the third phase, as a rule a good deal of the paralysis clears up, leaving a residuum that is usually permanent; it is thought that in cases treated with serum recovery is more rapid and more complete, but it is obviously necessary to intervene before definite destruction of medullary cells has occurred. As in all forms of serotherapy treatment must be undertaken at the earliest possible moment. Since the quantity of serum available for injection is necessarily very small, it is advisable to inject it by the intrathecal route, which also favours acceleration of the response. The quantity injected ranges between 3 c.c. and 13 c.c., with larger doses meningeal symptoms, such as opisthotonos, frequently occur. Netter recommends the repetition of injections (generally about eight times), but this appears to intensify the meningeal reactions.

On account of the difficulty in obtaining sufficient quantities of the serum of convalescents, many attempts to immunize animals have been made, chiefly at the Pasteur Institute in Paris. Etienne records nine cases of complete recovery after repeated intrathecal injections of serum prepared at the Institute. In one case (a man aged 40) treatment was only commenced seven weeks after the onset of the disease, when he was completely paraplegic with considerable muscular atrophy, an important clinical point is that the fever persisted. In ten days 120 c.c. of serum was injected, and within eight days the patient had improved, the reflexes returned, and he began to walk, three weeks later he had

recovered completely, except for slight extensor paresis and talipes equinus. One failure is recorded in a man aged 62 who had severe diabetes: he died of heart failure, in spite of definite improvement in the paraplegia. Professor Etienne adds that this serum is not effective in other apparently similar diseases, such as epidemic encephalitis and disseminated sclerosis. Netter's method of employing the serum of convalescents has given generally satisfactory and sometimes remarkable results, and the conclusion is that it has definitely passed out of the experimental stage.

## HOSPITAL POLICY AND LEGISLATION

At the Autumn Dinner of the British Medical Association Mr. Neville Chamberlain, the Minister of Health, made a speech, fully reported in the *STANDARD* for this week, which greatly impressed his audience. He outlined the legislation which he hoped would be passed at early dates for assisting the work of his department in furthering national health. Not the least part of the interest excited by his speech was due to his sketch of ideas on hospital policy. These ideas he has since set out in an interview which appeared in most of the daily papers on October 15th. From these sources it appears that the Minister desires to secure three main things in any reform of the Poor Law so far as this will affect hospitals. First, that there shall be association of hospital activities and not competition. This association, he claims, is necessary if the voluntary hospitals and their invaluable associations and the spirit that informs them are not to be lost through pressure by the statutory hospitals, whose resources may be termed (in comparison with the voluntary hospitals) as unlimited.

Such an association would, he suggested, be best brought about by the formation of a joint body embracing both the municipal and voluntary hospitals, which should decide upon the line of development of hospitals where they were needed, their types and so forth, and also secure interchanges between the hospitals both as regards patients and staff. Change of control of the Poor Law infirmaries from the smaller statutory boards of guardians to the municipalities he considers necessary, if only to secure the removal of the old stigma of pauperism from these great institutions. It would facilitate also arrangements for the interchange of patients. Such a scheme should make it easier for patients to secure admission to hospital, and for the home doctor to keep in touch with his patient when in hospital. The general practitioner should be represented upon the joint body of control and be in closer touch with institutional treatment.

Further, he envisaged the extension of hospital treatment so that not only the poor who cannot pay will be treated, but those who are able to pay more or less completely for the treatment they need and those who would be able to pay a full fee both to the hospital and their own specialist whose treatment they desire. "Nobody should be deprived of institutional treatment." Our present system, he holds, is illogical and wasteful, the custom of making differentiation in the treatment of a sick person according to whether he could or could not pay he deems absurd. His proposal to make the Poor Law hospitals into municipal hospitals he maintains, did not mean of municipal socialism for it was not a transference of a private hospital to public ownership. Some have admitted, however, that it meant doing away with the voluntary system, but that was the very opposite of what he wanted to do. His desire was to save the

voluntary hospitals from a danger now over-hadowing them.

The British Medical Association has formulated its hospital policy after prolonged deliberation through Council, committees, Divisions, and Representative Body. Now we have a Minister of Health who has shown himself particularly interested in the progress of medicine and bold enough to lay the outhnes of his hospital policy before the public. When we compare these two drafts of policy, the Association's and his, we are grateful to find that there is so large a measure of agreement. There is a happy significance in this fact, a happy augury for the successful accomplishment of a real reform of our hospital system in the near future which shall be both effective and British.

#### THE HARVEIAN FESTIVAL IN LONDON

THE HARVEIAN Festival was celebrated in London in the usual way by the Royal College of Physicians on St. Luke's Day (October 18th). The Harveian Oration, delivered by Sir William Hale-White, is printed in full in the opening pages of this issue and elsewhere we make further editorial reference to it. It was delivered in the afternoon, when the Baly Medal was presented to Professor A. V. Hill, F.R.S. At midday the President (Sir John Rose Bradford) and the officers and some members of the Council of the College attended Bow Church, Cheapside, to hear the annual sermon preached under the Sadler Trust. The preacher was the rector of the church, the Rev. Gordon Ponsonby, and the sermon was principally a recital of the names and achievements of distinguished Fellows of the Royal College who had passed away during the year. Among others whom Mr. Ponsonby recalled to the mind of his hearers were Francis Warner, who laboured on behalf of feeble-minded children, Llewellyn Phillips, a name which Gonville and Caius men remembered with special pride, who spent twenty-five years of his life training medical students in Egypt, Thomas Clavre Shaw, who took his first degree in London as long ago as 1860, and was a pioneer in advocating the establishment of mental clinics connected with general hospitals, Sir Isambard Owen, who after twenty years as a physician in London seemed to have found a more congenial sphere of labour in educational administration where his sympathies had full play, Thomas Robert Bridshaw, a loyal and lovable colleague, who laboured among the hard-headed folk of Lancashire, Ernest Henry Stirling, a man of exceptional distinction, who greatly advanced the knowledge of physiology, Sir Brian Donkin, who made notable contributions to the study of the inheritance of mental characters, Charles Wilberforce Daniels, who, after working in tropical colonies, had served as director of the School of Tropical Medicine and Adrian Stoke, perhaps the most pathetic of all these losses, who was cut off at the age of 40, though not too soon for him to have exemplified how abundantly he possessed the great virtues of the medical profession—patience, courage, selflessness, and humanity. The preacher also spoke of one, not a Fellow of the College, of whose death he had learned only within the last few days—Sir William Macpherson, a lifelong friend of his own, with whom he went to school more than half a century ago. The preacher's own chief recollection of him was of his great tenacity of purpose in all that he undertook. In addition to this he was a humble man at heart, reverent in his thoughts, quiet in his manner, and unswerving in his work, he approached death at the last with the same calm courage he had looked it in the face more than once before in other lands. He and his like, said the preacher, still spoke to those who followed in their step. He was a wise man who said that the dead ruled the world. Their bodies had been laid in the grave, but

their voice was still heard. In the evening a dinner was held within the College. Among the guests were the Dean of Westminster, the Speaker of the House of Commons, the Secretary of State for War, the President of the Royal College of Surgeons, the President of the Royal Academy, and the Ministers of the Grocers and the Merchant Taylors Companies. The Speaker and the Secretary for War responded to the toast of "The Guests," and the latter made a very sympathetic reference to the Air Force Medical Service.

#### TREATMENT OF EARLY MENTAL DISORDERS

EXPERIENCE has shown that there is no more urgent problem in the case of patients afflicted with mental disease than the adequate treatment of its early stages. In this we have to some extent lagged behind other countries—especially perhaps Germany and the United States of America—owing partly to the legal difficulties under which we still labour in bringing patients with slight and early mental disorders under control, and partly to the constitution both of our large public mental hospitals and of the smaller registered houses, which are bound either by law or by economic reasons to accept all patients, both early and chronic who are sent to them. In the larger public institutions a segregation of patients in the early stages of mental disease is sometimes possible and is often attempted but it is rarely practicable in the smaller mental hospitals and houses. In another column we publish a description of the Reception Block which was opened last week at St. Andrew's Hospital, Northampton. Into it all persons suffering from recent or acute psychoses who are sent to the hospital will be admitted and treated apart from the more chronic cases, until they recover sufficiently to be discharged or pass into a subacute or chronic stage. Here the ideal of the complete separation of patients with recent and often curable conditions from cases of hopeless or long-standing insanity will be possible, since the Reception Block has its own entrance, stands in its own grounds, and is under the care of a separate staff. An equally important feature is the provision of laboratories for the complete investigation of every case admitted to this block. In this matter we have been much behind the facilities enjoyed by psychiatric clinics and mental hospitals of some other countries, in our smaller licensed houses, particularly the clinics-pathological examination of patients has always been difficult, yet attention is being more and more strongly directed to the etiological importance of physical disease in the pathogenesis of insanity, and especially to disturbance in metabolism and to intoxication from foci of sepsis or other infections. If these factors are as important as some believe, it is obvious that they should be dealt with in the earliest possible stage of the illness. The influence of environment and of various forms of physiotherapy in the early stages of mental disorders has long been recognized in other countries, but in England, though theoretically taken into consideration, there has been no adequate opportunity of making a complete study of its influence on the rate of cure. In the United States valuable work is being done in this connexion, but the St. Andrew's Hospital, Northampton, is, we believe, the first institution in England which has been able to devote a whole block and whole-time medical men to the study of these influences. The difficulties of cure and treatment in mental disease must be very greatly increased when the patients are of necessity, in the constant company of hopeless and chronic cases. In all other diseases efforts are made to keep the acute and curable cases away from the hopelessly incurable or recumbent of the mental effort produced. It stands to reason that those patients in mental hospitals who present signs of lessened mental confusion must be depressed in their saner moments by close contact

with the wrecks of human civilization. The congratulations of the medical profession are due to the committee and medical staff of St. Andrew's Hospital for this welcome innovation in the treatment and investigation of mental illness. The Board of Control and all those in authority in asylums have been much preoccupied with the low recovery rate in mental disease as compared with other forms of disease, but, as the chairman of the Board of Control said at the opening ceremony, more favourable results may be looked for as a result of the experience gained at Northampton. The Lord Chancellor also laid stress on the desirability of all mental institutions in this country taking steps, so far as in them lies, to establish similar hospitals.

#### THE TRAFFIC IN DANGEROUS DRUGS

SEVERAL recent events have directed attention afresh to the traffic in opium and other dangerous drugs and the means which have been invoked with a view to effect both national and international control of that traffic. At the twenty-fourth Interparliamentary Conference, held recently in Paris (August 25th to 30th), a series of resolutions was carried declaring "unanimously" that the abuse of the drugs in question will only be reached by "limitation of the culture of the poppy and coca leaves and of all narcotics to the recognized amount needed for medical and scientific purposes, this measure to include the total suppression of the use of opium for smoking." It is true that later resolutions exhibited signs of compromise between those groups which approved the agreements arrived at by the Geneva Conferences of 1924-25 and those which did not. Thus a period of fifteen years was indicated within which the suppression of opium smoking contemplated by the Hague Convention of 1912 should take effect, and while some groups urged the ratification of the Geneva agreements, others pressed for their revision in accordance with the principle contained in the above-quoted first resolution, which had been passed unanimously. On September 16th the Assembly of the League of Nations received a report from its Fifth Committee dealing with the opium traffic. This report emphasized the insistence of the Advisory Committee on Dangerous Drugs on the necessity for a general and apprehension of what the illicit traffic in dangerous drugs means "in terms of human suffering, misery, and degradation," as well as on the committee's serious statement that the action taken by several Governments "falls far short of their contractual obligations" under the Hague Convention of 1912. Attention was called to the fact that Turkey had not yet ratified the last-named treaty, nor vouchsafed a reply to the secretariat's communications on the subject. The Fifth Committee further complained that several Governments had failed to comply with their stipulated undertakings to furnish information in regard to the commerce in noxious drugs of their respective countries. The change in constitution of the Council of the League of Nations has caused a setback in the matter of putting in force the Geneva agreements of 1925. It will be remembered that the effectuation of the Geneva Convention was dependent upon its ratification by ten signatory States, including seven of the principal States represented on the Council, two of which must have permanent seats thereon. By the disappearance of Belgium, Czechoslovakia, and San Salvador from the Council three of the requisite ratifications have been lost, only those of Great Britain, France, and Poland remaining effective. Early this month a special session of the Advisory Committee on Opium, etc., was held at Geneva. Further evidence of the "enormous scale" of the illicit traffic in dangerous drugs was forthcoming, and of its backing by "huge financial resources." Proposals were put forward for placing the manufacture of all dangerous drugs in Governmental hands or for an "international union of alkaloid manufacturers," which how-

ever, were referred to a subcommittee. The committee lamented that only three States, members of the League Council, out of the seven required had ratified the Geneva Convention, and made an "urgent request that the matter shall receive serious consideration at the next meeting of the Council."

#### A PROPOSED ASTHMA RESEARCH COUNCIL

WE have received a notice informing us that an Asthma Research Council has been formed with the Earl of Limerick as president, Lord Glenavy as vice-president, and Captain F. L. M. Boothby, C.B.E., as honorary secretary. The writers state that according to the Registrar-General's returns more than 2,000 men, women, and children die from asthma and its kindred diseases every year, and they infer that for every sufferer who dies there are many thousands whose lives are made a burden to them by the paroxysms of this malady. They go on to assert that, though palliatives have been found, no certain cure exists, and, further, that the cause of asthma is unknown. The council, they state, has been established to serve as a central body organizing research and carrying it out systematically. Its office is at 12, Bedford Street, W.C.2. Asthma is so distressing and incapacitating a disorder that we can well understand sufferers from it desiring to institute inquiries in the hope of finding some cure, or at least some mitigation, but the investigation of the cause of asthma is a very complicated problem, it is not so much a disease in itself as a symptom of some defect, functional or structural, which may not be, and probably is not, of the same nature in all cases. For this reason we think that the first step the proposed council should take would be to obtain from medical sources the most recent information available as to what has already been done, and of the medical work which is now in progress. For any effective inquiry a team of workers would be necessary, such as can only be found at a general hospital. Were the council able to finance a special asthma out-patient department such as exists in several American cities, and succeed in having it attached to some general hospital, a group of cases could be thoroughly investigated from every point of view. A physician, laryngologist, and radiologist already on the staff and interested in asthma might be put in charge, and some younger man, also if possible interested in the disorder from a pathological point of view, might be appointed to devote his whole time to the work as a research fellow. Such a research fellow would begin by spending some time at Leyden with Professor Storm van Leeuwen, at Mont Doie, at Bad Reichshall, and at the asthma clinics in Boston, New York, Philadelphia, and at the Mayo institution at Rochester. When he got to work in this country he would need skilled secretarial assistance for the collection and analysis of statistics. Those quoted by the promoters from the Registrar-General's returns are probably fallacious. The 2,000 deaths mentioned must include bronchitis complicated by asthma, and probably also conditions known as cardiac and renal asthma, neither of which has anything to do with real asthma. We should rather doubt whether half a dozen people die on an average in any year from uncomplicated or nervous asthma in England and Wales. A vast mass of statistics can, no doubt, be collected, but unless very carefully digested and examined from all points of view they are not likely to lead to any helpful results.

#### MALARIA AND NATIONAL DECAY

CURTAIN letters on malaria and national decay appeared in the *Times*, the writers of which seemed to be unaware that as regards Greece, with which they concerned themselves, it had received almost exhaustive treatment a score of years ago. Mr. W. H. S. Jones of Cambridge published,



in 1907, a small book on *Malaria: A Neglected Factor in the History of Greece and Rome*, and two years later followed up the subject in *Malaria and Greek History*. Both these books were noticed in our pages (BRITISH MEDICAL JOURNAL 1909, vol. ii p. 1349). The first work was reissued in 1920 with some additional evidence and an introduction by Sir Ronald Ross but the great mass of historical facts and references collected by Mr. Jones is to be found in the second book.<sup>1</sup> It is generally accepted that the national character of the Greeks changed for the worse between the fifth and third centuries before Christ, but there is not the same consensus of opinion as to the cause of this change. Mr. Jones and some others attribute it to the prevalence of malaria as a new endemic disease. One of the difficulties in discussing this question is the lack of precise diagnosis and the consequent doubt as to the nature of diseases known by such names as *επιπνοια* *καυσος* *η-ιαλος* *θερμη* etc. but notwithstanding this, it seems certain that by the third century B.C. the greater part of Greece and of the south of Italy was at least so malarious as it is to-day, but in order to show that this was the cause of national decay it is necessary to produce evidence that in the great days of the sixth century malaria was unknown or rare. The evidence which Mr. Jones relied on is hardly convincing on this point and indeed, there is a strong pre-emption in favour of the contrary view. In a paper with which he opened the discussion on the structure and function of the spleen during the Annual Meeting at Edinburgh Professor John Tait quoted from Hippocrates (BRITISH MEDICAL JOURNAL, August 20th, 1927 p. 291) evidence of the universal prevalence of malaria in his day. Apparently a large spleen was considered as normal for Hippocrates says "When the body flourishes the spleen wastes." Mr. Jones and Dr. Withington, on the other hand, consider that malaria was rare in the time of Hippocrates, and that the degradation of medicine from the rational school of Hippocrates to the miracle-working charms and snakes of the Esculapion temples was due not only to mental enfeeblement from malaria but also to the failure of the rational physicians in the absence of quinine to cure the disease. According to this ingenious theory the sufferers in despair turned to magic and dreams and incantations for the help which science could not give. But whatever influence malaria may have had it must not be forgotten that there were other potent causes of decay in the Hellenic peninsula acting at the same time. The want of union between the city-states and the frequent and devastating wars between them—notably the Peloponnesian war and the war of Athens with Syracuse—exhausted the people and left the survivors of war and pestilence enfeebled in mind and body. Yet in Attica Sparta Corinth and their neighbours were exhausted the Greek race was by no means done with, for its colonies long survived and flourished in Asia Minor, Egypt, and the Mediterranean, and when Rome had made a physical conquest of Greece the vanquished avenged themselves by a spiritual conquest of the victors. After all, the later so-called Roman Empire was largely Greek and Byzantium which for centuries was the centre of western civilization and learning was a Hellenic city, just as much as Alexandria. A writer in a recent number of *Nature* refers to the theory of Mr. W. H. S. Jones as being now generally rejected, but, nevertheless we think with our reviewer of 1909 that he and Dr. Withington have added a fascinating chapter to medical history and made a suggestive contribution to the study of the causes which influence the destiny of nations.

<sup>1</sup> *Malaria and Greek History*. By W. H. S. Jones, M.A., Fellow of St. Catherine's College, Cambridge, Assistant Lecturer at the Perse School. To which is added *The History of Greek Therapeutics and the Malaria Theory*. By E. Withington, M.A., M.B., Balliol College, Oxford. Macmillan & Co. Ltd. The University Press, 1909.

## ALL ABOUT TOBACCO

THE Norman Kerr Memorial Lecture of the Society for the Study of Inebriety, though usually devoted to the consideration of alcoholic problems, really has wider applications and in 1925 Sir William Willeox took the opportunity of authoritatively discussing drug addiction. Dr. W. E. Dixon has followed this excellent example, and his exhaustive and extremely interesting review of the tobacco habit, which is published in this issue (p. 719), is most appropriate in many respects especially, perhaps, in connection with the question of the effect of smoking on intellectual activity and the opinion, expressed by Dr. J. R. Larp and based on observations made on the students of Antioch College, Yellow Springs, Ohio, that the non-smokers come out better than the habitual smokers. On this vital point Dr. Dixon considers that the interpretation of the results given by the experimental tests applied, which admittedly point to some inferiority on the part of the smokers, is so complicated by various factors as to be negligible. He comes to the comforting conclusion that on the whole smoking in moderation does not exert any harmful effect on the normal central nervous system. But the important question whether or not strict moderation in smoking leads to a cellular degeneration as a rule or only exceptionally is left open for further investigation. It may be that the constitutional make-up is a determining factor in this respect, for Buijger's thrombo-angiitis obliterans though not absolutely confined to male Hebrew smokers, occurs among this ancient race in such an overwhelming majority of the cases that Dr. Paulus Weber's alternative title of "non-splinitis arteritis obliterans of Hebrews" has met with approval. It is rather attractive to speculate why smoking appeals to man and to the modern young woman. No doubt it exerts a mild stimulating effect followed by a soothing influence, so that it is adopted freely by both the dull and the irritable, but in addition the influence of rhythm, which forms part of the ritual of preparing and smoking a pipe, may—as in dancing, singing, and chewing gum—provide some satisfaction. The broad survey of the aspects of tobacco smoking given in this Norman Kerr Memorial Lecture contains a number of pharmacological points on which the lecturer has made observations in his laboratory, and thus there is an interest additional to the historical summary and the critical review of the literature. The relative importance and proportions of the constituents in various tobaccos and the smoke they yield have been investigated, and it was found that the pyridine contained in the smoke of smouldering vegetable material, including tobacco and coltsfoot leaves (the latter of which was at one time sold as a harmless smoking material for boys) has an irritating effect, and may produce diarrhoea, vomiting, and the early signs of shock. It will perhaps be disappointing to the smokers who feel attracted to denicotinized cigars to hear that Storm van Leeuwen found that their smoke contains as much nicotine as that from the same brand of cigars not submitted to the process of denicotinization, the explanation of this at first sight puzzling result would appear to be that the amount of nicotine in tobacco is no criterion of that in its smoke.

## THE HEALTH SERVICES OF NORWAY

THE Central Health Department in Norway is under the charge of a chief medical officer nominated by royal decree. It consists of two sections—a health section under a medical officer, and a pharmaceutical section under a pharmacist. Attached to the Central Department are the leprosy service, the antituberculosis service, and the service for the insane together with a vaccine institute for the preparation of serums and vaccines. The local authorities

for health are, in rural communes, the communal council, and in urban communes a separate health committee. The chairman of the council or health committee is the district medical officer, who is appointed by royal decree, and whose duty it is to supervise the medical practitioners, chemists, dentists, midwives, and assistant vaccinators of his area. The communes of the whole country are grouped into twenty prefectures, each of which has a medical officer-in-chief who supervises the district officers. The working of the system has recently been reviewed for the Health Organization of the League of Nations by Dr H. M. Gram, director of health services, Oslo. The infectious diseases required to be notified by medical men in Norway are of the same type as in England. One difference is that open tuberculosis only is notifiable, another is that venereal disease is included. Leprosy is not notifiable by medical practitioners, but chairmen of health committees keep a list of local lepers and report on them annually to the Central Department. For the bacteriological diagnosis of infectious disease there are laboratories at Oslo and Bergen, and municipal laboratories in some of the chief towns, but Norway is a land of such wide spaces that it is difficult for country doctors to avail themselves of these facilities. In any case it is not intended that notification should await bacteriological confirmation. The Central Health Department has issued a manual for the guidance of practitioners on these points. All towns and most of the rural areas furnish monthly reports on epidemic disease to the central authority. Their annual reports, which are more correct, are tabulated in an official year-book, which is published in French and Norwegian. The only midwives allowed to practise are those who have gained a diploma in a Norwegian public school or in a school recognized by royal decree. Nurses and masseurs of either sex are under the district medical officers. Vaccination against small-pox is not compulsory, but no person can be confirmed or married in the National Lutheran Church or admitted to a high school without a certificate of vaccination. There is an anti-vaccination propaganda of some activity, but vaccination is gradually becoming more general, and is stimulated by every outbreak of small-pox. There are no public services for the treatment of venereal disease, which work with some friction between rural and urban communes. Rural patients migrate into the towns in order to obtain better treatment, and the rural communes feel and voice their grievance at being required to meet the charges. A bill providing for State control of this service is at present under consideration. There is local abundance of water supply in Norway, but surface water is scarce and wells are often defective. Some towns use river water purified by filtration and chlorination. The few water-borne typhoid outbreaks of the last thirty years were traced to isolated wells. There is a temperance movement in Norway. During the late war prohibition was introduced of all drinks containing more than 12 per cent of alcohol. The result was that smuggling and illicit distillation increased enormously. It is now a penal offence for a soldier, a driver or conductor of a tramway car, a railway servant, or a driver of a motor vehicle to consume a beverage containing more than 2.5 per cent of alcohol while on duty or within six hours beforehand.

The Thomas Vicary Lecture before the Royal College of Surgeons of England will be given by Dr George Parker on Thursday, November 3rd, the subject of the lecture will be "The early development of hospitals." The Bradshaw Lecture before the same College will be delivered by Sir Cuthbert Wallace on Thursday, November 10th, it is entitled "Enlarged prostate a review." Both lectures will be given in the College at 5 p.m.

## Nova et Vetera.

### THE SERJEANT-SURGEONS AND THE SERVIENTES REGIS CONTRASTED

SOME account of the Serjeant-Surgeons to the King was printed in "Nova et Vetera," British Medical Journal, 1925, vol. 1 (p. 224), but it may be worth while to compare the serjeant-surgery with other royal serjeantries. Domesday Book calls the King's Serjeants *servientes regis*. Serjeantry in older times indicated a tenure of land, and as such was capable of descent from father to son. This leads me to the point of this note, which is that the serjeant-surgery can never have had anything to do with a professional land tenure. One can understand, to take an extreme and unauthorized example, a feudal noble owning a manor by the tenure of serjeantry of cutting the King's corns before the coronation ceremony. Anyone can make shift to cut a corn, but the son of a surgeon, even if he follows his father's profession, need not of necessity be of any use in it, and it is inconceivable that a serjeant-surgeon could have held land by serjeantry tenure of a professional sort. The whole idea was that of personal service. Father, son, or grandson could officiate with the napkins at the coronation banquet, but not necessarily with the surgery of the period, rude though it may have been.

There was, however, nothing to prevent a doctor holding land by serjeantry when the tenure implied service of a different kind from the practice of his profession. Round instances the holding by Walter Devenish of land in Devon by the serjeantry of finding three arrows when the king should hunt on Dartmoor. The land in question was Shiradon in Dean Prior, on the south-east border of Dartmoor. Roger de Mirebell had forfeited it for homicide, and Henry III had transferred it to Walter with the same service. Now Walter to Dorencis was Hubert de Burgh's physician. Round observes that this is a typical instance of petty serjeantry, which John defined in the Great Charter (1215) as the service of supplying us with knives, arrows, and the like. The classification of free tenures was as follows: frankalmoin, military service, serjeantry, and free socage. Littleton, in Tenures, sec. 153, wrote as follows:

"Tenure by Grand Serjeantry is where a man holds his lands or tenements of our Sovereign Lord the King by such service as he ought to do in his proper person to the King, as to carry the banner of the King or his lance, or to lead his army, or to be his marshal, or to carry his sword before him at his Coronation, or to be his sewer at his Coronation or his earlier, or his bath, or to be one of his chamberlains of the receipt of his exchequer, or to do other like services etc. And the cause why this service or to do other like services etc. And the cause why this service is called Grand Serjeantry is, for that it is a greater and more worthy service than the service in the tenure of escheage (knight service). For he which holdeth by escheage is not limited by his tenure to do any more especial service than any other which holdeth by escheage ought to do (the service due from a knight's fee was uniform), but he which holdeth by Grand Serjeantry ought to do some special service to the King, which he that holds by escheage ought not to do."

All serjeantry ranked below knight-service and above socage. Tenure by serjeantry is as old at least as Domesday Book. Round gives the following instances occurring in the Book: Round—Surrey, Odard, balistarius of Moulsey, Tezeln, surveyor—Surrey, Odard, balistarius of Moulsey, Tezeln, surveyor the cook, kitchen-service Hants William, arcuarus (archer) of Bentley, Geoffry of East Worltham (marshal ser), Miles, porter at Winchester Castle Dorset Omund, baker-service Somerset John, usher-service Devon William, porter at Exeter Castle Cambridgeshire Erchenger, baker-service Essex Walter the const Suffolk Ralf, balistarius of Burgh, cross-bowman service. We may therefore define serjeant-surgery as the personal professional service to the King without the holding of land by serjeantry of that particular service.

If any readers are inclined to think that my inference of cutting corns is improbable to a high degree, let them

remember that the "mighty Norman houses of Bigod and Giffard held, in succession, an Essex manor by the service of scalding the King's swine."

I am afraid that those who look for facts about the Serjeant-Surgeons in this article will find more of serjeantry than of surgery, but I hope it will be conceded that I am correct in my assumption. I assume, though I do not know, that a similar train of reasoning would apply to the serjeants-at-law.

In conclusion, I must state that I am indebted to J. Horace Round's *The King's Serjeants and Officers of State* (1911) for the facts relating to serjeantry which are recorded here.

R. R. JAMES

## A MENTAL RECEPTION HOSPITAL

### OPENING CEREMONY AT NORTHAMPTON

THE new Reception Hospital of the St. Andrew's Hospital for Mental Diseases, Northampton, was formally opened, in the presence of a large company, by the Lord Chancellor, Viscount Cave, on the afternoon of Friday, October 14th. The chair was taken by the Marquess of Exeter, president of the hospital. Lord Cave, in his address, pointed out that this was the first hospital of the kind to be established in England for the treatment of recent cases of mental illness entirely apart from chronic cases and he hoped that other institutions would follow on these lines. He also stated that he knew of a fact that the report of the Royal Commission on Lunacy was under the active consideration of the Government.

The conception of the governors of St. Andrew's Hospital that all mental patients—whether voluntary boarders or certified—who are recoverable, and who are likely to respond to treatment, should be received in a separate hospital, far removed from patients suffering from chronic forms of mental disorder, was first taken into active consideration in 1914, but the war prevented its realization until 1924, when the foundation stone of the building was laid. The cost of its erection and equipment has been £68,000.

### *The New Building*

The new reception hospital is built on the bungalow plan, with a central two-storied block. It faces south and has its own separate entrance gardens, and recreation grounds. Accommodation is provided for sixteen patients of each sex and also for the sister-in-charge and even nurses. On both the male and female sides are large dormitories opening on to wide verandahs on to which the beds can easily be wheeled. There are a number of separate private bedrooms and private sitting rooms are provided for patients who require them. All the patients' rooms face south, looking out over a wide agricultural valley, and the solarium on which the general sitting rooms open get the sun all day. The dining rooms for the patients are close to the central kitchens, and are arranged with tables, each seating four persons.

Each side has a large room specially set apart for clinical work. Here a complete survey of the physical and mental state of the patient is made. In addition to adequate provision for ear, nose, throat and eye examinations, and preliminary survey of the teeth, ample facilities are provided for the special examinations that modern bacteriological and biochemical methods demand. The preliminary blood examinations and fractional test meals are also carried out here. The investigation of hidden focal sepsis will be a special feature, and a system of case recording has been devised which will facilitate the periodical overhaul of each patient and the accumulation of facts relating to the effects of varying forms of treatment. Great stress is laid on the importance of this overhaul, and it is undertaken at intervals of not more than two months.

The laboratories, on the first floor of the central block, are an important part of the scheme. Two are provided one for bacterial investigation and morbid anatomy, the other for biochemical investigations. Here the detailed examinations of the blood, urine, stomach contents, faeces, cerebro-spinal

fluid, and excretions of each patient are carried out. The bacteriological laboratory, in addition to being completely fitted out with everything necessary for such work, is provided with special apparatus for continuing and elaborating the researches of the late Dr. W. Ford Robert on (bacteriologist to the Scottish asylums) on anaerobic bacteria and their relation to neuro-toxaemia, which promise to throw important light on mental disease. The biochemical laboratory is also fully equipped for its purpose, and efficient sterilization and preparation rooms are adjacent. It is intended to carry out extensive researches in all branches of mental disease in order to determine how far infective processes are active in the causation and what help can be obtained in the fight against them. The clinical and laboratory staff will be in constant consultation on all subjects relating to treatment.

On the first floor of the central block is a fully equipped operating theatre with anaesthetic and sterilizing rooms adjoining, and a bed-carrying lift is provided so that patients can be wheeled from their rooms to the theatre. On the ground floor of this block there are consulting rooms for psychotherapy, a medical library and dispensary, in addition to the dental room, and x-ray and electrical departments. The dental room has an x-ray outfit so that photographs can be taken without the patient moving from the dental chair. The x-ray department is provided with a very complete screening outfit, and the couch embodies all the latest ideas and improvements. It is fitted with a Potter-Buckey diaphragm. The set will provide a peak voltage of 170,000 and every form of treatment, except deep therapy, can be carried out here. The control of the current is so placed that there is no possibility of a patient getting access to it. The electrical department is fully equipped with the most modern apparatus, and the rooms have been furnished with the object of making the patient as comfortable as possible while undergoing either local or general artificial sunlight treatment. High powered diathermy and high frequency apparatus are also installed.

A separate hydrotherapy department is provided in each block close to the dormitories. The main room is provided with three baths for prolonged immersion, with thermostatic control so that it is impossible for the hot water supplied to exceed a temperature of 110° to 115° F. The electric bath has no earth connections and a sinusoidal surging current of 25 to 100 volts is employed. All these baths are so arranged that a number of patients can receive individual attention at the same time. Scotch Aix, and Vichy douches are provided, as well as the latest appliances for sprays, needle baths, etc. Adjoining is a room for massage and manipulative treatment, with a dressing room off it, and in another room provision is made for various kinds of hot packs used in connection with the baths. Special care has been taken in the installation of the most up-to-date equipment for intestinal lavage on the Plombieres system, so valuable in the treatment of mental cases. The hydrotherapy department is completed by a Turkish bath installation in a separate building close to the hospital, where all forms of hot air and vapour treatments are provided.

### *The Opening Ceremony*

After the company were seated, Sir Frederick J. Willes, chairman of the Board of Control, made a statement in which he said that while the public health of the country had improved in the last fifty years, the same could not be said of public mental health and he congratulated St. Andrew's Hospital on taking such a notable step further to deal with the problem. He was especially glad that research would take a prominent place in the work of the new hospital.

The Marquess of Exeter then asked the Lord Chancellor to declare the Reception Hospital open. The opening ceremony followed and the Bishop of Peterborough (Dr. Clande Blagden) said a dedicatory prayer.

A vote of thanks to the Lord Chancellor was proposed by Mr. Christopher Smyth, chairman of the Committee of Management, and seconded by Sir Charles Gunning. The guests afterwards inspected the hospital under the guidance of the medical superintendent, Dr. Daniel F. Rambaut.

## FOOD POISONING

## MALCOLM MORRIS MEMORIAL LECTURE

THE second Malcolm Morris memorial lecture, under the auspices of the Chadwick Trust, was delivered in the Hastings Hall of the British Medical Association House, Tavistock Square, on Monday, October 17th. The lecturer was Dr W G SAVAGE, medical officer of health for Somerset, who took for his subject "Food poisoning." The chair was occupied by Sir William J Collins.

Dr Savage, after a tribute to the late Sir Malcolm Morris, whose interest in public health problems was always fresh and stimulating, began his lecture by pointing out that food poisoning must have been present from the earliest ages of mankind. Only by experience could man have learned what foods to take and what to reject. The appointment of "tasters" to kings and other highly placed persons proved that deliberate food poisoning was of very early date. But new types of food poisoning had arisen in modern civilized communities, with the necessity for conserving food for long periods and the desire of people to have their palates tickled by made-up foods or foods preserved in various ways. The simplest type of food poisoning was that in which the poison was inherent in the animal or plant eaten—for instance, the globe fish, which caused many deaths in Japan, or certain kinds of fungi, which occasioned poisoning outbreaks in this country. Again, there was the admixture, accidentally or by design, of poisonous chemical substances with the food. The risikenal spraying of apples seemed to be dangerous, for poisonous doses of arsenic had been found on apples so treated. Not very long ago there was an outbreak of belladonna poisoning in a family who had been consuming stuffed breast of mutton, the mutton had been stuffed with sage, mixed with which were a certain number of belladonna leaves.

The great bulk of food-poisoning cases, however, were due to bacteria. Dr Savage described a typical bacteriological outbreak which he had investigated in an isolated country village. A woman had purchased pig bones from the local butcher, and had used them to make brawn. As a result of eating the brawn, seventeen persons suffered from poisoning and three died. A bacillus was isolated from a fatal case, and was without doubt the cause of the outbreak. The pig from which the bones had been obtained had evidently suffered from disease, judging by one leg which it was possible to examine, and probably its disease was due to infection with the same bacillus. It was for a long time supposed—and indeed the idea still lingered—that the cause of poisoning outbreaks was the eating of food which was in some way tainted or decomposed. The common name for such cases was "ptomaine poisoning," and the term was still freely used although it was wholly incorrect. There was no such thing as ptomaine poisoning. In the first place, no ptomaines were formed in meat or other food until it was far too nasty to be eaten even by the most ravenous. Ptomaines were produced only in a very late stage of the decomposition of organic matter. Again, in practically all poisoning outbreaks there was one characteristic, namely, that in appearance, taste, and smell the food which caused the poisoning was indistinguishable from sound food. A special group of bacilli, the Salmonella group, was responsible for at least, on a rough computation, three-fourths of the outbreaks of food poisoning. These bacilli grew very rapidly in food, particularly in hot weather, but the food did not show any physical change.

One feature of poisoning outbreaks was their seasonal prevalence. They were distinctly more frequent in the summer months. On analysing a list of 200 outbreaks of which he had had experience, he found the cause to be approximately as follows:

	30 per cent
Canned foods	7
Milk	7
Milk products (chiefly ice cream and cheese)	8
Made-up meats	27
Meats less manipulated (for example, stuffed)	4
Fresh meat	16
Fruits and vegetables	4
Other foods	4

As during a part of this investigation he was specially looking for instances of canned-food poisoning it was possible that the proportion set out under that head was rather higher than the average, but the point is that 72 per cent of the outbreaks were due to foods which had been man-handled in some way or other, such as chopping, mashing, mincing, or mixing, such as chopping, mashing, mincing, or mixing. A great many foods of this type had been heated up and slowly cooled, a process which offered considerable opportunities for contamination, especially if the cooling took place in dirty surroundings. He instanced an ice-cream outbreak, in which the producer had made five gallons of ice-cream from milk, cornstarch, sugar, and flavouring matters, all the ingredients being good but, after boiling, had left the mixture to cool in an outhouse yard before freezing. As a result there were 400 known cases of poisoning, though, fortunately, only one death. The investigation showed that the cooling mass must have been infected by bacilli which had had time, before the freezing took place, to multiply to large numbers. The Salmonella group had one property which it shared with no other group of micro-organisms—namely, that though the organisms were rather vulnerable, the toxins they produced were heat-resistant. Food could be boiled for an hour, and the poisons were not destroyed. After a brief reference to botulism, Dr Savage passed to a discussion of the prevention of food poisoning, poisoning, instead of being a sort of general infection of food with bacilli, was a very specific infection. Prevention therefore resolved itself into a determined hunt to find the sources from which these food poisoning bacilli came. The Salmonella were not natural inhabitants of the intestinal tract of man or animals, but they were found in diseased animals, and possibly a number of the outbreaks were due to diseased animals being used for food. More often, however, these bacilli got on to the food from outside sources, connected with the handling such foods received, either in the preparation or the storage. Sometimes infection might be carried by flies or by vermin in slaughter houses, dairies, and similar places. The first principle of prevention was to find the reservoirs of these bacilli and destroy them. The second principle was scrupulous cleanliness in the food trades, especially the enforcement of Section 12 of the Meat Regulations of 1924. The third line was to do much greater care in the treatment of made-up foods. There was urgent need for the registration of premises where made-up foods were produced, in the same way as bakeries and the like. The individual was practically defenceless, except, of course, that he would do well to practise strict rules of cleanliness in relation to food and to obtain his food from reliable sources.

A vote of thanks to the lecturer was proposed and seconded respectively by Sir StClair Thomson and Sir Harold Morris, K.C., the latter the son of the man in whose memory the lecture was founded.

## England and Wales.

## NEWCASTLE-ON-TYNE THE NEW SESSION

THE formal opening of the winter session at the University of Durham College of Medicine, Newcastle-on-Tyne, took place on the evening of October 11th. Dr Thomas Oliver, president of the college, took the chair and in opening the proceedings paid a tribute to Mr J. Brunton Angus, emeritus professor of surgery, and Dr H. E. Armstrong, the first lecturer in public health at the college, of whom obituary notices appeared in our last issue. The introductory address was given by Dr John Rose Bradford, President of the Royal College of Physicians of London, whose subject was "The study of medicine." After remarking that, in his experience, it was very rare for students to regret having chosen medicine as a career, he asked why the study of medicine should prove so satisfactory to its disciples and yet not lead to the extreme narrowing of mental outlook sometimes met with at other vocations. The reason for this was twofold—in the first place, medicine was a branch of natural knowledge.

secondly, its practical applications were so numerous and ever increasing that there was scarcely any department of human activity that did not enter into close relations with medicine. The student was thus not only brought face to face with problems of surprising scientific interest, but of necessity came into close relation with his fellow creatures, at times when the artificialities of life were broken down and human nature was faced with realities. Much of the criticism of the medical profession by intelligent laymen was justified by the tendency of some of its members to lay down the law on various matters as though their conclusions were warranted by facts instead of being mere opinions. This tendency to dogmatic utterances was one to be guarded against. Another point made by Sir John Ross Bradford was the need for those embarking on a medical career to develop a correct attitude of mind by correct methods of study. The vote of thanks was proposed by Professor Thomas Beattie and seconded by Professor Stuart McDouald.

#### A CONTRIBUTORY SCHEME FOR BIRMINGHAM

In the *Birmingham Post* of October 8th considerable space is devoted to an account of a new "contributory scheme" for hospital benefit which it is intended to launch in that city in January, 1928. Despite the space given to the project the account is not very clear, at least not in what we would regard as the essential features of such a scheme. So far as it is now set forth the plan is this. The scheme is to be organized by the Saturday Fund as the collecting agency, this body will have special representation on the central committee. Contributors will be required to pay a minimum of twopence a week. The employers will be asked to pay an amount to the fund equal to one-fourth of that contributed by their employees. There will be a hospital guild for the purpose of gathering contributions from those who are outside the normal operations of the collecting scheme, so that in the event of such contributors requiring treatment they will not be asked to pay for their maintenance while in hospital. It is hoped that those who are over the income limit will subscribe or make donations to the scheme. The hospitals will be open without charge to the very poor who are unable to join the contributory scheme. Others whose income is limited and who are accepted for hospital treatment under the present practice of the hospitals will be eligible for free treatment if they belong to the scheme. Contributors not considered eligible for free treatment may be called upon to make some additional payment to the funds of the hospital in accordance with the present practice of the hospitals. "It is hoped each hospital will make a maintenance charge for those patients who are non-contributors and who could afford to pay twopence per week." Hospital and convalescent home benefits will be extended to actual dependants of contributors. The basis of distribution of the funds will be the cost of maintenance of patients other than those provided for by grants from public authorities and private ward and other fees. Eventually it is anticipated that the whole of the net cost of the maintenance of contributing patients will be met out of the contributory scheme. It is intended that the districts immediately adjoining Birmingham shall be linked up with it in this project.

The scheme contains some novel features which call for careful consideration by the medical profession, and we have no doubt that the executives of the Divisions of the British Medical Association in the areas to be included will investigate the matter fully. It would appear that there is to be an income limit for what may be termed average contributors, but its amount has not so far been disclosed. The average contributors to the scheme when admitted to hospital will receive free treatment. Our contemporary writes:

Among the signal advantage of the new scheme is that it will enable the hospitals finally to abandon the inconvenient and unpopular ticket system. Incidentally it will also imply the abandonment of works collections in aid of particular hospitals. It will increase certainly to an appreciable extent and probably largely the number of those who hold that by virtue of their weekly contributions they establish a right to hospital treatment in case of sickness.

There are two features of some novelty in this scheme. One is that the promoters appear to intend that those who are not properly of the economic status included within the income limit (whatever that may be) may yet be admitted members of the scheme, but if and when admitted to hospital will be required to make some payment to the hospital over and above that which the hospital will receive from the fund on their account. Further, the promoters of the scheme desire the hospital authorities to require payment from persons admitted to the hospitals who are not members of the scheme and who are deemed to have been capable of making the minimum payment of twopence a week. Throughout the account of the scheme there is not a word or hint of the bearing all this will have upon the economic status of the medical staffs of the hospitals. In some of the paragraphs phrases are used which if taken literally, would render the medical staffs of these hospitals liable to give their services gratuitously for the patients who pay in part or in whole for their hospital treatment, for it is written: "The basis of distribution of the funds, will be the cost of maintenance of patients" (the italics are ours). In yet other places the wider term "treatment" is used. Another novel feature of the scheme is the association of employers in a financial obligation to supplement the contributions of their employees. It appears that the first suggestion was that this amount was to be one third that contributed by the employee, but that it was afterwards settled at one-fourth.

Contributory schemes are forms of insurance. They are just as much insurance as the insurance of one's house against fire. There is a tendency in some quarters to attempt to disguise this fact by a haze of philanthropic zeal on behalf of the hospitals. Such zeal is right and laudable, but it should not be allowed to blind the critical eye, so that it fails to scrutinize the details of the policy of insurance which is enacted under the guise of such contributory schemes. A lack of care in the initiation of these schemes may mean a world of trouble later on and possibly strained relations between the authors of the schemes, the hospitals and the contributors, which might be avoided by a little cool criticism at the outset.

#### NEW ISOLATION HOSPITAL AT SOUTHPORT

Sir George Newman opened a new isolation hospital at Southport on October 15th, this being the first building of the kind erected in England since the war. The hospital contains two scarlet fever wards, of twenty-two and twenty beds respectively, a diphtheria block of twenty beds, an observation block of eight beds, and a discharge block of two beds. There is, in addition, a tuberculosis pavilion of twenty-two beds, and shelters providing accommodation for eight patients. Should it later be found necessary, it will be possible to erect an additional fever block in the hospital enclosure and also another tuberculosis pavilion. The estimated cost of building and equipping the hospital was £81,000, and an additional sum of nearly £16,000 was required for the purchase of the land. Sir George Newman referred to his recent visit to America, and said that he believed the Southport Isolation Hospital must be one of the finest of these institutions in the world. In the course of his speech he emphasized the importance of securing the friendly co-operation of private practitioners in the prevention of disease, and paid a high tribute to those engaged in the health insurance service. Early diagnosis and prompt notification of such infectious diseases were, he added, exceedingly necessary if the public health was to be maintained and improved.

#### SURGICAL INSTRUMENT MANUFACTURERS' ASSOCIATION

The annual dinner of the Surgical Instrument Manufacturers Association was held at the Holborn Restaurant on October 14th, under the chairmanship of Mr Ernest W. Mayer. The toast of the association was proposed by Mr P. C. May, who referred to the valuable work done by the association during the past year. Sir John Corcoran, director of the National Union of Manufacturers, remarked on the fact that the association included in its membership more than 90 per cent of the manufacturers engaged in this branch of production. Its application



Industries proceeding had been rejected by the Board of Trade on the ground that the industry was not of substantial importance and that foreign competition was not exceptional, but Sir John Corcoran said that when he was at the War Office during the war he never heard it suggested—and in the circumstances of that time it would have been unthinkable—that the industry was not substantial or of national importance, while as to the second point, there was a large foreign importation, and it ought not to be necessary for the association, in order to get a safeguarding duty, to prove that it was exceptional. The association was also bringing forward an application for the marking under the Merchandise Marks Act of surgical instruments on their importation. He thought it was wise to press for this, because if goods were imported unmixed it was a matter of extreme difficulty, in view of the wiles of the importers, to prove that they were of foreign origin once they had been distributed. Mr Cecil Rowntice, F.R.C.S., who spoke as one of the guests, said that the industry might truly be described as a philanthropic one, especially since the advent of stainless steel, for instruments so made seemed as if they would last for ever. Mr L Ferris-Scott, Financial Secretary and Business Manager of the British Medical Association, complimented the manufacturers upon the imagination they invariably displayed, and said that he knew how fully the medical profession recognized the debt it owed to the instrument makers of the country.

#### ROOM DISINFECTION IN INFECTIOUS DISEASES

In his report for 1926 Dr R H H Jolly, medical officer of health for the county borough of Wolverhampton, comments upon disinfection in connexion with infectious diseases. While agreeing that the value of steam disinfection of the bedding and wearing apparel of these patients is unchallenged, he expresses the doubt whether anything is gained by scaling up rooms and burning formalin lamps in them, in view of the uncertainty whether the infecting agents of acute contagious diseases can survive for many hours on furniture, walls, or carpets, and the probability that the disinfectant liberated in the room is unable to destroy the bacteria. He states that the abandonment by various health departments of room disinfection for scarlet fever and diphtheria has not caused any adverse results, thus supporting the view that direct transference of the infecting agent from one person to another is the usual method of the spread of contagion. Dr Jolly adds that, since the use of scabietinal antistreptococcal serum became a routine measure in all early cases of scarlet fever, it has been found possible to reduce the length of the stay in hospital of these patients by nearly a fortnight without increasing the risks of infection after discharge. He thinks that the serum has also been particularly valuable in the treatment of severe cases. Only a few patients with septic infection were admitted to hospital during the year, but when the serum was administered early in this condition they made quick recoveries and their convalescence was uneventful. With a view to providing better accommodation for the isolation of doubtful cases, or of those with a double infection the erection of an isolation ward containing ten single cubicles is proposed.

#### CENTRAL MIDWIVES BOARD

The Central Midwives Board for England and Wales met on October 6th, when Sir Francis Crumpney (president) was in the chair. A communication was received from the Society of Apothecaries of London, stating that it had nominated Dr Thomas Vincent Dickenson to be its representative in lieu of Mr Charles Sangster, and a vote of condolence with Mr Sangster's family on his death was adopted. In reply to the medical officer of health for Lindsey the Board expressed the opinion that it would not be possible for each practising midwife to have a pair of callipers, and that the local supervising authority should keep a stock of these instruments for use by midwives when required. In reply to an inquiry from the medical officer of health for Surrey, the Board stated that "in all cases the person actually conducting a confinement should sign the form of sending

for medical help." The Board approved for one year the scheme of the Birmingham University for lectures to be delivered to pupil midwives in the area. The following institutions were approved as training schools: Birmingham Hospital, Mill Road Infirmary, Liverpool Newton, Widra Maternity Hospital, Patel, Bombay. It was reported that applications from midwifery authorities in various parts of the British Empire for the conclusion of reciprocal arrangements between them and the Board had been received, and the Approvals Subcommittee was given power to co-opt one or more additional members for their consideration.

The amendment of the Registration of Nursing Homes Bill, to the effect that non-county boroughs and urban districts employing whole-time medical officers of health should be the registration and inspecting authorities for nursing homes (including maternity homes) in their district, was considered, and the Board adopted a resolution strongly deprecating the amendment in so far as maternity homes were concerned, and instructed the secretary to advise the Minister of Health and also the County Councils Association of this opinion.

## Scotland.

#### ABERDEEN UNIVERSITY THE NEW SESSION

The winter term of the Faculty of Medicine of the University of Aberdeen opened on October 11th. Professor A W Mackintosh welcomed the students, and in recognition to the resignation of Professor McWilliam from the chair of physiology after forty-one years, said that they were glad to know that he was still to be with them for a few months. The resignation was a tremendous blow to them all. They were proud to have had such a distinguished scientist and lecturer amongst their alumni and professors, but he was sure that their chief and most cherished memory of Professor McWilliam would be of the man himself, who was ever a kindly and helpful friend, most lovable and modest to a degree. Professor Mackintosh, in referring to the joint hospital scheme at Lossisthull and the town council's scheme of extension at Oldmill and the City Hospital, paid a warm tribute to the Lord Provost for his noble efforts in the great cause, and expressed his conviction that the great endeavour would be brought to fruition. While a whole-hearted believer in the voluntary hospital system he was equally strong in the belief of the need for co-operation with the hospitals that were statutorily under the local authority. He considered that it would be an incalculable benefit to the sick if some working scheme could be arrived at, and he was glad to know that a movement towards that ideal was under consideration now in Aberdeen. Professor Mackintosh subsequently delivered his opening lecture dealing with the lives of Thomas Linacre (1460-1524), Francis Adams (1724-1861), and Charles Creighton (1847-1927).

#### NEW COMBINED HOSPITAL AT ABERDEEN

The Woodend Hospital at Aberdeen, which is to be utilized by Aberdeen municipal public health services, was opened on October 15th by Sir John Gilmour, Secretary of State for Scotland. Lord Provost Lewis and the magistrates of the city, as well as members of the Aberdeen Parish Council, were present. Sir John Gilmour said that the present was the first example of the co-ordination of hospital services to take place in Scotland. It was no matter to bring about uniformity in services, whether public or private, for special services developed as time went on under different conditions. There must come, however, when overlapping and wasteful expenditure arose. The example now given by Aberdeen was an instance of the way in which harmony might be attained through wise leadership, and this had been achieved through the helpful and capable guidance of the Lord Provost of the city. The scheme was fully approved by the Scottish Board of Health. A wide appeal had been made for public help, and the project had been received by the people, its development would be watched.

with the greatest interest. He was a strong supporter of the voluntary hospitals and believed that in Scotland they would not be abandoned without great misgiving but so was equally certain that there ought to be the closest co-operation between the great national services, the town and parish councils, and the voluntary hospitals.

#### MEDICAL GYMNASTICS

A congress the first of its kind was held under the auspices of the Chartered Society of Massage and Medical Gymnastics in the Rankin Hall, Glasgow, on October 6th and 7th. Mr. Matthew White, F.R.C.S., who presided at the opening, mentioned that out of 6,000 members in the society, 450 were resident in Scotland. Mr. Alexander MacLennan, M.B., C.M., delivered an address on crippling deformities in children. Mr. G. H. Stevenson, F.R.C.S., delivered a lecture on rest and posture in treatment in which he remarked that continuity of treatment was an important factor during the whole twenty-four hours whether the patient was awake or asleep. Correct posturing sleep should be prescribed for adults as well as children. Demonstrations were given upon such subjects as sling exercises for re-education in paralysis, and upon English and Scottish country dancing. The meeting was continued in Edinburgh on October 8th. A visit was paid to the massage department of the Royal Infirmary, where a demonstration was given by Miss Mann, who showed the treatment and exercises adopted by masseuses for stiff joints. In a lecture on foot conditions, Professor John Fraser dealt with the peculiarities of the arch of the foot with various congenital and acquired deformities, pointing out what could be remedied by massage and what could not. In the afternoon the annual meeting of the Chartered Society of Massage and Medical Gymnastics was held in the Royal Infirmary. Sir Cooper Perry, M.D., presiding. A proposal to prepare for publication a kind of directory of masseurs, together with their addresses, qualifications, and forms of treatment, was favourably considered. The meeting also considered the question of applying for State registration for persons practising massage.

#### PROPOSED REFRACTION HOSPITAL IN GLASGOW

A meeting of opticians was held in Glasgow on September 21st to consider a proposal which had been made for the establishment of a "Refraction Hospital" on lines similar to that of the London Refraction Hospital. Mr. R. Jackson presided and referred to the need for such an institution in Glasgow in order to deal effectively with the special needs of the necessitous poor. Speaking of the need of training for students in this matter, he mentioned that some 400 qualified opticians had gone through the course of the hospital in London. It was reported that the provisional committee, which had already been appointed, had received £380 and considered that the expenses of the first year would not exceed £250. The proposed objects of this scheme are to provide voluntary service for ophthalmic training, to form an educational centre for qualified opticians and students to furnish facilities for the study and recognition of abnormal and pathological conditions of the eye, as well as providing special clinical instruction for opticians and finally to promote research in optical refraction. The meeting unanimously decided to proceed with the scheme and a committee of opticians from various parts of Scotland was elected to secure premises in one of the poorer districts of Glasgow.

#### HEALTH OF DUNDEE 1926

Dr. W. L. Burgess, medical officer of health for Dundee, in his annual report for 1926 states that the population of the city was estimated at 170,060. The birth rate per 1,000 was 21.9, the corrected death rate 14.8, the infant mortality rate 103, the general tuberculosis death rate 1.12, and the pulmonary tuberculosis death rate 0.81. Tuberculosis death rates are the lowest yet recorded, mark genuine progress. The number of new houses completed during the year was 744. This is a "record" for the city. It is estimated to be considerably in excess of the normal annual increment, and is therefore a substantial

contribution to the reduction of the housing shortage. Of the 744 houses 389 were erected by the corporation and 355 by private enterprise. The problem of slum clearance still offers difficulty. The view is expressed that a two-roomed house may be quite healthy if the number and sex of its occupants are controlled. Re-housed slum dwellers on the whole keep their new houses well. The employment of women rent collectors with experience in house management is recommended in the public interest. In the month of June complaints were received from the west end of the city of a plague of mosquitos. It was traced to a pond in which larvae abounded. The pernicious insect was the common gnat. The pond has been filled up. The personnel of the meat inspection staff is now complete and the number of detections of disease among animals killed at the slaughter house has doubled during the year. Tubercle bacilli were not recovered from any of the twenty-four specimens of milk submitted for examination. Of the 7,500 gallons of milk distributed daily in Dundee more than 50 per cent is pasteurized. Dr. Burgess, under the present conditions of milk production and distribution, is strongly in favour of pasteurized milk and encourages its use. In Dundee there is little certified or Grade A (tuberculin tested) milk on sale, and its price in any case would be prohibitive for many. Pasteurized milk on the other hand, is sold at the same price as raw milk, and may be obtained in bottles. Of sundry recent milk borne infections in the city not one has been traced to pasteurized milk. In an extensive outbreak of food poisoning due to milk occurred in the city in August. The causative organism was *B. enteritidis* (Gaertner), and the source of infection was promptly discovered, was a cow at a dairy farm suffering from enteritis. The Gaertner bacillus was demonstrated in the discharges of the cow, in the milk distributed, and in the excreta of the sick, and the specific immunity response was given by the blood of convalescents. The cow died of its enteritis, but all the infected persons recovered. Of 1,084 persons immunized against diphtheria fourteen were later suspected of suffering from the disease. Of this number two were undoubted cases, the rest were dubious, negative, or carriers. Testing and immunization on a minor scale were carried out in scarlet fever. Of 415 cases of primary and influenza pneumonia nearly one-half were treated in Dundee Royal Infirmary. Nine cases of encephalitis lethargica were notified, all in late stages.

#### SCIENCE AND MEDICINE

The Royal Medical Society of Edinburgh began its 191st annual session on October 14th, when Dr. D. Noel Paton, F.R.S., professor of physiology in the University of Glasgow, delivered an inaugural address on the relationship of science to medicine. Dr. W. R. Russell, senior president of the society, who occupied the chair, reminded the audience that the Royal Medical Society had been closely connected with medical education in Edinburgh for nearly two hundred years almost since the foundation of the Medical Faculty in the University. The society had had much to do in creating the reputation of Edinburgh as a medical school. Professor Paton said that science meant the pursuit of knowledge while medicine was the application of knowledge to the diagnosis, treatment, and prevention of disease. Every good doctor must in addition be possessed of certain human characteristics, including kindness, unselfishness, and sympathy. Two further qualities were also necessary—the power of keen observation and the faculty of reasoning from what was observed. The main object of the study of preliminary scientific subjects was to give the student this training in observation and reasoning. He believed that the science which above all others afforded this training was physiology. The medical man must know how to investigate the action of different structures in his patient and he must know whether their action was normal. Further this knowledge must be real and practical, not acquired from books or lectures. The qualities required either by the scientific investigator or by the clinician might be enumerated under five heads. First there was curiosity with a perpetual asking of what, why, and how, and how similar to that possessed by every healthy and intelligent child.

Secondly, there was imagination to see various possibilities and where they led, with the power of employing theories as guides. Thirdly, determination was important, and these three were probably inborn characteristics. The last two qualities were the critical faculty by which the value of evidence could be estimated and, finally, the faculty of observing honestly and without preconceived ideas.

## Ireland.

### RESIGNATION OF PROFESSOR PEARSON OF CORK

PROFESSOR CHARLES YEIVERTON PEARSON, M.D., M.Ch., R.U.I., F.R.C.S. Eng., is resigning the chair of surgery at University College, Cork, on attaining the age limit. He has held the position for many years past, to the great advantage not only to the University, but to the whole medical profession in the South of Ireland. His position as the leading surgeon was recognized some years ago by the appointment as honorary surgeon to the King in Ireland. We understand that Professor Pearson is not retiring from active work, and all his friends and former pupils will wish him a long continuance of his useful life.

### LOCAL GOVERNMENT IN NORTHERN IRELAND

The report of the Departmental Commission on the Local Government Administration of Northern Ireland was presented to the Parliament of Northern Ireland on October 13th. The Commission was a large one, it contained about thirty-five members, including several medical men and several women. The doctors were Professor R. J. Johnstone, M.B., F.R.C.S., M.P., who was chairman, Lieut.-Colonel Dawson, O.B.E., M.D., David Gray, M.A., M.D., Professor J. A. Lindsay, M.A., M.D., Dr. J. M. McCloy, Dr. W. McLouman, Dr. H. S. Morrison, D.L., M.P., and Alderman J. D. Williamson, M.D. There are forty-seven recommendations, but there are also several reservations by individual members. These recommendations deal with the abolition of boards of guardians and changes in the poor relief services, which it is recommended should be put on a county basis, under county council control. The individual recommendations will be noted later.

### COMMISSION ON THE RELIEF OF THE SICK AND DISTITUTE POOR

In the course of its report the Commission on the Relief of the Sick and Destitute Poor states its conviction that the schemes, both positively and in their administration, have in some counties, particularly the larger, where the distances are considerable, operated prejudicially in the interests of the poor, while the saving in cost has been negligible. The classes that should not be returned in the county homes, and for which other provisions will have to be made, are unmarried mothers, married mothers, children, and mental defectives. Even if reserved for the aged and infirm poor and chronic invalids, the county homes, with one or two exceptions, require much structural alteration and improvement before they can be considered as coming up to the standard of comfort required. Discussing the provision of hospital accommodation the report states:

The Commission is in full accord with the policy of establishing without overlapping or duplication, in the most accessible centres of population, public hospitals where the poor are likely to find the medical assistance available to obtain modern and skilled treatment in surgery and medicine. The normal provision in each county or county health district would be one fully equipped central hospital, with district or cottage hospitals as auxiliaries where distance and population justified such auxiliaries. Given a hospital which was established for itself a record of efficient and sympathetic administration, and to which admission could be readily obtained, distances of from twenty to twenty-five miles will not deter the poor from availing of it in areas where there are good roads and modern means of transport. In some counties the institutional accommodation provided for the sick falls far short of what the county scheme contemplates. The counties chosen for the county hospitals are, as a rule, suitable, centres chosen for the county hospitals are, as a rule, suitable, centres chosen for the county hospitals are, as a rule, suitable, but the hospitals themselves are not, in some instances, up to a reasonable standard, nor is the accommodation sufficient, while in others the development is taking place on lines that are not

consistent with the general policy of complete severance from ordinary poor relief.

The county hospital should be an institution under one control in which both medical and surgical cases are treated. The arrangement in several counties under which surgical cases are treated in a county surgical hospital and medical cases related to the wards of the county home the Commission do not regard as satisfactory. Most of the district hospitals are situated in old workhouse buildings and while exception cannot be taken in every case to this, the Commission think that unless they can be effectively cut off from the unoccupied portions of these old buildings, the location will not ultimately prove satisfactory, and modern small hospitals will have to be provided. The accommodation for cases of infectious and contagious diseases does not appear to be inadequate except in the counties of Galway, Mayo and Inverness, but in several other counties it is, for reasons indicated in the report unsuitable.

Whilst recognizing the difficult problem presented by the advanced cases of tuberculosis the Commission does not think the county home is the proper place for them, or that they should be admitted to the district hospitals unless they can be completely isolated. The accommodation in some of the dispensaries visited was unsuitable and the furnishing of the poorest description. The order and cleanliness in a number were very bad and, generally speaking, the standard of comfort was low. It is essential that the accommodation should be clean, comfortable and well equipped, and sufficient to ensure absolute privacy for a complete examination should such be necessary.

The inspections of dispensaries by the Local Government Department's inspectors should be carried out without notice. Every encouragement should be given to the dispensary medical officers to look upon the hospitals as a necessary complement to the dispensaries. In support of the recommendation for surprise visits by inspectors the statement is made that the poor, as a whole, are very slow to make complaints, but because no complaints are made it does not follow that there are no grounds for complaint, and conscientious inspections very often oblige the necessity for complaint, and give confidence to the poor.

Dr. Hennessy, one of the members of the Commission, dissents from the opinions of his colleagues on this question, and submits a searching criticism of the defects inherent in the Poor Law medical service.

While recognizing that it is possible for a Board of Health, under a capable and businesslike chairman and with the help of committees, to work the administrative machine efficiently, the Commission is inclined to the view that in actual practice the Boards are not able to exercise the supervision which their institutions, officers, and services require. The Commission is unable to formulate any plan which, by merely altering the constitution or methods of procedure of the Boards, would be calculated to lead to more efficient administration. The alternative it recommends is the abolition of the Board of Health and the assumption by the county council itself of the control of poor relief, working through a paid official in entire charge of the Poor Law services of the county, like the general manager of a company under the control of a board of directors. Dealing with mental hospitals, the report states:

The accommodation for the insane poor in the district mental hospitals (including the auxiliary mental hospitals) is either fully occupied or insufficient or unsuitable in all but three instances (Kilkenny, Letterkenny, and Portlaoighle Mental Hospitals). The Boards of Health should be encouraged to avail themselves of the recommendation for mentally defective children that now exists. The Commission recommends that as an inducement to send such children to an approved institution a grant equal to half the such children to an approved institution should be made. Subject to the condition that the child can benefit by the training, the Board of Health should be empowered if it think fit to join with the parents of a mentally defective child in paying the expenses of maintenance in an approved institution. No child should be retained at the public expense in an approved institution beyond the time when improvement in his or her condition cannot be effected. Approved institutions for defectives should be visited and reported on by the inspector of mental hospitals. The Commission proposes that without lessening the safeguards against improper detention certain defects in the present procedure for admission should be remedied. The Commission recommends that in the case of poor persons who become insane, and whose relatives are not in a position to pay for the means of conveyance or for the medical certificate, it should be the duty of the home assistance officer to arrange for examination, certification and transfer to the mental hospital. The Commission anticipates that with the alternative procedure it is able to meet the necessities of poor persons the number of commitments as dangerous lunatics under the Lunacy Act, 1867 will be considerably reduced. The Commission recommends that the law should relieve police commissioners' medical practitioners and all persons giving certificates and making orders in connection with the reception of patients into mental hospitals from liability to legal proceedings if they act in good faith and with reasonable care. The power to discharge patients on probation should be more freely used, and the maximum period of absence on probation extended.

## Correspondence.

### CATARRHAL VACCINES

SIR,—The figures supplied by the Lton medical officers (October 15th p 702) are of considerable interest, and at first sight suggest that mass inoculations in schools are not of much, if any, value. But may I suggest that there is a fallacy?

The anticatarrhal vaccines cannot be expected to prevent epidemic influenza—at least I have never hoped for such a result. I firmly believe that true epidemic influenza is at present beyond our control. What the ardent advocates of such vaccines does believe is that they can and do, diminish the incidence of the endemic cold and catarrh which is the scourge of adolescent communities. The test of complications which is, in my opinion, a much more reasonable guide to the efficacy of vaccines, is certainly not in favour of them, so far as the Eton figures go, but the epidemic was mild, and the total number of complications very small.

My own experience of a rather similar epidemic in January is as follows. The epidemic was clearly of a more severe type than that at Eton, but in its incidence, length of illness and number of complications and their severity, the advantage lies with the inoculated. I have also included figures relating to colds and cases of pyrexia of unknown origin (that is feverish chill) which occurred later in the term, after the influenza epidemic had ceased.

#### Haileybury College Inoculation 1927 Non inoculated (315)

Influenza	67=21.27%
Days lost	890=Av 13.2
Complications	26
Pneumonia 5, bronchitis 6, otitis 6 (4 abscesses), frontal sinus and maxillary antrum (op) 1, acute rhinitis 6, enteritis (haemorrhagic) 1, adenitis 1	

Pyrexia of unknown origin	10=3.1%
Days lost	95=Av 9.5
Complications	6
Bronchitis 2, otitis 3 (1 abscess), acute rhinitis 1	

Cold (6 a second time)	71=22.5%
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#### Inoculated (215) AC 95 PS 120

Influenza	34=15.8%
Days lost	374=Av 11
Complications	9
Bronchitis 4 (1 AC, 3 PS), otitis 1 (PS), adenitis 4 (1 AC, 3 PS)	

Pyrexia of unknown origin	5=2.3%
Days lost	55=Av 11
Complications	4
Bronchitis 1 (AC), otitis 2 (abcesses), 1 PS, 1 AC, adenitis 1 (PS)	

Colds	29=13.5%
(AC 9=9.4%, PS 20=16.6%)	

Days lost by the 34 inoculated influenza cases	65=Av 9
7 AC cases (71%)	309=Av 11.5
27 PS cases (22.5%)	

AC = Park-Davis's Anticatarrhal vaccine PS = Public School vaccine

I wish more school medical officers would take the trouble shown by the Lton doctors to try the effects of vaccines and publish their figures. It is only by the accumulation of figures from various sources that we can hope to get anything in the nature of proof. Those who like myself, do believe in vaccine treatment for colds and catarrh may be wrong and mistake *post hoc* for *propter hoc*, but meanwhile it seems to offer the only method of diminishing those common minor complaints which seriously affect the schools' welfare, far more so than the infectious epidemics. The public school vaccine collected through the activities of the Medical Officers of Schools Association prepared in St Mary's Hospital Laboratories and issued by Messrs Parke Davis and Co. is now on the market and a circular is being issued to all school doctors inviting them to make use of it and record their results—I am, etc.

L. R. LEMPTIEFF  
Medical Officer Haileybury College.

### DENTAL RADIOGRAMS IN DIAGNOSIS

SIR,—Permit me to draw attention to a practice which appears to be growing and is, I venture to think, prejudicial to all concerned.

It is this: A doctor thinking that the condition of a patient's teeth may have a bearing on the illness sends him to a radiographer of his own choosing. On the strength of his own or the radiographer's interpretation of the resulting radiogram—often not too clear—he makes a diagnosis, possibly prescribes treatment, and either requires the patient's own dentist to carry it out or very frequently, sends him to someone else of his own selection. Surely this is wrong.

Dental radiograms are a very valuable aid to diagnosis, but only an aid, and no substitute for clinical examination. They are often invaluable in revealing unsuspected trouble, more often still in affording ocular and convincing proof of what the dentist already knows or suspects; but, on the other hand, there may be serious sepsis without any sign of it in the radiogram, negative evidence cannot be relied upon.

Moreover, to be of value they must be really good, and to produce good dental films requires considerable practice. With certain brilliant exceptions the dentist who takes his own usually attains to a higher level of perfection than the general radiographer. Far too many reports are made upon skiagrams so imperfect that no safe deductions can be drawn from them.

Having obtained good films they must be correctly interpreted, often no easy matter and here again the dentist is more likely to be successful than the medical man, or the radiologist in whose report the doctor usually puts implicit faith.

As examples of the gross errors easily made I may mention a case where a patient was recently told by his doctor that an upper wisdom tooth was diseased and must come out, the "tooth" in question being the coronoid process of the mandible and the frequent condemnation of lower premolars as the subjects of apical sepsis by reason of the proximity of the inferior dental foramen to their roots.

It is obviously unwise to depend upon the shadow for diagnosis, and entirely ignore the substance. No dentist would rely solely upon radiograms apart from clinical examination and the clinical history. Were he limited to one or the other he would certainly choose a careful clinical examination.

It is not uncommon for a patient to come to a dentist with films taken at the request of his doctor and instructions that certain teeth are septic and to be removed, while others much worse have passed unnoticed.

It is not only discourteous to ignore the patient's own dentist but shortsighted because if a careful man he will have a recorded history of the mouth which may prove of the utmost value. The reasons why he is so often ignored by the doctor when a diagnosis is to be made would appear to be that the doctor mistrusts dentists in general (or, possibly with good reason that one in particular), while he overrates skiagrams as a source of accurate and complete information, and fails to realize that their interpretation is a matter in which the knowledge and experience of the dentist and his clinical findings are of the utmost value, with the assistance of the radiologist in case of difficulty.

Surely the correct course is to refer the patient in the first instance to his own dentist if he has one for a report, with skiagrams on the condition of the mouth. If for any reason this report should not inspire confidence, a second opinion should be sought. In this way the patient's best interests would be served, and no one would have cause to complain.

The facts are that the average doctor has very little knowledge of teeth and the average dentist very little knowledge of general pathology, so that only by their close co-operation can the patient derive the maximum benefit—I am, etc.,

London W.1 Oct 12th.

J. H. B. COCK

### "THE HISTORICAL ASPECT OF QUACKERY"

SIR,—In a recent address I made a five-line reference to Hahnemann and a three-line reference to the followers of Abrams. These short references have provoked nearly five columns of correspondence, and since I naturally dread anything in the nature of a geometric progression in polemics, I will try to answer my critics as briefly as possible.

#### (1) Hahnemann

Dr Juhn objects to my statement that Hahnemann established a dogmatic faith even more absurd than the orthodox traditions that he combated. The particular absurdity that I had in mind was not the doctrine that like cures like, but the belief in the efficacy of infinitesimal doses.

Hahnemann taught (*Organon*, 1833 edition) that the dosage of preference for drugs was the thirtieth dilution, which means a concentration of one part in  $10^{10}$  parts. This represents a concentration of one molecule of the drug in a volume of solvent nearly equal to a sphere of which the great circle is represented by the orbit of the planet Mercury. Obviously the chances are practically infinite against any dose of this dilution containing a single molecule, atom, or election of the drug.

The belief that drugs in these dilutions can produce any effect must appear absurd to all who accept the atomic theory of matter. If the homoeopaths reject the atomic theory they escape the arithmetical difficulty that I have indicated, but they ought to make it clear that they are opposed, not merely to orthodox medicine, but also to the chief basic theories of chemistry and physics.

#### (2) Quacks and Others

I agree with Dr Reid that the definition I gave of the term "quack" excluded those men who have been instructed in medical science but have forsaken it in the search for universal cures. Medical history records a continuous succession of such dissenters from inductive science, but unfortunately I know of no simple generic term by which to describe them.

#### (3) The Doctrines of Abrams

Sir James Barr has written a criticism of myself and my paper that I will try to avoid copying either as regards length or style.

The greater portion of his letter consists of abuse so vague as to be unanswerable, but he does make the definite statement that I seem to be "utterly incapable of accurately recording a historical fact." No one with any sense of responsibility would make a serious charge of this nature without adducing proof. Sir James Barr's letter fills four columns, but the only error of fact that he suggests is as follows. He says that in a former paper I stated that Perkins's tractors were made of wood and that I now say they were made of metal. I can only recollect mentioning these tractors in one paper<sup>1</sup> and there I twice stated that the tractors were metallic. I did, however, mention some imitation wooden tractors that were prepared and used by opponents of Perkins in order to show up this silly delusion. The whole point is rather trivial, but it does illustrate Sir James Barr's standards of accuracy in controversy.

I gather from Sir James Barr's letter that he thinks I have misrepresented the doctrines taught by Abrams and adopted by his followers. Now my only reference to this matter was the sentence "The followers of Abrams believe that all diseases can be both diagnosed and treated by means of two boxes containing some simple electrical apparatus."

I cannot see that Sir James Barr or Dr Reid have shown any inaccuracy in this statement. The statement describes the nature of the boxes and their alleged powers. As regards the nature of the boxes, Sir James Barr in his letter says that the curative box, the oscilloclast, is a nonderiving machine, whilst in a former paper<sup>2</sup> he described the principal component of the diagnostic machine as follows: "The rheostat or ohm meter is a specially graduated resistance coil." There can be no

doubt, therefore, that the boxes contain electrical apparatus, and the apparatus in the boxes that I have examined appeared to me to be of a relatively simple character.

As regards the powers of the boxes, I deliberately understated the claims made by their advocates. Sir James Barr has described how he could determine not merely the diseases of a patient, but also the sex and race, without ever seeing the patient, but simply by testing a drop of blood or a specimen of handwriting in the diagnostic machine of Abrams. He actually gave details of the diagnosis of cancer as an example of his technique. I have not seen or heard of any recantation of these opinions and therefore, as regards diagnosis, I think that I definitely understated the published beliefs of Sir James Barr.

The electronic theory of Abrams postulated that disease was due to an abnormal vibratory rate of the electrons of the body, and his diagnostic machine was supposed to measure the abnormal vibratory rate, whilst his curative machine was supposed to break down these abnormal vibrations. The theory therefore postulates that both machines are of universal application in disease.

I gather that Sir James Barr is a whole-hearted supporter of Abrams's theory. If he objects to my statement that Abrams's followers believe that all diseases can be treated by one of the boxes, will he mention where either he or the late Dr Abrams has ever published any statement regarding the limitations of the use of the oscilloclast in the treatment of disease? I might mention that I chose the word "treated" instead of "cured" in order to make my statement as non-controversial as possible. I am of course aware that Sir James Barr does not rely solely on the oscilloclast for treatment, in his letter he mentions the use of spinal concussion (spondylotherapy), and in a previous paper<sup>3</sup> he has mentioned other somewhat unusual forms of therapy. For example, he recommended in the treatment of pulmonary tuberculosis the practice devised by Abrams of printing the chest with gamboge and wearing a blouse of printing the chest with gamboge and wearing a blouse or undergarment of yellow silk. Again, in certain cases of epilepsy or migraine he recommended the patient to wear in bed a silk stocking on one leg, the right in the male and the left in the female.

I am genuinely puzzled at Sir James Barr objecting to the suggestion that the oscilloclast can be used for the treatment of all diseases, since this appears to me to be an obvious corollary of the electronic theory of disease.

Since Sir James Barr is the most distinguished electionist in this country, I hope that he will publish a statement regarding the limitations of his belief in Abrams's doctrines. This seems particularly desirable because Dr Reid in his letter suggests that he regards the oscilloclast partly as an adjunct to psychic suggestion, and this seems a very wide departure from the original electronic doctrines.

Sir James Barr actually mentions that the electronic practice attracted a large number of undesirable ecophants and camp followers, and although he believes that these are now discarded, yet it would be convenient if we could know the orthodox electronic faith and thus be enabled to distinguish the regular troops from the camp followers. As a start would Sir James Barr inform the medical profession whether he claims to be able to diagnose the presence or absence of cancer by the examination of a specimen of the handwriting of the patient?—I am, etc.,

A J CROOK

Edinburgh, Oct 17th

### RELATIONS BETWEEN MUNICIPALITY AND VOLUNTARY HOSPITALS

SIR,—At the Annual Meeting of the British Medical Association in Edinburgh this important question was discussed in the Section of Medical Sociology, but unfortunately time did not permit of a full and free discussion of the subject in all its aspects. There are several points which occur to me as worthy of remark.

The scheme is outlined by Mr Eason was fairly put, and, as indicated by Mr Neville Chamberlain, the idea is to place the Poor Law hospitals entirely without the

<sup>1</sup> In Address and Demonstration by Sir James Barr, delivered at the South West of London Post-Graduate Medical Association, Oct 17th, 1924 (Samuel Hill and Sons, Liverpool).



control of the guardians, with this I am in entire agreement as the only true solution, in my opinion, of the proper treatment of patients who require to go either into poorhouse or asylum hospitals.

The Scottish view of the question was attended to by Mr. Renward, chief executive officer of Glasgow parish council and district board of control, whatever that may mean. He began with the frank admission that being a layman, he was not altogether competent to treat the subject from the medical point of view. With this one would entirely concur, as its truth was proved by the policy he had persuaded the Board of Health to sanction—namely, that mental patients could be admitted to Stobhill Hospital and kept there for—if I heard him right—six months instead of six weeks. How the Lunacy Commission can allow this I cannot understand, seeing that for that period the patients have not the protection which the Lunacy Acts give to mental patients. I quite agree with Mr. Renward that the poorhouse hospitals generally are inadequately staffed in comparison with the general infirmaries, and I am afraid Glasgow poorhouse hospitals suffer in this regard, though to a less degree, perhaps, than many of the Poor Law hospitals.

The great defect to my mind in our Poor Law institutions lies more at the door of many of our inspectors of poor. They are the stumbling block officially. Some of the hospitals are in charge of part-time doctors, which is often an advantage rather than a disadvantage, as such doctors have a better chance of obtaining or advising reforms—that is if its councillors are men and women who are out to do their duty to the best of their ability, and not such as those depicted by Dickens.

In my opinion the great and insurmountable defect in the use of Poor Law institutions is that the inmates are really prisoners and are classed as such. The only authority in Scotland that has solved this problem is that of Aberdeen, where the Poor Law hospital has been handed over to the control of the infirmary authorities so that the question of pauper or no pauper never arises. It was a pity that Mr. Renward had nothing to say regarding this solution of the difficulty when, in closing the discussion, he answered various criticisms.

It should be borne in mind that the cost of voluntary hospitals with poorhouse cannot be compared except in the case of combination hospitals where there is a similar basis for comparison.

There is a further objection to parish council institutions in a large city, and that is the possible abuse of their power in converting them into penal places by keeping patients in hospital long after the need for hospital care and treatment is past, several such cases I have met with in my own experience, and I am sure others may remember similar cases.

It is a great pity that a Section which has such possibilities for good cannot be so arranged as to allow so important a question to be discussed in all its bearings. To my mind this subject was not allowed sufficient time for the adequate discussion it merited and in future if the Section of Medical Sociology is to be a success its programme must be more carefully considered in regard to time. Unless this is done the Section will fail in its object and should be done away with—I am, etc.,

Glasgow Oct 16th.

THOMAS RUSSELL

### HOSPITAL POLICY

Sir,—I have been much interested in your leading article on hospital policy (October 1st, p. 601). If the problem is to be tackled successfully a candid statement of facts as they are at present is essential.

I will deal with the conditions as they exist in Liverpool. I am only competent to speak from the physician's point of view. Of the four general hospitals which are associated with the local medical school the smallest contains 100 odd beds, the largest 300 odd beds. The other two hospitals contain over 200 beds.

Let me take the case of a hospital with 200 beds. The majority of these beds are used by surgeons. There will be about 60 or 70 beds at the disposal of the physicians, and there will usually be two full physicians and one or two assistant physicians to take charge of these beds. The

assistant physician, be it remembered, is essentially an independent individual, with his own beds and patients.

It is obvious that a hospital of this size will have great difficulty in adapting itself to modern growth of medicine which makes specialization inevitable. The difficulty is twofold. There are not sufficient beds and material available to make effective special departments. There are only a few nerve cases, a few heart cases, etc., and these are divided among three or four men. Correspondingly, special departments such as pathological biochemical, cardiographic, etc., must remain ineffective because the work can only be carried on on a very small scale.

The other difficulty is still greater. There are really not a sufficient number of trained men to staff the different departments. What frequently happens is this. If a hospital requires, say, a pathologist, it appoints a man to the position who has never had any experience at all on this subject apart from what he gained as a student, and solely by virtue of his appointment he becomes at once an expert in pathology. The same applies more or less to most other departments. A man who, possibly, has been a house-physician for a year and has been acting as a tutor for a few months is appointed to the position of a junior physician. He becomes at once an authority on all branches of internal medicine, ready to act as a consultant and to instruct students. In addition to this, he frequently is a pathologist, a biochemist, takes charge of a nerve clinic, and is quite ready to undertake the work of a cardiographic department. Could medicine be practised on scientific lines by these amateur "experts" at a teaching hospital? The difficulty is that small hospitals entail the multiplication of small, inefficient departments. Things are not so bad with regard to the premier institution in Liverpool.

The progress of medicine is such, however, that it is at present quite impossible for any man to become equally proficient in all its branches. It must not be forgotten that the general physician nowadays usually concentrates all his energies on a special subject, yet he is ready to act as an expert in all branches of internal medicine. If all Liverpool hospitals would amalgamate and thus become one unit, the difficulty would at once disappear. General wards in internal medicine are now no longer compatible with the progress of scientific medicine, but under a scheme of amalgamation it would be quite possible to have, say, 100 beds for nerve cases in one place under the direction of the most experienced man, with the rest of the nerve specialists working under him, all material to be available for all of them, for teaching, and particularly for research. The same applies to other departments. The cost of such a scheme would be really less than at present. It is not, however, very likely that such an arrangement would materialize in the near future in Liverpool.

Sir, I am a believer in the voluntary principle with regard to hospital policy, but if this policy is unable to adapt itself to modern requirements it will have to go—I am, etc.,

Liverpool Oct 16th

I. HARPIS

### ULTRA VIOLET RADIATION AND VARICOSE ULCERS

Sir,—My attention has been called to some comments made by Dr. Weinbre (BRITISH MEDICAL JOURNAL, September 10th, p. 472) on the remarks made in my opening paper on "The uses and limitations of ultra violet radiation in dermatology," at the Annual Meeting of the British Medical Association at Edinburgh (published in the BRITISH MEDICAL JOURNAL, August 13th, p. 255).

In reply to his question, I should certainly include varicose ulcers in the chronic septic type of ulcer benefited by ultra violet light, but it is quite another matter to use it as a routine method for all varicose ulcers. It was exactly this indiscriminate use of actinotherapy for all sorts of conditions to the exclusion of other well tried methods, and the exaggerated statements often made of the results by observers insufficiently experienced to estimate them, that produced the "admittedly pessimistic vein" or my paper referred to by Dr. Weinbre.

I agree with him, however, that there is at present no

standard technique, and unless the method is mentioned, there is no common ground for comparison and discussion—I am, etc.,

London, W 1, Oct 15th

S ERNEST DONE

### THE INJECTION TREATMENT OF VARICOSE VEINS

SIR,—May I point out, with reference to your annotation of September 24th (p 558), that in *La Presse Medicale*, June 2nd, 1926, *xxxx*, No 44, p 689, a full account is given of the histology of veins treated by sclerosing injections.

This method has been in use for the last six years at the Necker Hospital in Paris, where the number of *piquets* given for this purpose is now between 30,000 and 40,000, without any material accident of any kind. I may add that a solution of sodium silicylate is used to the practical exclusion of all other substances and with very great success—I am, etc.,

H BLCKETT-OVERY, M D, F R C S

London, S W 1, Oct 3rd

### OXYGEN IN ACUTE PNEUMONIA

SIR,—When the semi-conscious pneumonic patient is struggling on the borderland his airway may get obstructed by a relaxed tongue as in anaesthesia. This state, which increases anoxaemia, may be counteracted by placing the patient in a semi-propped-up, semi-erect position, which will allow the tongue to fall forwards, or by the attendant holding the jaw forward as in anaesthesia, or possibly by the insertion of an anaesthetic airway. The sound of easier inspiration resulting assures us that we have helped, and that the patient is getting more oxygen.

Is holding the oxygen tube without a funnel immediately in front of the patient's mouth the effective or a futile method of administration? Purgatives involving expenditure of energy are easily overdone in acute pneumonia. Are any needed after the first one if large quantities of water are given?—I am, etc.,

Edington Birmingham, Oct 2nd

W J BURNS SEIKIRK

\*\* The value of oxygen inhalation and the best method of administering it were discussed by Dr J S Haldane, F R S, in the course of a lecture on anoxaemia published in this JOURNAL on July 19th, 1919 (p 65). The best types of oxygen apparatus were described, and one of them was illustrated by a diagram. It can, we believe, still be obtained from Messrs Siebe, Gorman and Co, Limited, 187, Westminster Bridge Road, S E 1. A discussion on the clinical methods of administration and therapeutic uses of oxygen was held in the Section of Therapeutics at the Annual Meeting in Edinburgh, a full report will be published shortly.

### COURTESY CALLS

SIR,—The remarks by "M B, D P H," on this subject in your issue of October 8th (p 664) approximate my own experience closely. I graduated in medicine, after more than four years on active service with the infantry, and bought a practice almost two years ago.

I took an early opportunity to call on neighbouring practitioners. One of my nearest colleagues gave me a very unwelcome reception, together with a rather hopeless impression of prospects of success in the district. Possibly, as my colleague had been at home during the war, my war service did me discredit. Do courtesy calls promote good fellowship as they should?—I am, etc.,

October 8th

B A, M B, Ch B Ed

### ROYAL COLLEGE OF SURGEONS OF ENGLAND MEMBERS AND THE COUNCIL

SIR,—The council of the Royal College of Surgeons of England have just published the result of the poll of the Fellows of the College on the question of the admission of Members to some representation on the council. The voting paper was sent to 1,850 Fellows of these 846 voted "No," and 234 voted "Yes," 770 Fellows did not vote.

Unfortunately—and unfairly, I contend—the council issued with the voting paper a definitely biased and *ex parte* statement of the Members' case. It is remarkable that 770 Fellows did not vote. Also it should be noted that some 600 Fellows are in the metropolitan area—I am, etc.,

London, S W 1, Oct 16th

REYNOLD ROCHF

### DARWIN'S HOUSE

SIR,—In an annotation in your issue of September 10th (p 464) commenting on Mr Buxton Brown's generous offer to buy Darwin's house at Down as a permanent memorial, it is stated that in the year 1842, when Darwin bought the property, it was only accessible by a long coach drive. This is not quite accurate, and in writing of such a master of accurate detail as Charles Darwin one should strive to be exact.

In *More Letters of Charles Darwin*, John Murray, 1903, vol 1, p 31, I find the following letter, which was written to his sister Catherine about two months before he settled at Down.

To Catherine Darwin

Sunday [July 1812]

"You must have been surprised at not having heard sooner about the house. Emma and I only returned yesterday afternoon from sleeping there. I will give you in detail, as my father would like, my opinion on it—Emma's slightly differ. Position. About a quarter of a mile from the small village of Down in Kent—sixteen miles from St Paul's—eight and a half from station (with many trains) which station is only ten from London. This is bad, as the drive from [that is, on account of] the hill is long. I calculate we are two hours going from London Bridge. Village about forty houses with old walnut trees in the middle, where stands an old flint church and the lines meet. Inhabitant, very respectable—infant school—grown up people great museum in all touch their hats as in Wales and sit at their open doors in the evening, no high road leads through the village. The little post house where we slept is a grocer's shop and the landlord is the carpenter—so you may guess the style of the village."

Darwin then goes on to describe the house and garden and surroundings in detail, but the letter is too long for transcription here—I am, etc.,

London, S W Oct 3rd

F MURRAY LATTIS

\*\* Our authority for what we said is the following sentence written by Sir Francis Darwin in *Rustic Southerns* (1917), Chapter X: "It would have been difficult to find a more retired place so near London. In 1842 a coach drive of some twenty miles was the only means of access to Down."

### "THE STRAIGHT ROAD TO A LONG LIFE"

SIR,—Dr Nuthall's interesting article (October 1st, p 600) on Toby Venner's dietetics made me look up a copy (1650 edition), which is also interesting as it belonged to Thomas Lambard, grandson of William the "Perambulator." On the flyleaf under his signature and the date 1659 he has written:

"Phisica est ars bene medendi"

"Est medicinalis Medicorum Regula talis  
Ut dicat da, da, dum dicit Languidus Ah! Ah!"

"The Doctor's practice is to ask for payne  
Even at the time when men cry out for payne"

This is quoted on page 2 of the translator's preface to the reader in Nicholas Culpeper's *Physical Directory* (first edition, 1649). As Lambard and Culpeper were both Kent men and contemporaries it is probable that the book was copied from the other. The price of the book is marked as 2s. As a counterblast I have placed Dance's stipple Alexander Russell, M D, F R S, opposite to this. It has John Locke's lines on Sydenham engraved under it:

"Innocuus phaeide Corpus jubet utere flamma  
Et juxta rapidos temperat Ignis Focor  
Festorist Liches Culteos pessime Venenam  
Abstulit et tritos non Sinit esse Metus"

Both quotations bear somewhat on the "rich quakers" also in the same number. Richard on public a facsimile of Venner's portrait in 1801—I am, etc.,

Appledore Kent Oct 1st

T WILLIAM COE

\* See H Fox *Life of Fothergill* pp 112-122.

## Obituary

### MAJOR GENERAL SIR WILLIAM C. MACPHERSON, KCMG CB LL.D.

Colonel Commandant Royal Army Medical Corps

By the death of Major General Sir William Grant Macpherson, which occurred in London on October 15th, the Army Medical Service has suffered the loss of one of its most distinguished Colonel Commandants. As scholar, administrator, linguist, and author he stood out prominently among his colleagues, but his chief contribution to his Service was that 'he timeously prepared against the great day by promoting a proper adjustment between medical military and staff requirements and by initiating the system of voluntary and detachments throughout the country.'\*

From the time he joined the Army in 1883 he devoted himself heart and soul to the Service to which he belonged. Nor did his devotion terminate with his retirement in 1918 at the age of 60.

William Grant Macpherson, third son of the late Rev. William Macpherson, was born in the Manse of Kilmaron Loch, Ross shire, and among the northern hills the moulding of his character began. His early training imbued him with a deep sense of duty, a passion for work, a dom determination to succeed, and a love of thoroughness in all he did. He carried with him through life a delight in the open air and the keen observant eye of the schoolboy. His love of study soon manifested itself, it was the very essence of his being. He was educated at Fettes College, Edinburgh, and to him, one of the most illustrious former pupils of the College, fell the honour of unveiling its war memorial a few years ago. From Fettes he passed to the University of Edinburgh, where, in keeping with Scottish tradition and the trend of ideas at that time, he took up arts specializing in classics. His real ambition, however, was to join the Army and with this end in view he combined arts with medicine graduating with honours in classics in 1879, and M.B. Ch.B. in 1882. Having gained a travelling scholarship he went to Tübingen and Leipzig where he combined the study of medicine with that of German and logic.

To the shaping of his career he brought many gifts, natural and acquired. The driving force behind him was his inherent desire for knowledge and many will remember the quick notes he made in his little black diaries—books that are still preserved. He was gifted with the art of expressing himself clearly and concisely, and his ready pen and ability to sketch helped him on more than one

occasion when a difficult problem or position required elucidation. To these must be added a natural aptitude for learning foreign languages, which not only stood him in good stead throughout his career, but was indirectly of great benefit to the Medical Service itself, as he became an enthusiastic research scholar into the military medical systems of Continental armies, and was thus able to formulate the principles and regulations that guided the Medical Service safely through the great war.

His military career took him to all parts of the world, and wherever he went he acquired the language in order to understand better the problems of the country he was in. His first tour of foreign service was in India, this was followed by five years spent at Gibraltar, where, in

addition to his routine duties, he acted as medical officer of health and for a time edited the *Gibraltar Chronicle*. While at Gibraltar he was sent in medical charge of Sir C. Lush Smith's Mission to Fez in 1892 and of Sir A. Nicholson's Mission to Morocco City in 1896. Experiences he delighted to recall. On the completion of this second tour of foreign service he was detailed for duty at the War Office as D.A.D.G., A.M.D.2, and held that appointment from 1890 to 1902. During this term of office he was selected to attend the sixth and seventh congresses of Red Cross Societies at Vienna and at Petrograd respectively. He was secretary of the Central British Red Cross Committee from its foundation until 1902. While he appreciated the work in these important appointments, the desire for more exciting and practical work in the South African war was ever uppermost but this could not be satisfied, and he had to be content with a mission to South Africa on the termination of his appointment at the War Office in 1902. The result of his investigations is embodied in his "Detailed Reports on Sanitary Conditions relating to proposed Cantonments and Encampments for the Troops in South Africa". In 1904 he was appointed

S.M.O. North China Command, and while serving there he had the rare experience of being attached to the Japanese forces in Manchuria for two years during the Russo-Japanese war. His observations were recorded in concise, educative reports which were published later in the "Medical and Sanitary Reports from Officers attached to the Japanese Forces in the Field". For his services to Japan he was awarded the Japanese War Medal, the Order of the Sacred Treasure (3rd Class) and the Meritorious Service Medal of the Japanese Red Cross Society.

On his return home he was appointed to the staff of the Director-General of Military Operations at the War Office, an appointment which perhaps gave him the keenest pleasure in his career and afforded him the greatest scope for his exceptional qualifications. It meant to Macpherson a storehouse of knowledge, periods of research, the friendship



*Yours ever  
W. G. Macpherson*

\* Appreciation by the Dean of the Faculty of Arts of the University of Edinburgh in presenting Sir W. G. Macpherson for the honorary degree of LL.D. July 10th 1919.

of enthusiastic staff officers like General Nicholson, and missions to Panama and Cuba in 1908. To the combatant staff it brought new and forcible ideas on the value of an efficient medical service, and to the Medical Service itself an enhanced reputation among staff officers. In 1910 he was sent as P.M.O. to Malta, where he earned the thanks of the inhabitants by his strenuous efforts for the prevention of disease. The desire to enjoy the companionship of his only son, then soldiering in Quetta, made him readily accept, in the following year, the appointment of A.D.M.S. of the 4th Quetta Division, and the position as lecturer on military medical subjects at the staff college there from 1911 to 1914. His influence for good and his enthusiasm for medical staff tours and exercises became well known, and roused a real desire among all junior medical officers to serve in the Quetta Division so that they might gain some insight into problems about which their knowledge had hitherto been only superficial. When it became known early in 1914 that the then D.M.S. India, Sir Arthur Sloggett, had been appointed Director-General, Army Medical Services, it was no surprise to learn that he had decided to take Macpherson home as his deputy. So much, 1914, found him again in the War Office, this time as D.D.G., A.M.S., a position he held until October of that year.

His service during the great war was continuous, first as Adviser to the Indian Corps, then as D.M.S. of the First Army in France until October, 1915, followed by a period as D.M.S. of the Force in Salonika until March, 1916, when he returned to France as D.D.G.M.S., G.H.Q., 1st Echelon, an appointment he held until June, 1918, when he was obliged to retire, having reached the age limit. While Adviser to the Indian Corps he had actually visited his son, then serving in a Gurkha regiment, when news was brought him a few hours later that he had been killed in action at Festubert. This was the greatest sorrow of his life and one that he never mentioned.

Several features of his administration during the great war are especially noteworthy. His preparations for big operations were carried out to a point of thoroughness in keeping with his character. Coordinated medical opinion prior to an engagement was to him of the highest importance, and he was instrumental in bringing together the representative D.M.S. of armies to discuss the operations. He viewed with dismay the constant wholesale evacuation of slightly wounded and sick casualties to the United Kingdom, and begged the authorities at home to provide sufficient beds in France to meet this need. The shortage of hospital accommodation, which had been greatly felt at the battle of the Somme, became so acute before the advance to the Hindenburg line that he was sent on a special mission to the Adjutant-General at the War Office to explain the position. Before the battle of Cambrai he fought hard to obtain such information from the General Staff as would enable the medical services to make adequate preparations for the heavy casualties expected, and thus avoid a tremendous wastage in man power. In dealing with the medical services in Salonika he found that a complete reorganization of medical transport was necessary, because the ordinary motor ambulance wagons and cars were of little or no use for front line work in that country. He early realized the danger of malaria to the force, and put forward a most comprehensive scheme for its prevention.

For his services he received many honours and distinctions. Prior to the great war, in addition to his Japanese decorations, he was made a Knight of Grace of the Order of St. John of Jerusalem in 1901, was awarded the C.M.G. in 1902, and was appointed Honorary Physician to the King in 1912. During the war he was mentioned nine times in dispatches, was made a C.B. (Military), a Commander of the Legion of Honour and Crown of Italy (3rd Class) and a K.C.M.G., and was awarded, in 1922, the Distinguished Service Medal of the United States of America. In July, 1919, he received from the University of Edinburgh the honorary degree of LL.D., in honour that appealed to all the sentiment in Macpherson because it half-marked the erudite tendency he had steadfastly developed from his student days, and was received amidst

warm-hearted and friendly fellow students who had likewise won fame and honour.

The years that followed his retirement were devoted to the many public and private interests that filled his life. He was editor-in-chief of the official *Medical History of the War*, compiling, with the help of collaborators, eleven volumes in the short space of four years. He had been a member of the British Medical Association for many years, was the representative of the R.A.M.C. on the Council from 1921 to 1926 and a member of the Naval and Military Committee from 1921 to 1927. He was a member of the Committee on the Expansion of the Army Medical Service in case of National Emergency from 1921 to 1923, of the Committee on the Royal Commission on the Superior Civil Services in India, 1924-26, and chairman of the Special Committee on Tests for Drunkenness, 1926-27. On numerous occasions he represented His Majesty's Government at the Convention of Red Cross Societies at Geneva. He reviewed many books, and was a frequent contributor to works of reference and journals. In particular, we would wish to acknowledge here the readiness with which his wide knowledge, command of languages, and skilled pen were put at the disposal of the *British Medical Journal*.

But what of the man himself? His lifelong principles were duty first and sham or make-believe nowhere. Few men had a kinder or gentler disposition than Macpherson, and, like the true Scot that he was, he had behind a courteous manner a shy reserve and an extraordinarily diffident and sensitive nature. Though he had his disappointments they did not sour him or rob him of his zest for and appreciation of life. In his entertainment of friends at the Savile Club, the Junior United Services Club, at a restaurant, or at home, he was the genial host, ever ready with merry jest and light-hearted conversation to make his artistic dinner a success. In the realm of sport he was no amateur. He was champion boxer and one of the best gymnasts of his year at Edinburgh University. At Gibraltar he raced, hunted, and played polo, while at Quetta his racing matches with the present Adjutant-General, Sir Walter Brathwaite, one of his greatest friends, brought him his most valued trophy—a cup. At golf there was no keener competitor in the Generals' Competition at the Army Golf Meeting or in the British Medical Association golf tournament than Sir William Macpherson, and no one enjoyed more than he the matches played during his annual golfing holidays at Gulluno with Sir Harold Stiles, Professor Leith, and Sir Oliver Lodge. His pride and pleasure were unbounded when his Corps won the Army Championship Cup at St. Andrews in 1926, and to the golfing members of the R.A.M.C. his enthusiasm and joy of life have brought esprit de corps and delight in comradeship. If the last two months of his life were tragic, he bore them without complaint, and to the very end he was the gallant, great-hearted officer who well deserved the name of "Tiger Mae" for his courage, energy, strength, and tenacity of purpose.

He married first Miss E. A. Clunns, daughter of Mr. J. Clunns of New Orleans, she died in 1907. In 1910 he married Geraldine, youngest daughter of General Sir John Dorian, K.C.B., of Ely House, Wexford, and to her and his other relatives we extend our whole-hearted sympathies.

We are indebted to Sir ARTHUR BOYD, Bt, K.C.B., who was Advising Consulting Surgeon at G.H.Q., France, when Macpherson was D.D.G. there, for the following tribute.

I am glad to have the opportunity afforded me by the *British Medical Journal* of alluding to the work done in the war by Sir William Macpherson. He was probably one of the best known men of the Army Medical Service and there must be very many who served in France or in Salonika who remember him and his work. At the beginning of the war he was Deputy Director General in London, but in November of 1914 he came out to France and acted as medical adviser to the Indian contingent, and for a short time. But it was on the formation of the First Army early in 1915 that he had the opportunity of administering a medical service himself. He served D.M.S. First Army during the fighting in March at Neu-Chapelle, and in the May attack at Festubert. Later

the First Army made the attack at Loos, and shortly after this Macpherson was promoted to be DMS in charge of medical affairs Salonika. Of his work in Salonika I cannot speak from any personal experience, but after remaining there for about six months he returned to France to take up the appointment of DDG under Sir Arthur Sloggett in the place of General O'Donnell, who had been appointed Director General in India.

It was while he was attached to the First Army that he first became closely associated with the civilian members of the medical profession who by this time were serving at the front in considerable numbers, and it was in association with the Consulting Surgeon of the First Army (Sir Cuthbert Wallace) that the first steps were taken in that army to improve the opportunities for operative work at the front and it was at the battle of Loos arrangements were made for the first time for an advanced operating centre in support of the casualty clearing stations. It was in the winter of 1914-15 that "trench feet" first came into prominence as a very disquieting source of invaliding and thousands of men in the British Expeditionary Force were incapacitated for service for many months. Macpherson was one of the first to take most energetic measures to prevent this drain upon the army, and I think that the success which attended his efforts was always a source of much gratification to himself.

It was however, after his return to France as Deputy Director-General in 1916 that he became so well known to all medical officers on the British front, and it is pleasant to recall in what a friendly way everything worked at advanced GHQ. It will be of interest to many readers to recall the GHQ staff at that time. Sir Arthur Sloggett was DG, Macpherson was DDG, and the chief staff officers were Majors Buckley, Martin, Morgan, and Black. It was with this staff that I was associated as 'Advising Consulting Surgeon,' and nothing could have been more smooth than the working of the office. Macpherson was the pivot on which most arrangements turned, the general direction was under Sir Arthur Sloggett but Macpherson acted in a position comparable with that of a chief of the staff to his general and it was largely through him that final orders were drafted and that the commands of the Director General were translated into action. It was about the time when he was appointed DDG that special efforts were being made to develop the surgery of the front and before he returned from Salonika steps had already been taken to keep the casualty clearing stations as near to the front as possible and also to add to their staffs operating surgeons of experience and nurses, and to increase their equipment in view of the coming battle of the Somme. The result was that in 1916 a very large percentage of all the wounded were operated upon at the front, and from that time onwards constant improvements were being made in arrangements for the early treatment of wounded men. In all the improvements Macpherson was one of the chief actors, and it was during the battle of the Somme that the system of reinforcement by "surgical teams"—which was such a success—was initiated at the casualty clearing stations. It must also be remembered that not only were the casualty clearing stations at that time much better equipped, but that, as the war went on, the surgical work of the field ambulances also was greatly improved and arrangements were made for the splinting of fractured limbs as soon as possible after the men were wounded. In all these improvements Macpherson bore a leading part and it was largely owing to his example and that of his colleagues at GHQ that the liaison between the RAMC and the civilian surgeons became so friendly and smooth.

But there was another matter in which Macpherson assisted very materially the easy working at the front of the Army Medical Department, and that was in maintaining close and friendly relations with the combatant command. He was very frequently the confidant of army commanders or of GHQ itself, and was thus often enabled to make those arrangements before a battle which allowed casualties to be anticipated and their treatment prepared for. He was all the more useful in this respect because as far as Army Regulations were concerned he might have been described as a walking dictionary, and

although he was sometimes accused of paying too much attention to red tape there is no doubt that he never allowed any such thing to interfere with the efficient treatment of the wounded or sick soldier, whose interests were always in his mind. I remember very well how he pointed out to a civilian medical officer during a battle that in the interests of the wounded man it was most necessary that the details of his wound and the date on which he was wounded should be carefully noted—and this for the sake of the man himself who might possibly have some difficulty in securing a wound pension if his name did not appear among the returns of the wounded.

He was a good disciplinarian but never a harsh one while he was always good tempered, very accessible and open to argument. He was fortunately blessed with a good constitution and robust health, and never appeared to be overtired, however long the day might be. It was a great disappointment to him when the time came for Sloggett and himself to retire from active service just before the termination of the war, but his work was not yet done for after serving as DMS in the Southern Command in England he was selected to act as editor-in-chief of the official *Medical History of the War*, and it is not too much to say that it was mainly owing to his energy, ability, and literary accomplishments, that the medical history was completed within three years, and that owing to his guidance it attained the very high reputation which it holds. It is indeed noticeable that this medical history was completed before similar histories of other combatant nations had been well begun. Macpherson had a very full life and earned distinction in many capacities in the Army Medical Corps, but it is his work at the front during the great war, and his further service as an historian after the war was ended, that will make his name go down to posterity. He will be deeply regretted by his many friends.

At the funeral service in Holy Trinity Church, Brompton, on Wednesday, October 19th the Council of the British Medical Association was represented by Sir Richard Luce, M.P., the Naval and Military Committee by Major General Sir Alfred Blenhusop, the headquarters staff of the Association by Dr. C. Courtenay Lord (Assistant Medical Secretary) and the Journal by Dr. N. G. Horner (Assistant Editor). A memorial service will be held in the chapel of Queen Alexandra's Military Hospital, Millbank, on Tuesday next at noon.

[The photograph reproduced is by Messrs Elliott and Fry, London.]

#### SIR JOHN O'CONOR, KBE, MD

Senior Medical Officer British Hospital Buenos Aires. The death of Sir John O'Connor senior medical officer of the British Hospital, Buenos Aires, is announced by the Ixehungo Telegraph Company. He was the son of Mr. Abraham O'Connor of Carrick-on-Shannon, and was born on December 21st 1863. He received his medical education at Trinity College, Dublin where he graduated MB in 1886, and MD and BCh in 1890. After holding the office of house-surgeon at the Royal Portsmouth Hospital from 1887 to 1889 he went out in 1890 to Buenos Aires to be resident medical officer at the British Hospital there, an institution maintained by the British community, but admitting patients of all nationalities, four years later he became senior medical officer. He established a great reputation as a surgeon in the Argentine and his name became well known in this country owing to his numerous contributions, always highly practical, published in this and other medical journals. Though he made his home in Argentina, he remained ardently attached to the fortunes of the British Empire, and during the war was chairman of the British Patriotic Administrative Committee and of the local Military Commission in Argentina. In 1920 he received the honour of KBE in recognition of this work.

We are indebted to Dr. BRUNO POTTER who was well acquainted with Sir John O'Connor and visited him at Buenos Aires only last spring for the following tribute to his memory.

By the death of Sir John O'Connor at the comparatively early age of 63, the city of Buenos Aires loses one of the



most prominent members of its British community. His great work was done at the British Hospital. He had long been the life and soul of this institution, and when I visited the wards with him only in May this year his interest, enthusiasm, and operative ability showed not the least sign of relaxation or slackening. His experience must have been immense and unique. There was always open to him a great field of labour, for to this hospital the accident cases of the Buenos Aires Great Southern Railway, among others, were brought. He lived in a flat overlooking the splendid Avenida de Mayo in the centre of the city, and to visitors there he delighted to show specimens of his wonderful colour photography, this was a great hobby with him, and his results were remarkable. The photographs were mostly taken at his country seat in the lake district, named by the Indians Nahuel Huapi, in the province of Rio Negro, some seven hundred miles to the south-west of Buenos Aires. This beautiful place is in the foothills of the Andes, at the mouth of the pass through which the Chileans would, if unhappily they undertook such an enterprise, descend to attack the Argentines. Here he would give himself up to hospitality, and revel in it during the summer months of December and January, escaping the heat of Buenos Aires. In Buenos Aires he entertained laugh and merrily at the Jockey Club, where he was much more at home than at the English or the Strangers' Club. He mixed freely and easily with the Argentines, and had none of the aloofness which somewhat handicaps the British community. He knew more than any other foreigner the mind of the Argentine, he could speak the language fluently, and mingled freely with them. He would often refer with pride to the place the British occupied in the estimation of the Argentines. Indeed, he would frequently reiterate that the British were easily first in the regard and affection of Argentines, and the only foreigners who really counted. He was a typical Irishman—he was witty, outspoken, a good raconteur, and impatient of contradiction. His position in his adopted country suited him well, for he loved to lead rather than to follow. His war work was worthy of one who held the highest ideals of the British Empire. I well remember a striking cartoon O'Conor drew to impress on each man his value in the structure and making of the arm. He had two sons, of whom one, a promising officer in whom he had taken the greatest pride, died in the war. Sir John O'Conor was possessed of a vigorous and striking personality. He was a great and versatile surgeon, an Imperialist contributing as much as any man to the prestige of the British in Argentina. Above all, he was possessed of a wonderful charm and kindness, which have endeared him to a vast circle of friends, both British and Argentine.

Dr J G BLACKMAN of Portsmouth, who knew Sir John O'Conor during his time at Portsmouth, writes of him as follows:

John O'Conor was full of enthusiasm for the new era then dawning upon medicine and surgery. His ardent zeal was so contagious that to be associated with him was a post-graduate education. As a surgeon he was at once daring and cautious, yet very original. His many communications to the *Journal* show how generously he strove to disseminate his ripe experiences. His comparatively early death is a heavy blow to the British community of Buenos Aires, as well as to the profession he so richly adorned.

Dr WILLIAM CAMERON MACAULAY, who died in the Middlesex Hospital on September 1st, was born in 1868, and owing to straitened family circumstances had to begin earning his livelihood by teaching at the age of 17. In 1895 he obtained the degree B A Lond with honours in English, and remained in the teaching profession until 1898, being an assistant master at the Westminster City School and tutor in early and medieval English in the University of London. He entered the Middlesex Hospital as first entrance scholar in 1898, when he was 30 years old, and secured almost every available scholarship and prize, in one year, 1904, he was awarded the John Murray Gold Medal and Scholarship, the second Broderip Scholarship, the Governor's Prize, the Leopold Hudson Prize, and

the Hetley Clinical Prize. In 1903 he graduated M B Lond with first-class honours in gynaecology, and second-class honours in forensic medicine, and obtained the diplomas M R C S, L R C P. During his medical education he found time to continue teaching in English, and for several years he held the post of demonstrator of chemistry in the Middlesex Hospital medical school. He held a resident obstetric appointment at the Middlesex Hospital for a year and then commenced practice at Brixton, where he worked resolutely until within a month of his death, save for the entire period of the war, during which he was serving abroad with the 2/5th Field Ambulance. He was an ardent Territorial and was second in command of this ambulance from its formation to its disbandment. He saw active service in France, Salonika, Macedonia, Egypt, Palestine, and Syria, and was mentioned in a dispatch by General Allenby for gallant and distinguished services in the field. Other appointments held by him were those of medical referee to the Ministry of Pensions, and to the Commonwealth of Australia migration scheme. He was a member of the British Medical Association. He died in his old hospital tended by old friends and classfellows, and will be long remembered as a brave man, who faced with the quiet fortitude and courage which befitted a soldier the desperate operations for the malady from which he was suffering. He is survived by a widow and one son, Dr H M Cameron Macaulay, who is deputy county medical officer of health for Middlesex. Mr Victor Bonner writes: I should like to pay a tribute to the late Dr William Cameron Macaulay, whose premature death is a real loss to the profession. He entered his calling late, so that though a student under me, he was considerably older than the rest of his classmates. He was a very brilliant man, and possessed ability which would have fitted him for any position however high. He greatly distinguished himself in all his examinations, and, but for an oversight in his paper, would have obtained the gold medal in obstetrics at the London University. As too often happens to men of the greatest promise, circumstances compelled him to take up a line of work where his great gifts were hidden from the recognition of the general public. That he did splendid though unostentatious work, I can vouch for, and his noble and steadfast character enabled him to meet the tragic fate that befell him with extraordinary courage and fortitude.

We regret to record the death of Dr ROBERT CORRI, on September 25th, at the age of 57, after a short illness. He received his medical education at St Mary's Hospital, where he graduated M B Lond in 1894, and obtained the diplomas M R C S, L R C P. He held the appointments of house-surgeon and obstetric officer to St Mary's Hospital, was resident medical officer at the Ipswich General Hospital, and during the Boer war he acted as civil surgeon. In 1902 he settled in Greenwich, where he carried on practice for the past twenty-five years, and was physician to out-patients at the Miller General Hospital. He took a keen interest in Church activities, and had been church warden at the parish church for many years. At the outbreak of the late war he was called up as a Territorial officer, R A M C, and served in France and Salonika throughout its duration, retiring with the rank of lieutenant-colonel. He was a lecturer for the St John Ambulance Association, and held local clinic appointments under the London County Council. He was a member of the executive committee of the Greenwich and Deptford Division from 1923 to 1926, and was chairman of the Division in 1926-27. His death will be keenly felt throughout the district, where his medical skill and kindly disposition had made him greatly beloved. He leaves a widow and two daughters.

Dr ALFRED JAMES MEYRICK PAGET, who died on September 15th, after many months of failing health, was the third son of Sir George Edward Paget, K C B, formerly Regius Professor of Physic in the University of Cambridge. He was born at Cambridge in 1869, and entered as *Commoner*, was born at Cambridge for the merchant service, but after a year's work was disabled by a severe accident. His year's work then led him to try ranching as a premium

student in Canada, but finding this unsatisfactory he returned at the age of 19 with a desire to enter the medical profession. He obtained the M.B. degree at Edinburgh in 1895 and proceeded M.D. in 1898. His health proving unequal to the strain of general practice, he took service in the following year under the Foreign Office and became a medical officer for the Uganda Protectorate. He got no further than Nandi, where he lay for two months dangerously ill with malaria. He was invalided and then transferred to Kenya, where he spent four years of pioneer work in an unsettled country. From Kenya he went to Somaliland as senior medical officer, and remained there till 1916 through the troubled years of the "Mad Mullah's" activities. He received the Somaliland medal for services during military operations especially for attending and rescuing Colonel Summers when wounded. His administrative work was highly praised and he did much towards starting hospitals and training native attendants. In 1916 he was invalided, and shortly afterwards joined the R.A.M.C. as a temporary lieutenant, he worked in the Lord Derby Hospital, Warrington, and afterwards at Ripon. From 1918 to 1925 he took temporary duty as a neurological expert, chiefly on pensions boards in London. In May of this year his health finally broke down. He leaves three sons, of whom Dr M. A. Paget is a member of the medical profession.

Dr THOMAS O'KELLY of Chipping Norton, who died on September 25th, at the age of 70, received his medical education in Dublin and Queen's College, Galway. He graduated M.D. of the Queen's University of Ireland in 1879, and obtained the diplomas L.R.C.S. Ed. and L.M. in 1883. He was medical officer and public vaccinator in the Chipping Norton Union, and in addition carried on a large country practice. For many years Dr O'Kelly took a prominent part in the work of the Oxford Division of the British Medical Association. He was a member of the Oxford and District Branch Council from 1892 to 1894, and of the Oxford and Reading Branch Council from 1913 to 1922. He was also chairman of the Oxford Division in 1914, and vice-chairman of this Division from 1915 to 1921. Dr William Collier who was President of the Association when it met at Oxford in 1904, writes: "The late Dr O'Kelly joined the Oxford Branch of the British Medical Association soon after its institution in 1885, and proved himself one of its most enthusiastic supporters, he very rarely missed a meeting of the Branch and took an active share in the discussions. No general practitioner ever went to greater trouble to keep up with advances of medicine, as year by year he spent a portion of his holiday visiting the hospitals in London and learning what he could. Needless to say he built up a large and widespread practice in the neighbourhood of Chipping Norton, and was much esteemed and respected by his neighbours, both rich and poor. He gave freely of his best to all. A somewhat long and painful illness was borne with great courage and cheerfulness, and his loss to the neighbourhood is very great."

## Universities and Colleges

### UNIVERSITY OF CAMBRIDGE

At a congregation held on October 15th the following medical degrees were conferred:

M.D.—J. C. Harris \* L. P. Lockhart  
M.B.—B. C. H. J. Burrows \* H. R. Hafield G. P. Chandler M. S.  
Dewhurst  
M.B.—A. C. Copley

\* By proxy

The following candidates have been approved at the examination indicated:

D.P.H. and Hy.—Part II. L. A. P. Anderson H. M. Ayres A. Gilbert  
H. M. O. Mann M. H. M. L. M. L. N. Segal G. Shehata H. Singh  
Mary A. McI. Steven on H. C. Wilkinson

### UNIVERSITY OF LONDON

#### UNIVERSITY COLLEGE

Three lectures on the history of medicine will be given at University College Hospital Medical School by Dr Charles Singer on syphilis (November 7th), influenza (November 14th) typhoid

fever (November 21st). The lectures which will be given at 4.15 p.m. on each day, will be illustrated by lantern slides and are open to all medical students of the University of London.

### UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

The annual dinner of past and present students of University College Hospital was held at the Hotel Cecil on October 14th. Sir George H. Macer presided over a large gathering. In the course of his report on the past year the dean Dr A. M. H. (Craw) mentioned that the centenary of the Medical Faculty of University College fell in 1923. With its new obstetric and mental hospitals University College Hospital now possessed 500 beds and in the matter of buildings and equipment was second to no hospital in London. Among the investigations carried out in the Medical School during the past year he mentioned the synthesis of thyroxine by Dr Harrington, a notable achievement in biochemistry. In conclusion, he referred to the severe illness the hospital had recently sustained in the deaths of its chairman and vice chairman Sir Ernest Hatch and Lord Ormonde Browne.

### VICTORIA UNIVERSITY OF MANCHESTER

The Lancashire County Council has increased its annual grant to the University from £4,000 to £5,000 in addition to the supplementary grant made by them for extramural work. The Cheshire County Council has renewed its annual grant of £10.0.

Dr R. B. Wald who has recently retired from the Leech Chair of Materia Medica and Therapeutics has presented £250 for the endowment of a prize in pharmacology.

Professor J. S. B. Stopford has been appointed the representative of the University on the General Medical Council.

The following appointments have been made: Assistant Lecturer in M.R.C.S. demonstration in I.Sc. M.B. Ch.B. Manchester demonstrator in pathology Mr H. L. Sheehan M.B. Ch.B. Manchester

### UNIVERSITY OF GLASGOW

The following degrees were conferred on October 17th:

D.Sc.—John Glasier M.D.  
M.D.—Aim M. Fleming George Macdonald A.M. A. Scott.  
With honours

The degrees of M.B. Ch.B. were also conferred upon the successful candidates whose names were published in our issue of October 8th (p. 666).

The Branton memorial prize awarded to the most distinguished graduate in medicine for 1927 has been gained by W. A. Mackay.

The West of Scotland B.A.M.C. memorial prize for the candidate with the highest aggregate marks in medicine surgery and midwifery in the final M.B. Ch.B. examination held during 1927 has been awarded to Margaret W. Thomas.

### UNIVERSITY OF WALES

The following candidates have been approved at the examination indicated:

D.P.H.—Part I. C. J. Donelan Nancy K. Gibbs Dyls Jones Part II.  
C. W. Anderson J. D. A. Chapman C. J. Donelan Nancy K. Gibbs  
Dyls Jones E. M. Jones

### ROYAL COLLEGE OF SURGEONS OF ENGLAND

A general Council meeting was held on October 13th when the President, Sir Berkeley Moynihan was in the chair.

#### Annual Report

The annual report of the Council was approved and will be placed before the Fellows and Members at the annual meeting on Thursday, November 17th.

#### Direct Representation of Members on the Council

The Committee on the Annual Report of the Council reported that it had examined the answers received in reply to the circular addressed by the Council to the Fellows with the object of eliciting their opinion regarding the direct representation of Members of the College upon the Council. Circulars were sent to 18.0 Fellows and 1050 replies were received. The question asked was:

In your opinion is it desirable that Members of the College should have direct representation upon the Council? 846 Fellows voted No and 234 (including 6 conditional answers) voted Yes, majority against 612.

#### Lectures

Sir H. J. Waring was appointed to deliver the next Huxterian Oration. The Brantley Lecture will be delivered by Sir Anthony Wallace on November 10th at 5 p.m. on Laryngeal prostatic a review. The Thomas Vicary Lecture will be delivered by Dr George Parker on November 3rd at 5 p.m. on The early development of hospital.

#### Bicentenary of John Hunter

It was decided to celebrate the bicentenary of the birth of John Hunter on February 14th 1923.

#### Honorary Curator

Mr C. J. S. Thompson, formerly curator of the Wellcome Historical Medical Museum was asked to act as honorary curator

of the historical section of the museum (including surgical instruments and appliances) in succession to the late Mr. Alban Dornan, on the ensuing year.

#### Gilbert Blane Gold Medal

The Sir Gilbert Blane Gold Medal has been awarded to Surgeon Lieut. Commander Allan Watt McRorie, M.B., R.N. Promotion Examination, 1927.

#### The Late Mr. Thelwall Thomas

A vote of condolence was passed on the death of Mr. William Thelwall Thomas, M.B.E. Member of the Council. The vacancy in the Council thus occasioned will be filled up at the election of members of the Council in July, 1928.

#### Advancement of Gynaecology and Obstetrics in New Zealand

Leave of absence was granted to Mr. Victor Bonney to assist in the inauguration of a new society in New Zealand for the advancement of gynaecology and obstetrics. Mr. Bonney was asked to convey the best wishes of the Council of the College to the Medical Association of New Zealand for their continued prosperity and for the success of the new section to be formed.

#### CONJOINT BOARD IN SCOTLAND

Five following candidates have been admitted Diplomates in Public Health:

H. Subramanyam, W. B. Moore, A. E. W. McLachlan, J. O. Hamilton, Joanne Kean, C. K. Robertson, J. Douglas, A. McLarnon, A. Gairdner.

Eleanor B. Bone has passed Part I of the D.P.H. examination.

### The Services.

Surgeon Commander H. E. Y. White, C.V.O., O.B.E., has been appointed to H.M. Yacht *Victoria and Albert*. He entered the service in July, 1913, and after serving throughout the war was appointed to H.M.S. *Rivern* in 1919, in which ship he did duty during the Prince of Wales's world tour. He was for two years in charge of the sick quarters at the Royal Naval College, Dartmouth. He again attended upon the Prince of Wales during his South African tour in 1925 in H.M.S. *Repulse*. After serving as principal medical officer of H.M.S. *Queen Elizabeth* he was appointed to H.M.S. *Rivern* in which the Duke and Duchess of York made their recent world tour.

#### DEATHS IN THE SERVICES

Lieut. Colonel Frederick William Wright, D.S.O., Bengal Medical Service (ret.), died at Bournemouth on September 9th aged 76. He was born on December 7th, 1850, the son of Robert John Wright, land agent, Thorpe, Norfolk, and educated at Edinburgh, where he graduated as M.B. and Ch.B. in 1872. Entering the I.M.S. as surgeon on July 1st, 1873, he became surgeon lieutenant-colonel after twenty years' service, and retired on December 7th, 1905. His entire service was passed in military employ. He served in the Afghan war of 1878-80, in the actions at Jagdallah and Chihil-dakhteran, in the march under General Roberts from Kabul to Kandahar, in the battle of Kandahar, and in operations against the Afghans, receiving the Afghan medal with a clasp and the special Kabul-Kandahar bronze star and in the Burma campaign in 1886-88, in the operations of the 2nd and 4th Brigades, when he was mentioned in dispatches, in G.G.O. No. 434 of 1887, and received the frontier medal with two clasps, and the D.S.O. from July 1st, 1887, China 1900, medal and North West Frontier of India, Waziristan campaign, 1901-02, medal with clasp. On January 4th, 1919, he was granted a good service pension. In 1914 he married Edith Bella Freeman of Dover.

Major Christopher Martin Ingoldby, R.A.M.C., died at Sekondi, Gold Coast, on June 22nd aged 39. He received his medical education at the London Hospital and took the M.R.C.S. and L.R.C.P. Lond. in 1912. He entered the army as lieutenant on January 26th, 1912, attained the rank of major on January 26th, 1924, and was seconded for service in West Africa on October 8th, 1924. He served throughout the recent great war and was mentioned in dispatches in the *London Gazette* of March 12th, 1918.

Surgeon Captain Michael Joseph Liffan, R.N. (ret.) died in Guernsey on August 13th. He was educated at the Catholic University, Dublin, and graduated B.A., M.B., B.Ch., and B.A.O. in the Royal University of Ireland in 1901. After serving as senior resident medical officer in the Mater Misericordiae Hospital, Dublin, he entered the navy, attaining the rank of surgeon commander on November 21st, 1916, and retiring with an honorary step in rank as surgeon captain, on August 26th, 1926. He served in the recent great war, receiving the medal.

Surgeon Lieut. Commander John Stephen McGrath, R.N., died recently at Ghisnevin, Dublin. He graduated as M.B., Ch.B., and B.A.O. in the National University of Ireland in 1917 and, entering the navy soon afterwards, obtained his rank on May 1st, 1923. He served during the recent great war, receiving the medal.

Lieutenant Anthony Keppel Jackson Finch, R.A.M.C., died at Allahabad on September 5th aged 25. He was born on June 13th, 1902, the only son of Surgeon Rear Admiral Finch, R.N., and educated at St. Mary's taking the M.R.C.S. and L.R.C.P. Lond. in 1925. He took a temporary commission as lieutenant in the R.A.M.C. on October 12th, 1925, and was confirmed in that rank from February 3rd, 1926.

## Medical News.

THE annual dinner of the Royal Society of Medicine will be held on Wednesday, November 16th, at 8 o'clock, at the Hotel Victoria, Northumberland Avenue.

THE annual general meeting of the Medical Students' Annuity and Life Assurance Society, Ltd., will be held at the offices of the company, 300, High Holborn, W.C.1, on Monday, November 14th, at 4 p.m.

DR. H. C. CAVERON, physician and physician in charge of the department of diseases of children, Guy's Hospital, will deliver the Lloyd Roberts Lecture at St. Mary's Hospital, Whitworth Street West Branch, Manchester, at 4.15 p.m., on November 1st. The subject is "The child in general practice: a study both of temperament and of disease."

THE Fellowship of Medicine announces that Mr. Herbert Paterson will deliver a lecture, entitled "Surgical Hints," at the Medical Society, 11, Chandos Street, Cavendish Square, on October 24th, at 5 p.m. On the same day, at 2 p.m., Mr. J. B. Hunter will give a surgical clinical demonstration at the Royal Northern Hospital, and on October 25th there will be a medical clinical demonstration at the same hospital by Dr. Bruce Williamson at 3 p.m. Mr. Cunningham will give an ophthalmic clinical demonstration at the Central London Ophthalmic Hospital on October 27th, at 4 p.m. The lecture and the demonstrations are free to medical practitioners without fee. From October 24th to November 5th there will be a special course in ophthalmology at the Royal Lying-in Hospital every afternoon at 3 p.m. During November there will be the following courses in medicine, surgery, and the specialties at the Hampstead General Hospital, from 4 to 6.30 p.m.: October 31st to November 12th, a similar course at the London Temperance Hospital, November 21st to December 3rd, in medicine, surgery, and gynaecology at the Royal Waterloo Hospital, occupying the afternoons and some mornings, November 14th to December 3rd, an all-day course in diseases of the chest at the Brompton Hospital, from November 7th to November 12th, in neurology at the West End Hospital for Nervous Diseases, November 21st to December 1st, daily at 5 p.m., in proctology at St. Mark's Hospital, from November 28th to December 3rd, an afternoon course in toxicology at St. Peter's Hospital, November 14th to 26th, and a course in venereal diseases at the London Lock Hospital, October 31st to November 26th, occupying the afternoons and some evenings. Copies of syllabuses are obtainable from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

AT the meeting of the West Kent Medical-Chirurgical Society to be held on November 11th, at the Miller General Hospital, Greenwich, Dr. Edward Mapother will read a paper on "Co-operation by the profession in the treatment of mental disorder." The Paterson Oration will be delivered on December 9th by Mr. Victor Bonney on "Puerperal sepsis."

IN view of the retirement of Dr. Joseph Priestley on October 31st from the post of medical officer of health for Lambeth, after thirty-two years' service, the Borough Council at its meeting on October 13th adopted a motion recording its great appreciation of his high professional and organizing ability, combined with indefatigable zeal in promoting the health and welfare of the borough—"services which have placed it in the forefront of the large boroughs with regard to efficiency in sanitation and the lessening of the mortality rates." Invitations have been issued by the Mayor and Mayoress of Lambeth (Dr. and Mrs. R. S. Pearson) to a reception at the Town Hall, Brixton Hill at 4 p.m., on Thursday next, October 27th, when a presentation will be made to Dr. Priestley by his fellow practitioners of Lambeth.

DURING the first thirty-three weeks of 1927 the number of cases of diphtheria in Prussia was 13,632 with 749 deaths, as compared with 12,192 cases with 576 deaths in the corresponding period of 1926.

THE Society of Miniature Rifle Clubs calls attention to the fact that Captain C. Heyate Vernon, the King's prizeman at Bisley last July, has been largely responsible for the inauguration of a miniature rifle club at Bournemouth. Other amateur practitioners interested in this pastime include Dr. F. H. Kelly, who is an active member of the Imperial Brighton and Hove Rifle Club, and Dr. W. T. Bethune, who belongs to the Inverness Club. Dr. P. G. Harvey of Monmouth presided recently over a meeting of the members of the Monmouth and Chepstow Rifle Clubs, which was convened for the purpose of forming a county rifle association for Monmouthshire. It is suggested that similar rifle clubs might well be started at medical schools under the auspices of this society, and that matches might be arranged between them. Information and assistance may be obtained from the secretary of the Society of Miniature Rifle Clubs, 15, Arundel Street, Strand, W.C.2.

THE Bribery and Secret Commissions Prevention League, of which Lord Lamborne is president, is appealing for members and increased funds, on November 4th the Lord Mayor will preside at a meeting at the Mansion House in celebration of the twenty first anniversary of its foundation. Bribery, it is said, is still rampant in this country and more power is desired to counter this disgrace to trade by calling attention to the work of the League and making the law as regards bribery known throughout the land. One of the great successes of the League was known as the canteen case in which seventeen persons were convicted. As a result of the case the whole canteen system was reorganized. The address of the League is 22, Buckingham Gate, S.W. 1.

A MEDICAL tour is being organized by the Société Médicale du Littoral Méditerranéen. It will extend from December 30th, 1927, to January 7th 1928 and will include Hyeres, St. Raphael, Vence, Grasse, Cannes, Nice, Beaulieu, Monaco, Monte Carlo, Mentone. Full particulars can be obtained from the Federation of the Health Resorts of France, 19, Tristram Square, London W.C.1.

THE September issue of the *Africa and East African Medical Journal* contains an article on malaria which is the first of a series of popular accounts of the common diseases of East Africa, with hints on general lines of treatment for those out of reach of immediate medical assistance.

THE fifteenth annual report of the British Dental Hospital illustrates the progress that has been made since its foundation in 1911. Besides the original centre at Camden Road, London, N.W. dental treatment centres are operating at Lewisham Park, Clapham Common, Hammersmith Road and Holborn. Twelve boroughs have maternity and child welfare and tuberculosis dental clinics and there is one minor ailment centre at Lewisham. The attendance of patients at the treatment centres during 1926 shows a considerable increase on the figures of the previous year and many public lectures on oral hygiene are being given.

A SEVERE epidemic of infantile paralysis has recently broken out in Rumania. A large number of cases has also been reported lately in Germany, especially in Saxony.

As the claim of Dr. Dorothy C. Logan to have swum the English Channel was mentioned last week it ought perhaps to be placed on record that she has since withdrawn it explaining that she perpetrated the hoax in order to show how easy it was to deceive the public in this respect.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communication should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1 on receipt of proof.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the *British Medical Association* and the *British Medical Journal* are **MUSLUM 5671 5672 5673** and 5674 (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are **EDITOR of the British Medical Journal Antology Westcent London**

**FINANCIAL SECRETARY AND BUSINESS MANAGER** (Advertisements etc.) **Articulate Westcent London**

**MEDICAL SECRETARY** **Mediscera Westcent London**

The address of the Irish Office of the *British Medical Association* is 16 South Frederick Street, Dublin (telegrams **Bacillus Dublin** telephone 4737 Dublin) and of the Scottish Office 6 Drumshugh Gardens, Edinburgh (telegrams **Asociate Edinburgh** telephone 24361 Edinburgh).

## QUERIES AND ANSWERS

### MOTOR CAR ACCIDENTS

MR H. W. BURLEIGH, secretary and general superintendent of the Hospital for Epilepsy and Paralysis (Valde Vale London W.9) asks secretaries of hospitals throughout the country to send him before the end of October statistics as to the number of motor car accidents treated with a view to obtaining the average length of stay of the patients.

### IONIZATION FOR CATARACT

CHM—With each development of electrical treatment vigorous measures have been taken to ascertain what if any effect these means of treatment have upon eye diseases. X-rays and high frequency have been tried and now ionization which might seem more likely to give beneficial effects for it is a means of transferring of drugs from the superficial into the deeper tissues. The use of ionization has been noticed in the *JOURNAL* but its effect is doubtful. It is certainly ineffective when cataract formation has advanced to such a degree that there are actual opacities within the lens. These the treatment cannot affect for they are definite structural alterations. In the early stages of lens disturbance when bubbles are visible on high magnification it has been thought that ionization has been beneficial in some cases. But the benefits have been no more than have been secured by simpler means of subconjunctival injections with fluids that promote vigorous local tissue interchange.

### PAIN IN DISSEMINATED SCLEROSIS

G.P.—I have had a patient with disseminated sclerosis under treatment for some six years. Organic arsenic and courses of typhoid and T.A.B. vaccines (intravenously) seem to have much slowed the progress of the disease. During the present year an unusual and most troublesome symptom has developed. Not long after the right lower extremity has been straightened as in bed intense sciatica pain comes on especially over the outer aspect of thigh. This is at once relieved by sitting on the side of the bed—that is apparently by relaxation of the spastic hamstring. Aspirin, aspirin and phenacetin, atonal, dial, veramon, grimalin, pyramidal, spasticine and many other drugs have been tried without success. Our correspondent asks for suggestions.

### DOGS UNDER CHLOROFORM

ONCHOF—writes. I have been informed by a veterinary practitioner that dogs, showing, failing respiration under chloroform are revived by continuing the chloroform and the immediate application on the back of the tongue of two to three drops of Scheele's solution of prussic acid. Is there any parallel to this in the human being?

### POISONING AND HANGING

DR J. A. PARRY (Hove) asks for information on any of the following points: (1) Date of earliest recorded trial for poisoning in this country. (2) Date of earliest poisoning trial in which medical evidence was given. (3) Date of same in which any analysis of viscera was made. (4) Any other interesting points bearing on above. (5) Date of substitution of drop method of execution in place of strangulation. (6) Is present method of execution by subaerial or subaerial knot?

### INCOME TAX

#### Practice Sold

EX MEDICUS sold his practice in May last and has now received an assessment notice on the basis of the amount of his earnings for the year 1926. Is he liable on that amount?

No. The assessment is in respect of the profits of the practice for the year to April 5th 1926 and should be divided between 'Ex Medicus' and his successor on a time basis. Thus suppose he sold his practice to A as from May 17th 1926 then he is liable on six fifths of £253—say £33—before deduction of allowances and the balance of £255 relates to the period May 17th 1927 to April 5th 1928 and is applicable to his successor for the period to April 5th 1928. We advise our correspondent to write to the inspector of taxes stating the date of sale of the practice and the name of the purchaser and asking for his notice of assessment to be amended and returned to him. The inspector will presumably take the matter up with the successor and 'Ex Medicus' will ultimately have a claim to repayment for 1927-28 in respect of the tax deducted from his dividends etc.

### Car and Locumtenent Expenses

J.D.H. is in partnership and owing to ill health has to provide a locumtenent and will have to sell his share in the firm. In April of this year he incurred the expense of replacing his car. What relief can he obtain for these expenses?

The amount of the firm's assessment for 1927-28 is fixed by the profit for 1926-27 and therefore the expenses referred to will not affect the total tax payable by the firm for 1927-28. It is of course obvious however that they will operate to reduce the assessment for 1928-29 when in all probability J.D.H. will no longer be a partner. It seems to us a matter for adjustment between J.D.H. and his partner. The gross assessment should be divided between them in accordance with the terms of the partnership arrangement for that year. If for 1927-28 J.D.H. incurs a special expense which will operate in favour of the firm in future years there is much to be said for treating at least a part of such expenditure specially—that is as chargeable to his share of the partnership assessment. Admittedly this will mean that his partner will pay tax for 1927-28 on a greater amount than he receives but on the other hand for 1928-29 the position will be that he will benefit by the deduction

of expenses which are not then being incurred, so that, taking the two years together, he should not suffer any hardship on the basis suggested.

#### Car Replacement

"M H" bought a second hand car for £90 in March, 1925, and sold it in June 1926, for £70, buying a new car for £200. What should he claim?

Any claim he now has is for the year 1927-28, and for that and subsequent years he cannot in our opinion, claim "depreciation" on the old car. That car became obsolete—so far as "M H" is concerned—in 1926, he can claim to include as part of his professional expenses for 1926 the sum of £90-£70=£20 as an obsolescence allowance due under Rule 7, Schedule D, Cases I and II. Also he is entitled to claim the usual percentage depreciation allowance on the £200 (15 per cent or 20 per cent) for 1927-28.

#### Production of Accounts

"T A F T" employed an accountant to prepare his figures last year, this year he made his return himself to save the expense but the inspector of taxes asked for a certified copy of his accounts after his return was made. Since then a formal notice of assessment has been received which agrees with the return already made. Should he employ an accountant in such circumstances?

Presumably the accountant looked into the question of expenses carefully last year, and our correspondent, in preparing his figures for the return this year, has followed similar lines to those then laid down. If so it is unlikely that other allowable expenses would now be discovered and our advice would be that "T A F T" should himself make a copy of the detailed statement of receipts and classified expenses, which we assume he prepared for the purpose of his return, certify it to be correct, and forward it to the inspector, explaining that he does not consider that the facts warrant the payment of a professional accountant's fees.

### LETTERS NOTES ETC

#### INSURANCE AGAINST ACCIDENTS TO DEPUTIES

MR L FERRIS SCOTT F.C.A., Financial Secretary and Business Manager, writes: On page 712 of the JOURNAL of October 15th "Sheffield" writes on the question of insurance against accidents to deputies and says, "I intend in future to cut all this trouble out by only engaging a locum tenens who has insured himself against all risks." I am afraid that "Sheffield" is labouring under a misapprehension, or, alternatively, that there is some means of transferring the liability which is unknown to me. I am under the impression that an employer cannot contract out of his responsibilities under the Workmen's Compensation Acts (except in accordance with special provisions laid down in the Act of which mention is made below), and, further, that the maximum benefit under the Acts for fatal injury (where the workman leaves dependants) is £500 and not £300. Subject to possible correction I would set out the position as follows:

(a) He can run the risk himself and in respect of his own estate (which, I believe, would be foolish). (b) He can, by paying a premium, transfer his liability to an insurance company of repute, which will pay on his behalf such amounts as become due and payable under the Workmen's Compensation Acts. (c) A mutual agreement may be entered into between an employer and his workmen for the substitution of a special scheme of compensation, benefit, or insurance for the workmen, in lieu of the compensation provided by the Workmen's Compensation Acts. All such schemes to be effective must be certified by the Registrar of the scheme as well as favourable to the workmen and their dependants as the corresponding benefits of the Workmen's Compensation Act, and unless a majority of the workmen to whom the scheme is applicable are in favour of such scheme. Should the scheme provide for contributions from the workmen, the benefits conferred must be at least equal to those contributions in addition to the benefit to which the workmen would have been entitled under the Acts. The scheme must contain no obligation upon the workmen to join as a condition of their employment, and must permit of voluntary withdrawal. No insurance effected by a workman would relieve an employer of his liability under the Acts.

I cannot too strongly recommend, either of the Association to insure against his liability, or for locum tenens, but in respect of assistants, dispensers, etc., and for domestic servants who come under the provisions of the Workmen's Compensation Acts, it would be the duty and right of the medical profession that they should take out an approved by the Medical Insurance Agency.

#### TREATMENT OF VARICOSE VEINS BY INJECTION

A FATAL issue to the treatment of a case of varicose veins by injections is reported by Dr O A Olson in the JOURNAL of the American Medical Association for August 27th. A woman aged 35 had been wearing elastic stockings for varicose veins in both legs with complete relief when she received injections on two days with salt solution and calomel five days after the second injection she died suddenly and at the necropsy a thrombotic mass was discovered in the right ventricle. Large thrombi were present in a varicose vein in the right leg, a thrombus was

found in the right internal saphenous vein, with a broken end, there was phlebitis of this vein also. The spleen, liver, pancreas, kidneys, brain and other organs appeared normal, the cardiac muscle and valves were healthy. This incident adds point to the concluding sentence of our recent discussion of the procedure (JOURNAL, September 24th, p 558) when reference was made to the possibility of awkward complications ensuing.

#### MENTSTRUAL "TABOO" IN LITERATURE

DR G LOWELL WEBB (Bexhill-on-Sea) writes: If Dr Robert Hutchison will refer to "Jaboo and the Perils of the South" and "Bulder the Beautiful" (vol. 1 of Sir James I. Fraser's *Golden Bough*) he will find numerous references to the origin of this idea. The crude philosophy of primitive man imposed certain taboos on the priest king, god upon whose health and vitality the prosperity of the country depended, and menstrual uncleanness was one of these, which also extended to the king's worshippers. Moses merely formulated a taboo which had been in existence for many thousands of years previously, as had others before him. It extended to the pollution of rivers, wells, and fountains, herds and crops, as well as to many articles of food, but in certain localities the supposed effects of menstrual blood were utilized in a reverse way for destroying the pests which attacked the crops by making women at this period walk among them. Pliny teases the same ideas, even to the drinking of mirrors and the rusting of razors. Three of Sir James I. Fraser's correspondents informed him that it was quite a common belief in recent years in many parts of England that a menstruating woman should not be allowed to assist at the picking of beef or pork, for fear of decomposition.

DR W M FELDMAN (London, W) writes: In reply to Dr Robert Hutchison's inquiry information on the subject will be found in my book (just out) on *The Principles of Antenatal and Postnatal Child Hygiene* (John Bale Sons and Danielsson Ltd). On p 685 occurs the following paragraph:

The Biblical injunction regarding the semi-isolation of a menstruating woman has recently been explained on a scientific basis. It has been found that during her menstrual period her blood contains perspiration and milk contain a toxic material which is harmful to living tissue especially woman will wilt more. The toxin in the milk the nursing during the

The experimental investigation of the subject was carried out by David I. Macht and Dorothy S. Lobin of the Pharmacological Laboratory of the Johns Hopkins University, and fully recorded in a paper entitled "A physio-pharmacological study of menstrual toxin" in the *Journal of Pharmacology and Experimental Therapeutics*, 1924, xxii, pp 413-66. The results were so constant that the authors could without much difficulty diagnose or differentiate between menstrual and normal saliva (or other body fluid) when unknown specimens were submitted to them. The toxin which has been named "menotoin," is found to have some chemical relationship to oxy-cholesterin.

#### TREATMENT OF FACIAL PARALYSIS DUE TO TYPHOID

DR VERA VITCH (Hartshill Orthopaedic Hospital, Stoke on Trent) writes with reference to Mr. Beattie's description of his split in the treatment of facial palsy (JOURNAL, September 17th, p 438). She agrees that relaxation of the paretic or paralyzed muscles is the accepted principle of treatment and that with the addition of mild graduated faradism in the early stages, and reduction of the muscles when they begin to recover function, is probably all that is necessary in the treatment of such cases. She continues: We have had a considerable number of these cases referred to us at the Cripples' Hospital, Stoke on Trent during the past few years, and our difficulty has been the devising of a mouth brace which the patient can wear constantly so that the paretic muscles shall never be stretched. We have eventually produced a splint on the same principle as that of Mr. Beattie, which we find the patient can wear with comfort. This brace consists of silver plated wire of sufficient strength to maintain the facial muscles in the position of relaxation. The face and ear portion is covered with chamois leather, and the mouth portion is covered with the rubber tip of a No. 6 Jaeger's catheter, so that it can be frequently washed. Originally we used ordinary metal wire, but several patients complained of a nasty taste in their mouth. Silver suture wire was then tried which did away with the unpleasant taste, but the cost of this (7s 6d an ounce) was against its everyday use. The silver plated wire is entirely satisfactory and only costs 7d an ounce. For hospital use ordinary rubber tubing is used, with the open end stitched down. Where a more neatly finished splint is required, then the catgut is employed.

#### PREGNANCY AND GYNECOLOGY

DR ZELICK GRIFFIN (London) writes: I was asked to examine a married woman for an insurance company about May. She was then seven months pregnant (primipara) and had been in the arms otherwise she was in good health. To-day—six weeks after her confinement—I again examined her and found no sign of life. I might add that she gave birth to a girl, which may interest Dr D M Macdonald (*British Medical Journal*, October 1st, p 620).

#### VACANCIES

NOTIFICATIONS of offices vacant in various medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 46, 47, 50 and 51 of our advertisement columns and advertisements as to partnerships and locum tenencies at pages 48 and 49.

A short summary of recent posts notified in the advertisement columns appears in the Supplement at page 163.



## ASPECTS AND PROBLEMS OF COMPARATIVE MEDICINE

### FIELD FOR CO-OPERATION BETWEEN SPECIALISTS IN HUMAN AND ANIMAL DISEASES

BY

J. BASIL BLAXTON, M.A., M.P.C.S.

Professor of Animal Pathology, University of Cambridge

In presenting this small and, I fear, quite inadequate contribution for discussion by the Section of Comparative Medicine I feel that I cannot do better than quote the words of the late Sir Clifford Allbutt in another place and upon a similar occasion:

If for years slowly and almost silently our work makes its way we must be content our experience of the world teaches us to be content but happily now and then after long leaning in the darkness we break into light we find ourselves almost suddenly upon a peak our way open and bright before us and our call justified before men. The barriers of convention which ought to be so slender and occasional are of all the most inveterate and impregnable. Of such have been the barriers dividing medical sciences which to its grievous injury have split up medicine into fractions. As physics was divorced from surgery and mind from body so the diseases of animals and plants were separated from those of mankind.

In that last sentence Sir Clifford put the case of what is called comparative medicine in a few words. It has become separated from the mother science medicine. For some reason or other but probably through ignorance of what has gone before, comparative medicine has come to be regarded by many as something in the nature of an innovation—a breaking of new ground, an inoculation of new ideas and perhaps even the initiation of a new branch of the science of medicine. But this is not so. During the past century there has been a steady, sure progress in the study of comparative medicine in all parts of the world but especially in tropical and sub-tropical countries. The reason for this is that animal diseases particularly those caused by protozoal parasites and invisible viruses have been recognized as a serious economic menace, and therefore more or less adequate facilities have been provided for their investigation. The general progress which has been made in comparative medicine appears to have received but little notice, indeed it is not an uncommon experience to find the comparative aspect of the many cases of the mother science medicine regarded as something quite new—in fact almost unique, or at best a more or less comprehensive recital of some of the diseases of the lower animals which may affect man also.

This misconception of the real state of affairs is probably easily explained. The encyclopaedic tradition which had persisted from Aristotle through the Arab and medical schools down to Herbert Spencer has ceased to exist. It is forced upon us in our own day that in a pursuit so many-sided as medicine, whether in its scientific or in its practical aspect we have to submit more and more to that division of labour which has been a condition of advance in all other walks of life. It is now fully recognized that that division of labour which may appear to disintegrate the mother science of medicine really unites it. While pathology, for example which is especially the science of medicine, was winning territory on one side from physiology of which in a sense it is but an aspect and on another was making progress of its own in the post-mortem room and museum of morbid anatomy, and was fusing these gains in the laboratory so as to claim for itself as a special branch of science by virtue of peculiar concepts its due place and provision—provision in the establishment of chairs and of special laboratories for its chemical and biological subdivisions—clinical medicine was illustrating the truth of the experience that teaching and research must go hand in hand, the one reinforcing the other.

Unfortunately, the necessary development of specialism has led to the almost inevitable sequel—water-tightness. The many children grandchildren and great grandchildren of the mother science seem in their self-centred interest to forget that they are but the offspring of the parent. That branch which deals with the comparative aspect of disease has been accused of drifting, farther and farther away from the parent sciences during the past century, but the fault if fault there is is not peculiar to that one branch of medicine. Fortunately the current of thought is not changing and the attitude of splendid isolation is less evident. Any attempt to prescribe a dividing line between the scientific study of the diseases of the lower animals and those of man is inevitably doomed to failure, and this fact is fortunately becoming better realized. Pasteur shed light upon all aspects of medicine but above all upon comparative medicine. The stimulus provided by the master has been directly responsible for the world-wide progress which has been made during the past century. But an attitude of complacency must find no response in the hearts or minds of those who are engaged in contributing to the study of comparative medicine.

A most cursory survey of some of its many problems which have been or are in the process of being investigated cannot fail to create in the minds of those who are responsible for the prosecution of those and similar problems an overwhelming sense of responsibility in relation to the general well-being of men and animals.

The field of comparative pathology perhaps affords one of the best examples of the essential nature of the demand for close co-operation between specialists in the study of human and animal diseases. This does not for one moment suggest that the importance of such co-operation rests with a discussion of those diseases which affect both men and animals, for however important the may be they are relatively few in number in comparison with the diseases which are peculiar to the individual species but which nevertheless, have a general importance in the study of disease processes as a whole. It is true that the fact that a causal organism is common to both man and the lower animals greatly facilitates the work of the histologist, bacteriologist, immunologist, and epidemiologist. Tuberculosis probably affords one of the best examples of this for it is only by the study of the artificially produced disease in experimental animals and in those which require the disease under natural conditions that much of our knowledge has been gained, and it is certain that any advance in the prevention or cure of tuberculosis in man will depend upon observations made in animals. Again recent advance in the investigation of tumours has resulted from work carried out in animals in which experimental tumours can be produced, and others in which a peculiar form of tumour occurs naturally. One cannot fail to be impressed by the possibilities which might result from a systematic study and comparison of the apparently closely related neoplasms which occur in man and in various of the lower animals.

Whatever may be the outcome of the controversy concerning the etiological identity of the variolae of man and the lower animals, the fact remains that the observations of Jenner were of fundamental importance in establishing at least a cross-speciesity in the case of cow-pox and small-pox, and it is equally certain that any progress which may be made in the study of cultural and immune processes will depend upon investigations into the variolae of the lower animals.

Unfortunately, from the experimental point of view, it does not infrequently happen that the causal organism of a disease in man is either non-pathogenic for the lower animals or produces in them lesions which do not resemble the human form of the disease. In such instances it is impossible or at least difficult to study etiological and preventive measures which might be applied to the human subject. But it is sometimes possible to find that a disease peculiar to one animal species has a very definite resemblance to a disease which is peculiar to another species—as, for example distemper in the dog and influenza in man. A comparative study of the two diseases may reveal many common features and knowledge gained from the study of the one may prove to be of value in the study of the other.

Port of a discussion at a joint meeting of the Sections of Comparative Medicine and Bacteriology at the Annual Meeting of the British Medical Association, Edinburgh, 1927. Principal G. C. B. and Dr. J. B. Blaxter.

As a result of investigations into a number of the diseases which are peculiar to certain of the lower animals and which are caused by invisible viruses—for example, rinderpest, foot-and-mouth disease, dog distemper, and others—several methods of inducing immunity to the disease have been devised and it is reasonable to hope that, apart from the benefit which is likely to be conferred upon the animal host, further research may reveal the possibility of applying similar methods to diseases of a like nature which are peculiar to man.

The impetus which was given to the study of the microbial infection of wounds during the war has left its mark upon the bacteriology of several diseases of the lower animals, for while it was previously well known that many of the spore-bearing microbes which were found to play an important part in the pathological complex "gas gangrene" were commonly associated with certain well known and similar diseases in the lower animals, great progress was made in the etiological, cultural, and toxicogenic properties of these organisms as soon as their significance in the military economies of the time was realized. Under normal conditions, however, they are of little importance in pathological conditions in man as compared with the lower animals, and it is certain that, while the further study of these organisms may receive but little attention at the hands of the human pathologist under peace conditions, much further light will be shed upon their relationship to pathological changes in the lower animals, and upon specific toxicogenic variations in members of the same family—as, for example, has been observed in the case of *B. botulinus*.

Quite recently nutritional diseases have occupied a prominent position in comparative medicine. Contributions to the study of various aspects of organic and inorganic deficiencies under experimental conditions have done much to increase our knowledge concerning the probability of certain diseases of animals which are kept under apparently normal conditions being due, in part at least, to a deficiency of one or more of the accessory factors. One of the most important questions which have arisen as a result of purely laboratory experiments is whether, and to what extent, the results obtained with one animal are applicable to the case of other animals and to man. We know from carefully conducted experiments that deprivation of vitamin B will cause paralysis in rats as well as in fowls and in pigeons, that the elimination of vitamin C from the diet of monkeys and guinea-pigs will result in the production of the characteristic haemorrhages and bone lesions of scurvy. Similarly, in rabbits fed with such limitations, while there is an absence of haemorrhages the characteristic pathological changes can be observed in the bony tissues. While rats, on the other hand, are little affected by the absence of vitamin C in their diet, but fail to breed satisfactorily under such conditions.

The absence of vitamin A has been shown to result in ophthalmia (first described by McCollum in rats) in poultry and in infants, in defective calcification of bone in puppies, rats, poultry, and young children. And further, the action of light in correcting a deficiency has also been demonstrated. Thus there is a schedule involving several vitamins and a series of corresponding "deficiency diseases." But there is an even more important issue represented by the widespread disturbances of a non-specific nature which are perhaps produced by vitamin deficiencies—disturbances which have a direct effect upon the severity of other diseases, especially bacterial infections. It is not an uncommon experience, when investigating widespread outbreaks of disease, especially in pigs, to find that the organism which appears to be responsible is one which, under ordinary conditions, is regarded as of little pathogenic significance, yet it appears, for some inexplicable reason, to have developed an exalted virulence. The reaction usually appears to be well balanced and all that could be required, yet slight alterations in the constituents—especially in the direction of increasing the amount of vitamin C—frequently lead to a marked improvement in the general condition of the animals.

Another and equally important aspect of deficiency diseases has been investigated at the Rowatt Research Institute, Aberdeen.

Research into some problems of mineral metabolism has already been productive of information of considerable economic and scientific value. Investigations have shown that natural pastures with a low content of minerals have a low nutritive value for sheep, and that not only is the percentage of progeny from these animals low, but the mortality is often high. These and similar observations are proving of considerable importance, not only in the case of animals in this country, but particularly in some of the colonies. Of no less importance are the experiments which have been carried out to show that artificial ultraviolet irradiation is capable of increasing the absorption and retention of calcium and phosphorus in young pigs. Again, the importance of colostrum in the early life of young animals, apart from its purely medicinal effect, is well known, especially in regard to the temporary protection which it is believed to afford against bacterial invasions. It has hitherto been generally assumed that this protective power is to a large extent due to the high antibody content of the material, but it has been found that the iodine content is also very high, and in view of the claim which has been made that the feeding of potassium iodide to mares is a preventive of joint ill in their progeny, the possibility that iodine may play an important part in the protection of the newborn animal against disease is worthy of serious attention.

Investigations into the physiology of reproduction which have been carried out at the Animal Nutrition Institute at Cambridge have added considerably to our knowledge of these normal processes, and open up a large field for investigation into the abnormal conditions which are so commonly met with in the lower animals and in the human subject.

Marshall's contribution to the study of the conditions governing parturition cannot fail to stimulate further research in this direction, especially since, as he points out, although certain factors are common, the conditions, though generally constant within a particular species, vary widely in different species, and even among closely related forms as well as in individuals.

There are, of course, many other aspects of deficiency diseases which are of great interest from the comparative point of view, there no doubt will be dealt with by others who are to take part in the discussion.

Experimental comparative physiology has not received the attention which it deserves, especially in the case of the lower animals. It has not infrequently happened that an attempt has been made to study the abnormal rather than the normal, often with results which, if capable of any sort of interpretation, have been entirely misleading. There is an enormous scope for research which will lead to a better understanding of many of the normal functions of and processes in the animal body. Such a study should progress with, and not independently of, that of the abnormal.

Another aspect of comparative medicine is that which has been termed tropical veterinary medicine. Here, again, the relationship between the diseases of man and of the lower animals is of the most intimate character. We may take as a fair example of this those which have been grouped under the heading of trypanosomiasis. The classification of the causal parasites is now recognized to be far more difficult than was originally supposed. The morphological and biological characters are in themselves insufficient for this purpose, whereas the mode of development in the fly is of fundamental significance. As a result of more recent work, it has been found to be necessary to recognize different strains of the same species of organism, but the process of evolution of such strains yet remains to be determined, as also do the changes in virulence and in morphology which result from passage. There is also a call for improvement in the methods of diagnosis of infection with the various species of trypanosome. Watson showed the value of the complement fixation test in the diagnosis of dourine, while J. M. Robin in South Africa has confirmed this, and in addition has shown that animals infected with *T. brucei* react to the test even if *T. equiperdum* antigen is employed, while the serum of those affected with *T. congolense* or *T. vivax* does not usually react in the presence of that antigen, but it may do so with the specific antigen. The many

chemotherapeutic problems relating to these diseases which yet remain to be solved can only be satisfactorily carried out in animals, and preferably in those which are naturally the subjects of the disease.

It would not be possible to close even such a sketchy and incomplete contribution as this undoubtedly is without some reference to the vast field of experimental comparative medicine represented by artificially acquired immunity. Since the time of Pasteur it has been recognized that experimentation with animals offers the only satisfactory method of determining the relative merits and demerits of the various methods of inducing a state of specific resistance to disease not only on account of the relatively small size of the subject but because large numbers of animals can be employed for the purpose and, moreover, they can be maintained under natural conditions. Observations upon active immunization of horses against tetanus by means of toxin-antitoxin mixtures rendered a similar procedure possible in soldiers during the great war. Parallel experiments which have since been carried out with the modified toxin of other spore-bearing anaerobes have enabled us to confer an active immunity against a variety of diseases of sheep. The use of bacterial suspensions, consisting of living virulent or avirulent organisms, or of those which have been killed by a variety of means has enabled us to control a number of serious epidemic and enzootic diseases of the lower animal. Experimentation along these lines is constantly progressing and cannot fail to be of economic importance from the agricultural point of view as well as from that of mankind.

For an opening address on the subject of some aspects and problems of comparative medicine I realize that my remarks may be considered too narrow in their scope. But the aspects and the problems are so many, while the range of choice so extensive, that it is impossible in the present circumstances to do more than mention a few and that in a very cursory manner. Those who are to follow me will no doubt make good the deficiencies which are so very obvious in my remarks.

#### DISCUSSION

Dr ANDREW BALFOUR (London) thought that one aspect of comparative medicine which would appeal to all was the essential unity of human and veterinary medicine, one problem well worthy of discussion was how this unity might at least in some degree be realized. This was probably better exemplified in the field of tropical medicine than elsewhere. As comparatively recent examples he cited Pfeiffer's work on rabbit coccidiosis and its relation to human malaria and Theobald Smith's work on the tick in Texas fever, since those days human and veterinary medicine had advanced hand-in-hand in the tropics. He recalled Sir Patrick Manson's announcement about Ross's work twenty-nine years previously his talk was largely about sparrows, crows and mosquitos. After referring to trypanosomiasis, leishmaniasis, virus, ankylostomiasis, rickets and bubonic plague, he passed to the consideration of the experimental method, and the necessity of enlisting the aid of the veterinarian when employing animals in medical research. He maintained that no laboratory engaged in work on tropical medicine was properly and fully equipped unless veterinary medicine was represented, and he mentioned in this connection the system in operation at the London School of Hygiene and Tropical Medicine with special reference to the value of its association with the Zoological Gardens. He regretted the tendency to cleavage in tropical medicine and pleaded for combination under a research roof while routine and clinical work could be carried out in laboratories attached to the respective hospitals. He hoped that the new Research Committee of the Colonial Office would accomplish something in this direction.

Dr W. H. ANDREWS (Ministry of Agriculture) remarked that the problem of the filterable virus was furnished an excellent example of the essential unity of pathology and of medicine on the scientific side although in the practical applications there were fundamental differences. The filterable viruses and the diseases they caused were now

attracting much attention in medical and veterinary circles in both temperate and tropical regions. They constituted the most urgent problem of the present day, and the slow progress in their study suggested that new conceptions and a new technique were needed. Veterinary pathology had already furnished much that was valuable for the human pathologist but more could be expected from research work organized on less restricted lines than in the past. The veterinary pathologist should have the great advantage of working with experimental animals of the species naturally infected by a disease but the advantages had usually been sacrificed to financial considerations. It was known how narrowly specific might be the relations between host and parasite and it should be recognized that among pig and rabbit studies however convenient and valuable (as long as their limitations are realized) could be entirely misleading when applied to animals of other species. Moreover, the reaction to a poisonous substance could also be narrowly specific for example *Melospiza melanocephala* apparently harmless to all other domestic animals, induced a fatal intoxication in hares. Recent work on chronic plant intoxications in animals had great interest for the human pathologist, but much of it was not at all widely known. In connexion with mineral deficiencies the outstanding work of Thelander and Green at Pretoria deserved special mention. They had succeeded in establishing the etiology of the bovine disease "metabolic" but their work had had result far exceeding that of controlling himself, although that disease had formerly caused very heavy losses indeed (see JOURNAL September 24th p. 559). With respect to vitamin deficiencies, it seemed very doubtful whether any of the domestic herbivora under ordinary conditions ever suffered severely from this cause, but specific avitaminoses occurred naturally in pigs and dogs, and probably in fowls also. Dr Andrews felt confident that however important such work might prove later to the human pathologist the study of the diseases of the domestic animal would be best and most successfully pursued for its own sake, although human and veterinary pathologists should naturally co-operate and exchange information as freely as possible.

Mr G. W. DRYDEN M.R.C.V.S. (Mill Hill) stated that the vast fields awaiting investigation and the numerous diseases common to man and the lower animals lent ample support to the suggestion of closer and more intimate co-operation between human and veterinary medicine. The Section of Comparative Medicine of the Royal Society of Medicine was flourishing its membership was still increasing and its meetings continued to be of the greatest interest to both branches of medicine. Nevertheless the facilities already existing for co-operation between the two branches were inadequate for the necessary development of this term work. He stated that, with Dr Laidlaw he had been engaged for the past four years in the investigation of dog distemper. Although this disease was specific for the dog and ferret and did not affect human beings, there were, nevertheless, many phases which closely resembled other conditions in man and it was hoped that the results of this research would tend to the better understanding of certain human ailments. Another disease (John's disease of cattle) which was receiving his attention did not, so far as he knew, possess any analogy in human medicine but it was evident that the results would not be without interest to human bacteriologists and pathologists. It was good to know that diseases of lower animals and their investigation could be of assistance in this way, but he submitted that they were matters for team work in order that a better understanding of the baffling pathological conditions could be obtained.

Mr JAMES McALLAN M.R.C.V.S. (Aberdeen) suggested that the public health aspect of comparative medicine was by no means the least important, and he emphasized the necessity for a very close co-operation between the two professions. In the field of meat inspection while the medical officer of health would always have the last word on the fitness or unfitness of meat for human food it seemed necessary that the veterinary surgeon should co-operate, since he had the better knowledge of animals in health and disease. In Scotland this co-operation had

been fully established. In the production of milk from the hygienic standpoint the veterinary surgeon had a big field, which was further extended by the control of milk-spiced tuberculosis. From personal experience the speaker could emphasize the value of co-operation between the two professions in the investigation of food poisoning outbreaks spread by milk. On two occasions he had been able to trace milk-borne outbreaks of food poisoning to the infection of cows with *Gaciner's bacillus*. It was on such occasions that he appreciated clearly the value which would accrue to medical practitioners from making full use of the veterinary surgeons on the public health staff.

Professor D C MATHESON, FRCVS (Edinburgh) said that for the past fourteen years he had acted as veterinary pathologist to the Scottish Zoological Society. As a matter of routine every herbivorous animal was examined microscopically for anthrax before the necropsy, while in the case of carnivores the possibility of glanders had always to be considered. These animals frequently suffered from "menage pneumonia," and cultures from the lesions on potato often yielded an early growth of *B. coli* with a superficial resemblance to the glanders bacillus. A recent survey of the records showed that among the animals, excluding birds, tuberculosis occurred in 4.7 per cent., in birds the incidence was 7.1 per cent. Among domestic fowls examined in the laboratory for the same period the incidence was 10.3 per cent. Impaction of the intestine by vegetable fibre, twisted by the peristaltic movements into a veritable rope, was not uncommon among the larger cursorial birds such as the ibex. Impaction of some portion of the intestine, usually with vegetable fibre, was responsible for death in 10.1 per cent of the fowls examined during a period of thirteen years. Neoplasms were rare among the animals in the gardens.

Dr J G NASMITH (Edinburgh) emphasized the necessity for investigations into the origin of epidemic and epizootic diseases, and into the periodicity of epidemic diseases that were now controlled and no longer seriously menaced the health of the community. It was also desirable to know why, in the case of "epidemics," the causal organism was able to lie dormant for long, and yet, when a suitable host offered, assert its pathogenic power. He also emphasized the importance of co-operative and co-ordinated investigations by the biologist and the biochemist in association with the pathologist and the clinician. He believed that it would be to the benefit of comparative medicine if the Veterinary College were affiliated to the University, and the Animal Diseases Research Association were similarly linked to the Veterinary College in Edinburgh. Such affiliations he was convinced would lead to co-ordination in research, and the consequent benefit of mankind by the discovery of the fundamentally common conditions which caused human and animal diseases.

Dr F A E CREW (Edinburgh) remarked that so much stress had been laid upon the need for greater co-operation between the medical and the veterinary professions that he could not refrain from asking whether they knew of what and to whom they spoke. Co-operation in research must always be between individuals. He who sought help eagerly found it, if such help was available, in the communion of minds. Those engaged in research were conscious of shortcomings, and the true searcher after knowledge recognized no monopolies. The knowledge of one was available for all. Co-operation was not based on professional organization but on common humility, for no professional organization could override personal antagonism. Far too much was made of the distinction between the medical practitioner and the veterinarian, it was the problem and technique of investigation, and not the material, that really united men. Medicine was too disposed to content itself with study of the causes and the effects of disharmony. They ought to recognize clearly that the control of the future evolution of man and of animals lay in the hands of man himself, and that they must help to decide what man should become and how animals might evolve, setting themselves the task of guiding man and beasts in the lines of their destinies. It was for them to think of the eradication of those hindrances,

and the securing of that degree of material and physical comfort which was a prerequisite of spiritual development. Then great contribution would concern the breeding of man and animals naturally highly resistant and immune to diseases which threatened their existence.

Professor D T GRAY (Liverpool University) believed in the advantage to human medicine of the study of comparative pathology. His own pathological museum contained many specimens of animal disease which he used in teaching medical students.

Mr W A POOL, MRCVS (Edinburgh), stated that there was obviously agreement as to the necessity of greater co-ordination between the two branches of medicine. Investigation of factors concerning animals, both in health and in disease, had in the past been almost limited to consideration of those which were of immediate economic importance or of use in throwing light on problems affecting mankind. As a result they lacked a certain knowledge of many things which should at the present day be well understood. Outstanding examples could be quoted in the field of physiology, such as digestion in ruminants and ungulates, and also in connection with pharmacology, as, for example, the action of certain alkaloids on the autonomic nervous system of equines. This was due to research into animal problems being limited to those of urgency and by methods of applied science, there had not been enough investigation for the sheer desire for knowledge. Prominent examples of problems in which greater co-ordination of the two branches of medicine was necessary were the study of the streptococci of the bovine udder and the effect of nutrition on resistance to disease. The policy adopted in distributing public funds to finance investigations into problems of animal disease tended to foster this policy of attending only to questions of immediate practical importance. Subsidized laboratories were expected to justify their existence in the eyes of the public as they proceeded. This entailed the early and frequent issue of reports, and, to ensure the certainty of having something to report, investigators felt bound to hunt their sphere of action largely to problems which, while being of immediate practical importance, were also likely to produce definite results.

Lieut.-Colonel L D W GRIG (Edinburgh) strongly favoured close co-operation between medical and veterinary pathologists. From his experiences in the last few years several instances of the importance of this combination including the investigation and treatment of rabi and the study of tuberculosis in India. He was convinced that the recent appointment by the Colonial Office of a Medical Research Committee would help materially in co-ordinating research in the two branches overseas.

Dr T W M CAMFORD (London) drew attention to the fact that no one had yet attempted to formulate a definition of "comparative medicine." There was a tendency to regard it as veterinary medicine, or, more frequently, as veterinary diseases in relation to man. He thought that it was neither of these. Defining medicine as the art and sciences of preventing or removing disease, then comparative medicine was the comparison of the art and sciences of medicine as relating to man, the domestic animals, the non-domestic animals, and even plants. Of these, probably the most important was comparative pathology. If physiology were regarded as a study of the normal reactions of an organism to normal stimuli, then pathology was, for the most part, the study of the normal reactions to abnormal stimuli, neoplasms and similar conditions. Of unknown etiology might well prove to be short of reactions to either normal or abnormal stimuli. Comparative pathology, then, would be the comparison of the reactions of various hosts to the same harmful stimuli. Its aim would be to elucidate the fundamental laws underlying the methods by which the body became diseased and by which it fought against disease. This while including both human and veterinary pathology, was co-extensive with neither. It was, moreover, concerned not from bacteriology or parasitology, sciences concerned with causes only, while pathology was concerned with effects.

The speaker then illustrated this concept of comparative pathology by describing the reactions of a variety of hosts to the tubercle bacillus and to the hydatid cyst. Comparative pathology was a natural sequel to comparative physiology, and was a subject as capable of standing by itself in the university curriculum as any of the other divisions of science. If comparative pathology and the other ancillary medical sciences were regarded in this way, then obviously comparative medicine should really be called "medicine" and what was generally regarded as "veterinary medicine" should be rechristened "human medicine." Man was only the most domesticated of the mammals and in these neo-Darwinian days there was no reason why an unqualified name should be given to the purely human sciences while grouping those concerned with the other domestic animals under the cumbersome title of "veterinary medicine." He could not accept the statement that human medicine was the mother of veterinary medicine; she was merely the elder sister who for so many years had acted as foster mother. The true parent was only now being recognized as comparative medicine and it was to her that both the sisters, the elder as well as the younger, must look for the fundamental principles which were necessary before any real understanding of disease was possible.

## TREATMENT OF TOXIC GOITRE

### I.—THE PLACE OF SURGERY IN THE TREATMENT OF TOXIC GOITRE

BY

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I HAVE chosen the term 'toxic goitre' because I believed it would be the wish of this meeting to discuss the treatment of the types of goitre which cause ill health through disordered secretion.

**Clinical Terms.**—There will not be universal agreement on terms. That is because although most goitres fall into well recognized clinical types many minor differences occur. Any two types are linked up by intermediate cases.

Pathologically also many cases fall into definite groups but practically every type of histopathological condition may be found somewhere in a diseased thyroid gland. There is a tendency to multiply types and subdivisions but I have come to feel that the different types are related, I believe pathological evidence is tending to bear this out, and that it will ultimately be found that the differences are only in degree. Take exophthalmic goitre, with which, in its orthodox manifestations, we are familiar. Clinically we recognize a primary and a secondary type of this but we may not be able to define where the primary type ends and the secondary type begins. Histopathologically also we recognize a primary and a secondary type, but some cases which histopathologically are undoubtedly secondary would clinically have been considered primary. There may be great differences between examples of the secondary type, and some of them approach very closely to what we are in the habit of calling toxic adenoma.

As we examine the symptoms we see progressive differences which conform to the differing appearances in the gland. A case of primary Graves's disease has well defined features: an early secondary case is scarcely distinguishable from it. In the late secondary case exophthalmos has become less and may scarcely exist; the nervous phenomena are less obvious, but the cardiac changes are more manifest, auricular fibrillation occurring frequently. Working backwards from the other end of the chain a toxic adenoma is well recognized, but sometimes there is more than one adenoma and, farther still, a gland may be bilaterally symmetrical, the nodules in it scarcely recognizable as adenomata capable of being shelled out (as is a single

adenoma), the whole gland approaching the type of late secondary exophthalmic goitre.

**Etiological Factors.**—What are the etiological factors which cause the differing appearances? Why does the gland of a primary type appear to be a solid cellular organ? and why does the gland of an early secondary type often look like a simple colloid goitre, and a late secondary look like an old fibrotic goitre with some adenomatous masses in it? We presume that a thyroid gland is normal until puberty approaches. We can agree that there is at that time of life a tremendous but quite normal call on the gland, for we believe that the thyroid secretion determines the energy output of every cell in the body. This extra demand is successfully met in the majority of people, but in order to meet it there is some temporary hypertrophy—possibly not enough to be noticed, possibly just noticeable, and, if so, rightly called a physiological hypertrophy. Involution should occur after the demand is successfully met, but if the demand is not successfully met involution does not occur and a colloid goitre remains. These processes occur in meeting a physiological stimulus.

Now let us take notice of a pathological stimulus. We need to keep in mind two hypotheses: first, that the stimulus which causes exophthalmic goitre is situated without the gland and secondly, that this stimulus induces changes in the gland which in turn cause the manifestations which we recognize as the signs and symptoms of the disease. Some may not agree with this statement if so the argument must come later. The stimuli which induce these changes may be active from beginning to end of the disease. There is a time early in the disease when these stimuli urge the gland intensely and there comes a time when they lessen in their intensity, but when the results induced by them in the thyroid gland dominate the clinical picture. This has to be borne in mind in deciding the treatment to be followed at the different stages of the disease. Possibly the stimulus is a subconscious sex disturbance, possibly some psychic trauma, possibly focal sepsis is added, and possibly there is deficiency of available iodine. If that pathological stimulus is directed on to a normal gland the whole gland is able to respond, it changes into a solid cellular organ—the gland of a primary exophthalmic goitre—and we have the signs and symptoms of a primary exophthalmic goitre. If that pathological stimulus is directed on to a gland in which post-puberty involution has not occurred—in other words on to an early colloid goitre—the whole gland cannot respond, cannot change into a solid cellular organ for most of it already consists of enlarged colloid vesicles and the only parts of it which can respond to the abnormal stimulation are the cellular areas between the vesicles. These scattered areas become solid, opaque, whitish, and similar to the whole gland in the primary exophthalmic case. Both these types are quite definitely exophthalmic goitre. Both have prominent eyes, a hot skin, tremor, a rapid pulse, and both follow a similar course. Why separate them? Only because the appearance of the gland, macroscopically as well as microscopically, is so different, and because the second type links up with the late secondary type, and may help to explain the late toxic nodular goitre.

Now take late secondary Graves's disease. In this we have a woman who has had a goitre for many years. We know from our own experiences that the colloid goitre of puberty about the third decade loses its smooth surface and becomes nodular. It is still symmetrical, but fibrous strands develop, constricting and isolating areas throughout the gland. In the woman who "has had a goitre all her life" this change has been progressing until the fifth decade. How does this condition become toxic? The same factors which affect a younger woman with a normal gland giving her frank exophthalmic goitre, or another woman with an early colloid goitre, giving her early secondary Graves's disease can be brought into action at any time during a woman's life but if these factors are directed on to an old fibrotic goitre the areas in it which are able to respond are small and scattered. We cannot at this stage expect the whole gland to respond as the normal gland did which produced exophthalmic goitre, or even as the early colloid goitre responded, and so we get a



condition with which we all are familiar—although it may be given different names by different observers—the late secondary Graves's disease. This is included by Plummer under the term "toxic adenoma." Both pathologically and clinically we find every gradation between this and exophthalmic goitre, and between it and true toxic adenoma. This pathological change may be scattered throughout the whole gland, but we may see it limited to one lobe, replacing all the normal tissue of that lobe, the other lobe remaining, as far as we can tell, normal. Again, we see occasionally one single adenoma, the removal of which frees the patient from her symptoms, and therefore we must believe that it alone was the cause of the manifestation of disease from which she suffered.

There are thus three important factors concerned in the manifestation of exophthalmic goitre, and each of these may vary within wide limits, with corresponding differences in the ultimate result to the patient.

- 1 The stimulus directed on to the thyroid gland
- 2 The thyroid gland which in responding to the stimulus produces disordered secretion
- 3 The heart muscle (leaving out of count other viscera for the moment)

I have stated what I believe this stimulus to be. It may be intense and soul-racking, or less intense but unceasing. It may be directed on to the mechanism of a thyroid gland which is normal, or which is in a condition of colloid or adenomatous enlargement with fibrosis. The response of the thyroid gland to the stimulus may result in secretion which affects a heart whose musculature is unimpaired, and therefore able to stand up to years of intoxication, or whose musculature is already affected by the wear and tear of life and on this account soon feels the effect of an added thyrotoxaemia.

The place of surgery in the treatment of toxic goitre will vary in each of the conditions which have been discussed. Some may question whether surgery has any place in treatment. Kessell, Lieb, and Hyman<sup>1</sup> report that with skilful neglect the prognosis is excellent. Barber<sup>2</sup> has stated that the course of the disease associated with diffuse hyperplasia of the whole gland—that is, primary Graves's disease—"is probably two or three years, no matter how you treat it (medically, surgically, or radiologically)." My answer to that is, that of 273 patients operated upon by me consecutively in the last few years, 107 had suffered from the disease over four years, 77 over six years, and 53 over ten years. This represents much unhappiness for patients and their relatives, and great economic loss.

One other important question is, Could the disease have been arrested earlier? My medical colleagues will bear me out that, while patients have been lying in bed in hospital wards under what we must regard as efficient treatment, most disturbing features have developed, and it has been impossible to arrest the progress of these by any means with which we are familiar. I mean by this that corneal ulceration has occurred while the patient has been at complete rest. In several patients destruction of an eye has occurred. In one patient this lit up the other symptoms, which at the moment were not progressive, to such an extent that the patient died. Glycosuria has developed in others, maniacal symptoms in others again. Loss of weight frequently occurs in patients who have been in bed for months—5 st in one patient—and auricular fibrillation has developed in patients who were under observation.

Again, take the economic factor. For the moment we may leave out of the discussion the question as to whether, if all patients were treated under ideal conditions, the disease could be arrested or controlled. We are faced with the fact that many patients are gravely ill, and have been ill for a long time, and that in the stage in which we find them they cannot be restored to an industrial plane by medical means, using medical means in its broadest sense. For these two reasons surgery has a place in the treatment of toxic goitre, if we can show that it is able to arrest the disease and permit a patient to resume life on an industrial plane. What this place should be can only be decided for each individual, after the character of onset,

the stage of the disease, the quality of the gland and the previous treatment, and the social position of the patient have been taken into consideration.

If an operation has to be performed, three important points have to be decided: (1) When should it be performed? (2) How can it be made safe? (3) How can we ensure that it will achieve the object for which it is performed?

Lack of time prevents more than a rapid answer to these three questions. Taking the first—When should operation be performed?—we need to keep the types of the disease in our minds. In a primary case operation should not be performed early. Surely some people never get this disease but successfully resist it. Others get it slightly and recover. Our medical colleagues pilot many of these patients back to health. Some will not be restored to health and will settle into a chronic condition. It would obviously be wrong to operate while there is a chance of recovery without operation. The thyroid gland is much too important to have a great part of it removed unless the necessity is pressing. When a patient has suffered from the disease for approximately six months the question of operation is certainly arguable, and the patient's social position looms largely among the factors upon which we must decide. A well-to-do patient may be willing to live a sheltered life and to give up many activities. The poor patient is in quite another category. She may be unmarried and dependent on her own exertions for her living. She may be married and have a husband and children dependent upon her for the maintenance of their home. Patients in this condition cannot rest indefinitely. I find that what generally happens is that they are taken into hospital for a few weeks or a few months, and then discharged, perhaps a little better, but often much in the same condition as when admitted. Crises occur from time to time, and the tendency is for the patient gradually to sink to a lower plane of health. For these reasons is most helpful. Even the well-to-do patient usually realizes the limitations under which she must live now, in any circumstances, in a certain number the disease progresses, and the signs and symptoms become so aggravated that operation becomes advisable.

When auricular fibrillation has been established or congestive heart failure has occurred, the question has ceased to be arguable. Neither rest nor medical or x-ray treatment will avail to restore the patient to health. These conditions may occur either as a late result of primary Graves's disease or quite early in a case of late secondary Graves's disease, or so-called toxic adenoma. Without operation the patient is doomed to permanent invalidism, by means of operation—followed by treatment—the fibrillating heart is almost always restored to normal rhythm, and congestive heart almost always disappears. In these two types, with auricular fibrillation, there should be no delay beyond the time necessary to get the patient into the best condition for undergoing operation.

The second question is, How can operation be made safe? By ensuring that the patient has no other lead to carry besides the disease itself. It is surprising to what extent patients are still sent for operation with foci of gross sepsis present. The majority of patients improve obviously when septic foci are cleaned up, and in an operation where the margin of safety is narrow enough every factor which reduces this margin should be eliminated. It should not be necessary to insist on this at this late period.

2 By rest in bed. It takes several days for the pulse rate to come down to its resting level when a patient is put to bed and freed from her worries.

3 With exophthalmic goitre, by iodine medication. This should be commenced as soon as it is seen to what extent the pulse rate has dropped as the result of rest and mental relief—that is, usually about the third day. Generally iodine will not only further reduce the pulse rate, but the associated improvement in the patient's condition, but it will induce a definite change in the pathological condition of the gland which makes the operation safer.

4 By confidence between patient and surgeon. It is not enough that confidence has been established between patient and physician. On the operation morning the surgeon must come as a friend, not as a person to be feared. This is not an emergency operation.

5 By adjusting the amount done at one operation to the patient's strength. This is most important, and the surgeon must be able to gauge it. It is always tempting to cut time and get the complete job done in one operation. The patient who has been ill for a long time will often plead for it to be finished at once, and for the surgeon it is vastly easier to deal with the second lobe in a field unhampered by scar tissue. Sometimes this is possible and, if so, it is the right thing to do, but unless the surgeon can judge this, he will tell the patient in the beginning that two operations are necessary and then do at one stage only what is within her strength. If the patient is forewarned she is not disappointed. If she is tacitly allowed to believe that one operation will cure her, and after this is done learns that another is necessary, she will be disappointed.

In dealing with patients with grossly incompetent heart, dilated and irregular, and with oedema, safety is only attained by the closest co-operation between physician and surgeon. In this class the results obtained are surprisingly good (I will present evidence of this later), but the margin of safety is very narrow.

Anesthesia must be considered. Chloroform is unsafe. Open ether is safe but it is a nuisance to have a mask so close to the operation field. Gas and oxygen with a little ether, given by the endotracheal method, is safe, and interferes less with the surgeon than any other method of inhalation anesthesia. Rectal ether is quite good. If the surgeon will take the trouble and allow the necessary time before the operation, local anesthesia gives a comfort in working and a freedom from bleeding which is attained in no other way. Freedom from bleeding saves much time at the operation, and this saving of time, as well as the diminished loss of blood, is of importance to the patient. In cases of auricular fibrillation I believe that local anesthesia is essential. If these precautions are taken, there are few patients who cannot be carried through operation with a reasonable degree of safety, but no consideration of urgency on the part of the patient, or convenience on the part of the surgeon, should ever tempt him to operate at a time other than that which is the optimum, taking all the factors into account.

I think this is the place to speak of the death rate which for this operation will range within wide limits. It will vary according to the type of patients operated upon and greatly according to the time selected for the operation in each individual and the care with which the preliminary treatment has been carried out. Some surgeons will be careful for their statistics, others will undertake operation at some risk on patients who without operation are, so far as can be judged, doomed to complete ruin, and it will naturally vary according to the experience of the operator. My own death rate in operations for Graves's disease—excluding toxic adenoma—is 2.8 per cent. Never neglect this when discussing the question of operation with patients.

Apart from death two other calamities can occur as the result of operation: damage to the recurrent laryngeal nerve, and tetany. I have injured one nerve very occasionally, but I have seen two patients in whom both nerves had been irreversibly damaged. I have had one case of severe tetany.

The third question is: How can we ensure that operation will achieve the object for which it is performed?

There are many patients who have been operated upon for exophthalmic goitre who are not cured, and the reasons for this require examination. Kocher stated that removal of one lobe with the isthmus, and ligation of an artery on the other side, cured 83 per cent of cases. Similar statements were published by American surgeons. Twenty years ago I insisted that this was not so, and I have insisted continuously since. The remaining lobe is bigger than the whole normal gland, and very toxic. It is not reasonable to suppose that the patient could be cured while all this remains. This must be realized in the beginning. The removal of the first lobe is comparatively easy. Removal of the appropriate amount of the second lobe is much more difficult. The approach is through scar tissue, anatomical planes may have been destroyed by adhesions, and an extremely vascular gland must be cut through, but rules

the surgeon is prepared to undertake the second operation he should never perform the first. Removal of one lobe improves a patient so much at first that patient and surgeon are pleased, but this result is so far short of a cure that, if left at that, it can only bring the operation into discredit. The pulse rate will not remain down, the eyes will not recede, and in patients with auricular fibrillation there will not be restoration to normal rhythm. To make the operation effective sufficient gland substance must be removed to eliminate the toxic effects of the secretion, always bearing in mind the physiological needs of the body.

What evidence can we produce that surgical treatment will shorten the duration of the disease, or restore to normal function organs which have shown evidence of failure? I have selected some cases to illustrate different grades of the disease and the response to operative treatment in each.

Two young women had both been ill for more than six months, but had no heart failure; one of them earned her living by working in the General Post Office, the other had difficult home duties. The first went back to her work at the post office immediately on her return from convalescent home four years ago and has worked continuously since. She feels quite well. The second, whose exophthalmos was such that she suffered from corneal ulcers each time, was in hospital sent home to nurse an invalid father who apart from her day work, kept her out of bed several times each night. She writes to state that she feels well and carries out her duties without difficulty. A German on the northern export service went back to his duties after his return from convalescent home and has carried on continuously since.

**Exophthalmos**—The question is often asked: Will the eyes improve? They will. How much we cannot say. Sometimes the return to normal is not so complete, but there is always much improvement, and this improvement increases.

**Cardiac Failure**—Now we pass to patients with cardiac failure. These are the patients about whom Marion Read<sup>4</sup> writes: "Many had reached the stage of myocardial damage which leads to decompensation, which is the one residuum of this disease which is most distressing and from which there is often no recovery." This statement has been much quoted. I have operated upon 63 patients with established auricular fibrillation in the last six and a half years. Some of these could only be described as waterlogged wrecks. Of them 4 have died, 4 have, for one reason or another, only had one lobe removed and the heart beat has not regained normal rhythm, of the other 55 I believe only 2 have not regained normal rhythm. Therefore 87 per cent of these patients have been restored to a level of health which could scarcely have been believed possible. In reference to these deaths, some of the transformations have been so remarkable that we are occasionally lured into attempting too much, but I believe that in this type of case the death rate has not been higher than has occurred in cases not operated upon. The disappearance of fibrillation is interesting in another respect. We do not yet know the origin of this disease, but the disappearance of fibrillation after operation shows that the origin of the toxins which are the ultimate cause of some of the most distressing symptoms is in the diseased thyroid gland.

**Glycosuria**—In working with my medical colleagues it has become clear that with some patients who have suffered from glycosuria associated with Graves's disease it has been impossible to control the glycosuria before operation, while after a sufficient thyroidectomy the glycosuria has disappeared spontaneously or has been readily controlled.

**Dropy**—The following case illustrates the increase in the amount of urine immediately following operation in a waterlogged patient in whom diuretics had been ineffective.

A woman arrived from South Africa as ill as a patient could be. Legs, thigh and trunk were enormously increased in size—a finger would leave a pit anywhere below the level of the breasts—the abdomen and pleural cavities contained fluid. She was dyspnoeic and the daily amount of urine passed was little over one pint. The heart beat was irregular for five years. She was kept for a month while every effort was made to increase the urine, decrease the drops, and lessen her breathlessness. She was worse rather than better at the end of the month and then one lobe was removed. In three days the urine output increased to 60 oz. and then to 90 oz. The oedema disappeared synchronously with this. Part of

the second lobe was removed later. She went back to South Africa by herself. She now camps out, rides on horseback, and manages her household affairs.

One further aspect remains to be spoken of—namely, mental disorder. This complication is not common, but, taking a large number of cases, it is not infrequent. Some patients have suddenly become maniacal and died. I have had to decide what course to follow in patients who were gradually getting worse and who were approaching, or had reached, a stage when they could not be managed in their own homes. I have never operated upon these patients without the fullest consultation, and without the relatives appreciating all that is at stake, and sometimes a patient is too ill to justify operation. It is wise to have the help of a specialist in mental disorders before a decision is arrived at. Only one of these patients has not improved, the others have, after operation, returned to their ordinary way of living. One of them has married since, and one of the worst was driving her own car around London within eight weeks of her second operation.

The degree of recovery in these cases, and in the majority of cases, appears to be very high, and yet I think we must believe that in Graves's disease the secretion is not normal secretion, and when we reduce its amount by four-fifths we are not leaving a patient with an output of secretion normal in amount and quality, and therefore the end-results are not strictly comparable with those obtained after removal of a diseased appendix.

**Anorexia, with Emaciation.**—Now the other side of the picture. I have had three patients who have suffered from extreme anorexia—an unusual symptom in Graves's disease—associated with great wasting. The emaciation, as you know, is frequent, the anorexia is not, and I cannot help thinking that some factor with which we are not familiar is present. Of these three, one recovered after operation, one is just about holding her own, and one died some months subsequently.

Patients who have suffered severely from exophthalmic goitre never become normal as they were before the disease occurred, but they are a great deal nearer normal than if they had not been operated upon, and almost all of them can take up their work and enjoy life in the world once more.

I would ask you to bear in mind two points. We must visualize a heart and nervous system flooded with toxic secretion, sometimes continued for years. If that toxic secretion is suddenly reduced by four-fifths, the organs quickly show relief—often, indeed, dramatically—but it is unreasonable to expect that their complete recovery (their capacity to stand up to strain) should be other than gradual, and may never be quite complete. My second point is, that as soon as a sufficient operation is performed the patient feels a different woman, and is on an up grade all the time. She is conscious of this herself, and it is obvious to her friends.

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## II—INDICATIONS FOR SURGICAL TREATMENT IN TOXIC GOITRE

BY

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It is important to regard the surgical treatment of toxic goitre from three points of view. When the question of an operation is under consideration it is advisable to take the opinion of the physician, of the surgeon, and of the anaesthetist, if possible in consultation, in deciding whether medical treatment should be continued or surgical treatment be adopted forthwith. The term "toxic goitre" includes all forms of goitre which give rise to general symptoms, is distinct from those which cause only disfigurement of the neck or pressure on neighbouring structures. These general or toxic symptoms are due either to

hyperthyroidism or to dysthyroidism—in other words they are the result of the passage from the goitre into the blood either of an excessive amount of normal thyroid secretion or of an altered secretion.

As the relative importance of changes in the quantity, as compared with those in the quality, of thyroid secretion in the production of thyrotoxicosis is still open to discussion, the term "hyperthyroidism" will be used simply to indicate overactivity of thyroid secretion in whatever form it may ultimately be proved to occur.

In considering the indications for surgical treatment in this group of maladies we require some form of classification. Mr. Dunhill has given us a valuable lead in this respect from the surgical aspect. I find that rather a different arrangement is more convenient from the medical point of view, as the physician sees early and mild forms of toxic goitre, in which the question of operation does not arise. A physician is apt to feel that all cases of toxic goitre ought to be amenable to medical treatment—is, indeed, we hope in the future they will be—and so is liable to look upon the necessity for surgical treatment as a confession of failure. There are, however, certain forms and stages of toxic goitre in which an operation at present affords the only means of cure or relief of the malady.

### CLASSIFICATION

I find the following classification is useful for practical purposes, but it must be clearly understood that there is no sharp line dividing the different groups, as intermediate cases occur.

In the first place it is advisable to divide all forms of toxic goitre into (a) primary, and (b) secondary groups. In the primary group may be placed all cases in which the onset of the toxic symptoms either precedes or coincides with the appearance of the goitre. In the secondary group the toxic symptoms only develop after a goitre, of one kind or another, has been present for several years without causing ill health. It is in this secondary group that surgical treatment is most frequently required. There are two forms of primary toxic goitre: (1) simple hyperthyroidism (thyrotoxicosis), (2) exophthalmic goitre. There are three forms of secondary toxic goitre, which may be conveniently called: (3) simple secondary hyperthyroidism (thyrotoxicosis), (4) toxic adenoma, (5) secondary exophthalmic goitre. I shall now endeavour to describe briefly these five forms of toxic goitre, with special reference to the indications for surgical treatment in each of them. Brief details of a few cases will be given as examples.

### PRIMARY TOXIC GOITRE

#### 1 Simple Primary Hyperthyroidism or Thyrotoxicosis

In this condition the thyroid gland is enlarged to a slight or moderate degree. In some rare cases the toxic symptoms precede any palpable enlargement of the gland. The pulse rate at rest is increased to 80, 100, or more, and is easily accelerated by exertion or emotion. The mind is alert, and the hands tremble when extended. The skin is warm and moist, there is loss of weight, and gastric or intestinal symptoms may be present. The basal metabolic rate may be increased by as much as 50 per cent. This form of toxic goitre corresponds to the "formes frustes" of the French writers, and may be illustrated by the following case.

Miss R., aged 26, complains of palpitation on exertion, nausea with occasional vomiting, perspiration, and nervousness. There is a uniform goitre of moderate size but no pre-tibial oedema. Pulse 100 to 104, no cardiac murmur, fine tremor, no exophthalmos. Medical treatment advised.

These patients are not seriously ill, they are usually amenable to medical treatment, and so are seldom referred to a surgeon. Occasionally a patient gets progressively worse, the pulse rate increases to 120 or more, the hands enlarge and may begin to fibrillate, there is great loss of weight, and severe gastro-intestinal symptoms may supervene. In these circumstances, even when the thyroid is not enlarged or not even palpably enlarged, an operation should be carried out without delay. It is not sufficiently realized that serious thyrotoxicosis may occur, and even end fatally, while external examination fails to reveal any enlargement.

of the gland the true nature of the malady only being revealed by the microscopical examination of the gland after death.

## 2 Primary Exophthalmic Goitre

In mild and moderately severe exophthalmic goitre medical treatment alone suffices in the majority of cases and should be given a fair trial for at least six months before it is abandoned in favour of an operation.

In a series of cases of exophthalmic goitre of all grades of severity under my care at the Manchester Royal Infirmary a thyroidectomy was performed in one-twelfth, as medical treatment had failed. In a few cases owing to the urgent necessity of earning a living or of removing to some remote part of the world, an immediate operation has been advised which in other circumstances would have been postponed. In some cases this course has proved successful in every way but there is a greater risk of a death which might have been averted if time and circumstances had allowed for prolonged medical treatment.

In a large majority of cases of Graves's disease the enlargement of the thyroid is only slight or moderate, and there are no pressure signs. In a few cases, however, the goitre is larger than usual. In these medical treatment is apt to fail so that even if pressure signs are entirely absent an early and extensive thyroidectomy is advisable. In all cases in which no decided improvement has taken place during six months of medical treatment the advisability of surgical treatment should be fully considered. In the physician and surgeon in co-operation. In selecting a surgeon it must be realized that special experience and certainty are just as important in a thyroidectomy as in a parathyroidectomy or in any laryngeal operation.

One of the chief dangers to life in prolonged cases of exophthalmic goitre is due to the development of thyrotoxic myocarditis so that in cases in which medical treatment fails to prevent the onset of early signs of cardiac failure an operation should not be delayed. In the past an operation has frequently been considered too hazardous in certain cases to be undertaken in these cases, but thanks to the work of Professor Fraser and Mr Dunhill we now know that signs of myocardial failure, such as auricular fibrillation and oedema of the legs are not a bar to operation but rather an indication that it should be carried out as soon as the patient has been prepared by medical treatment so as to minimize the risk of it as far as possible. In the case as in all forms of thyrotoxic myocarditis it is important to realize the danger of delay as it is not fair to the surgeon to wait until the signs of cardiac failure are advanced before asking him to see the case with a view to operation.

Briefly the advantages of operation in primary Graves's disease are: (1) The saving of time owing to the prompt reduction of the thyrotoxicosis and immediate relief of symptoms. (2) The complete recovery in some cases and marked improvement in others. (3) The diminution of the risk of the development of chronic myocarditis.

The disadvantages are: (1) The risk to life. (2) The uncertainty of the ultimate result on the operation owing to the difficulty in determining the right amount of the gland which should be removed in each case. (3) The tendency to recurrence within a year or two, with the necessity for further medical or surgical treatment.

The following case illustrates recovery after operation.

Ms M aged 27 seen February 14th 1921. Eighteen months duration. Physical signs. Moderate uniform goitre pulse 150 enlarged heart exophthalmos tremors. As this patient was very anxious to accompany her husband who was going to live in China at an altitude of some 7000 feet above sea level and was Mayo Clinic for an operation. In the following June Dr V C Hunt ligated both superior thyroid arteries. This was followed in September by a second removal of the gland with removal of the isthmus. She was able to proceed to Japan in November and the last report received from her there stated that she was quite well.

The following cases illustrate the tendency to recurrence after operation.

Ms L A severe case of primary exophthalmic goitre in which the symptom had developed acutely after a long visit to a dental surgeon. First and medical treatment failed to relieve her. On two occasions a partial thyroidectomy was carried out by Sir Victor Horsley with benefit but when I saw her again

after an interval of ten years the symptoms were still well marked. They then subsided under x-ray treatment.

Mr F B aged 41. Symptoms of exophthalmic goitre first developed in 1923. In 1914 a partial thyroidectomy was performed by Mr Kelly of Liverpool. Improvement followed so that he was able to follow his occupation for the next ten years. When seen for the first time in 1925 the right lobe of the thyroid was absent and the left lobe had increased in size during the previous twelve months. Pulse 140 to 160 well marked exophthalmos tremors pigmentation of the skin glycosuria.

## SECONDARY TOXIC GOITRE

### 3 Secondary Simple Hyperthyroidism or Thyrotoxicosis

In this group may be placed cases in which a simple colloid or parenchymatous goitre of several years' duration becomes toxic. This complication may arise, either gradually or rapidly as a result of some emotional strain or for no apparent reason, long after the goitre first appeared. The symptoms are the same as in the primary form. The following are illustrative cases.

Miss P aged 33 teacher. Duration of goitre long but uncertain as the neck had always been full. A definite swelling had appeared during the last month. For a year he had found her work too hard for her. She had vomited several times and had lost weight. Physical signs. Moderate uniform goitre with thrill and bruit pulse 120 heart apex beat in left nipple line systolic murmur at apex and over pulmonary area slight eccentric widening of palpebral fissures and pigmentation of eyelids but no exophthalmos. Medical treatment advised.

Miss R aged 43 teacher. Seen June 1st 1927. A goitre had been present for at least twenty-three years. She had recently lost her father mother and brother. Six months ago she suffered from erythema nodosum. For the last five months she had had palpitations and tremors with icterus and diarrhoea at times. Physical signs. There is a uniform soft goitre of moderate size the circumference of the neck being 16 in. pulse 140 systolic blood pressure 150 mm diastolic blood pressure 100 mm tremors moist skin and some loss of hair increased frequency of defaecation menses irregular. Medical treatment advised.

In these cases medical treatment may in the absence of urgent symptoms, be given a fair trial. The results are not so good as in primary hyperthyroidism but the toxic symptoms may subside, although the goitre will persist even if it is reduced in size. If there are no marked results from medical treatment in three months a thyroidectomy should be advised.

### 4 Toxic Adenoma

The term "toxic adenoma" has been used with a varying significance by different authors. Some include the group which I have just described, but it seems best to restrict the name to those cases in which a nodular goitre—that is to say, an adenomatous or adenoparenchymatous goitre, which may be cystic—has been present for some time even many years, before the toxic symptoms appeared. The cardio-vascular symptoms are often prominent in these cases though wasting nervousness tremors and gastro-intestinal symptoms may also be severe. The following are records of cases in this group.

Ms H aged 41 seen January 3rd 1926. A goitre had been present for eight years. She had not been well since an attack of diphtheria after which she lost 2 st in weight. The right lobe of the thyroid was moderately enlarged and firm in consistency but there were no pressure signs. Pulse 124 systolic blood pressure 105 mm heart apex beat in left nipple line. Nervousness and tremors were present but there were no eye signs. Menses regular. At operation on February 2nd 1926 Mr Burgess removed a large deeply buried adenoma of the right lobe. On examination by Dr Loveday this showed the structure of a fibro-adenomatous goitre. In some parts there was an atrophic condition with fibrosis and haemorrhage and in others marked adenomatous proliferation of the acini and some mucoid degeneration. Here and there an acinus was seen with columnar cell formation. On June 15th 1927 Dr Leather reported that the patient was very well. When last examined early in the year the pulse was 70 to 80 never exceeding the latter she was much less nervous and there were no tremors. She had gained 2 st in weight and the hair had begun to grow again.

Ms H aged 40 seen February 11th 1925. There probably had been some enlargement of the thyroid gland since childhood but during the last five years the left lobe had been definitely enlarged. For several years she had felt tired by mid-day. She had suffered from bronchitis and had been worried by her business. Recently she had a course of treatment during which took one tablet of Crookes' colloidal iodine 1 per cent thrice daily and she had three doses of x-rays. Or later he had lost weight the pulse frequency had increased and tremors were present. There was a uniform goitre with a small central adenoma. There were no pressure signs or eye signs. Pulse 130 to 140 irregular owing to auricular fibrillation heart apex beat in left nipple line. Defaecation four or five times a day. Operation was advised after a preliminary course of digitalis. About

a fortnight later the left lobe and isthmus of the thyroid were removed by Dr Crug of Kendal, ether being given by the rectum. The patient made an excellent recovery and Dr Crug recently informed me that she had gained 5 st in weight, the pulse was regular and not more than 88 even after a hard day at business. The tremors and nervous symptoms had entirely disappeared. She still finds that she cannot hurry or climb hills without some dyspnoea, but this is the only symptom left of the severe thyrotoxic myocarditis which was present when I saw her before the operation.

In the following case medical treatment was adopted, as the patient had a young family, and did not wish to run the risk of an operation.

Mrs X had had a goitre for fourteen years. She complained of feeling tired at times of loss of weight, throbbing in the neck, and of palpitation, especially during the last three months. There was a moderate uniform enlargement of both lobes of the thyroid with a small central adenoma the size of a cherry. Pulse 120, heart apex beat in left nipple line. Tremors were present.

In cases of true toxic adenoma operative treatment is advisable as soon as the symptoms become moderately severe, as medical treatment is of little permanent value. In a few cases in which operation has been declined or postponed and medical treatment has been continued some diminution of the toxic symptoms has followed x-ray and medicinal treatment, although there has been no diminution in the size of the goitre, but such improvement is apt to be of short duration.

### 5 Secondary Exophthalmic Goitre

A convenient group is formed by all the cases in which the goitre has been present for several years before the onset of Graves's disease. In order to save further subdivision these cases may be grouped together whatever the character of the pre-existing goitre. In these cases exophthalmos and the other characteristic symptoms of Graves's disease are present. Secondary exophthalmic goitre is not common in this country; in a series of 300 cases seen by me in private practice only twelve were secondary. It is not so amenable to medical treatment as the primary form of the malady. In the majority of the cases, especially when the goitre is either large or nodular, an operation should be advised as soon as the symptoms are well marked. If this cannot be carried out medical treatment must perforce be continued, but the results are disappointing and myocardial changes are only too prone to progress to complete invalidism or to a fatal termination.

Mrs H, aged 57, first noticed that she had a goitre twenty years ago, this diminished in size after the application of iodine paint. Three years ago she began to feel tired and suffered from palpitation and insomnia. The weight decreased from 9 st 3 lb to 7 st. There was a cystic and adenomatous goitre. Pulse 140, slightly irregular, blood pressure 170/60, heart apex beat heaving, external to nipple line, loud mitral systolic murmur, slight exophthalmos, tremors. A suitable case for operation.

There is one special form of goitre in which, though it is truly toxic, the symptoms are not due to hyperthyroidism. I refer to the septic goitre in which an adenoma or cyst becomes infected and gives rise to a general toxæmia. I have recorded such a case in which infection of an old cystic goitre by the colon bacillus caused an intense toxæmia, which promptly subsided when the pus and gas were removed. The treatment of these cases is purely surgical.

There is no doubt that in some cases of toxic goitre focal sepsis plays a part in starting or in aggravating the thyrotoxicosis, either by way of a subinfection or a toxæmia. In my own experience the frequency and importance of focal sepsis has not been nearly so great as has been stated by some writers. In every case, however, a careful search must be made, and if a septic focus is found it must be dealt with by surgical means appropriate to its situation.

The type of operation and the choice of the anaesthetic must, of course, be left to the discretion of the surgeon and the anaesthetist. When surgical treatment has been selected the physician wishes as much of the abnormal gland to be removed as will ensure early improvement and, if possible, cure without recurrence, enough of the gland being left to prevent the onset of post-operative myxoedema. It is thus no light task we ask the surgeon to perform, but when the ideal result is obtained we are all the more

grateful for what he has done for our patient. From a medical point of view a subtotal thyroidectomy in which seven-eighths of the goitre are removed at once appears to be the most desirable procedure in the majority of cases. After the modern methods of preparation of the patient in which medical treatment plays such an important part, preliminary ligation of the thyroid arteries and piecemeal operations should seldom be necessary. Finally it must be remembered that, in some cases, although marked improvement follows the operation, the patient is still far from being well and may still require medical treatment for a considerable period before recovery takes place.

### DISCUSSION

Mr C THURSTAN HOLLAND (Liverpool) related the case of a deeply jaundiced, wasted, vomiting woman, to whom an operation had been refused by a surgeon, x-rays cured her. He believed many patients treated by surgery could have been benefited by x-rays. They should always be used in early cases, and in advanced cases astonishing results occurred. The mortality was nil. X-ray burns and telangiectases should never be caused. He did not think myxoedema resulted from the use of x-rays.

Professor R E KEENE (Liverpool) pleaded for intratracheal anaesthesia. An x-ray photograph, to show the position of the trachea, was useful. Warming the ether vapour was unnecessary, though moistening was advantageous. Toxic adenomatous patients were very susceptible to morphine. Iodine should be given for one week before operation upon true exophthalmic goitre. Though the early case with symmetrical enlargement was much improved by iodine administration the patient with adenoma and hyperthyroidism did not respond to anything like the same extent.

Dr JOHN EISON (Edinburgh) stressed the importance of primary exophthalmic goitre. Death, in the vast majority of cases, was remote. Early operation restored a patient to normal function and stopped the deterioration of important organs. He thought operation probably raised the general death rate, when, however, deterioration of important organs had set in, operation should be considered. He desired evidence of early operative mortality. Most young people with exophthalmic goitre adjusted themselves to ordinary life activities. He regarded the general policy of operation as wrong, to justify surgical intervention the risk of deterioration must be obvious or medical treatment be unobtainable.

Sir W DE COURCY WHITLAW (Dublin) said that in estimating the effects of various treatments it was necessary to remember that the disease was one of cycles, normal improvement during one of the cycles could be hastened by x-rays and the administration of iodine. Recurrence of crises, he believed, could only be certainly prevented by a thorough surgical operation. Of 80 patients, all of whom were definitely toxic, every one had had medical treatment, with or without x-rays, for months or years before seeking surgical help because the cures were of a transitory nature. Iodine was very potent generally in bringing about temporary improvement. He thought that the common adenomatous goitres of women were made toxic by the administration of iodine, and the effect upon the cardiovascular system was often disastrous. The effect of iodine in true goitres was admirable and dramatic in about half the cases. In about one-third some improvement was noticed and in the rest there was no obvious effect. He had cured a patient with Graves's disease become very much improved with iodine. The mortality of operation in early cases was almost nil. He employed rectal anaesthesia combined with a local anaesthetic, a few patients had been anaesthetized only.

Mr JOHN MORLEY (Manchester) said that surgery and x-rays alone had no effect upon true primary Graves's disease, the former brought about much more rapid improvement than x-ray treatment. The mortality had been lowered very much of late years, and Lugol's solution



had helped a great deal. The operation should be performed seven to fourteen days after the institution of iodine therapy, seven eighths of the gland should be removed. Preliminary ligaturing of the arteries had not proved satisfactory and therefore the whole operation should be performed at one sitting. X rays were apt to leave cardiac disturbance unaffected.

Mr A J WALTON (London) said that advanced colloid goitre it is persisted to middle life changed to diffuse adenomatous goitre. This kind of goitre rarely gave rise to exophthalmic symptoms. The exophthalmic goitre was rare in type in young people and nervous in type in older women about the menopause. Operation often failed to relieve this second group. He believed the medical mortality to be pretty considerable. X rays had no effect at all upon the disease in his experience though they performed wonders in carcinoma of the thyroid. He had never seen fibrosis of the thyroid after exposure to x rays. Lugol's solution was excellent as a preliminary drug.

Dr L A ROWDEN (Leeds) said that in twenty years only seven cases of toxic goitre had been operated upon at Leeds. All the other cases had been referred to the radiographer as the surgeons in this town regarded x ray treatment as the method of choice. If the full effect were to be obtained by this means it was necessary to give such doses that the skin was bound to be damaged. He had had experience of 550 patients severe cases recent cases cases with high basal metabolic rate and cases with small glands did best. He strongly advocated x-ray treatment.

Dr F A C STARR (Toronto) said that he had consulted his records for 1926, and with his assistants he had committed during that year 253 benign offences according to Mr Holland. He had given up advising x rays or radium treatment which did no good in the adenomas whether hyperplastic or simple, and was dangerous in the diffuse hyperplastic. In ten cases treated some years previously the two last patients had succumbed within a few hours after the first x-ray treatment. With really all patients the cure was so long delayed that it was not worth while subjecting them to the misery of six months to a year's treatment when a few weeks would accomplish what x rays failed to do. Dr Starr thought that the goitre problem was changing at least on his side of the Atlantic. Twenty years ago in Toronto there were many non-toxic cases and an occasional case of Graves' disease. Now however the tables were turned. Last year, out of 253 cases operated upon, 27 only were non-toxic and 10 were of the diffuse colloid type with hyperplasia or presented colloid adenoma with a small amount of diffuse hyperplasia. 52 were definite hyperplastic adenomas while 119 were diffuse hyperplastic. Finally, 54 cases, which so far as he knew seemed to be local, were of the diffuse hyperplastic goitre variety with hyperplastic adenomas as well. These last always aroused great concern but after operation the result was spectacular, provided that judgement did not fail and in operation was performed at the psychological moment. A preliminary rest treatment in the hospital was greatly to be preferred to rest at home because often the entire benefit was lost by the journey to the hospital. In addition a minimum of two quarts of water, together with overfeeding and the use of Lugol's solution hastened the improvement. Often when a patient was apprehensive if she could be placed in a two-bed room or in a large ward next to a patient who was convalescing after a very serious illness she would improve more rapidly as the patient who was recovering talked about the great benefits obtained.

Mr CHAS JOYE (London) said there were many patients with adenomatous glands and only slight toxic symptoms and they had been included in many statistics so that confusion had resulted. True exophthalmic goitre showed severe metabolic and nervous disturbances. Symptoms rose and fell in severity in a highly variable and apparently capricious fashion. In the toxic adenoma they were constantly progressive and involved the cardio-vascular apparatus far more than any other systems. He had

never seen true exophthalmic in toxic adenomatous case. Joigne had a good effect on both groups. Surgery was indicated in most patients arising from exophthalmic goitre but shrewd judgement was required in deciding how much gland to remove. Nine tenths of the operation was in toxic adenoma had been removed. The mortality was less in toxic adenomatous cases than in exophthalmic goitre. He had treated 97 per cent of his own cases, and in general the results were good.

Mr DENNIS, in reply said that surgical opinion was gradually becoming rationalized as to the place surgery should take in the treatment of toxic goitre. He did not advocate operation in early cases.

## THE THERAPEUTIC USES OF CALCIUM SALTS

### I—THE PART PLAYED BY CALCIUM IN THE LIVING ORGANISM

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AN understanding of the indications for the administration of calcium in the treatment of disease and of diseased persons is complicated by the fact that this substance is always present in the body. Further it is present in the blood in amounts that are remarkably constant. The serum in health contains about 10 mg per 100 ccm. Variations of from 9 to 12 mg have been recorded by various workers, but some investigators obtain more constant figures. A serum content so constant at this point is due to the presence of some mechanism that maintains a balance between absorption and elimination and deposition which must be taken into account in rational calcium therapy. Further this constancy in the calcium content of the serum in health suggests that it plays an important part in the life of the individual and the relation of the body to its environment.

The source of the body calcium is the calcium in the food ingested. Only a small proportion of the ingested calcium is absorbed most of it being passed from the body in the faeces. The greater part of the absorbed calcium is excreted back into the tissues and eliminated with the faeces but a small fraction is eliminated in the urine. During childhood considerably more is absorbed than is eliminated since much is retained for the proper construction of the bony skeleton.

Our knowledge of the functions of calcium in the living organism is vague and probably scanty at present. Certain facts are however well established. It enters into the mechanism of the clotting of blood and is essential to the mechanism. A low content of calcium in the serum is associated with a disturbance of the neuromuscular apparatus so that the electrical excitability is increased and tetany may result. It appears to be essential to the proper contraction of heart muscle since the perfused heart ceases to beat sooner if calcium salts are absent from the perfusion fluid and beating recommences on the addition of the fluid of a soluble calcium salt. It is an essential constituent of bone.

In addition to these specific functions it plays an important part in the balance of ions in the tissues and fluids of the body. Undoubtedly this ionic balance enters into all of these functional activities that have been specified and disturbances of this balance occur in the abnormal states in which these functions are impaired. It is probable that in many more functional derangements not yet elucidated calcium plays a part though appears in this balance of the ions. A balance between calcium and magnesium ions on the one hand and sodium and potassium ions on the other, has been demonstrated in normal

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life, and this balance may be disturbed by alterations in the ionic concentrations of any of these elements. The part played by calcium in spasmodophilia and tetany, and in the contraction of heart muscle, must be viewed as exercised through this balance of ions as well as by calcium specifically. For example, calcium is essential to the normal functioning of the neuro-muscular apparatus, but increased electrical excitability may be produced either by a decrease in calcium or by an increase in sodium or potassium.

A balance also exists between the basic ions, such as sodium and calcium, and the acid ions, so that an increase in the acid radicals is accompanied by an increase in basic ions, the balance, upon which the hydrogen-ion concentration depends, being kept almost constant in health. Further, calcium exists in a solid form as  $\text{Ca}_3(\text{PO}_4)_2$  in bone, and a balance must exist between the  $\text{Ca}^{++}$  ions and the  $-\text{PO}_4^{---}$  ions and the solubility of the  $\text{Ca}_3(\text{PO}_4)_2$ , so that the product of ionic concentration cannot rise above a certain level. An increase in the product will cause a deposition of solid  $\text{Ca}_3(\text{PO}_4)_2$ , and a diminution will result in the passage of  $\text{Ca}_3(\text{PO}_4)_2$  from the deposits in the bones into solution in the body fluids. An increase in the concentration of  $\text{PO}_4^{---}$  ions will, however, result in a diminution of  $\text{Ca}^{++}$  ions, the product remaining constant.

These very superficial considerations must suffice to show that disturbances in the specific functions of calcium due to insufficiency are merely symptomatic of abnormalities that may be far-reaching in their consequences and remote in their causation, while any attempt to influence the specific functions by increasing the concentration of calcium above the normal may have effects on important constituents of the body and on remote functions.

#### Serum Calcium

The amount of total calcium in the serum is used as an indication of the calcium supply in the living body. All of this calcium, however, is not in the same condition of chemical combination. The quantity that is in an ionized state has been variously estimated as only 20 to 25 per cent of the total.<sup>6</sup> The work of Salvesen and Linder<sup>6</sup> suggests that part is in combination with protein, and this part will not only be in an an-ionized form but in a non-diffusible form, and therefore not easily available for utilization by the tissues. The diffusible calcium is not easily estimated with accuracy, but from observations by many workers it would appear to constitute 50 to 60 per cent only of the total.<sup>7</sup> Since this diffusible calcium is alone available for producing specific or ionic calcium effects, it is obvious that figures for the total calcium of the serum may not give a true indication of the available calcium. From the work of Vines<sup>8</sup> it would appear that about 4 mg. of calcium per 100 ccm. that was in a non-diffusible form in the whole blood is converted into a diffusible form during the process of clotting. If this is confirmed the figure for the total serum calcium is still further from being a true indication of the available calcium. In considering the significance of departures from the normal values for the calcium content of the serum it is important to remember, therefore, that they may affect (a) the non-diffusible fraction combined with protein, (b) the diffusible and easily ionized fraction, or (c) the ionized fraction. It is possible also that even when normal values for the total calcium are obtained the available calcium may be present in deficient amounts. Until simple and accurate methods are devised for estimating the available calcium in the blood its therapeutic uses cannot be placed on a satisfactory basis.

#### Indications for Calcium Therapy

**Nephritis.**—The total calcium of the serum is definitely reduced in severe nephritis.<sup>9, 10, 11</sup> In the forms with pronounced oedema there is reduction also in the serum proteins, and Salvesen and Linder suggest that the reduction in such cases affects mainly that fraction that is in combination with proteins. They showed<sup>12</sup> that the reduction in calcium and in proteins is not the result of simple dilution, but that there is a reduction in the total proteins of the plasma even after the disappearance of oedema. It is difficult to see how an increase in the serum

calcium, if it could be brought about directly, would of itself be of benefit in this form of nephritis, but a therapeutic measure that would diminish the oedema might well be of benefit to the patient, and might at the same time increase the calcium content of the serum. Blum<sup>13</sup> and his co-workers have advocated the administration of calcium chloride for this purpose, and in his findings and in those of many others it has proved to be an effective diuretic in many cases. It is certain, however, that its action is not due to a specific action of calcium and the restoration of the serum calcium to a higher level. It would appear that it acts by the change that results in the balance of ions in the body fluids. Blum maintains that by increasing the calcium ions the sodium ions are decreased, and since the retention of fluids is closely associated with the retention of sodium, the oedema is decreased. Another explanation, however, is possible. The administration of calcium chloride results in the setting free of  $\text{Cl}^-$  ions, the calcium being retained in or excreted into the intestines as carbonate. The  $\text{Cl}^-$  ions are thus able to cause an increased acidity, and, to correct for this, sodium is excreted as sodium chloride, accompanied by large amounts of water. This latter explanation is supported by the similar beneficial action of ammonium chloride on uric acid. It is, of course, conceivable that the administration of the calcium chloride has some effect from the calcium, as Blum maintains, in addition to its undoubted effect as an acid forming substance. In severe cases of azotemic nephritis the serum calcium is definitely reduced, and this is accompanied by an increase in the inorganic phosphorus of the serum. It seems probable, as de Wesselow<sup>14</sup> has pointed out, that the low calcium content is the result of retention of phosphates and the consequent disturbance in the ionic balance. If, as he suggests, the phosphate retention is directly responsible to some degree for the toxic state known as uraemia, there would be reason to administer calcium to lower the absorption of phosphates. As far as I am aware, no clearly beneficial results have been reported in this form of nephritis by the administration of calcium or by the adoption of any indirect method of raising the calcium content of the serum such as the administration of parathyroid extract.

**Tetany.**—In tetany, following the removal or severe disturbance of the parathyroid glands during the operation of thyroidectomy, the serum calcium is definitely reduced. Tetany is strictly a symptom of a more fundamental disturbance, but is a crippling condition and one dangerous to life. In post-operative tetany it is specifically due to the low calcium content of the body fluids and can be relieved by raising the calcium content. The recent work of Collip<sup>15</sup> has clearly demonstrated the importance of the parathyroid glands in maintaining the calcium at its normal level in the serum, and the administration of extracts of the parathyroid glands, besides being a rational treatment in post-operative tetany, is able to raise the calcium content of the serum and relieve the tetany. There is much evidence of an indirect nature in favour of the view that parathyroid extracts raise the serum calcium by mobilizing the calcium that is stored in the bone and tissues, and that their action does not depend upon the absorption of calcium from the digestive tract. Parrott, Stewart and Percival<sup>16</sup> have reported experimentally to seem to give direct proof of this. The oral administration of calcium salts in excess, however, can raise the level of calcium in the serum and may relieve tetany, and intravenous administration gives prompt but transient relief. In tetany and spasmodophilia accompanying rickets the serum calcium is low. The use of parathyroid extract in rickets is contraindicated, except as an emergency source of increased serum calcium is obtained by the removal of calcium from the bones, which are already deficient in it. In this condition the low calcium could appear to be due to poor absorption, either because of low calcium content of the absence of vitamin D. The low phosphorus content of the serum which is found in rickets is probably an important factor in the defective calcification of the bones. The less constant reduction in calcium in the serum by the loss of calcium salts and cod liver oil will suffice to raise the calcium in the serum to a normal level, but the measures is exposure of the patient, or of the parathyroid

food to sunlight or ultra-violet light may be all that is necessary for the proper treatment of the rickets and the relief of the spasmodic.

**Skin Diseases.**—Low values for the serum calcium have been reported in various skin diseases, such as lupus erythematosus<sup>12</sup> but there is no evidence that the deficiency of calcium is of significance in the pathology of the disease and no clear evidence that raising the calcium level influences the course of the disease.

**Chronic Infections.**—In many and various diseases associated with chronic infections, Grove and Ames<sup>13</sup> find that although the total calcium content of the serum is within physiological limits the amount of active or diffusible calcium is reduced. They further considered that the oral administration of parathyroid extracts and soluble calcium salts was beneficial in these conditions by raising the ratio of active to total calcium. The methods employed by them in their calcium estimations are open to criticism, and the reports of the therapeutic results in their clinical investigations are not convincing. Confirmation of their results is necessary before the scope of calcium therapy can be accepted as embracing the conditions enumerated by them.

**Haemorrhage.**—The administration of calcium has been advocated in many conditions in which there is no evidence of calcium deficiency. The basis for such therapies may be the attempt to obtain an exaggeration of a specific calcium effect, or to correct a disturbed ionic balance. In 1886 Wright<sup>14</sup> advocated the use of calcium chloride administered by the mouth to reduce the prolonged coagulation time seen in haemophilia. Even when the coagulation time is not unduly prolonged, an increased serum calcium has been shown by Matz<sup>15</sup> and Cantarow, Cayen, and Gordon<sup>16</sup> to be associated with a reduction in the coagulation time. Its use has been reported in many cases in which the coagulation time is prolonged, but also in others, such as purpura and pulmonary tuberculosis, in which no such prolongation is found but the results are very irregular and in view of the numerous factors present in patients and the numerous therapeutic procedures that are unavoidably employed at the same time, it is difficult to accept the evidence available as proof of the value of internal calcium therapy to control bleeding. Walters<sup>17</sup> considers that the injections of calcium chloride in the preparation for operation of patients with purpura has reduced the risk of bleeding. I have not yet seen the evidence on which his opinion is based, but it is obvious that careful observations on coagulation time and bleeding time would be of great value, and that there is sufficient ground for the view that there may be a scope for calcium therapy in the control of haemorrhage.

**Myocardial Weakness.**—In 1922 Cheimise<sup>18</sup> reported that his clinical studies suggested that calcium salts by the mouth enhanced the effects of digitalis, making them more rapid in their appearance and enabling a greater beneficial effect to be obtained before the onset of toxic effects. In 1924 Billigheimer<sup>19</sup> found that in normal persons, and in patients with heart failure, calcium chloride intravenously had in action very similar to that of digitalis but that it was more fleeting. He considered that it acts on vagal nerve endings and on the inhibitory centres in the heart. It had no effect on the tachycardia that results from atropine, but checked the acceleration following the injection of adrenaline. There is not at present sufficient evidence for the use of calcium in the treatment of myocardial weakness in patients.

**Inflammatory and other Exudates.**—It has already been mentioned that French workers notably Blum, have pointed out the powerful diuretic action of calcium chloride in nephritic oedema. Blum has shown a similar action in cardiac oedema. That ammonium chloride acts in a similar manner suggests that it is the acid properties of these salts which are responsible for their action as a diuretic, though the calcium may have an effect in the same direction by its antagonistic action to sodium. Blum<sup>20</sup> has extended his observations to inflammatory exudations, and has reported beneficial therapeutic effects in pleural and peritoneal effusions and in inflammation of the conjunctiva. It may be argued that the suppression of inflammatory reaction is not desirable,

except occasionally, when exudations have embarrassing mechanical effects, but Blum's arguments are based on clinical improvement and the disappearance of fever as well as on the absorption of exudates. Based presumably upon this action of calcium ions and of chloride ions on exudations and transudations, beneficial results of the administration of calcium chloride have been reported in such conditions as oedema of the glottis,<sup>21</sup> asthma,<sup>22</sup> oedema of the lung,<sup>23</sup> glomeruloneuritic oedema, urticaria, and Raynaud's disease. If convincing evidence can be brought forward that such beneficial actions are due to calcium, an extensive and important addition will be made to the scope of calcium therapy.

#### Methods of Administration

**Oral.**—Most writers agree that oral administration of calcium salts is inconstant in its effects, and at best produces only a moderate rise in the level of the serum calcium in healthy subjects. The normal calcium requirement for a healthy adult has been variously estimated but the consensus of opinion places it at about 1 gram of calcium oxide daily. Children of 6 to 7 years of age need 0.5 to 0.5 gram, and children of 14 should receive 0.6 to 0.9 gram daily.<sup>24</sup> Denis and Minot<sup>25</sup> found that calcium-poor diets and calcium-rich diets had little effect on the serum calcium. Matz<sup>15</sup> however found that a meal containing the equivalent of 0.917 gram of calcium oxide caused no rise in serum calcium but one containing 1.8 grams caused a rise of 1 mg. per 100 c.c.m. at the end of three hours after which it fell again and that three meals in a day containing 2.34 grams caused a rise during the day of from 1 to 2 mg. per 100 c.c.m. Matz further showed that the ingestion of cod liver oil and calcium lactate caused a greater rise than calcium lactate alone. Brauer and Ropes<sup>26</sup> studied the effect of doses of 5 grams and of 10 grams of calcium lactate by the mouth in normal subjects and found variable but definite rises in the serum calcium maximal in from one to four hours, and maintained, though diminishing, for twelve hours. The average maximal rise after 5 grams was 8 per cent above the normal, and after 10 grams 14 per cent. Jansen<sup>27</sup> found that when different calcium salts were given by the mouth in doses equivalent to 1.2 grams of Ca, a temporary rise of serum calcium was obtained with a maximum effect in two to three hours. He found the lactate to be without effect and the bicarbonate to give greater effects than the chloride. Hjort<sup>28</sup> obtained a constant rise in the serum calcium in normal dogs by the oral administration of amounts of the lactate chloride and glycerophosphate equivalent to 0.2727 gram of oxide per kilo but smaller doses of these salts and similar doses of less soluble salts were without constant effect.

It may be concluded, therefore, that the ingestion of calcium salts is able to raise the calcium content of the serum to an extent of less than 2 mg. per 100 c.c.m., but that the salts must be given in large doses of 5 to 10 grams to obtain this effect that such an effect is by no means constant and that it is maximal in about three hours and passes off in about twelve hours. Such an effect will have a therapeutic value in checking tetany when the calcium content of the serum is not excessively low, but the effect will be maintained only so long as the administration is continued. To obtain a permanent rise it will be necessary to administer parathyroid extract in addition in the case of post-operative tetany, and cod liver oil, or sunlight, or mercury vapour lamp irradiations in the case of the tetany accompanying rickets. It is not yet clear why oral administration of soluble calcium salts is without effect in some cases. Theoretical considerations point to the conditions of acidity and alkalinity of the digestive tract as likely to affect absorption and studies on this point would be of value. In the case of rickety infants the absence of vitamin D would appear likely to be the factor that interferes with absorption, even when sufficient calcium is being ingested.

If calcium should prove to be essential to the diuretic effects obtained with calcium chloride and to the effects on inflammatory exudates and local transudates then all these conditions could be treated by similar large doses administered orally.

**Intravenous**—The intravenous injection of 2 grams of calcium chloride dissolved in 50 c.c. or 100 c.c. of water can be utilized to raise the serum calcium promptly, and if given slowly no ill effects are produced. By this means the serum calcium can be raised 100 per cent, but the effect is transitory. This method is useful in controlling the severe manifestations of tetany, the convulsions, and laryngismus. Cameron<sup>4</sup> recommends the intramuscular injection of 1 gram of calcium chloride in infants with laryngismus.

**Indirect**—The indirect methods of influencing the calcium in the body are of perhaps greater practical importance than the direct administration of its salts. The influence on its absorption of cod-liver oil, mercury vapour lamp irradiations, sunlight, and the retention of the contents of the digestive tract have already been referred to. The recent work of Collip<sup>13</sup> on the parathyroid glands, and the elaboration by him of an extract that is constant in its action in normal dogs and capable of standardization, has opened up new methods of approach. This extract is prepared by Lilly and Company under the name of parathormone, and must be administered by injection. Stewart and Percival<sup>14</sup> find that it increases the ratio of diffusible to total calcium as well as raising the total serum calcium. Collip and others have studied its action in post-operative tetany, and Hunter and Aub<sup>22</sup> have reported its successful use in lead poisoning. Reports have been published of its use in one case of severe nephritis<sup>23</sup> and of its failure to influence definitely the course of pulmonary tuberculosis,<sup>24</sup> but there is no clear evidence as to its therapeutic value in these conditions. In spasmophilia, and in tetany accompanying rickets, it is theoretically contraindicated, except as an emergency.

I hope that this discussion will throw some light on the part that calcium plays in the effect of calcium chloride on oedema and on inflammatory exudates, that it will explain the inconstant effects of the oral administration, and that it will enlarge the field of calcium therapy. At present it appears that, apart from the actions of calcium chloride, which are possibly due to the chloride rather than the calcium, the field of usefulness is restricted to the treatment of tetany and deficient calcification of bone, and that even in these conditions other therapeutic measures are necessary in addition to obtain a satisfactory calcium effect. The uses of calcium salts in external applications, and of the less soluble calcium salts as antacids and astringents in dyspepsia, need no discussion.

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## II—THE EFFECT OF CALCIUM IN CHILDREN

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If the title of this discussion, "The therapeutic uses of calcium salts," means its limitation to a discussion of the role of calcium in those instances in which calcium salts are given medicinally, I have nothing to add to it, because my experience of these drugs is limited almost entirely

to their exhibition during the acute stages of infant tetany. I am therefore greatly relieved that the speaker has taken the wider view and has considered the variations in disease of the available calcium in the blood and how this can be increased in those instances in which it is lower than normal. With one modification I entirely agree with Professor Fraser's penultimate remark—for example, the field of usefulness of calcium salts is restricted to the treatment of tetany and deficient calcification of bone, and that even in these conditions other therapeutic measures are essential to obtain a satisfactory calcium effect. I do not think it is necessary to give calcium salts medicinally in order to produce calcification of bone, because if the diet of a young child be efficient it will contain sufficient calcium to supply the body requirements if only the absorption be normal. Thus estimations of the calcium in the diet in a series of 82 infants showed that the mean of calcium oxide intake varied from 2.36 to 0.43 grm, with an average of 1.129—a figure considerably in advance of that suggested by Professor Fraser as the normal calcium requirement. My remarks will be entirely confined to the problem of the calcium effect in children and the methods by which this can be produced. In dealing with the question of absorption of calcium I propose giving the results of some observations which may throw a certain amount of light on the cause of the inconstant effects of the oral administration of calcium salts.

Professor Fraser refers to the action of calcium chloride being possibly due to the chloride rather than to the calcium, a view strongly held by Gamble and his colleagues, and supported by the well known therapeutic fact that ammonium chloride—which also acts by virtue of its chlorine radicle—and hydrochloric acid will cause a temporary improvement in infantile tetany by producing a rise in the blood calcium. These drugs will also increase the blood calcium in low calcium rickets, but Ross and Seriver have shown that this result is due to a mobilization of calcium from the bones, and therefore the cure of rickets by this means is impossible. The most recent work on this subject is that by Drucker, who has shown that in therapeutic doses ammonium chloride usually causes an uncompensated acidosis, both in normal children and in those suffering from tetany, whereas calcium chloride usually gives rise to a compensated acidosis. Ammonium chloride, therefore, has the stronger acid effect on the blood, but, on the other hand, calcium chloride causes a larger rise in the amount of blood calcium when this is decreased, as in tetany. The effect of ammonium chloride in infantile tetany depends on an increase in calcium ions because the blood is rendered more acid, but that of calcium chloride is more lasting, and due chiefly to an increase in the number of calcium ions resulting from an increase in the previously low total calcium. It would therefore appear that the effect of calcium chloride in tetany is due both to the chloride and to the calcium.

It has also been pointed out by Professor Fraser that the calcium of the serum is partly diffusible and partly non-diffusible, that the diffusible calcium is the part for which the ionized fraction is derived, and that it is the latter which produces the specific calcium effects. If the calcium which produces the specific calcium effects is diminished tetany will occur. According to Drucker the calcium ion concentration in normal children, calculated on the Rona-Takahashi equation, is from 3.4 to 2.1 mg. per cent, with an average of 2.6 mg. per cent. The diffusible calcium, as estimated by the method of ultra-filtration through colloidal selenium, is at a negative pressure of 150 mm. of mercury, is about 50 to 60 per cent of the total calcium of the serum, but an attempt to estimate the diffusible calcium in my cases, using a pressure of this amount and filtration for four hours, has given figures almost identical with those given by Drucker for ion calcium, and previous to the publication of his results I had come to the conclusion that in tetany the ultra filtrate would be less than 2.5 mg. and usually under 2.2 mg. per cent.

Spasmophilic manifestations may, however, occur in certain circumstances with an undiminished blood calcium, indeed, some authorities have reported that the blood calcium when the blood calcium was higher than normal. But stenosis of infants furnishes some of the best examples of

the condition. Anyone who is familiar with this disease must have seen cases in which convulsions have occurred and recurred and eventually proved fatal, or in which—particularly shortly after the Rammstedt operation—the child showed periods of apnoea and arrested breathing followed by a period during which deeper breathing occurred and convulsions appeared, and after several such attacks the child was succumbed. This condition is one of all also is resulting from repeated vomiting and high intestinal obstruction with the consequent loss of chlorine ions. As a result of this alkalosis although the calcium in the serum is normal or higher than normal the ionic calcium is diminished. On the other hand in severe azotemic nephritis in which the serum calcium may be low, tetany may not occur because there is present an acidosis, which results in more of the calcium being ionized.

The therapeutic problem, therefore, becomes chiefly one of maintaining the ionic calcium at such a level (in small children over 2.2 mg. per cent.) that the specific effects of low calcium do not occur. Before considering how this can be accomplished I would like to refer to one or two other points in connection with calcium concentration in nephritis and in coeliac disease. Professor Fraser has referred to the diminution of serum calcium in severe azotemic nephritis and accepted the view that this is the result of phosphate retention. Experimentally the injection of phosphates into animal and children has been found to produce this effect, and also to produce tetany. Professor Fraser has suggested the possibility of administering calcium to lower the absorption of phosphate, but I doubt whether this would have any effect because of the inability of this type of kidney properly to secrete phosphate. In renal infantilism—that is, infantilism associated with severe chronic interstitial nephritis—although the blood calcium is relatively low when compared with phosphorus yet not infrequently a combination of high blood phosphorus with a normal or even higher than normal blood calcium is found. Such a combination however is associated with severe bone change—the so-called renal rickets. It would appear therefore, that any attempt to maintain a high blood calcium in adults suffering from severe azotemic nephritis by such methods as the administration of parathyroid hormone would produce an osteoporosis. It is true that tetany may not occur in severe azotemic nephritis because of the presence of an acidosis favouring increased ionization of the calcium, but young children are apparently more sensitive than adults to diminution in ionic calcium, and probably therefore to prevent tetany they raise their serum calcium to a higher level than the adult by drawing on their calcium reservoirs. They do not always seem to do this, however, with the result that tetany is not an uncommon complication of this form of nephritis as a temporary method of curing tetany in such cases parathyroid hormone might be helpful, but I have not had any personal experience of its use.

In coeliac disease the serum calcium and ionic calcium are low as also is the serum phosphorus. If the disease be severe and of long duration rickets and tetany occur as complications and can be cured by methods that increase the absorption of calcium and phosphorus.

Now what are the factors concerned in the absorption of calcium from the alimentary tract, and how can absorption be increased?

It has been shown that while excessive amounts of calcium in the diet tend to increase the total absorption and retention of calcium yet they impair phosphorus retention and vice versa and that the retention of one element in the intestine by an excessive amount of the other is best explained by the formation of insoluble phosphate of calcium. To obtain the maximum absorption of both elements—a necessary desideratum in infants and young children—the diet should contain amounts of calcium and phosphorus sufficient in quantity and properly balanced. The percentage of calcium in the diet should be greater than the percentage of phosphorus. In children one pint of milk daily will meet both these requirements.

Another factor in the absorption and retention of calcium is the presence of fat in the dietary and its normal absorption from the intestine. The presence of large quantities of unabsorbed fat in the intestine may lead to a negative calcium balance, thus in a case of infantile biliary cirrhosis,

in which owing to the exclusion of bile from the intestine, fat absorption was poor, a negative calcium balance was found, and in coeliac disease, a condition in which the fat absorption is very defective, a negative or low calcium retention is found. In precisely the same way a child fed on a low fat dietary may show a negative calcium balance. Thus an infant who ate diet—a milk mixture containing 2 per cent of fat—contained 0.44 gram of calcium oxide a day showed a percentage absorption of 34, but when fed on a mixture containing 0.8 per cent of fat for seventeen days showed a negative calcium balance, although the daily calcium intake was more than twice as much as in the previous diet. We have found that in infants showing a normal fat absorption the fat intake must be from 2 to 10 grams per kilo of body weight to ensure the absorption of 0.1 gram of calcium oxide per kilo of body weight. This effect of fat on the absorption of calcium is due to the presence of the fat-soluble vitamin D.

Telfer has produced evidence showing that the absorption of calcium only occurs in the upper part of the intestinal tract. The solution of the calcium salts in the food is affected by the acid of the gastric juice, and absorption proceeds until the acid mixture of lime and phosphoric acid is rendered alkaline by the intestinal secretions when calcium phosphate is precipitated in insoluble form. It has therefore been suggested that an increased acidity in the upper part of the intestinal canal would increase the absorption of calcium. Such is however not entirely borne out by my observations, thus in the case of biliary cirrhosis already quoted in spite of the presence of large amounts of free acid in the bowel the calcium balance was a negative one, and in another example of this condition the calcium absorption was very small although incidentally in both cases the absorption of phosphorus was greatly increased.

Observations have also been carried out in a number of atrophic infants fed on varying diets, some being fed on acid milk. The average calcium absorption of fourteen infants fed on lactic acid milk was considerably less than in a group of thirty-one infants fed on ordinary cow's milk mixture. This may in part be due to the fact that children fed on lactic acid milk excrete more fat than those fed on the ordinary mixtures. Four children fed on hydrochloric acid milk (that is, milk prepared by adding 1 oz. of decinormal hydrochloric acid to 4 oz. of milk) however showed a higher absorption of calcium, and although there was a marked increase in the amount of calcium excreted in the urine the actual calcium retention was definitely higher than in children fed on cow's milk. On the other hand Wills, Sanderson and Paterson found that in two children a positive calcium balance on cow's milk dietary was converted into a negative one by changing their diet to hydrochloric acid milk. Finally a group of six infants fed on almara, a food which has a buffer value similar to that of breast milk, showed the highest calcium absorption of all the children examined.

Zucker and Matzner found that rats kept on a high calcium low phosphorus rickets-producing dietary developed marked rickets alkalinity. It has been shown by Jephcott and Bacharach that in such animals the faecal pH can be reduced to the acid side of neutrality by means of cod-liver oil irradiated cholesterol or irradiation, and that the alkalinity can be prevented by irradiation. Indeed, they have recommended this change in pH as a test for the presence of vitamin D. It would appear then that it is not the increased acidity *per se* which is so important in the absorption of calcium as the occurrence of vitamin D, which by its presence leads to increased acidity in the intestinal tract.

The absorption of calcium from the intestinal tract is increased by giving by the mouth substances rich in vitamin D, such as cod-liver oil irradiated cholesterol irradiated ergosterol or by exposure to sunlight and ultra-violet irradiation.

The problem of how to increase calcium absorption in coeliac disease is complicated by the difficulty in absorption of fats in this disorder and because for its efficient treatment it is necessary to give a very low fat dietary for a long period of time. Actually when the fat in the diet is kept very low indeed the percentage absorption is



the second lobe was removed later. She went back to South Africa by herself. She now camps out, rides on horseback, and manages her household affairs.

One further aspect remains to be spoken of—namely, mental disorder. This complication is not common, but, taking a large number of cases, it is not infrequent. Some patients have suddenly become maniacal and died. I have had to decide what course to follow in patients who were gradually getting worse and who were approaching, or had reached, a stage when they could not be managed in their own homes. I have never operated upon these patients without the fullest consultation, and without the relatives appreciating all that is at stake, and sometimes a patient is too ill to justify operation. It is wise to have the help of a specialist in mental disorders before a decision is arrived at. Only one of these patients has not improved, the others have, after operation, returned to their ordinary way of living. One of them has married since, and one of the worst was driving her own car round London within eight weeks of her second operation.

The degree of recovery in these cases, and in the majority of cases, appears to be very high, and yet I think we must believe that in Graves's disease the secretion is not normal secretion, and when we reduce its amount by four-fifths we are not leaving a patient with an output of secretion normal in amount and quality, and therefore the end-results are not strictly comparable with those obtained after removal of a diseased appendix.

**Anorexia, with Emaciation.**—Now the other side of the picture. I have had three patients who have suffered from extreme anorexia—an unusual symptom in Graves's disease—associated with great wasting. The emaciation, as you know, is frequent, the anorexia is not, and I cannot help thinking that some factor with which we are not familiar is present. Of these three, one recovered after operation, one is just about holding her own, and one died some months subsequently.

Patients who have suffered severely from exophthalmic goitre never become normal as they were before the disease occurred, but they are a great deal nearer normal than if they had not been operated upon, and almost all of them can take up their work and enjoy life in the world once more.

I would ask you to bear in mind two points. We must visualize a heart and nervous system flooded with toxic secretion, sometimes continued for years. If that toxic secretion is suddenly reduced by four-fifths, the organs quickly show relief—often, indeed, dramatically—but it is unreasonable to expect that their complete recovery (their capacity to stand up to strain) should be other than gradual, and may never be quite complete. My second point is, that as soon as a sufficient operation is performed the patient feels a different woman, and is on an up grade all the time. She is conscious of this herself, and it is obvious to her friends.

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## II—INDICATIONS FOR SURGICAL TREATMENT IN TOXIC GOITRE

BY

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It is important to regard the surgical treatment of toxic goitre from three points of view. When the question of an operation is under consideration it is advisable to take the opinion of the physician, the surgeon, and of the anaesthetist, if possible in consultation, in deciding whether medical treatment should be given. "Toxic goitre" treatment be adopted forthwith. The term "toxic goitre" includes all forms of goitre which give rise to general symptoms, as distinct from those in the neighbouring structures. These general or toxic symptoms are due either to

hyperthyroidism or to dysthyroidism—in other words they are the result of the passage from the goitre into the blood either of an excessive amount of normal thyroid secretion or of an altered secretion.

As the relative importance of changes in the quantity, as compared with those in the quality of thyroid secretion in the production of thyrotoxicosis is still open to discussion, the term "hyperthyroidism" will be used simply to indicate overactivity of thyroid secretion in whatever form it may ultimately be proved to occur.

In considering the indications for surgical treatment in this group of maladies we require some form of classification. Mr. Dunhill has given us a valuable lead in this respect from the surgical aspect. I find that rather a different arrangement is more convenient from the medical point of view, as the physician sees only and mild toxic of toxic goitre, in which the question of operation does not arise. A physician is apt to feel that all cases of toxic goitre ought to be amenable to medical treatment—indeed, we hope in the future they will be—and so is liable to look upon the necessity for surgical treatment as a confession of failure. There are, however, certain forms and stages of toxic goitre in which an operation at present affords the only means of cure or relief of the malady.

## CLASSIFICATION

I find the following classification is useful for practical purposes, but it must be clearly understood that there is no sharp line dividing the different groups, as intermediate cases occur.

In the first place it is advisable to divide all forms of toxic goitre into (a) primary, and (b) secondary groups. In the primary group may be placed all cases in which the onset of the toxic symptoms either precedes or coincides with the appearance of the goitre. In the secondary group the toxic symptoms only develop after a goitre of one kind or another, has been present for several years without causing ill health. It is in this secondary group that surgical treatment is most frequently required. There are two forms of primary toxic goitre: (1) simple hyperthyroidism (thyrotoxicosis), (2) exophthalmic goitre. There are three forms of secondary toxic goitre, which may be conveniently called: (3) simple secondary hyperthyroidism (thyrotoxicosis), (4) toxic adenoma, (5) secondary exophthalmic goitre. I shall now endeavour to describe briefly these five forms of toxic goitre, with special reference to the indications for surgical treatment in each of them. Brief details of a few cases will be given as examples.

## PRIMARY TOXIC GOITRE

## 1. Simple Primary Hyperthyroidism or Thyrotoxicosis

In this condition the thyroid gland is enlarged to slight or moderate degree. In some rare cases the toxic symptoms precede any palpable enlargement of the gland. The pulse rate at rest is increased to 90, 100, or more, and is easily accelerated by exertion or emotion. The mind is alert, and the hands tremble when extended. The skin is warm and moist, there is loss of weight, and gastric and intestinal symptoms may be present. The basal metabolic rate may be increased by as much as 50 per cent. The form of toxic goitre corresponds to the "formes frustes" of the French writers, and may be illustrated by the following case.

Miss R., aged 26, complains of palpitation on exertion and with occasional vomiting, perspiration, and nervousness. There is a uniform goitre of moderate size but no pressure. Pulse 100 to 104, no cardiac murmur, fine tremor, no exophthalmos. Medical treatment advised.

These patients are not seriously ill, they are not amenable to medical treatment, and so are referred to a surgeon. Occasionally a patient gets progressively worse, the pulse rate increases to 120 or more, the goitre enlarges and may begin to fibrillate, there is great weight loss, and severe gastro-intestinal symptoms are superadded. In these circumstances, even when the thyroid is not even palpably enlarged, an operation should be carried out without delay. It is not sufficient to say that serious thyrotoxicosis may occur and cure itself, while external examination fails to reveal any enlargement.

of the gland, the true nature of the malady only being revealed by the microscopical examination of the gland after death.

## 2 Primary Exophthalmic Goitre

In mild and moderately severe exophthalmic goitre medical treatment alone suffices in the majority of cases and should be given a fair trial for at least six months before it is abandoned in favour of an operation.

In a series of cases of exophthalmic goitre of all grades of severity under my care at the Manchester Royal Infirmary a thyroidectomy was performed in one-twelfth, as medical treatment had failed. In a few cases owing to the urgent necessity of earning a living or of removing some remote part of the world an immediate operation has been advised which in other circumstances would have been postponed. In some cases this course has proved successful in every way but there is a greater risk of death, which might have been averted if time and circumstances had allowed for prolonged medical treatment.

In a large majority of cases of Graves's disease the enlargement of the thyroid is only slight or moderate, and there are no pressure signs. In a few cases, however, the goitre is larger than usual. In these medical treatment is apt to fail so that even if pressure signs are entirely absent an early and extensive thyroidectomy is advisable. In all cases in which no decided improvement has taken place during six months of medical treatment the advisability of surgical treatment should be fully considered. In the physician and surgeon in co-operation. In selecting a surgeon it must be realized that special experience and capacity are just as important in a thyroidectomy as in a parathyroidectomy or in any larvageal operation.

One of the chief dangers to life in prolonged cases of exophthalmic goitre is due to the development of thyrotoxic myocarditis so that in cases in which medical treatment fails to prevent the onset of early signs of cardiac failure an operation should not be delayed. In the past an operation has frequently been considered too hazardous an enterprise to be undertaken in these cases but thanks to the work of Professor Frazer and Mr. Dunhill, we now know that signs of myocardial failure, such as auricular fibrillation and oedema of the legs are not a bar to operation but rather an indication that it should be carried out as soon as the patient has been prepared by medical treatment so as to minimize the risk of it as far as possible. In the case, as in all forms of thyrotoxic myocarditis it is important to realize the danger of delay as it is not fair to the surgeon to wait until the signs of cardiac failure are advanced before asking him to see the case with a view to operation.

Briefly the advantages of operation in primary Graves's disease are: (1) The saving of time owing to the prompt reduction of the thyrotoxicosis and immediate relief of symptoms. (2) The complete recovery in some cases and marked improvement in others. (3) The diminution of the risk of the development of chronic myocarditis.

The disadvantages are: (1) The risk to life. (2) The uncertainty of the ultimate result of the operation owing to the difficulty in determining the right amount of the gland which should be removed in each case. (3) The tendency to recurrence within a year or two with the necessity for further medical or surgical treatment.

The following case illustrates recovery after operation.

Miss M. aged 27 seen February 14th 1921. Eighteen months duration. Physical signs: Moderate uniform goitre; pulse 150 enlarged heart; exophthalmos; tremors. As this patient was very anxious to accompany her husband who was going to live in China at an altitude of some 7000 feet above sea level and was about to visit relatives in Minnesota I advised her to go to the Mayo Clinic for an operation. In the following June Dr. V. C. Hunt ligatured both the thyroid arteries. This was followed in September or a double lobectomy of the gland with removal of the isthmus. She was able to proceed to Japan in November and the first report received from her there stated that she was perfectly well.

The following case illustrates the tendency to recurrence after operation.

Miss L. A. a severe case of primary exophthalmic goitre in which the symptoms had developed acutely after a trying visit to a dental surgeon. First and medical treatment failed to relieve her. On two occasions a partial thyroidectomy was carried out by Sir Victor Horsley with benefit but when I saw her again

after an interval of ten years the symptoms were still well marked. They then subsided under x-ray treatment.

Mr. E. B. aged 41. Symptoms of exophthalmic goitre first developed in 1923. In 1914 a partial thyroidectomy was performed by Mr. Kelly of Liverpool. Improvement followed so that he was able to follow his occupation for the next ten years. When seen for the first time in 1925 the right lobe of the thyroid was absent and the left lobe had increased in size during the previous twelve months. Pulse 140 to 160 with marked exophthalmos; tremors; pigmentation of the skin; glycosuria.

## SECONDARY TOXIC GOITRE

### 3 Secondary Simple Hyperthyroidism or Thyrotoxicosis

In this group may be placed cases in which a simple colloid or parenchymatous goitre of several years' duration becomes toxic. This complication may arise, either gradually or rapidly, as a result of some emotional strain or for no apparent reason, long after the goitre first appeared. The symptoms are the same as in the primary form. The following are illustrative cases.

Miss P. aged 33 teacher. Duration of goitre long but uncertain as the neck had always been full. A definite swelling had appeared during the last month. For a year he had found her work too hard for her. She had vomited several times and had lost weight. Physical signs: Moderate uniform goitre with thrill and bruit; pulse 120; heart apex beat in left nipple line; systolic murmur at apex and over pulmonary area; slight ectatic widening of palpebral fissures and pigmentation of eyelids but no exophthalmos. Medical treatment advised.

Miss R. aged 35 teacher. Seen June 1st 1927. A goitre had been present for at least twenty-three years. She had recently lost her father, mother and brother. Six months ago she suffered from erythema nodosum. For the last five months he had had palpitation and tremors with sickness and diarrhoea at times. Physical signs: There is a uniform soft goitre of moderate size; the circumference of the neck being 16 in. pulse 140; systolic blood pressure 150 mm. diastolic blood pressure 100 mm. tremors moist skin and some loss of hair; increased frequency of defaecation; menses irregular. Medical treatment advised.

In these cases medical treatment may in the absence of urgent symptoms, be given a fair trial. The results are not so good as in primary hyperthyroidism, but the toxic symptoms may subside, although the goitre will persist even if it is reduced in size. If there are no marked results from medical treatment in three months a thyroidectomy should be advised.

### 4 Toxic Adenoma

The term "toxic adenoma" has been used with a varying significance by different authors. Some include the group which I have just described but it seems best to restrict the name to those cases in which a nodular goitre—that is to say, an adenomatous or adenoparenchymatous goitre which may be cystic—has been present for some time even many years before the toxic symptoms appeared. The cardiovascular symptoms are often prominent in these cases though wasting nervousness, tremors and gastro-intestinal symptoms may also be severe. The following are records of cases in this group.

Miss H. aged 41 seen January 3rd 1926. A goitre had been present for eight years. She had not been well since an attack of diphtheria after which she lost 2 st in weight. The right lobe of the thyroid was moderately enlarged and firm in consistency but there were no pressure signs. Pulse 124; systolic blood pressure 105 mm. heart apex beat in left nipple line. Nervousness and tremors were present but there were no eye signs. Menses regular. At operation on February 2nd 1926 Mr. Burges removed a large deeply buried adenoma of the right lobe. On examination by Dr. Lovdahl this showed the structure of a fibro-adenomatous goitre. In one part there was an atrophic condition with fibrosis and haemorrhage and in others marked adenomatous proliferation of the acini and some mucoid degeneration. Here and there an acinus was seen with columnar cell formation. On June 15th 1927 Dr. Leather reported that the patient was very well. When last examined early in the year the pulse was 70 to 80 never exceeding the latter; he was much less nervous and there were no tremors. She had gained 2 st in weight and the hair had begun to grow again.

Mr. H. aged 40 seen February 11th 1926. There probably had been some enlargement of the thyroid gland in childhood but during the last five years the left lobe had been definitely enlarged. For several years she had felt tired by mid-day. She had suffered from bronchitis and had been worried by her business. Recently she had a course of treatment during which she took one particle of Crookes's colloidal iodine 1 per cent. thrice daily and she had three doses of x-ray. On late she had lost weight the pulse frequency had increased and tremors were present. There was a uniform goitre with a small central adenoma. There were no pressure signs or eye signs. Pulse 130 to 140 irregular owing to auricular fibrillation; heart apex beat in left nipple line. Defaecation four or five times a day. Operation was advised after a preliminary course of digitalis. About

a fortnight later the left lobe and isthmus of the thyroid were removed by Dr. Craig of Kendal, ether being given by the rectum. The patient made an excellent recovery, and Dr. Craig recently informed me that she had gained 5 st in weight, the pulse was regular and not more than 88 even after a hard day at business. The tremors and nervous symptoms had entirely disappeared. She still finds that she cannot hurry or climb hills without some dyspnoea, but this is the only symptom left of the severe thyrotoxic myocarditis which was present when I saw her before the operation.

In the following case medical treatment was adopted, as the patient had a young family, and did not wish to run the risk of an operation.

Mrs. X had had a goitre for fourteen years. She complained of feeling tired at times of loss of weight, throbbing in the neck, and of palpitation, especially during the last three months. There was a moderate uniform enlargement of both lobes of the thyroid with a small central adenoma the size of a cherry. Pulse 120, heart apex beat in left nipple line. Tremors were present.

In cases of true toxic adenoma operative treatment is advisable as soon as the symptoms become moderately severe, as medical treatment is of little permanent value. In a few cases in which operation has been declined or postponed and medical treatment has been continued some diminution of the toxic symptoms has followed x-ray and medicinal treatment, although there has been no diminution in the size of the goitre, but such improvement is apt to be of short duration.

### 5 Secondary Exophthalmic Goitre

A convenient group is formed by all the cases in which the goitre has been present for several years before the onset of Graves's disease. In order to give further subdivision these cases may be grouped together whatever the character of the pre-existing goitre. In these cases exophthalmos and the other characteristic symptoms of Graves's disease are present. Secondary exophthalmic goitre is not common in this country; in a series of 300 cases seen by me in private practice only twelve were secondary. It is not so amenable to medical treatment as the primary form of the malady. In the majority of the cases, especially when the goitre is either large or nodular, an operation should be advised as soon as the symptoms are well marked. If this cannot be carried out medical treatment must perforce be continued, but the results are disappointing and myocardial changes are only too prone to progress to complete myxedema or to a fatal termination.

Mrs. H., aged 57, first noticed that she had a goitre twenty years ago, this diminished in size after the application of iodine paint. Three years ago she began to feel tired and suffered from palpitation and insomnia. The weight decreased from 9 st 3 lb to 7 st. There was a cystic and nodular goitre. Pulse 140, slightly irregular, blood pressure 160/100, heart apex beat heaving, external to nipple line, left lobe murmurs, slight exophthalmos, tremors. A suitable case for operation.

There is one special form of goitre in which, though it is truly toxic, the symptoms are not due to hyperthyroidism. I refer to the septic goitre in which an adenoma or cyst becomes infected and gives rise to a general toxæmia. I have recorded such a case in which infection of an old cystic goitre by *Ale. colon bacillus* caused an intense toxæmia, which promptly subsided when the pus and gas were removed. The treatment of these cases is purely surgical.

There is no doubt that in some cases of toxic goitre focal sepsis plays a part in starting or in aggravating the thyrotoxicosis, either by way of a subinfection or a toxæmia. In my own experience the frequency and importance of focal sepsis has not been nearly so great as has been stated by some writers. In every case, however, a careful search must be made, and if a septic focus is found it must be dealt with by surgical means appropriate to its situation.

The type of operation and the choice of the anæsthetic must, of course, be left to the discretion of the surgeon and the anæsthetist. When surgical treatment has been selected the physician wishes as much of the abnormal gland to be removed as will ensure early improvement and, if possible, cure without recurrence, enough of the gland being left to prevent the onset of post-operative myxedema. It is thus no light task we ask the surgeon to perform, but when the ideal result is obtained we are all the more

grateful for what he has done for our patient. From the medical point of view a subtotal thyroidectomy, in which seven-eighths of the goitre are removed at once, appears to be the most desirable procedure in the majority of cases. After the modern methods of preparation of the patient in which medical treatment plays such an important part, preliminary ligation of the thyroid arteries and piecemeal operations should seldom be necessary. Finally it must be remembered that, in some cases, although marked improvement follows the operation, the patient is still far from being well and may still require medical treatment for a considerable period before recovery takes place.

### Discussion

Mr. C. THURSTON HOLLAND (Liverpool) related the case of a deeply grounded, wasted, vomiting woman, to whom operation had been refused by a surgeon, x-rays cured her. He believed many patients treated by surgery could have been benefited by x-rays. They should always be used in early cases, and in advanced cases astonishing results occurred. The mortality was nil. Trix burns and telangiectases should never be caused. He did not think myxœdema resulted from the use of x-rays.

Professor R. E. KELLY (Liverpool) pleaded for intratracheal anæsthesia. An x-ray photograph, to show the position of the trachea, was useful. Warming the ether vapour was unnecessary, though moistening was advantageous. Toxic adenomatous patients were very susceptible to morphine. Iodine should be given for one week before operation upon true exophthalmic goitre. Though the early case with symmetrical enlargement was much improved by iodine administration, the patient with adenoma and hyperthyroidism did not respond to anything like the same extent.

Dr. JOHN EASON (Edinburgh) stressed the importance of primary exophthalmic goitre. Death, in the vast majority of cases, was remote. Early operation restored a patient to normal function and stopped the deterioration of important organs. He thought operation probably raised the general death rate, when, however, deterioration of important organs had set in, operation should be considered. He desired evidence of early operative mortality. Most young people with exophthalmic goitre adjusted themselves to ordinary life activities. He regarded the general policy of operation as wrong, to justify surgical intervention the risk of deterioration must be obvious or medical treatment be unobtainable.

Sir W. DE COURCY WIFFLER (Dublin) said that in estimating the effects of various treatments it was necessary to remember that the disease was one of cycles, normal improvement during one of the cycles could be hastened by x-rays and the administration of iodine. Recurrence of crises, he believed, could only be certainly prevented by a thorough surgical operation. Of 80 patients, all of whom were definitely toxic, every one had had medical treatment with or without x-rays, for months or years before seeking surgical help because the cures were of a transitory nature. Iodine was very potent generally in bringing about temporary improvement. He thought that the cure of adenomatous goitres of women were made toxic by the administration of iodine, and the effect upon the cardiovascular system was often disastrous. The effect of iodine in true goitres was admirable and dramatic in about half the cases. In about one-third some improvement was noticed and in the rest there was no obvious effect. He had seen a patient with Graves's disease become very much improved with iodine. The mortality of operation in early cases was almost nil. He employed rectal anæsthesia combined with a local anæsthetic, a few patients had had general anæsthesia only.

Mr. JOHN MORLEY (Manchester) said that surgery and x-rays alone had no effect upon true primary toxic goitre, the former brought about a much more rapid improvement than x-ray treatment. The mortality had been lowered very much of late years, and Lugol's solution

had helped a great deal. The operation should be performed seven to fourteen days after the institution of iodine therapy, seven eighths of the gland should be removed. Preliminary ligaturing of the arteries had not proved satisfactory and therefore the whole operation should be performed at one sitting. A ray was apt to leave cardiac disturbance unaffected.

Mr A. I. WALTON (London) stated that advanced colloid goitre, if it persisted to middle life changed to diffuse adenomatous goitre. This kind of goitre rarely gave rise to exophthalmic symptoms. The exophthalmic goitre was vascular in type in young people and nervous in type in older women about the menopause. Operation often failed to relieve this second group. He believed the medical mortality to be pretty considerable. A ray had no effect at all upon the disease in his experience though they performed wonders in carcinoma of the thyroid. He had never seen fibrosis of the thyroid after exposure to x rays. Lugol's solution was excellent as a preliminary drug.

Dr L. A. ROWDEN (Leeds) said that in twenty years only seven cases of toxic goitre had been operated upon at Leeds. All the other cases had been referred to the radiographer as the surgeons in this town regarded x ray treatment as the method of choice. If the full effect were to be obtained by this means it was necessary to give such doses that the skin was bound to be damaged. He had had experience of 550 patients. Severe cases recent cases, cases with high basal metabolic rate and cases with small glands did best. He strongly advocated x ray treatment.

Dr F. N. C. STARR (Toronto) said that he had consulted his records for 1926, and with his assistants he had continued during that year 253 benign cases often according to Mr Holland. He had given up advising x rays or radium treatment, which did no good in the adenomas whether hyperplastic or simple and was dangerous in the diffuse hyperplasia. In ten cases treated some years previously the two latest patients had succumbed within a few hours after the first x ray treatment. With really ill patients the cure was so long delayed that it was not worth while subjecting them to the misery of six months' to a year's treatment when a few weeks would accomplish what x rays failed to do. Dr Starr thought that the goitre problem was changing at least on his side of the Atlantic. Twenty years ago in Toronto there were many non-toxic cases and an occasional case of Graves' disease. Now however the tables were turned. Last year out of 253 cases operated upon 27 only were non-toxic, and 10 were of the diffuse colloid type with hyperplasia, or pre-ent colloid adenoma with a small amount of diffuse hyperplasia. 52 were definite hyperplastic adenomas while 119 were diffuse hyperplasia. Finally, 54 cases which so far as he knew, seemed to be local were of the diffuse hyperplastic goitre variety with hyperplastic adenomas as well. These latter always aroused great concern, but after operation the result was spectacular, provided that judgement did not fail and an operation was performed at the psychological moment. A preliminary rest treatment in the hospital was greatly to be preferred to rest at home because often the entire cure was lost by the journey to the hospital. In addition a minimum of two quarts of water together with overfeeding and the use of Lugol's solution hastened the improvement. Often when a patient was apprehensive if she could be placed in a two-bed room or in a large ward next to a patient who was convalescing after a very serious illness she would improve more rapidly as the patient who was recovering talked about the great benefits obtained.

Mr C. H. JOEL (London) said there were many patients with adenomatous glands and only slight toxic symptoms and this had been included in many statistics so that confusion had resulted. True exophthalmic goitre showed severe metabolic and nervous disturbances. Symptoms rose and fell in severity in a highly variable and apparently capricious fashion. In the toxic adenoma they were constantly progressive and involved the cardio-vascular apparatus far more than any other systems. He had

never seen true exophthalmos in toxic adenomatous case. Iodine had a good effect on both groups. Surgery was indicated in most patients arising from exophthalmic goitre, but shrewd judgement was required in deciding how much gland to remove, and this was often taken away. In toxic adenoma less need be removed. The mortality was less in toxic adenomas than in exophthalmic goitre. He had treated 57 per cent of his own cases and in general the results were good.

Mr DENNIS in reply said that surgical opinion was gradually becoming crystallized as to the place surgery should take in the treatment of toxic goitre. He did not advocate operation in early cases.

## THE THERAPEUTIC USES OF CALCIUM SALTS

### I.—THE PART PLAYED BY CALCIUM IN THE LIVING ORGANISM\*

—BY

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AN understanding of the indications for the administration of calcium in the treatment of disease and of diseased persons is complicated by the fact that this substance is always present in the body. Further it is present in the blood in amounts that are remarkably constant. The serum in health contains about 10 mg. per 100 c.c.m. Variations of from 9 to 12 mg. have been recorded by various workers, but some investigators obtain more constant figures. A serum content so constant as this points to the presence of some mechanism that maintains a balance between absorption and elimination and deposition which must be taken into account in rational calcium therapy. Further this constancy in the calcium content of the serum in health suggests that it plays an important part in the life of the individual and the relation of the body to its environment.

The source of the body calcium is the calcium in the food ingested. Only a small proportion of the ingested calcium is absorbed most of it being passed from the body in the faeces. The greater part of the absorbed calcium is excreted back into the digestive tract and eliminated with the faeces but a small fraction is eliminated in the urine. During childhood considerably more is absorbed than is eliminated since much is retained for the proper construction of the bony skeleton.

Our knowledge of the functions of calcium in the living organism is vague, and probably is scanty at present. Certain facts are however well established. It enters into the mechanism of the clotting of blood and is essential to this mechanism. A low content of calcium in the serum is associated with a disturbance of the neuromuscular apparatus so that the electrical excitability is increased and tetany may result. It appears to be essential to the proper contraction of heart muscle since the perfused heart ceases to beat sooner if calcium salts are absent from the perfusion fluid, and beating recommences on the addition to the fluid of a soluble calcium salt. It is an essential constituent of bone.

In addition to these specific functions it plays an important part in the balance of ions in the tissues and fluids of the body. Undoubtedly this ionic balance enters into all of these functional activities that have been specified and disturbances of this balance occur in the abnormal states in which these functions are impaired. It is probable that in many more functional derangements not yet elucidated, calcium plays a part through upsets in this balance of the ions. A balance between calcium and magnesium ions on the one hand and sodium and potassium ions on the other, has been demonstrated in normal

\* Opening paper of a discussion in the Section of Therapeutics and Pharmacology at the Annual Meeting of the British Medical Association at Edinburgh 1927. Professor J. A. Gunn presided.

life, and this balance may be disturbed by alterations in the ionic concentrations of any of these elements. The part played by calcium in spasmophilia and tetany, and in the contraction of heart muscle, must be viewed as exercised through this balance of ions as well as by calcium specifically. For example, calcium is essential to the normal functioning of the neuro-muscular apparatus, but increased electrical excitability may be produced either by a decrease in calcium or by an increase in sodium or potassium.

A balance also exists between the basic ions, such as sodium and calcium, and the acid ions, so that an increase in the acid radicals is accompanied by an increase in basic ions, the balance, upon which the hydrogen-ion concentration depends, being kept almost constant in health. Further, calcium exists in a solid form as  $\text{Ca}_3(\text{PO}_4)_2$  in bone, and a balance must exist between the  $\text{Ca}^{++}$  ions and the  $-\text{PO}_4^{---}$  ions and the solubility of the  $\text{Ca}_3(\text{PO}_4)_2$ , so that the product of ionic concentration cannot rise above a certain level. An increase in the product will cause a deposition of solid  $\text{Ca}_3(\text{PO}_4)_2$ , and a diminution will result in the passage of  $\text{Ca}_3(\text{PO}_4)_2$  from the deposits in the bones into solution in the body fluids. An increase in the concentration of  $\text{PO}_4^{---}$  ions will, however, result in a diminution of  $\text{Ca}^{++}$  ions, the product remaining constant.

These very superficial considerations must suffice to show that disturbances in the specific functions of calcium due to insufficiency are merely symptomatic of abnormalities that may be far-reaching in their consequences and remote in their causation, while any attempt to influence the specific functions by increasing the concentration of calcium above the normal may have effects on important constituents of the body and on remote functions.

#### Serum Calcium

The amount of total calcium in the serum is used as an indication of the calcium supply in the living body. All of this calcium, however, is not in the same condition of chemical combination. The quantity that is in an ionized state has been variously estimated as only 20 to 25 per cent of the total. The work of Salvesen and Linder<sup>8</sup> suggests that part is in combination with protein, and this part will not only be in an un-ionized form but in a non-diffusible form, and therefore not easily available for utilization by the tissues. The diffusible calcium is not easily estimated with accuracy, but from observations by many workers it would appear to constitute 50 to 60 per cent only of the total.<sup>9</sup> Since this diffusible calcium is alone available for producing specific or ionic calcium effects, it is obvious that figures for the total calcium of the serum may not give a true indication of the available calcium. From the work of Vines<sup>10</sup> it would appear that about 4 mg. of calcium per 100 ccm. that was in a non-diffusible form in the whole blood is converted into a diffusible form during the process of clotting. If this is confirmed the figure for the total serum calcium is still further from being a true indication of the available calcium. In considering the significance of departures from the normal values for the calcium content of the serum it is important to remember, therefore, that they may affect (a) the non-diffusible fraction combined with protein, (b) the diffusible and easily ionized fraction, or (c) the ionized fraction. It is possible also that even when normal values for the total calcium are obtained the available calcium may be present in deficient amounts. Until simple and accurate methods are devised for estimating the available calcium in the blood its therapeutic uses cannot be placed on a satisfactory basis.

#### Indications for Calcium Therapy

**Nephritis.**—The total calcium of the serum is definitely reduced in severe nephritis.<sup>11, 12, 13</sup> In the forms with pronounced oedema there is reduction also in the serum proteins, and Salvesen and Linder<sup>8</sup> suggest that the reduction in such cases affects mainly that fraction that is in combination with proteins. They showed<sup>8</sup> that the reduction in calcium and in proteins is not the result of simple dilution, but that there is a reduction in the total proteins of the plasma even after the disappearance of oedema. It is difficult to see how an increase in the serum

calcium, if it could be brought about directly, would of itself be of benefit in this form of nephritis, but a therapeutic measure that would diminish the oedema might well be of benefit to the patient, and might at the same time increase the calcium content of the serum. Blum<sup>14</sup> and his co-workers have advocated the administration of calcium chloride for this purpose, and in his paper and in those of many others it has proved to be an effective diuretic in many cases. It is certain, however, that its action is not due to a specific action of calcium and the restoration of the serum calcium to a higher level. It would appear that it acts by the change that it makes in the balance of ions in the body fluids. Blum maintains that by increasing the calcium ions the sodium ions are decreased, and since the retention of fluids is closely associated with the retention of sodium, the oedema is decreased. Another explanation, however, is possible. The administration of calcium chloride results in the setting free of  $\text{Cl}^-$  ions, the calcium being retained in or excreted into the intestines as carbonate. The  $\text{Cl}^-$  ions are thus able to cause an increased acidity, and, to correct for this, sodium is excreted as sodium chloride, accompanied by large amounts of water. This latter explanation is supported by the similar beneficial action of ammonium chloride or nitrate. It is, of course, conceivable that the administration of the calcium chloride has some effect from the calcium, as Blum maintains, in addition to its undoubted effect as an acid forming substance. In severe cases of azotemic nephritis the serum calcium is definitely reduced, and this is accompanied by an increase in the inorganic phosphorus of the serum. It seems probable, as de Wesselow<sup>15</sup> has pointed out, that the low calcium content is the result of retention of phosphates and the consequent disturbance in the ionic balance. If, as he suggests, the phosphate retention is directly responsible to some degree for the toxic state known as uraemia, there would be reason to administer calcium to lower the absorption of phosphates. As far as I am aware, no clearly beneficial results have been reported in this form of nephritis by the administration of calcium or by the adoption of any indirect method of raising the calcium content of the serum such as the administration of parathyroid extract.

**Tetany.**—In tetany, following the removal or extreme disturbance of the parathyroid glands during the operation or thyroidectomy, the serum calcium is definitely reduced. Tetany is strictly a symptom of a more fundamental disturbance, but is a crippling condition and one dangerous to life. In post-operative tetany it is specifically due to the low calcium content of the body fluids, and can be relieved by raising the calcium content. The recent work of Collip<sup>16</sup> has clearly demonstrated the importance of the parathyroid glands in maintaining the calcium at its normal level in the serum, and the administration of extracts of the parathyroid glands, besides being a rational treatment in post-operative tetany, is able to raise the calcium content of the serum and reduce the tetany. There is much evidence of an indirect nature in favour of the view that parathyroid extracts raise the serum calcium by mobilizing the calcium that is stored in the bone and tissues, and that their action does not depend upon the absorption of calcium from the digestive tract. Russell, Stewart and Percival<sup>17</sup> have reported experiments that seem to give direct proof of this. The oral administration of calcium salts in excess, however, can raise the level of calcium in the serum and may relieve tetany, and intravenous administration gives prompt but transient relief. In tetany and spasmophilia accompanying renal disease the calcium is low. The use of parathyroid extract in such cases is contraindicated, except as an emergency, as increased serum calcium is obtained by the release of calcium from the bones, which are already deficient in calcium. In this condition the low calcium would appear to be due to poor absorption, either because of low calcium diet or the absence of vitamin D. The low phosphorus content of the serum which is found in such cases is probably an important factor in the defective utilization of calcium. The less constant reduction in calcium in the serum in the case of calcium salts and cod liver oil will affect the calcium in the serum to a normal level, and the measures is exposure of the patient, or of the



food to sunlight or ultra-violet light may be all that is necessary for the proper treatment of the rickets and the relief of the spasmophilia.

**Skin Diseases.**—Low values for the serum calcium have been reported in various skin diseases such as lupus erythematosus<sup>1</sup> but there is no evidence that the deficiency of calcium is of significance in the pathology of the disease, and no clear evidence that raising the calcium level influences the course of the disease.

**Chronic Infections.**—In many and various diseases associated with chronic infections Grove and Vines<sup>15</sup> find that although the total calcium content of the serum is within physiological limits, the amount of active or diffusible calcium is reduced. They further considered that the oral administration of parathyroid extracts and soluble calcium salts was beneficial in these conditions by raising the ratio of active to total calcium. The methods employed by them in their calcium estimations are open to criticism, and the reports of the therapeutic results in their clinical investigations are not convincing. Confirmation of their results is necessary before the scope of calcium therapy can be accepted as embracing the conditions enumerated by them.

**Haemorrhage.**—The administration of calcium has been advocated in many conditions in which there is no evidence of calcium deficiency. The basis for such therapies may be the attempt to obtain an exaggeration of a specific calcium effect, or to correct a disturbed ionic balance. In 1896 Wright<sup>1</sup> advocated the use of calcium chloride administered by the mouth to reduce the prolonged coagulation time seen in haemophilia. Even when the coagulation time is not unduly prolonged, an increased serum calcium has been shown by Matz<sup>16</sup> and Cantarow, Caven, and Gordon<sup>17</sup> to be associated with a reduction in the coagulation time. Its use has been reported in many cases in which the coagulation time is prolonged, but also in others such as purpura and pulmonary tuberculosis in which no such prolongation is found but the results are very irregular and in view of the numerous factors present in patients and the numerous therapeutic procedures that are unavoidably employed at the same time it is difficult to accept the evidence available as proof of the value of internal calcium therapy to control bleeding. Walters<sup>8</sup> considers that the injections of calcium chloride in the preparation for operation of patients with jaundice has reduced the risk of bleeding. I have not yet seen the evidence on which his opinion is based but it is obvious that careful observations on coagulation time and bleeding time would be of great value, and that there is sufficient ground for the view that there may be a scope for calcium therapy in the control of haemorrhage.

**Myocardial Weakness.**—In 1922 Cheimisse<sup>1</sup> reported that his clinical studies suggested that calcium salts by the mouth enhanced the effects of digitalis making them more rapid in their appearance and enabling a greater beneficial effect to be obtained before the onset of toxic effects. In 1924 Billigheimer<sup>18</sup> found that in normal persons and in patients with heart failure, calcium chloride intravenously had an action very similar to that of digitalis, but that it was more fleeting. He considered that it acts on vagal nerve endings and on the inhibitory centres in the heart. It had no effect on the tachycardia that results from atropine, but checked the acceleration following the injection of adrenaline. There is not at present sufficient evidence for the use of calcium in the treatment of myocardial weakness in patients.

**Inflammatory and other Exudates.**—It has already been mentioned that French workers notably Blum, have pointed out the powerful diuretic action of calcium chloride in nephritic oedema. Blum has shown a similar action in cardiac oedema. That ammonium chloride acts in a similar manner suggests that it is the acid properties of these salts which are responsible for their action as a diuretic though the calcium may have an effect in the same direction by its antagonistic action to sodium. Blum<sup>19</sup> has extended his observations to inflammatory exudations, and has reported beneficial therapeutic effects in pleural and peritoneal effusions and in inflammation of the conjunctiva. It may be argued that the suppression of inflammatory reaction is not desirable,

except occasionally, when exudations have embarrassed mechanical effects, but Blum's arguments are based on chemical improvement and the disappearance of fever as well as on the absorption of exudates. Based presumably upon this action of calcium ions and of chloride ions on exudations and transudations beneficial results of the administration of calcium chloride have been reported in such conditions as oedema of the glottis,<sup>20</sup> asthma,<sup>21</sup> oedema of the lung,<sup>22</sup> angioneurotic oedema, urticaria, and Raynaud's disease. If convincing evidence can be brought forward that such beneficial actions are due to calcium an extensive and important addition will be made to the scope of calcium therapy.

#### Methods of Administration

**Oral.**—Most writers agree that oral administration of calcium salts is inconstant in its effects, and at best produces only a moderate rise in the level of the serum calcium in healthy subjects. The normal calcium requirement for a healthy adult has been variously estimated but the consensus of opinion places it at about 1 gram of calcium oxide daily. Children of 6 to 7 years of age need 0.3 to 0.5 gram, and children of 14 should require 0.6 to 0.9 gram daily.<sup>23</sup> Davis and Minot<sup>24</sup> found that calcium-poor diets and calcium rich diets had little effect on the serum calcium. Matz,<sup>16</sup> however, found that a meal containing the equivalent of 0.917 gram of calcium oxide caused no rise in serum calcium, but one containing 1.8 grams caused a rise of 1 mg per 100 c.c.m. at the end of three hours, after which it fell again and that three meals in a day containing 2.34 grams caused a rise during the day of from 1 to 2 mg per 100 c.c.m. Matz further showed that the ingestion of cod liver oil and calcium lactate caused a greater rise than calcium lactate alone. Brauer and Ropes<sup>25</sup> studied the effect of doses of 5 grams and of 10 grams of calcium lactate by the mouth in normal subjects, and found variable but definite rises in the serum calcium, maximal in from one to four hours, and maintained, though diminishing for twelve hours. The average maximal rise after 5 grams was 8 per cent above the normal and after 10 grams 14 per cent. Jansen<sup>26</sup> found that when different calcium salts were given by the mouth in doses equivalent to 12 grams of Ca a temporary rise of serum calcium was obtained with a maximum effect in two to three hours. He found the lactate to be without effect and the bicarbonate to give greater effects than the chloride. Hjort<sup>27</sup> obtained a constant rise in the serum calcium in normal dogs by the oral administration of amounts of the lactate, chloride, and glycerophosphate equivalent to 0.2727 gram of oxide per kilo but small doses of these salts and similar doses of less soluble salts were without constant effect.

It may be concluded, therefore, that the ingestion of calcium salts is able to raise the calcium content of the serum to an extent of less than 2 mg per 100 c.c.m., but that the salts must be given in large doses of 5 to 10 grams to obtain this effect, that such an effect is by no means constant and that it is maximal in about three hours and passes off in about twelve hours. Such an effect will have a therapeutic value in checking tetany when the calcium content of the serum is not excessively low, but the effect will be maintained only so long as the administration is continued. To obtain a permanent rise it will be necessary to administer parathyroid extract in addition in the case of post-operative tetany, and cod liver oil, or sunlight or mercury vapour lamp irradiations in the case of the tetany accompanying rickets. It is not yet clear why oral administration of soluble calcium salts is without effect in some cases. Theoretical considerations point to the conditions of acidity and alkalinity of the digestive tract as likely to affect absorption and studies on this point would be of value. In the case of rickets infants the absence of vitamin D would appear likely to be the factor that interferes with absorption, even when sufficient calcium is being ingested.

If calcium should prove to be essential to the diuretic effects obtained with calcium chloride, and to the effects on inflammatory exudates and local transudates then all these conditions could be treated by similar large doses administered orally.

**Intravenous**—The intravenous injection of 2 grams of calcium chloride dissolved in 50 c.c. or 100 c.c. of water can be utilized to raise the serum calcium promptly, and if given slowly no ill effects are produced. By this means the serum calcium can be raised 100 per cent, but the effect is transitory. This method is useful in controlling the severe manifestations of tetany, the convulsions, and laryngismus. Cameron<sup>1</sup> recommends the intramuscular injection of 1 gram of calcium chloride in infants with laryngismus.

**Indirect**—The indirect methods of influencing the calcium in the body are of perhaps greater practical importance than the direct administration of its salts. The influence on its absorption of cod-liver oil, mercury vapour lamp irradiations, sunlight, and the action of the contents of the digestive tract have already been referred to. The recent work of Collip<sup>13</sup> on the parathyroid glands, and the elaboration by him of an extract that is constant in its action in normal dogs and capable of standardization, has opened up new methods of approach. This extract is prepared by Lilly and Company under the name of parathormone, and must be administered by injection. Stewart and Percival<sup>14</sup> find that it increases the ratio of diffusible to total calcium as well as raising the total serum calcium. Collip and others have studied its action in post-operative tetany, and Hunter and Aub<sup>15</sup> have reported its successful use in lead poisoning. Reports have been published of its use in one case of severe nephritis<sup>12</sup> and of its failure to influence definitely the course of pulmonary tuberculosis,<sup>13</sup> but there is no clear evidence as to its therapeutic value in these conditions. In spasmophilia, and in tetany accompanying rickets, it is theoretically contraindicated, except as an emergency.

I hope that this discussion will throw some light on the part that calcium plays in the effect of calcium chloride on oedema and on inflammatory exudates, that it will explain the inconstant effects of the oral administration, and that it will enlarge the field of calcium therapy. At present it appears that, apart from the actions of calcium chloride, which are possibly due to the chloride rather than the calcium, the field of usefulness is restricted to the treatment of tetany and deficient calcification of bone, and that even in these conditions other therapeutic measures are necessary in addition to obtain a satisfactory calcium effect. The uses of calcium salts in external applications, and of the less soluble calcium salts as antacids and astringents in dyspepsia, need no discussion.

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## II—THE EFFECT OF CALCIUM IN CHILDREN

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If the title of this discussion, "The therapeutic uses of calcium salts," means its limitation to a discussion of the role of calcium in those instances in which calcium salts are given medicinally, I have nothing to add to it, because my experience of these drugs is limited almost entirely

to their exhibition during the acute stages of infant tetany. I am therefore greatly relieved that the speaker has taken the wider view and has considered the variations in disease of the available calcium in the blood and how this can be increased in those instances in which it is lower than normal. With one modification I entirely agree with Professor Fraser's penultimate remark—for example, that the field of usefulness of calcium salts is restricted to the treatment of tetany and deficient calcification of bone, and that even in these conditions other therapeutic measures are essential to obtain a satisfactory calcium effect. I do not think it is necessary to give calcium salts medicinally in order to produce calcification of bone, because if the diet of a young child be efficient it will contain sufficient calcium to supply the body requirements if only the absorption be normal. Thus estimations of the calcium in the diet in a series of 82 infants showed that the amount of calcium oxide intake varied from 2.36 to 0.43 grams with an average of 1.129—a figure considerably in advance of that suggested by Professor Lissner as the normal calcium requirement. My remarks will be entirely confined to the problem of the calcium effect in children and the methods by which this can be produced. In dealing with the question of absorption of calcium I propose giving the results of some observations which may throw a certain amount of light on the cause of the inconstant effects of the oral administration of calcium salts.

Professor Fraser refers to the action of calcium chloride being possibly due to the chloride rather than to the calcium, a view strongly held by Gamble and his colleagues, and supported by the well known therapeutic fact that ammonium chloride—which also acts by virtue of its chloride radical—and hydrochloric acid will cause a temporary improvement in infantile tetany by producing a rise in the blood calcium. These drugs will also increase the blood calcium in low calcium rickets, but Ross and Sever have shown that this result is due to a mobilization of calcium from the bones, and therefore the cure of rickets by this means is impossible. The most recent work on this subject is that by Drucker, who has shown that in therapeutic doses ammonium chloride usually causes an uncompensated acidosis, both in normal children and in those suffering from tetany, whereas calcium chloride usually gives rise to a compensated acidosis. Ammonium chloride, therefore, has the stronger acid effect on the blood, but, on the other hand, calcium chloride causes a larger rise in the amount of blood calcium when this is decreased, as in tetany. The effect of ammonium chloride in infantile tetany depends on an increase in calcium ions in the blood is rendered more acid, but that of calcium chloride is more lasting, and due chiefly to an increase in the number of calcium ions resulting from an increase in the previously low total calcium. It would therefore appear that the effect of calcium chloride in tetany is due both to the chloride and to the calcium.

It has also been pointed out by Professor Lissner that the calcium of the serum is partly diffusible and partly non-diffusible, that the diffusible calcium is the part from which the ionized fraction is derived, and that it is this latter which produces the specific calcium effects. If the calcium is diminished tetany will occur. According to Drucker the calcium ion concentration in normal children, calculated on the Rona-Tillich equation, varies from 3.4 to 2.1 mg. per cent, with an average of 2.6 mg. per cent. The diffusible calcium as estimated by the method of ultrafiltration through colloidal membranes under a negative pressure of 150 mm. of mercury is about to constitute 50 to 60 per cent of the total calcium of the serum, but an attempt to estimate the diffusible calcium in my cases, using a pressure of this amount and filtering for four hours, has given figures almost identical with those given by Drucker for ion calcium, and previous to the publication of his results I had come to the conclusion that in tetany the ultrafiltrate would contain under 2.5 mg. and usually under 2.2 mg. per cent.

Spasmophilic manifestations may, however, occur in certain circumstances with an undiminished blood calcium, indeed, some authorities have reported the presence of stenosis of infants furnishes some of the best evidence

this condition. Anyone who is familiar with this disease must have seen cases in which convulsions have occurred and recurred and eventually proved fatal, or in which—particularly shortly after the Rimmstedt operation—the child showed periods of apnoea and arrested breathing followed by a period during which deeper breathing occurred and convulsions appeared, and after several such attacks nearly always succumbed. This condition is one of all kinds of suffering from repeated vomiting and high intestinal obstruction, with the consequent loss of chlorine ions. As a result of this alkalosis, although the calcium in the serum is normal or higher than normal the ionic calcium is diminished. On the other hand in severe azotemic nephritis in which the serum calcium may be low, tetany may not occur because there is present an acidosis, which results in more of the calcium being ionized.

The therapeutic problem, therefore, becomes chiefly one of maintaining the ionic calcium at such a level (in small children over 2.2 mg per cent) that the specific effects of low calcium do not occur. Before considering how this can be accomplished I would like to refer to one or two other points in connexion with calcium concentration in nephritis and in coeliac disease. Professor Fraser has referred to the diminution of serum calcium in severe azotemic nephritis and accepted the view that this is the result of phosphate retention. Experimentally the injection of phosphates into animals and children has been found to produce this effect and also to produce tetany. Professor Fraser has suggested the possibility of administering calcium to lower the absorption of phosphate, but I doubt whether this would have any effect because of the inability of this type of kidney proper to secrete phosphate. In renal infantilism—that is infantilism associated with severe chronic interstitial nephritis—although the blood calcium is relatively low when compared with phosphorus, yet not infrequently a combination of high blood phosphorus with a normal, or even higher than normal blood calcium is found. Such a combination however is associated with severe bone changes—the so-called renal rickets. It would appear, therefore that any attempt to maintain a high blood calcium in adults suffering from severe azotemic nephritis by such methods as the administration of parathyroid hormone would produce an osteoporosis. It is true that tetany may not occur in severe azotemic nephritis, because of the presence of an acidosis favouring increased ionization of the calcium but young children are apparently more sensitive than adults to diminution in ionic calcium, and probably, therefore to prevent tetany they raise their serum calcium to a higher level than the adult by drawing on their calcium reserves. They do not always seem to do this however with the result that tetany is not an uncommon complication of this form of nephritis. As a temporary method of curing tetany in such cases parathyroid hormone might be helpful, but I have not had any personal experience of its use.

In coeliac disease the serum calcium and ionic calcium are low, as also is the serum phosphorus. If the disease be severe and of long duration rickets and tetany occur as complications, and can be cured by methods that increase the absorption of calcium and phosphorus.

Now what are the factors concerned in the absorption of calcium from the alimentary tract, and how can absorption be increased?

It has been shown that while excessive amounts of calcium in the diet tend to increase the total absorption and retention of calcium yet they impair phosphorus retention and vice versa and that the retention of one element in the intestine by an excessive amount of the other is best explained by the formation of insoluble phosphate of calcium. To obtain the maximum absorption of both elements—a necessary desideratum in infants and young children—the diet should contain amounts of calcium and phosphorus sufficient in quantity and properly balanced. The percentage of calcium in the diet should be greater than the percentage of phosphorus. In children one pint of milk daily will meet both these requirements.

Another factor in the absorption and retention of calcium is the presence of fat in the dietary and its normal absorption from the intestine. The presence of large quantities of unabsorbed fat in the intestine may lead to a negative calcium balance thus in a case of infantile biliary cirrhosis

in which, owing to the exclusion of bile from the intestine fat absorption was poor a negative calcium balance was found and in coeliac disease, a condition in which the fat absorption is very defective, a negative or low calcium retention is found. In precisely the same way a child fed on a low fat dietary may show a negative calcium balance. Thus an infant who is diet—a milk mixture containing 2 per cent of fat—contained 0.44 gram of calcium oxide in day showed a percentage absorption of 34 but when fed on a mixture containing 0.8 per cent of fat for seventeen days showed a negative calcium balance, although the daily calcium intake was more than twice as much as in the previous diet. We have found that in infants, showing a normal fat absorption, the fat intake must be from 2 to 10 grams per kilo of body weight to ensure the absorption of 0.1 gram of calcium oxide per kilo of body weight. This effect of fat on the absorption of calcium is due to the presence of the fat soluble vitamin D.

Telfer has produced evidence showing that the absorption of calcium only occurs in the upper part of the intestinal tract. The solution of the calcium salts in the food is affected by the acid of the gastric juice and absorption proceeds until the acid mixture of lime and phosphoric acid is rendered alkaline by the intestinal secretions when calcium phosphate is precipitated in insoluble form. It has therefore been suggested that an increased acidity in the upper part of the intestinal canal would increase the absorption of calcium. Such is however not entirely borne out by my observations thus in the case of biliary cirrhosis is already quoted in spite of the presence of large amounts of fatty acid in the bowel the calcium balance was a negative one and in another example of this condition the calcium absorption was very small although incidentally in both cases the absorption of phosphorus was greatly increased.

Observations have also been carried out in a number of atrophic infants fed on varying diets, some being fed on acid milk. The average calcium absorption of fourteen infants fed on lactic acid milk was considerably less than in a group of thirty-one infants fed on ordinary cow's milk mixture. This may in part be due to the fact that children fed on lactic acid milk excrete more fat than those fed on the ordinary mixtures. Four children fed on hydrochloric acid milk (that is milk prepared by adding 1 oz of decinormal hydrochloric acid to 4 oz of milk) however, showed a higher absorption of calcium and although there was a marked increase in the amount of calcium excreted in the urine the actual calcium retention was definitely higher than in children fed on cow's milk. On the other hand Wills Sanderson and Paterson found that in two children a positive calcium balance on cow's milk dietary was converted into a negative one by changing their diet to hydrochloric acid milk. Finally, a group of six infants fed on almost a food which has a buffer value similar to that of breast milk showed the highest calcium absorption of all the children examined.

Zucker and Matzner found that rats kept on a high calcium low phosphorus rickets-producing dietary developed marked renal alkalinity. It has been shown by Jephcott and Bycharach that in such animals the faecal pH can be reduced to the acid side of neutrality by means of cod-liver oil irradiated cholesterol or irradiation, and that the alkalinity can be prevented by irradiation. Indeed, they have recommended this change in pH as a test for the presence of vitamin D. It would appear then that it is not the increased acidity *per se* which is so important in the absorption of calcium as the occurrence of vitamin D, which by its presence leads to increased acidity in the intestinal tract.

The absorption of calcium from the intestinal tract is increased by giving by the mouth substances rich in vitamin D, such as cod liver oil irradiated cholesterol irradiated ergosterol or by exposure to sunlight and ultra-violet irradiation.

The problem of how to increase calcium absorption in coeliac disease is complicated by the difficulty in absorption of fats in this disorder and because for its efficient treatment it is necessary to give a very low fat dietary for a long period or time. Actually when the fat in the diet is kept very low indeed the percentage absorption is

increased, but to prevent or to cure rickets and tetany either ultra-violet irradiation or the giving of irradiated cholesterol or ergosterol is essential. The administration of irradiated cholesterol or ergosterol appears to produce better results than exposure to ultra-violet light, but it is advisable to combine both forms of treatment. Irradiated cholesterol or ergosterol must not be given dissolved in oil, as recommended in ordinary rickets and tetany. I administer irradiated cholesterol in powder form and ergosterol in tablets prepared by the British Drug Houses, Ltd. Incidentally these tablets also contain 2 grains of calcium glycerophosphate, but I am sure that the additional calcium is unnecessary.

As I stated in my opening remarks, the number of cases in which I administer calcium salts is such is small, being almost entirely limited to the acute stages of tetany, in which I give calcium chloride in 5 to 15 grain doses three times daily. In all other cases I find the calcium in the diet (chiefly milk) amply sufficient to produce the calcium effect if absorption be improved by the methods suggested. It is stated by some authorities that cow's milk should never be given in tetany, because of the tendency of some infants to constipation with the passage of large soap stools, which contain considerable quantities of calcium soaps and therefore deplete the body of calcium. This type of nutritional disturbance, which in its severest form has been particularly stressed by German workers (Czeiny, etc.) under the title of *Milchnahshaden*, is in my experience a very rare occurrence. I am not convinced that even in these rare cases the loss of calcium in the soap stool is sufficient to overcome the advantages of the good calcium supply obtained by giving a milk diet, but that there is a certain loss of calcium in children passing soap stools cannot be denied, and therefore there may be some advantage, in those cases of tetany which are complicated by constipation, in substituting almond for milk for a time, and further justification for giving calcium salts in the acute attack.

In the cases of spasmodophilia due to alkalosis, to which reference has been made, the methods used to alter the blood reaction and thereby increase the ionic calcium are to give saline intravenously, to operate at once in cases of pyloric stenosis, and to fill the abdomen with normal saline, after operation to feed the infant on lactic acid milk if breast milk be unobtainable, in order to prevent the drain on the body chlorine ions caused by the high buffer value of cow's milk and the necessarily greater amount of hydrochloric acid required for peptic digestion. I must also confess that in a recent case of alkalosis tetany (a boy aged 14) I gave 15 grains of calcium chloride intramuscularly in addition to intravenous salines, with most encouraging results.

### III—THE BIOCHEMICAL ASPECT OF CALCIUM THERAPY

BY

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THE inconstant results obtained in feeding various calcium salts and various calcium-containing foodstuffs are possibly to be explained as the result of the observation that in health the intestinal contents remain slightly acid, while in rachitic animals they are alkaline. In the presence of a copious secretion of hydrochloric acid in the stomach such salts as the lactate, carbonate, and proteinate of calcium would all give rise to calcium ions, which, the reaction remaining acid, would be available for absorption from the intestine. In the absence or reduction of such a secretion these salts would not be ionized to the same extent, and therefore would be less readily absorbed. Other inorganic substances must be taken into account. Thus it is readily seen that a large excess of phosphate would hinder calcium absorption, since, in consequence of the slightly acid reaction of the intestine, some of the calcium would form the insoluble phosphate.

A careful distinction must be made between calcium absorption and calcium retention: the latter is measured

simply enough by taking the difference between intake and output, estimation of the former is not so easy. Alterations in the urinary excretion are of little value, as the greater part of calcium excretion occurs through the epithelium of the large intestine. Determinations of the blood calcium content are perhaps better, but still unsatisfactory. As an example of the confusion some recent experiments by Berggren, who has devised a method for measuring the actual absorption, may be mentioned. He finds that in rachitic animals calcium is absorbed from the small intestine only to be excreted again into the large intestine. Vitamin D improves the retention (though it seems to be that this is not necessarily the sole effect of the vitamin). By removing the whole of the alimentary canal from experimental animals Dr. Perival and I have been able to show that the parathyroid hormone does not raise the blood calcium by increasing absorption from the intestine, for in the eviscerated animals the effect of the hormone is as great as in intact animals. By isolating the large intestine and washing out its contents we estimated the calcium excretion by that route. The urinary excretion was used to determine the parathyroid hormone, we found, did not diminish calcium excretion—that is, it did not increase retention. It must act, therefore, by withdrawing calcium from the tissues, and ultimately, at any rate in long-continued hypercalcaemia, from the bones. Greenhalgh has shown that in a hypercalcaemia induced by parathyroid hormone the excretion is increased, and that there is a calcium loss from the body. It follows that parathyroid hormone is of no use where it is desired to increase calcium absorption. Further—especially where the absorption mechanism is impaired—its long continued use to raise the blood calcium level may lead to the undesirable effect of depletion of the body stores.

Calcium circulates in the blood stream, and it may reasonably be assumed that in this, as in other cases, changes in the tissue content will be, to some extent at least, reflected in the concentration in the blood. Moreover, though on this point there remains a slight element of doubt, it seems that the calcium of the blood is confined to the plasma and that the corpuscles contain at the most only traces. Hence the plasma calcium content forms a valuable guide as to the state of the animal with regard to calcium metabolism. True plasma is difficult to obtain, and experiments with citrated plasma, based on the assumption that sodium citrate does not precipitate any calcium, have led to the statement that the plasma and serum contain equal amounts of calcium and, consequently, to the universal use of serum for calcium estimations. Actually, true plasma contains 10 to 20 per cent more calcium than does the serum, but for most purposes this does not destroy the usefulness of the serum estimations as an index of normal functioning. Figures obtained by analysis of serum are certainly of more value than those obtained from whole blood, owing, inter alia, to the variability of corpuscle volume.

Of the 10 mg. of calcium normally present in 100 c.c. of human serum only some 2 mg. exist as calcium ions, and only about 6 mg. are able to pass through a colloidal membrane. The remaining 4 mg. are in some form of combination—part as an ionized salt or complexes of protein, and part, possibly, in an ionized combination with lipid material. Whether the plasma calcium is distributed in a similar manner we cannot say with certainty. Vines's work would appear to indicate that it is not. On the other hand, evidence derived from the analysis of the cerebro-spinal fluid and of cerebrospinal fluid which have been enclosed for some time in the peritoneal cavity, indicate a similar distribution of calcium in serum and plasma.

Holt, La Mer, and Chown believe that the blood is supersaturated with calcium phosphate,  $\text{Ca}_3(\text{PO}_4)_2$ , to an extent of more than 200 per cent, since on dilution with solid calcium phosphate there is a reduction in the calcium and the phosphate concentrations, although no such reduction takes place in the absence of the solid phase. They explain the supersaturation as due to a sudden change during absorption from the acid reaction of the intestine to the alkaline reaction of the blood.

change which causes the production of trivalent  $\text{PO}_4$  (from monovalent  $\text{H PO}_4$  and divalent  $\text{HPO}_4$ ) at a rate greater than the calcium phosphate can be precipitated. Though this is an extremely interesting suggestion—it implies, for example, that the fluids bathing osteoid tissue are supersaturated with calcium phosphate in presence of the solid phase a condition which would lead to deposition of more solid calcium phosphate—Holt, La Mer, and Chown do not seem to have taken into account sufficiently the presence of bicarbonate and of a large part of the serum calcium in the form of non diffusible protein or lipid complexes. Indeed, it has also been claimed that blood is supersaturated with respect to calcium bicarbonate.

The diffusible and especially the ionic, calcium of the plasma is doubtless most readily available for transference to other tissues, and is often referred to as the "active" or "available" calcium. In using these somewhat dangerous terms, however, two things must be borne in mind. In the first place we really know nothing about the functions of the different calcium derivatives present in the blood and it is perfectly conceivable that the non-diffusible fraction may have its own special uses. Secondly, neither the absolute nor relative concentrations of the different calcium compounds can be regarded as fixed and immutable; they form a series of mutually dependent equilibria so that alteration in the concentration of one constituent may be followed by a readjustment throughout the whole complex system.

#### IV—PHARMACOLOGICAL AND THERAPEUTIC ASPECT

BY

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It has already been emphasized, in the opening paper, that the presence of calcium is necessary for the life and activity of the various cells and systems of the body. It is not possible, however, in view of the existing state of our knowledge to present a coherent account of its exact mode of action or to offer an explanation of its indispensability. Such explanation must await the solution of a multitude of physical and chemical problems of the most complex and fundamental nature. Certain facts, however, have long been known.

In the first place, Sidney Ringer determined the concentration of calcium required to maintain the normal activity of the frog's heart and noted the effect on it of variations in this amount. Later workers have studied the effect of calcium-containing solution on other tissues and also on the less highly organized forms of life. Many of the experimental results obtained have been questioned, and the interpretation of those which are now generally accepted is by no means clear. There is nevertheless an increasing amount of evidence in favour of the theory that calcium is intimately associated with the lipid complexes of the cell membranes and that variations in the calcium content of the fluid bathing the cells tend to produce alterations in the physical structure of these complexes. The property of semi-permeability possessed by the cell membrane is thus interfered with and the activity of the cell modified accordingly. The general action of calcium appears, therefore, to be exerted at the surface of the cell.

Experiments on the lower animals have shown that certain tissues, notably the cardiac and skeletal muscles and the nerve, are extremely sensitive to slight variations in the calcium content of the fluid in which they are bathed. Presumably this is so in the human subject, and, as has already been stated by Professor Fraser, the calcium concentration in human serum is found to be remarkably constant. In certain diseases, however, considerable variations do occur and it is worth noting that it is only when the serum calcium has been reduced to from 60 to 70 per cent of its normal value that symptoms which can be attributed to such a diminution make their appearance. The most constant change accompanying such a reduction is increased excitability of the peripheral nerves to electrical, and to a less extent to mechanical stimulation and it

would seem, therefore, that these structures are more sensitive to lack of calcium than are the more delicate organs such as the heart and the central nervous system. On the other hand, an increase of 20 to 50 per cent in the serum calcium, such as has been found in osteitis fibrosa, is unaccompanied by any symptoms apart from those associated with the local bone condition. Nevertheless, despite the fact that wide variations in the serum calcium are compatible with the apparently normal functioning of the body cells, there exists a very efficient mechanism for controlling the concentration of this substance in the serum.

Various factors are concerned in this control—the availability of the ingested calcium, the body stores, the reaction of the tissues, the presence or absence of vitamin D, and the parathyroid hormone. Before continuing it may be well to emphasize the delicate correlation of all these factors. In the first place, the remarkable constancy of the serum calcium, not only among different individuals, but also in the same individual. Further the alteration of one of these factors produces a very rapid response—for example, the intravenous injection of sodium bicarbonate or parathormone produces its maximum effect within an hour, and the return to normal is equally rapid. Moreover, by simultaneous injection of appropriate doses of these substances it is possible to maintain the serum calcium unchanged. It may also be mentioned that in rickets vitamin D may be quantitatively deficient without more than a slight fall in the serum calcium. Again, severe haemorrhage producing a 50 per cent reduction in the haemoglobin is unaccompanied by any fall in the serum calcium of dogs and cats, animals which are sensitive to the parathyroid hormone, whereas in the relatively insensitive rabbit such haemorrhage causes a definite lowering of the serum calcium. This evidence besides illustrating the delicacy of the controlling mechanism in toto, also points to the parathyroid hormone as being the chief controlling factor.

Turning now to survey the results of calcium administration in disease it is not surprising to find, in view of the foregoing facts, that calcium as a therapeutic agent has proved most disappointing. The large available store of calcium in the bones and the constant supply in the daily food intake make it extremely unlikely, except in very rare instances, that the regulating mechanism ever lacks calcium for distribution throughout the body fluids, so that it is only in the event of failure of function of some part of this mechanism that the tissues suffer from calcium deficiency. Shortage of vitamin D may either cause deficient calcium absorption from the bowel or interference with the process of ossification and in these circumstances no amount of calcium given by the mouth or intravenously is likely to alter the degree of its utilization by the tissues.

In the case of parathyroid deficiency a different set of factors is operative, and there is primarily no interference with absorption. A temporary rise in the serum calcium, with a coincident alteration of symptoms, may be produced by the oral administration of calcium, as well as by its intravenous injection. The effect is only temporary, however, for the function of regulating the distribution of calcium between the blood and the body fluids has been lost. Calcium therapy, therefore, is merely palliative.

Spasmodophilia is also temporarily relieved by the administration of calcium salts although the accompanying rachitis is not benefited. In this instance there is no doubt that calcium can be absorbed from the intestine in sufficient amounts to raise the serum calcium above the tetany level, even at a time when the tissues are suffering from a deficiency of vitamin D.

A consideration of pregnancy reveals a sequence of events which may lead to another variety of deranged calcium metabolism. The constant demand on the part of the growing foetus for calcium obviously subjects the maternal tissues to a severe strain, and in some cases these may be taxed beyond physiological limits. Animal experiments have demonstrated the fairly frequent occurrence of a negative calcium balance during pregnancy and lactation. One obvious cause of this derangement is that the maternal diet contains an insufficient amount of calcium to meet the requirements both of the maternal organism and of



the foetus, although sufficient for the former alone. Again, in the human subject the serum calcium is frequently somewhat diminished during the later weeks of pregnancy, and a low serum calcium has been found in cases of eclampsia. These facts would warrant attention being paid to the supply of a liberal daily ration of calcium in the maternal diet throughout the periods of pregnancy and lactation.

The condition of osteomalacia occurring in pregnancy cannot be definitely attributed, however, to a mere deficiency in the supply of calcium, since its course is not arrested by the administration of calcium. The biochemical methods now available do not yet appear to have been applied to an investigation of the etiology of this condition, about which very little is definitely known. In the allied condition of osteitis fibrosa, where decalcification of bone is also the most striking feature the serum calcium has been found to be very much higher than normal, and adenomatous tumours of the parathyroid glands have been present in a number of cases. These findings suggest that the condition is due to the occurrence of hypersecretion of the parathyroid glands, and this would account for the failure of calcium therapy.

The conditions which have been so far dealt with have all presented definite abnormalities in calcium metabolism, the mechanism responsible for this derangement has been to some extent accounted for, and the value of calcium therapy discussed.

Calcium therapy has been advocated in numerous other diseased conditions on purely empirical grounds. In many of them this method of treatment has been credited with quite remarkable curative effects, but in the majority of cases these have been discredited after a more prolonged and extensive trial. There remain however certain conditions in which calcium is still recommended but in which there appears to be no indication for its administration, either in view of the pathology of the disease or of the clinical results obtained by such medication. It has recently been revived in the treatment of chronic infective conditions, on the assumption that the serum calcium is either diminished in amount or that there is some alteration in its physical condition. Impairment of the defence mechanism of the body against organismal infection is said to be brought about by such a change, with the result that chronicity is favoured. The condition quoted as an outstanding example of this type of derangement, and as benefiting from calcium therapy, is that of chronic leg ulcer. It may be definitely stated, however, that in this disease the serum calcium is normal both as regards its concentration and its physical state, and that the raising of the serum calcium and the alteration of its physical state by administering calcium salts and parathyroid extract does not hasten recovery. The same may be said of the various forms of inflammatory and infected skin lesions and of chronic rheumatism.

Another group of diseases in which an attempt has been made to obtain relief by the administration of calcium is that resulting from a lack of tone in the superficial vessels of the extremities with consequent circulatory stasis in the capillaries and venules. This gives rise to a group of closely allied symptom complexes, including erythema pernio, "raw beef" hands, and chronic erythema of the legs, and is an almost invariable precursor of erythema induratum. Calcium has long been advocated in erythema pernio, and the apparent success of this treatment has led to its trial in the closely allied disorders mentioned. In none of these conditions, however, are there any grounds for concluding that calcium therapy might be efficacious. In all of them the serum calcium is normal, both as to amount and physical state, and clinical benefit does not follow the administration of calcium alone or combined with parathyroid extract, even when a very definite alteration in the serum calcium is obtained by such means. In erythema pernio sudden and extreme variation in severity is a clinical characteristic of the condition and is responsible for the reputation gained by calcium as a curative agent, for in those somewhat rare examples which are persistent calcium therapy proves a failure.

It would appear that derangements of calcium metabolism

are confined to a very small number of pathological conditions, and that, with a possible exception in the case of pregnancy, such derangements are almost always due to a deficiency in some part of the controlling mechanism. For this reason calcium therapy appears to have a very limited field moreover, in those instances in which it has proved useful the effects are merely palliative, and may be better achieved by other means.

#### DISCUSSION

Professor L. BLUM (Strasbourg) discussed the administration of calcium salts as a therapeutic measure in cases of nephritis, with ascites and oedema. He illustrated with diagrams and tables the results which he had obtained. In certain cases, where no diminution of ascites or oedema had followed resort to a salt-free diet or the administration of diuretics, large doses (10 to 20 grams a day) of dry calcium chloride had given rise to copious diuresis with consequent relief of ascites. He had found that, to obtain the effect, the calcium chloride must be added to an otherwise completely salt-free diet. The effect was much less marked if other salts were given with the calcium. The lactate was much less effective than the chloride. If the calcium chloride was replaced by sodium chloride there was an immediate and marked increase in the dropsy. Oedema due to other causes was more refractory to calcium treatment. When the condition was caused by cirrhosis of the liver such drugs as iocasinol were definitely indicated. In such cases calcium salts might merely be given and were on the whole useful. In cases of pleurisy, Professor Blum had observed that the administration of large doses of calcium chloride was followed by clinical improvement, and a fall in temperature and pulse rate. The diuresis in such cases was small, because the actual fluid retention was usually not very great. It was not advisable to continue the administration of calcium for too long a period. Professor Blum then discussed the condition which he had named "dry chloride retention," in which the chief factor was a disturbance of the ratio of sodium and chloride ions in the tissues, particularly in the brain, the proportion of chlorine being raised and that of sodium diminished. In both body fluids and tissues the balance between sodium and chlorine ions,  $\text{CO}_2$ , and "protein acid" was disturbed giving rise to an alteration of hydrogen ion concentration. The administration of large quantities of calcium chloride might give rise to this condition of "dry chloride retention." In the pure "hydratic" type of nephritis the chloride retention affected only the fluids, the ionic relation in the tissues was normal. Professor Blum admitted that in these cases the increase of chlorine ions appeared to be the potent factor, but some definite and specific effect was also assignable to calcium ions.

Dr. G. C. LINDER (London) said that tetany was a response of the body to several different chemical states which fell, however, into two groups. In the first of these were infantile parathyroid, intestinal, and phosphatic tetany in all of which the serum calcium was much decreased, in the second were gastric bicarbonate, and over-breathing tetany, in which the serum calcium was normal, but its effectiveness was reduced by such abnormalities as increases in pH, bicarbonate, or phosphate. Calcium salts were effective in the first group. Intravenous calcium chloride immediately and completely relieved the symptoms. 2 grams were required in the case of an adult with parathyroid tetany and the effect passed off with the excretion of the calcium in a few hours. The salt would not be sloughing if it passed outside the vein, this treatment is therefore, an emergency one. By the mouth calcium chloride was less certain. In doses of 10 grams a day it gave dramatic relief to the symptoms of a patient with intestinal tetany, but this was probably due not so much to the small rise in serum calcium as to the accompanying changes in pH and bicarbonate, since calcium chloride in the mouth was a powerful agent in the production of acidosis. Determinations of calcium excretion showed that a large amount of calcium was retained in the body although the serum calcium rose but little. When 20 grams of calcium lactate were given instead of the chloride

to a patient suffering from tetany, active tetany at once appeared but disappeared again after two days it was probably due to the readjustment of the acid base balance. A slow increase in serum calcium followed, and the patient remained free from active tetany. A return to calcium chloride was followed by a prompt rise of the serum calcium to normal figures, and the signs of latent tetany disappeared. The body now, after fifty days of massive calcium therapy behaved as though it were rich in calcium and responded to parathormone (Collip) in a way in which it had failed to do before. More difficult to interpret were the results obtained in the treatment of a case of parathyroid tetany, 150 units of parathormone with 6 grams of calcium lactate were comparatively ineffective, but when foci of sepsis were removed and calcium chloride substituted for calcium lactate there was immediate clinical and chemical improvement on a much lower dose of parathormone. It was suggested that sepsis vitiated the action of parathyroid extract as it did that of insulin. The calcium chloride was probably effective more by its acid effect and by promoting a fall in serum phosphate than by virtue of its calcium ion. Ammonium chloride would probably have acted equally well. In this case, also, prolonged calcium therapy enabled parathormone to develop its full action. No experiences with cases of tetany of the second group were available, but it seemed probable that in all of them calcium chloride by the mouth would be of benefit by its effect in proving an acidosis. By way of absorption of calcium it would be of no value, calcium lactate should therefore not be given.

Dr NORMAN BURGESS (London) stated that for the estimation of the serum calcium he had employed the method described by Lindlaw and Payne in 1922. Pathological cases showing a diminished serum calcium fell into two groups, in the first the total calcium was normal while the precipitable calcium was low, in the second both total and precipitable calcium were markedly diminished. Dr Burgess then discussed the biological method employed by Vines, which depended on the recalcification of oxalated blood by the addition of the material to be tested and the comparison of the action of the latter with that of calcium chloride solutions of known strength. Vines and Grove found that injection of calcium chloride or administration of parathyroid increased the readily precipitated calcium in the serum, and that clinical improvement accompanied this increase. With reference to calcium metabolism in skin diseases Dr Burgess's work included the investigation of sixty-seven patients of which the majority were cases of urticaria, prurigo, or acrosphegia. Of the urticarial cases a clinical distinction could be made between those in which dermatographism was a marked or predominant symptom and those in which it was absent or slight. Of the former four cases were examined, and with out exception gave a very low figure for the precipitable calcium, while in three cases the total calcium was normal. In one case the dermatographism was so marked that rubbing the face and hands with a towel caused them to become swollen. Following treatment with calcium chloride and parathyroid extract after meals, the patient's condition became practically normal. In another case, after twelve days' treatment the precipitable calcium had risen from 3.9 mg to 8.5 mg per cent, and there was considerable clinical improvement. All the patients without dermatographism showed a diminished precipitable calcium, but the figures were not so low as in the former cases. The prurigo was mostly of the Besnier type, associated with ichthyosis, a thymic, hay fever, and eczema, only one of the sixteen patients gave a normal figure for the precipitable calcium. In the majority of the cases the total calcium was normal. In one case associated with vitiligo, the precipitable calcium rose from 5.3 mg to 9.75 mg per cent after one month's treatment with calcium chloride and parathyroid extract, and the symptoms disappeared. On the whole a considerable improvement had been noticed in the majority of these cases of prurigo under treatment with calcium and parathyroid. Of fourteen cases of acrosphegia eight gave normal figures for the total and precipitable calcium while in the remainder the precipitable calcium was much diminished. Two cases of generalized alopecia areata gave

very low figures for the precipitable calcium, the total calcium being slightly below normal. Of four cases of psoriasis only one gave a low figure, the rest being practically normal. In seven cases of eczema the precipitable calcium was lower than normal. One case examined after treatment showed considerable improvement, and the precipitable calcium had risen from 4.5 mg to 7.5 mg per cent. The total calcium was normal in five cases and slightly diminished in two. In all the cases of light sensitization (adult type) examined the precipitable calcium was lower than normal, the total calcium being approximately normal. Five cases of subcorneal dermatitis were investigated, of which two were normal, one showed slight diminution of both total and precipitable calcium, while the other two showed marked diminution of the precipitable calcium. In two cases of total alopecia areata there was a diminution both in total and in precipitable calcium, but particularly in the latter. One case of erythema multiforme showed a slight diminution, while a case of Darier's disease and another of xeroderma pigmentosum both gave normal values. Dr Burgess added that it was clear from the results obtained in this series of cases that the precipitable calcium of the serum tended to be diminished in those diseases which were associated with involvement of the sympathetic or endocrine-sympathetic systems, such as urticaria, particularly when associated with dermatographism, prurigo, especially in the ichthyosiform, hay fever, prurigo syndrome, acrosphegia, and alopecia areata. Good results might be expected to follow treatment with parathyroid extract and calcium when the precipitable calcium was low in cases of urticaria with dermatographism, encouraging results had been obtained in some cases of prurigo.

Dr C. G. LAMAR (Edinburgh) said that osteitis fibrosa was a chronic disease characterized by rarefaction of the bones, the presence of bone tumours containing giant cells, and by hyperplasia of the parathyroid glands, the latter being sometimes as large as a pigeon's egg and easily palpable in the neck. This coexistence of osteoporosis and enlargement of the parathyroids suggested some connexion between the two, and led him to examine the calcium metabolism in such cases. A marked hypercalcaemia was found, the amount of calcium present being 17 mg per cent, a figure comparable with that found by Collip in dogs injected with large doses of parathyroid extract. The blood inorganic phosphate was slightly lowered, but the acid soluble phosphate was normal. The magnesium chloride, urea and non protein nitrogen were normal. The clotting time of the blood was unchanged. The CO combining power of the blood was increased by 5 per cent, perhaps owing to the increased amount of base in the blood brought about by the hypercalcaemia. The patient was kept on a diet of milk alone and his calcium balance was tested over a period of a week. The output of calcium in the urine was about normal, but there was a considerable increase in the output of calcium and phosphate in the faeces, the result being negative calcium balance for the period of observation. These findings were similar to those found by Greenwald and Collip in dogs treated with parathyroid extract, and suggested that the decalcification of bones was due to excessive secretion of parathyroid hormone by the hyperplastic parathyroid, the effect of the hormone being to cause the mobilization of calcium in bone. If this interpretation was correct, osteitis fibrosa would be a metabolic disorder, analogous to acromegaly or exophthalmic goitre and not merely a disease of bone. While the parathyroid hormone brought about the mobilization of calcium in bone, the effect of vitamin D appeared to be to promote the synthesis and deposition of calcium phosphate. The value of vitamin D as a therapeutic agent was not confined to rickets. He had found it raise the blood calcium to normal in a case of fragilitas ossium. It also seemed possible that some of the benefit of cod liver oil, ultraviolet irradiation and sunlight treatment in tuberculosis was associated with the increased deposition of calcium phosphate around tuberculous foci, thus aiding in the natural process of cure. It appeared significant in this connexion that this treatment was most efficacious in tuberculosis of bone and glands.

## Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL.

CONVULSIONS CAUSED BY PITUITARY EXTRACT  
AFTER LABOUR

The following extraordinary reaction to a therapeutic dose of pituitary extract merits a short description, as such an event does not seem to have been recorded before.

The patient was a fat multipara, aged 40, who had suffered from typical diabetes for some seven years, and had been treated with insulin during her last pregnancy. On September 16th, 1927, a stillborn foetus weighing 12½ lb was delivered after a difficult forceps operation, the cause of death being haemorrhage from a tear in the tentorium cerebelli.

Insulin was stopped after labour, without sugar or acetone appearing in the urine.

Ten days after delivery the uterus was lax, and 10 units of pituitary extract (1 ccm pituitrin) were given intramuscularly at 11.20 a.m., and produced a very alarming condition which had at one time the appearance of being fatal. At 11.30 the patient complained of faintness. At 11.40 she felt sick and retched but did not vomit anything. Beads of sweat covered her face, which was ashy white. She asked urgently for the bedpan and began to pass a liquid motion, when she collapsed forward as she was being held on the pan. Her head drooped, the eyes were closed, she breathed heavily and seemed quite unconscious. She was laid flat in bed and then became stiff all over like the tonic stage of epilepsy, and the firmly clenched jaws had to be propped open to prevent her biting her tongue severely. The breathing was heavy stertorous, and obstructed, and her colour, which had been white, became blue and cyanosed. At 11.50 the pulse rate was 140 and the systolic blood pressure 70 mm., as far as could be made out. She began to recover consciousness and at noon scratched her head and stomach fiercely and asked what was the matter with her. For a few moments muscular twitches occurred and were especially violent in the jaws and hands. She was very confused mentally and asked for her husband whom she appeared to think was just outside, and for the baby which had been stillborn four days previously. At 12.5 p.m. the pulse rate was 120 and she complained of headache and itching and trembling all over. She was very restless, afraid she was going to die and wanted to sleep but could not. At 12.30 the bowels were opened and she complained that she could not see. She slept for short snatches and at 1.15 said that she could see better but felt very cold. The pulse was 120. At 2 she vomited three times, but her mind was becoming clearer. By 4 o'clock her mentality was quite normal and the pulse rate 116. At 6 p.m. the blood pressure had risen to 96/52 which is her usual pressure. Two hours and a half after the dose of pituitrin the blood sugar was raised to 0.188 per cent, although no food was given, she passed a considerable amount of sugar that evening and traces for the next few days, whereas she had been sugar free before this attack. She felt quite well on the day after the attack.

So far as we are aware there is no record of such a severe attack after pituitrin, although pallor, dizziness, and cold are common enough. The course of this patient's diabetes (which will be published later) suggests a hyperactive pituitary, and the bitemporal constriction of the fields of vision suggests the same thing, although no definite homonymous symptoms are present. The severity of the symptoms experienced after the pituitin may therefore be due to an overactive pituitary gland.

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M. P. SHACKLE, B.A.

London, W.1

## INVERSION OF THE UTERUS

In view of the case of uterine inversion reported by Dr J. C. Fotheringham in the JOURNAL of August 27th (p. 350) it may be of interest to record details of a patient I attended for the same condition.

A woman, aged 22, sent for me to attend her at her first confinement on July 20th, 1927. With the aid of forceps I delivered her of a normal healthy female child.

The placenta appeared somewhat adherent so I allowed forty minutes to elapse before making final efforts to express it, it came away without undue pressure, but when I attempted to separate it by torsion I found the inverted body of the uterus in my hands. I peeled the placenta from the endometrium and examined the latter, the surface appeared plum coloured and of a velvety consistency with a few oozing points of blood here and there, but no excessive bleeding. After the nurse had migrated the exposed surface with saline solution I endeavoured to reduce the inversion but failed. Since the patient showed signs of collapse I made no further efforts except ordering hot saline douches night and morning and general stimulating diet. Ten days later under a general anaesthetic I reduced the inversion by taxis which took about fifteen minutes. The patient made an uneventful recovery, and is now perfectly well.

There was very little haemorrhage in this case, but the evidence of shock and collapse at the time decided me to hold my hand till a later date, this was justified by the result.

Hove, Sussex.

J. G. HARRIS, L.R.C.P. and S.I.

COMPOUND FRACTURE OF THE HUMERUS  
SPONTANEOUS REPAIR

The following case is of interest on account of the unusually good result which followed such primitive treatment of the fractured arm.

An East African (Swahili) boy, aged about 14, applied for treatment at the native hospital Dar-es-Salaam, Tanganyika Territory, in 1926 complaining of 'the bone of the arm' (right).

The history given was of a fall from a tree 'several months before', owing to the usual native inability to reckon time of time this was the nearest estimate of the period which could be obtained. As a result of the fall the right upper arm was broken at about its middle and bone protruded from a wound. The patient stated that he himself tied a stick to the injured arm, and that he kept the stick on for about two months. He then removed the stick, and found that he had some movement of the arm but the bone still protruded. His power of movement of the arm continued to improve, but the bone did not go away, so he came to a white doctor for treatment.

Briefly, on examination there was seen some slight wasting of most of the muscles of the right arm compared with the left, and some outward bowing of the upper arm. At a point about the junction of the middle and lower third of the upper arm, and just external to the lower part of the biceps muscle was protruding a jagged piece of bone about three quarters of an inch long, surrounded at its base by scar tissue, which appeared healed and clean. On seizing the projecting bone only slight movement of it could be effected. The right humerus seemed intact and the movements of the right arm were only slightly limited compared with those of the left. There was no pain or tenderness and no shortening could be made out on measurement. There was no evidence of nerve involvement.

A radiogram showed that the humerus was intact with outward bowing and some thickening at what was presumably the old site of fracture. There was a detached fragment leading from this point downwards and outwards and ending outside the flesh shadow, with some periostitis at its base. With simple expectant treatment the fragment was eventually withdrawn with forceps, and the resulting sinus healed quickly.

The photograph is of the case shortly after it was first seen. Such a good functional result after such crude treatment must be very exceptional, and it is an interesting conjecture as to what could have been the original bone injury.

C. R. STEEL, M.R.C.S., L.R.C.P.,  
D.T.M. and H. Lond.,  
Medical Officer, Tanganyika Territory, East Africa.

## THE "RISING TEST" FOR ACUTE ABDOMINAL

For the last two years I have been using a test, both in private and hospital practice, which has proved exceedingly useful—more especially in those borderline cases (chiefly cases of appendicitis, where one might reasonably be persuaded to put off operation, perhaps until the next day or so).

The "rising test" consists in the patient putting both hands down by the side of the thighs and then rising himself in bed by means of the abdominal muscles. This produces pain immediately, and the patient fails to rise himself or complains of pain in doing so. This test will prove positive when there is little or no tenderness in the abdomen. In my hands it has frequently proved the presence of acute abdomen, and is often the decisive factor in doing an immediate operation. The test is a sign of an acute abdominal condition, not necessarily appendicitis, and applies equally well in any acute abdomen.

The rising test has been tried by a physician in a large teaching hospital, who writes to me that it is working well.

C. L. GRANVILLE CHAPMAN, F.R.C.S.,  
Surgeon, Grimsby and District Hospital.



## CONGENITAL OCCLUSION OF THE SMALL INTESTINE

THE following case resembles in some respects that described by Dr B. Sher in the BRITISH MEDICAL JOURNAL of September 24th (p. 549)

A male child the seventh in the family was born in December 1926. He was well nourished and weighed 8 lb. He passed no meconium but some green mucus and the anus admitted the little finger. At first he took the breast well but on the third day he began to vomit about half an hour after feed first bile-stained fluid and later faecal material. This continued with increasing distension of the abdomen till he died on the sixth day.

At the necropsy it was found that the distended upper coil of the small intestine ended in a bulbous part. There was about an inch of intestine with a tiny cord attached to its free border then another much smaller bulb continuous with the lower intestine of about 12 inches. The caecum and other parts of the large intestine were present and rotated perfectly. But they were very small in size. There was an intussusception of the ileum, probably agonal as it was not inflamed about an inch below the occlusion, and an inch and a half in length.

The mother had been treated for syphilis during previous pregnancies but her Wassermann reaction was negative. Several small lymph glands in the intestine near the occlusion were examined for spirochaetes by Dobell's method but none were found.

Sunbridge Well.

SIDNEY E. CROSEY, M.B., Ch.B.

## Reports of Societies.

### THE FUTURE OF RADIOLOGY

At the first seasonal meeting of the Section of Electrotherapeutics of the Royal Society of Medicine on October 21st Sir HENRY CANNAN delivered his presidential address, and three short communications were made by distinguished visitors from the United States, Denmark, and Switzerland respectively who had been elected corresponding members of the Section.

Sir Henry Cannan said that he took his election to be an indication that the Section regarded the science of electrotherapeutics as embracing the whole range of electromagnetic vibrations in their application to the relief of human suffering. It was no exaggeration to claim that no branch of medicine could record such rapid advances of recent years. A century ago few could have conceived that by submitting the subject to forces impalpable, invisible, and intangible the inner secrets of the human structure could be clearly revealed, malignant growths dispersed and rickety bones restored to normal. Though it was not yet to be explained how these and other effects were produced, they were so readily and certainly achieved that they had ceased to be surprising. Whither would these forces lead? It was right to give rein to the imagination if, as in this event, the imagination sprang from a foundation of facts already familiar. It would be alluring to discuss the possible future developments of electrotherapeutics but there were present in the Section three distinguished visitors from other countries who would indicate some recent advances for which they were responsible. He would make only one personal observation. It appeared to him that the advance which electrotherapeutics was making in all its applications was so rapid and important, so pregnant with possibilities, that not only was the employment of highly expert practitioners called for in this branch of scientific medicine but it was imperative that all medical practitioners should have a certain clear knowledge of the principles and practice of electrotherapeutics. The time had come when all medical students should have systematic instruction in these methods. The status of the radiologist on the staffs of teaching hospitals should be improved. The advent of a diploma in radiology was to be welcomed but it was not enough. It might encourage more specialization in this branch of medicine and that was a good thing but what was more needed was a larger general knowledge amongst medical men of the significance and importance of the subject. The electrotherapist should have equal rank with the physician and surgeon. Not only should he have his department which should not be considered a subordinate depart-

ment to any other, but he should have his own wards, beds and teaching facilities. The interests of patients demanded that the proper recognition of this branch of medicine should not be farther delayed.

### Radiological Methods in Diagnosis of Pulmonary Tuberculosis

Dr H. K. DUNHAM (professor of electrotherapeutics, University of Cincinnati), who addressed himself to the subject of radiological methods in the diagnosis of pulmonary tuberculosis, said that the radiologist, if he hoped to help the clinician in medicine, must translate for him x-ray densities into pathology. To do this it was necessary to use the stereoscopic method, by which alone it is possible to make useful study of the shadows with their pathological significance. In the single plate one of the subtler variations of density as between different areas were apt to be lost. Dr Dunham exhibited a large number of radiograms of chest conditions, and pointed out the markings which showed the stage and condition of the tuberculosis. A number of the examples were included to illustrate what he called the fan indicating tubercle is producing exudate. It was, he thought, too common in the United States for radiologists, while anxious to ensure that their radiological methods were sufficiently perfected to detect the earliest signs of tuberculosis, to fail to realize, what he thought was the greatest value of x-rays in this connexion, that the x-ray method enabled the physician to exercise care and control over the whole progress of the case. He also begged radiologists not to try to do too much, they should concentrate on giving the clinician some definite information relating perhaps only to a small fact rather than make a guess at something on which their methods did not enable them definitely to pronounce. Locked up in the x-ray plate was pathology. The x-ray pictures must be translated back into pathology, and the clinician must translate back into pathology his physical signs. Without this, the work on the chest would be lost to a large extent.

### Treatment of Pulmonary Tuberculosis by Modern Methods

Dr J. CHRISTENSEN (medical superintendent Vejlebjerg Sanatorium, Denmark) also showed a number of lantern slides illustrating some recent results in the treatment of tuberculosis. He dealt with the effect of artificial pneumothorax and sanocrysin, both had reduced the number of failures in tuberculosis treatment, and had greatly shortened the period. The reason why such different opinions were expressed with regard to the chemotherapy of tuberculosis was that the good effect of the agent was not to be expected in all tuberculosis cases, but only in those where there was evacuation or fresh spread. The sanocrysin specific treatment covered those cases in which the affection was of an exudative character. Artificial pneumothorax covered just those cases in which sanocrysin failed, it was useful where there was fibrosis of the lungs of a chronic type which did not react well to the ordinary sanocrysin regime. From the x-ray picture the best indications could be obtained for choice of treatment in tuberculosis. A number of the lecturer's lantern slides illustrated the good effects of both these treatments in selected cases. In some instances both treatments had been applied to the same case—collapse therapy to the one lung and sanocrysin to the other. He also urged close co-operation between the radiologist and those engaged in the treatment of tuberculosis so that a qualitative diagnosis might be reached with the greatest sureness.

### X Rays in the Treatment of Breast Cancer

The last of the three visitors to speak was Professor HANS KESLER (Basle University) who referred to the use of x-rays after operation for cancer of the breast, he had used the method in the Basle University Clinic since 1916. He first treated cases of inoperable carcinoma then operable recurrences and metastases, and finally carried out after-treatment on operated cases. The radiation was applied as soon as possible after operation. One Sabouraud dose being given through from 1 to 3 mm of aluminium. Of twelve patients irradiated as far back as 1918, seven were

still alive in 1927 and enjoying good health, two had died of cancer, and three had succumbed to other maladies. The heaviest mortality in breast cases arose among patients with pure scirrhous, and he was inclined to endorse the prognosis of the late Dr. Hedinger, based on histological considerations, that scirrhous was the most dangerous, and medullary carcinoma the least dangerous, type. By x-ray treatment inoperable cases had been rendered operable, tumours had been mobilized, and gland metastases reduced and then removed. He believed intensive irradiation for cancer of the breast to be an error. Wintz, the inventor of that method, and other radiologists in Germany, had now returned to the use of the minimum filter. Personally Professor Iselin said he had never been a believer in intensive treatment; he had never used the "carcinoma dose," and, in fact, so far as he could see, there was no such thing.

The thanks of the Section to the three visitors from abroad were expressed by Sir PERCIVAL HARTLEY and Dr. CLIVE RIVIERE.

### WHAT IS COMPARATIVE MEDICINE?

At a meeting of the Section of Comparative Medicine of the Royal Society of Medicine, held on October 26th, Dr. O. CHAIRLOCK BRADLEY, Principal of the Royal (Dick) Veterinary College, Edinburgh, read a paper entitled "What is comparative medicine?"

The word "comparative," he said, was capable of numerous interpretations, depending on the point of view of the interpreter. It was often considered to be synonymous with veterinary medicine. In the early days of history only one or two animals came within the consideration of veterinary medicine in a pastoral country like Bithlon, in the third millennium not only sheep and cattle mattered, while in a military country like Rome the horse was of paramount importance. Nowadays, however, it concerned itself with a great variety of species, ranging from the horse to cage birds, suffering from different diseases which were not all intercommunicable and which presented different manifestations. Veterinary medicine, then, afforded ample scope for comparisons and could well claim to be recognized as comparative medicine, but it did not include man and there was no justification for the exclusion of human medicine from comparative medicine, while there was abundant warrant for regarding both human and veterinary medicine as branches of a larger medicine. Both had a similar birth and growth. Both dealt with like problems by like means. Co-operation, long existing between both, had increased remarkably in recent years. There was, therefore, no sound reason for denying to them the collective title of "comparative medicine."

Comparative medicine, however, should have an even wider and more comprehensive connotation. Medicine had been built up gradually from materials imported, and these importations were most clearly evident in the foundations. The cell theory of Schwann and Schleiden, and the discoveries of Leenwenhoek, were of fundamental importance, although neither worked initially in the interests of medicine. It was never possible to predict when and where the results of research in one branch of science would affect the problems of other branches. Moreover, no one could foresee what provinces of science might not have to be asked to assist in any particular problem. The daily work of the medical man and the veterinary surgeon was essentially analytical and as it was always easier to analyse than to synthesize, they busied themselves with the relationship of things to man, rather than their relationship to each other. Accordingly this analytical method, invaluable as it was, must be checked and controlled by as extensive a general survey as possible.

Comparative medicine contained elements contributed from widely diverse sources, the physicist, the chemist, the biologist, the pathologist, all helped to accumulate the store of linked ascertainable facts which the practitioner took for his use. Thus regarded, it was an instrument for the proper comprehension in the perspective of the problems of human and veterinary medicine.

With little reservation comparative medicine might be considered as standing to applied medicine in much the same relationship as do pure and applied science. Just as

it was impossible to say when the truths of pure science might be applied, so was it impossible to predict when the facts of comparative medicine might form part of applied medicine. The work of Pasteur at first had no semblance of being an adjunct to medicine, and it progressed long and far before it became applied to veterinary medicine, and even longer before it touched human medicine. Comparative medicine, in brief, was a storehouse, be the provenance of its contents what it might, from which human and veterinary medicine could choose such things as were of possible application, and, taking them, give.

### JAMES MACKENZIE INSTITUTE

#### *Physiology of the Stomach*

In a lecture at the James Mackenzie Institute for Clinical Research, St. Andrews, on the influence of diet upon the physiology of the stomach, Dr. JOHN BOYD ORR pointed out that in much of the earlier work on the stomach there was a tendency to limit attention too exclusively to phenomena occurring in the stomach as if it were a semi-independent organ. The work of the past few years, however, has emphasized the close relationship and interdependence of the activities of the stomach and those of the other parts of the alimentary system. A derangement of function originating in any part of the alimentary canal tends to disturb the normal activities of the stomach, and many clinical symptoms located in, or at least referred to, the stomach have their origin in other parts of the system. In discussing the function of sensation, he distinguished between hunger and appetite. The former could be correlated with the contractions of the gastric muscle; the latter, however, depended not only upon the tone of the muscle, but also upon stimuli received from sight, smell, taste, and memory. Instances were given of cases of perverted appetites in animals, and it was shown that these tended to occur on deficiency diets, and that in many cases the abnormal substance craved for was rich in the substances which were deficient in the diet. It was suggested that hunger might indicate a demand for quantity of food, and that appetite was to some extent at least, in indication of quality rather than quantity.

With regard to the function of secretion, Dr. Orr said that a review of the most modern work indicated that perverted secretion, or excess or deficiency of gastric juice, was of less importance in the etiology of disease than had been formerly supposed. He regarded movement as the function which played the most important part in the maintenance of health and the causation of disease. Recent work had shown that the former conception of the acid alkali control of the pylorus was untenable. The movements of the stomach, including those of the pylorus, were of the same nature as those of the rest of the intestine, following the law enunciated by Bayliss and Starling. The pylorus was seldom, if ever, in health completely contracted. While the general movement of the food was outward from the stomach to the intestine, there was a normal tidal flow between the duodenum and the stomach, and it was this tidal flow which regulated the degree of acidity in the latter organ. The chief factors which influenced movement were, normally, diet and the emotions. Experimental results showed that the composition of the diet had both an immediate and a remote effect upon movement, the remote effect being produced by an alteration in the circulating fluids of the body. One of the most interesting features of the results of feeding experiments with deficiency diets was not the gross disturbances in the body, but the disturbances of the function of movement in the intestine which led to lesions such as inflammation and ulceration, especially in the pyloric and caecal regions. Discussing the influence of the sympathetic nervous system on the gastro-intestinal movements, Dr. Orr expressed the opinion that emotions such as fear, anxiety, and anger, which stimulated the sympathetic, causing inhibition of movement and contraction of sphincters in the intestine, were an important factor in producing stress in the lower part of the tract, and that this was often the beginning of permanent lesions.



## Rebiefus

### THE BRIGHT CENTENARY

THE third and fourth quarterly instalments of this year's volume of the *Guy's Hospital Reports* are combined and form a Bright Centenary number containing a most interesting symposium. Professor W. S. Thayer's charming oration on Bright, which was printed in full in our issue of July 16th, appears here also illustrated by three plates of his hero at different ages. This most complete study of a great pioneer bears evidence of much research and the elaborate references constitute a valuable and most complete bibliography of Bright's published work. The actual site of the special wards called "climical" in which so much of the observation and teaching of the physicians of Guy's Hospital was carried out is described by Mr. H. L. Eison, C.B., superintendent of Guy's Hospital and its senior ophthalmic surgeon. Under the title "Chronic Bright's disease without albuminuria," used by F. A. Mahomed in his M.B. thesis at Cambridge in 1881, Dr. J. A. Ryrie argues that the whole story of high blood pressure was constructed at Guy's between 1827 and 1881 by the pathological and clinical labours of Bright, Wilks, Gull and Sutton and Mahomed. Three articles from well known authorities in Germany, France and this country—Professor Ludwig Aschoff of Freiburg on 'Disorders of the kidneys with symptoms of Bright's disease,' Professor A. Lemoigne of Paris on its outstanding syndromes, and Sir John Rose Bradford, President of the Royal College of Physicians on uræmia—admirably express the appreciation of the medical world beyond the precincts of Bright's hospital.

Professor M. S. Pembrey reviews the work of Starling and his pupils on the process of secretion in the kidney; Mr. J. H. Pfeiffer sums up the practical bearing of tests for renal efficiency pointing out that apart from the question of determining the presence or amount of renal damage the estimation of the plasma bicarbonate is more important than that of the blood urea in deciding about operation and in his 'Studies in Bright's disease,' Mr. A. A. Osman continues his observations on the value of alkalis in the treatment of Bright's disease and its prevention. The development of the kidneys is described by Dr. C. W. Nicholson, and Mr. A. Ralph Thompson discusses the association of chronic Bright's disease with obstruction in the lower urinary tract. The incidence and pathological features of nephritis in early and in late syphilis with references to the literature are considered by Dr. C. B. Dowling who illustrates the highly characteristic picture of the acute syphilitic nephritis seen in rare instances during the early stage—namely during the first year after infection—thus contrasting with the nephritis that may arise in the latent period following the secondary stage and in the tertiary phase. The surgical treatment of chronic parenchymatous nephritis by decapsulation is favourably considered by Dr. John Fawcett who prefaces his careful discussion by admitting that the surgical treatment of chronic Bright's disease might well seem to emanate from the home of lost causes, but there is not any further reference to suggest that the senior of the two older universities is really responsible for Edebohls' operation.

Dr. H. C. Cameron writes wisely on nocturnal enuresis, and Dr. F. A. Knott pleads for more frequent bacteriological examination of the urine when clinically latent or intermittent septicaemia may appear probable. Dr. E. J. Greenwood, in discussing nephritis as a result of tonsillar sepsis, remarks on the much greater frequency of this sequence than of nephritis after acute otitis media, pneumonia, and skin sepsis, and from analysis of thirty-eight cases shows that in acute nephritis due to the tonsils their removal definitely improves the outlook by diminishing the risk of recurrent attacks and of chronic nephritis, but that

when chronic nephritis has developed it is very doubtful if tonsillectomy will do any good. While admitting that there is not any mental syndrome specifically and solely related to Bright's disease Dr. R. D. Gillespie gives an account of the forms that may occur and makes some comments on the rarity of Bright's disease in the insane.

### ATHLETICS AND THE HEART

If the reader will examine the evidence carefully for himself much information may be gathered from the book on *Heart and Athletics* by Drs. Felix Detsch and Emil Kant, translated into English by Dr. Louis Wapf. The authors have had the opportunity of examining in recent years and by modern methods many athletes of all types at the heart station in Vienna, and in this volume they present an analysis of their observations. The book is diffusely and confusingly written, it is difficult at times to be sure of the precise meaning of the text and it is a pity in such a controversial subject that more attention has not been paid to the manner of expressing the conclusions. How far this is due to translation cannot be estimated, since the original German text has not been available for comparison.

In the conclusions at the end of the book it is said that the most important fact recorded is that athletics brings about changes in the heart in a not unaccountable number of cases which in the present state of our knowledge, cannot be looked upon as harmful. Stated in this form the conclusion is not justified by the evidence given, for the numerous tables show and the authors themselves admit that the majority of athletes possess absolutely normal hearts. Less objection can be taken when it is stated, as on page 117 that "the normal man bears a marked loading of his heart without any change being produced in it on the contrary the 'inferior-value' heart suffers in often increasing enlargement early, even with slight strains made upon it." In other words if the true meaning of cause and effect be borne in mind "athletics" is not a cause of cardiac enlargement. The author brings forward no convincing evidence of enlargement of the healthy heart by effort, and such evidence as is given seems rather to support the view that if a heart is enlarged as the result of exercise, then it is an unsound heart.

### THE NORMAL CHEST OF THE ADULT AND THE CHILD

*The Normal Chest of the Adult and the Child* written by Professor J. A. Myers in collaboration with five other members of the teaching staff of Minnesota University is a book whose appearance indicates the gradual advance that is being made in medical education. It represents the outcome of an attempt to teach the student something about the normal chest before confronting him with a pathological one. Many will remember the confusion of the first three months of clinical examination when we were faced with a medley of heart and lung cases, and were expected to sort out for ourselves the pathological from the normal. Interesting work it was, and stimulating to the mind but it was not good teaching. That position is now changed and both in this country and in America the student is being taught the standards of the normal chest by means of auscultation, radiography, and vital capacity measurements.

The book before us is excellently suited to those who have charge of this branch of teaching. After dealing with the anatomy and physiology of the heart and lungs it goes on to electro-cardiography and the x-ray examination of the chest to the correlation of body weight and chest measurements to the development of the thoracic organs,

*Heart and Athletics*. By Dr. Felix Detsch and Dr. Emil Kant. Translation by Louis M. Wapf. A.B. M.D. London: H. K. Lewis, 1927. (5s. 6d.) 16s. 6d. net.

*The Normal Chest of the Adult and the Child*. By J. A. Myers in collaboration with S. S. Jary White, R. E. Scammon, A. T. Ramirez, C. A. Stewart, George F. Felt. With an introduction by Elias P. Lyon. London: Baillière Tindall and Cox, 1927. (Med. 8vo. Pp. xv + 413. 14 figures.) 22s. 6d. net.

*Guy's Hospital Reports*. Vol. 7 (Vol. 7, fourth series). Nos. 3 and 4, July and October 1927. Edited by Mr. L. F. Hirst, M.D. London: The Lancet, Ltd. (Med. 8vo. Pp. 25-602. 4 plates. 2 figures. Price 4s. 6d. net. Number 25s. Annual subscription 12s. 6d. for volume of four parts including numbers 12s. 6d.)

and to the physics of percussion and auscultation. The information is fairly full, it is perhaps a pity that the erection of the heart and lungs to exercise is not more fully considered, and that the estimation of basal metabolism is not included, but no doubt the editor has sufficient reasons for restricting the book to its present limits.

### THE FLUSHINGS OF THE MENOPAUSE

In a monograph of fifty odd pages entitled *The Flushings of the Menopause*, Dr. HANNAN records his investigations and discusses possible lines of treatment. Its chief merit is that it is based on the personal observation of 131 women, of whom 73.3 per cent complained of some degree of flushing, and 26.7 per cent did not. The distribution, character, duration, and frequency of the flushings are noted, together with any symptoms associated with or immediately preceding or succeeding the flushing.

Flushing is regarded as a "vasomotor crisis" and observations are given, unfortunately only in four patients, on the changes in blood pressure and pulse rate before, during, and after flushing, and an attempt is made to correlate the intensity of the crisis with the age of the patient, the character of the menstrual changes, and the psychological condition of the patient at the menopause.

The material at the author's disposal is much too small for anything definite regarding the nature and treatment of menopausal symptoms to be based on it, and severely warrants the conclusions summarized at the end of the monograph. His work will, however, be found suggestive and useful.

### A COMMEMORATIVE VOLUME

VOLUME XVIII of the Italian archives of surgery is dedicated to Professor Raffaele Bastirrelli in celebration of his having attained the twenty-fifth year of his professorship, and it contains nearly one hundred articles of surgical and pathological interest, written by colleagues and admirers in his own country and abroad. A few only of the contributions can be referred to here. Professor Arcangeli writes on "osteomielitis," distinguishing the disease from senile osteoporosis and from the so-called starvation osteomielitis. True osteomielitis he holds to be an infective disease caused by the diplococcus discovered by Mopingo in 1890. Its infective nature is further shown by its frequency in some localities and its rarity in others, by its appearance in the form of epidemics, and by the frequent occurrence of several cases in the same house. Osteomielitic patients, he states, mostly have rickety children or have lived with osteomielitic or rickety children. The infection is supposed to be transmitted through the urine and feces, and one of the reasons why women are especially liable to the disease is said to be their frequent contact with rickety children. Fehling's theory that the disease is caused by disordered ovarian function and curable by ovariectomy is rejected by Arcangeli, who considers that any effects that follow the operation are due to the chloroform inhalation rather than the operation itself. According to the author, true osteomielitis can be almost always cured by inhalation of chloroform. It is necessary that the necrosis induced should be profound, as if for a major operation, and that it should be continued for three-quarters of an hour or an hour. Arcangeli has treated 150 patients by this means with almost uniform success. Professor Leucbe contributes a paper on section of the ram communicans for relief of painful affections of the extremities, reference being made chiefly to painful stumps and to diffuse osteomyelitis. In Raynaud's disease and erythromyalgia, he considers that percutaneous sympathectomy is successful in 85 per cent of cases having occurred in various forms of juvenile arteritis. In the treatment of osteomyelitis, while in scleroderma percutaneous sympathectomy combined with sympathectomy gives the best results, he regards sympathectomy as the best method.

With little reservation considered as standing to the same relationship as do pure

of the brachial plexus as an essential part of the treatment, combined with section of the sympathetic trunk above the inferior cervical ganglion and of the ram communicans of the vertebral nerve. With regard to painful stumps, he distinguishes two types. In one the vasomotor disturbance is peripheral and objective (coldness, cyanosis, trophic changes) and the pain is supportable, such cases are generally cured by percutaneous sympathectomy. In the second type the pain is intolerable, diffuse, radiating further with the lapse of time, and in form of such cases congestion of the corresponding region of the cord was observed. No peripheral operation of any kind gives permanent relief in this type, although division of the posterior roots may give a partial or temporary relief. Sympathectomy, on the other hand, which was performed in four cases, has given immediate and complete relief, persisting for seventeen, five, four, and two months respectively, and the author regards it as the operation of choice. Sympathectomy was found to be equally satisfactory in those distressing cases in which severe neuritis follows some insignificant traumatism—the so-called ascending traumatic neuritis. These cases are at present held to be incurable, but Leucbe found that sympathectomy gave complete and apparently permanent relief in three cases. Sir Berkeley Moynihan contributes a valuable article on perforating gastric and duodenal ulcers, their diagnosis and treatment.

### MEASLES

In the preface to their book on measles, Drs. ROBERT DUBREUIL and PIERRE JOUHANOV are careful to state that it is not to be an exhaustive study of measles, but merely an exposition of the facts connected with the epidemiology, immunology, and prophylaxis of the disease. Both writers, particularly Dr. Debré, are well fitted to write such a work, as they have for some years taken an active part in the campaign against measles and, as will be seen from the bibliography to the volume, have made several contributions to the literature of the subject.

The book is divided into three parts, dealing with the epidemiology, immunology, and prophylaxis of measles respectively. In the first part the writers discuss the mortality from measles, giving tables showing the mortality in ten different European countries, the factors of mortality such as age, sex, previous health, epidemic constitution and environment, and the social factors in the high mortality from the diseases in the working classes. The second part, which deals with immunology, contains two chapters, the first of which is concerned with susceptibility to measles during and after the first year, special attention being paid to the subject of congenital measles. In the next chapter an account is given of the contagiousness of measles at various stages of its course and of the immunities contained in the blood. The third part, which forms the most important section of the book, deals with prophylaxis. The writers begin with the study of general methods, and then go on to discuss prophylaxis by convalescent serum, or the whole blood or serum of those who have had measles some time previously, such as the parents and, finally, active immunization against measles by modification of a method first introduced by Francis Home in 1758. An extensive bibliography is appended.

The book contains an admirably lucid exposition of the recent work on the aspects of measles described. We must, however, take the writers to task for giving to an imaginary "Mme. en Angleterre" (p. 220) the credit for testifying to the prophylactic value of convalescent serum which, to judge from the dearth of literature, has so far not been employed in this country in the prophylaxis of measles.

### PATRICK GEDDES AND TOWN PLANNING

MANY members of the British Medical Association attended the Annual Meeting in Edinburgh last July and have noticed a tall building nearly at the top of Castle Hill, upon which is mounted an observatory. In a book

by Patrick Geddes, *La Nouvelle* (Paris, 1926), the author, who is a member of the Académie des Sciences, discusses the importance of town planning in the prevention of disease. He refers to the observatory on Castle Hill as a symbol of the need for a new approach to town planning, one that takes into account the health of the population. He also mentions the work of the British Medical Association in this field.

By John H. Hannan, M.A., M.D., F.R.S., F.R.C.P., F.R.C.S., F.R.C.O., F.R.C.S.D., F.R.C.S.(E), F.R.C.S.(G), F.R.C.S.(I), F.R.C.S.(N), F.R.C.S.(S), F.R.C.S.(T), F.R.C.S.(U), F.R.C.S.(V), F.R.C.S.(W), F.R.C.S.(X), F.R.C.S.(Y), F.R.C.S.(Z). London: Tindall and Cox, 1927. (5s. 6d.)

entitled *The Interpreter, Geddes*, written by Miss Amelia Duffries, we learn that this tower was once the habitation and laboratory of Patrick Geddes, sometime professor of botany at St. Andrews University, and now professor of sociology and civics at Bombay. The book under review purports to be a life of Geddes and an exposition of the principles for which he lives and works.

Geddes has many sides. He was a biologist first and with Professor Arthur Thomson wrote some works on the evolution of sex that are well known and much read. But he ranges outside the strict limits of theory into the fields of practical sociology into statistics, economics, the dramatization of history, war, civics, the vexed coal crisis, and, most of all, into town planning. And who shall say that these divergences are outside the field of biology? Geddes is without doubt an eccentric genius, geniuses are often eccentric, and perhaps they are entitled to be so for they are outside law and a law unto themselves. But alas! his biographer has caught too much of his eccentricity, so that it is with difficulty that the reader can discover from her book any clear picture of her revered master, she eludes for him that he is "The Interpreter," but she fails to be an interpreter of him. Nevertheless, the book is one of interest. Town planning is certainly the chief love of Geddes, and in that field he has done some remarkable work. The design for the University of Jerusalem for which he and Morris were responsible, and of which there is an illustration in this book would alone give him claim to distinction. But he has served in wider field, notably in India, where he prepared many reports on town planning.

Perhaps one of the most amusing parts of the book is the story of the town planning exhibition in Ghent in 1913. Geddes took part. The visitor sought out his exhibit on the eve of the opening. There was found,

the gallery of the vast German Pavilion magnificently arranged. Every photograph was a fine one, every plan splendidly drawn and each exhibit was not only well framed and glazed but in good taste. Underneath each was a clearly printed label in gold and black, the whole was well hung and the wall covering artistic. Thus the gallery presented a unity and harmony which heightened the efficiency manifest throughout. Guardians in German uniform stood at each end of the building who were able to reply intelligently to all my questions.

But no one knew where was Geddes's show except these German officials. When at length the right place was discovered

I stumbled over scaffolding and fell into a litter of maps, plans and prints scattered over the floor. Around was a vast gallery partitioned into smaller rooms of different sizes, papered with yellow casing on which were roughly pinned plans, photographs and incomprehensible-looking diagrams. In every room masses of material were scattered on the floor with endless piles of apparently disordered notes among them some realistically horrible representations of war. Hearing voices I ventured further and there on his knees working in shirt sleeves and at high pressure—was the slim, agile, bearded figure of the master. Yet Geddes, received the International Award, and not the Germans.

The book has a foreword by Rabindranath Tagore and a preface by Lewis Mumford, who knows and tells what Geddes has done, and a very interesting introduction by the late Israel Zangwill which ends with the words: "We no citizens of no earthly city. That is not to say we should be content to be citizens of mean cities."

#### A GUIDE TO BEGINNERS IN GENERAL PRACTICE

To justify his choice of "career" the general practitioner must acquire speedily some business knowledge, the faculty for orderly arrangement of his life, and an extensive and varied acquaintance with human psychology, especially of the human sick. No teaching school has ever yet considered it part of its duties to instruct its students in these essentials, probably because teaching staffs know nothing of the matter. Dr. W. S. SYKES, though comparatively young in practice, endeavours to enlighten the beginner by his *Manual of General Medical Practice*.

*The Interpreter, Geddes, the Man and His Work*. By Amelia Duffries. London: George Routledge and Sons Ltd. 1927. (Demy 8vo. Pp. xiii + 335. Illustrated. 16s. 6d. net.)  
*Manual of General Medical Practice*. By W. Stanley Sykes, M.A. M.B. B.Ch. Cantab. D.I.H. Lond. etc. London: H. K. Lewis and Co. Ltd. 1927. (Cr. 8vo. Pp. xii + 267. 7s. 6d. net.)

Dr. Sykes writes in a pleasant and readable style, evidently he takes the trouble, so often neglected by general practitioners, of keeping records of his practice, and he can be quite interested in analysing his results, and he can be quite forcible in defending the honour of the general practitioner. When he went into practice he had no idea what influence was like. Osler's *Medicine* had given him three and a half pages, which he found unsatisfactory about influenza to forty-six about typhoid. Yet he has had to treat 112 cases of the former disease for every enteric case. He disagrees with Osler that the thermometer is the most trustworthy guide in the diagnosis of appendicitis and relies on a rising pulse rate with increasing toxicæmia. Dr. Sykes resents the tendency of the official to attribute puerperal fever to infection by the doctor, and he challenges highly placed medical officials to polish up their knowledge of midwifery and conduct a series of confinements themselves. He considers that the Royal Commission on Venereal Diseases estimated the number of those infected with syphilis far too high, and that more reliance can be placed on the figures for unselected fragments of the population, such as form the clientele of a general practice, than those derived from bodies of lunatics, convicts, or peccolized groups. Thus amongst 2,250 individuals in his practice the prevalence of syphilis was 0.22 per cent. instead of 10 per cent. He admits that his figure is too small but he points out that a proportion of 10 per cent. would mean that for every case recognized he had overlooked forty-nine. Dr. Sykes humbly submits that his powers of diagnosis are not as bad as that. The experience of most general practitioners would probably support his views.

While much of Dr. Sykes's book will appear mere truism to established practitioners, to the student starting in practice its many suggestions should be invaluable.

#### NOTES ON BOOKS

A new textbook of clinical ophthalmology has been written by two French doctors, Messrs. JACQUES DUVERNEAU and ARSCOLA. For some time over the first half the book is arranged on the customary systematic plan, but for the rest it is composed of a series of monographs of a distinctly attractive and illuminating order. There are chapters on the innervation of the eye and its disorders on congenital anomalies on tumours and pseudotumours on the pathology of the eye and its relation to general pathology, on ocular medication and general therapeutics on injuries to the eye and their medico-legal aspects and the determination of percentages of invalidity. The book is well written and well printed. The arrangement of the paragraphing is good, there are ample spacing so that the eye of the reader is not wearied with a never-ending succession of unrelieved grey pages. But the illustrations are poor, judged by our standards, they are few in number and the representations or tenuous drawings are such as might be considered likely to deter anyone from attempting to see their originals. The volume is of cumbersome shape—somewhat like Bradshaw's railway guide squat and heavy.

SIR W. ARBUTHNOT JAYE has written a little book with the title *Secrets of Good Health*. It appears for the most part to be a collection of articles which have appeared in the *Daily Mail* on matters of health interest. The book deals with a variety of topics in a brief and vigorous manner. The author claims that "These hints will explain in simple non-technical language how and why the human organism benefits or suffers from the various physical influences to which it is subjected under the complicated conditions of modern life and diet." Much attention is given to food and food values and notes by other writers on these subjects are included. Many of the opinions expressed are individual, but this adds emphasis to the writing. One suggestion seems to us somewhat surprising. The author very properly animadvertes upon the lack of sufficient lavatory accommodation especially for women and upon the ill effects of constipation. But he appears to be altogether dissatisfied with one good evacuation of the bowels a day and suggests that in the natural state defecation would follow each meal and that this habit should be cultivated. If suitable foods are eaten the bowel evacuates a quantity of

*Hygiène*. Par A. ROCHON DUVERNEAU et ARSCOLA. Paris: 1927. (Demy 8vo. Pp. 128. 16s. net.)

London  
viii + 152.

material after each meal, proportionate in bulk to the amount of food taken." There may be persons to whom such a sequence of events would prove an advantage, but if the proposition thus stated be universally true, then there must be many who will say "Let me eat unsuitable foods, and leave me to my one good action a day."

The story of the naval operations in the South Atlantic and Pacific in 1914, as told by Lieutenant Commander JOHN IRVING, is a thrilling romance of the sea.<sup>11</sup> Not that it is the author's intention to be picturesque. On the contrary, he writes seriously, with the apparent, though not expressly stated, object of bringing into relief certain fundamental requirements in naval armament, and the age-old chivalry of the sea that ceased with the advent of the submarine. The demands and estimates of the navy were often, we are told, the shuttlecock of political opportunism, and invariably suffered. Lack of cruisers, intensified by their withdrawal in subordination to military whims of the moment—to form escorts for expeditions set on foot prematurely for territorial acquisitions, exposed our maritime trade—our vital and most vulnerable point—to attack by the enemy. In arriving out the task of freeing the trade routes, met by sea, from this menace Craddock's heterogeneous and inferior squadron was sent from the South Atlantic, by "a stupendous error of the Admiralty," to oppose the homogeneous and formidable squadron of von Spee in the Pacific, and met its fate gallantly off Coronel. Then the wheel of fortune turned, and von Spee's squadron, on entering the Atlantic, met its fate, equally gallantly, off the Falklands. The chivalry of the sea was upheld by both. In the author's narrative of the latter battle an incident, reminiscent of one in the history of the Peninsula war, is related. "As though to bring a breath of peace and tranquillity to a scene of blood, a full rigged ship was observed to pass down the lines with her sails full and bellying to the slight breeze. What she was doing there no one knew." In this battle it comes as a surprise to be told that the British casualties were only ten killed and fifteen wounded, while the German losses are estimated at 2,263.

Dr R. G. COCHRANE, medical adviser to the Mission for Leprosy has prepared a pamphlet on the symptoms, diagnosis, and treatment of leprosy for the use of those who have had no opportunity for special study of this disease. The pamphlet is clearly written and the subject is approached from the practical standpoint, so that it can be strongly recommended to those who desire a short and up to date summary. It can be obtained from the Mission for Leprosy, 33, Henrietta Street, W.C.2. On August 27th (p. 362) we referred to a recent pamphlet by Dr Cochrane entitled *Leprosy in India a Survey*.

The anonymous little book entitled *The Invert and His Social Adjustment*<sup>12</sup> is the work of a cultivated layman, himself the victim of the anomaly on which he writes. The book is intended, as Mr R. H. HOWLESS says in the introduction, for two classes of readers—namely for those who are themselves invert, to whom the writer gives excellent advice, and also for the average man who has mistaken views about the nature of sexual inversion. The work is an interesting human document and well fulfils the purpose for which it was written.

<sup>11</sup> *Coronel and the Falklands*. By John Irving, Lieutenant Commander R.N. (ret.) London: A. M. Philipps, Ltd. 1927. (Gr. 8vo, pp. 247 illus. bound 6s net.)

<sup>12</sup> *The Invert and His Social Adjustment*. By Anomaly. With an introduction by Robert H. Howless, M.A., Ph.D. London: Baillière Tindall and Cox. 1927. (Cup. 8vo, pp. xxi + 160. 3s 6d net.)

## PREPARATIONS AND APPLIANCES

CLAMPS FOR GASTRECTOMY AND GASTRO-ENTEROSTOMY  
Mr C. W. CATHCART has devised two clamps for abdominal surgery, which he finds are very satisfactory. He writes:

Both clamps are of similar construction. Each consists of parallel steel bars approximated by a screw at each end. This mechanism allows a delicate adjustment of pressure, which can be increased at will to a crushing force. The advantage of having the pressure thus under control is especially important in the operation of gastro-enterostomy. The ordinary type of forceps, which moves on a pivot, has been found to injure the gastric mucous membrane by unequal pressure at certain parts.

1. *The Gastrectomy Clamp*—This consists of two strong steel blades shaped as shown in the illustration. They are eight inches long, and a quarter of an inch broad where their surfaces meet. The lower blade (that is on the reader's right) has fixed to it a short rod "A," which is tipped with a screw. At the other end of this blade there is an oval hole into which the oval head of rod "B" fits, "B" is therefore detachable, but cannot rotate in its socket. The upper blade (that is on the reader's left) has a hole at each end which allows the rods,

"A" and "B" to pass easily through. Each rod is supplied with a large screw nut by which the blades can be pressed together.

*Mode of Use*—After the stomach has been prepared for resection "B" is removed and the nut of "A" loosened. The free ends of the blades are passed above and below the stomach at the site chosen for resection. "B" is then inserted through the holes in the blades, and its nut is fitted on to it. The blades are then pressed together by screwing down the nuts, which are turned from time to time as the tissues are compressed. When no further pressure can be made the nuts are loosened and the blades allowed to separate. The clamp is then used as a tourniquet as follows. It is moved about 1½ or 2 inches nearer the fundus of the stomach, and the nuts are carefully screwed down till the stomach is compressed sufficiently to prevent hemorrhage or the escape of gastric contents, and no more. The crushed portion of the stomach is then divided and sewn up. "B" is then removed, and the clamp with drawn. The parts beyond the affected portion of the stomach or duodenum are afterwards dealt with, and the operation is completed as may be required.

### 2. The Gastro-enterostomy Clamp

This is a lighter form of the gastrectomy clamp. The blades are much lighter, because they are needed only for holding the required fold of stomach wall. They are grooved longitudinally. At the proximal end of the blade, near "A," a small block of steel is attached. It is pierced with six small holes, tipped with a screw, about a quarter of an inch apart. The intestinal forceps (3) which are required for this clamp are of the usual light type with the following addition. A small block of steel is fastened under one of the blades just beyond the pivot. To this two small pins are attached, projecting to the left, one is plain, and the other, "C," is screwed to fit the holes on the clamp.

*Mode of Use*—Having exposed the part of the stomach wall which is to be connected with the duodenum, pass a right needle (round point) with a thick strand of silk or catgut into the muscular coat of the stomach at each end of the intended line of incision into the stomach. Draw each thread through the wall, leaving about four inches of double thread free. Knot the ends together, and cut off the rest along with the needle. This leaves a loop of catgut at each end of the intended line of incision. Open the blades of the clamp and gently draw the selected part of the stomach wall between them by means of the catgut loops. Then approximate the blades to hold the fold securely and no more. Now grasp the selected portion of the jejunum lightly with the intestinal forceps and lay the forceps alongside of the clamp which holds the stomach. Adjust the forceps to the clamp and fix the two together by screwing the rod with the milled head, "C," into the hole which most suitably adapts the intestine to the stomach. Remove the catgut loops and proceed with the gastro-intestinal anastomosis. When the suturing is complete release the intestinal forceps, first from the clamp, and then from the intestine. Lastly, having screwed off the nut, remove "B," and withdraw the blades of the clamp.

The makers are Messrs Smith, Hurford and Drysdale, 21, Lauriston Place, Edinburgh.

### ERGOTOXINE

We have received from Messrs Burroughs Wellcome and Co. a sample of ergotoxine ethanesulphonate. This is a new preparation of the alkaloid ergotoxine, which is one of the principal alkaloids of ergot. Ergotoxine was introduced by the Burroughs Wellcome and Co. many years ago, and sold by them as ergotoxine phosphate. The recent discovery of the allied alkaloid ergotamine has stimulated interest in their principles of ergot. Ergotamine and ergotoxine differ in their chemical formula but appear to have the same qualitative pharmacological action. The evidence available suggests that the intensity of their actions is also similar. It will be of interest to see if further research reveals any difference in the action of these alkaloids. It is satisfactory that the alkaloid ergotoxine is now available in a form which, the makers state, has various advantages over previous preparations.

## Notae et Vetera.

### A SIXTEENTH CENTURY LONDON PHYSICIAN'S BOND, 1587

I was fortunate in acquiring this document it among a bundle of ancient deeds, most of which were of early date and none or then of a later date than that of Queen Elizabeth. The text is as follows:

This Indenture made the thirde day of Marche in the eighte and twentieth yere of the reigne of Our Sovereigne Lady Elizabeth by the grace of God Queene of England France and Irland Defendor of the fau he etc Betwene William deLaune of London Doctor in phisic on thone partie And Adam Rayneshave Citizen and Carpenter of London on thother partie Witnes eth that whereas the said Adam Rayne have by one recognizance of the nature of a statute staple bearing date the day of the date of this presents Taken and acknowledged before the righte honorable Sr. Christopher Wraye Knight Lorde Cheife Justice of the Queene's Mye ty Court comorle called the Kings Benche at Westminster to holde and standeth bounde unto the said William deLaune in the somme of Thre hundred pounds of lawfull money of England Payable as by the same recognizance more fully at ludge doth and may appere. Nevertheles the said William deLaune for him his heires executors administrators and assigns and for every of them doth covenant and grante to and with the said Adam Rayneshave his heires executors administrators and assigns and every of them by this presents That if the said Adam Rayneshave his heires executors administrators or assigns or any of them do and shall well and truly paye or cause to be paid to the said William deLaune his executors administrators or assigns At or within the nor dwelling house of the said William deLaune called the signe of the three starres situate ad beinge within the precincts of the Blacke friers nere Ludgate in London the somme of one hundredth and fower score poundes of lawfull money of England in manner and forme followinge (that is to say) On the fourth day of Marche which shalle in the yere of our Lorde God One thousand fyve hundredth fyve score and sixe fiftene pounds and on the fourth day of Marche that next immediately followinge which shalle in the yere of our Lorde God one thousand fyve hundredth fyve score and seven one hundredth thre score and fyve poundes THAT THEN the said recognizance shalbe clerelie voided and of none effecte AND IF defenite lill happen to be made in payement of the said some of one hundredth and fower score pound or any parte or parcell thereof contrary to thorder forme and place aforesaidclered. THAT THEN the said Adam Rayne have for him his heires executors administrators and assigns and for every of them doth covenant and grante to and with the said William de Laune his heires administrators executors and assigns by this presents That the said recognizance shal stande abyde and remaine in full strength and vertue AND FURTHER the said William de Laune for him his heires executors administrators and assigns doth covenant and grante to and with the said Adam Rayneshave his heires executors administrators and assigns by this presents That he the said William de Laune his executors administrators or assigns immediately after that full payment shalbe had and made of the said somme of £180 in forme aforesaid according to the true intent and meaninge of this presents shall and will upon the lawfull request or demande of the said Adam Rayneshave his executors administrators or assigns therefore to be made not only deliver or cause to be delivered to the said Adam Rayneshave his executors administrators or assigns At or within the forsaide nor dwelling house of the said William de Laune the forsaide recognizance or statute staple to thintent to be cancelled and made void But also at the costs and charges of the said Adam Rayneshave his executors or assigns shill and will At or in the office of the clerke of the staple for the tyme beinge to be holden and kepte in London give his or thers consent that a vacat or entree shal or may be there entered (if nede shall so require) As by the said Adam Rayneshave his executors or assigns or by his or here learned counsell shalbe reasonably devised whereby it may there appere that the same recognizance or statute staple is discharged and made void In witness whereof the parties first above named to these indentures sounderly have set their seales the day ad yere above written 1587

The seal is missing, but on the tag is written, in two hand "Sigillatum et deliberatum in presencia Roberti Balere feltmker et mei Willelmi Sesche (?) scrivener"

An account of William de Laune will be found in Munk's *Roll of the Royal College of Physicians* (second edition, vol 1 p 84) From this source we learn that he was buried at St Anne's, Blackfriars, on February 19th, 1610

DeLaune's son, Gideon was a prominent man in the early days of the Apothecaries' Society, and he had other children as appears from a study of his will, an abstract of which is as follows:

(P.C.C. Wood 23) William deLaune preacher of the word of God and Physician 27th November 1610.

To be buried here unto my late decess wife if it be possible In form of ale to Gideon deLaune my eldest sonne all my messages lundes etc (except what I give to my sonne Paule deLaune) in present called the blackeffriers nere Ludgate of London which I late purchased of Sr William More and the said Gideon in 6 month to pay the following—Poore of frenche church in Londo £4 Poore of blackeffriers and the churches of Norwich and deepe to every one of them 20/ [this probably means 20/ to each place]. A poore kindred beyond the sea £5 to be admitted by my son Nathaniel deLaune Sister in law Mary DeLoges widow of Cornelius Tance [? Tance] £3 Sonne Paule for the good service he hath done me the new house which I built with the greates court and the house of office therein and also one of the chambers which he shall choe ready furnished and also the Apothecaries stuffe and furniture in the said new house—paying unto Gideon deLaune his eldest brother £50 Said sonne Paule deLaune these £50 mentioned in a bond under the names of Mr Burr Mr Hartley and Mr Boulton as also my silver guilt pott of a pynle for a remembrance Abraham deLaune sonne and heire to said Gideon deLaune the great silver selfe seller Perdue of goods as of the £650 which arise of the sale of my houses canell to my sons eldest son Gideon, and sonne Peter Nathaniel, and Paule and to Henry deLaune sonne and heire to Leese my sonne decessed who for his marriage received £100 And to my daughters Sara Ester and Elizabeth As for my sonne Isaac Peter Chamberlen my will is he repaire the entree of my house wherem he now dwelleth as it was when he first entered as he ought to be judgement of honest men before he receive any benefitt And since my daughters have had more than my sonnes a well at their marriages as at their mother's decess he he in maners, each sonne to have £5 extra Executors son Gideon deLaune and Nathaniel Mary my son in law And if Gideon refuses to execute then his legacies to my son Peter and as he refuse then to my son Nathaniel and if he refuse then to my son Paule In which case I will only £150 to son Gideon Witses Rob Andrews Martin Broome Roger Langton

The will was proved on March 12th 1610 (O.S.) and administration was granted to Gideon de Laune and Nathaniel Mary The deceased is spoken of as of the "parish St Anne in le Blackfriars London"

From Venn's *Alumni Cantabrigie* we learn that Peter was of Peterhouse D.D. and Pastor of the French congregation at Norwich in 1647 Paule was of Emmanuel, and an account of him will be found in Munk's *Roll* (vol 1, p 170) Abraham and Henry de Laune both figure in Venn's book, the former was of Emmanuel College and died in January, 1637/38 The latter was of Cnus College, a son of Isaac de Laune, M.D. a Frenchman he was educated at a school in Norwich (Pedigree in *Tribulation* of London, 1634) There was evidently a Norfolk connexion about this family and I regret that I have had no opportunity of consulting the history of that county

It is satisfactory to find that son Gideon did not renounce probate, let us hope also that the recalcitrant son-in-law made good the defect in the 'entree of his house' Can he have been related to the famous Peter Chamberlen? I like to think that 'sonne Paule' got "the new house," possibly that of the 'three starres' mentioned in the bond.

I am indebted to Mr John Gibbons for the abstract of the will The original deed has been deposited in the library of the Royal Society of Medicine

R. R. JAMES



## THE WATERS OF BATH.

## RECONSTRUCTION OF THE OLD ROYAL BATHS



THE OLD ROYAL BATHS

WHEN the British Medical Association held its memorable Annual Meeting at Bath in 1925, the small bathing establishment in Hot Bath Street, which was designed by John Wood the younger and has long been known as the Old Royal Baths, was undergoing reconstruction as a special block for Plombieres douches and for "large pool" treatment by re-educative exercises. It has now been finished and is ready for use. In adapting this building to modern balneological needs every care has been taken by Mr Alfred J Taylor, architect to the baths committee, to preserve Wood's ingenious planning and the many agreeable old features that give the characteristic "Bath flavour" of the eighteenth century.

The main lines and the façade of the 1777 building have been retained and freed from some later excrescences. In the centre of the block is the large pool, supplied direct from the neighbouring thermal spring, and equipped for the under-water treatment of spastic and flaccid paralyses by voluntary and controlled exercises, a method which has been in use at Bath on a smaller scale in the Cross Bath for some time past. The object is to facilitate active and passive movements in a medium which supports the limbs, relieves muscular spasm, and eases pain. For this purpose an ample supply of hot water is essential.

John Wood's beautiful little pool bath has thus been carefully restored, the only change in its architectural features being the addition of a glass roof, which in favourable weather can be opened to the sky. A lifting and travelling apparatus (shown in our illustration) has been installed for conveying helpless patients from the dressing room to the hot mineral water bath, supported by slings. There are also submerged parallel bars to assist patients in the voluntary walking exercises which form an important part of the re-education treatment.

Behind the pool are six suites of rooms admirably equipped for the Plombieres intestinal lavage and Troch douche treatments. The increasing employment of the Plombieres method at Bath, at first for colitis, and now also in rheumatic diseases, has called for the provision of more and more accommodation and the training of a staff of expert attendants. Concentration of this method of treatment in one building, specially designed and fitted for the purpose, should prove a considerable advantage, and incidentally it releases some good rooms in the Royal Baths for vapour treatment.

The reopening of the Old Royal Baths, on Saturday, October 22nd, coincided with the annual meeting of the British Orthopaedic Association at Bristol, and a large party of orthopaedic surgeons from all parts of the country travelled from Bristol to Bath to inspect the new bathing

equipment and the orthopaedic hospital at Coombe Park in connexion with the Royal United Hospital. At noon the visitors assembled in the Pump Room, and after a welcome by Mr John Hatton, director of the hot mineral baths, Dr R G Gordon briefly explained the purpose of this, the latest addition to the baths of Bath, and the indications for the hot pool treatments. Parties were then shown over the establishment by Dr Gordon, Mr W G Mumford, Dr Vincent Cortes, and Dr Charles Cuid, and demonstrations of the various methods were given.

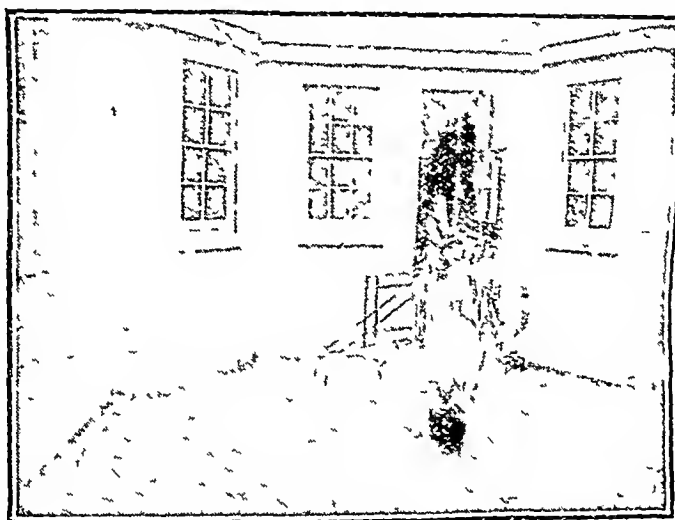
The visitors were entertained to luncheon in the banquetting chamber of the Guildhall as the guests of the mayor, Alderman Cedric Chivers, who, to the regret of all, was unable to receive them in person owing to illness. In his absence the chair was taken by the mayoress, Madame Sarah Grand, supported by the deputy mayor. In proposing the health of the visitors the mayoress referred to Alderman Chivers's whole-hearted interest in orthopaedics

and his work for the hospitals in Coombe Park. Mr H A T Frimbank, president of the British Orthopaedic Association, in his reply, recalled the long history of Bath, with its world-famous springs and its great name for hospitality, and welcomed the presence that day of Dr F G Thomson, whom so many of them missed two years ago when illness prevented him from presiding over the Bath meeting of the British Medical Association. They were also pleased to have among them their colleague, Mr Walter Mumford, who had deputized so admirably for Dr Thomson on that

occasion. Mr Frimbank undertook to send a telegram of good wishes to Alderman Chivers, and in proposing the health of the mayoress spoke of Madame Sarah Grand's deep concern for the welfare of crippled children. The proceedings ended with a congratulatory speech on behalf of the French sprys by Dr Chesneau of Aix-les-Bains.

The new extension of the hot mineral baths was formally opened later in the afternoon by Councillor C H Hader, deputy mayor and chairman of the baths committee, who said that with this second reconstruction of the Old Royal Baths—150 years after the first reconstruction by John Wood the younger—the modernised Bathing Establishment of Bath might be considered complete. In declaring the building open he acknowledged ever warmly the interest shown by the local medical profession in the improvements that had been carried out, and their constant co-operation in promoting the great work of Bath as a centre of healing.

It is always pleasant to revisit Bath at any time of the year, but particularly on an occasion such as this, when the old city gives further proof of its ability to keep up with the ever-growing demands of medical science. The reconstruction of the Old Royal Baths provides much needed additional accommodation for the modern methods of treatment, and preserves a delightful piece of Georgian architecture.



RE-EDUCATIVE TREATMENT IN THE HOT BATH

# British Medical Journal.

SATURDAY, OCTOBER 29TH, 1927

## PREVENTION AND PERFECTION

THE problems dealt with by Dr James Whitley, county medical officer of health for Salop in his presidential address before the Society of Medical Officers of Health a week ago are of very great moment. The fundamental questions raised are the same as the more important of those discussed by Sir Robert Philip, the President of the British Medical Association in his address at Edinburgh in July last. That address was entitled "The strategic front of medicine to-day" and in commenting upon it in a leading article (July 23rd, 1927, p. 138) we ventured to describe the objectives to be attained from that front as prevention and perfection and as we then said each of these objectives is being more and more recognized and insisted upon in our time. That the president of the Society of Medical Officers of Health should have made them in effect the keynote of his address to his fellow members of the public health service at the inauguration of his new office is further evidence of this recognition and emphasis.

Preventive medicine is by no means the concern of the public health service alone. It is the study and the work of the whole medical profession. Private practitioners and public health officers alike are pressing beyond the mere recognition and relief of unhealthy conditions whether in the individual or in the community which was for so long their main business and still remains a great part of it to the wider and more satisfying aim of preventing such conditions from arising. Beyond even this step they are beginning to contemplate yet another wider and more satisfying still. With increasing purpose as Sir Robert Philip said the doctor, whatever be the exact sphere of his professional work has his mind and eye fixed on perfect on of form and function as the ultimate goal. We have ourselves more than once pointed out that health is not the mere absence of disease but the complete development of body and mind—indeed of the whole personality—to the full extent of whatever powers they possess.

There is a long way to go to these objectives. It is the more important as Dr Whitley insists that the right road should be taken and that we should not be led by a false route or wander down too devious paths. He suggests quite justly that medical officers of health should be able to take a broader view of health problems than persons engaged in one section of health work only and yet that they have not always accepted help from the best sources and have not always accurately judged the relative values of the different branches of public health work. It is quite possible, he says, for certain measures to save individual lives or protect individuals from grave ailments and yet the complete result to the nation may be bad. He even raises the doubt which is not a new one and goes deep in this matter whether the two objectives may not be incompatible—whether the successful prevention of disease may not indirectly and in the long run militate against the perfect health and development of those who escape it. Certain it is—and this may be regarded as Dr Whitley's main point—that if disease is not prevented in the right way and by the wisest means such a doubt becomes a probability.

Death is in the end, unavoidable and its mere postponement, which has hitherto been acclaimed as the main triumph of preventive and public health work, does not of itself produce a more healthy community. Indeed, other things being unchanged the result must be the opposite of this. Neither to the individual nor to the community is the postponement of death a certain benefit. It is no more certain that even a successful warfare waged against a particular scourge must necessarily result in producing by itself, a healthier race. Nor would the immunization of a whole people against a particular disease germ or against all such germs guarantee a greater perfection of national or human development if other conditions of heredity and environment remained unchanged. Yet doctors will continue to strive for the postponement or death for the elimination of tuberculosis of cancer of venereal disease and will protect the individual against the effects of disease-producing microbes by whatever means they can and any triumph they may have will be those of preventive medicine. The true means for relieving both the objectives, perfection as well as prevention, remain and must be put in their proper place. It is the removal of the causes of ill health and poor development that has to be sought and not the mere prevention of some of the effects of some of those causes. Wise behaviour is not only better than arsenobenzol but better than packets. Measures which lead to cure in making to rid of improvement in environment, good housing and good feeding both in infancy and later to reduction in personal domestic and public hygiene as well as in other matters are the only certainly efficient we possess in this campaign though others may win a battle or cause the fall of a redoubtable citadel.

Prevention of disease may some day be achieved, perfection of health never. In judging our results therefore we must beware of fallacies, especially of two which may be called the fallacy of the average and the fallacy of the physical. Curiously enough there is a passage in Dr Whitley's address which illustrates both. Past a certain age, he says but probably averaging about 60 life is no longer a national asset but a national burden. This general truth is not vitiated by the fact that many men over 60 or 70 years of age have done work of extraordinary value. It is otherwise the lethal chamber is indicated for all over 60. It is a complete fallacy to regard the exceptional merely as a contribution to the average, and not to give it its own sometimes enormous value over and above such contribution. It is a fallacy too even when calculating purely economic values to consider only physical well-being. True all-round perfection is what is aimed at. But in placing our imperfect results in the health balance we must weigh up what may go along with a feeble physique, a powerful and well-poised mind, and much something more than both of these in the personality which may be more enduring than either.

## CLINICS FOR CHRONIC RHEUMATISM

THE successful treatment of the various forms of chronic rheumatism in insured persons is very difficult. The prevalence of these complaints apparently an increasing prevalence—among the industrial classes, the grave impairment of industrial efficiency thereby caused and the urgent need for taking some further action to meet this situation have been fully recognized during the last few years. A number of conferences have considered the subject in most of its aspects and various suggestions have been put forward

for dealing with the matter. In the year 1922 a committee of the Ministry of Health began a special inquiry, its report, issued in 1924, is a very valuable piece of work. In March last we published (SUPPLEMENT, March 12th, 1927, p. 85) the report of a conference called by the British Medical Association on spa treatment for insured persons. The main discovery of this conference seems to have been that, while all sections were anxious for something to be done and genuinely willing to co-operate, there were very great difficulties in the way of doing anything. The subject was under consideration again at the congress of the Royal Sanitary Institute at Hastings in July last. Sir William Willcox there delivered a lecture on the effect of chronic rheumatism in industry, and Mr. John Hatton, director of baths at Bath, outlined a scheme proposed by the British Spas Federation for the extension of facilities for treatment. Some account of these pronouncements was given in the JOURNAL of July 23rd last (pp. 143 and 145). Last summer, too, by invitation of the German Ministry of Health, a number of British medical men and representatives of industrial organizations attended the inauguration of a German committee on industrial rheumatism in Berlin, and visited various spas and special hospitals. A full account of this expedition and of some of the institutions and health resorts visited was published in the JOURNAL of September 17th last (p. 502). Last week Mr. Henry Lesser, who was among those who had thus visited Berlin, devoted his presidential address before the National Association of Insurance Committees at Harrogate to the subject of the need for clinics for the treatment of industrial rheumatism, and made the suggestion that national health insurance organizations—whether Insurance Committees or approved societies—should, with the sanction of the Minister of Health, co-operate in helping to finance the experimental clinic in London which has been proposed by the British Committee of the International Society of Medical Hydrology, and apparently sponsored by the British Red Cross Society, which, under the chairmanship of Sir Arthur Stanley, is launching an appeal for £40,000 as a foundation fund.

Commonly quoted statistics are that nearly one sixth of industrial invalidity in this country is due to rheumatic affections, that such diseases cost the approved societies between £1,800,000 and £2,000,000 each year in sickness and disablement benefit, that the nation loses more than 3,000,000 weeks of work from this cause every year, that half of this loss is caused by chronic joint disease, and that the number of insured persons suffering in these ways approaches 400,000. These figures are sufficiently serious, and if Mr. Hatton's claim can be substantiated that 87 per cent of patients are discharged cured or relieved from the hospitals at three of the principal British spas there is a clear case for a great effort to make such treatment available for insured persons. The scheme of the British Spas Federation is to take some 30,000 insured patients each year to the British spas, to place them in hospitals, in the less expensive boarding houses, or in hostels under some supervision, and to give them an appropriate course of treatment at the bathing establishments. The approved societies appear to regard such a scheme as too expensive, and some of them propose that, since the patient cannot go to the spa, the spa treatment shall be brought to the patient, as at Berlin, Hamburg and Dresden. Any such scheme in this country must be regarded as purely experimental. Though in Germany both the staffs of the hospitals and the officials of the organizations

corresponding to our approved societies appear to consider that an appreciable measure of success has been achieved, statistics are almost wholly lacking, and there is room for a reasonable scepticism as to the permanence of relief in a large proportion of the cases referred to by Mr. Hatton. No doubt much good would be done by the establishment of a well equipped clinic in London under proper auspices and direction. Possibly approved societies might in due time recover in diminished sick pay whatever contributions they might be able to give. The main value of the clinic would, however, consist in the improved facilities and opportunities which it would afford for that clinical and pathological observation and research which is so necessary for further success in combating a baffling and obstinate national scourge.

#### THE PANEL CONFERENCE

THE Annual Conference of Representatives of Local Medical and Panel Committees was held last week in the Great Hall of the British Medical Association. A full report of the proceedings is given in this week's SUPPLEMENT. The representatives were mainly engaged upon two matters, the one of major, the other of minor, importance. The former was the consideration of what has come to be called the "disciplinary machinery" of the national health insurance medical service, the latter was the question of devoting a small portion of the National Insurance Defence Trust Fund to encouraging the candidature of suitable medical representatives for the House of Commons. Last year's Conference gave to the Insurance Acts Committee a general authority to negotiate with the Ministry of Health on certain lines with regard to the revision of the Medical Benefit Regulations and procedure relating to alleged breaches of their terms of service by practitioners. Some quite important alterations in detail have now been agreed upon between the Committee and the Ministry, and an entirely new and purely professional committee is to be set up within the Ministry for the purpose of advising the Minister in every case involving questions of professional conduct, before he promulgates his decision. Half the members of this new committee will be chosen from a panel nominated by the Insurance Acts Committee itself, the committee will have full access to all relevant material, and it is to be presumed that no Minister would be unwise enough to act contrary to its advice. These proposals were endorsed by the Conference as preferable to a routine recourse to the Law Courts, and they are to be given a trial for an experimental period of three years at least. On the other matter the Conference, by a narrow majority, refused to endorse the proposal of the National Insurance Defence Trustees to earmark a sum of £1,000 for parliamentary purposes. This decision was possibly a wise one in the interests of the Defence Fund and if, as may be presumed to be the case, the majority of subscribers, or potential subscribers, share the twofold misunderstanding which was apparent at the Conference. It appears to have been thought that such earmarking would convert a non-political into a political fund, and so entail certain consequences. There can be little doubt, however, that the fund must be regarded even now as a political one, and so subject to any legal or other provisions which apply to such funds. Political purposes are none the less political because they are not associated with any particular party. Again, it seems to have been assumed that "the support of a member of Parliament" was aimed at, whereas the most frequent use of such a fund would be to give relatively small sums to a number of candidates by way of contribution towards their election expenses. It is found that a friendly and helpful act of this kind, in cases adjudged

suitable is calculated to produce results in the direction of securing such information, sympathetic attention, and willing advocates, which are well worth the encouragement. It is to be hoped that the decision of the Conference in this matter will merely result in increased attention and support being given to the Parliamentary Elections Fund of the British Medical Association.

#### THE INTERNATIONAL SOCIETY OF MEDICAL HYDROLOGY

THE Annual Congress of the International Society of Medical Hydrology took place in Italy from October 12th to 16th under the presidency of Senator Professor Umberto Gabbi. Representatives of fourteen nations, numbering in all about 250, were present the first three days of the congress were passed in Rome. On October 12th the inaugural meeting was held by invitation of the Government in the Campidoglio (Senate House) on the Capitol the address of welcome being delivered by Signor Pietro Fedele, Minister of Public Instruction, who was supported by the Governor of Rome, the Dean of the Faculty of Medicine the Director-General of Public Health and other distinguished Romans. The afternoon was devoted to scientific business at the University of Pavia. The use of water in acute disease" being read by the President Professor Strassmann (Vienna), Dr. Fortescue Fox (Chairman London) and Sundell (London). In the evening the delegates were received at the Palazzo Chigi by Signor Mussolini who expressed his pleasure at seeing members of so many nations united on Italian soil in the common fight against disease. On the next day the members were shown the principal sights of Rome and were received at the Chamber of Deputies, where they were entertained for tea afterwards they went to the tomb of the Unknown Warrior, where the President laid a wreath. The next place visited by the congress was Montecatini a well known watering-place near Florence which has been considerably developed of late years largely owing to subsidies granted by the Italian Government for the purpose. Here they were welcomed by Senator Professor Queirolo (Pisa), the honorary director of the baths and shown the new bathing establishments which but for an unlucky accident would have been officially opened on this occasion. During the next day further papers were read by Professors Valenti (Milan), Marfisi (Naples), Razzano (Ischia) and Charvanc (Algiers) and Drs. Burt (Buxton), Judd Lewis (London), Joseph Race (Buxton), and Leirevolles (La Bourboule). In the evening a banquet was given at the principal hotel by the municipality and this was followed by a dance at the "Sporting Club." Salomaggiore, a spa lying between Parma and Milan was next visited. The establishments here are on a most lavish scale the Government having, since the war, advanced over three-quarters of a million pounds for their completion. Papers were here read by Professor Luigi Zoni (Milan) and Dr. Mongeot (Rovato) and Woodmansey (Harrogate) the subject being the action of mineral waters on ferments and micro-organisms. On the next day the congress broke up some members proceeding to Parma where they were shown round the University and new hospital by the President Professor Gabbi, who occupies there the chair of clinical medicine.

#### WHAT IS COMPARATIVE MEDICINE?

At the meeting last week of the Section of Comparative Medicine of the Royal Society of Medicine Dr. Braekel put a most pertinent question and raised matters of great fundamental importance when he asked "What is comparative medicine?" At the Edinburgh meeting of the British Medical Association the newly formed Section of Comparative Medicine debated a somewhat similar matter,

and, as we publish reports of both discussions this week, it may be opportune to examine the result. Medicine itself must be regarded as a collection of more or less unrelated sciences united by the single common factor of their bearing on health, whether of man or of his animals. In the past it has often been believed that veterinary medicine *per se* was comparative medicine, and while it is true that the collection of "medicines" studied by the veterinary surgeon must be to some extent comparative, it is equally true that comparative medicine cannot exclude man. There has also been a tendency in the past to limit comparative medicine to a consideration of veterinary diseases communicable to man, but it is now fully recognized that this view is far too narrow. Comparative medicine is most frequently conceived as the comparison between human and veterinary medicine but some of the speakers in Edinburgh pointed out that it is even greater than this and Dr. Biddell now confirms them. It is not a complete entity like human medicine or like equine or bovine or canine medicine or any of the other branches into which veterinary medicine is divided. It is really a method by which it should be possible to abstract from each of these their common fundamental truths. Comparative pathology is thus envisaged by one of the speakers at Edinburgh as the comparison of host reactions to a common stimulus; the comparative method will attempt to find, for example, an explanation of why the histology of the tubercle varies in different animals and why it resembles in the one animal, lesions caused by other chronic infections. Comparative immunology will, in a like manner, attempt to explain natural immunity, and so with the other branches. In this way will be formed a pure pathology, a pure immunology, and so on. These subjects grouped together will form pure medicine. In other words, this is the method by which pure medicine, as opposed to applied medicine will be abstracted from facts discovered in its divisions, the method by which general theories will be built up and in turn prepared for reapplication in a new and wider sense. Looked at in this light comparative medicine is almost synonymous with pure medicine and until the day when such a metaphysical concept can be called into real existence will of necessity have to replace it. Comparative medicine is, then, mainly a matter for to-morrow. Co-operation between human and veterinary medicine has been frequent in the past, it must be continuous in the future. The discoveries made by this co-operation must be first of all analysed and then synthesized into new and more comprehensive theories. It is only in this way that an all embracing view of disease and the processes of disease is possible, and it is only when this becomes a reality that a war of extermination against the causes of disease can be successfully waged.

#### THE THAYER LECTURESHIP

WILLIAM SUMNER THAYER is well known in this country, and is not without honour in his own country. He was born on June 23rd, 1864, and after graduating at Harvard went to work under Osler at the Johns Hopkins Hospital Baltimore where he has remained ever since except when during the war, he was Brigadier-General of the Medical Corps and Chief Consultant of the Medical Service of the American Expeditionary Force. He was professor of clinical medicine 1905-18, physician-in-chief 1918-21 and now is Emeritus but active as of yore as shown by his recent elaborate monograph *Studies on Bacterial (Infective) Endocarditis*, noticed in our columns last year (1926 II, 843). Like his former chief, the late Sir William Osler, he has captured not only the minds, but the hearts of his colleagues and pupils and so it is no matter for surprise that on May 18th last, at Washington,

D C, his friends presented to the Johns Hopkins Medical School the deed of gift (over 16,000 dollars) to be held in trust by the University as an endowment for "the William Sidney Thayer and Susan Read Thayer Lectureship in Clinical Medicine". This income is to provide one or more lectures annually at the Johns Hopkins Medical School by men distinguished in clinical medicine, pediatrics, neurology, or borderline branches. The graceful introductory speech of the chairman, Dr Frank Billings of Chicago, was followed by the presentation address prepared by Professor L G Rowntree, who originated the idea of thus honouring his former teacher. Provost Ames, who spoke not only as representing the Johns Hopkins University but as a grateful patient, accepted the lectureship on behalf of the president of the Board of Trustees. Other informal addresses were given by Dr Simon Flexner, J M T Finney, Thomas McCrae, T B Fitcher, L A Conner, and Charles Minor, old friends and associates. Professor Thayer replied in a speech charming in its reminiscent vein. He confessed that at the beginning of his career and for many years afterwards his desire was to be a pathologist, but the necessity to earn a living obliged him to set up a door-plate in Boston, and during its three weeks' existence he had two patients, then by accident he heard from a friend of a post-graduate of "differentiating physician" to sort out the patients—and in thirty-six hours he was in Baltimore. Looking back on the experience of these years his opinion is that above all the art of medicine demands practice, and a good diagnostician is not born, but made by experience. There are, he goes on, "few short cuts in medicine. All the acquisitions of recent years have not shortened by a day the time that he who would be a skilled clinician must pass by the bedside." This lectureship is exceptional in being established during the lifetime of a physician, but it also perpetuates the memory of his noble wife, who, when fatally ill, urged him to go on the American Red Cross Mission to Moscow in 1917, knowing full well that she would not live to welcome him back.

#### YELLOW FEVER IN WEST AFRICA

When the work of Reed and his associates, and its practical application to Cuba and Panama, were followed by Noguchi's discovery of *Leptospira icteroides*, and the preparation of a serum and vaccine, it seemed that the world was in a fair way to be rid of yellow fever, but the disease still appears from time to time on the west coast of Africa, often in isolated cases, and attention has turned again to that locality, from which, according to Carter, the American yellow fever originated. In the course of an address delivered in Holland last March, Balfour recalled the demonstration by Theiler and Schüld that the relation between Weil's disease and yellow fever was far from clear, and said that the etiological significance of the *Leptospira* was by no means certain. It has been asserted in a recent United States public health report that the causative agent of yellow fever is still unknown. Schuffner and Moeltzer have been unable to distinguish between *Leptospira icteroides* isolated from a yellow fever case at Vera Cruz and other *Leptospira* preserved by the Tropical Institute at Amsterdam, and some recent reports from West Africa emphasize these uncertainties. In eight cases (with five deaths) recorded by Aitken and Smith in Nigeria, the clinical picture differed definitely in several points from the authoritative description by Carter of classical yellow fever. In every case blood culture on Noguchi's medium was negative, injections of specific serum saved none of the four patients to whom it was given, and careful examination of the fatal cases revealed an unexpected variety in the

nature and extent of the pathological conditions present. Aitken, writing from French West Africa, records the recovery of a patient after four injections of 50 ccm of Noguchi's serum. The first three injections were followed at about a day's interval by a return of vomiting and other serious symptoms, suggesting, perhaps, that benefit was wrongly attributed to the serum, the phenomena representing really an instance of the occurrence of the repeated prostrations and remissions which Le Fanu has noted among his cases on the Gold Coast. Aitken adds that each injection was followed by a violent reaction with rigors, and he regards this as normal, but it did not occur in the cases treated by Aitken and Smith. In the annual medical report of the Gold Coast for 1925-26, Le Fanu gives an account of four successive cases treated effectively on new lines. Assuming the disease to be spinochaetal he gave novarsenobillon, he had seen many cases treated in other ways, and concludes that this arsenical preparation may be given with advantage in doses of 0.45 gram for men and 0.3 for women, at any stage unless anuria has set in. An important adjunct—the credit for the suggestion is given to Balfour—was the administration of glucose to maintain the nutrition and liver function, and thus to avoid the production of toxic fermentations. The glucose is added to bland fluids given freely in small quantities, or where nausea was present by intravenous injection of a 5 per cent solution. In Le Fanu's view these methods mark a definite advance in the therapeutics of yellow fever. The International Health Board, which played so large a part in adding America of "yellow fever," has appointed a commission to study the African problem on the spot, in co-operation with the officers of the British Colonial Service.

#### MEDICAL EDUCATION IN CHINA

Dr J L Maxwell, the secretary of the Chinese Medical Association, contributes to the July issue of the *China Medical Journal* an interesting account of the present position of the medical schools in China. He states that of these nine schools, four are still running more or less normally, two continue under a skeleton staff, and three are closed. One of these may, however, be reopened in the autumn after complete reorganization, but grave doubts are felt as to the possibility of beginning work again in the other two. Dr Maxwell fears that the interference in medical education consequent on the military disturbances in China will have very serious results. There is at present a decrease of nearly 50 per cent in the output of medical practitioners from the leading medical schools in that country, the previous supply was far below the needs even of the mission hospitals, and it will be very long before the former figures can again be reached. Moreover, many of the Government and other medical schools have been closed, and the financial condition of others is grave. The prospect of providing an adequate medical profession for the country has, therefore, receded very seriously. Dr Maxwell adds that the mission hospitals—nearly 300 in number—are largely dependent on these schools for their staffs, and in the past have been grievously hampered by the difficulty of obtaining fully qualified Chinese medical practitioners. This evil will now be intensified, and already foreign countries are carrying a heavy burden in staffing hospitals, than they can continue to bear. The death and invaliding rate among these doctors is believed to be heavier than in any other class of foreign workers. It is suggested that in all boards and committees should consider carefully the difficult situation that is now developing in mission hospitals, with a view to making more use of the valuable Institute of Hospital Technology, which has been in operation a short time if it is thought that its students might relieve hospital staffs of much burdensome incidental work.



## THE SCHOOL OF BIOCHEMISTRY, OXFORD

THE School of Biochemistry in Oxford dates from 1887, when Dr J S Haldane began to teach the subject within the department of physiology which had been established some five years earlier, when the then regius professor of medicine (Sir Henry Acland) had induced Buidon Sander on to leave University College, London. Recognition of the value and interest of the study of the chemistry of living things grew, and in 1920 University opinion was prepared gratefully to accept an offer from Mr Whitley of Trinity College, which made possible the foundation of the chair of biochemistry, Benjamin Moore was its first occupant. After his premature death he was succeeded in 1923, by the present occupant, Dr R A Peters. The need for providing additional accommodation for physiology had long been patent, and it was decided

to do this by erecting a new building for biochemistry. It is linked with the physiological laboratories by a new lecture theatre seating about two hundred which is to be used in common by both and has been so used since October, 1925 a year later the biochemistry classes were transferred to the new building and the move was practically complete. Last January, although some of the rooms are not yet quite finished the department is now working as an organic whole so that the University deemed it appropriate to celebrate this addition to its resources by a formal ceremony on October 21st, the last day of St Luke's summer with which this year has tardily been graced.

The Chancellor, Viscount Cave (Lord Chancellor of England) gave a short address in the Sheldonian Theatre to a distinguished audience which thanked him through the Vice-Chancellor, and then followed to the new laboratories which stand four square on a piece of ground, off South Park Road which was once shrubbery. The walls are of brick faced with white cement with in order to secure plenty of light lofty steel windows the whole has something of the effect of those business premises or reinforced concrete with a wide expanse of window in metal frames, a style which, when it was introduced a few years ago was much admired by many architectural amateurs.

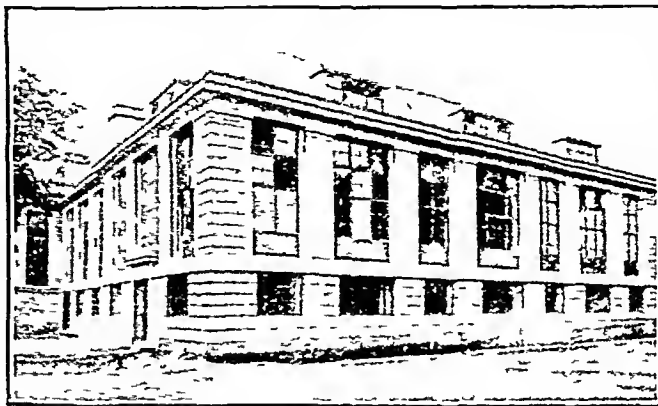
The ground floor, in addition to the conjoint lecture room already mentioned contains several research rooms, rooms for centrifuge and photography, various offices, and rooms for assistants. The first floor, mainly devoted to teaching, contains large classrooms placed side by side with steel and glass partitions which can be shifted if it be desired to alter the arrangement of space. From this floor a passage leads to the library, which has been constructed out of the old physiology lecture room. On a mezzanine floor several rooms have been formed, including one for gas analysis, and another lined with cork for constant temperature work. The second floor is wholly for research, in addition to ordinary research rooms and one for the professor, there is an aquarium room supplied with water from a special part of the roof, which is tiled instead of being covered with asphalt. Another part of the roof is flat and upon it has been placed a small open air laboratory.

The architect, Mr H Redfern, RIBA, is to be congratulated on designs which meet very well the special conditions with which he had to deal.

In spite of the benefactions of Mr Whitley for the chair, and of the Rockefeller Foundation for the building the University is itself undertaking a serious pecuniary responsibility. It has agreed

to contribute a sum of £25,000 or its equivalent in annual income towards the general maintenance of the new department. The Rockefeller Foundation has also given £20,000 towards maintenance, for the building it gave £55,000, and the University £3,000 to meet the capital expenditure of the department of physiology.

Those responsible for the conduct of the department are, however, very desirous of obtaining further funds, chiefly for the purpose of providing studentships to enable selected men to stay in Oxford for one or two years to obtain training in research work. Other scientific departments feel the same need and it is said that until it is properly met our country will not make the best possible use of the brains of the younger generation of the University of Oxford.



SCHOOL OF BIOCHEMISTRY OXFORD

## England and Wales.

### LIVERPOOL MEDICAL SERVICE

THE Liverpool annual medical service was held at the Cathedral on Sunday, October 16th. The Bishop of Chester (Dr Luke Paget) preached an eloquent sermon dealing with the comradeship between medicine and theology in all medical work, and the necessity that their members should co-operate. He alluded to the fact that his father was a surgeon and paid a warm tribute of admiration to the late Sir Victor Horsley. The Bishop of Liverpool conducted the service and the lessons were read by two medical men. There was a large congregation, general and medical, some eighty medical women and men attended in robes. The collection which amounted to £119 5s., was in aid of the Royal Medical Benevolent Fund.

### NEW PHYSICS LABORATORY IN THE UNIVERSITY OF BRISTOL.

Sir Ernest Rutherford, O.M., president of the Royal Society and Cavendish professor of experimental physics in the University of Cambridge, opened, on October 21st, the Henry Herbert Wills Physics Laboratory, the latest addition to the buildings of the University of Bristol. This acquisition is the gift of the late Mr Henry Herbert Wills, pro-chancellor of the University, who provided £200,000 for its erection and equipment. The laboratory, which is built in the Renaissance style, is L shaped, the long arm being arranged with a view to future extensions. The carvings in the spandrels over the main doorway represent the dispersion of sunlight by a prism, and the tracks of alpha particles from radium, thus illustrating early and modern discoveries in experimental physics. On the ground floor there are research rooms,

power rooms, and workshop, on the first floor more research rooms and laboratories for senior pupils, on the second floor laboratories for senior students of optics and laboratories for junior pupils, on the third floor is the library, several classrooms and private rooms for the staff. A large lecture theatre on the first floor will accommodate an audience of 300. A smaller theatre beneath it has a minimum seating capacity for 130, the acoustic properties of both of these theatres have received special consideration. At the junction of the two arms of the building is a tower 64 feet square which contains two large rooms available for research work, its roof is flat in order to facilitate certain forms of outdoor experimental work. In equipping the new laboratory provision has been made for the researches of the existing staff and for the present requirements as regards teaching, a small reserve fund has been formed for future needs. A professorial chair in theoretical physics has been established and two new Fellowships.

#### A CONValescent HOME FOR BIRMINGHAM PATIENTS

The Minister of Health opened new buildings at a convalescent home in Tyn-y-coed, overlooking the valley of Llanrwst, on October 1st. This home has enabled many thousand Birmingham workers to recuperate after illness, and the number of applications has increased so considerably that it has been found necessary to expand the accommodation from sixty-five beds to 125. In the course of the proceedings it was stated that through the Hospital Saturday Fund, the promoter of this work, no fewer than 117,540 patients had already been treated. The cost of this extension was estimated at about £34,000, half of which has now been subscribed. Mr Neville Chamberlain commented on the gratifying fact that the new building resulted from the voluntary efforts of the working population of Birmingham. The achievement was the more meritorious because of the recent severe unemployment and underemployment in that city. He added that the work of the convalescent home was not merely curative, it was also preventive, and would result in the saving of money as well as of health.

#### HARTLEPOOL INFIRMARY NEW OPERATING THEATRE

In consequence of the steady increase in surgical work at the Hartlepool Union Infirmary a new operating theatre has been equipped at a cost of £2,350. The walls of the new theatre are coloured green in order to avoid glare, and all the fittings are fully modern. The chairman of the board of guardians, presiding over the formal opening on October 10th, explained that for many years such an improvement in the surgical department had been urgently necessary, but financial considerations had prevented anything being done. Insufficient accommodation at the voluntary hospitals had, however, rendered some action necessary, since in the event of a serious accident affecting several people that institution was obliged to provide beds. He added that the cost of upkeep is lower than that of any other similar establishment in the North of England—namely, 7s 4d a head, as compared with 9s 8½d, which was the average for Northumberland, Durham, and the North Riding of Yorkshire. Dr T. G. Ansley, senior medical officer, stated that for many years operations had been conducted in a theatre improvised out of a ward when inadequate ventilation had rendered the use of the room impossible for this purpose, and for the last four years the surgeons had been consequently compelled to operate in the wards. During recent years verandahs had been added to accommodate over fifty beds, a nurses' home had been built and electric light had been installed. It was proposed to provide before long helio-therapeutic apparatus, moreover, the nurses' home required further enlargement.

#### MALARIAL THERAPY IN LONDON MENTAL HOSPITALS

The London County Council has approved, as an experiment for one year, a scheme for the co-ordination of the work done at the mental hospitals in the county of London in connexion with the treatment of general paralysis of the insane by induced malaria. The scheme provides that all cases of general paralysis of the insane treated by malaria shall be reported to the central pathological labora-

tory. A special medical officer is to be seconded to the central laboratory whose duty it will be to maintain the records and, under the direction of the director of the laboratory, to give his time to research work on the malarial treatment of general paralysis. It would be his duty also to visit the various mental hospitals and to report abnormalities in cases under treatment. A return of all patients discharged after malarial treatment is to be made to the central laboratory, and the special officer will follow up the after-history of such cases, visiting them when desirable, and making such arrangements as are practicable for them to undergo tests at stated intervals. The expenditure is expected not to exceed £480 for the experimental period of one year.

#### ENLARGEMENT OF ERESHAM HOSPITAL

Towards the end of last year the committee of Eresham Hospital decided that this institution must be enlarged, at an estimated cost of about £18,000, and that the most urgent part of the work should be done first. An appeal was made for £9,000 for this first part, and £8,378 has been subscribed or promised, but the work now completed has actually cost £11,764. There is thus at present an outstanding debt of £3,386, and it is estimated that the second part of the enlargement scheme will involve an additional £4,500. On September 28th the portion of the extension already completed was opened. The new accommodation includes a public ward for women, with twelve beds, an improved operating theatre, anesthetic room, and dressing room, a ward for children, containing four beds, a temporary x-ray room, eight nurses' bedrooms, and an additional bathroom, enlargement of the kitchen, and various accessories. Eresham Hospital has been established for fifty-one years, and it is confidently expected that the further funds necessary will be obtained.

## Ireland.

#### MEDICAL REGISTRATION COUNCIL

The Medical Registration Council for the Irish Free State has been completed, and its constitution is as follows:

Executive Council (Irish Free State Government) Dr H. K. Moore and Dr J. N. Meenan  
University College, Cork Professor J. Dundon  
Royal College of Surgeons Sir Arthur Chance  
Royal College of Physicians Professor T. G. Moorhead  
Apothecaries' Hall Dr E. Magennis  
Trinity College, Dublin Professor A. F. Dixon  
University College, Dublin Dr D. J. Coffey  
General Medical Practitioners of the Free State Dr R. J. Rowlette and Dr Maurice Hayes  
University College, Galway Professor Stephen Shea

The members of the Council, according to the Medical Practitioners Act, will hold office for five years, and any vacancy arising from death, resignation, or disqualification will be filled by the body which the deceased or resigned member represented, the new member to hold office for the residue of the term of the deceased or resigned member. The duties of the Council will be the administration of the Act, including the preparation, establishment, and maintenance of a register of practitioners in the Free State. When the Council has fixed a date for the establishment of the register—not later than ten months after the passing of the Act—the Minister for Local Government and Public Health, by notice in *His Official Gazette*, will declare the establishment of the register is from that date.

#### DUBLIN MEMORIAL TO PROFESSOR ADRIAN STOKES

A meeting for the purpose of establishing a memorial to the late Professor Adrian Stokes, of whom an obituary notice appeared in our issue of October 1st (p. 615), was held in the School of Pathology, Trinity College, Dublin, on October 17th. The new Provost, Mr Edward J. Gwynn, presided, and those present included many leading members of the medical profession in Dublin. The Provost briefly reminded his hearers of the special connexion of Adrian Stokes with the University of Dublin, and the many reasons why his name ought to be perpetuated there, and in so doing paid a fine tribute to Dr Stokes as a sportsman. Sir John W. Moore in proposing the establishment of an

Adrian Stokes memorial, spoke of the ancestral connexion of Adrian Stokes with Trinity College and its famous school of medicine, of his brilliant professional career, and of his splendid scientific work while on active service in France. Professor T. Gillman Moorhead, in seconding the resolution, said that the phrase "well beloved" undoubtedly applied to Adrian Stokes whom above all he liked to remember as a friend. "We honour ourselves," said Professor Moorhead, "in honouring him, and we want to perpetuate his memory in this school." The resolution, the terms of which are indicated in a letter from Professor J. W. Bigger and Mr. Seton Pringle, published this week in our correspondence column, was passed unanimously, and an executive committee was appointed.

#### DENTISTS BILL, 1927 (IRISH FREE STATE)

The Minister for Industry and Commerce (Mr. McCulligan), in dealing with the second stage of the Dentists Bill, stated that its object was to regulate the internal arrangements with regard to the control of dentists in the Irish Free State, and was pretty well identical with the international agreement regarding the control of medical education. The bill, he said, was with the exception of a few minor changes, similar to the bill that was before a former Dail. To gather the full effect of the proposals attention should be paid to the Medical Practitioners Act passed last June. The bill provided that the control of dental practitioners should be in the hands of Irishmen in the Free State. Sir James Craig (Dublin University) said that he had supported a second reading on two former occasions, but in this bill he found Clause 43 objectionable. It said that "it shall not be lawful for any person on or after the date of the passing of this Act, to practise, or hold himself out, whether directly or by implication, as practising, or being prepared to practise, dentistry or dental surgery, unless such person is a registered dentist." A sub-section allowed the performance by a registered medical practitioner of any surgical operation in connexion with the tissues of the mouth or jaws, or the giving by a registered medical practitioner of any dental treatment, advice, or attendance in urgent dental cases. It was ridiculous, he said, to put the word "urgent" into the bill. He did not approve, either, of the principle that medical men should not be allowed to practise dentistry. For instance, if a poor laborer came to the dispensary doctor suffering from a severe toothache, the doctor, if he extracted the tooth, would be acting illegally under this bill. Was the man to be sent perhaps, twenty miles away to a dentist, and then have to pay a fee for that which he could have had for nothing at the dispensary? Dr. O'Dowd (Roscommon) and Dr. Hennessy (Dublin City South) also opposed the sub-sections limiting the practice of future medical practitioners.

## Scotland.

#### IMPROVEMENT OF THE PUBLIC HEALTH IN SCOTLAND

In an address delivered by Dr. William Robertson, M.O.H. Edinburgh, in the Central Hall, Edinburgh, on October 16th, he said that the city had passed through various reformations of which one of the most important had been that in public health. Koch, by his discovery in 1882 of the existence of the tubercle bacillus, and his subsequent work in growing it outside the human body, had awakened the scientific world to the importance of relieving the whole problem of possible prevention and cure. In 1900 there had been 548 deaths from pulmonary tuberculosis and 270 from non-pulmonary tuberculosis in the city of Edinburgh. A quarter of a century later, in 1926, the deaths from these two sources were respectively 356 and 126. The saving of life could not, however, be rated in actual figures. It was evident that more people were being kept alive to earn wages and to be serviceable citizens. The successors of the present generation would reap the benefits of the present-day agitation in favour of tubercle-free milk supplies for local authorities were now armed with strong powers for dealing with cows that spread infection. More-

over, slum clearance and improvement schemes were, in Edinburgh, about to transfer more than twenty-five thousand persons to better surroundings. The infantile mortality figures had already been reduced from 143 deaths per 1,000 births in 1880 to 80 per 1,000 recorded in 1926. This meant an annual saving of 63 lives among every 1,000 births. Thus money had been saved, lives had been protected, and the expectation of life had been increased in Edinburgh by 17 years.

#### A MATERNITY AND CHILD WELFARE HOSPITAL

The value of a maternity hospital in a large industrial area is emphasized by Dr. G. V. T. McMichael, medical officer of health for the burgh of Paisley, in his annual report for 1926. When the Barshaw Maternity and Child Welfare Hospital was opened in 1921 eighteen beds were provided for ante-natal cases, for abnormal and complicated labour, and for those necessitous patients whose circumstances rendered safe confinement at home impossible. During 1926 arrangements were made to utilize one of the children's wards for maternity cases, the accommodation for which is now thirty beds but the demand is increasing. Dr. McMichael believes that it will be necessary before long to devote the whole hospital to maternity work. The number of admissions to the ante-natal ward reached last year the record total of 182, as compared with eighty-three during 1922, the first year of the hospital. The success of the ante-natal clinic is attributed largely to the fact that hospital treatment for diseases of pregnancy is always available at Barshaw. The number of confinements in the year under review was 388, as compared with 201 in 1922. Patients treated in the maternity wards are required to contribute according to their household income. When the hospital was opened two wards were allocated to children, one for medical cases and one for minor surgical cases but owing to the increased demand for accommodation for maternity patients only one ward is now available, and arrangements have been made for the medical cases to be admitted to the fever hospital.

#### ROYAL PHYSICAL SOCIETY OF EDINBURGH

At a meeting of the Royal Physical Society of Edinburgh, on October 17th, Dr. John Stephenson read a paper on "Eastern adepts and Western science" in which he discussed the reputed power of the yogis to modify the beating of the heart at will. A yogi of Bombay is reported to have been able to stop his pulse in either arm for two or three minutes, and that of the temporal artery for several seconds. Mechanical records had shown that the heart beat was slowed and made less forcible, but not completely stopped. This yogi had apparently acquired a certain amount of voluntary control over the sympathetic nervous system, but more observations were required before either the facts or the explanation could be accepted. At the same meeting a study on "The pigmentation of the rabbit" was communicated by Dr. F. A. E. Crew, who said that adult Himalayan rabbits, which normally are white with black tips on the nose, ears, legs, and tail, can be made to grow black by lowering the temperature of the environment, and white tips can be produced in place of black by raising the temperature. Local application of low temperature at any part was also found to stimulate the growth of pigmented hair. The pigmented granules had been found to originate in the epithelial cells of the hair follicles and later to pass to the growing hair. The production of pigment by low temperature was explained by the stimulation of secretion of oxidase and the consequent production of pigment by its combination with a colourless chromogen.

#### GRASS DISEASE AMONG HORSES

The serious mortality among horses in Scotland caused by "grass disease" is of great importance to farmers, and it is also of considerable interest to medical men on account of an alleged connexion with encephalitis lethargica. The subject of grass disease was discussed at a meeting of the Scottish Branch of the National Veterinary Medical Association at Gleneagles Hotel on October 15th. Professor

W. A. Pool, Director of the Animal Diseases Research Institute, Lelerton, gave an account of the history of grass disease which suggested that it was first encountered in 1907 at Bury Camp, Forfarshire. It was supposed to have spread gradually until now cases had occurred in every county in the north-east of Scotland. The disease had been attributed to various organisms, including types of streptococci in the nervous system of animals suffering from the disease, but the latest evidence suggested that these were of only secondary importance. Considerable attention had been given to the possibility of fungi causing diseases of this type. It had also been suggested that the disease was the same as botulism, but the symptoms of the two diseases were different, although four types of the *Bacillus botulinus* were recognized. The lecturer thought that the cause of grass disease was at present an open question. Professor Russell Grieg of the Royal (Dick) Veterinary College, Edinburgh, described the clinical symptoms of acute grass disease, which gave some indication as to the nature of the toxin producing them, it belonged apparently to the so-called sympathico-mimetic group. The discussion was continued by Professor Clark of Edinburgh University, who declared there was a fairly strong probability that the disease was caused by a toxin of some kind. Dr. Diverie, lecturer on biophysics in Edinburgh University, suggested the possibility of dietetic irritation of the mucous membrane as a cause. Mr. John Brown, F.R.C.V.S., who was inclined to attribute the disease to inhalation, and who said that cases occurred on uncultivated land as well as in highly cultivated areas, was among numerous other speakers.

## Correspondence.

### DUBLIN MEMORIAL TO ADRIAN STOKES

SIR,—At a meeting held in Trinity College, Dublin, on October 17th, with the Provost in the chair, it was decided to inaugurate a memorial to the late Professor Adrian Stokes, who died of yellow fever contracted during research work on that disease in Lagos.

It was the opinion of the meeting that Stokes's connexion with Dublin and with Trinity College—as student, as assistant to the professor of pathology, and as professor of bacteriology—could best be commemorated by the foundation of a scholarship, prize, or medal in connexion with the study of pathology and bacteriology in Dublin University. An executive committee was appointed and was empowered to collect funds and to consider a suitable form of memorial, the exact form of which will depend on the amount collected.

Those who would like to take part in the establishment of such a memorial to one of Trinity's ablest and most loved sons are invited to send their subscriptions to the honorary treasurers of the fund, Mr. Robert Russell, S.F.T.C.D., and Professor A. F. Dixon, Sc.D.—We are, etc.,

SETON PRINGLE, F.R.C.S.I.,

JOSEPH W. BIGGER, M.D.,

School of Pathology, Trinity  
College Dublin Oct 19th

Honorary Secretaries, Adrian Stokes  
Memorial Fund

### MINERS' NYSTAGMUS

SIR,—Your issue of October 1st (p. 612) contains a very interesting letter from my friend Mr. A. S. Percival. Everyone who knows Mr. Percival entertains for him the most cordial respect, and anything that he may say deserves careful consideration. At the same time, as regards the origin of miners' nystagmus, I have difficulty in accepting his view of it. The fact remains that a good number of pits are quite free from miners' nystagmus. There are a considerable number of such pits in the area in which I work, and it is interesting to observe that no fewer than six of these are oil safety lamp pits, no other light being used. That is one group—pits from which I get no cases whatsoever. In a second group cases do occur, but sporadically, now and again I see patients from them, but not regularly. In a third group the disease seems to

be rampant, and it is to be remarked that a fair number of the pits in this last group are lit entirely by electricity. Now if I am not doing my learned friend an injustice his theory would imply that in some pits there are no men with an hereditary predisposition in other pits there are a few, and in the third group there are a great number. Dr. Hildane's theory would involve that in the first group of pits the lights are invariably excellent and satisfactory—it is to be noted that six of these pits are oil safety lamp pits—that in the second group the lights are sometimes good and sometimes bad, and in the third group they are invariably bad. Dr. Hildane may be able to assent to such a proposition, personally I am quite unable to do so.

It is to be remarked that in the reports which were published, and which I have somewhat stringently criticized in the *Proceedings* of the Institution of Mining Engineers, there is no record made of any investigation as to eye incidence. Had such investigation been made by men competent to handle vital statistics it would have been found that in many instances the disease seems to be an epidemic. That, at any rate, is how it appears to me. Just now the disease is very prevalent in one group of pits in the south-west of Scotland. In another group of pits near the centre of Scotland the disease was very rampant in one particular pit some months ago. Scarcely a week passed but what some cases occurred. For the last few months I personally have not seen a single case from that pit although there has been no change in the illumination, but the disease is now rampant in another pit not very far from the first. Then, again, we have records of cases appearing in men who have never been down a pit at all. Personally I have never seen any such cases, but the reports which have been issued of persons so afflicted leave little doubt in my mind that men who have never been down a pit still may take miners' nystagmus. The whole subject requires investigation, and that on a far broader basis than the last. I have little confidence in a committee which did not investigate the eye incidence, and which did not, with the exception of one member, pay any attention to the disorders of the eye. I incline towards the opinion that the facts which I have observed are best explained by supposing the presence of a toxin or of micro-organic life. To my way of thinking they are not explicable on the theory of defective illumination—I am, etc.,

Glasgow, Oct 15th

IRFELAND FRIGES

### ACTINOTHERAPY IN JOINT TUBERCULOSIS IN CHILDHOOD

SIR,—As I have used actinotherapy since 1914 in the treatment of osseous and arthritic tuberculosis I venture to give my views on its value. Like Dr. Huxley Martin I think the opinions expressed by Drs. Crosbie and Adam are too sweeping and pessimistic, at the same time they contain a large element of truth.

It is hardly necessary to emphasize the difficulty of assessing the value of any one form of treatment, but it may be well to point out that whenever a new therapeutic method is introduced one is immediately assailed with statistics apparently proving the almost universal efficacy of the remedy. It is only after long years of patient sifting of evidence that its degree and sphere of usefulness are established. For the last thirteen years I have treated children with bone tuberculosis by ultra-violet irradiations obtained from various sources—for example, the Hanau and Jesionek mercury vapour lamps, the long and short flame carbon and tungsten arcs. An erythema dose was used in the majority of cases. The children were treated by ordinary "conservative methods" at the same time, and all but a very small number have been kept under continuous observation to this date. Recently the records of the last 120 such cases treated with ultra-violet light up to twelve months ago have been carefully reviewed, and bear out the conclusions reached from one's previous experience, both among in-patients and out-patients. Of the 120 cases six definitely became worse, and is these improved soon after the radiations were discontinued it is possible

that the remedy produced the ill effects, thirty eight showed marked improvement which could only be attributed to ultra violet light therapy, after all other possible factors had been considered. The disease was arrested in the majority of the remaining patients but the result would probably have been as successful with ordinary conservative treatment without actinotherapy.

A study of the above and my previous cases has led me to form the following opinions:

#### (A) In the Cases Improved by Radiations

1 Some chronic cases with multiple sinu es which were not getting better or were actually becoming electric improved especially with mercury vapour lamp. It was impossible to decide before and whether patients would and which would not respond to ultra violet light treatment.

2 Cases of some months' duration with single sinu es and localized disease reacted in a similar way to the chronic cases.

3 In about a fourth of the patients the beneficial effect of "light" was shown by an increase in the calcification of the bones. The carbon and mercury vapour lamps were equally efficacious in producing this result.

#### (B) In the Cases not Showing Improvement

1 The progress of the disease in early acute cases was not arrested by light, nor was bone destruction prevented in such cases.

2 The reason for the failure of this treatment in the other cases which did not improve could not be determined. It was not due to the type of lamp used nor to the exposure, nor to the period of treatment, as these factors were all varied in different instances without result.

3 Case of pigmentation did not mean that a patient would do well—I am, etc.,

C LEE PATTISON, M.B., M.R.C.S.,  
Medical Superintendent, King Edward VII  
Hospital, St. George's Rd.

October 16th

#### "THE HISTORICAL ASPECTS OF QUACKERY"

Sir—I suggest that Professor Clark's argument by which he attempts to vindicate his statement about the followers of Abrams is insupportable, because on his own confession it is based entirely on the assumption that the "electronic" methods committed them etc. to Abrams's electronic theory—a theory, which, it is conceded, posulates that the apparatus employed is of universal application in disease (destruction of tissue excepted). This assumption is incorrect. On page 19 of Abrams's *Methods of Diagnosis and Treatment*, edited by Sir James Barr, the following statement occurs: "We do not at this stage of our knowledge advance it as our own." The word "we" refers to the majority of doctors who use Abrams's methods in England, the book being fairly representative of their opinion. The word "it" refers to Abrams's electronic theory. There can therefore be no doubt of the incorrectness of Professor Clark's primary assumption. On page 33 it is stated: "reactions cannot be relied upon to furnish us with diagnoses in clinical terms" and at the top of page 24 "the unreliability of Abrams's diagnoses when it is divorced from ordinary diagnostic methods—e.g. indeed, when it is used purely as a guide to the use of Abrams's treatment methods—is discussed." This disposal of Professor Clark's questions about diagnosing cancer, etc., at all events in relation to the majority of those who use "electronic" instruments. Sir James Barr will, no doubt, deal with the question as it specifically concerns his private views. Furthermore reference to page 18 will show that the Abrams system is regarded only as an adjunct to orthodox medicine (which therefore is not for given) while reference to pages 14 and 47 is sufficient to indicate that it is not sought as a universal cure.

Widely divergent individual theories, like that of Sir James Barr and my own obviously cannot constitute the basis of agreement between British doctors who use Abrams's methods. Professor Clark wants to know what the "orthodox electronic faith" is and he shall be answered. It is solely the belief that certain phenomena, demanding in

investigation, exist. There may even be no essential relation between these phenomena and Abrams's machines.

As regards my own independent theory, I once thought that the phenomena must be mechanically explained and that Abrams's idea was probably right. Now I have arrived at the conclusion that they are psychically determined and can be similarly connected with most, if not all, medical methods, orthodox or unorthodox. I hold that their recognition will be helpful to scientific medicine and will deal quicker and more effectively with it than it has yet received my reason for thinking so being that they throw light upon the results constantly attending the use of quack and other methods, the successful operation of which from the physical standpoint appears unintelligible or improbable. I am prepared not only to demonstrate them, but to set forth the steps of inductive reasoning by which I arrive at my particular explanation of them.

It matters little what opprobrious term Professor Clark chooses to apply to qualified dissenters from inductive science, and I consider that his reply to me was an evasion of the central point. This is that he ought not to apply any opprobrious term to any of his qualified brethren, (a) because he does not make thorough investigation before passing judgement on them, (b) because even if he did, he is no more qualified than they are to determine what is or what is not sound reasoning in medical matters.

The book to which I have referred is at present the only authoritative British work on the subject of Abrams and in it not a single sentence is to be found which justifies Professor Clark's position.

I submit Sir that conclusive proof has now been afforded of the inaccuracy of Professor Clark's derogatory statement about the followers of Abrams in this country, and I am therefore going to ask him definitely to withdraw it together with his suggestion that these doctors are quacks or in any way akin to quacks—I am, etc.,

London W1 Oct 21st

J KENFICK PEID

Sir,—Professor Clark tells us that he said very little against Abrams, but he should know that it is not what he said but the way he said it that matters. He thought that a few lines of ridicule from a professor of pharmacology would be sufficient to demolish Abrams's followers. That same was tried in America but when the American Medical Association failed Professor Clark is not likely to succeed. I am going to show him that it is a dangerous game to call better men than himself quacks. No amount of evasion will now shield him. I account Gladstone did a good service to society when he showed that even the dead cannot be libelled with impunity.

He Professor Clark showed his incapacity by making charges of quackery in unsupported evidence, it was therefore unnecessary for me to adduce proof of a self-evident fact. He is now apparently content to remain in "everlasting ignorance" rather than take the advice of Herbert Spencer.

He draws some inferences which he thinks will suit his case from my address and demonstration at the South-West of London Post-Graduate Medical Association, in October 1924. It would be more to the point if he gave some quotations such as the following:

I do not ask you to-night to accept anything which I tell you until you have proved its accuracy. The only knowledge worth a trader's curse is that which a man acquires for himself and makes his own.

There is nothing in Abrams's methods beyond the competency of the general practitioner, but I wish to warn you that Abrams's methods are not substitutive of but supplementary to ordinary medical knowledge and the better you know your physiology, the more successful you will be in the acquisition of this new knowledge.

I do not wish you to infer that I consider Abrams's methods as the *summa summarum*. They are merely steps in the path of progress. The more scientific medicine becomes the simpler it will become.

There is not one word in my address which I would now alter, modify, or withdraw.

Although Professor Clark cannot make a diagnosis from a specimen of blood or handwriting that is no reason why others should be equally incompetent. The procedure, like all mine, is quite simple, but certain precautions have to be taken, an important one is that there should be no



contamination by untutored fingers. As Mr Legge would say, you should cultivate the thinking hand. I succeeded the first time I tried. I would advise Professor Clark not to get despondent over his ineptitude, take the advice of Herbert Spencer, and follow the example of Bruce and the spider—try, try, try again. I have myself heard men denounce Pasteur and Lister who were afterwards sorry for their temerity.

I was under the impression that I have often said that there should be no one method in medicine. The oscilloclast is not always available, nor is it always necessary. You can then fall back on the expectant method, which has been long and widely practised in orthodox medicine. This is less cumbersome than the oscilloclast, and has the great advantage over pharmacology that there is no risk of poisoning your patient, who is just allowed to live, or die a natural death—fortunately the vast majority live, hence expectant treatment is a profitable business.

Professor Clark says "Sir James Barr is the most distinguished electionist in this country." This may or may not be intended as a compliment, probably not, but as one who has always weighed against mere authority, and held that no enlightened individual should accept any doctrine which did not accord with his own reason, I can treat the compliment with the contempt which it merits. There are in this country many who have had much more experience with Abrams's methods, and there are hundreds here and abroad who have accomplished feats which I never attempted.

He is very cynical about Abrams's methods of treating tuberculosis, which seem to be beneath his contempt. Well, they are the best that I know of. Some time ago I said that Sprahlinger's treatment may be better, but I did not know Sprahlinger's, and until its superiority was established I would continue to recommend Abrams's.

Six weeks ago I saw, with an Abrams practitioner, a gentleman suffering from pulmonary tuberculosis, who had been recommended by his orthodox medical advisers to go to Diox. I agreed with my friend that he should have a course of Abrams's treatment, including the gamboge print and the yellow silk blouse. I saw him again a few days ago and he was cured. He had gained flesh and colour, his cough and expectoration had disappeared, his temperature was normal, his vital capacity had greatly improved, he could count over forty in one breath, which is his previous limit was under twenty. He said that he felt perfectly well and could walk any distance, but he had no intention of swimming the Channel. He returned home this week-end.

When Professor Clark can do better than that I shall adopt his methods, but I am afraid that I shall be a very long time dead before that happens.

In Abrams's methods the senses of hearing and touch are diligently cultivated, while the most easily deceived of all our senses, sight, takes a subsidiary place, though it is never neglected. I am afraid that life is too short to teach Professor Clark the effects of colour vibrations, though they only occupy an octave of light.—I am, etc.

London Oct 22nd

JAMES BARR

SIR,—There is no need for Professor Clark to point out to homoeopaths the manifest absurdity of believing that the thirtieth dilution of a drug contains a single molecule, atom, or election of the drug. The homoeopath knows perfectly well that his high dilutions do not contain any matter at all—that is, in any of the forms under which matter is recognized by modern physics. But surely Professor Clark is not so wedded to matter that he has forgotten the existence of that which is equally demonstrable, though immaterial—that is, energy.

Professor Clark considers it absurd to believe that these dilutions have any effect whatever. It is, of course, absurd and inconceivable, but then inductive science is not concerned with inconceivabilities, it is based on experiment under proper controls. The argument from inconceivability is not an argument which any real scientist will allow to be raised. If Professor Clark will refer to the Horder Report on the Chronometer of Boyd to the Royal Society of Medicine he will find that, however inconceivable it may seem,

drugs in high dilutions do produce effects which can be demonstrated.

Professor Clark suggests that homoeopaths are opposed to orthodox medicine. This is a misconception. Homoeopaths are not opposed to orthodox medicine but are opposed to orthodox medicine-going, which is a very different thing.

As to homoeopathy being "opposed to the chief basic theories of chemistry and physics," I have heard Sir Oliver Lodge, whose knowledge of physics and whose good faith will not be questioned, state publicly that in his opinion homoeopathy, by reason of their concepts, was the most likely to understand and apply the findings of modern physics.

In conclusion—homoeopathy is not a "fath," or a "cult." It rests on the tripod of observation, experiment, and induction, and can thus justly claim to be scientific—I am, etc.

Liverpool, Oct 22nd

F B JENIN

#### A PROPOSED ASTHMA RESEARCH COUNCIL

SIR,—In the article on page 746 of the JOURNAL for October 22nd you quote the assertion in the notice of the formation of this council that, though palliatives have been found, "no certain cure exists," and, further, that "the cause of asthma is unknown." There is, of course, a great deal of truth in this assertion, but it does not contain the whole of the truth, and suggests an attitude of hopelessness which is very discouraging to the unfortunate asthmatic. There is, truth, no certain cure for every case, but it is certain that many cases are cured. Those who care to study the illuminating experimental researches of Dixon, Bradie, and Ransom will obtain from them much information as to the cause of asthma. They will learn that an exciting cause for the attack may be localized in the nose, and should then be sought for and removed. Even though the predisposing cause may not necessarily be done away with, a vicious circle may be broken and a practical cure brought about. There are many cases in which the removal of an ill-disposed has resulted in the complete disappearance of the asthmatic attacks. It is extraordinary, however, how long patients with asthma are allowed to go on without rhinological treatment, even in the presence of very obvious nasal disease, and thus "distressing and incapacitating" disorder unnecessarily prolonged.—I am, etc.

London Oct 24th

JAMES DIXON (JUNR)

#### DRIED COMPLEMENT IN THE TROPICS

SIR,—In two recent letters in the JOURNAL Dr. Neave Kingsbury (September 17th, p. 518) and Major Anderson, I.M.S. (October 8th, p. 665), relate their experience of the use of dried complement in the Federated Malay States and India respectively. Both agree either that (a) the sample used was not a representative one or (b) that dried complement is not suitable for the tropics. The age of the dried complement at the time of trial is not stated in either letter, and judging from a short experience of dried complement in England (some ten or twelve tests) I am convinced that this is the vital point. The complement I used was also a (crude) preparation, and the claim as claimed by the makers I found to be true, with one exception—namely, that the titre would keep practically indefinitely. Using a supply from three to (?) six months old, which was stored in an ice box, I had very satisfactory results. Titres varying from 1 in 40 to 1 in 65 or 1 in 100 were obtained. The Wassermann method used was as follows: Medical Research Council elaborated by Colonel Harrison.

On the other hand, dried complement from the makers twelve months old was found to be inert. I found no difficulty in getting a clear solution, and the method adopted was to shake out the granular material evenly on to the surface of normal saline (not distilled water directed) in a watch glass. After a little time a portion not dissolved was broken up with a glass rod.

I am fairly confident that dried complement, such as I

used would be valuable in the tropics, provided small fresh supplies could be obtained direct from the makers—I am, etc.,

Bath Oct 8th J COVIL, M.B., Lieut Colonel (Ret.)

SIR—In connexion with the reference to dried complement in the tropics (Dr Nerve Kingsbury, September 17th, p 518 and Major Anderson, October 8th, n 663), we were asked some years ago if dried complement could be made and sent to the tropics in a satisfactory condition. After a considerable amount of investigation the staff of the Wellcome Physiological Research Laboratories succeeded in making a reasonably stable dry powder. Experimental batches were sent to the tropics, and after they had proved to be satisfactory we supplied the product for some time, but the demand was not encouraging and its issue was discontinued.

Our experience indicates that the dried material can probably be prepared suitable for use in the tropics, but we are informed by the staff of the laboratories that its preparation entails vigilant control and continual supervision and the loss in the process is considerable.—We are, etc.,

London EC1 Oct 18th BUTROUGHS WELLCOME AND CO

### REFRACTION "HOSPITAL"

SIR,—In your issue of October 22nd (p 753) there is a note that the opticians of Glasgow propose to establish in their city a "Refraction Hospital" for which 'the expenses of the first year would not exceed £250,' and on the lines of the 'London Refraction Hospital.' This so-called hospital is no more than a meeting place where opticians collect some few patients, examine their eyes according to their expertise, and instruct their neophytes in their methods. The inwardness of this device of the opticians would seem to be an attempt to combat the finding of the report of the Departmental Committee on the causes and prevention of blindness. "There is only one place where ophthalmology can be learnt, that is at a hospital," and so apparently the opticians devise a 'hospital' so that they may claim to be 'hospital' trained! The device is on a par with their profuse use of high sounding titles of "optologist" "ophthalmologist," "qualified ophthalmic optician," and of strings of letters which they bestow on one another. Since Scots have some reputation for a choice use of words one might have hoped that the opticians of Glasgow would have refrained from this flagrant misuse of the word "hospital."—I am, etc.,

London W1 Oct 22nd

A BISHOP HURMAN

### INFECTIVITY OF JUVENILE WARTS

SIR,—A few years ago I had under treatment a woman who had a wart on the right index finger and another on the thumb of the same hand the two warts opposing one another as if from contact inoculation. The appearance of these warts did not suggest verrucose tuberculosis. The patient, who had been a "land girl" in Cheshire during the war and for some time after said that she had acquired these warts from her work as a milker, occasionally a cow had a warty teat, and during the milking "if you make it bleed that's where you catch it yourself"—that is on the hands or finger.

Dr Piossey White believes that this transmission of warts from cattle to mankind has never been recorded previously in this country although there are numerous references to it in Continental medical writings. In the second edition of his monograph on *Occupational Affections of the Skin* (second edition 1920 p 201) he refers to a paper by Andry and Suffrin in the *Annales de Dermatologie et de Syphilis* (1908, p 545) in which it is stated that the common warts of oxen and of dogs are communicable to man. He also refers to a paper by F. Schultz on the experimental transmission of warts from cats to the human subject, in the *Deutsche medizinische Wochenschrift* for 1908.

I am told by a farmer that warts are rather common on cows' teats, even on heifers which have never calved. It

would appear that the cow is not simply infected from warts on the hands of a milker and transmits the infection subsequently to another milker. The cow seems to have a definite predilection for infective warts, and may possibly be the first stage in the cycle of infection otherwise they would not be met with on heifers before handling by the milker.

My patient's observation that the warts became infective if they were made to bleed is fully borne out by the case of ordinary juvenile warts on the human subject. In Manchester, for instance, children have a folk lore belief that they can get rid of warts if they can "sell them for a halfpenny." Thus, apparently, they have no difficulty in doing as some small boys seem quite proud to have a wart or two about their fingers somewhere it confers quite a distinction upon them. The infection, sold to the recipient, is transferred by rubbing against the wart after making it bleed.

This raises the question as to whether warts can be transferred to children and others through drinking raw (unboiled) milk. Certainly milk is predominantly a food of children, and warts are typically an affection of childhood. Blood cells can be found with fair frequency in samples of milk, and the cows which supply the milk for human consumption may have on their udders infective warts, capable of transmitting the infection to human beings if the warts are made to bleed. A prima facie case for suspicion seems to exist, though it is perhaps unsafe to put it more strongly at present.—I am, etc.,

Manchester

W J RUTHERFORD, M.D. (Lanc)

### BIRTH CONTROL INVESTIGATION COMMITTEE

SIR—There is no reasonable doubt that birth control is practised by a large number of married people of all classes. It is to be supposed that the usage may have important effects on the physical, psychological, and ethical well being, not only of the individuals who employ it, but also indirectly on the well being of the children of those persons, and therefore of the whole community. It is also probable that if birth control is desirable some methods are to be preferred to others yet up to the present little scientific study has been made, either of the comparative advantages of different methods or of the possible far reaching effects of the practice as a whole.

The subject of birth control has hitherto not formed part of medical education, and generally speaking any professional knowledge that medical practitioners may have of this question has been acquired in response to a demand from their individual private patients. In hospitals and medical schools general instruction in this subject is not as a rule given to the students, nor information to patients. Yet it is well known that in certain cases of ill health further pregnancies are clearly contraindicated on medical grounds alone.

A committee composed of scientific workers and members of the medical profession, assisted by lay workers and others interested in the problem, has been formed to promote the scientific investigation of birth control. The members of the committee differ widely in their opinions as to the desirability of birth control, but are united in the realization that the practice is widespread, and that the scientific problems which it raises can no longer be ignored.

It is realized that the results of the investigation may show that no entirely satisfactory method has at present been discovered, and work is being done to find new methods. It is hoped also that relations may be established with clinics and other organizations connected with birth control abroad, so that their experience and knowledge may be used.

The committee serves no propagandist function but desires only to establish facts and to publish these facts as a basis on which a sound public and scientific opinion can be built. The present division of medical and scientific opinion and the lack of any orthodox medical teaching on the subject are largely explained by the absence of available data on which a sound opinion can be formed.

The committee will be grateful if any of your readers who may be interested in the subject, or who possess data

that would yield information, would communicate with the honorary secretary of the committee, the Hon Miss Majoie Frier, 41B, Clarendon Gardens, London, W 2

A questionnaire has been prepared by the committee which, if filled in in sufficient numbers and in a sufficient variety of cases, will provide that quantity of accurate statistical information which is now lacking. As many of these questionnaires as may be required will be sent to any private doctor, hospital, welfare centre, or infirmary on application to the honorary secretary of the committee—I am, etc,

October 25th

HUMPHRY ROLLESTON,  
Chairman

\* \* The other members of the committee are E D Adam, M D, F R S, C P Bleker, M B, C J Bond, C M G, F R C S, Professor A M Cru-Saunders, Frank Cook, F R C S, Mrs Gladys Cox, M B, B S, Professor Winifred Cullis, D Sc, Professor Arthur Ellis, M D, Professor Julian Hurley, and Professor F H A Marshall, D Sc, F R S

### CONVULSIONS DURING GENERAL ANAESTHESIA

Sir,—Since I wrote on this subject in the JOURNAL of May 28th (p 956) you have published letters containing statements with which I disagree

The convulsions could not be confused with ether clonus by anyone who has witnessed both, and it is a pity that one or two of your correspondents should, by doing so, obscure the issue. They are probably quite easily distinguishable also from those due to atropine, which, however, I have never seen as far as I know. I do not believe they are due to impurities, because I have seen them begin, and herald of a fatality where only ether, fresh from a bottle, and of a very good brand (B D H), was used.

Neither are they due to the bomb, because many have occurred where this method was not employed (and four of those which I reported). I may add that three of the five deaths that I wrote of occurred under other methods. As I invented the bomb I should like to contradict the suggestion that it is liable to cause chest complications. Possibly, by making ether easy, administrators have been tempted to use that drug more often, and in fuller measure than they would otherwise have considered judicious. I have used it continually during these ten years, and I find that it is not so.

My experience of this phenomenon makes me adhere to my original suggestion as to its cause, and the administration of CO<sub>2</sub>, I believe, would make matters worse—I am, etc,

Manchester, Oct 8th

K B PINSON

### CONVULSIONS DURING LOCAL ANAESTHESIA

Sir,—About six months ago I administered a local anesthetic—cocaine—to a woman, aged 45, for the removal of a large lipoma from her right side. After about five minutes she had a most violent epileptiform attack. Her face became purple, and it gave us all we could do to hold her on the table. As I thought that she might have some intolerance to cocaine I at once made my incision and quickly removed the growth. She came to just as I had finished, got off the table, and walked to her room. She had never had a fit of any kind before, nor has she had one since, but she remembers everything about the seizure. I have given this same local anesthetic in hundreds of cases, but never had an experience like this. What is the explanation?—I am, etc,

Bourton on the Water, Glos, Oct 19th

PROSPER LISTON

### SECOND ATTACK OF PITIRIASIS ROSEA

Sir,—I am obliged to Dr E Graham Little for pointing out a mistake of mine in my memorandum on a second attack of pityriasis rosea (September 24th, p 549). The date of his own case was, of course, 1914, and not 1915, as I have it.

Dr Graham Little says that he thinks "the implication of infection conveyed by Dr Edleston's experience equally

uncommon", and he is surely right. This was a point which intrigued me very much, and it would be interesting and instructive to know if any similar cases have ever occurred, in which the disease seemed to be so conveyed from one to another—I am, etc,

Manchester, Oct 10th

B GORDON LEDSTON

Sir,—May I add my experience to that which has been described by Dr Gordon Edleston (September 24th, p 549). When I was a student at St Thomas's Hospital (about 1905) I found one day an eruption on my chest and arms, and went to the skin department and showed myself to Dr Strimer. By a herald spot on my arm and the character of the lesion he diagnosed pityriasis rosea. On my asking about treatment and prognosis, Dr Strimer told me that I should never have a second attack. About one year later I found myself to my great surprise exhibiting an eruption exactly similar to the previous one. I showed it to Dr Strimer, who was greatly interested, and diagnosed it as pityriasis rosea occurring a second time—I am, etc,

Ride, I W, Oct 13th

SPENCER CHURCHILL

### - A PAROXYSM OF AURICULAR FIBRILLATION

Sir,—In the memorandum by Dr Brewis on "A paroxysm of auricular fibrillation" (October 1st, p 565) he makes the statement "the auricular systole was distinctly heard". Dr Brewis is not alone in repeating such a statement, but if such a fact be not within the region of even possibility it is time that those responsible for teaching that it is should either give reason for the faith that is in them or recant. A statement of this sort detracts seriously from the value of the other statements in the memorandum.

Until we are satisfied as to the cause of the normal heart sounds it is absurd to speculate as to the cause of the abnormal heart sounds. As I have pointed out on several occasions the vibrations of the aortic valve when fibrillating are so few per second as to be incapable of producing a sound audible by the human ear. I am convinced that the sounds of the heart are produced by the movements of the pericardial fluid, and any variation of those sounds are associated with variations in the quantity and quality of that fluid together with a diminution of the negative pressure within the pericardial cavity—I am, etc,

Swansea Oct 1st

G ARBOUR STEPHENS

### PIREXIA DURING THE PUERPERIUM

Sir,—I should like to add my protest to that of your other correspondents against this new order—that we shall notify as puerperal fever any case of a lying-in woman who has a temperature of 100.4° for more than twenty-four hours. This is a form of legislation which can only bring derision on the medical profession, it is a waste of public money and a very unjust and ridiculous order. Mr Chamberlain should be made to justify this new brain-regulation. The Registrar-General's statistics will be more than funny if every woman with a headache and temperature due to mammary irritation or constipation is notified as suffering from puerperal fever—I am, etc,

IAN JEFFRIES, M R C S, L R C P,  
Medical Officer of Health

Totnes Oct 11th

### The Services

#### NO 14 STATIONARY HOSPITAL

The eighth annual dinner of the medical officers of No 14 Stationary Hospital will be held on Friday, December 9th at the Trocadero Restaurant, at 7.15 for 7.45 p.m.

#### DEATHS IN THE SERVICES

LIEUT COLONEL LEWIS CASPER, Bengal Medical Service, died in a nursing home at St Heliers, Jersey, on October 27th, aged 85. He was born on June 18th, 1842, the son of Mr D. A. J.

Cameron of the Excise department Knocknido Elm and educated at Edinburgh where he graduated as M.D. in 1863 also taking the L.R.C.S. Ed. in the same year. He entered the I.M.S. as a student surgeon on March 31st 1866 passing first into Netley became surgeon major on March 31st 1870 and retired on August 9th 1891. His whole service was passed in civil employment in the province of Bengal where he was civil surgeon successively of Bickerganj, Champaran Rayshahi and Midnapur. He leaves a widow.

## Medico-Legal

### AN OSTEOPATH'S CLAIM FOR FEES

In the *BREIT* MEDICAL JOURNAL of March 5th (p. 448) a short report was given of the action brought by Mr. E. L. Macnaghten of Weymouth Street London in the Bloomsbury County Court claiming £50 for osteopathic treatment rendered by him to the wife of the defendant Mr. C. H. Douglas. The defendant pleaded that the plaintiff's diagnosis of the case was entirely wrong that the treatment given was unnecessary and unsuitable and no relief upon the provisions of Section 32 of the Medical Act 1858.

No person shall be entitled to recover any charge in any court of law for any medical or surgical advice attendance or for the performance of any operation or for any medicine which he shall have both prescribed and applied unless he shall prove upon the trial that he is registered under this Act.

Deputy Judge Stoker held that as the plaintiff was not a registered medical practitioner he could not recover fees for advice and treatment and entered judgement for the defendant with costs. The plaintiff appealed to the King's Bench Division and the hearing was reported in the *JOURNAL* of May 21st (p. 940). Their lordships Acton and Talbot J.J. ordered a new trial on the ground that they were bound by the decision of Horridge and Shearman J.J. in the case of Hall v. Trotter that an osteopath was entitled to recover fees for treatment rendered.

The action was tried anew in the Bloomsbury County Court by Judge Hill Kell on October 19th. The plaintiff was represented by Mr. A. C. Jackson and the defendant by Mr. Malcolm Hilbery and Mr. Laporte Payne instructed by Messrs. Blewitt and Son.

The plaintiff described his treatment of Mrs. Douglas and the findings upon which this treatment was based. It appeared that he had found evidence of suppurative in the antrum approximation of the first and second cervical vertebrae displacement of the coccyx and half an inch of shortening of one leg. His treatment included movement of the cervical vertebrae reduction per rectum of the displaced coccyx and administration of ultra violet rays. In cross-examination he was understood to say that he did not know the dosage of ultra violet rays and agreed that osteopathic treatment was worthless if the suffering could not be relieved by moving bones.

Sir Herbert Waterhouse consulting surgeon to Charing Cross Hospital who gave evidence in behalf of the defendant said that the movement of bones in this case could have had no effect whatever on the antrum. He had examined Mrs. Douglas and found each antrum positive normal by transillumination and there was no evidence of previous antral disease. It was quite impossible to move a dorsal or lumbar vertebra and very dangerous to attempt to move a cervical vertebra. Clinical and x-ray examination showed the spine to be normal. The coccyx could not have been moved by the plaintiff without an anaesthetic on account of the intense pain that would have been caused. There was no evidence of any shortening of one leg and speaking generally Sir Herbert Waterhouse expressed the opinion that Mrs. Douglas had had nothing the matter with her calling for special treatment.

Mr. Frank Romer M.R.C.S. who said he had specialized in what was known as manipulative surgery expressed the opinion that the bones stated to have been moved by the plaintiff could not be moved. He concurred in the evidence given by Sir Herbert Waterhouse.

Dr. W. J. C. Keats of Wanstead who also agreed with what Sir Herbert Waterhouse had said stated that he had been Mr. Douglas's regular medical attendant and had examined her in March 1916. He thought the osteopathic treatment she had been receiving was wholly useless and that she had derived no benefit from it.

The defendant (Mr. Douglas) in his evidence said that he informed the plaintiff by letter in June that he had stopped his wife's visits to him because he was not satisfied with the treatment she had been receiving. After two or three visits she seemed to be a little better but subsequently became worse.

Mrs. Douglas who also gave evidence said that she went to plaintiff on the recommendation of a friend to get rid of faceache and he told her he could make her better. She felt better after two or three visits to him in April but after that her condition became worse and she stopped going to him because he was doing her no good. She had complained to plaintiff that his treatment was rather drastic and that once she nearly fainted on her return home.

In Honour and that he was satisfied that the treatment given by Mr. Macnaghten to Mrs. Douglas could not have achieved any beneficial results and he had come to the conclusion that the services rendered by him were wholly useless. He accordingly gave judgement for the defendant with costs.

## Universities and Colleges

### UNIVERSITY OF OXFORD

At a congregation held on October 20th the following medical degrees were conferred:

B.M.—C. L. Cope P. C. MacLennan

### UNIVERSITY OF CAMBRIDGE

Mr. FRANK CLARKE CVO, formerly an exhibitor of the college and assistant demonstrator of anatomy in the University has been elected an honorary fellow of Downing College. He graduated M.B. Lond. in 1881 M.D. in 1885 and became F.R.C.S. L.S. in 1894. He is consulting surgeon to the Central London Ophthalmic Hospital and has been President of the Ophthalmological Section of the Royal Society of Medicine.

The Raymond Horton Smith Prize for the best M.D. thesis during the past academic year has been awarded to V. B. Wilesworth M.A. B.Ch. of Cairns, *Proxime accessit*, A. L. Roche M.A., M.D., M.Ch., of Manchester.

### UNIVERSITY OF EDINBURGH

At a graduation ceremony on October 22nd the Diploma in Public Health was conferred upon the following:

W. T. de Silva E. F. Bell R. A. Macdonald D. F. Macfiver M. C. J. Macleod Elizabeth I. M. Whirter

### ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At the meeting of the Royal College of Surgeons of Edinburgh held October 19th Dr. Alexander Miles was elected president for the ensuing year. Dr. A. Logan, former vice president and Mr. John William Struthers F.R.C.S. Ed. secretary and treasurer.

The following twenty-five successful candidates out of ninety-three entered having passed the requisite examinations were admitted Fellows:

J. M. D. Watt W. A. Blomfield W. M. Brown J. H. Conch A. F. W. da Costa H. Da C. F. Duncan Caroline A. Elliott G. M. Irvine W. H. G. M. Lill H. C. Lorry R. R. Macintosh H. Macpherson R. B. Martin R. S. Melville A. J. Murray J. S. Ramsay R. K. Ran L. J. Ryan R. V. S. Selvadurai M. A. Swan T. E. Stoker B. M. G. Thomas J. Troup J. V. Young

### UNIVERSITY OF DUBLIN

#### SCHOOL OF PHYSIC TRINITY COLLEGE

The following candidates have been approved at the examination indicated:

**FINAL EXAMINATION—Part I Materia Medica and Therapeutics Medical Jurisprudence and Hygiene Pathology and Bacteriology**  
M. H. Fridgoun R. St. J. Lyburn H. T. Fleming W. R. Johnston J. V. Russell J. E. C. Cherry A. J. Garde R. M. Wilson C. H. Harris R. I. Red C. King J. F. MacCarthy Morrough A. H. O'Malley Anna M. J. McCabe J. S. Mackenna.  
**D.P.H.—Part II Sanitation Public Health Administration Hygiene and Epidemiology Sanitary Law and Vital Statistics** Kathleen M. Kennedy M. Halligan Sarah M. Colahan Brenda M. Young

### ROYAL COLLEGE OF SURGEONS OF ENGLAND

Calendar for 1927-28

The College Calendar for the current year includes as usual a report of the proceedings of Council during the past twelve months. A large part of the matters recorded therein have formed the subject of notes in this column from time to time.

In regard to the primary Fellowship examination it has been decided that no alteration shall be made at present in the subjects of this examination and that no exemptions of any kind shall be granted. The Council has however, resolved that it is desirable to send examiners to the Dominions to conduct a primary examination for the Fellowship of the same standard as the examination in this country on conditions to be hereafter determined provided that satisfactory arrangements can be made. To this end negotiations with the proper authorities in Canada have been authorized. The fees for admission in the diploma of Fellowship have been revised. In future, besides the examination fees a member will pay 10 guineas on admission and a non-member 30 guineas. Under the authority given by the recently granted Supplemental Charter the Court of Examiners has been increased from ten members to twelve.

In the period under review 60 diplomas of Fellowship were issued including one to a medical woman, 700 diplomas of Membership including 117 to women and 129 licences in dental surgery including 12 to women. The following diplomas were granted jointly with the Royal College of Physicians: Public Health 53, Tropical Medicine and Hygiene 49, Ophthalmic Medicine and Surgery, 40 Psychological Medicine 22 Laryngology and Otology 19.

The subject of the Jacksonian Prize for 1923 is the surgical treatment of pulmonary tuberculosis. The prize for 1925 was awarded to Mr. E. Miles Atkinson.

Mr. G. Buckston Browne has given a sum of £5,000 the interest from which is to be expended in providing an annual dinner on the College Premises for Fellows and Members and such others as

the President and Council may wish to invite, at least half the guests invited to be Members of the College.

The report on the work of the Museum records that the greatly extended odontological collection was opened by the President on May 23rd, Sir Berkeley Moynihan's speech was published in full in our issue of May 28th, p 978. In January, on the initiative of the President, a large party of medical students from Leeds spent a day examining the contents of the Museum, and the hope is expressed that students of other provincial universities and medical schools may be induced to follow this example. During the year rapid progress has been made in the laborious work of preparing a new descriptive catalogue.

The library report states that the librarian is now engaged upon the compilation of a catalogue of all the manuscripts in the library, including many bearing on the history of the Museum and College at large. The "Lives of the Fellows" have been kept up to date.

Notice is given that the annual meeting of Fellows and Members will be held at the College Lincoln's Inn Fields, on Thursday, November 17th, at 3 o'clock, when the Council's report will be presented.

## ROYAL COLLEGE OF PHYSICIANS OF IRELAND

### LECTION OF OFFICERS AND FELLOWS

At the annual stated meeting of the President and Fellows, held on St. Luke's Day, Tuesday, October 18th, the following candidates nominated on July 1st were duly elected Fellows of the College: Geoffrey Bewley, M.D. Dubl (1925), M.R.C.P.I. (1926), Charles Greer, M.R.C.P.I. (1911), Jiwann Ram Maleet, M.R.C.P.I. (1925), James Smelan Quinn, M.D. Dubl (1925), M.R.C.P.I. (1925).

Dr. William Arthur Winter, M.D. Dubl, D.P.H., was elected President of the College in succession to Professor T. H. Wilson.

The following Fellows were elected Censors of the College: Medicine, Dr. Callaghan, Dr. Syngé; Medical Jurisprudence and Hygiene, Dr. Bigger; Midwifery, Dr. Solomons.

The President appointed Dr. Solomons a Vice President of the College.

The election of officers resulted as follows: Representative of the General Medical Council, Sir John Moore; Treasurer, Dr. Bewley; Registrar, Dr. Kilkpatrick; Librarian, Mr. R. Phelps; Dr. John Spence was elected Deputy for the King's Professor of Materia Medica and Pharmacy to act as Physician at St. Patrick's Hospital.

As representatives of the College on the Committee of Management under the Conjoint Examination Scheme the following Fellows were elected: Dr. Walter Smith, Sir John Moore, Dr. Kilkpatrick.

### ANNUAL DINNER

In the evening the annual St. Luke's Day dinner was held, when the newly elected president was in the chair. A large number of guests were entertained, including the Chief Justice, the Provost of Trinity College, the Presidents of the Royal College of Surgeons in Ireland, of the Royal Academy of Medicine, of the Incorporated Law Society, of the Royal Hibernian Academy, of the Royal Society of Architects, and of the Chamber of Commerce, as well as the Dean of St. Patrick's, the Very Rev. Father Finlay, and the Archdeacon of Dublin. A telegram of salutation was sent to the Royal College of Physicians of London and duly acknowledged.

## CONJOINT BOARD IN SCOTLAND

The following candidates have been approved at the examination indicated:

**FINAL EXAMINATION**—Out of 105 candidates entered the following have passed: M. M. Wright, F. A. Buttner, T. Lotter, M. A. H. Gohar, K. R. Bali, G. D. Roche, M. M. Farhah, K. R. Trembath, P. M. E. Logan, S. Jurawan, T. B. Dobson, S. K. Ponniah, R. O. Adhikari, J. S. T. Isbister, G. M. Johnson, C. D. C. Golding, A. A. Hase, S. Sivalingam, R. Kandiah, S. C. Lovett, Bulankulame, A. W. Green, B. I. Campbell, W. Jackson, T. W. A. Wilson, W. T. A. Peace, T. C. A. B. Anna.

The following have passed in the subjects indicated:

**Medicine**: E. S. R. Menon, M. R. Ramjohn, A. B. Anderson, H. F. N. Slane, R. G. Paranjape, B. J. S. S. Chelliah, V. Sanetamby, J. E. Felix, **Surgery**: D. A. Hoid, F. H. D. J. Maslamm, M. Kier, W. Wallace, **Midwifery**: D. A. Hoid, C. A. Munro, Agnes Donald, son, E. S. R. Menon, S. S. Nagi, A. B. Anderson, H. F. N. Slane, S. Chelliah, **Health**: G. Henderson, N. J. W. J. de Villiers, R. G. Paranjape.

hundreds of certificates were issued.

What is the exact

Bourton on the Water,

## APOTHECARIES OF LONDON

ates have been approved in the subjects

## SECOND ATTACK

H. J. Haremont, B. D. Jain, D. I. Jones, I am obliged to you for the information given in your issue of 11th inst. regarding the case of my patient, Mr. J. H. Jones, who has been suffering from a severe attack of the disease. I have been unable to find any other cases of the disease, and I am therefore very much interested in the case. I have been unable to find any other cases of the disease, and I am therefore very much interested in the case. I have been unable to find any other cases of the disease, and I am therefore very much interested in the case.

SOCIETY. The following candidates have been approved at the examination indicated: H. J. Haremont, B. D. Jain, D. I. Jones, I am obliged to you for the information given in your issue of 11th inst. regarding the case of my patient, Mr. J. H. Jones, who has been suffering from a severe attack of the disease. I have been unable to find any other cases of the disease, and I am therefore very much interested in the case. I have been unable to find any other cases of the disease, and I am therefore very much interested in the case.

was granted to Messrs R. P. Charles, G. H. Haidaker, B. D. Jain, G. C. Rhys, and V. R. Smith.

## Obituary

Dr. DAVID RUTHERFORD ADAMS, physician to the Whitechapel Tuberculosis Hospital, Toorquay, and pathologist to the Toorquay Hospital, died of pneumonia in a nursing home in Toorquay on October 17th at the early age of 40. He graduated M.B., Ch.B. Glasg. in 1910, and M.D. with commendation four years later. He had held resident appointments in the Glasgow Royal Infirmary and in the City Fever Hospitals, and had been engaged for a time in pathological work in the Western Asylum Research Institute. After a period as assistant surgeon to the Kilmaronock Infirmary, Arishie, he held a commission in the R.A.M.C. and served on the Salonika and Italian fronts. On his return from the war he began practice in Toorquay, first in partnership with Dr. Anbosa Spong and later with Dr. D. G. Riddell, his professional ability and social gifts rendered him very popular. He is survived by a widow and four children.

Dr. JOHN RUDD LEFSON, mayor of Twickenham, died on October 23rd, in his 74th year. He received his medical education at St. Thomas's and Edinburgh, and also studied in Vienna and Berlin. As a student he worked in Lister's wards in the Edinburgh Royal Infirmary, and his book *Wards as I Knew Him*, was reviewed in our columns on April 16th, 1927 (p. 728). He obtained the M.R.C.S. in 1875, and graduated M.B., Ch.B. in the following year, proceeding M.D. in 1882. He had held the appointments of senior consulting physician to the St. John's Hospital, Twickenham, and consulting physician to the Metropolitan and City Police Orphanage. He was a divisional surgeon of the St. John Ambulance Brigade, and a Fellow of the Royal Astronomical, Royal Microscopical, Geological, and Linnæan Societies. Dr. Leeson retired from active medical work several years ago, and since then had devoted his life to public work in Twickenham, becoming its first mayor when this town was incorporated as a borough last year. He was a Justice of the Peace for the county of Middlesex.

## Medical News.

THE following appointments made to the staff of the London School of Hygiene and Tropical Medicine took effect on October 1st. Mr. Reginald Lovell, M.R.C.V.S., to be research assistant in comparative pathology, Mrs. W. M. Smith, M.A., to be demonstrator in bacteriology, Miss H. M. Woods, F.S.S., to be assistant lecturer in the division of epidemiology and vital statistics. Mr. W. Rees Wright, M.Sc., has been appointed to a temporary research post, to continue Dr. P. A. Buxton's investigations on the biology of *Stegomyia*.

As already announced, a dinner to celebrate the incorporation of the British Institute of Radiology with the Röntgen Society will be held at the Hotel Great Central, Marylebone Road, on Friday, November 18th, with Sir Humphry Rolleston in the chair. As was made quite clear in a paragraph published on October 15th (p. 697) the two societies have amalgamated on equal terms. The present officers of the British Institute of Radiology whose names were mentioned in the paragraph are retiring, and will be replaced by officers to be elected at a general meeting on November 17th of members of the new society formed by the amalgamation.

THE Woolwich and District War Memorial Hospital at Shooters' Hill will be formally opened on Wednesday next, November 2nd, at 2.45 p.m., by H.R.H. the Duke of York, who will be accompanied by the Duchess of York. A preliminary account of the new buildings appeared in our issue of May 14th, p. 892.

THE National Association for the Prevention of Infant Mortality and for the Welfare of Infancy has arranged a course of lectures on the hygiene of married life and parenthood (for married people only) to be given in the Lecture Hall, Carnegie House, 117, Piccadilly, on Wednesday, November 2nd to December 7th, at 8.30 p.m. The subjects and lecturers are as follows: Physiology of reproductive organs, Professor Winifred Cullis; hygiene of pregnancy—from the mother's and the father's point of view, Lady Brett; how a new life begins and what it owes to its ancestry, Dr. J. S. Fairbairn; contraception, Dr. L.



Pitchard the effect of discipline on mental development Dr O W Kimmis sterility by Professor Louise Vellroy Fees 7s 6d for the course for one person, or 10s 6d for husband and wife 1s 6d for a single lecture Tickets may be had from the secretary of the Association, 117, Piccadilly, W 1

THE Fellowship of Medicine announces that Mr Lawrence Abel will deliver a lecture on points in the diagnosis and treatment of pyuria at the Medical Society, 11, Chandos Street, Cavendish Square, on October 31st at 5 p.m. On the same afternoon Dr Donald Paterson will give a medical demonstration at the Great Ormond Street Hospital at 2.30 p.m. and Mr Bright Banister a surgical demonstration at the Chelsea Hospital for Women at 2 p.m. The lecture and demonstrations are free to medical practitioners. Two courses begin on October 31st: one lasting four weeks, will be held at the London Local Hospital, and the other, a five afternoon course for general practitioners, will continue at the Hampstead General Hospital for two weeks. From November 7th to 12th the Hospital for Diseases of the Chest Brompton will provide a comprehensive course, and there will be a clinical course at St Peter's Hospital from November 14th to 25th with a series of lectures on diseases of the urinary tract. From November 14th to December 3rd a course in medicine, surgery, and gynaecology will be held at the Royal Waterloo Hospital. From November 21st to December 17th the West End Hospital for Nervous Diseases will give a series of clinical demonstrations upon selected cases in the out-patient department in Welbeck Street daily at 5 p.m. and there will be a course for general practitioners at the London Temperance Hospital during the two weeks following November 21st from 4.30 to 6 p.m. A course in proctology at St Mark's Hospital will extend from November 28th to December 3rd. Copies of syllabuses of these courses and of the *Post graduate Medical Journal* are obtainable from the Secretary of the Fellowship of Medicine, 1, Wimpole Street W 1.

A COURSE of post graduate lectures at Ancoats Hospital, Manchester opened on Thursday last when Mr H E Hughes discussed the early diagnosis of intestinal obstruction. On November 10th he will deal with gall stones and on November 24th with the diagnosis and treatment of common ailments of the rectum. On November 3rd Dr Kletz will discuss diarrhoea and on November 17th the medical treatment of peptic ulcer. The lectures which begin at 4.15 p.m. are open without fee to medical practitioners and senior students. Tea will be served at 3.45 p.m.

DURING November a series of lecture demonstrations will be given twice a week at 4.30 p.m. at the Wes London Hospital Post Graduate College, free to medical practitioners. On November 1st Dr Sydney Owen will deal with infant feeding and on the 8th with the heart in childhood. On November 4th Mr Neil Sinclair will speak on gall stones, and on the 16th Dr G B Dowling will discuss the preservation of a youthful skin. Mr Tyrrell Gray will give two lectures on gastric and duodenal ulcer the first being on the 17th and the second on the 24th. On November 22nd Dr Sent Pinchin will speak on cardiac irregularities, and on the 30th Dr Carter Braine will consider the therapeutic application of x-rays. A staff consultation will be held on November 11th, at 5 p.m., in the massage department.

THE Prince of Wales opened the new extension of the Boscombe Branch of the Royal Victoria and West Hants Hospital on October 19th. He named the new ward, which has been specially adapted for sunshine treatment, as the Prince of Wales Ward.

THE annual dinner of the Chelsea Clinical Society was held on October 25th. Dr L D Bailey, M.C., the president, took the chair and there was a good attendance of members. The toast of "The Society" was proposed by Alderman J E Jefferson Hogg, ex-mayor of Chelsea, and the president in acknowledging it referred to the flourishing state of this fraternity which was now in its twenty-ninth year. The membership was 158 and the standard of interest of the meetings was well maintained. The toast of "Kindred Societies" was proposed by Dr F J McCann in a humorous speech, and Mr Mortimer Woolf, president of the Hunterian Society, replied. Mr Ivor Back added to his reputation in a witty speech, proposing the health of "The Gneiss" replies being made by Sir William Osler, B.A., who showed that brevity could be the soul of wit, Mr Leonard Huxley, LL.D., Mr J Hugh Edwards, M.P., who indicated with many jests and epigrams the value of the medical profession to the nation as a whole and the Hon Alan Hood, who spoke of the part played by medical practitioners in building up the Empire overseas. The toast of "The President" was proposed by Dr Ernest Young and in his reply Dr Bailey referred to the valuable work of the officers of the society including the treasurer, Dr K E Eichenstein, who replied succinctly and effectively.

THE annual dinner of the London Hospital was held at the Trocadero Restaurant on October 20th, when more than 230 old members and guests were present. The chairman, Dr Angus Kennedy, proposing the toast of "The Hospital," referred to the excellence of the training, the remarkable spirit of self-reliance which it encouraged and the devotion to its memory of all its old students. He regretted that the hospital no longer opened its doors to women students. Dr Russell Andrews, proposing the health of the chairman, mentioned that Dr Kennedy's grandfather, father, son, and daughter had all graduated from the London Hospital. He referred to the number of instances in which several generations had passed through the medical school, which afforded sure testimony of their appreciation of the training there.

THE annual autumn meeting of the Society for the Propagation of the Gospel in Foreign Parts was held at the Central Hall, Westminster, on October 25th. The speakers who dealt principally with medical missions included the Bishops of London and Woolwich, Dr D S Bryn Brown of the Yosse Memorial Hospital in North China and Miss B E Corbett a member of the medical mission in Malacca, Straits Settlements.

THE Ministry of Health has issued new regulations replacing the Public Health (pneumonia, malaria, dysentery, etc.) Regulations 1919 which provide for the notification and treatment of certain infectious diseases. Malaria and dysentery, as well as acute primary pneumonia or acute influenza pneumonia, must be notified in the prescribed form irrespective of previous notification. Special provision is made for cases in which malaria has been used for therapeutic purposes such cases occurring in an institution need not be notified, but if the medical practitioner is of opinion that the patient may be regarded as liable to relapses of malaria at the time he is discharged from the institution notification must be sent to the M.O.H. for the district in which the patient proposes to reside. The fee for a notification is, for a private patient 2/6d for a case occurring in the practice of the medical officer of any public body or institution 1s.

DR D W SAMWAYS (Topsnam, Devon) wishes again this year to direct attention to the fact that professional men whose means are limited requiring a change are received into the Home of Rest at Mentone at the charge of 30/- a week for board and lodging. The committee are prepared to give special consideration to the cases of those unable to pay this amount. The stay of each person is limited to three months. The home which is open from November 1st to May 1st is a philanthropic undertaking intended to help professional men who break down temporarily and is therefore useful to medical practitioners of small means, or their professional patients in like cases. Applications should be made to the lady superintendent Miss Goldee or to the honorary physicians, Dr Stanley Peadar or Dr Samways, at Mentone, Alpes Maritime, France.

THE Central Council for Health Education is publishing a monthly periodical entitled *Better Health*, with a view to providing instruction in health matters for the public. The November issue contains an article by Sir George Newman on the relation of food to health and other subjects dealt with include the care of milk in the home, the relation of air and ventilation to health, and the work of the Public Health Department. This publication is well and simply written, and should be of great value in spreading information about the prevention of disease. The annual subscription is 1s 6d, post free and copies may be obtained from the Society of Medical Officers of Health, 35/38 Whitefriars Street E.C.4.

DR RICHARD ARTHUR of Sydney who is Minister of Health in the New South Wales Government formed by Mr Bavin, following the resignation of Mr Lang, the Labour Premier, studied medicine at the University of Edinburgh, where he took the degrees of M.B. Ch.M. in 1888 and M.D. in 1891. He is also M.A. of St Andrews. He is a member of the Legislative Assembly of New South Wales and a member of long standing of the New South Wales Branch of the British Medical Association. He is surgeon to the Ear and Throat Department of the Sydney Hospital.

UNDER the title *Sale of Food and Drugs Acts* a pamphlet has been issued by H.M. Stationery Office at the price of 1s 6d containing extracts from the Annual Report of the Ministry of Health for 1926-27 relating to this subject, together with an abstract of Reports of Public Analysts for the year 1926. The Ministry's Report from which these are taken was noticed in our issue of September 24th (p. 558).

As a large number of applications are received at the Frederick Andrew Convalescent Home, The Manor House, West Malling Kent from persons who are ineligible we are asked to remind possible applicants that the three weeks' free convalescence can only be given after definite mental illness to ladies of better education, who are earning their living in professional or analogous occupations.

On the occasion of the international conference on tabies, recently held in Paris, an international society for micro biology was founded, with Professor Jules Bordet of Brussels as president, and Professor Rudolf Kraus of Vienna, Drs Dujardin de la Riviere and Plotz of Paris as secretaries.

THE annual report for 1926 of Earl Haig's British Legion Appeal Fund includes an account of the British Legion Sanatorium and Settlement at Aylesford, Kent. On March 1st, 1927, there were 142 patients in the sanatorium, and nearly 200 passed through the treatment centre in 1926. The report, which contains detailed information about the organization and results of the sixth annual Poppy Day appeal, may be obtained from the British Legion Appeals Department, 26, Eccleston Square, S W 1.

POST GRADUATE courses on diseases of the heart and circulation will be held in Vienna, from November 28th to December 10th. Further information may be obtained from Dr A. Kronfeld, Porzellangasse 22, Vienna IX.

THE Scottish Board of Health has issued as separate reports the chapters in the annual report of the Board for 1926 relating to (a) encephalitis lethargica, (b) ultra violet ray therapy, and (c) Schick and Dick tests in diphtheria and scarlet fever. The reports have been issued at the nominal price of 2d each, or post free, 2d. Copies can be obtained through any bookseller, or direct from H M Stationery Office, 120, George Street, Edinburgh. The annual report was noticed in our columns of July 9th and 16th, and August 6th.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **British Medical Journal** must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the Journal, should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the British Medical Journal are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The TELEGRAPHIC ADDRESSES are:

EDITOR of the **British Medical Journal**, Atterbury Westcent, London.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), Atterbury Westcent, London.

MEDICAL SECRETARY, Atterbury Westcent, London.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh).

## QUERIES AND ANSWERS

### CANCER AND DIABETES

"C H S" asks for experiences of the occurrence of carcinoma or other malignant disease in patients suffering from diabetes.

### PETIT MAL

"COUNTRY G P" asks for references to recent literature regarding petit mal, and especially as to possible causation by toxic conditions.

### INCOME TAX.

#### Liability of Colonial Medical Officer

"J J B E" is in the Colonial Service and visits the United Kingdom at intervals of from two to two and a half years, but never stays here six months in any one financial year. He has recently acquired the house in which his parents reside and would like to know to what end are directed some questions which he has received from the authorities as to his liability to income tax as a resident in this country.

\* \* \* Residence is a difficult question, which it is impossible to deal with adequately in a brief answer. The points on which the authorities are seeking information appear to be those which might establish that "J J B E" ownership of the house and the financial arrangements between himself and his parents are

such that he has a place of abode in the United Kingdom, which he returns periodically to an extent sufficient to justify the inference that it is one of his places of residence. If this inference is correct then he would be liable to British income tax on that part of his earnings which he receives in this country.

#### Loss Due to Coal Strike

"L R" has been assessed for many years in respect of the earnings of a colliery practice. For the year to April, 1927, he has been assessed on the usual basis of the three previous years, but owing to the strike his expenses exceeded his gross earnings of £75. The inspector of taxes agreed to the deduction of the loss of £75 from the 1926-27 assessment, but says that otherwise it must stand.

\* \* \* That is in accordance with the law, which does not provide for an adjustment of the assessment in such circumstances unless the "average" period or part of it was during a predecessor's tenure of the practice. In fact but for the change in the basis of assessment from the three years' average to the previous year, "L R" would have been chargeable for 1927-28 on from £1,300 to £1,400. If "L R's" earnings return to the former level he will not suffer loss in the long run, though obviously for the time being he has to bear the hardship of finding tax to meet a charge quite out of accord with his earnings for the actual year.

#### Arrears of Liability

"J C G" paid tax in 1921, but has received no assessment since. How far back can the authorities now go, and can he claim an allowance for his housekeeper?

\* \* \* Assessments can now be made for the year commencing April 5th, 1921, and subsequent years. The housekeeper allowance can be claimed only in the special circumstances, looking after children, etc., set out in the notes accompanying the forms of return.

## LETTERS, NOTES, ETC

### Menstrual "Uncleanliness"

DR ROBERT HUTCHISON (London, W.) writes: I am grateful to your correspondents who have replied to the inquiry I made under the above heading. I have also received many private letters on the subject from doctors all over the country which show that the "superstition" referred to is very widespread amongst all classes, and there seems to be no doubt that it has its origin in a "taboo" which dates back long before Biblical times. Several correspondents have directed my attention to the paper by Macht and Lubin, to which Dr Goldmann refers, and which describes the results of the only attempt I have heard of to investigate the subject on scientific lines. I have not yet had time to study the paper myself, but I confess that it would require very strong evidence to convince me that the touch of a menstruating woman can excite decomposition in foods. Meanwhile, I would suggest that the subject is a suitable one for investigation by some of the women members of our profession, for the belief in this "uncleanliness" is evidently real enough to lead to a great deal of practical inconvenience.

### BINOcular VISION

DR KENNETH R. SMITH whose book on *Binoocular Vision* was reviewed in our issue of September 24th (p. 552), writes to explain that his "exerciser for agram" is not intended to be used only with reading matter. He prefers an ordinary pack of cards, which are placed three in a row in the stand. The child sees the centre card with both eyes, the card on the left with one eye, and the card on the right with the other eye. He prefers playing cards to reading matter or pictures.

### MINISTRY OF HEALTH REPORT ON SCARLET FEVER

#### A Correction

DR ALLAN C. PAPSON, Ministry of Health, writes: I have to thank Dr J. A. Milne for drawing attention to an error on page 9 of the recently issued report of the Ministry of Health on scarlet fever. Carbolic lotion 10 per cent. is there referred to instead of carbolic oil, as it should have been written and is written on other pages which described the technique of the Milne treatment, as introduced by his father, the late Dr Peter Milne.

#### A DISCLAIMER

DR A. J. D. CAMERON (Northampton) wishes to dissociate himself from any responsibility for an article in the *Westminster Gazette* of October 14th, headed "Rejuvenation by Fasting," in which his name was mentioned.

## VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 35, 36, 37, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 38 and 39. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 1, 2.

## CHRONIC SEPSIS AS A CAUSE OF MENTAL DISORDER

### 1—RELATION OF FOCAL SEPSIS TO MENTAL DISEASE \*

BY

WILLIAM HUNTER, C.B. M.D. Ed., F.R.C.P. Lond.,  
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Cross Ho. pital

THE part played by sepsis in producing nervous and mental disorders of all degrees of severity and the degree to which the same can be prevented, checked, or controlled by antisepsis are singularly opportune subjects for discussion on an occasion marking the centenary of the birth of Lister. We are not only commemorating past achievement but inaugurating a new campaign against sepsis in one of the greatest domains of medical diseases—that which bears the ill-omened title of insanity.

It is the first time this subject of sepsis and antisepsis in relation to mental disorders has been before this Association. The types of mental disorders more especially concerned are those that bear the titles of dementia praecox, manic-depressive insanity, paranoid conditions, psychoneurosis, and toxic insanities. These constitute the great proportion of the admissions into our mental hospitals—on an estimate kindly supplied me by our President dementia praecox about 20 per cent, manic-depressive insanity about 50 per cent, paranoid conditions about 10 per cent, psychoneurosis about 5 per cent, and toxic insanities about 15 per cent.

The sepsis with which medicine is concerned is that originally described by me in 1890 under the title of "oral sepsis" and other forms of focal sepsis as a cause of medical diseases—namely the sepsis in teeth, the tonsils, nasopharyngeal nasal sinuses, stomach, intestine, colon, and sometimes elsewhere in the genito-urinary tract—"oral sepsis," "tonsillar sepsis," "nasal sepsis," "septic gastritis," "septic enteritis," "septic colitis," as I then termed the several conditions.

The call I then made (1900) on behalf of this sepsis was that

Sepsis in medicine is playing a greater part in producing medical diseases than it is now doing in surgical affections. A great field of prevention is opened up by the exercise especially of oral antisepsis against oral sepsis the worst and parent source of most other forms of focal sepsis especially that in the tonsils, stomach, intestine, and colon—a field that can be worked in with the most surprisingly satisfactory results by the doctor, the surgeon, the throat, nose, ear, and eye specialist and most of all the dental surgeon.

This call included a special appeal for attention to this sepsis in the realm of nervous disorders as presented in ordinary general practice: its neuritis, its neurasthenias, its mental depressions or its more severe so-called "nervous attacks" or "nervous breakdowns."

One of the conditions I specially called attention to I termed "toxic neuritis." Cases of this kind "open up a new field of inquiry" as regards the possible role of oral sepsis in causing nervous effects such as those I described under the title of "toxic neuritis" (1900).

Now after twenty years I am glad to think that the response to that call has come at last. It has come first of all (1919-23) from the American side at the hands of Dr. Cotton, the director of the New Jersey State Hospital, Trenton, who four years ago (1923) set forth very fully his results before the Royal Medico-Psychological Society at its annual meeting as fully detailed in the *Journal of Mental Science*, October, 1923. Dissatisfied after some fifteen years' experience of mental work with the results obtained he began from 1918 onwards a desperate frontal attack with horse, foot, and artillery—namely medical recognition of the importance of oral and focal sepsis, surgical help for its removal and bacteriological support

for both—on the whole field of the sepsis presented by his cases (1,400 in number), in the teeth, the tonsils, nasal sinuses, stomach, intestine and colon, and the genito-urinary tract, with the result of doubling the number of his discharges, and reducing the average stay in hospital from ten months to three months.

Since then the subject has received steadily increasing attention at the hands of English psychiatrist physicians, and has been before them at three of their annual meetings as a subject of great interest and increasing importance in the treatment of the insane.

As might be expected, the very force of this attack on the problem of sepsis in mental diseases has produced equally strong counterattacks chiefly at the hands of American psychiatrists—especially the studies by Kopeloff, Kober, and Cheney (1922-23) of the New York State Psychiatric Institute. But the net result has been the satisfactory one that, however much they may agree that no importance is to be attached to focal sepsis as a cause of mental disorder, they are all "wholeheartedly in favour of eliminating all focal infection in psychotic patients." That is a great advance on what has hitherto obtained—to wit, that no attention has been paid to it. There the matter at present stands—there is an advance all round.

### SEPSIS IN MEDICINE

If on the present occasion the President and officers of this Section have kindly invited general physicians and surgeons to take part in this discussion, it is owing to the circumstance that the past twenty-five years have furnished a large experience as to the part played by sepsis in general diseases other than nervous or mental—an experience now available in relation to the whole subject of mental disorders. The result of that experience may be best described in the words of others since it was first set forth by me before this Association at its Oxford meeting in 1904 and since so fully confirmed by many others especially William Willcox and Chalmers Watson in this country, Frank Billings, Llewellys Barker, and Charles Mayo in America.

One of the great advances in medicine of the past twenty years. The effects of oral sepsis have been worked out and prove to be so widespread so multiple and frequently so grave as to make us ashamed of our previous blindness to a common source of blood infection staring us in the face all the years. In addition to our knowledge of the first magnitude—Dr. Mitchell Bruce Address in Medicine British Medical Association 1910.

No one circumstance in the last fifteen years that has so changed the aspect of the practice of medicine as the doctrine of focal sepsis—Professor Thayer Johns Hopkins University 1914.

The most interesting chapter in modern medical history profoundly affecting medical and dental practice epoch making in its effects—American dental literature.

A profound and permanent influence on general medicine rendering Lister's hypothesis which governs the practice of surgery at least of equal importance in relation to medicine. Infection in medicine is responsible for a vast number of diseases—a fact that has received far less attention than it ought to have had. The immediate ravages of oral sepsis may prove serious enough but the remote complications seemingly unrelated to their true cause are a grave menace both to health and life—Sir Berkeley Moynihan 1927.

These appraisements may serve to indicate at once the chief site (the teeth), the apparently negligible character but nevertheless the actual supreme importance of the fact of sepsis with which medicine as distinct from surgery is specially concerned, with which also, however the surgeon has learnt to be equally concerned as a great potential and actual source of much of the septic infection in his surgical cases.

The sepsis with which the surgeon has been concerned is something obvious, manifested by recognizable effects such as inflammation, suppuration, death of tissue, fever, and septicaemia—common effects producible by a large range of organisms, but chiefly those of the staphylococcal and streptococcal groups, or, in the case of the alimentary tract, the *B. coli* group. But he is not specially interested in the character of the organisms; his whole concern is that no organisms of any kind invade his wounds in the course of his operations.

But the features of the sepsis operating in medicine are of a different and more complex character. Its foci are small, hidden, chronic, and cause generally no local effects

\* The opening paper to a discussion in the Section of Mental Diseases at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

This case illustrates, according to its recorder, the effect of impacted third molars in producing these conditions.

Table showing Incidence and Sites of Focal Sepsis treated successfully in 100 Male and 100 Female Patients (Dr Cotton)

Mental Disorder	Total		Teeth		Tonsils		Gas ric		Vaccine		Vesiculo- tomy	Cervix	Colon	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Manic-depressive in acute	49	65	49	60	39	47	41	50	41	45	1	8	—	9
Dementia praecox	18	8	18	8	13	7	13	7	13	7	—	5	—	2
Paranoid condition	15	9	15	9	11	6	14	5	14	5	—	1	1	1
Psychoneurosis	7	10	7	10	7	6	6	7	6	6	1	2	—	—
Toxic psychosis	11	7	11	7	6	7	9	7	10	7	—	4	—	1
Totals	100	100	100	100	76	73	83	76	81	71	2	20	1	13

mental states which so closely resemble dementia praecox. For such teeth are always, in his experience, found to be infected. It shows how the removal of some particular focus of infection such as the tonsils in this case, may fail to improve the mental condition, and the necessity in such an eventuality for seeking for other possible foci—in this case the impacted teeth. It also indicates the difficulties presented to the full investigation of patients owing to their excited state, and their refusal to allow any examination of their mouths or throats radiographically or otherwise.

The problem is whether to wait for weeks, possibly months, till the violence of the mental symptoms subsides or lessens, or, on the other hand to face what appears to be the risks and carry out operations such as dental extractions while the patient is still violent.

Every case of this kind must be considered on its own peculiar features of urgency and severity. It is a matter which specially requires the judgement of the physician in charge of the case. I may give my own experience that any such apparent risks can be safely run.

The existence and possible importance of impacted and unerupted teeth in mental cases, here noted by Dr Cotton are in my judgement observations of interest in revealing the earlier dental history of such cases. Thus in 120 cases recorded by Kopeloff and his fellow workers (1923) I find that as many as 15 cases (or 1 in 8) showed such teeth to the number of no fewer than 49, an average of 3 such teeth to each case. If these teeth become infected, as in cases of long-standing and severe sepsis they are most likely to be, the neurotoxic action of such sepsis is enclosed in the alveolus of the jaws is likely to be very severe, as in the case above recorded.

The existence of such teeth in 1 in 8 cases of dementia praecox and manic-depressive insanity emphasizes in my opinion the importance of the earlier dental history of all cases of this character, especially in young people and young adolescents. I have had cases in which I have been able to trace back a continual history of severe dental infection from the time of dentition at the age of 2 onwards.

In my judgement the dental history and the high degree of sepsis present in the last mentioned case would probably be found, if fully investigated, to represent approximately the dental history and degrees of sepsis of most cases of the severe and prognostically grave mental disorders affecting juveniles or young adolescents. I draw special attention to the matter as one worthy of investigation and inquiry in every case of this character.

If, as I am satisfied from my own clinical experience as a physician is the case, this widespread septic infection is also in particular instances causing direct and various psychotic effects, the title from now onwards that would, in my judgement best connote this form of psychosis would be the one I would now suggest of 'septic psychosis'.

This commonest form of psychosis produced by long-standing chronic septic infection, exists sometimes alone, but more frequently along with and complicating other forms of psychosis intensifying and aggravating the more special mental features belonging to these latter psychoses. The extent to which it is present in any case can only be determined by removing it, and the best hope that any psychotic patient can have about his trouble is that it may prove

to be largely or possibly entirely, of the nature of a septic psychosis, and therefore one which may possibly be removed by removal of the septic foci underlying it.

As regards the possible importance of this 'septic psychosis' in psychiatry perhaps the most judicious opinion is that pronounced by Dr Adolf Meyer, professor of psychiatry in the Johns Hopkins University.

The evaluation of focal infections is an outstanding contribution of twentieth century medicine. If means could be made available to remove such focal infections in all mental cases psychiatrists would make another large contribution of importance far beyond its own special sphere of mental hygiene, and relieve a group of patients of one of the insidious suppressing influences taxing humanity, thus offering a free field to work with the many other features which are bound to play a part. In dealing with it I would only make one plea. Do not let it go forth that sepsis is the cause of all insanity, for that is the sort of statement that always puts the clock back. Let us be content to know on evidence that a new era has been opened up for the prevention or cure of many cases of mental disorder, by surgical attention to septic conditions.

#### INCIDENCE AND SITES OF FOCAL SEPSIS

The incidence and sites of the focal sepsis found in mental disorders are well brought out in the above table of 200 cases treated successfully by Dr Cotton, and found afterwards on visit to have remained well.

In his experience in the case of men the teeth were found infected in all cases, and in every form of psychosis, the tonsils in 76 per cent of cases, the stomach in 83 per cent (all of them requiring treatment with vaccines) the seminal vesicles in 2 per cent, and serious lesions of the colon in 10 per cent. In the case of women, the teeth were found septic in all cases, the tonsils in 73 per cent, the stomach in 76 per cent (requiring treatment with vaccines in 71 per cent), the cervix in 80 per cent, and serious lesions of the colon in about 30 per cent.

As regards the incidence in different forms of psychosis there was little or no difference between them in males, but in women the colon was operated on in 13 per cent of cases as compared with only 1 per cent in males, 9 of the cases being among 66 cases of manic depressive insanity.

Interesting data regarding the incidence and seats of focal sepsis are also supplied by Dr Graves, the director of Rubery Hill and Hollymoor Mental Hospitals of the Birmingham Corporation. The first of the hospitals in this country to supply data of this character.

No of Cases	Teeth	Tonsils	Nose	Ear	Cervix
270	230	—	—	—	—
253	193	—	—	—	—
123	—	43	18	39	—
29	—	104	20	105	—
139	—	—	—	—	20



These figures yield the following incidence of septic foci in different seats

Oral sepsis	76 per cent
Tonsillar sepsis	40 "
Nasal sinusitis	10 "
Ear	39 "
Cervix uteri	71 "

The figures show the widespread character of the sepsis present in the mental patient.

The percentage incidences for the teeth and tonsils (76 and 40) are considerably lower than those found by Dr. Cotton (100 and 76) respectively, but they are interesting in confirming the high incidence of cervix infection—namely, in 71 per cent of women. They draw attention to the incidence of nasal sinusitis in at least 10 per cent of cases, but most of all to the high incidence of ear sepsis in 39 per cent of cases.

The relative importance of the various seats of focal sepsis, I would point out, is not dependent on the relative incidence of such infection in the various seats—teeth, tonsils, nose, cervix, etc., it is determined far more by the amount of sepsis which may be harboured in each seat, and by the conditions favouring its chronicity and by its virulence. In this relation oral sepsis (dental sepsis) is by far the most important, for the number of foci which the teeth may harbour depends not only on the number of septic teeth which may be present, but also on the number of septic sockets connected with these teeth. Thus the presence of four septic molars each with three roots means the existence of twelve septic foci, and may thus be the equivalent of eight incisors and four canines which have only one root each.

I have been much impressed by the degree of infection in the sockets of infected teeth in many cases, cultures which I myself have taken with extreme precautions from the apices of the teeth immediately on their withdrawal, and planted on sloped agar tubes, growing hundreds of colonies of staphylococci sometimes in almost pure culture (90 per cent).

The degree of oral sepsis cannot be expressed in terms of "infected teeth" as some observers do (Kopeloff, 1923). It must have regard to all the other conditions present—of septic gingivitis, tartar deposit, ulceration and pocketing, pyorrhoea, of periodontitis and osteitis shown by recession of gums or looseness of teeth, or by thickening of alveolar margins, number of carious or necrosed teeth, number of devitalized teeth (nerves destroyed), number of teeth with gold caps or porcelain crowns, gold bridges (a very potent form of sepsis, especially in regard to its neurotoxic effects), and finally, to conditions revealed by radiographs of apical abscesses and granulomata, of buried roots, of impacted or unerupted teeth.

When regard is had to all these conditions, the ordinary degrees of oral sepsis usually found—slight, moderate, or severe (1°, 2°, 3°), as I am accustomed to designate them—will often, in my experience, be found to be so severe (especially in mental cases) that it can only be expressed by degrees varying from 5° up to 10°.

The amount of infection elicited by all these various conditions is far greater than anything ever found in connection with infected tonsils, and also far more virulent, since it is all in connection with bone tissue, which always enhances the virulence of a septic infection.

It is this latter circumstance that adds to the virulence of nasal sinusitis and ear infection, which also can be very severe in mental cases.

#### NEW ERA OF ANTISEPTIC IN MENTAL DISORDERS

In the foregoing I have endeavoured to give a glimpse of the character of this subject of sepsis in relation to mental disorders, from the point of view of a general physician well acquainted with the characters and potentialities of the sepsis concerned—rather than from that of the psychiatrist physician to whom many other questions of interest arise.

The same applies to matters of surgical interest arising out of this new aspect of mental disorders: the work required from the dental surgeon, from the radiographer, from the throat, nose, and ear surgeon, from the abdominal surgeon in connection with the surgery of the intestine and colon, from the genito-urinary surgeon in connection

with the prostate and seminal vesicles, and lastly from the gynaecological surgeon. I see no person who the help of the surgeon in dealing with conditions of sepsis present in mental patients should not be warmly welcomed, in the hope of restoring sanity to a disordered mind, just as readily as it is placed at the disposal of any other class of some accident might require such help.

Discovery of the part played by sepsis in mental disorders introduces an entirely new era into the whole subject of the nature of many of these disorders, and the possibility of controlling and preventing them. They make clear, in my judgement, that it is septic infection that underlies many mental disorders hitherto regarded as denoting a foreshadowing permanent damage, or contributes to the severity of such disorders even when permanent damage has been done.

This "septic psychosis"—as I would now term it—is produced by the action of toxins derived from small and apparently insignificant septic foci, chiefly in the teeth and tonsils and elsewhere. On the removal of these the whole mental disorder may be profoundly affected, and may in many cases be made to disappear. By the removal of such septic foci with the attendant septic psychosis the control of mental disorder and insanity in many of its forms and manifestations is rendered possible to a degree never before attainable. The degree of disorder may be of such a character and duration—for example, that presented in dementia praecox, or in severe manic depressive insanity—as to suggest permanent damage to the higher brain centres, and to appear, therefore, incapable of being influenced by the removal of slight septic foci. But the clinical facts show that this is not the case, and the extent to which the degree of sepsis present in each case is affecting the character and degree of the mental features of the case in causing a "septic psychosis" can only be determined by the removal of that sepsis.

The removal of the sepsis in all cases of mental disorder and insanity is therefore called for as a matter of urgency and as a first measure of treatment in every case. The amount of chronic sepsis present among the mental patients who to the number of 133,000 and more occupy the mental hospitals and asylums of this country is far greater than that to be found in any other group of inmates of our hospitals. The removal of that sepsis in these cases is imperative to a degree, as the first and most important measure of treatment applied to them. For in these cases the evidence already available makes it clear that however much ordinary people in health may be able to resist, and do successfully resist, the deleterious action of the varying degrees of similar sepsis which they carry, the sufferer from mental disorder cannot afford to have any such sepsis unremoved. He is playing for the highest stakes—the preservation of his brain power and his sanity. He can run no risks. And inasmuch as in his case the control of his illness is out of his hands, it is all the more incumbent that every possible measure of treatment should be available and should be applied for his benefit.

Each mental hospital should therefore be as fully and as well equipped for surgical work as it has hitherto been for medical or nursing care. Its staff should include a resident and visiting surgeons concerned with dental, throat, nose, and ear, abdominal and gynaecological surgery. This involves the provision of a fully equipped dental department and surgical theatre for every mental hospital, with a resident dental surgeon and anaesthetist, and a visiting staff of a general surgeon, and throat, nose, and ear specialists, with the necessary radiographic and biological departments. In making this provision all public authorities will, I feel sure, have the whole-hearted approval of the public, rightly concerned for the mental health of more than for any other class of sufferers.

The possible standard of increased relief which can be expected of this class may receive its full effect if the chances of recovery may be doubled, that the duration of their stay in hospital may be materially reduced, and that on discharge the chances of remaining well, both physically and mentally, will be greatly improved by the removal of the sepsis which they previously carried, if that removal is carried out at the first onset of the trouble before permanent damage is done.

But it is in the realm of prevention that this new application of antiseptics will find its greatest triumph—namely, the cutting short of all sorts and degrees of nervous and mental disturbances that in most cases precede and herald the onset of the graver mental disorders.

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## II.—RELATION OF ABERRANT MENTAL STATES TO ORGANIC DISEASE

BY

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In the month of April we celebrated the centenary of Lister and in a week of devotion to his illustrious memory we recalled the incomparable services rendered by him to the cause of humanity. We heard once again from the lips of men representing all the civilized countries, each of them a spokesman of high distinction, that Lister by his researches had changed the whole scope and practice of surgery. So long as men shall live and suffer, to be rescued from their suffering by the art of the surgeon, so long must the hand of Lister be there to heal them, for the principles laid down by the master are eternal.

Among the multitude of voices which bore eloquent testimony to the immortal labours of Lister, there was one only which witnessed to the truth that the scope of his doctrine spread beyond the bounds of surgery and must be held to include the whole province of medicine including research.

The bent of Lister's mind towards biology was soon observed. Many of his early experiments seemed to have little direct bearing upon the craft of the surgeon. Yet he had derived from John Hunter the belief that the beginning of surgery is a knowledge of inflammation and

in studying this process he was making his mind ready for the new observations and deductions which Pasteur was soon to make plain to the world. Pasteur's work had been published some years before, and had been accessible to all. When Lister was handed Pasteur's original paper by the professor of chemistry at Glasgow he alone of all who read it was able to realize at once the direct relevance of this new doctrine decided and deemed by high authority to the science and practice of surgery. It is as clear an illustration as was ever given of the need which lies upon us all to keep our minds open to new truths, expectant of them competent to test and to apply them. Such truths may be born, will, in fact, in the near future almost certainly be born, in the minds of those not directly engaged in the service of surgery.

We speak of Lister's work in its relation to surgery, and might attribute to him the almost incredible changes which have come over our own art. But the eternal principles established by Lister have an effect upon all branches of medicine. And it may truthfully be claimed that the adventures of the surgeon have consumed and illustrated the truth which we owe to William Hunter alone—that infection plays a large part, often indeed the chief or the only part, in the inauguration of many of the diseases still within the province of the physician or the alienist. The thesis developed by him in a series of papers which display both remarkable originality of thought and careful and patient observation, concerns the part played by slight and continuously overlooked forms of sepsis in causing distant and apparently unconnected disorders often serious and disabling and not seldom, in their full career the cause of death. For over twenty years William Hunter pursued his way and preached his doctrine, unregarded, discredited, or denied. For years he was a voice crying in the wilderness. There was once a voice crying in the wilderness which changed the face of the world, and built the world anew on foundations which can never be shaken. William Hunter's contribution to direct research is, in my judgement, the most significant of any conducted in the last generation. Of the truth of his teaching there is not the slightest doubt. Thanks to him we recognize now the grave importance, the causal significance of small and often concealed areas of septic infection—in the tonsil, the pharynx, the nasal sinuses, the prostate, the cervix uteri, the appendix, the uterine appendages, the gall bladder and other organs. Hunter's earlier conclusions had reference to the graver forms of anæmia and he was the first to point out the causative associations of oral sepsis with pernicious anæmia. We are now learning the full truth of his work. We are quick to recognize the dependence of anæmia, of glandular diseases, of certain obscure fevers of various forms of "rheumatic" affections, of gastric and intestinal disorders, of severe affections of the kidney, and of many affections of the nervous system—from neuritis to functional nervous and mental diseases—of perhaps all forms of cardiac diseases, upon "focal sepsis." In the days before Lister so my teachers told me, the surgeon would look with apprehension for a bluish round, a recent wound, and would lay his fingers upon the sterno-clavicular articulation to discover whether the joint was tender. Paemia, which had wasted the joints of the limbs in a riot of rapid disorganization, was the most dreaded of all the consequences of wound infection. It was not infrequent for the sterno-clavicular articulation to be the first of all the joints to be affected. Rheumatoid arthritis is paemia moving slowly.

My acquaintance with the mental disorders consequent upon infection is not enough to entitle me to speak with authority in the least degree comparable with that of the distinguished alienists who will contribute to this discussion. But no one who has been attracted to the study of the mind's working in health (if we may for the moment assume the existence of such a state) and in disease can have failed to notice the close relationship of aberrant mental states to organic diseases, especially those owing an infective origin.

My own attention was first attracted to this subject many years ago when gastric surgery was in its early days. It was no uncommon experience then to operate

upon patients who had for many years lain under the accusation of being "neurotic." For long periods of time they had complained of pain after food, they had in consequence reduced the amount of food taken, restricting themselves to a diet the ingredients of which were readily absorbed or easily propelled, they were often wasted, querulous, ill tempered, hard to live with, and their social reactions were not improved by the repeated denial of the reality of their sufferings. Yet when an operation was performed, in advanced condition of organic disease of the stomach, for example, was discovered, and by degrees it became realized that the patients had good cause for the complaints which they made. The existence of organic disease in those called "neurosthenic" was often so certain, though obscure, that I endeavored to impress upon students that the literal translation of the word "neurosis" was "I don't know." Neurosis was the word which covered (and still covers?) a great deal of ignorance. This experience does not indicate merely a mistake in diagnosis by a succession of observers. For the state of the patients fully justified their inclusion among a group of victims of functional psychoses. The point is rather that continuous physical illness, infective in origin, leading to gross organic disease, long unrecognized, has produced a real mental disorder which was regarded as primary, and therefore unrelated to any physical change. The difficulty was, and is, to discover in such patients the focus of infection, or its sequels, which might be the cause of the psychosis.

We are not entitled to make a diagnosis of "neurosis" until we are completely satisfied that, as far as our means of investigation permit, no organic disease is present. When we remember that, in respect of the abdominal viscera, though there is little more to learn of their structural diseases, there is little yet learnt of their functional disorders, we may still be merciful and reluctant in our use of the word "neurosis." The physiologists, owing to their concern with mice rather than with men, have not kept pace with the surgeon in his advancing knowledge of the normal and disordered function of the abdominal viscera. Though an organ may appear to the naked eye to be normal in position and in structure, we cannot be sure that its functions are unimpaired, or that its relations with other organs have suffered no change. When the physiologist works as long in the wards and in the operation theatres as in the laboratory, we may hope to fill up some of the many considerable gaps in our knowledge of functional anatomy.

Each generation of students in medicine, as in other sciences, has to make its own experience. Positive knowledge we may derive from the store erected by our intellectual ancestors, but the application of this knowledge, the proof of it, lies with ourselves. In our purposeful testing of truth we are prone to error. Experience is the name we give to our mistakes. After I had learnt by experience of this plain association of disordered mental conditions, of "functional psychoses," with visceral disease I discovered that a century ago the same view had been held and taught by Abernethy in this country and by Pinel in France. Chalmers Watson, himself a pioneer in this branch of inquiry, quotes Pinel as saying in 1809

"It seems that the primitive seat of insanity generally is the region of the stomach and intestines, and it is from that centre that the disorder of intelligence propagates itself as by a species of irradiation."

That functional psychoses may be dependent upon minute changes in structure in the brain is indicated by the work of Cotton, who describes a "fatty degeneration of cortical nerve cells." In treating these patients he holds that we are dealing, not only with a disorder of the mind, but with a structural disease of brain tissue.

The experiences to which I have referred accumulated slowly. Their general effect was to make me less reluctant to consider surgical treatment for obvious organic disease in those suffering from grave forms of mental disorder. About fifteen years ago I was consulted by a medical man who in childhood had suffered many times from appendicitis, and in adult life had been attacked by hepatic colic, lately accompanied by jaundice, rigors, and wasting. It was clear that there was an obstruction of the common bile duct by a stone, and that there was a degree of chronic pancreatitis,

and that these were possibly linked up with the course of the appendix which had affected him in early life. But the doctor was "nervous", his form of insanity was of the kind now described as "manic depressive." The effect of a major abdominal operation upon a man with a grave mental disorder had to be considered. I have a useful ready rule, that "it is unwise to allow a patient to suffer or to die from one disease remediable by surgery because he happens to have another." The patient accepted operation, made the usual recovery, and in his own words, a "cloud was lifted from his brain." He has been at work, except for holidays a little longer than I feel able to take, ever since, and has had no breakdown in mental health. In all I have operated upon four cases of this form of insanity, and in three the improvement in mental health has been considerable. The fourth was certainly not improved, and though there are longer intervals of apparent normality the "attacks" are as grave as ever. A good deal depends, no doubt, upon the stage at which such patients are seen. The surgeon has very properly been reluctant to undertake any surgical adventure if there are grave adverse circumstances. He has not always realized that such circumstances may perhaps afford more compelling reasons than any for early surgical relief. Nor that it appears probable that certain mental disorders are directly dependent upon distant organic diseases, often infective in origin, the removal of those likely causes must be undertaken without misgiving.

In the case of a distinguished medical man upon whom I operated for chronic appendicitis and gastric ulcer, out-breaks of mental disorder had necessitated his admission for two long periods. At the time I was consulted about him grave questions were raised as to his mental state and as to the effect of the order of an operation upon him. He contemplated operation with almost a frenzy of fear and horror. My opinion that operation should be delayed only until the advanced dental infection was removed seemed enlightened to have disastrous consequences upon the patient and to be a source of deep anxiety to his relatives. All ended happily, however. The usual routine of my abdominal cases was followed, the oral sepsis was first eradicated (this, I insist, must be done, and any other infection treated), the diseased appendix was removed, and partial gastrectomy was performed. Since the operation, now a few years ago, there has been unimpaired mental clarity and strength.

It is interesting to observe that a few of the "insane" patients upon whom I have operated have been members of my own profession. All the attributes of mind and character embraced in the word "sanity" should find a high expression in the doctor. The results of operations upon which mental no less than physical health depends are submitted to a sterner test than usual. The after-history of my cases bears eloquent witness to the value of Hunter's work.

That focal infections, with the organic diseases which they may originate, are capable of causing serious mental disturbance is, I suppose, no longer a matter of doubt. But certain aspects of the problem require careful investigation. We wish to know the frequency of "septic psychosis," of mental disorder due solely to septic infection. We seek to discover the degree of contributory influence exerted by sepsis upon mental aberrations which are primarily psychogenic. What influence has focal infection upon those whose heredity involves them in neuropathic or psychopathic tendencies, or upon those suffering through stormy crises of adolescence, or passing tranquilly through the lethargic involutions of senescence, or upon those who suffer the physiological excitement of child-bearing and lactation? In all these infections, no doubt, find a few victims. We desire to learn also something of the peculiar circumstances in which a very prevalent disorder, or sepsis, is sometimes able to exert the gravest influence, and at other times seems inert even though present in an advanced stage. In this the whole question of immunity is engaged.

Focal infection is certainly free to cause the most serious effects at a distance, while arousing no suspicion of its existence. The distant and apparently unconnected

may make progress, and prove fatal without a sign of local disturbance. This cryptic quality is the source not only of danger but of disbelief. It seems at first hearing quite incredible that results so grave and so formidable could be the direct consequences of causes so trivial and remote. But that they are is now beyond the region of dispute.

The organisms responsible in the occult infections are almost always streptococci. Numbers of them are described, and to the variants descriptive titles are given. The cultural characteristics as tested in the laboratory are classified. Some day it will be generally recognized that the human body, variously constituted, is a fertile culture medium, and that organisms may also be classified according to their choice of a specific human soil in which to grow. Rosenow speaks of the elective localization of micro-organisms, and this may be decided by qualities of soil no less than of germs.

So far as my own work is concerned the infective agencies which appear to be sometimes associated with mental disease are in the teeth, the facial sinuses, the alimentary tract, and the gall bladder. We know, I think, that these infections are often connected with one another, that oral sepsis may, and often does, precede organic disease in the stomach, that infections of the appendix lead to diseases of the gall bladder and pancreas, and that infections, wherever arising, are apt when they reach the caecum and ascending colon to remain there, long after the primary focus has ceased to be active. It would appear that among the many causative agencies producing diseases of the mind, infection may assuredly be counted as one. Other factors are obviously at work also, and by comparison with them infection may take a subordinate place. My work shows at least this—that mental instability and "insanity" may sometimes be relieved, and apparently permanently removed, by eradication of a focus of infection, or removal of the diseases it has originated. I have seen more than enough to convince me that the doctrines of Lister applied, not only to surgery, but as by William Hunter to general medicine, may find a very fruitful application in the investigation and treatment of cases of mental disease. The work of Cotton and Draper in New York, of Hall in Vancouver, and of Graves in this country seems to set us a new standard of inquiry in this branch of medicine, and to show that no mental hospital will in future be considered as adequately equipped unless it has an x-ray laboratory, a skilled bacteriologist, and can command the services of an enlightened surgeon.

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#### DISCUSSION

Dr CHALMERS WATSON (Edinburgh) said that the view that a septic focus in the teeth, sinuses, tonsils, prostate gland, or gastro-intestinal tract might be the cause of common remote systemic disorders was gradually gaining ground, and the work of Rosenow was of great value in helping to explain the mechanism of its production. For many years the speaker had taught that diseases of the nervous system, such as disseminated sclerosis and many acute and chronic mental diseases, took origin in a septic focus in the gastro-intestinal tract, including the gall bladder, or elsewhere this being most frequently a secondary development from sepsis in the mouth. In this connexion it was a further hopeful sign that attention was now commencing to be given to the important subject of the cleansing of the colon. More attention should be directed to the examination of the stools and urine as a guide to the diagnosis and treatment of many general and mental disorders. The use of the senses of sight and smell in the case of the stools, after the repeated use of a Plombières douche, was the main essential, this examination should be combined with a careful naked eye and microscopic examination of the urine for the presence of bacteria and cells. Healthiness of the mouth, bowel, and urine must be secured, and some standards ought to be established. The excessively putrefactive condition of the stools which was apparently accepted as normal to-day could be proved to be abnormal, it indicated a profound

disturbance in the balance that normally obtained between the bacteria in the bowel and their host. Restoration of the normal balance, quantitatively, was of great value in treatment, in proportion to the stage in the disorder at which it was applied. The surgical removal of a localized septic focus, dietetic measures, directed to improve the condition of the intestinal flora, lavage of the colon, if thorough and combined with vaccine therapy, deserved more attention. According to Dr Ford Anderson, the one medicinal remedy on which Lord Lister placed his reliance was Lysol salt. To lay stress on the importance of sepsis as a cause of mental and other disorders was not to minimize the part played by such an important factor as heredity, and by disturbed conditions of nutrition, such as calcium or iodine deficiency.

Dr H. A. COTTON (Trenton, New Jersey, U.S.A.) said that nearly every mental case was physically ill at the time of admission to hospital. The work at Birmingham under Dr Crace, went beyond anything that had been done in the United States. Dr Cotton considered non-specific protein therapy in advance on the use of vaccines. He no longer recommended colectomy, but used copious colonic douches, instead. The results of this irrigation in 600 cases had been very satisfactory.

Dr T. C. GRAVES (Birmingham) began with a tribute to Dr Lewis Bruce, who had extensively discussed this subject twenty-one years ago. Dr Bruce believed that the cause lay deeper than a toxæmia, being the result of a failure to form antibodies. Dr Graves then described a case to illustrate the possibilities of thorough disinfection.

The patient was a single woman aged 21 the fifth and youngest child of a mother aged 41. The mother had had three nervous breakdowns, but was not certified and was now a mental and physical invalid. Two brothers and one sister had suffered from chronic nasal disease. The patient had had chronic otitis media since the age of 5. She was a quiet reserved girl never on the alert. Menstruation was irregular until a mastoidectomy was performed when she was 19 when it became regular. After the operation she became depressed with persecution and suicidal obsessions, she improved for a time and then grew more restless, exalted, hallucinated and confused with kataplexy manifestations. The face was covered by a scattered staphylococcal eruption, the tonsils were septic, there was pus in the right nostril, the left antrum was darker than the right and there was a mucopurulent cervical discharge. The serum was negative to typhoid paratyphoid A and B, *B. aertrycke* to Shiga bacillus, and to Flexner's Y bacillus but agglutinated Gaertner's bacillus. Eight intravenous injections of T.A.B. vaccine were followed by a rise in the titre of the serum to all the above except paratyphoid B and by considerable clinical improvement, although she remained depressed. A sinus examination then showed pus in the left sphenoidal sinus and both antra. The antra were washed out and this was followed by an exacerbation of the skin eruption. A second wash-out was followed by much improvement in the later. The brain membrane permeability value returned to normal. Another course of non-specific protein therapy was then given and ultra violet light treatment was instituted. Intranasal drainage of both antra was performed. The patient was now well and was reported to be alert as never before.

Dr Graves suggested a "septic heredity" in this case, or alternatively transmissible familial infection. The high agglutination to the bacilli of food poisoning suggested that she had acquired a food poisoning infection with neurotoxic possibilities at some time.

Dr D. K. HENDERSON (Glasgow) challenged some of Dr Hunter's statements. The Royal Medico-Psychological Association had frequently considered this topic and in 1902 the late Sir Thomas Clouston had opened a discussion on it, expressing views which were still held to-day. It was not true that no attention had been paid to the possible influence of sepsis as a cause of mental disorder previous to the publication of Cotton's reports. The work of Kopeloff, Kirby, and Chenev had been much better controlled than was that of Cotton, and accorded more with the opinion of psychiatrists generally. Kopeloff and Kirby had examined 120 patients divided into two groups as nearly identical as possible. One group was treated surgically, while the other group had no surgical treatment. The percentage recovery rate of the manic-depressive patients in the two groups was equal, while patients with dementia præcox showed a slightly lower recovery rate in those operated upon than in those left alone. Dr Hunter

had generalized from one case. It was a commonplace in psychiatry to say that each case was an individual problem, but instead of accepting this Dr Hunter said, "Here is one case, see the brilliant result accomplished, there must be hundreds like it." Take the case which Dr Hunter had quoted with so much enthusiasm and commendation. Not only was it imperfectly described, but it was diagnosed as "a septic psychosis." In the speaker's opinion the case would be more accurately described as one of agitated depression occurring at the involutional period, and if it had been properly recognized it first the patient would never have been sent to the chronic ward. The course of the illness was quite in accord with psychiatric experience, and the increased attention, the change to better surroundings, and the building up of resistance had as much to do with recovery as the removal of her teeth. To say that the failure to remove the teeth in the first instance caused the patient's detention in hospital for two years was an unwarrantable assumption. Similarly in Dr Hunter's second case, with its acute onset, tempestuous course, and recovery with good insight, a good prognosis would have been given, and the operative procedures were merely concomitant. Dr Hunter had attempted to coin a new psychiatric term, for many years psychoses with toxins and infections had been recognized, and such a term as "septic psychosis" was not required. To divide all psychoses into the septic and the others was not permissible on the actual facts. It was very dangerous to state that because something existed in a given mental case that something was the specific agent. If in some half a dozen cases there was a *B. coli* or streptococcal infection which had not given rise to clinical symptoms pointing to a toxic involvement, such a factor was merely incidental, and might or might not have any influence on the course of the psychosis. Dr Hunter had given no clinical picture of the disease which he had named "septic psychosis." It was important to investigate all the facts carefully in every case, and not to jump to conclusions. Many a healthy abdomen had been mutilated, and many a serviceable tooth removed as the result of ill-grounded theories of the etiology of mental illness.

Dr W F Mearns (Cheddleton) agreed with Dr Henderson, and said that the evidences of chronic sepsis were no more frequent in the insane than in the sane. Sepsis was as a rule a secondary cause of mental disorder. The hypothesis that sepsis was an important cause of mental illness was not new, forty years ago colonic lavage and Bouehrid's mixture of naphthalene, chloroform, and glycerin were popular in the asylums. As long ago as 1902 he had asked a surgeon to perform a short-circuiting operation in a patient with dementia praecox. The recovery had not been materially raised by antiseptic measures. Antigenous vaccines were disappointing. The results of serological, metabolic, and endocrinological tests had all given results that were not at all specific. Dr Mearns thought that the difficulty in the study of mental disorder was that the observations were made upon complex states such as paranoia and dementia praecox instead of being made upon the basal emotional feeling tones. He referred to the association of Parkinsonism rigidity with euphoria in various basal lesions, in the later stages of epidemic encephalitic Parkinsonism euphoria was almost universal. Pathological euphoria was an expression of the irritation produced in the neurones by a free flow of toxin-laden blood. In toxic mental conditions there was increased stimulation of the sphincter reflex arcs by some toxin, probably of bacterial origin, together with irritation of the basal and cortical neurones from toxins in the blood. In the absence of rupture between the basal and cortical groups, dysphoria occurred. If there were partial dissociation, euphoria was produced. It was a pity that surgeons and physicians rarely described the mental attitude and feeling tone of their cases.

Mr F Watson-Williams (Bristol) supported the view that chronic toxemia could produce a definite psychosis, just as it constantly caused a psychosis. He instanced cases under his own observation which had been relieved by operation.

Dr W A Potts (Birmingham) discerned a very distinct clinical picture in Dr Hunter's description of the term "septic psychosis" was the most satisfactory one he knew. Although chronic sepsis was as common in the sane as in the insane, the reason why it was to be considered as a cause of mental disorder was that in the insane there were many other contributing factors, while the septic infection had begun earlier and had, therefore, lasted longer and produced greater effects. Infection should always be eradicated before its serious sequels had developed. It was likewise necessary to deal with the psychological factor early, before the sepsis of later date had produced such mental disability that psychological treatment was out of the question.

Dr Hunter, in reply, insisted that the important part was the focalization of the infection. The advantage of the term "septic psychosis" was that it called attention to the cause. Kopeloff's patients were not satisfactory clinical material, the morbid process in them had lasted a long time, and the sole step taken was the elimination of a few teeth. The only patient who did well had had thirty teeth removed.

## ACUTE INTESTINAL OBSTRUCTION IN INFANCY AND CHILDHOOD.

### CONGENITAL ABNORMALITIES ACQUIRED CAUSES TREATMENT

BY

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Acute intestinal obstruction in children presents much the same symptomatology as in adults. It is a fatal malady, but with relief in prospect the prognosis in children may be somewhat less serious than in those of maturer years. As an offset to this relative benignity must be placed the fact that in many of the obstructions due to congenital malformations relief is not possible.

Children stand intestinal obstruction comparatively well, for the reason that the child's intestine is less prone to ileus than the adult's. For example, children suffer less from post-operative colic than grown-ups, and they seldom show any deterioration from minor degrees of chronic obstruction. In the main, however, the disease is able at all ages, and it does not really add any special complication to consider the matter as it presents itself in the young. There is one class of obstruction which is entitled to separate consideration—I refer to obstruction due to congenital deformities.

#### 1 Duodenal Stenosis

From time to time instances of this type are reported in the journals. Probably a complete stenosis is commoner than one which is incomplete. A feature of these conditions, as indeed of all developmental obstructions, is the tendency for the bowel distal to the obstruction to be in a state of what might be described as embryonic spasticity. Thus a functional atresia is superimposed upon the anatomical. It is to the former condition that we must ascribe the well-nigh hopeless prognosis. The obstruction in the duodenum is usually proximal to the entrance of the bile duct, it may, however, be in the region of the ampulla, while there may be anomalies of the pancreatic duct. Three varieties may be recognized: (a) those which present a gap in the continuity of the bowel and where the duodenum above is much distended, (b) those which show merely a partition in the bowel and (c) cases where the lumen is narrowed to a serious extent, this type may be due to an inherent lesion of the duodenum itself, or be the result of fibrous bands crossing the bowel, or be due to tortuous errors during development. Fortunately the condition is one of considerable rarity.

\* A paper read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, Edinburgh, 1927.



for it is seldom diagnosed early enough for successful treatment. Indeed, it is rarely possible that any treatment could be curative, on account of the non-distensibility of the jejunum being almost if not always an accompaniment.

The symptoms upon which most reliance must be placed are early and persisting vomiting with in many cases, icterus. The combination of icterus with vomiting is suggestive but on the other hand there is no special characteristic about the jaundice to distinguish it from the common fleeting icterus neonatorum. As a rule these infants are brought under expert observation only after the fourth day, when intervention, even if theoretically possible is useless. The examination of the meconium may reveal that it does not contain any down from the foetal skin but a negative finding is inconclusive.

The operative repair of such a condition is one which will tax both the child and the surgeon. Gastro-enterotomy and duodeno-jejunostomy are operations having a high mortality in infants even before they show signs of breaking up but in a moribund infant there is little hope of success. The operation is practically doomed to failure if it consumes more than twenty minutes. I cannot claim a single success even though, in one instance, a gastro-enterostomy was carried out in eleven minutes the deeply jaundiced infant was 5 days old and showed a complete stenosis of the duodenum which was dilated while the jejunum was hopelessly shrunken.

### 2 Jejunal and Ileal Atresias

These conditions may be due to gaps existing in the bowel to obstructions from congenital tumours which more or less replace the gut and to impermeability of the bowel in short or long sections. The proximal bowel is usually much distended and shows a great contrast to the underdevelopment of the lumen distal to the defect. Certain of these cases are associated with errors in rotation, and the obstructions may be multiple. There is no special situation where these deformities are more likely to occur but as a rule they should be looked for high up in the jejunum or low down in the ileum in the neighbourhood of Meckel's diverticulum. Theoretically these anomalies should be easily remedied, but the underdevelopment of the lumen of the bowel distal to the obstruction forms an insuperable barrier to restoration. An enterotomy of the distended bowel is essential as otherwise the developing ileus is bound to be progressive. The proximal bowel, already encumbered by overinflation, cannot blow out the semi-solid distal intestine.

### 3 Colic Obstructions

It is said that gaps are found less commonly in the colon than in the small intestine. If we omit the pelvic colon this statement is probably correct. It is however, comparatively common to find the colon end abruptly at the place where it should join up with the rectum, but probably the commonest type is the nondevelopment of the lumen. The entire colon is apt to be involved. The rectum may be normal but in its upper part it will be found to become conical. These cases are occasionally diagnosed as imperforate conditions of the rectum. Their treatment is quite beyond the range of surgery. In cases where union between pelvic colon and rectum has failed to become established an attempt is often made to tunnel through the intervening tissue but if an entrance is gained to the lower end of the blind pelvic colon an inveterate stricture subsequently develops. A primary inguinal colotomy is the only possible solution of the trouble.

In my experience errors in rotation of the colon do not produce obstructions of the colon but rather of the ileum.

### 4 Rectal Obstructions

Malformations of the rectum are so frequently associated with malformations of the urethra and bladder that the cases are very complicated but it is the possibility of the membranous urethra being involved is remembered our treatment may be more successful. Where the sphincter is defective an artificial anus should never be made in the perineum this is the worst possible site for such an opening. As an emergency measure the sinus into a cloaca may

be widened at the expense of the perineum, but in doing so the possibility of damaging the sphincter should not be forgotten.

### 5 Fromphalos

Hernias into the umbilical cord are a class by themselves and strangulation is unusual as rupture of the covering membrane occurs too early, with the production of a fatal peritonitis. An obstruction may, however, be present, and it may involve both large and small bowel. Suffice it to say that all cases of omphalos should be operated upon as soon as possible. In one case the radical operation was successfully performed and the infant returned to bed aged 1 hour.

### 6 Meckel's Diverticulum

A more prolific cause of trouble from congenital abnormality is produced by a Meckel's diverticulum. The diverticulum may be adherent at its tip to the inner aspect of the umbilicus and a loop or loops of bowel may become entangled round this intra-abdominal pillar. The tip of the diverticulum may become adherent to visceral or parietal peritoneum, and may act as a band strangling one or more loops of bowel.

### 7 Strangulated Hernia

Among the innumerable instances of hernia it is fortunately unusual for many to strangle, yet the condition is quite common none the less, it calls for no further comment.

### Acquired Causes

It would be futile to go into all the various causes of acute obstruction in children, but I might refer to one or two types which are frequently met with. To begin with, it must not be forgotten that the term "acute obstruction" which refers to symptoms, is not synonymous with "complete obstruction" hence the dividing line between acute and chronic obstruction is a broad one. We have acute exacerbations superimposing themselves on the chronic and as in children the chronic part is masked we will have clinically, only the attacks of acute obstruction recognizable. Under this aspect of the case would come to be considered those obstructions which resulted from a tuberculous infection of the mesenteric glands with band formation or adhesions with more or less linking of the bowel (and consequent narrowing of the lumen) from a contracting cicatrix. These conditions are often associated with a healed tuberculosis, but they may crop up during the infective stage of a plastic peritonitis. How far the final stage in many peritonitis is due to obstruction is a point on which discussion might profitably take place. Whatever the cause of the obstruction the symptoms will vary according to the level and degree of completeness of the stenosis and to the degree of interference with the circulation. Symptoms indistinguishable from those produced by obstruction may be set up by other conditions without implication of the lumen of the bowel at all. For instance, strangulated omentum a strangulated Richter's hernia and a mesenteric embolism will produce a set of symptoms almost incapable of differentiation from a true obstruction. So much is this the case that we are greatly given to label a particular lesion as an example of the acute abdomen and are content if we decide for or against exploration.

It is the general custom to classify intussusception among the obstructions, and I would like to enter a protest against such an arrangement as conducing to delay in operation. Intussusception is no more an obstruction than appendicitis is a general peritonitis. Both are alike in this respect that under such a view they demand treatment before they come into their proper categories, intussusception must be operated upon before it is obstructive, as must an inflamed appendix before it gives rise to a general peritonitis. The risk of leaving an appendicitis till perforative peritonitis has developed is not nearly so serious as leaving an intussusception till obstructive symptoms set in. In intussusception which is possibly often one phase of the status lymphaticus death is apt to be sudden and entirely unexpected.

The reference to appendicitis brings to mind the

obstruction which complicates the operation. It develops about the fifth day, usually suddenly, and it requires prompt treatment. I do not refer to the ileus developing with a spreading peritonitis, but to a local obstruction of the lumen of a section of bowel.

Simple tumours rarely occasion an intestinal obstruction. Malignant tumours are so seldom found that we hardly ever think of including them in the discussion of a differential diagnosis.

The symptoms which result from the interruption of the intestinal flow may be briefly considered.

1 *Vomiting*—At first this may be a reflex phenomenon, it soon, however, becomes a sign of reversal in the direction of the intestinal current. It is persistent, and its character changes in the well recognized manner so that it becomes pathognomonic.

2 *Visible Peristalsis*—This symptom is probably more fully developed in the chronic obstructions, but it is an important aid to diagnosis even in the acute. It may be accentuated by tapping the abdomen and in some cases by lightly scratching the skin.

3 *Distension*—To begin with, this is the alternative to spasm, but it soon becomes permanent to the exclusion of the spasm. When the entire small bowel becomes distended the well recognized designation of "ladder abdomen" to the appearance shown is a condition of sinister meaning. No doubt the distension is due to the evolution of gas which cannot find an exit, but soon the overdistension passes into a paralysis, so that mere escape of the gas brings no relief.

#### *Symptoms Due to Interference with Function*

These might be referred to under the following sections.

(a) *Toxaemia*—Chemical changes in the contents of the intestine soon take place, the initial disturbance cannot be explained in this way, but later symptoms and the tendency to death are certainly due to this cause. The experimental work done to elucidate the results of obstruction of the intestine is considerable, and while it has been enlightening it has added an element of complexity. The action of the chlorides, which are so quickly reduced in the circulation, has been proved to be of the greatest importance in such toxæmias as we are considering, but that their repletion is the desideratum is not yet established. Whether a distortion of metabolism takes place in the wall of the bowel, due to the pressure of the distension or to chemical changes instituted by the infection of the entire fluids, is not decided. It is, I think, proved that the gas-producing organisms make highly toxic substances, and we thus have to attempt to inhibit such manufacture from the point of view of gas as well as toxin. It is more than likely that a vicious circle is set up—the more toxin the greater the inflation, and vice versa. Distension alone is serious from its pressure effects on the thoracic organs, its interference with deep respiration, and with the heart. From clinical experience, as from scientific research, the emptying of the bowel, etc., is essential.

(b) *Disturbance through the Sympathetic*—Some of the symptoms might be so explained. By warring out the action of the sympathetic ganglia the pneumogastric inhibition becomes more active or the vagus is initially stimulated, and the heart shows the effect sometimes very rapidly. Thus irregularity of the pulse in intussusception is often an early sign. Of course, a toxin might well have a direct action on the heart without reference to the nervous system.

(c) *Paralysis of the Bowel*—This condition will develop at a period governed to some extent by the nature and situation of the obstruction, and whether the obstruction be complicated with peritonitis.

(d) The changes in the circulation of the bowel and the reflex stimuli will account for the effusion of fluid which takes place almost invariably with an obstruction.

(e) *Peritonitis from Perforation*—Is the result of gangrene this very serious catastrophe may set going its own series of symptoms, but as a rule death takes place before this occurs. Examination by x rays is rarely possible, as we rightly hesitate to allow the expenditure

of the time required, to say nothing of the difficulty and disturbance caused by trying to force the retention of the opaque meal.

#### *Treatment*

The stomach should be washed out early in the anæsthetic period, and great care should be exercised that none of the stomach contents finds its way into the tract. I do not propose to touch on all the various plans or treatment possible of adoption, either from the point of view of operation or as adjunct treatment, but rather to refer to some aspects of the matter which are discussible.

After opening the abdomen, distended bowel should be avoided, and a gentle search for undistended gut instituted, the obstruction being approached from the sound end. After the obstruction has been relieved, if anything further is required we are often placed in a dilemma whether to resect, perform a lateral anastomosis, or to be content with an enterotomy. There does not seem to me to be any great reason why an enterotomy should not be done irrespective of whatever else may have been demanded. We dislike making a fistula, but these fistulae (in children at any rate), if made through the omentum, show a great tendency to spontaneous closure. The omentum should not be pushed aside, but the most prominent loop of bowel above the umbilicus should be drawn through a hole made in it. An enterotomy likely to function should be made high in the jejunum.

The handling required in resecting is against its success, and so the quick methods of performing intestinal union are attractive. The possibility of adding infection to the already damaged abdominal contents is to be avoided at all costs. It is a decided advantage to leave as much saline in the abdomen as it will hold, and I think the addition to it of 5 per cent. cane sugar, a half to one cubic centimetre of pituitin, and the same quantity of adrenalin, is beneficial.

*The Anaesthetic*—The choice of an anaesthetic is of importance. Most surgeons dislike chloroform for an intestinal obstruction, but when chloroform gains in its greater power of producing muscular relaxation. A shorter incision suffices, and manipulation in the abdomen is facilitated, with consequent shortening of the operation time. As obstruction is more often associated with an alkalosis than an acidosis, it is possible that this general dislike of chloroform may not be an entirely sound doctrine. In this connexion the recent proposal to introduce pepsin and hydrochloric acid with saline into the peritoneum as a remedy in peritonitis may find support, and the almost invariable rule to give alkalis and glucose may require to be sometimes departed from. The advice to give excess sodium chloride may well receive a careful trial, not only because its quantity has been reduced, but also because it has a direct antagonistic action on the toxins developing in the distended bowel. It certainly tends to reduce the dehydrating effects of the poisons.

*Enteritis after Operation*—This is a condition which is prone to develop in children at all times, and more especially after damage to the intestine. Grey powder and so-called intestinal antiseptics may be indicated. I have found the oral administration of normal horse serum to be most effective.

*Pneumonia*—Tactical changes in the atmosphere, in the temperature of the sick-room, etc., cannot account for the onset of this complication, but it is almost certainly due to a toxæmia or septiciæmia.

*Pyelitis*—After intestinal operations I think there is a direct tendency for a *Bacillus coli* septiciæmia to become established, and I have observed a few cases where pyelitis resulted from an enterectomy. The urinary infection has thus a common source with that causing pneumonia.

There are many other complications which occur, such as those referable to thrombosis, etc., but it is unnecessary to elaborate the matter further.

#### *Prognosis*

The important item in the prognosis is the degree of ileus present, and this will depend to some extent on the amount of handling which has been found necessary at the operation, as well as upon the nature of the obstruction.

and the general robustness of the child. Where craniotomy has been performed the prognosis is bad. Scientific investigation may help us to neutralize the toxins and restore motility to the overstretched intestine.

An early diagnosis, followed by prompt intervention, is still the thing which matters most.

# DISCUSSION

Mr L. E. BARRINGTON-WARD (London) emphasized the points in symptomatology and physical examination which his experience led him to believe were most helpful in diagnosis. He hoped the day was not far distant when, as a result of earlier diagnosis, the surgeon would seldom be faced with the difficult and debatable problems of how to deal with an irreducible mass in intussusception or treat a length of gangrenous intestine. The patient's age was often of assistance in deciding beforehand the nature of an obstruction in early life. He referred at length to some of the rarer forms of intestinal obstruction in childhood: (1) Internal hernia—(a) through a congenital hole in the mesentery or omentum, (b) diaphragmatic, (c) retroperitoneal. (2) Volvulus of the small intestine apart from volvulus neonatorum. He based his remarks on the latter form upon a series of six cases which had occurred during a period of twenty-five years at Great Ormond Street Hospital. All were dependent on a deficient attachment of the mesenteries of the small intestine and ascending colon. The diagnosis of the condition from ketonuria had presented great difficulties, and he thought the character and time of onset of the abdominal pain were the points which were likely to be of most help in differentiation. In the treatment of intussusception he had tried and been impressed with the value of Farris' method which consisted of an injection of air into the colon followed by a small abdominal incision to enable the reduction to be completed. This procedure eliminated the element of uncertainty of the older method of reduction by inflation alone and was associated with less shock than complete reduction by laparotomy. Where reduction was impossible he was in the habit of resecting and performing an anastomosis at once. The infant did not seem to tolerate temporary drainage well.

Mrs. GEORGE HERZFELD (Edinburgh) referred to the fact that in acute obstruction in children abdominal distension was usually not a striking feature. She emphasized the desirability of combating dehydration and washing out the stomach as preliminary measures. As a routine anesthetic in these cases she preferred open ether combined with local infiltration but recently had been using spinal anaesthesia successfully in cases of intussusception. Where distension of the bowel was marked she did not hesitate to perform immediate puncture of the gut by means of a fine trocar and cannula. She did not agree with Mr. MacLennan's contention that obstructive symptoms were so definitely secondary in intussusception that to include the latter under the category of acute obstruction was calculated to lead to delay in operating. It was her experience that in the majority of cases obstruction of the bowel was complete within three or four hours. She had had 109 primary cases of intussusception under her care during a period of seven and a half years—71 in male and 38 in female children. 18 were in children under 1 year old. One child was moribund on admission and died without an operation. Spontaneous reduction occurred in three instances. Immediate operation was performed in the remaining 105 cases. A recurrence took place in 7 and in one case proved fatal. Including the recurrence 112 operations were carried out with 24 deaths giving a death rate of 21.4 per cent. In the last 50 cases, however, there had been only 7 deaths—that is a mortality of 14 per cent. This improvement was chiefly due to earlier diagnosis on the part of the practitioner. As regards the type, 84 per cent occurred in the ileo-caecal region, 11 per cent were of the colic and 5 per cent of the enteric variety. All the colic cases recovered. Most of the 7 recurrences took place from eight to fifteen months after the primary operations. It was interesting to note that in 2 of the recurrent cases fixation of the caecum had been performed at the first operation. There were 9 cases

in which resection was found to be necessary, with 5 deaths. Tearing of the peritoneum even when extensive was not in itself regarded as an indication for resection. During the same period 16 cases of obstruction due to abdominal tuberculosis had occurred; there were 6 deaths, all in children under 3 years. Of obstruction due to irreducible and strangulated hernia, there were 22 examples, the average age was 5½ months. Resection was necessary on two occasions once in a baby of 12 days. All the patients in this group recovered. In the course of 197 cases of acute appendicitis 6 examples of true post-operative obstruction arose. The average time at which operation for this complication was called for was the fourteenth day after appendicectomy. The methods of dealing with this emergency were discussed. The only fatal case was one of streptococcal appendicitis in which obstruction occurred on the fifth day after operation and an enterotomy was performed.

Mr. T. C. PEARCE (Newcastle-on-Tyne) dealt with the sequence of development and relative importance of the symptoms and signs of obstruction. He maintained that it was often possible to determine beforehand the nature of an obstruction from a carefully taken and interpreted history. He quoted cases illustrative of the difficulties of diagnosis with special reference to ketonuria and Henoch's purpura. Chloroform as an anesthetic was to be avoided.

Mr. NORMAN M. DODD (Edinburgh) submitted two cases for consideration: (1) that inasmuch as children suffering from acute intestinal obstruction to varied operations up to one hour's duration remarkably well, delicate accurate technique should not be subordinated to mere speed in operating; (2) that resection was possible the best treatment in certain cases of intussusception in which the bowel though reducible and viable was yet severely injured in the process of reduction. He developed his argument from a review of 20 cases of intussusception which he had been called upon to treat during the past two years. All these cases had been operated on and 4 deaths had occurred. In 3 of the fatal cases the condition was so severe and advanced on admission that a fatal issue was almost inevitable, he had thought it right however to give them the chance offered by operation. The fourth fatal case was in a baby of 5 months who had a double intussusception of fourteen hours' duration. Reduction was extremely difficult but was finally accomplished with viable bowel. The immediate effect of the operation was negligible but the child's condition rapidly deteriorated and death took place after twenty hours. The cause of death in Mr. Dodd's opinion was toxic absorption from an excessively bruised bowel, and he believed that removal of this injured segment might have been a life-saving measure. Excluding the 3 unavoidable fatalities his series was reduced to 17 with one death. The 15 recoveries took place in cases which on the average were of a severe type. In operating great speed had not been aimed at. It was his rule to make a "gridiron" or rectus displacement incision to carry out fixation by the fine interrupted silk sutures and to close the wound deliberately in layers. Further 3 of the 17 patients were subjected to procedures of considerable magnitude. One was a baby of 10 months who had an ileo-colic intussusception of forty-three hours' duration. A good recovery followed an operation which occupied thirty minutes. Four days later an enteric intussusception developed necessitating a second laparotomy. Another child of 4 months had an ileo-caecal intussusception of five days' duration. Reduction was impossible and a right hemicolectomy with lateral anastomosis by the aseptic method was performed. The operation lasted one hour. The third was a child of 3 months with a gangrenous ileo-colic intussusception of three days' duration. A right hemicolectomy with end-to-end anastomosis by the aseptic method was carried out. Recovery in these three cases was uneventful.

Dr. H. C. CAMERON (London) spoke of the need for early diagnosis when confronted with the grave symptoms of intestinal obstruction in a newborn infant. There was too great a tendency to wrap the child in a shawl and adopt

a fatalistic attitude. In duodenal obstruction the diagnosis could only be made by an x-ray examination in the first few days of life. One such case of duodenal atresia operated on by Mr. Stewart made a complete recovery. With regard to acute intussusception, he called attention to the contrast in practice prevailing in Scandinavia. There, in 80 per cent of the cases, taxis through the abdominal wall without laparotomy was successful. Secondary laparotomy was necessary in the remaining 20 per cent. He referred to the case of a small boy suffering from extreme ketonaemia, with the characteristic tenderness of the abdominal muscles, who had developed after some days of illness a complicating intussusception. Mr. Jennings Marshall had reduced the intussusception in a moment, and without difficulty. In this case it was the ketonaemic amyotonia that explained the ease of reduction. The differential diagnosis of intussusception from follicular colitis and Henoch's purpura was helped by noting the odour of the blood-stained evacuation. In intussusception the motion was odourless, in the other conditions foul-smelling. Lastly, he spoke of the immense value of a blood transfusion before a young feeble infant was submitted to a severe operation.

Dr. C. P. LAPAGE (Manchester) thought that the history in cases of intussusception was so distinctive that it was often possible to make a diagnosis before blood appeared in the stools, or even on the finger after rectal examination. The earlier spasms of abdominal pain were often overlooked unless the mother was closely questioned. In the differential diagnosis between obstruction and ketonaemia a history of previous attacks and the presence of certain clinical peculiarities in the latter group were helpful. In Henoch's purpura the difficulty was greater, but as a rule the blood in the motions was more profuse than in intussusception, and the purpura patients were often peculiarly sensitive to rectal examination. He protested against the indiscriminate use of purgatives which was still so common in the treatment of patients with abdominal symptoms. As an illustration of the ability of the youngest infant to tolerate severe surgical procedures, he referred to the case of a baby of a few weeks who had had a mesenteric cyst of the size of its own head successfully removed by his colleague Mr. Moiley.

Dr. MARGARET TOD (Edinburgh) pointed out that it was often by no means easy to distinguish between acute enteritis and intussusception. Enteritis might determine an intussusception and the history of the antecedent enteritis confuse the issue. On the other hand, at the outset of an intussusception there might be one or two greenish motions, suggesting a diagnosis of enteritis. She had been impressed, especially during a recent visit to America, by the great value of transfusion as a pre-operative or post-operative measure.

## DEAF-MUTISM DUE TO A BILATERAL LESION OF THE AUDITORY SENSORY AREAS

BY

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In the vast majority of cases of deaf-mutism the lesion is situated in the ear itself. Deaf-mutism is usually divided into the congenital and the acquired varieties.

In Switzerland endemic congenital deaf-mutism is met with in association with goitre and cretinism. Here the lesion is in the middle ear, the niches of the oval and round windows being filled with connective tissue. Many of these patients, however, have fairly good hearing, and the mutism is mainly caused by their feeble mental development. In this country sporadic congenital deaf-mutism is by no means uncommon. The lesion in these cases is in the inner ear and, as a rule, consists in maldevelopment of the membranous cochlea and sacculus—the pars superior of the

labyrinth—while the utricle and semicircular canals are normal. In such cases the vestibular apparatus is usually normally to the rotation and caloric tests, though the patient is almost or entirely deaf.

Acquired deaf-mutism is due to labyrinthitis, which may result (1) from the otitis media of such infections as scarlet fever or measles invading the inner ear, (2) from injury, as in fracture of the base of the skull involving both labyrinths, (3) from purulent infiltration of the labyrinth from the meninges—as, for example, in cases of epidemic cerebro-spinal meningitis, in which the infection may pass to both labyrinths along the eighth nerve, or (4) from congenital syphilitic infection of the inner ear, which, as a rule, only occurs after the age of 9, when the child has already learned to speak. The vestibular tests in cases of acquired deaf-mutism give negative results.

The microscopic changes in the ear in these various kinds of congenital and acquired deaf-mutism have been well known for many years from the work of Politzer, Alexander, Neumann, Denker, Mondini, Scheibe, Gray, and others. Caster, however, holds that deaf-mutism is usually due, not to lesions of the ear, but to changes in the cortical hearing area which may be caused by intermeningitis. Though we hold that such an occurrence is extremely rare it must be admitted that all cases of deaf-mutism have not been explained by histological examination of the ears. For this reason the following case appears to be worthy of publication.

A male child, aged 3, had suffered from bilateral middle ear suppuration at the age of 1 year, the cause was unknown. Three months before admission to hospital on August 2nd, 1921, an abscess formed behind the left ear and was opened by his doctor. A week before admission a swelling appeared behind the right ear, with pain and loss of sleep. There was no history of giddiness or sickness. Examination showed the ear of an old mastoid abscess behind the left ear. The left meatus contained purulent discharge and a polypus, there was also profuse discharge from discharges and a subperiosteal abscess was present. The child did not speak, but his cry was like that of a child who heard.

On August 3rd a radical mastoid operation was performed on the right ear, there was erosion of the cortex, and the antrum contained cholesteatoma. The incus was absent, there was slight erosion of the lateral canal, and granulations were present in the tympanum. A cold lotion applied to the inner wall produced prompt conjugate deviation to the left. A skin graft was applied, leaving the inner wall of the antrum and aditus uncovered over the erosion in the lateral canal, and the wound was closed. The temperature remained normal after the operation, and the wound and operation cavity were satisfactory on August 7th, seventeen days later the patient was discharged.

Nearly one year later, on June 13th, 1922, the child was brought back with an acute exacerbation of the chronic middle ear suppuration in the left ear. An abscess had been present over the left mastoid for five days, but there was no vomiting, the child still did not speak, and did not appear to hear. A radical operation was performed on the left ear, there was a subperiosteal abscess and the cortex and whole of the mastoid were hollowed out by and the cortex and whole of the mastoid of the lateral canal. The cholesteatoma. There was no erosion of the lateral canal. The ossicles were absent and the vestibular apparatus responded promptly to cold lotion. A skin graft was applied. The temperature continued normal until June 22nd, when it rose to 99°, and on the next day to 101°, there was slight stiffness of the neck and Kernig's sign was present. The operation cavity appeared satisfactory and there was no nystagmus, but a lumbar puncture showed cerebro-spinal fluid under pressure and slightly turbid. The patient had a lemon yellow colour.

On June 30th the temperature rose to 103°. At an operation on July 1st the sinus wall was found to be greyish yellow and thickened. Neumann's labyrinth operation was performed on the left side, the internal meatus was opened through the vestibule and a flow of cerebro-spinal fluid was obtained.

On the day after the operation the temperature remained between 100° and 101°, drainage through the internal meatus was not very free. On July 3rd the temperature was 102° and the pulse 164, the cerebro-spinal fluid was still draining. Two days later the temperature was 101°, and death ensued.

At two necropsy purulent meningitis was found at the base and over the left cerebral hemisphere. There was no thrombus of the venous sinuses. The infecting organism was the pneumococcus.

*Microscopic Examination of Right Ear.*—The Eustachian tube was closed by thickening of the submucosa, which showed cystic spaces. The tympanum, attic and antrum were lined with squamous epithelium, there was a gap filled with fibrous tissue in the footplate of the stapes, though the crura were entire. It showed that the gap in the footplate was not due to injury at operation. The round window membrane was only slightly thickened. The cartilage bone capsule of the labyrinth was local thickened. Two cartilage bone capsules were dilated, and some of the vessels of the footplate antrum, through the footplate, traced from the inner wall of the antrum, through the middle ear to the area of the posterior cranial fossa. On the left side this may have been a possible route of infection from the middle ear to the meninges. The vessels of the modiolus were dilated, and the membrana was slightly depressed, as is usual in cases of meningitis.

The cochlear nerve and ganglion appeared to be normal if allowance be made for the presence of meningitis. Cortic organ was degenerating (a possible *post mortem* change) but the acoustic papilla was well formed and the membrana tectoria was in the normal position. The bony spiral lamina was well filled by the nerve and the stria vascularis appeared to be normal. The spiral ganglion was infiltrated with pus cells from the internal meatus. A few pus cells were present in the scala tympani in the lower part of the basal coil near the opening of the perilymph aqueduct. There was a little curdled lymph just internal to the footplate of the stapes the neuro-epithelium of the utricle showed desquamation possibly a *post mortem* change. The sacculus appeared rather dilated and the otolith membrane was in parts separated from the neuro-epithelium. The ductus endolymphaticus was healthy. The crista and ampullae of the canal were normal except for desquamation of epithelium. The subarachnoid space of the internal meatus was crammed with pus cell. The meningitic infiltration surrounded the vestibular nerve to the utricle and superior and lateral canal, and extended along the seventh nerve almost as far as the geniculate ganglion.

Middle-ear suppuration alone even when bilateral and dating from earliest childhood does not produce such a severe degree of deafness as to give rise to mutism in a child of 4 years. The cold caloric test, carried out on the operating table had shown that on both sides the vestibular apparatus reacted promptly, and that in consequence a former labyrinthitis might almost be trunk be excluded as the cause of the deaf-mutism. Consequently one of us (J. S. F.) expected to find on the microscopic examination of the right ear the changes usually associated with sporadic congenital deafness—namely, malformation confined to the cochlear canal and sacculus. Such examination however indicated an apparently normal inner ear. It allowance is made for *post-mortem* changes and for the results of basal meningitis. The cause of the deaf-mutism therefore remained a mystery until the histological examination of the brain carried out by one

of us (S. H. N.) revealed abnormality of the auditory sensory area in the cortex on both sides.

On microscopical examination of the auditory paths and centres a basal meningitis of pneumococcal origin was seen to be present, and this confused to some extent the histological picture. A "foamy" degeneration of the nerve cells was observed throughout the brain, this was presumed to be due to the meningitis. Haemorrhages were noted in the eighth nerves, but no degeneration, as shown by Weigert's method was seen. The posterior quadrigeniculate and mesial geniculate bodies were well developed.

In the cortex the pathological process was more of a meningo-encephalitis, as perivascular infiltration was observed. The transverse gyri of Heschl (auditory sensory areas) showed marked changes. The cells of the cortex in these regions were represented by small rounded elements which were nerve cells deprived of cell body and processes. This degeneration caused the topography of the cortex to be lost. The pathological condition was present on both sides and was in marked contrast to the histological picture of the outer borders of the superior temporal gyri (auditory psychic areas) Broca's area pre-Rolandic areas, angular gyrus, and the area round the calcarine fissure, which showed normal development.

The case was one of acute pneumococcal meningitis, with the existence of a more chronic lesion in the transverse gyri of Heschl. The fact that the auditory psychic areas were developed presumed the normal development at one time of the auditory sensory regions. It is probable that the auditory sensory areas were subsequently destroyed by some disease process.

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## PREVENTION OF EAR DISEASE BY REMOVAL OF TONSILS AND ADENOIDS

BY

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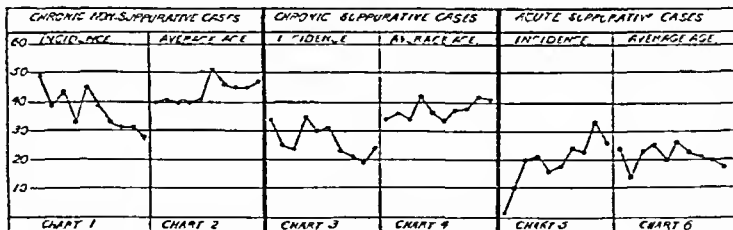
THE answer to the question to what extent the removal of the tonsils and adenoids prevents ear disease is of some importance. I have been accustomed to believe and to preach that in the very great majority of cases chronic middle-ear disease in the adult has its origin in childhood. I have also thought that infection associated with enlarged tonsils and adenoids is responsible for such disease in an over-

whelming majority of cases and that excision of these should largely prevent or arrest the middle-ear infection. The removal of tonsils and adenoids by operation has now been widely employed for at least twenty years and it occurred to me that it might be interesting to try to ascertain to what extent this proceeding was actually diminishing middle-ear deafness in the adult. For this purpose I have made a somewhat laborious statistical examination of the records of my private cases from 1910 until 1926. In this period a total of 1,077 cases of middle-ear disease were dealt with. In judging the result many factors no doubt must be taken into consideration but I believe that, taken as a whole my practice can be considered as presenting typical results. I have done no particular work in any one direction which would lead to an undue proportion of any particular type of case being referred to me.

My first step was to see to what extent I could demonstrate a variation in the incidence of middle ear disease as a whole. I was surprised to find that over this period of sixteen years, there was no sign of any diminution in the relative number of cases. As a check I worked out the average age of the cases of middle ear disease, and again found that this was practically constant. Being unwilling to believe that our efforts at prevention were entirely fruitless I analysed the figures under three separate groups—namely chronic non-suppurative, chronic suppurative, and acute suppurative middle-ear conditions.

Taking first the chronic non-suppurative cases, the curve indicating the incidence of these cases does show quite an appreciable downward tendency—that is cases do seem to

be diminishing in frequency (Chart 1). In support of this the next curve (Chart 2), giving the average age of cases shows an upward tendency, which would suggest that cases are now being chiefly drawn from the period prior to that in which tonsils and adenoids



Charts showing the incidence and average age in cases of chronic non-suppurative, chronic suppurative and acute suppurative middle-ear disease.

were removed. In the chronic suppurative group there is a less marked diminution in the incidence (Chart 3) and a less marked rise in the average age (Chart 4). Acute suppurative on the other hand shows a decided increase in the number of cases, without any obvious change in the age incidence (Chart 5). This increase in the number of cases of acute suppurative is I suggest due to the recent prevalence of influenza.

To sum up. There is a decided diminution in the incidence of cases of chronic non-suppurative middle-ear disease but this is balanced by an increase in the cases of acute suppurative due to influenza so that the gross total of cases of middle-ear disease is unaltered. Fortunately,



however, acute suppuration seldom leads to deafness. There is, therefore, a diminution in the number of cases of adult deafness, and this decrease should be progressive, owing to the increased frequency with which tonsils and adenoids are removed in childhood.

## RADIOGRAPHY IN MASTOID DISEASE \*

BY

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This paper is based on the study of the radiographic pictures of over 500 cases, normal and abnormal.

Before dealing with the radiographic study of the mastoid, it is necessary to consider the normal mastoid development at the various ages and the normal mastoid structure. According to Wittmack's researches, the development of the temporal bone may be divided into three periods: (1) Formation of the tympanum, epitympanic recess, and the mastoid antrum, continuing to the end of the first year. (2) Formation of mastoid cells from these three cavities, which ceases between the fourth and the sixth year. (3) Further formation of cells, which continues throughout life.

Chertle's researches go to show that the acellular structure of the infantile mastoid is diploetic tissue, the only cells in addition to the tympanic antrum being a layer on its outer wall. It is stated that this acellular type persists throughout life in 15 per cent of people. In the second type (cellular or pneumatic) the diploe is replaced by an spaces which have extended from the middle-ear tract. Between the infantile acellular diploetic mastoid and the cellular or pneumatic mastoid several intermediate varieties of bone are recognized. In the adult bone these represent an arrest of development corresponding with a definite age in the child. This is of special interest in the consideration of asymmetry in the mastoid and its possible etiology.

In the standard x-ray projection we can trace the gradual pneumatization and the approximate normal for the age. The standard projection used gives practically a lateral projection, and the following landmarks should be studied and recognized. We first of all recognize the external and the internal auditory meatus, just a little superior and posterior to this is located the mastoid antrum. Directly posterior to the canal at a variable distance is the groove for the sigmoid sinus. Passing downwards and forward through the mastoid process to the jugular fossa—below and in front of the mastoid tip—the sharp angle or knee of the sinus groove can be recognized, and it is especially important to note the anterior line of this groove. Below this is the tip, and just behind the canal is an opaque area forming the posterior meatal wall with the facial nerve underneath. Above the mastoid antrum and middle ear can be seen the tegmen of middle ear and antrum. The superior line of the squamous may be indicated. In front of the meatus we have the temporomandibular articulation with the glenoid cavity and the condyle of the lower jaw. Frequently the emissary vein is seen as a worm-like shadow situated anywhere between knee and tip. The area enclosed between the posterior meatal wall in front, the tegmen above, and the anterior wall of the sinus groove forms roughly an inverted triangular area, with the tegmen as base, for descriptive purposes this has been called the triangular area.

Returning to the radiographic studies of the normal mastoid in children, this is found to correspond more or less closely with Wittmack's stages of mastoid pneumatization. (1) From birth to one year the only cell development is seen in the mastoid antrum, which occupies a more superior position to the auditory meatus than in the adult and is of comparatively large size. (2) From the first to the sixth year cell development begins and is confined to the triangular area previously described and forward towards

the zygoma in some cases. (3) From the sixth year to the sixteenth we notice gradual cell development beginning posterior to the inferior sinus groove, starting first at the lower posterior part and tip. (4) The complete pneumatization extends eventually to the upper posterior part and permeates completely the mastoid process.

The pneumatic mastoid in the adult may show cell development corresponding closely to these four stages. Another feature of interest is that cells laid down early in the triangular area are smaller as a rule than those developed at the tip and posterior part of the mastoid later, this is well shown in some of the radiograms.

### Symmetry of Mastoids

By symmetrical mastoids is meant that they are either both pneumatic or both diploetic in structure. Asymmetrical mastoids would thus mean a diploetic mastoid on one side and a pneumatic mastoid on the other, a case revealing an extensive pneumatization on one side with a very limited pneumatization on the other is not in the true sense an illustration of asymmetry, but rather symmetrical mastoids with arrested pneumatization on one side.

In their investigations Beck, Law, Ravichon, and others report consistent symmetry. Turner and Porter, in their examination of 1,000 crania, report 12 per cent asymmetrical. Plum suggests that some of these might possibly indicate arrested development. With regard to the present series, in the normal cases I have examined I have found the mastoid processes consistently symmetrical. Where there was no ear complaint and the x-rays revealed apparently asymmetrical mastoids, investigation has shown without exception the presence of either a mastoiditis or a healed condition, often previously unknown to the patient. Thus apparent or false asymmetry due to some previous pathological condition is a very common occurrence.

We now come to the question of the influence of an inflammatory process on mastoid development and thus indirectly on the question of asymmetry.

Macewen in 1893 stated that "In chronic cases of inflammation of the mastoid an osteoplastic formation may be set up in the neighbouring bone which results in an abutting sclerosis and an actual obliteration of many of the mastoid cells." This well expresses the old view regarding the sclerosed mastoid frequently found at operation.

Chertle has more recently stated that in infancy, with the exception of the mastoid antrum and a few cells on its outer wall, the mastoid consists of diploetic structure, further, that this so-called infantile type persists in 15 per cent of people. Chertle's researches tend to show that the sclerosis produced at first round the antrum is not the effect but the cause of the chronic suppuration, the cellular condition being thus primary. Wittmack, on the other hand, believes that hyperplasia of the mucosa with incomplete or arrested pneumatization is caused by the entrance into the tympanum of amniotic fluid, meconium, etc., during foetal life or at birth, or the entrance of vomitus during the first year of life. Wittmack's theory is supported by Preece and others.

As I have already stated true asymmetry has not been found in the present series of cases—that is, apart from a previous pathological condition of the mastoid. In addition, I have not been able to find a case presenting normal ears with a sclerosed or ivory mastoid. Assuming Wittmack's theory to be correct regarding the production of the acellular type of mastoid, I have found the acellular mastoid to give the x-ray appearance suggesting a diploetic mastoid rather than a sclerosed mastoid. Law in 1920 stated that it was impossible to distinguish between a sclerosed mastoid and a diploetic one.

In the present series of films I have found that the appearance of a sclerosed mastoid is different from that of a diploetic one. Further, cases of chronic mastoiditis on x-ray examination reveal all degrees of thickening of the cell trabeculae, in some cases so thick that the mastoid cells are almost obliterated. This thickening is shown only in the cases of healed mastoiditis, whereas in the normal pneumatic mastoid the trabeculae are of a very uniform degree of fineness and the cells distinct and well marked.

\* A paper communicated to the Section of Laryngology and Otolaryngology at the Annual Meeting of the British Medical Association, Edinburgh, July, 1927.

Taking the cases where a healed mastoid was found it can be demonstrated that the inflammatory process has undoubtedly produced an arrest of pneumatization on the affected side as compared with the healthy, the subsequent growth of bone in these healed cases being apparently diploetic in structure as distinct from the ivory sclerosis found in some cases of chronic mastoiditis. This arrest of pneumatization in the adult I have been able to demonstrate as corresponding to the various stages previously mentioned in the normal pneumatization process in the child.

Taking the present series as a whole normal and abnormal, I have found true diploetic acellular mastoids to be comparatively rare whilst those showing arrested development are of frequent occurrence. I have come, then, to the following conclusions from the cases studied:

- (1) That normal mastoids are symmetrical
- (2) That they are of two types (a) pneumatic or (b) diploetic. Apart from chronic mastoiditis never of the ivory sclerotic type
- (3) That arrest of pneumatization occurs following otitis media with mastoid involvement, many cases of apparent asymmetry are due to this cause
- (4) That the normal pneumatic cases far outnumber the normal diploetic.

#### The Value of X Rays in Mastoiditis

Kutner as recently as 1912 stated that radiology did not furnish any assistance in otology. Winckles and Voss on the other hand, in 1907 reported x-ray findings verified by operation. Plagmann, by means of a negative, was able to distinguish whether the disease was confined to mucosa in an acute case or whether there was some bone caries. Law in 1920 produced a descriptive atlas including operation findings and technique. Plum in 1924 gave a record of x-ray procedure with confirmed operation findings.

It would be well to emphasize at once that as in other branches of medicine and surgery the diagnosis should not be attempted on x-ray findings alone but, if properly studied and applied we have a very valuable addition to our other clinical means of investigation.

At the throat and ear clinic of the Royal Infirmary, Glasgow we have employed this method to all possible cases of mastoiditis acute and chronic coming to operation. It has thus been possible to compare the x-ray and operation findings. The initial difficulties were many.

If radiography is to be of any use as a routine method several things are, in my opinion, essential. The first essential is to decide on a standard position. Next it is necessary to become familiar with the normal appearances at different ages, and the various results of pathological processes. Good plates, indeed very good plates, are essential. The following have been selected: (1) A large series of normal mastoids child and adult. (2) A series of pathological conditions in children. (3) The conditions seen in a series of 50 operations with the x-ray findings noted. (4) A series of cases illustrating other conditions—for example, simple acute otitis media, furuncle of meatus etc.

Plum (1924) has suggested that an x-ray photograph does not reveal whether disease is active or healed and that only repeated negatives during the process of disease give indication of active lesion. It is undoubtedly the case that, taking negatives alone, this may be true and also that repeated negatives may be considered in acute cases, but, if the other clinical observations are combined with a single x-ray plate a fairly accurate opinion may be given regarding conditions in the mastoid. It has also been stated by various authors that x-ray findings in cases of chronic suppurative otitis media are of less value than in acute cases. It has been possible however to demonstrate from the present series many interesting and suggestive changes in chronic cases verified by operation.

#### X-Ray Appearances in Normal Mastoids

The characteristics depend on the type being examined. A radiogram of both sides should be obtained on the one plate for comparison. This is especially valuable in unilateral cases. If bilateral, the surgeon must compare with what he would assume to be the normal condition at the age of the case under review.

Dealing first with the mastoid with arrested cell development at some period under 6 years of age, we can distinguish the following features: (1) the auditory canal, (2) the posterior wall of the bony meatus (3) the sinus groove, especially the anterior wall, (4) the line of the tegmen of the antrum (5) the tip of the mastoid process. The only cell development noticed here is in the triangular area. The sinus groove is usually well seen, but the antrum is indistinct. The remainder of the mastoid is usually diploetic in structure.

**The Diploetic Mastoid**—This shows all the features of the above except cell development in the triangular area. The mastoid throughout being of uniform fine meshwork, much finer than in the smallest pneumatic mastoid. Only a very good film will show the true nature of the diploetic structure.

**The Pneumatic Type**—Primarily, although the size of the cell may vary in individuals, the smallest cells are found in the triangular area whilst the largest are in the tip and posterior to the sinus groove. These latter cells are developed later. The cells frequently run well forward into the tegmen. Another important point in the normal pneumatic mastoid is the character of the lines indicating the anterior sinus groove. This line sometimes shows clearly, at other times only faintly. This depends on the thickness of the sinus plate compared with superimposed cells. It has already been stated that normally the mastoids of any particular case are symmetrical. This not only applies to the type of mastoid but to the size of the cells where there is a large cell or collection of cells in one situation, a similar collection is usually seen in the same situation on the other side. This makes it possible to distinguish sometimes between an area of cell development and an area of caries with bone absorption. The size and position of the emissary vein should be noted as a matter of interest.

**The Sclerotic Type**—This I have only found associated with a chronic process in the mastoid. Often no cell outline can be distinguished but, as sclerosis is not always uniform, areas of caries with bone absorption can be noticed. The anterior sinus groove is often well marked.

From the series of x-ray findings followed up to operation I have been able to verify the following conditions:

- 1 Hypoaemia of mastoid cells in acute otitis media without obvious mastoid disease
- 2 Acute mastoid inflammation
- 3 Purulent mastoiditis
- 4 Caries indicated by breaking down of cell trabeculae in pneumatic mastoids or areas of bone absorption in previously diploetic or sclerotic mastoids
- 5 Exposure of sinus extradural perisinus abscess
- 6 Exposure of middle fossa dura with low middle fossa
- 7 Cholesteatoma
- 8 Sclerosis with often a sinus groove unusually far forward. This condition gives more or less definite x-ray appearances.

**Mild Acute Mastoiditis**—The diseased side in pneumatic mastoids shows a faint haze covering the mastoid, as compared with the clear outline of the healthy side. The cell trabeculae are still distinctly seen. I have found that this haziness is especially marked in the region of the mastoid antrum. A case presenting these features, with free drainage should be left alone providing other signs do not indicate operation. Where, because of cessation of discharge, increase of pain in the ear with elevation of temperature, etc., operation has been undertaken, the mucous lining of the cell is found to be oedematous, a collection of haemorrhagic serous fluid is found in the mastoid antrum but there is an absence of caries or pus. Sydney Lange records this degree of mastoid involvement in 50 per cent of cases of apparently simple acute inflammatory otitis media.

**Acute Purulent Mastoiditis**—In these cases the cells are filled with purulent discharge. There is a greater degree of cloudiness of the cells especially in the triangular area, obscuring the antrum. The sinus groove is well marked. Such an appearance may be associated with symptoms or signs indicating operation. I have found beads of pus throughout the mastoid, the mucous membrane oedematous, and, on opening the antrum, a collection of pus, there is no breaking down of the cell trabeculae.

**Severe Purulent Mastoiditis, Acute or Chronic**—The pneumatic mastoid here appears entirely blurred. Areas of apparent rarefaction consequent on the breaking down of cell trabeculae or cysts indicate the necessity for operative measures, and at operation extensive cysts may be found with collection of pus especially surrounding the antrum or towards the tip, these areas, however, may be found at any point in the mastoid. Up to the stage of cysts the line of the anterior sinus groove is intact and more visible than in the normal side, but where the sinus plate is affected the intact line becomes broken, and at operation the sinus is seen to be exposed and sometimes covered with recent granulations—granulations and pus being found throughout the mastoid. An x-ray plate with the above findings indicates immediate necessity for operation apart from the presence or absence of such signs as temperature, mastoid oedema, tenderness, etc. In several operation cases I have been able to demonstrate abscess formation in acute and chronic suppurative mastoiditis in the x-ray films. In these cases the cell trabeculae break down and numerous cells appear to have coalesced, the outline of the abscess being sometimes clearly marked. Frequently in these cases the lines of the tegmen and of the anterior sinus groove become broken or blurred, and operation has revealed extracranial, middle fossa, and petrous abscess. A common situation for abscess formation is in the large tip cells.

The edges of an area of bone formation corresponding to an abscess are often blurred and hazy, but readily distinguishable. It has been noted in some cases that the area of maximum tenderness corresponds accurately to the area showing bone absorption. Cholesteatoma formation occurring in chronic cases sometimes presents a diagnostic picture of an indefinite haziness, this is usually surrounded by an area of increased density, the surrounding bone having undergone osteoplastic change resulting in ivory-like sclerosis. The condition is most commonly noted in the triangular area surrounding the antrum. The density of the shadow found in cases where operation has revealed ivory sclerosis has, in my experience, never been seen in the mastoid process of the normal ear, in the presence of a chronic discharge, indeed, this type of change is a distinct indication for a radical mastoid operation, as there is little chance of a permanent cure.

There are several other conditions where x-ray evidence is of great assistance in diagnosis.

(1) **Mailed Dermatitis or Eczema**—Frequently cases occur of eczema or dermatitis of the external auditory canal with stenosis, in these, because of their chronicity, a middle-ear origin is suspected. The x-ray picture in some of these cases pointed directly to the mastoid as the source of infection, whilst in others a beautiful healthy pneumatic mastoid has been found, absolutely excluding mastoid disease.

(2) **Furunculosis**—With post-aural infection and oedema the x-rays have again given valuable diagnostic assistance and sometimes prevented a mastoid operation. In these cases a haze is apparent over the mastoid, but there is no indication of cysts. The employment of routine x-ray examination of mastoids of all cases of otitis media enables us to decide whether conservative measures—for example, removal of polyp, ionization, douching, drops—are likely to prove satisfactory. I have found in this way cases with chronic aural discharge, but no other symptoms where radiography has revealed cholesteatoma or dural exposure.

#### Conclusions

- 1 Mastoids are normally symmetrical
- 2 Mastoids are usually pneumatic, occasionally diploetic
- 3 Nothing has been found to disprove Wittmach's views of the origin of the diploetic mastoid
- 4 Pneumatization proceeds in a more or less definite manner in children normally, mastoiditis, mild or severe tends to arrest cell development, resulting in the persistence in adult life of a partially pneumatized mastoid process
- 5 If reinfectied this arrested or infantile type of mastoid may develop a sclerotic character, and is probably more liable to chronicity

6 A dense sclerosed mastoid has not been demonstrated without at least evidence of a pre-existing otitis media

This investigation has been carried out in the throat and ear clinic of the Royal Infirmary, Glasgow, under the charge of Mr James Harper. The operations were performed by Mr Harry Dr. Leitch, and myself. I am indebted to Mr Harper and Dr Leitch for the operation findings in their cases and for permission to include them in the present series. I desire also to express my indebtedness to Dr Bruce MacLennan, our radiologist, and his staff for the very considerable trouble taken with the x-rays. I am also indebted to Dr Logan Turner and Dr Fraser of Edinburgh for very valuable references.

## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL

#### PULMONARY EMBOLISM WITH KNOT FORMATION IN THE CLOT

This accompanying photograph shows the appearance of an embolic clot found at the bifurcation of the pulmonary artery in a patient who died suddenly with the usual symptoms of pulmonary embolism. The clot, when found was not spread out as in the photograph, but lay curled up at the bifurcation of the pulmonary artery, it extended a little into the right pulmonary artery, and a very little into the left pulmonary artery. The only true knot, however, was the one illustrated. The total length of the clot is almost 17 in.

A possible clue to the knotting is provided by the unusual site of origin of the clot. This was in the left axillary vein. A more angled path to the pulmonary artery had thus to be followed than is the case with the more common clots coming by way of the inferior vena cava from the pelvis or leg veins. The clot may thus have been intruded for some time when only part had passed the transpericardial valve, and the portion in the ventricle may have been knotted by the repeated contraction of that chamber, particularly if the part still lodged in the transpericardial orifice was causing some incompetence at the same time, and so modifying the blood currents in the ventricle. The history tends to support this view, for the patient lived for nearly an hour after the pain in the chest and respiratory distress commenced, and then died suddenly. He was a man aged 56, and was suffering from an ulcer of the left axilla, resulting from neglect of a slight wound of the hand. The wall of the axillary vein was inflamed and surrounded by pus. The femoral and pelvic veins were healthy.

I have to thank Mr J. Mainoch, professor of surgery, Aberdeen University, for the notes of the case, and Professor Sherrin, of the Pathological Department, for permission to publish this report.

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#### ACUTE VERONAL POISONING WITH TOBAC PNEUMONIA AND BILDSORIC

The following case of veronal poisoning which occurred in my practice in Valparaiso, Chile, this year, four months before I left for England, seems worthy of record in view of the large dose taken and the subsequent complication which delayed recovery.

I was summoned urgently one night at about half past ten to see a woman who had taken an overdose of veronal and died fifteen minutes later. I found her deeply unconscious. She had been given some hot water and had vomited a little brown fluid. The pulse was regular and the colour good. The patient reacted normally. I washed the stomach out with warm water containing sodium bicarbonate until the solution became clear. The first returns being brownish and containing some tablets. I gave her a tablespoonful of sodium sulphate in half a pint of water and left in the stomach. Hypodermic injections of atropine, digitaline, caffeine, and camphorated oil were given at intervals.

At 7 o'clock the next morning the patient had a prolonged rigor and during the day there was a rise of temperature the bowels acted well. The stomach was again washed out in the evening when the temperature was over 102°. Signs of consolidation were found at the right base the pulse had increased in rapidity and the respiration was short and quick. On the second morning there was definite lobar pneumonia involving the lower two-thirds of the right lung there was no cough but tracheal rattling was very distressing and the mucus had to be removed at frequent intervals from the throat and mouth. The patient was fed through a tube at eight hourly intervals and oxygen was administered every half hour for about five minutes each time. The urine which contained a trace of albumin but no sugar was drawn off every eight hours. At midday 25 ccm of polyvalent antipneumococcal serum were injected. That evening the temperature was over 104° and the pulse 150 the patient was kept in the sitting position.

On the third morning her condition was grave and a red patch had appeared on each buttock. The temperature fell somewhat in the evening but rose again the next morning when some slight movements of the eyelids were evident and there was a little resistance in passing the stomach tube. During the following night some movements of the facial muscles began and the patient became able to swallow a little water. Though still unconscious on the fifth day the patient was able to swallow more easily and the lung began to clear. Later in the day she began to talk wildly and it was not until the following evening that she became more or less rational.

On the seventh day the dry rub of pleurisy was evident behind her left shoulder but this disappeared in a few days as also did the pneumonia. On the eighth day a buttock abscess was incised under ether. On the eleventh day giant urticaria developed with intolerable itching the pain and rash were relieved by hot alkaline applications and occasional subcutaneous injections of 2 to 3 minims of adrenaline.

After another four days the patient was obviously convalescent except for the bed sores. The sloughs gradually separated leaving large cavities on each buttock which extended for four or five inches in the direction of the ischio-rectal fossae daily boracic baths being much appreciated by the patient.

The amount of veronal taken by the patient was estimated at 15 grams or 225 grains but about 25 grains were probably left in the cup used. Complete unconsciousness lasted for a period of 115 hours after which it took the patient at least two clear days to realize fully the gravity and nature of her illness.

The quantity of the drug taken, with subsequent recovery is in itself worth recording but the various complications add further interest to the case. The bed sores would most probably have been avoided had trained nursing been available but it is possible also that so large a dose of poisonous reagent in the system only requires a determining factor such as pressure for a certain number of hours to induce gangrene of the tissues. So far as I can remember the patient weighed only about 7 to 7½ st.

London

S. M. WELLS, F.R.C.S. Ed.

### A TREATMENT OF MORPHINISM

It is universally maintained that the eventual outlook for the morphine addict who submits to treatment is very bad indeed the rate of permanent recovery being variously estimated as between 10 and 15 per cent. Furthermore the process of withdrawal is reputed to be exceedingly painful in whatever manner it is performed.

I am now able to give the after history of ten consecutive patients who were treated by a somewhat elaborate technique whereby the usual discomfort is avoided. With this series the average duration of addiction was eleven years and all except two had been treated unsuccessfully by other methods. The average length of treatment was exactly thirty days or which about half were devoted to withdrawal. The treatment of the various individuals was spread pretty evenly over the three years ending last June and the result is accurately known in every instance.

Of these ten patients, nine have remained without any sort of relapse since they were dealt with. The tenth had to face prolonged domestic unhappiness and morphine was restored as the only means of procuring sanity. I am not aware that any other method can show results which are at all comparable.

A full description of the technique appeared in the *Practitioner* of January, 1927. The reduction of morphine is covered by two waves of overdosage by drugs or the atropine group and by luminal respectively in such a way that morphine is timed to be completely withdrawn just before the maximum doses of luminal are administered. Use is made of the "special mixture" of Lambert (tinct. belladonnae, liq. ext. hyoscyami et scopolami ad 5j) Lambert's

method aims at the rapid withdrawal of morphine, and produces a mild delirium which in some instances deadens the sufferings of the patient. The present method secures a much higher tolerance of atropine, which appears to be the factor which renders withdrawal painless. Indeed, it is not too much to say that as skill is developed in meeting the various emergencies which may arise, the majority of patients can pass through the treatment without an hour of uneasiness. A very important factor in attaining this result is the cautious manipulation of the doses of the habit-forming drug. Small supplementary amounts are kept in readiness so that the patient is not allowed to suffer. In practice, a certain degree of atropine tolerance seems to enable a given level of withdrawal to be painless; as tolerance develops this level gradually sinks, and the patient remains perfectly comfortable so long as rapidity of reduction is kept within this limit. While such elaboration of technique adds greatly to the trouble expended upon each individual case, I claim that the patient's comfort is well worth securing. It would seem, also, from the after-history of the small series referred to, that the more important question of permanency is very favourably influenced.

London W. 1.

G. LATCHFORD SCOTT, M.R.C.S.

### FOREIGN BODY IN THE BLADDER

THE following case of a foreign body with secondary phosphate calculus imbedded in the urinary bladder is worthy of record.

A girl aged 11 was sent to me for cystoscopic examination with a tentative diagnosis of renal tuberculosis.

She had been seen four weeks previously by her doctor to whom a history of three months incontinence of urine was given. He found her suffering from pruritis and albuminuria and as no improvement took place under medical treatment a tuberculous infection was suspected and a further investigation was advised.

The child appeared to be very ill and toxic. I could obtain no definite history from her or her mother as to how the condition started. The child struck me as being unusually shy and secretive and of rather dull intellect for her age. The tempera-



ture was 105° the pulse 34 and the respirations 35. Micturition was frequent but painless. Complaint was made of a dull ache in both lumbar regions and there was tenderness on palpation over the hypogastrum. The urine was foul and alkaline albumin and pus were present in large quantities and casts were seen under the microscope.

I suspected a foreign body of some nature in the bladder. X-ray examination revealed a hairpin encrusted with phosphatic material with the points directed towards the base of the bladder (see photograph). I removed the hairpin through a suprapubic incision and washed out a considerable amount of foul phosphate debris. Suprapubic drainage and daily lavage cleared up the condition and the wound closed in three weeks. The urine was then quite clear free from casts and normal in every way.

GUY CHAMBERS, F.R.C.S.

Honorary Surgeon, Isle of Wight County Hospital.

### THE USE OF QUININE BIPHENYLDROCHLORIDE IN OBSTETRICS

SINCE Dr S. Gordon Inker recommended the use of quinine biphenyldrochloride in the treatment of puerperal pelvic infection I have employed it with success, though the number of cases is too small to justify any dogmatic assertion. Since the injections can be made after effects this treatment should follow I think every difficult labour. I append a short note of two cases.

A primipara more than 30 years of age was delivered after a difficult instrumental labour in which I had no help at all. Twenty-four hours later she had a rigor so severe pains in the head and abdomen and a temperature of 104°. I gave one injection and the temperature had fallen to 99° by the next day. There was no further trouble and she was able to suckle her child. A primipara not seen till 1½ hours in labour was found to have fibroid which obstructed delivery. Caesareanotomy was performed under most adverse conditions. One injection of quinine was given immediately after delivery. The temperature rose to 99°.

and the pulse to 100, on the fourth day, but the patient was perfectly comfortable throughout the puerperium and was able to rise on the ninth day.

Other instances could be cited. Since the injections are painless I venture to think that it is well worth while to employ this treatment whenever it has been necessary to intervene in the course of labour. The dose is 5 grains and the injection should be made into muscle.

Lambister, Radnorshire

O STEEL, L.M.S.S.A.

## Reports of Societies.

### RECENT ADVANCES IN TOXICOLOGY

At the meeting of the Medico-Legal Society on October 27th Sir WILLIAM WILCOX, the new President, delivered his address from the chair, which was chiefly a review of recent advances in toxicology.

After some reference to the history of the Society and the value of its work he pointed out how necessary it was in forensic medicine to eliminate all possible risks of fallacy in the scientific tests employed, and paid a tribute to the work done in chemistry, physical chemistry, and physics, saying that most of the new methods and tests used in medico-legal science were really the application of principles already worked out in the pure sciences. But in forensic medicine the practicability of a test had also to be considered. Scientific research from time to time elaborated new and important tests, but their practical application in medico-legal investigation was not always easy. The recent work on the examination of alcohol in the urine as a guide to alcoholic intoxication, for example, was important, but it was not easy to see how this work could be applied in police court cases.

With regard to toxicological advances, he instanced, in the first place, the work on arsenic. One of the latest advances in toxicology was the electrolytic test for the detection of minute quantities of this poison. This superseded the use of zinc, which had been necessary in the earlier tests, and which always left a doubt in the mind as to the possibility of arsenic appearing from some impurity in the metal. Platinum electrodes were now employed, or, in further modifications, said to be improvements, lead, mercialized lead, or mercury electrodes, but in any event the electrodes were now entirely above suspicion. The Seddon case was the one in which the electrolytic test was first used in determining quantitatively the amount of arsenic in the organs of the victim. In the Armstrong case, which was also one of acute arsenical poisoning, the interest arose from the fact that the arsenic would never have been suspected as the cause of death in the case of Miss Armstrong, who had already been dead for a year, had not Armstrong made an attempt to poison another person, who was given an approximately fatal dose of arsenic, and whose symptoms recalled to the doctor those which he had observed in the case of the woman a year previously. On exhumation it was found that a dose much larger than the fatal one had been taken twenty-four hours before death, and from its distribution in the body it could be said almost exactly when the fatal dose was given. Sir William Wilcox also mentioned that, five years ago, he was consulted by an Indian official who had come home on account of an obscure illness which could not be diagnosed in India. He cut off some of his hair and had it analysed, and it was found to contain traces of arsenic. The man was really suffering from arsenical poisoning, and the occasion of the poisoning was traced back to a date two months previously, before he left India, when his cook, under the influence of political agents, had endeavoured to assassinate him.

Sir William Wilcox then went on to refer to the arsenobenzol compounds. He said that since Ehrlich's discovery of salvarsan in 1910 innumerable arsenobenzol derivatives had been introduced, but none of them had proved superior in therapeutic value to the original salvarsan. The compounds had become definitely established as the most effective remedy for the treatment of syphilis, and had proved of great value in the treatment of other diseases, such as relapsing fever, also. But the introduction of this

powerful remedy was followed by some instances in which the drug was found to have a toxic action, and investigations showed the necessity for close inquiry into the purity of the preparations. He next spoke of liver poisons, and mentioned a fatal case of toxic jaundice which came under his observation during the war. The patient had worked at an aeroplane factory at Hendon. On examining the conditions obtaining at that factory, it was found that tetrachlorethane was one of the substances in which cellulose was dissolved. Experiments carried out on rats showed conclusively that this was the substance which must be incriminated, the rats submitted to the vapour showed incipient toxic jaundice, with degeneration of the liver cells, and definite signs of hepatitis. Immediate modifications were made in the ventilation of the factory, which reduced the danger, and shortly afterwards it was found that amyl acetate could be substituted altogether for tetrachlorethane, and there were no more cases of toxic jaundice.

One of the striking advances in toxicology had been the improvement in methods for extracting alkaloids from viscera. It was realized to-day how important it was to do this work in low temperatures, if the work was done at a temperature above blood heat the alkaloid was destroyed by hydrolysis. It was by attention to these details that in the Cuppen case hyoscyne was extracted from the remains, which had been buried for six months. He also touched on lead treatment for cancer, introduced by Professor Blair Bell. The value of this treatment was still *sub judice*, but a good deal of light had been thrown thereby on the toxic action of lead, and views on lead poisoning had to some extent been modified.

Turning to new drugs, Sir William Wilcox said that there was a tendency to-day, when a person was ill, instead of giving him good, old-fashioned remedies, to select for use some of the new and much vaunted drugs of foreign manufacture with which this country was flooded, and unfortunately these drugs were allowed to supersede the old and well tried remedies. The best example was the barbituric acid and veronal group of compounds. Their name was legion, and they were introduced on the market with glowing advertisements, and were said to be perfectly harmless. He was not going to say that these drugs were of no value, because if used properly they were of value, but they were dangerous and toxic drugs, and he had endeavoured to call attention to the need of care in their use. From 1905 to 1925 there were 257 cases of fatal poisoning from these drugs, and there appeared to be no sign of diminution, but, on the contrary, the numbers were likely to increase. Numerous cases of addiction to these drugs had also been recorded. Then, again, there were the new organic compounds for all sorts of conditions and diseases which were poured into this country, and many of which were really powerful toxic agents. He thought the public ought to be protected to a greater extent than it was. He was informed on good authority that fine chemical and proprietary remedies were imported into this country in enormous quantities from abroad, with little restriction as regards duty, and no other restriction, whereas, on the other hand, similar products of British manufacture were subjected to such hampering restrictions and duties as to render the exportation of British remedies impossible.

A drug recently employed was thallium acetate, which had the remarkable property, in carefully calibrated doses, of removing from the body all the hair which was under the control of the sympathetic system. He had seen serious effects ensue from taking a full dose of this drug, and it seemed as if the possibility of idiosyncrasy and severe toxic symptoms must arise. Was it wise to employ so powerful a drug in full doses for diseases which were not mortal? With regard to physiological principles used therapeutically, insulin was a very powerful substance, of which only a minute quantity had to be used under most perfect control. The question of the toxicological detection of substances of this class, adrenaline and so forth, for forensic purposes had not yet arisen. The toxicological detection of bacterial toxins for forensic purposes might be a field of work for the toxicologist of the future.

In conclusion, Sir William Wilcox touched upon a few advances in forensic medicine apart from toxicology. Advances had been made in the detection of blood stains,



and it was now possible to say from an examination of a stain from what human group as regards agglutinating properties the blood had originated. In rounds from firearms chemical analysis of the projectile used now enabled one to say, by examining the marks inside the barrel which left a definite impression on the bullet found, whether the discharged bullet was or was not fired from a particular pistol. The application of ultra violet light in forensic investigations promised to be of great value. By this means the fluorescent properties of certain substances often served for their immediate detection and different kinds of paper, for instance which were indistinguishable by ordinary light, revealed their differences under ultra violet rays.

## MEDICAL BILIARY DRAINAGE IN GALL TRACT DISEASE

At the meeting of the Section of Medicine of the Royal Society of Medicine on October 25th Dr VINCENT LYON of Philadelphia described the technique and usefulness of medical biliary drainage in gall tract disease illustrated by a cinematograph film. Dr A. F. HURST was in the chair.

Dr Lyon said that many questions of diagnosis and the most appropriate plan of management would remain unsettled until the existence of cholecystitis was recognized at an earlier stage. Disease of the gall tract and its treatment had been a controversial shuttlecock and closer co-operation between surgeons and clinicians was necessary. There was a stage in the disease when surgery was unnecessary and perhaps harmful, a stage when it was indispensable perhaps even for the saving of life and a stage in which surgical efforts had been exhausted and non-surgical measures alone were of service to the patient. There was need for better judgement in the selection of each patient for surgical, non-surgical or combined treatment, and for better team work. Dr Lyon then illustrated, with the aid of moving pictures, the passing of the duodenal tube and the procedure attending biliary drainage and duodenal lavage, including the microscopical examination of the specimens of bile obtained. He also claimed that apart from its value in the diagnosis of some forms of cholecystitis and associated gall-tract disease the procedure of non-surgical drainage of the gall bladder by the use of irrigations of magnesium sulphate into the duodenum had a therapeutic value in a large number of conditions. He declared that biliary tract drainage when properly performed was valuable in the treatment of relapsing cholangitis particularly when a cholecystectomy had failed to relieve, the condition could often be cured without resorting to secondary operations provided that there was no evidence of residual stone in the common or hepatic ducts. When proper judgement was used in the selection of cases many patients with quiescent cholelithiasis might be restored to satisfactory health by this means. In some cases of gall-tract disease and quiescent cholelithiasis when surgical intervention had been precluded the non-surgical drainage had been substituted with satisfactory results. Another condition which could be checked by this treatment was persistent post-operative ileus and vomiting which ceased, sometimes after the first few hours of drainage, and always in a day or two. Simple catarrhal jaundice usually cleared up promptly in from two to seven days after the obstructive blocks of mucus had been removed. Gall bladder and duct catarrhs with sub-infection could often be cleared up and more serious pathological conditions prevented. The cholecystitis which was a complication of acute fevers often responded favourably to the treatment. There was also a large group of patients from whom the gall bladder and appendix had already been removed, and who suffered from hepatic or intestinal toxæmia and gave vague histories of various disorders in the past. The patient, very frequently medical drainage, colonic irrigation and dietetics secured much better results than emolument or other drugs. In association with other measures some patients with chronic neuritis and arthritis had been greatly improved particularly joint cases in which there was some infection from the liver or intestine. In the group including typhoid carriers this

treatment had also been found helpful. Dr Lyon instanced several other conditions as likely to benefit, mentioning that in a few cases of non-traumatic epilepsy, especially in young adults, seizures had been greatly lessened in frequency and severity when this method was tried, although various drugs usually employed in such cases had failed to relieve. The fundamental truth to be realized was that gall tract disease was not always—perhaps not often—a clinical entity confined solely to the gall bladder and bile ducts. Often it involved the liver, pancreas, duodenum, intestine as well as the cardio-vascular system. The crux of the therapeutic problem lay in the proper selection of patients in the various stages of gall tract and associated disorders for whom proper surgical, non-surgical, or combination methods were adopted. Dr Lyon described certain vicious circles which operated in the continued ill health or relapses of the victims of chronic gall tract disease and the reasons which had led him, after having previously used the method of drainage only occasionally, with results which stopped short of success to apply it intensively, under suitable control.

Dr A. F. HURST said that for some years past he had been very much interested in Dr Lyon's method from the point of view of diagnosis. He had gained the impression that it was of the greatest value and enabled a non-surgical mild type of cholecystitis to be recognized when it had hardly been discernible before. This was quite a frequent condition and in his view one of the three most common causes of chronic dyspepsia. He doubted if Dr Lyon's method of treatment had as wide an application as was suggested. Some cases of catarrhal jaundice cleared up in from two to seven days even though this treatment had not been employed. With regard to the less radical methods of non-surgical biliary drainage, Dr Hurst added it appeared to be quite clear that the gall bladder would contract after magnesium sulphate had been given by the mouth and in many of the milder cases of chronic cholecystitis it seemed to him that the results of treatment of that kind had been admirable. With regard to the cause of infections of the gall bladder, his own experience was that the vast majority were due to aberrant forms of *B. Coli*. *B. staphylococcus* was hardly ever found. This however, was contrary to some observations at the Mayo Clinic.

Dr J. W. McCREE said that Dr Lyon's method, while largely followed in America had made slow advance in this country where there had been some advance in diagnosis but not in treatment. He thought that there was no doubt of the importance of the method in diagnosis, but he was inclined to think that it did not pass the therapeutic value which Dr Lyon had supposed. In certain cases it was no doubt, useful, but the method which he himself had employed was simply the administration of magnesium sulphate by the mouth.

Dr F. A. KNOTT described an investigation into the diagnostic value of this method which had extended to more than 400 cases. The results had shown that as a test it was thoroughly practicable. Just over three-fourths of the specimens were noted as satisfactory—that is to say it was possible to obtain contrast specimens of the duodenal contents which were relatively free from bile and of the gall bladder bile (dark green) after magnesium sulphate. It had not been possible in this investigation however, to distinguish as Dr Lyon had done between different sorts of bile the bacteriological tests were made on what was assumed to be gall bladder bile. Out of these 411 cases according to the clinical notes, just over 100 cases of cholecystitis were detected.

Dr A. C. COWDIS said he had used the method rather extensively for diagnosis. He had tried it also in treatment but without much success and the patients finally asked for surgical intervention. A combination of magnesium sulphate and pectone had furnished good results clinically, and was a simple method which could be tried in all these conditions. Injections of pituitrin were also said to have a certain action in provoking evacuation of the gall bladder.

Dr T. LEON BENNETT thought that Dr Lyon deserved thanks for reasserting the importance of the catarrhal factor in gall-bladder pathology, which had been overlooked in recent years. The sulphate side of the infection had

been emphasized too much, and Dr Lyon had done well to demonstrate that pathological changes taking their origin within the ducts and spreading upwards played a very real part in the picture of liver and gall-bladder disease. Dr Lyon had also made clear the importance of a more thorough drainage of the capillary tree than was usually accomplished. His own experience was that in the milder cases of cholecystitis very great apparent relief followed the oral administration of magnesium sulphate, olive oil, and other stimulants, so far back as the days of the Romans the therapeutic advantages of magnesium sulphate under such conditions were recognized. The sprays of Europe were perhaps the best testimony that a very definite benefit was to be derived from magnesium and possibly other salts in dyspeptic conditions.

Dr Lyon in reply, said that in the Jefferson Hospital many patients had pleaded to be kept on the battery diuretic treatment, even after it had been definitely decided that they ought to be treated surgically, because of the symptomatic improvement which made them unwilling to undergo operation. It was true that magnesium sulphate by the mouth had been given for centuries, yet many of the patients who came to the clinic in America were persons who had spent long periods in European spas. Olive oil also had been given therapeutically for many years by the mouth.

### THE EPIDEMIC CONSTITUTION

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine, held on October 28th, the President, Dr S. Moxon Corbett, F.R.S., in the chair, Dr E. W. Goosvenor read a paper entitled "The epidemic constitution."

Dr Goodall remarked that recent years had seen a revival of a doctrine which had apparently died out in this country not long after the middle of the nineteenth century. The doctrine of epidemic constitutions was not seriously discussed in the early days of the Epidemiological Society (now the Section of Epidemiology and State Medicine of the Royal Society of Medicine), although it was erroneously alluded to in 1863 and 1874 by Inspector-General Robert Lawson, and in 1893 by Dr J. F. Payne, who expressed himself as being "very sceptical as to the reality of any such phenomena." The latest reference in an English textbook of medicine appeared to be that of Bristowe in 1864. Recently Sir William Hamer and Dr F. G. Crookshank had resuscitated the doctrine, and the epidemic constitution had been referred to in an annual report of the chief medical officer of the Ministry of Health. The particular phrase "epidemic constitution" seemed to be due to Sydenham, although Sydenham, to some extent, derived the conception from Hippocrates. It was, however, an error to seek to identify the epidemic constitution with the "something divine" of Hippocrates. Hippocrates's word was *latetastasis*, and, unfortunately, the English word "constitution" had been used by translators to render not only *latetastasis* but also *phusis*. In Dr Goodall's view Hippocrates meant by the *latetastasis* of a season the state brought about by the concurrence of certain weather conditions. He invoked no mysterious agent to account either for diseases or epidemics. Galen made no advance upon the Hippocratic teaching, and although Prætorius provided us with another instrument of research when he very clearly explained the modes by which infection could be spread, no notable advance in our knowledge of the epidemic behaviour of diseases was due to him. Sydenham divided the prevalent epidemic diseases into two groups—the stationary and the intercurrent fevers, the former depended upon the epidemic constitution. The existing constitution not only determined what should be the stationary fever, but impressed its characters, which were manifest especially in the stationary fever, upon such intercurrent fevers, and even other diseases as happened to be prevalent at the time. Thus, during one period—1667 to 1669—the constitution was a virulose, and so small-pox was the stationary fever, but amongst the intercurrents prevalent during that constitution was a certain continued fever, and, towards the end of the period, a diphtheria also. In accordance with the

doctrine both these diseases exhibited some of the features of small-pox, without, however, the eruption. This was Sydenham's account of the manner in which an epidemic constitution made itself felt, but what he meant by the term "epidemic constitution" could not be ascertained, it was a vague something over and above the more obvious causes of disease, the presence of which was necessary to bring about an epidemic. Sydenham's new points were that the nature of the constitution varied from time to time, that it determined the prevailing epidemic and imparted its characters on concurrent minor epidemics, and even on diseases which were not necessarily epidemic at all. In this conception Sydenham was to some extent anticipated by Galeazzo di Santa Sofia in a book published in 1514. The most prominent modern supporters of the doctrine, Sir William Hamer and Dr F. G. Crookshank, had stated their views briefly but clearly in a work entitled *Influenza*, edited by Dr Crookshank and published in 1922. According to Dr Crookshank, by "epidemic constitution" "we really mean to imply all the correlated symptomatic disorders and their consequences manifested in a community or population during a period of time that is not arbitrarily selected, but has natural duration and limitation and during which peculiarities and occurrences of distinctive nature arise." In Dr Goodall's opinion this was rather a definition of what Sydenham meant by the stationary and intercurrent fevers, a prevalence of diseases brought about or influenced by the constitution, than a definition of the constitution itself. It appeared to Dr Goodall that upon this Dr Crookshank's view was much the same as Sydenham's, and consequently vague. Both Sir William Hamer and Dr Crookshank, "who started as followers of Sydenham, have far outstripped their master, and have now set out in quest of the cause not only of an epidemic, but of the cause of the cause of an epidemic, the cause of the veritable epidemic constitution itself." In Dr Goodall's view the revivalists had not helped us much towards understanding what Sydenham meant by the epidemic constitution, nor provided a satisfactory substitute. Dr Goodall had asked himself whether in his own experience the characteristics of the prevailing stationary fever were impressed upon the intercurrents. In particular, he had paid special attention to the cases admitted to the North-Western Hospital at Hampstead during the winter and spring of 1924-25. Influenza was the stationary fever of the period, whooping cough, scarlet fever, diphtheria, mumps, rubella, and chicken pox were the intercurrents amongst the infectious diseases. He had found no evidence whatsoever that these last-mentioned diseases bore any trace of influenza, and that experience was the experience of former years.

Dr Goodall rejected the doctrine of the epidemic constitution as set forth by Sydenham and the revivalists. He thought that the genesis of an epidemic was not dependent upon a single cause, nor upon one outstanding cause aided by minor causes, as Sydenham surmised. An epidemic was the result of the interplay of several factors, the kind and number of which varied with each disease. Any conception we might now have of an epidemic constitution or its equivalent could not be that of a single agent. Dr Goodall thought the term "epidemic constitution" should be abandoned altogether and replaced by Peters's "epidemic potential," with Professor Popple's extended definition—namely, "the balance of interacting forces which tends towards the occurrence of an outbreak of disease."

Sir William Hamer found Dr Goodall's paper stimulating, and recalled the respect in which Sydenham had regarded the Dr Goodall of his own time, perhaps in the star of his critic. Sir William regretted that Dr Goodall had not devoted more of his great clinical and epidemiological skill to the study of the interrelations of the various illnesses associated in time with influenza, and he pointed out that from the literary point of view there was no more than that from the literary point of view there was no more than Sydenham but really three Sydenhams, expressing the different developments of Sydenham's experience. Professor M. Greenwood agreed with Dr Goodall that the phrase "epidemic constitution" was misfelicitous. He agreed that Sydenham's theory was of no value. He thought, however, that the attempts of Sir William Hamer

and Dr Crookshank to show in order in the sequence of epidemics were significant although in his view, it was not likely that such attempts would be wholly successful until more had been learned by an application of the experimental method to herds of short-lived animals than from, of epidemiological problems less complex than those of human epidemics.

Professor W. C. COTTELL was in general sympathy with Dr Coddall, but thought that Sir William Hamer's criticisms of bacteriological interpretations had been very useful.

Dr J. D. ROLLSTON referred to some historical applications of the term "epidemic constitution." Fleet Surgeon W. E. HOME thought it was really impossible to form any clear idea of what medical writers of the eighteenth century really did mean, and that the use of vague indefinite terms had done, and might do, considerable harm.

The discussion was closed by the President, who congratulated Dr Coddall and the Section on the paper and the discussion it had provoked, and Dr Coddall himself replied.

## Reviews.

### ENDOCRINE GLANDS

THE combination of early physiological work, clinical experience and wide reading has enabled Dr W. JACOBSON Brown to write a clear and philosophical handbook full of suggestive ideas on the difficult subject of *The Endocrines in General Medicine*. Attractive from its potentialities and therefore open to rash speculations in the armchair, the therapeutic use of endocrine preparations is much in need of such an authoritative and well considered opinion, which strikes a judicious mean between the keen clinician and the cautious if not agnostic physiologist. Thus while sceptical about the uses of thymus, pineal, prostate, placenta, and mammary gland, he is favourably impressed with the future utility of gonad extracts. The methods of preparation and administration of the extracts, which have such an important bearing on the results, are, of course, discussed and there are useful comments on the dosage and therapeutic scope. The endocrine balance and the pluriglandular syndromes are naturally mentioned, and there is a useful table showing the types of disturbed endocrine balance in childhood, thus overactivity of the anterior lobe of the pituitary is held to be responsible for gigantism and for hemi hypertrophy, whereas its deficiency accounts for the Lorrain type of infantilism. But in the second edition, which will certainly be called for soon, a more extended discussion in a special chapter of that difficult problem of the pluriglandular syndromes would be a welcome addition.

The chapter with the rather arresting title "The retarding glands" deal with the thymus and pineal, which delay sexual maturity in the interests of more prolonged somatic development presumably by influencing in some way the endocrine balance, though there is not any evidence that they provide an internal secretion. Prophylactic measures in children thought to have status lymphaticus are suggested and the rare syndrome of macrogenitosomia praecox characterized by premature psychical, physical, and sexual development is ascribed to pineal defect. Elsewhere the adrenal cortex is regarded as a retarding agent in normal childhood defect being responsible for progeria, and overaction as in hyperplasia and tumour for virilism. This delicate discrimination between the contrary effects of normal and pathological activity of the cortex on development is of considerable interest. The clinical manifestations of hypothyroidism receive full attention, and reference is made to the rheumatic character of some of them, the explanation being that they are really due to myxoedematous infiltration of ligaments and fasciae.

There are many other interesting points to which attention might well be called, but enough has perhaps been said to show that this is a book to read.

### THE SCIENCE AND PRACTICE OF SURGERY

To attempt to cover the whole of the science and practice of surgery in two volumes of reasonable dimensions is an ambitious project. In their book on *The Science and Practice of Surgery*, Mr W. H. C. POMAN and Mr PHILIP MITCHENER, both of St Thomas's Hospital, greatly daring, have essayed this task with the intention of placing before the student a textbook sufficiently comprehensive to enable him to negotiate the higher examinations of surgery and at the same time providing the medical practitioner with a work of reference.

They have very nearly brought off a great success, for the book is well balanced, and includes chapters on such subjects as diseases of the eye, ear, nose, throat, as well as very useful articles on inflammation, sterilization, bacteriology and immunity.

The various sections, many of them written by specialists in the several branches, present a good deal of uniformity of style, and what perhaps is more important, the amount of room devoted to individual subjects bears a reasonable relation to their respective importance.

It is, of course, obvious that in an enterprise such as this insuperable difficulties must present themselves in steering a course between the dogma which is necessary and desirable for students and the more elastic discussion of pros and cons that one expects to find in a work of reference. On the whole the balance between the two is well maintained, learning if anything a little in the direction of dogma which no doubt is wise, as student readers may be expected to be in the majority.

With regard to arrangement, the general principles of surgery are considered in the first volume, and in the second regional diseases and their treatment are carefully described each section being prefaced by an account of the surgical anatomy and the physiology of the region or organ under consideration.

The illustrations are extremely numerous, but vary in quality, for some are exceedingly good while many are distinctly bad. It is difficult to understand the value of retaining such examples as Figs. 2, 15, 21, 26, 27, 50, 55, 94, in the first volume, and several others of similar character in the second.

No doubt they will be improved in a later edition, which will certainly soon be called for. Probably the authors will take that opportunity of amplifying the description of such subjects as post-operative thrombosis, gun-shot wounds of the bones, Cushing's work on the pituitary, the injection treatment of varicose veins, the treatment of hernia by fascial grafts and other sections that appear to have received less adequate consideration than might be desired by at any rate the post-graduate student. No doubt also the authors will by that time have informed themselves that their undue pessimism as to the value of radium in the treatment of cancer of the tongue (p. 197) is hardly justified by the facts.

There is a good table of contents in each volume and an excellent index, but there is no indication in either volume as to what is to be found in the other, the value of the complete work might be considerably enhanced were a composite index for the whole book to be included in each volume, together with a table of contents showing the general scope and arrangement.

### "THERAPEUTIC MALARIA"

THE employment of an artificially induced malarial infection as a therapeutic agent has become so widespread in recent years that such an account as Dr RUDOLF has given of its technique, results, and possible complications in his *Therapeutic Malaria*,<sup>2</sup> will be widely welcomed.

Only a few years ago general paludism of the type was regarded as a necessarily fatal disease with a duration,

<sup>1</sup> *The Science and Practice of Surgery*. By W. H. C. POMAN, M.A., M.B., M.Ch. Cantab., F.R.C.S. Eng., F.R.S. Ed. and Philip H. MITCHENER, M.D., M.S. Lond., F.R.C.S. Eng., Vol. I. General Surgery. Vol. II. Regional Surgery. London, J. and A. Churchill, 1927. (Pop. 8vo. Vol. I. Pp. viii + 725. 650 figures. 9 plates. Vol. II. Pp. viii + 550. 250 figures. net £5 a volume.)  
<sup>2</sup> *Therapeutic Malaria*. By G. M. RUDOLF, M.R.C.S. L.P.C.P., D.P.H., D.P.M. Oxford Medical Publications. London. Oxford. Oxford University Press, 1927. (Demy 8vo. Pp. xi + 223. 55 figures. 2 plates. 12. 6d. net.)

<sup>1</sup> *The Endocrines in General Medicine*. By W. JACOBSON BROWN, M.D., D.Sc. F.R.C.P. London. 80 pp. viii + 127. 6d. net.

generally, of from one to three years, a disease in which there was little prospect of betterment beyond the possible occurrence of a temporary halt in the march of its progress towards paralysis, dementia, and death. Since the introduction by Dr Wagner-Juregg of Vienna of malarial therapy a complete change has been wrought in the attitude of physicians towards this disease, and at the present day a case of general paralysis is one which requires and receives vigorous treatment, by far the most hopeful form of which is that by inoculation with benign tertian malaria.

Dr Rudolf is an assistant medical officer at Claybury Mental Hospital, London. It was in the summer of 1923 that his chief, Dr G. F. Baillam, decided to introduce malarial therapy at this hospital—time when this mode of treatment was still in its infancy. Dr Rudolf has therefore had ample opportunity, of which he has made full use, to study the course of general paralysis as influenced by malarial infection, and to make observations of its sequelae over a length of years.

Dr Rudolf, like, we believe, all others who have used this treatment, is of opinion that the earlier the case of general paralysis is treated the better the prognosis, and quotes Wagner-Juregg as saying that if only early cases are treated nearly 100 per cent of remissions can be obtained. Interesting evidence is also provided of the value of malarial therapy in tabes and neurosyphilis, and cases are quoted of syphilitic cerebral thrombosis treated at Claybury Mental Hospital with marked improvement.

It was to be expected that a method of treatment which had produced such striking results in general paralysis should be tried on other forms of mental disorder. Wagner-Juregg had reported an early acute case of dementia praecox as apparently cured after treatment. Dr Rudolf has observed that his cases of dementia praecox at Claybury, whilst showing temporary benefit as the result of this treatment, soon afterwards relapsed into their former state.

The author takes care, in discussing the mental changes that occur during the malarial treatment of general paralysis, to keep in mind the mental aspects of both diseases, malaria and general paralysis. Some patients developed auditory hallucinations after the fever, and these persisted for many months. Dr Rudolf considers this to be due to the general paralysis and not to the malaria, although hallucinations are considered rare in the untreated disease. The mental and physical and pathological changes occurring as a result of malarial treatment receive full consideration. The author's discussion of the technique employed is succinct and reliable. The various safeguards against the occasional dangers of this therapy are fully stated.

The whole book provides an admirable summary of all the important recent work on this subject, and is enriched by two coloured plates and numerous diagrams.

#### "RECENT ADVANCES IN ANATOMY"

THE character of the contents of *Recent Advances in Anatomy*,<sup>1</sup> by Professor H. WOOLLARD, now of Adelaide, is rather unexpected, for it deals, as will be seen, mainly though not quite exclusively with microscopical structure, the preface, indeed, confesses that many aspects of anatomy—such as the racial and constitutional, anthropological, large veins of comparative anatomy, and much embryology—are either omitted or mentioned only incidentally. Much that is usually taught in physiological courses is set forth clearly and attractively in this well written volume—for example, the chapter on oestrus, ovulation and menstruation, the account of the origin of the blood cells, and the description of the cerebrospinal fluid. The first chapter, entitled "microdissection," deals with the instruments employed in the dissection of individual cells and then with mitochondria, the recently discussed Golgi apparatus, and the chromosomes. This chapter, like all the others, has a short but useful list of references for the reader who desires to follow the subject to its original sources. The second chapter is devoted to a description of tissue culture, and in another the morpho-

genesis of nerve fibres is considered. In the chapter on "growth centres and organizers" some of the problems recently investigated by experimental embryology, especially in connexion with the eye, are set out and illustrated by pictures taken from Spemann's paper.

The reticulo endothelial, or, as it is preferably called, the macrophage, system is fully described, its characteristic movements—vital staining, phagocytosis, and amoeboid movement—but its functions are admitted to be constantly expanding. The anatomy of the extrapyramidal system is given in some detail, with an account of S. A. K. Wilson's work on the fibre connections of the corpus striatum and Elliot Smith's researches into the comparative anatomy. The symptoms of extrapyramidal disease are summed up as muscular rigidity unaccompanied by any change in reflexes or in sensation, and involuntary movement ranging from tremor to athetosis. In the chapter on proprioception and epicritic sensation the subject, as represented by Sir Henry Head's opinions in 1920, is reviewed in the light of the more recent publications of Professor Stoppford, Dr E. D. Adrian, and Sir John Purdon.

The last chapter deals with x-ray anatomy, and the points out the number of bony variations which may mutate features. The association of hypothyroidism with pseud-epiphyses, atypical epiphyses, and accessory nasal elements is cautiously discussed. Reference is made to the light thrown by radiology on the position of the normal stomach, and the existence of two forms of stomach—the hypersthenic or highly placed and the asthenic or very low stomach—depending on bodily constitution. This constitutional influence holds sway as regards the other abdominal contents, and the same types of position have recently been shown to exist in the gall bladder by L. Davis of University College, London.

#### TEXTBOOKS OF MATERIA MEDICA

NEW editions of two very well known textbooks of materia medica have just appeared. These are the nineteenth edition of HALE-WHITE's book<sup>2</sup> and the thirtieth edition of that by BATE and DILLING.<sup>3</sup> So many generations of medical students have been familiar with these volumes that it is unnecessary to say anything regarding their general scope and quality. In point of seniority Bate and Dilling has the advantage, since it first appeared in 1884, and the first edition of Hale-White appeared eight years later. In the case of both books the new editions include numerous important new drugs. Sir William Hale-White has introduced sarsaparilla and the lead treatment of cancer, in both cases, however, he has adopted the policy of a cautious reserve in describing the results obtained with these drugs. In the case of protein therapy he has given a favourable verdict for its use in hay fever, but has been less certain of its value in asthma.

It is six years since the previous edition of Bate and Dilling appeared, and hence the present volume contains a long list of new drugs, of which insulin is the chief. Novarsol, sarsaparilla, Bayer 205, typharamide, and mercuriochrome are the chief new synthetic drugs included. Some other new uses or new drugs not mentioned in the morrhuaes in tuberculosis, carbon tetrachloride in ankylomiasis, and the chaulmoogates in leprosy and in mykylomiasis, acetylene and propylene in anaesthesia, butyn and borocaine in local anaesthesia, malarial therapy in neurosyphilis, scarlet fever antitoxin, protein therapy, and ultra-violet light treatment. This list of new drugs shows how thoroughly the volume has been brought up to date, and it also indicates how important are the advances that have been made in recent years in therapeutics. Moreover, the subjects in the list indicate the remarkable variety of the forms of therapeutics that have been introduced in recent years.

As has been already stated, both books are so well known that it is superfluous to proclaim their general merit, but enough has been said to indicate that the new editions have been brought completely up to date.

<sup>1</sup> *Materia Medica, Pharmacology and Therapeutics*, by H. Woollard, M.D., London, 1927. (Fcap 8vo, pp. vii + 712, 10s. 6d.)  
<sup>2</sup> *Materia Medica and Therapeutics*, by W. J. Bate and W. J. Dilling, M.D. (Hon.) and M.D. (Hon.), F.R.C.P., and W. J. Dilling, M.B. Ch.B. (Hon.) Third edition, revised, London, 1925. (Fcap 8vo, pp. x + 652, 6s. 6d.)

<sup>1</sup> *Recent Advances in Anatomy*, by H. Woollard, M.D., London, 1927. (Fcap 8vo, pp. vii + 712, 10s. 6d.)

## BIOLOGICAL CONSTANTS

The first volume of *Tabulae Biologicae*,<sup>1</sup> edited, with the assistance of ninety contributors by C. OPPENHEIMER and L. PRINGSHEIM, was published about two years ago, and, together with the second, was reviewed last year (1926, vol. 1, p. 832). The fourth and last volume, which has just appeared, contains a mass of information concerning inheritance and variation.

The first 115 pages are devoted to the enumeration of the chromosomes in the different species of plants and animals. This is followed by a review of the chief known examples of Mendelian inheritance, it includes a summary of the known examples of the inheritance of diseases and malformation in man. The volume concludes with an index to the whole work. This index, which occupies 200 pages, is, of course, one of the most important features of a work of reference of this nature. It has been carefully prepared, the key words are given in German, English, and French, whilst the names of species are cross-indexed under Latin and German.

*Tabulae Biologicae* will be found to be of very great value by all workers in biological sciences for it provides an easy method of finding out the chief information that is available on any subject. Its special merit is that it covers all the biological sciences. Many important biological problems are of interest to several branches of science and this work makes it possible to find out what has been done on a given problem, not merely by workers in one science, but by all workers in biological science. The information in it cannot, of course, compare in its accuracy with the physico-chemical constants collected in such a work as that of Landolt-Bornstein, but this is not the fault of the compilers and the collection of this mass of material ought to encourage the determination of biological constants with greater accuracy.

The book is fairly dear, for the volumes are not sold separately and the set costs £12 10s. unbound. Since, however, the volumes consist almost entirely of tabulated matter, their preparation must of necessity have been very expensive. Moreover, it must be remembered that the publishers offered the set at the very cheap price of £5 to those who had sufficient confidence to subscribe to the work in advance.

## NOTES ON BOOKS

The work on *Preventive Pediatrics*<sup>2</sup> by Dr. BORDEN S. VEEDER, professor of clinical pediatrics at the Washington University School of Medicine, forms the fourth volume of the system of clinical pediatrics edited by Dr. Royal S. Orrs Haynes. The book is divided into three sections devoted respectively to the growth and development of the child, including chapters on physical and mental growth, nutrition and diet, hygiene and education, the prevention of disease with consideration of the morbidity and mortality in infancy and childhood, and methods which include pre-natal clinics, infant welfare, the care of pre-school children, and school hygiene. An appendix contains specimens of weight charts, record forms, and a bibliography.

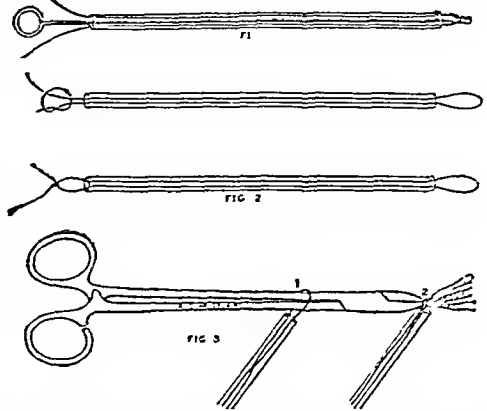
When Sir Jonathan Hutchinson suggested, or reintroduced, to parents the plan of recording in a book their infants' progress, he probably did not foresee the literary and artistic refinements to which the plan might lead. In *The Little One's Log*<sup>3</sup> Lady ERLING has compiled a handsome volume with charming illustrations by Mr. E. H. Shepard. The foreword by Dr. ERIC PRITCHARD is adorned by the inevitable stork which drops an infant lying crouched in a kind of inverted uterus down a chimney pot. The book is arranged with alternate pages of letterpress and record. The information in the letterpress seems sound and the record makes provision for such minutiae as Baby's First Curl. A bibliography of books on the care of the child, and suggestions to the child's library completes the volume. If mothers find the time to keep these records doubtless they will as Dr. Pritchard says meet with their reward.

*Tabulae Biologicae*. Edited by C. Oppenheimer and L. Pringsheim. 100 contributors. In four volumes. Vol. IV. P. 115. W. Junk 1927. (Sup. for 8vo pp. vi + 237 7 maps. £12 10s. the four volumes. 10s. 1s. 6d. separately.)  
<sup>1</sup> *Preventive Pediatrics*. By Borden S. Veeder, M.D., New York, and London. D. Appleton and Co. 1926. (Roy. 8vo pp. x + 235 figures 16s.)  
<sup>2</sup> *The Little One's Log*. By Lady Erleigh. With foreword by Dr. Eric Pritchard. London: W. & W. Partridge and Co. 1927. (Crown 8vo pp. 50 illustrated. 6s. net.)

## PREPARATIONS AND APPLIANCES

## A Ligature Applicator for Tonsillar and Other Deeply Seated Vessels

SM. JAMES DUNDAS GRANT, K.B.E., M.D., F.R.C.S., sends the following description of an apparatus to facilitate the ligature of tonsillar and other deeply seated vessels. It consists essentially, he writes, of a glass or metal tube of about four inches in length and a metal carrier, somewhat longer, with a notch at one end. The ligature preferably of catgut (not long soaked), is doubled and pushed through the tube by means of this carrier (Fig. 1). The projecting loop of the ligature is then secured by means of a pledget of gauze and the wire guide removed.



One loose end of the ligature is then marked by means of ink or a knot in order to distinguish it. A half knot is then made in the other loose end and the marked one pushed through it. The half knot is then tightened (Fig. 2). We thus have a sliding knot round the marked end. The ligature loop (which may be considerably longer than is shown in the illustration) is passed over the forceps with which the bleeding vessel has been clipped and is pushed down by means of the tube till it encircles the vessel. If the marked external end is then pulled, the loop on it will pass down the tube and grip the vessel (Fig. 3). The carrier and tubes have been made for me by A. Charles King, Limited, 34, Devonshire Street, W.1.

## ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the case committee fifty cases were considered and £648 was voted to forty four applicants. Below is a summary of some of the cases relieved.

Widow, aged 67, of M.D. who died in 1921. Her only income is 10s. a week in respect of a son killed in the war. The responsibility of the home falls on a son aged 35 but at the present time he is only earning £2 a week after being out of work for some time. Applicant has had many money losses and she has to keep her daughter at home to look after herself and the cottage (rent of cottage 10s. a week). Voted £24 in quarterly instalment.

Daughter, aged 22, of M.R.C.S. who died in 1907. On the death of her father she took a boarding house which she was obliged to give up in 1925 owing to ill health. In June this year she took another house but unfurnished room, retaining two for herself to carry on a sewing business. Voted £25 to meet rates and to buy some furniture for her room.

Widow of L.R.C.P. who died in 1925. She tries to support herself by envelope address which rarely brings in more than 10s. a week. Total help given £20 and £25 voted in quarterly instalment. This grant is supplemented by the Royal Medical Benevolent Fund Guild which gives 10s. a week.

Widow, aged 59, of L.R.C.P. who died in 1904. Her only income is rent from a house which amounts to 15s. after deducting expenses for repairs. Rent including fire and light £43 per annum. A 1s. for renewal of grant as her income is insufficient to meet her expenses and increased rent. Previous help £10. Voted £10 in two six monthly instalments.

Daughter, aged 64, of M.P.C.S. who died in 1920. Up to 1922 supported herself as a laundress but owing to ill health had to give up work. Income from investments amounts to £50 per annum. Relations give £4. Applicant does not pay any rent but £5 for rates. Voted £15 in four quarterly instalments.

Subscriptions may be sent to the Honorary Treasurer, S.R. Charters, Symonds, at 11 Chandos Street, Cavendish Square, London W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing especially for coats and suits for ladies and girls holding secretarial posts and suits for working boys. The Guild appeals for second hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street W.1.



## LARYNGECTOMY FOR CANCER OF THE LARYNX

SEMON LECTURE BY MR LIONEL COLLEDGE

THE Semon Lecture, under the auspices of the University of London, was delivered in the Barnes Hall of the Royal Society of Medicine on November 3rd by Mr LIONEL COLLEDGE, surgeon to the Ear and Throat Department of St George's Hospital, who took for his subject "The present position of laryngectomy for cancer of the larynx."

Mr Colledge said that laryngectomy had been applied to cases of extrinsic cancer of the larynx, really pharyngeal cancer—that is, to cases in which the growth had originated on the aryepiglottic folds or epiglottis—or combined with partial excision of the pharynx to the post-epiglottic carcinoma of women, and to growths arising in the fossa pyriformis.

For the first class of case—growths of the aryepiglottic folds and epiglottis—if an operation was advisable a pharyngotomy was generally more suitable, for such tumours were situated in the pharynx, and the principle so persistently advocated by Mr Trotter of adequate exposure and removal of the growth rather than of any particular organ must be followed. In the second class—post-epiglottic carcinoma in women—it was not necessarily imperative to sweep away the front of the neck, including the larynx, in order to excise the epithelioma. In the case of a lady, aged 38, after resection of the lower part of the pharynx and upper end of the oesophagus, the resulting defect was replaced by a flap of skin. The larynx remained intact and the open gutter was re-formed into a gullet by a plastic operation. In the third class—tumours of the pyriform fossa—no other operation than laryngectomy was feasible, and a portion of the pharynx, usually a complete segment, must be sacrificed at the same time. This operation of Gluck left the patient in such a condition that a plastic operation must be devised afterwards to re-form the anterior wall of the pharynx.

The performance of laryngectomy upon such cases brought disaster on the operation, and induced Brison Delavan to state some seventeen years ago that up to that time total laryngectomy had added nothing to the sum total of human life. Statistics and case reports showed that no sufficient distinction was drawn between cases of excision limited to the larynx and those in which it had been combined with a partial excision of the pharynx. For example, in the first case of laryngectomy for cancer, reported by Billroth in 1873, the removal included part of the upper two tracheal rings, the epiglottis, thyroid, and arytenoid cartilages, and the lower third of the epiglottis, while in a subsequent case, in a woman of 43, in addition to the entire larynx, the thyroid gland and part of the pharynx and oesophagus were removed. In Langenbeck's first case the hyoid bone and parts of the tongue, pharynx, and oesophagus were removed with the larynx.

A collection of such cases must inevitably be associated with a heavy operation mortality, but in spite of this the following analysis by Crile of cases reported between 1873, the date of Billroth's first operation, and 1901 tended to show a steadily diminishing death rate.

1873 to 1876	12 laryngectomies	1 ultimate cure = 8.33%
1876 to 1886	108 "	21 " " = 19.44%
1886 to 1896	156 "	49 " " = 23.82%
1896 to 1901	30 "	20 " " = 66.67%

Sendzick (*Die bösartige Geschwulste des Kehlkopfes*) gave a similar record of progress.

Recent reports concerning almost entirely cases of intrinsic cancer too advanced for excision of the growth by laryngofissure were far more encouraging, and indicated that in well selected cases, if the operation was performed in suitable circumstances by a surgeon who had made a special study of the technique and subsequent management of the case, the risk was now quite small. For example, Lipka (Madrid) had reported 107 cases with 5 deaths due to the operation, a mortality of less than 5 per cent. Moore and Portmann (Bordeaux) and Mackenty (New York) had each reported a series of 31 laryngectomies without a death, and Mackenty had later reported 102 laryngectomies with 4 deaths, all these four patients being diabetics. Crile had recorded 27 cases with 2 deaths and various

other short series similarly successful had been reported during the last ten years. The most striking figures were those of Gluck, who reported as long ago as 1894 that 23 out of 26 consecutive patients recovered, while in 1914 the total number of his simple laryngectomies amounted to 172, including a series of 72 cases without a death. Soerensen had recently reported the vast total of 700 laryngectomies from this clinic.

Allowing for the tendency towards optimism inseparable from large collections of surgical statistics, it might fairly be assumed that the mortality of the operation would be as low as 5 per cent under the favourable conditions already mentioned, and it was hardly likely to fall much below this figure for so severe an operation. The occasional operator who had not made a special study of this type of operation was likely to be faced with a much higher death rate, and Hajek still considered that the mortality was really in the neighbourhood of 50 per cent. At the present time the operation was almost limited to cases of intrinsic cancer too advanced for any conservative operation—namely, laryngofissure or partial excision. In such cases the pharynx was not invaded, and only such a small part of it had to be removed as was necessary anatomically to enter the larynx, its closure presented no serious difficulty, and there was usually no need for any plastic operation or the use of skin flaps. Many lasting cures in such cases could be claimed.

Such cases of advanced intrinsic cancer included the following types:

(a) Where the disease had extended at all widely into the subglottic region. There was a high percentage of recurrence after laryngofissure in this condition, owing to the difficulty of elevating the mucous membrane below the lower edge of the thyroid cartilage, and the case with which the disease spread through the cricothyroid membrane and crossed the middle line.

(b) Where the disease crossed the anterior commissure and invaded both vocal cords.

(c) Where one or both vocal cords were fixed and there was extension to the arytenoid region. Although fixation of one cord did not necessarily contraindicate laryngofissure yet such cases showed a large percentage of failure, and the question whether this operation or a partial or total excision of the larynx was the appropriate operation must be considered in each individual case. Even laryngectomy, or some modification of it, would result in a better voice and less social disability, but in many cases a permanent tracheotomy was necessary afterwards in spite of the attempt to preserve an airway through the larynx, and there was a greater risk of recurrence.

(d) Where both vocal cords, the ventricular bands, and the subglottic region were attacked and the larynx was choked with growth, no doubt could arise that laryngectomy was the proper operation.

(e) Where the disease had recurred after laryngofissure, though occasionally a second fissure or partial excision might succeed, laryngectomy was generally a more suitable operation and should be preferred to a lesser operation. Mr Colledge had performed the operation seven times on patients who had previously undergone laryngofissure. Of these, four died within a year from another recurrence, one died from heart disease clinically free from any trace of cancer, and two only remained well six years and three years respectively after the laryngectomy. Recurrence after a laryngofissure, therefore, was not so hopeless as had been thought, but the outlook was clearly not so encouraging.

Besides the selection of cases there were certain other considerations, of which the recognition nowdays is influenced the results of operation beneficially.

The decision whether laryngofissure, laryngectomy, or some intermediate procedure was the appropriate operation for the case was of the utmost importance. This decision should be made before any operation was begun and it was left to an exploratory investigation, because laryngofissure preceded by thyrotomy was a longer and more complicated operation than a deliberately planned laryngectomy. If any doubt existed it would generally be found that laryngectomy was required, but each surgeon could be guided by his own views and experience—one inclined to

larynx wherever possible, another determined to place the risk of recurrence beyond every other consideration.

Recurrence after thyrotomy should be extremely uncommon, but no larynx should be sacrificed unnecessarily. On the other hand, the surgeon should not allow himself to be forced into operating on an unsuitable case on the plea that the disease was inevitably fatal.

The general condition of the patient was of the utmost importance, and might be a contraindication in a case otherwise suitable for operation. In this connexion it must be remembered that in elderly people the growth might be present for a long time before ultimately destroying life. In a case observed by Mr Colledge the patient who declined any form of operation whatever, survived four years from the time that the growth was first recognized. The most remarkable case was that of Gleitsman, which had been ultimately recorded by Harmon Smith. A man, aged 53, came under observation with cancer of the larynx, proved histologically, the larynx was successfully removed thirteen years later by Dr Brewer.

Age in itself was no contraindication. A medical practitioner aged 73, passed through the convalescence without any complication or even rise of temperature, and returned to carry on his practice until his death some months later from an unexpected recurrence of the disease at the root of the neck. Generally, however, it was natural that the younger the patient the better was the operation supported. Three of Mr Colledge's patients between the ages of 40 and 50 caused very little anxiety. Those of spare build with long thin necks were better subjects than fat people with short thick necks, and those addicted to tobacco and especially alcohol, were invariably in a poorer position to withstand any severe operation but particularly a laryngectomy.

Prolonged dyspnoea appeared to exercise a pernicious effect on the general nutrition and to cause wasting. Such patients withstood the effects of the operation very badly. A thin wasted man of 56, who had increasing dyspnoea, which would soon have rendered a tracheotomy essential to life, succumbed to sloughing and septicaemia in a week, although he was edentulous and in other respects a suitable subject.

In the operations of pharyngotomy and laryngectomy the wound in the neck was in direct communication with the mouth, and in overcoming sepsis the surgeon was presented with a problem entirely different from that in laryngofissure, in which it was comparatively simple to maintain an aseptic technique. Saliva, reaching any raw surface produced a slough, so that if any leakage occurred healing by first intention was impossible and could only take place by granulation after the sloughs had separated. The presence of infective material in the secretions of the mouth in these circumstances constituted a serious risk, and should in operation be undertaken without removing every septic tooth the wound would certainly be attacked by a severe streptococcal infection, and the patient might rapidly succumb to septicaemia or broncho-pneumonia. The state of the tonsils and accessory sinuses might play some part and their condition should certainly be investigated, but it was the teeth which were all important. The patients frequently had reached an age at which they were either already edentulous or infection of the gums and tooth socket had begun.

The most satisfactory cases were those in which the teeth had been removed and two to three weeks allowed to elapse while the gums healed. The immunity seemed then to have reached its highest point and it was possible to obtain healing by first intention. It was most important to allow a sufficient interval between the extraction of the teeth and the operation. The edentulous also were favourable subjects, but in course of time the immunity to mouth infections seemed to become lower. Patients with really good teeth and gums—an exceptional condition—did well, but there was always some sloughing. Patients with bad teeth and pyorrhoea should not undergo operation until they had been converted into Class I.

A preliminary tracheotomy must generally be avoided but it might be necessary if the patient was exhausted by dyspnoea, not infrequently it had been previously performed and sometimes in the high position immediately

below the second. A preliminary tracheotomy or a palliative tracheotomy should be as low as possible. If a low tracheotomy had been performed the larynx could be amputated from the trachea above the tracheotomy opening and the cannula left in position during healing.

Apart from tracheotomy, if the growth extended low down it might be necessary to remove a few rings of the trachea with the larynx to give an adequate margin below. If there had been no preliminary tracheotomy and the growth caused respiratory obstruction during the operation a laryngotomy tube introduced through the cricothyroid membrane would give relief. This was Botet's advice.

Mr Colledge thought that the epiglottis should always be removed. It became useless and might cause difficulty in swallowing later on, but what was more important it might be the site of a recurrence. In no other operation was the subsequent care of the patient of greater importance.

The objections raised in connexion with the ultimate results of the operation concerned social, physical, and mental disabilities. It had been stated that speech was impaired or reduced to a whisper, that the neck was disfigured, and that there might be a predisposition to pulmonary disorders or even to the aspiration of foreign bodies into the air passages. Initially the mental depression had been said to lead even to suicide. Actually most patients developed a useful pharyngeal whisper, and occasionally the pharyngeal voice might be of such a quality that there was no disability. Professor Burger, in 1925, had demonstrated such a patient, who was able to make himself heard all over the Barnes Hall, and Professor Burger described his researches on the manner in which this voice was produced. In another patient, on whom Sir Robert Woods had operated eight years previously, the voice except for a slightly croaking quality, was perfectly natural, with a slight Irish accent the patient produced it without difficulty or apparent effort in the vibrations of two bands, which seemed to correspond to the upper edges of the middle constrictor.

Less fortunate patients were either satisfied with a whispered voice or could employ some form of phonatory apparatus. Patients did not take very readily to the use of an artificial larynx but one had combined certain parts of the Trapa apparatus with other parts of the Mackintosh-Western apparatus into an artificial larynx, which really suited him. With this he was able to carry on a very active professional life as the leading partner in a firm of architects.

There was no direct evidence that these patients were especially liable to pulmonary disorders, though Professor Moore had noted that out of thirteen patients who remained free from recurrence four succumbed later to broncho-pneumonia. These patients were usually remarkably free from coriza, due probably to the abolition of nasal respiration. The entry of foreign bodies into the trachea did not seem to have occurred. The disfigurement of the neck was but slight, and the permanent tracheotomy was part of the price paid for the cure of the disease, which unchecked, would eventually necessitate this operation in almost every case. It might be claimed, therefore, that if the patient was willing to undergo the operation, his ultimate condition was no worse than that of one suffering from any form of permanent and complete laryngeal stenosis and the voice occasionally might be much better. The depressing effect on the mental state had been exaggerated; the patients were usually cheerful and active, and Mr Colledge had not encountered the despair and melancholia leading to suicide described by some writers.

In a general way it might be concluded that the operation in properly selected cases was justified by its results, both immediate and remote and that it was too often declined. When an operation was feasible Mr Colledge did not think that there was a satisfactory alternative as a routine treatment. The use of lead and x rays had been disappointing. Radium was very apt to lead to necrosis of the laryngeal cartilages without eliminating the growth but recently Mr Harner had reported improved results by employing small doses in needles over prolonged periods after resecting the thyroid cartilage to fashion a window

In the first of these cases the result after three years had been much superior to a laryngectomy, leaving the man with a normal larynx, movable cords, and a good voice. Nevertheless, Dr Thomas J Harris had written in the present year, from a large experience of radium in laryngeal cancer: "Certainly if I had cancer and the condition was too far advanced for an operation I would prefer to endure the disease rather than to risk the uncertain results of radium treatment."

There would always be those who preferred to try radium, for the operation sometimes failed and radium might succeed.

## THE STRANGWAYS COLLECTION

### PATHOLOGY OF RHEUMATOID JOINTS

Of additions made to the museum of the Royal College of Surgeons of England in recent years none is more worthy of record than that known as the "Strangeways Collection"—the preparations and specimens assembled by the late Dr T S P Strangeways during the years he devoted to the study of those human ailments which are accompanied by chronic and often painful changes in joints. The collection contains about 800 dissections and preparations with some 3,000 microscopic sections, all of which bear upon the pathology of joints undergoing changes of a rheumatic or rheumatoid nature. The circumstances in which Strangeways built up this collection were altogether of a peculiar kind, and deserve more than a passing notice.

Strangeways died on December 3rd, 1926, on the eve of completing his sixtieth year. Fame came to him late in life. During his last six years he made the Research Hospital of Cambridge the leading institution in this country for the study of living tissues cultivated and grown in artificial media. He drew round him a trained and enthusiastic band of workers, who now successfully strive towards the goal he had hoped to reach. At first sight it may seem that there can be no connexion between an inquiry into the artificial changes of chronic rheumatism and a study of living tissues grown in artificial media, yet in Dr Strangeways's case the one inquiry led on to the other in the most natural way.

Strangeways entered as a student at St Bartholomew's Hospital in 1890, and in 1896, when 30 years of age, became a member of the Royal College of Surgeons. At his hospital he was brought, as were many others, under the influence of the late Professor Kantack, who was appointed to the chair of pathology in Cambridge in 1897. Strangeways followed him there, becoming his demonstrator, a choice determined not only by an inclination for laboratory work in preference to practice but also by a partial but increasing degree of deafness. In 1905, when he was made Huddersfield lecturer on pathology in Cambridge under the late Professor Sims Woodhead, he began to strike out on his own path in life. Coming to the conclusion that a pathologist could make headway only when he studied disease in the living as well as in the dead, he set about putting this idea into execution. He found that his friends Sir William Osler, Sir Clifford Allbutt, and Professor Sims Woodhead were willing to help him and "cover" him, they became a "Committee for the Study of Special Diseases"—the particular diseases chosen for study being those which were accompanied by slow deforming changes in joints—chronic rheumatic arthritis in its numerous forms and degrees. Some £480 were raised by subscription, a house was taken, three beds were purchased and filled, a matron and nurse engaged, an x-ray apparatus installed, and the coal shed in the garden converted into a laboratory and museum. In 1906 another bed was added, and Dr G W Nicholson was appointed research scholar and began his fruitful inquiries into those microscopic changes in bone and cartilage which mark the successive stages of chronic osteoarthritis. Literature was unsparingly searched for the best knowledge bearing on chronic rheumatic disorders, beds were added, the Poor Law infirmaries in London were tapped for material, a research scholar in chemical pathology was appointed and another in bacteriology, and Dr Strangeways giving his services voluntarily and shouldering the chief burden of obtaining financial support. In 1907 the

hospital cost £256 to run, records of a thousand cases were accumulated and analysed, hundreds of specimens were dissected and examined, the most interesting being served as the nucleus of a museum. In 1908 funds were exhausted, but, nothing daunted, he appealed for a large scheme—a special research hospital. He asked for £350 and obtained £846. His museum was becoming large, his records very numerous, and his family responsibilities were also growing, but these he blithely shouldered with his other liabilities. He had become convinced that arthritic deformations covered a multitude of disorders which had to be disentangled before any attempt could be made to relieve suffering by scientific means.

Sir Otto Beit, Sir Robert Brown, the Medical Research Council, and other friends came to his aid, and by 1912 £4,000 had been raised and a special research hospital built in Hills Road, a mile and a half from Cambridge. The executors of Sir William Osler came to the funeral and of this voluntary worker. Thus it came about that in August, 1914, when the war broke out there was a hospital in Hills Road with beds for twenty-one patients, a well equipped laboratory, and a museum. By then full records of 4,000 cases of chronic arthritis had been accumulated and studied, 2,000 joints had been minutely examined, over 3,000 microscopic sections had been cut and studied, and over 800 preparations arranged on the shelves of the museum. Soon after the outbreak of hostilities the Hills Road Hospital was taken over by the military authorities. Strangeways, in the intervals of military service found time to prepare a typewritten account of the investigations he had made into the nature of osteoarthritis and allied disorders. In 1917 the hospital reverted to its original purpose and Mr Strangeways resumed his investigations. In 1918 he published in account of the microscopic changes in joints affected by chronic changes, and another paper in 1920 on the nourishment and growth of loose bodies in joints, a paper of great importance because from the experience therein related, he passed, in a most natural way, into an altogether new field of inquiry. He found that the synovial fluid within a living joint was a medium in which particles of cartilage could grow and that he had thus at his disposal an excellent method of studying the growth and nourishment of cartilage. From the growth of cartilage in the synovial fluid of joints it was an easy and natural transition to the cultivation of living tissues in artificial media. And thus it came about that a hospital established for the study of a special disease became launched as a progressive and fully equipped laboratory for the microscopic study of living tissues. To-day the work begun under Strangeways is being continued under Dr J A Andrews.

After Strangeways's death those who were responsible for the upkeep of his collection of specimens had to determine how it could be utilized to the best advantage. The collection, with all documents relating to it, was offered to, and accepted by, the council of the Royal College of Surgeons of England. The council invited Mr R L Knaggs, F.R.C.S., to make a critical examination of all the specimens and to compile a descriptive catalogue of the collection. The choice of Mr Knaggs was particularly happy, for the chapters he devoted to arthritic deformations in his work *Diseases of Bone* mark him out as an authority in all that relates to the pathology of osteoarthritis and rheumatoid arthritis. The task he has undertaken is not an easy one. Most of the specimens which require redissection and remounting, their histories have to be searched for in Strangeways's notes and writings. It is mainly there will emerge a series of specimens which will do justice to Strangeways's memory. It will be remembered that Strangeways recognized six types of arthritic deformations, and all the specimens which he had marked as representative of his various types will be carefully preserved but an examination of the type specimens shows that the criteria on which his classification was based are clinical rather than pathological. The more specimens will be preserved as a separate collection and will be available for the use of all research students.

# British Medical Journal.

SATURDAY, NOVEMBER 5TH, 1927

## CHRONIC SEPSIS AND THE PSYCHOSES

IN this year of the centenary of the birth of Lister, who by his brilliant post-operative sepsis made surgery safe for mankind Sir Berkeley Moynihan, President of the Royal College of Surgeons of England with the sympathy natural to a physician doomed to the practice of surgery has more than once drawn attention in eloquent terms to the notable advance made by the recognition of the existence and importance of medical sepsis. In so doing he has paid a well deserved tribute to the services of Dr William Hunter in applying Lister's teaching to general medicine, describing him as having been for years a voice crying in the wilderness. A like fate has attended many other pioneers and it is always hard to foretell the bearing of a piece of research and to prophesy what far reaching effects may eventually result from work undertaken solely to arrive at truth or directed to the solution of some special problem. After working at Leipzig on intraperitoneal transfusion of blood and the fate of the absorbed blood the distinguished Edinburgh graduate Dr William Hunter was elected John Luer's Walker student at Cambridge in 1887 he spent the three years of his tenure in beginning the investigation of the pathology and etiology of pernicious anaemia, and soon came to the conclusion that the haemolysis was due to the action of toxins absorbed from the alimentary canal. With rare persistence he followed this trail and pointing out the sore tongue, oral sepsis and streptococcal gastritis he arrived in 1900 at the conception of what has now become a commonplace—the influence of local infection on the body generally. In America the writings of Frank Billings of Chicago on focal infection followed these clear expositions of oral sepsis. The new term though describing the same process has a wider connotation and it is now recognized that the original focus may arise in various parts of the body, in the Fallopian tubes or prostate among others, and that when it starts in connexion with the teeth it may establish a secondary focus elsewhere—in the tonsils, gall bladder, appendix, intestine or even a joint—before the original focus is eliminated by the establishment in this way of another active centre for bacterial activity. The diagnostic connexion may be obscured and remedial treatment rendered difficult and disappointing. The influence of focal sepsis has been accepted in connexion with the etiology of acute rheumatism and while altering our conception of that disease bids fair, through the removal of the faucial and pharyngeal tonsils and other foci to combat the heavy toll of crippling cardiac rheumatism. But even so, and perhaps because of the inherent difficulties medical anti-sepsis and sepsis have it must be admitted lagged much behind the example set by surgery.

As Dr William Hunter points out in the paper (published at page 811) on chronic sepsis as a cause of mental disorder with which he opened the discussion in the Section of Mental Diseases at the Annual Meeting at Edinburgh there are differences between what is ordinarily understood as medical and as surgical sepsis. Medical sepsis is usually chronic and of a

more complex character the foci are often small hidden, and not infrequently latent as regards symptoms. Experience is epigrammatically designated by Sir Berkeley Moynihan as the name we give to our mistakes, and experience in hunting for these foci in cases of chronic arthritis or neuritis often proves that they are far from easy to locate. The interesting observations of Rosenow on the special selective action of certain strains of streptococci are quoted but here as was pointed out in Sir Berkeley Moynihan's contribution to the discussion in his paper on The relation of aberrant mental states to organic disease (p. 815) the qualities of the soil as well as those of the seed must be taken into account. It is indeed, common to see persons with advanced oral sepsis with little or nothing in the way of secondary results, such as arthritis, fibrositis and neuritis and as already mentioned to see on the other hand patients with these disabilities in whom an infective focus is far to seek. The results of medical sepsis are now fully recognized as numerous and wide-spread among them modifications of the endocrine balance and of the closely associated activities of the nervous system open up vistas presenting many problems full of interest and tempting speculation.

It is particularly fitting that at Edinburgh so closely associated with Lister there should have been in this Lister's year a discussion on the subject mentioned, and that it should have been opened by Dr William Hunter—a graduate of the Northern Athens. Psychiatrists have not been backward in showing how great may be the influence of chronic infection in the production of mental disturbance as is illustrated by the references to the remarkable experiences and results reported by Dr H. A. Cotton of the New Jersey State Hospital Trenton where the number of discharges increased from 37 to 85 per cent after the removal of oral and tonsillar infective foci. This subject was also raised in the discussion on the prophylaxis of mental disorder in the Section of Neurology and Psychological Medicine at the Bath meeting of the Association two years ago by among others Dr P. Watson Williams, who forty years before had recognized the importance of the toxic factor but stated that in the larger proportion of cases of mental aberration the determining cause was not infection thus agreeing with the wise warning of Professor Adolf Meyer of the Johns Hopkins University (quoted with approval by Dr Hunter) not to regard all insanity as due to infection. Dr Chalmers Watson during the discussion ascribed disseminated sclerosis and many acute and chronic mental disorders to septic foci and spoke highly of the value of colonic lavage and Plombiers douches. The experience of two superintendents of large mental hospitals provided cause for critical consideration of the opener's thesis. Dr D. K. Henderson doubted the deductions drawn as to the dependence of psychoses on sepsis and Dr W. T. Menzies pointed out that the hypothesis of the septic factor in insanity was forty years old, that chronic sepsis was not more frequent in the insane than in the sane and that the recovery rate had not been materially raised by antiseptic measures.

As he considers the incidence of chronic sepsis among the insane of this country to be much higher than in any other group of hospital patients, Dr William Hunter pleads for early removal of any septic focus so as to prevent permanent and irreparable damage and that in order to achieve this new era of anti-sepsis in mental disorders and the cure of 'septic psychoses'—a term approved by Dr W. A. Potts—

each mental hospital should be as fully equipped for surgical and specialist work as it has hitherto been for medical and nursing care. Though obviously right in principle, this counsel of perfection must encounter financial difficulties which, in the present position of affairs, have to be taken into account, perhaps, however, these may be overcome by some arrangement with neighbouring hospitals, so that a system of team work not unduly costly can be successfully brought about. In the meanwhile, as recorded in our issue of October 22nd, a move in the right direction has been made at the new reception hospital for mental patients at Northampton.

### THE WORLD POPULATION CONFERENCE

For several days this autumn a large number of persons, including a fair proportion of scientific men of established reputation, were gathered together at Geneva to engage, in the words of the president, Sir Bernard Mallet, in "a full discussion on purely scientific lines of the theories, facts, and statistics relating to population problems." The *Journal* of the Conference, which is the only record of its proceedings at present available, is necessarily too concise to permit us to appraise the value of the papers read. Thus we should no doubt be wrong in concluding, as the summary tempts us to do, that M. Albert Thomas, save for a proposal to create one more permanent international organization, dealt exclusively in vague eloquence. In fact—again judging from the summary—possibly our proviso is superfluous, for the new international centre, we read, "should apply itself indefatigably to acquiring the necessary authority for defining population needs and proposing the means to satisfy them," which sounds a trifle nebulous. Of the scientific contributions in a narrower sense, Professor Pearl's seems to have contained nothing which he has not admirably expounded elsewhere, Mr. E. J. Lindbette's analysis of proper stocks requires more detailed exposition to be really intelligible and convincing, and Professor Cair-Saunders's contribution on differential fertility seems to have been rather slender.

As we have said, it is not fair to judge from so bald a summary, and in any case the *imponderabilia* of an international gathering, the advantage of bringing into contact intellects profoundly different innately and by training, of converting a name into a personality, are not measured by a *process verbal* or even a complete report. It may well be that this conference was a great success, and the report before us at least testifies to the pleasure it gave its participants. At the same time, such a summary does bring into consciousness doubts whether there are not many important topics which cannot be usefully discussed by international gatherings, and whether the business of persuading scientific men to assemble at, say, Geneva is not being overdone. It is obvious that neither the policies of national Governments in the matter of immigration laws nor the practices of individuals in the matter of "birth control" are in the least likely to be influenced by the lectures or resolutions of professors, economists, or any other 'experts'. Sir Bernard Mallet had, of course, no illusions as to this. The sentence we quoted from his opening address shows that he was concerned to secure a strictly scientific discussion of the problems but there seems to be an insuperable difficulty, in that the problems which can be brought under the connotation of population problems are heterogeneous, and, for their comprehension, need a mastery of different

techniques such as the command of one man. A discussion of such measures in general meeting, even when the speakers have a common language, is unlikely to be of much value, it will be of less so to differences of technical knowledge we add differences of language. Many speakers at this conference seemed to think that all would be made plain were some new international bureau created which should "co-ordinate" efforts and "sift the evidence collected." Anybody who has attended international gatherings at Geneva is familiar with this sentiment. The suggestion is that we do not know the answer to certain questions simply because we have not collected enough data. But at least two alternative explanations are possible. The first is that Newtons and Einsteins are rare, the second that we do not know what problems we want to solve. Even permanent residence in Geneva does not convert ordinary men into Newtons, while what is unintelligible in English will still be so when rendered into French.

In our view, not the conference hall, but the study where the papers of other students can be read at leisure, is the proper centre of international co-operation in research into such problems of population as can be solved.

### THE RICKMAN GODLEE LECTURE

LADY GODLEE has founded and endowed at University College a lecture in memory of her late husband, who was a student of the medical school, was appointed assistant surgeon to the hospital in 1877, was Holme Professor of Clinical Surgery from 1892 to 1907, and remained surgeon to the hospital until 1914. He was President of the Society of Clinical Surgery until his death in April, 1925. The foundation is managed by a joint committee of University College and University College Hospital Medical School and the founders desired that the lecturer (who should not be a member of the college or the medical school) should have scope to select his topic from the long list of subjects in which Sir Rickman Godlee was interested. These were enumerated in the trust deed as "medicine, surgery, natural history, natural science and philosophy, history—past and present, political, sociological, art, literature, travel, biography, archaeology, psychology and anthropology." The first lecture was given by Viscount Cecil of Chelwood on October 27th in the Hall of University College to a meeting over which Sir Berkeley Moynihan, President of the Royal College of Surgeons, presided. In a brief introductory speech Sir Berkeley Moynihan said that as the lecturer might deal with any of the subjects in which Sir Rickman Godlee had been engaged, and as his tastes were catholic, and his intellectual faculties almost equal in number to those of the distinguished cousin of the first lecturer, it was legitimate to look forward to a series of most interesting orations. Sir Berkeley recalled his first meeting with Sir Rickman Godlee, by whom he was examined at the Royal College of Surgeons. Godlee had even then greatly distinguished himself as an anatomist, as an artist who had illustrated with unsurpassed accuracy and beauty the gross anatomy of the body, and as a pioneer in surgery. Armed with the weapons which his uncle Lord Lister had forged, he had, with Dr. Hughes Bennett as colleague, operated in 1884 for cerebral tumour. He was soon to publish with Sir James Fowler their work on *Diseases of the Joints*. In the new surgery of the cranial and thoracic cavities Godlee was among the earliest adventurers. How the diverse qualities of physician and surgeon could be caused to work together for the patient's benefit and to the advance of knowledge. In both cases he had laboured in friendly and fruitful co-operation.



physician Godlee, who was President of the Royal College of Surgeons when the speaker joined the Council, was the almost ideal chairman. All business to be considered had been carefully prepared, and every aspect of it most thoroughly studied. He was tolerant of opposing opinions, dispassionate in judgement, prudent in council, wise and circumspect in action. Godlee did not make friends easily. He seemed at first a little aloof, disliking any early approach to intimacies. But he was capable of real affection. Wordsworth said of his wife that her love had ceased to be like a fountain, and had become a well. That was true of Godlee's affection. It did not burst out and immerse one in its revelations, but when sought it was deep and almost inexhaustible. He had a quiet sense of humour and a quizzical enjoyment in intellectual and tactical difficulties. In contrast with Godlee's ignoble things were of no account, and one often left him with a sense of spiritual invigoration and encouragement. Godlee, like Lister, was a Quaker. The selection of Lord Cecil, our champion of peace, as the first lecturer was therefore most appropriate. Viscount Cecil's lecture, which was on

The co-operation of nations, dealt generally with the subject but had special reference to the work of the League of Nations. He laid stress upon the influence to-day exerted by this country in the councils of Europe, and expressed the confident hope that, given only courage and vision, it would be able to take a leading part in saving the world from future wars.

#### THE BRITISH MEDICAL BUREAU

To the great and varied organization it maintains for the convenience and assistance of its members the British Medical Association has this week added a Medical Bureau for giving advice with regard to the transfer of practices as to partnerships and as to assistants and locumtenents and for dealing with other aspects of the business side of general practice. The British Medical Bureau starts with the advantage of commanding the experience of the Scholastic Clerical and Medical Association established in 1880, and already well known to the profession as a trustworthy and successful agency for the transaction of medical scholastic, and accountant business. The arrangement has been brought about as the result of negotiations conducted by the Council with the approval of the Representative Body, whereby a considerable share in the capital of the Scholastic Clerical and Medical Association has been acquired by the British Medical Association, four representative members of which will in future act as directors of this old established company. Details of the work the Bureau will do for members are set out in full in an advertisement printed this week on page 61. As will be seen, the British Medical Bureau will be under the management of Mr. A. V. Storey, who has been long associated with the agency and will also have the services of a staff of qualified accountants wholly engaged on medical work, who will investigate practices, for purchasers and audit books and accounts, and give advice as to income tax. A register is kept of medical men willing to receive resident patients, and the scholastic department will advise as to the selection of educational establishments, private tutors and governesses. From much experience of the work of the Scholastic Clerical, and Medical Association and of its straightforward method of doing business the Association has in the past been able to advise members to consult it and can now commend the new Bureau with every confidence. Members of the British Medical Association will have the advantage of a reduced scale of charges applicable to them. All correspondence should be addressed to Mr. A. V. Storey, General Manager, British Medical Bureau, 12 Stratford Place, Oxford Street, W.1 (telegraphic address: Triform, Wesdo, London, telephone, MAY 1762 and 1783).

#### FIRST AID ON THE ROADS

The number of patients carried by the Home Ambulance Service of the Order of St. John and the British Red Cross Society during the third quarter of the year was 29,107. There are 369 ambulances altogether and the average number of patients carried in each for the three months is 79. The practice of using ambulances for moving patients is increasing five years ago the average number carried during a quarter was only 43. Probably the increase is to some extent due to the greater number of accidents that occur on the roads. Last year in the English counties there were 121,267 accidents in the streets and roads resulting in death or personal injury. A suggestion made a short time ago that a road service should be set up for the purpose of giving first aid to those injured in traffic accidents has been vigorously taken up both by the Order of St. John and the British Red Cross Society. Already the Home Ambulance Service has been instrumental in dealing with an immense number of persons injured in road accidents. A certain number of units of the Order and Society have also for some time past been giving special attention to first aid on the roads. The appeal to extend this work and to place the service on a national basis has met with a very satisfactory response. The work done in this respect during the past summer has been to a large extent experimental, but much useful experience has been gained as to ways in which the service of members of the two societies can be most usefully employed. Depending, as it does, on the service of members of voluntary organizations, the majority of whom are at work all the week, it is principally at week ends and on public holidays that actual roadside work can be performed. It is, however, at those times that the demand is most urgent. In order to meet the needs of those who are injured in road accidents at times when first-aid workers cannot be standing by, a large number of roadside boxes have been erected by local units of the Order and Society. These boxes contain bandages and dressings and in some cases a stretcher is included in the box. If these boxes are not placed where someone is always in attendance to open them, arrangements are made that, by breaking a pane of glass, the key of the box can be obtained. With the growing volume of motor traffic it is, unfortunately, not probable that the number of road accidents will sensibly decrease for some time, and it is hoped that next year the work of giving first aid on the roads will be firmly established as one of the most useful undertakings to which members of the two organizations can devote their skill.

#### THE PREVENTION OF MATERNAL MORTALITY

A MEETING attended by representatives of associations in touch with working women was held in London on October 27th to consider how by the dissemination of information and by administrative measures, maternal mortality might be reduced. The meeting was presided over by Lady Barrett M.D., dean of the London School of Medicine for Women. The chief organizer was Miss Cecile Tuckwell, a member of the Royal Commission on National Health Insurance and the committee in charge of the arrangements included representatives of religious bodies, such as the Mothers Union of the Church of England and the Salvation Army, and industrial bodies, such as the Standing Joint Committee of Industrial Women's Organizations. It was stated that this committee would be kept together to pursue the subject with a view to spreading enlightenment among working women—for instance by the circulation among mothers or prospective mothers of literature containing simple advice on the subject. Sir George Newman, Chief Medical Officer of the Ministry of Health, gave the principal address, in which he said that taking the average of the last ten years 750,000 women in England and Wales gave birth to children each year. In rendering that

service to the nation 3,000 of them died in the act or so soon after that the death was attributed to childbirth, and thousands of others, as evidenced by insurance returns and hospital records, suffered from impairment of health. Of the women who died, 75 per cent were under 35. He sometimes thought that there should be an inquiry into every death from childbirth, for such deaths seemed to him to call for explanation as much as any fatal accident. Three principal measures were urgently necessary. The first was pre-natal hygiene, local authorities had provided between 700 and 800 ante-natal centres, but at present only a small fraction of the 750,000 women just mentioned were receiving effective assistance. It was necessary to create a public opinion which would lead the pregnant woman to consult her doctor in a simple and natural way at the earliest juncture. The second need was for maternity homes. Partly because of the necessity for satisfactory treatment, and partly because of the frequent inadequacy and unsuitability of home accommodation, there were many cases of childbirth in which the woman should be delivered in a maternity home. Since the organization of the Ministry of Health 150 maternity homes, with 2,300 beds, had been established or approved, but further provision on a large scale was still required. The third need was for skilled and competent assistance at childbirth. Arrangements had been made by the responsible authorities for the more thorough training in obstetrics of the pupil midwife and the medical student, but the large number of women qualifying for the C.M.B. certificate made it difficult for the medical schools to provide their students with as full a training and experience as was required, and, along with other matters, including the administration of maternity benefit, the Ministry was now giving attention to the question of how far it was expedient to have an enrolment of upwards of 63,000 certified midwives while less than a quarter of them were actually practising midwifery. On the motion of Lady Barnett a resolution was carried pledging the meeting to do all in its power to reduce the present unnecessary suffering and death rate in childbirth, and calling for skilled medical and midwifery services to be made readily available. To this end the resolution urged improved midwifery training of medical students and midwives, and such readjustment and extension of the provisions for maternity under the National Health Insurance Act as might be necessary, together with an extension of the work of the public health authorities and other bodies in the provision of clinics and welfare centres and health visitors.

#### SCHOOL OF HYGIENE AND TROPICAL MEDICINE

THE annual meeting of the Court of Governors of the London School of Hygiene and Tropical Medicine was held on October 31st in the Council Room of the British Medical Association, Tavistock Square. Sir Holburt Waring was re-elected chairman, and presided. The report of the Board of Management contained a reference to the recommendation of the committee appointed by the Minister of Health on the way in which clinical and pathological facilities for the study of tropical diseases could best be secured. The recommendation was that an imperial hospital with 150 beds should be established. Apart from the need of facilities for study and research, the committee emphasized the pressing necessity for further hospital provision for sufferers from tropical diseases. On both grounds it was thought that the proposed scheme would have a strong call on the support of the business community interested in the economic development of tropical and subtropical countries. It was estimated that a capital sum of £250,000 would be required, and it was hoped that a strip of land in Milet Street forming part of the Bloomsbury area required by the University of London might become available. It seemed probable that the

school might be asked to co-operate with the Colonial Medical Research Committee in the establishment of schemes of research in various parts of the Empire, and the Academic Board of the school was prepared to draw a programme of research in tropical medicine. A question under consideration was the need for the expansion of the work of the Institute of Agricultural Pathology on imperial lines, and proposals had been made to the Empire Marketing Board for its financial support. A medical course in tropical medicine (the full course extended to twenty weeks) had been a success, but the propriety of providing a short intensive course for medical practitioners who had to go to the tropics at short notice was under consideration, as was also the institution of a short course in hygiene for persons employed by banks and firms engaged in tropical commerce and industry, and others who were going to reside in tropical or semi-tropical climates. The need for a larger supply of trained bacteriologists was urgent, and new courses of study had been established in bacteriology and immunology, directed by Professor W. W. C. Topley, and in epidemiology and vital statistics, directed by Professor Greenwood. It was also desired to establish a chair of public health with a view to the appointment of a professor in the group of subjects comprising the principles and practice of preventive medicine, general sanitation, and public health administration. Consultation with local authorities and other bodies would be necessary, but the Board considered that in organizing the division the director, Dr. Andrew Halloway, should at once have the help of the professor designated. As to finance, it was reported that the University Grants Committee had promised to increase its grant of £7,200 made in 1926-27, to £18,000 in 1927-28. This money was needed for new courses of study, and it had been proposed that £25,000 a year promised by the Government would not be adequate. A note had therefore been sent to the University Grants Committee, containing an estimate that an Exchequer grant of £50,000 a year would be required in a full working year. An appeal would also be made to the Colonial Medical Research Committee to obtain additional financial support from colonial sources.

#### AMYOTROPHIC PARALYSIS AFTER INJECTIONS OF ANTITETANIC SERUM

AMONG the various manifestations of serum disease, what grave and persistent, though fortunately rare, form is paralysis with muscular atrophy. Of this La Paré collected and reviewed twenty-five examples, eighteen of which occurred after the use of antitoxic serum. Various explanations of these cases have been proposed, the usually accepted being that it is due to peripheral neuritis or inflammation of the nerve roots. Veigier, Aubertin, and Delmas-Marsalet have recently reported two cases of amyotrophic paralysis after the administration of antitoxic serum, and have argued in favour of the view that the change is in the spinal cord, they agree that the paralysis is more frequent after antitoxic serum than after any other kind of antitoxic serum, but contend that it is not anaphylactic, it is due, they think, to the toxicity of the antitoxic serum towards the central nervous system. From critical analyses of their two cases they conclude that the paralytic phenomena correspond to those of an acute poliomyelitis of the Hone-Melnic type rather than to those of multiple neuritis or myelitis. A detailed discussion of the character of the changes leads to the same conclusion. One of the cases showed a dissociation of sensation the record of which was tabes and radiculitis, and the change in temperature, pain and temperature resembled those of the

syndrome much more than those of multiple neuritis or radiculitis, in this case the presence of lymphocytosis in the cerebro-spinal fluid was held to afford evidence of meningeal irritation, and the spontaneous pains, which might be regarded as suggesting neuritis, are ascribed to the myelitis. In this connexion attention is directed to the severe pain that may accompany Hemo-Medin disease and to severe pain produced by the laceration of the cord necessitated in removal of an intramedullary tumour causing Brown-Sequard's syndrome. The muscular tenderness on pressure is regarded by the authors as very fallacious evidence of multiple neuritis, as it is present in adults with acute poliomyelitis. The selective paralysis of certain muscles, such as the serratus magnus is explained by the consideration that the anterior cornu cells, though histologically alike, differ in their functional activities and physico-chemical reactions.

#### MODERN MIDWIFERY

DR W. J. YOUNG of Harston evidently enjoys the practice of midwifery, and is strenuous in his endeavours to mitigate the risks and pains of labour. In July last he gave his presidential address to the Cambridge and Huntingdon Branch of the British Medical Association under the title "Then and now in midwifery." Dr Young thinks that, with "twilight sleep," morphine, chloroform, and spinal anaesthesia, together with the use of as-traction forceps, we have attained as near to perfection as possible in relieving the sufferings of parturient women. He is not happy, however, about the extended employment of midwives, which he regards as reactionary and likely to perpetrate a large amount of preventable suffering. But a comparison of the management of labour a hundred years ago and to-day convinces him that enormous advances have been made, that the growing practice of ante-natal care, and the negligible risks attached to formidable obstetric operations, have contributed much to these advances, and that the elimination of sepsis, if it can be accomplished, will completely crown the achievements. He attributes the apparent callousness of old-time accoucheurs to the spirit of the Middle Ages—a spirit which did not concern itself with physical pain, but was greatly occupied with spiritual sufferings. It is thus that he accounts for the long delays in the second stage, even after forceps had come into use, so that sometimes the head was left in the pelvis, or even on the perineum, for many hours, while resort was had to such practices as bleeding. Dr Young illustrated his discourse with references to many famous persons from the mother of Socrates, who regaled her son with stories of the sufferings of her patients, to Mrs Jarvis of Clerkenwell, who was delivered, "after three mortal hours of the crochets," in 1830, and from Helvir, the mother of Cicero, to Louise de la Valliere, for whose birth Louis XIV introduced male accoucheurs

#### TRACHOMA IN CHINA

IN 1925 Dr Harvey J. Howard, professor of ophthalmology in the Peking Union Medical College, was captured by bandits. His experiences are told in graphic but modest fashion in a book entitled *Ten Weeks with Chinese Bandits*. He was on a visit to his friend Major William Morgan Palmer, an Englishman who had done good service for China, and had initiated a most promising experiment in agriculture in Northern Manchuria which, had his life been spared, would probably have done much for the relief of economic conditions in that country. Alas! raiding bandits attacked one of the outlying farms of the estate, and in an attempt to frighten off the invaders he was shot dead. The professor, who was with him at the time, was

carried off into captivity and held to ransom. He encountered some amazing experiences, and endured much hardship in the hurried flight of the bandits when they were pursued by numbers of troops sent out to rescue him. Ultimately he was released. Dr Howard found disease rife among his captors, and considered that opium was at the root of most of their degradation. Some of them were men of high culture, and had held important positions in the civil and military life of the country. One of his captors, a man of education, suffered badly from trachoma, and was on the verge of blindness from corneal ulceration of both eyes. By reason of his ability to relieve him of pain and stay the symptoms, this man became his protector, and probably saved him from being killed. The manner in which he treated this case, and severe wounds that threatened to become gangrenous, when there were no medicaments at hand shows what can be done when simple measures are applied with intelligence.

#### SIR CHARLES J MARTIN

THE appearance of Professor C. J. Martin's name in the recent list of Knights Bachelor created on the occasion of the King's birthday was most cordially welcomed by the staff of the Lister Institute as a well deserved tribute to one who had gained high scientific distinction, and who during the past twenty-four years had so happily guided the fortunes of the Institute. At a special meeting of the staff it was decided that the occasion might fittingly be celebrated by presenting Sir Charles Martin with his portrait as a token of their personal esteem and their appreciation of his great services to the Institute. Subscriptions to the portrait were confined to present staff and research workers and to past members of the staff during Dr Martin's directorate. The painting of the portrait was entrusted to Mr Neville Lewis, and the finished work has given much satisfaction. The portrait was presented at a meeting in the library of the Institute on October 28th, when Professor Harden, F.R.S., presided over a large company of past and present members of the staff and research workers. As one of the few members who could recall Dr Martin's arrival as director in 1903, Professor Harden referred in eloquent terms to the scientific and administrative ability of the director, his versatility and helpfulness, and, above all, to his great personal charm and tact, which had conduced so greatly to that domestic harmony and camaraderie which had ever been the pride of the Lister Institute. Sir Charles, in returning thanks for the portrait, alluded to the great good fellowship among staff and workers which had rendered so pleasant the years he had spent among them.

#### J & A CHURCHILL.

THE medical publishing firm of J and A Churchill, long associated with Great Marlborough Street, has lately moved to larger premises at Nos 39 and 40, Gloucester Place, Portman Square, W. 1, at the corner of York Street. The firm was founded in 1825 by John Churchill, grandfather of the present partners. For many years the two sons of the founder, John and Augustus, had charge of the business, and each in turn introduced a son, Mr A. William Churchill, M.A., and Mr J. Theodoro Churchill, who jointly carry on the tradition of the house. Members of a profession which has for over a hundred years had friendly dealings with this firm, as publishers of the *Medical Directory* and of many standard medical works, will wish it continued prosperity in its new office, which incidentally brings Messrs Churchill within easier reach of most of their authors and collaborators. In a pamphlet announcing the change or address there appears an impressive list of medical writers, past and present, whose books have borne or now bear on their title-pages the familiar imprint

<sup>1</sup> *Ten Weeks with Chinese Bandits*. By Harvey J. Howard, M.D. London: John Lane, the Bodley Head Ltd., 1927. (Pp. 272. E. 6s. net.)

## THE PATHOLOGY OF PNEUMONIA \*

BY

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Dr GASKELL said that his purpose was to submit the results of certain experiments which had occupied him during the last seven years and had yielded, as he thought, certain facts which could be legitimately applied to man. They showed that the title of the infecting organism was all-important, and that this determined both whether a lesion would be produced at all and what the nature of that lesion would be. An attack of lobar pneumonia in the healthy adult was due to organisms of titres between 5 and 7, which were otherwise comparatively rare. The deduction might be made that it was spread by direct contact, infection passing from throat to throat, though very possibly intermediate carriers were often concerned.

In any attempt to produce infective lesions by experiment estimation of the virulence of the infecting organism was of the utmost importance, this was particularly so in the case of the pneumococcus, because its virulence varied so greatly. Earlier workers used organisms which answered the criterion that one-millionth of a cubic centimetre of an eighteen hours' broth culture killed mice when injected intraperitoneally, their method of obtaining such a dose was by successive dilutions in broth. This criterion was open to the objection that the few organisms injected lay in a comparatively large volume of a nutrient fluid which was not rapidly absorbed and in which they could multiply freely, the host acting as a living test tube. The method, therefore, did not give an accurate measure of the minimal lethal dose to mice.

The virulence or pathogenic power of an organism depended upon two factors which could not be measured separately—namely, the invading power of the organism and the resisting power of the host. In order to obtain any measure of virulence it was necessary, therefore, to standardize as far as possible one of these factors—namely, host resistance. The measure then used is the smallest dose of the organisms which will cause death. It was, therefore, essential to employ a method which ensured immediate reaction between the attacking organisms and the defences of the body. The organisms must be denied all facilities for multiplying other than those provided by the tissues of the host. The mouse was an experimental animal eminently suitable for the measurement of pneumococcal virulence, owing to its high susceptibility, and if healthy mice whose weight lay within narrow limits were used a fairly satisfactory stabilization of the host factor was obtained. The possibility of variation of the measurement of the dose of the organism by multiplication in the fluid introduced could be obviated by dilution in normal saline, which was rapidly absorbed. Such dilutions must, however, be injected immediately, as the pneumococcus rapidly died in saline solution.

His own experiments had been almost entirely carried out with a single strain of pneumococcus whose virulence had been altered at will. For convenience the measure of virulence or titre had been taken as the logarithm of the reciprocal of the minimal lethal dose—that was to say, the titre being 8, the minimal dose was  $1/10^8$ . The actual dose given could be roughly estimated from the fact that an eighteen hours' broth culture contained between 200 and 500 million organisms, or otherwise  $2 \times 10^8$  to  $5 \times 10^8$ . The minimal lethal dose at titre 7 therefore lies between 20 and 50 cocci only, and titre 8 becomes an absurdity.

The experimental animal selected was the rabbit, an animal moderately susceptible to the pneumococcus, which fortunately showed very comparable to the human host in its relationship to infection.

## Lung Structure

Dr Gaskell said  
In the mammalian lung the bronchial tree is lined with ciliated epithelium up to its terminal branches, which end in one or two terminal bronchioles having non-ciliated epithelium.

\* Being an abstract of the Bradshaw Lecture delivered before the Royal College of Physicians of London on November 3rd.

each of which opens into an alveolar unit consisting of a number of portions, which have been accurately described by Millier. The terminal bronchioles are lined by ciliated epithelium, the alveoli, the air sacs, and air vesicles with terminal pores. Owing to the absence of ciliation of these terminal bronchioles any material which reaches into or beyond them is not removed, but is speedily sucked in by the respiratory movements and is bound to become spread through the system. Such a terminal bronchiole with its air spaces is termed an alveolar unit, and any infection which reaches it necessarily involves the whole unit.

These terminal units not only occur at the end of the branchings, but are also given off throughout the bronchial tree, rising from the largest bronchi, usually being in pairs and connected to such a bronchus by only a very small distal bronchiole. The central part of the lung is composed of these units, which are thus in very intimate connexion with the biggest bronchial tubes.

Owing to the respiratory to and fro current and the primary action of the epithelium, material lying in the largest bronchi is rapidly side-tracked into these central units. There is a tendency for these small branchings consisting of a terminal bronchiole with two units attached to occur in whorls of three, a peculiarity of structure which explains the trilobed appearance of the consolidation not infrequently seen in bronchopneumonic conditions.

## Method of Experiment

Dr Gaskell then described the method he employed to make certain of introducing pneumococci into the lung itself.

Tracheotomy was performed, and a soft rubber tube of a size as to engage in the opening of the main bronchus to a depth of the lung passed down the trachea. The culture was injected into the tube by piercing it with a fine injection needle, and the material blown into the lung by means of a glass ball on the external end of the tube. It was found that the most common site of any lesion produced was the base of the right lung, which is of interest, because of the frequency with which this lobe is the site of pneumonia in man. The probable explanation in both cases lies in the fact that the bronchus of the right lower lobe is in the most direct line with the trachea. As a rule 1 cm. at least of the culture was injected, and it was estimated that about half reached the lung itself, the remainder being lost in the tube. Over eighty experiments were performed with the Type 1 pneumococcus whose virulence varied from a titre of below 3 to one between 6 and 7. The nature of the lesion obtained depended entirely upon the virulence of the organism used, and not upon the dose given.

## Broncho-pneumonia

When organisms of about titre 4 were introduced into the rabbit's lung, they and the material in which they were contained were speedily side-tracked by the respiratory current and ciliary movement into the nearest distal bronchi. Frequently the material had reached only the terminal bronchi and had been side-tracked into the central units in connexion with them, thus giving rise to a patchy central pneumonia, if the material had spread more widely a diffuse broncho-pneumonia was produced. The inflammatory reaction which took place remained confined to the units thus invaded, which were often in the earlier stages clearly delineated by the consolidated area. It was only in the early stages that cocci in any quantity could be identified in such a lesion. They appeared to have lost their power of multiplication and to be rapidly destroyed by the inflammatory reaction, though, as would be expected, shortly, this destruction was not always complete. In the neighbouring alveoli began to take part in the inflammatory reaction, so that the unit outline became obscured.

The capillaries of the consolidated patch became more and more engorged, reaching a maximum at about the fourth or fifth day. They then gradually became more conspicuous, and in the meantime the more fluid exudate became slowly absorbed by local lymphatics.

These experiments threw light on that low grade type of broncho-pneumonia which occurred in children, characterized by the successive appearance of fresh patches of lung infection which might even continue for several months. The explanation they suggested was that the local defensive reaction in the original lesions had not been sufficiently intense completely to destroy the material

### Lobular Pneumonia

As the virulence titre of the invading organism increased, though the initial stages of the cleansing of the bronchi and side-tracking of the infecting material were the same, the inflammatory reaction became both more extensive and more intense in nature. The power of the cocci rapidly to reproduce themselves was increased, so that they were much more easily found in the earlier stages, and were no longer confined by the limits of the alveolar unit, but spread directly into others lying around it. The nature of the inflammatory reaction was changed owing to an increase of the numbers of polymorphonuclear leucocytes and consequently a diminution in the preponderance of the larger alveolar cells. The serous exudate was increased and fibrin might begin to be formed in it.

The capillaries again became more and more engorged up to about the fourth day, but then, especially in the centre of the patch, they became rapidly obliterated by the pressure of the exudate in the alveoli. It was during this early period that cocci were most conspicuous. Though the inflammatory patch had become much larger, its periphery was still similar to that of the smaller patch with catarrhal exudate taking place at a fairly early stage. These patches might become so large that they coalesced to form the more extensive lobular type of lesion.

### Lobar Pneumonia

With a further rise of titre to a value of between 5 and 6, if a suitable dose was introduced a lobar lesion was obtained. The organisms had now a much greater power of reproduction and invasion, and spread rapidly throughout the lobe, being apparently able to keep in advance of the host's attempt to localize them by inflammatory reaction until the periphery of the lobe was reached. A lobar lesion twenty-four hours old showed the process clearly.

In this lobar form of lesion the distension of capillaries did not reach its maximum till about the fourth day, after which the capillaries became somewhat suddenly obliterated by alveolar pressure. The lymphatic system became widely dilated throughout the lobe, distension reaching a maximum at about the third day. The large lymphatics round the larger vessels were then extremely conspicuous, and the bronchi and bronchioles were widely involved. They were filled with exudate and merged into the general consolidation. Cocci were most conspicuous at the spreading edge in the earliest stages. They could easily be found up to the third day, with much more difficulty on the fourth day, and had practically disappeared by the fifth day.

### Lymphatic Drainage

In a few experiments at the lobar titre the involvement of the lymphatic system might cause fatal results. Though the lymphatic channels contained all sorts of debris which must have been derived from the alveoli of the lung free cocci were, as a rule, completely absent, only an occasional polymorphonuclear cell contained them, and the contrast was great between the wide lymph channel and the alveoli next to it, in which free cocci were numerous. Occasionally an intense invasion of the whole lymphatic system had taken place and the picture was reversed.

These results were perhaps of wider and more general application. They indicated that the swelling of the lymph gland, which belonged to any inflamed tissue, was usually caused by debris drained from the part affected, which was in itself sterile except for the presence of organisms which as a rule, were safely enclosed in leucocytes, and became filtered out in the peripheral sinuses of the lymph gland. Such organisms were mostly killed by the leucocytes, if all were destroyed the gland subsided without breaking down but if some were successful in destroying their host, the gland then suppurated.

Occasionally, however, an infection was of such virulence that the power of resistance of the peripheral lymphatics became destroyed. The lymphatic system draining the part underwent a true invasion and acute lymphangitis occurred.

### Invasion of the Blood Stream

In all experiments where definite lesions had been obtained and the animal had been killed on the first or second day, blood cultures yielded positive results. By the fifth or sixth day, even when the lesion was severe

the blood culture had almost always been sterile. Thus organisms were always present in the blood at the earlier stages.

### Pleurisy

The relation of pleurisy to lung lesion varied very considerably. An intense form of double pleurisy and pericarditis might occur with titres of high virulence, and probably developed with extreme rapidity, beginning within twenty-four hours of invasion. Pleurisy has also been found with milder types of lesion due to cocci of lower virulence in connexion especially with the lobular type of lesion. In its mildest degree it consisted of a patch situated over a lobular lesion which had just reached the surface, the patch then had been found to be sterile at all stages. When the lung lesion was larger, the pleurisy, though local, was sometimes infected, but usually when this had taken place the whole pleural cavity soon became involved and considerable effusion occurred. A lobar lesion had also been accompanied by unilateral pleurisy with effusion.

### Pericarditis

In a few experiments the pericardium alone became infected, both pleural cavities escaping. The relationship of the root of the lung to the pericardium being very close, an infection mainly localized to the central region of the lung near the root could reach the surface, where it lay against the pericardium and directly invaded this cavity. Such pericarditis, if recovered from, gave rise to adherent pericardium, which suggested that certain cases of this condition might arise from a pneumococcal infection by way of the lung.

### Crisis

On the strength of the facts above described Dr Gaskell attempted an explanation of the crisis in lobar pneumonia. He said:

I have already stated that cocci have practically disappeared from the lung on the fifth day, but are usually easy to find in the more severe lesions until then. Now the chief toxin of the pneumococcus is an endotoxin which is only liberated when the cocci are killed. There is thus an increasing liberation of endotoxin up to the fifth day, but after that the supply practically ceases. One of the factors determining the crisis may therefore be the final neutralization of endotoxin by the defences of the body forty-eight hours later on the seventh day. Another extremely interesting phenomenon has been demonstrated by Armstrong. He has shown that in lobar pneumonia the protective power of the serum which is extremely slight at the onset of the disease, practically vanishes after twenty-four hours and remains absent for the first four days. On the fifth day it suddenly reappears and increases enormously and with great rapidity to a maximum on the seventh or eighth day. It then slowly diminishes, throughout convalescence. The rapid rise of this power to destroy pneumococci coincides with the crisis. The combination of these two processes thus affords some explanation of the regularity with which crisis occurs on or about the seventh day.

### Low Virulence Organisms: Terminal Pneumonia

No experimental method of lowering the resisting power of the host had been attempted, but Dr White had been approaching the problem of the nature of terminal bronchopneumonia from the clinical side, and had also attempted to correlate the titre of organisms obtained from human lung lesions with the experiments Dr Gaskell had described. He had had the opportunity of examining strains from a considerable number of cases of pneumonia, extending over nearly two years, which had occurred in a somewhat isolated village near Cambridge the outbreak had therefore been due to the nature of an epidemic. The titre of the strains recovered had been remarkably constant, and the number of the inhabitants of this village being comparatively small, it was possible to draw up a scheme of the path of infection had probably taken. In this instance a pneumococcus of high titre had therefore been definitely traced from case to case by actual direct contact. These results opened up the prospects of control of pneumococcal infection in so far as lobar pneumonia in the healthy adult was concerned, and pointed very strongly to the necessity of the isolation of this type of disease. The occurrence of pneumococci of titre 5 or over in the human throat was undoubtedly very uncommon, the organisms with pneumococcal reactions which were present were almost always of quite low titre.



## England and Wales.

### ST THOMAS'S HOSPITAL DINNER

THE old students' dinner of St Thomas's Hospital was held on October 28th, with Sir Charles Ballance in the chair, at St Thomas's House, the splendid new residential club for students in Lambeth Palace Road, opposite the entrance to the Medical School. A description of the building and of the opening ceremony performed by the Archbishop of Canterbury appeared in our issue of April 30th, 1927. Among those who supported the chairman on Friday evening last were Sir John Rose Bradford, President of the Royal College of Physicians, the medical heads of the three Services—Surgeon Vice-Admiral Arthur Gaskell, Lieutenant-General Sir Matthew Fell, and Air Vice-Marshal David Munro—Sir James Berry, President of the Royal Society of Medicine, Dr E W Ainley Walker, Dean of the School of Medicine at Oxford, and Professor H R Dean of Cambridge, together with Sir George Makins, Sir Hector Mckenzie, Dr T D Acland, and other past and present members of the staff of St Thomas's, the Treasurer (Sir Arthur Stanley), and Lord Riddell, one of the Governors. Sir Charles Ballance, in proposing the toast of prosperity to St Thomas's Hospital and Medical School, gave some recollections of the time when he was a student in College House fifty years ago. Coming to more recent days he congratulated two old students, Dr C H Vernon on winning the King's prize at Bisle, and Dr Percy Smith on vindicating in the law courts his professional and personal honour. Sir Arthur Stanley expressed the hope that St Thomas's House, as a real centre of good fellowship, would prove to be a home and club for all students past and present. Sir Cuthbert Wallace, Dean of the Medical School, who also responded to the toast, referred to the loss by death of three distinguished old students, J L Adams, Sir Bryan Donkin, and J H Tonking—"the surgical father of Devon and Cornwall", congratulated Sir C T Martin and Sir Frigolani Buzzard on their recent honours, and paid a tribute to Sir Charles Ballance for his thoroughness and largeness of view, and his loyalty to younger men and to the institutions he served. The health of the guests was proposed by Mr Percy Sargent, who coupled with the toast the name of a successor and worthy competitor of John Hunter—Sir Arthur Keith. In his reply Sir Arthur Keith congratulated St Thomas's students on their gorgeous new club rooms, and spoke of his own debt to St Thomas's for its courteous reception when he first came to London as a shy Aberdeen lad, and for the friends it had given him like George Makins, Charles Ballance, Cuthbert Wallace, and F G Parsons.

### KING EDWARD'S HOSPITAL FUND FOR LONDON

In certain respects the statistical report for 1926 on the finance of London hospitals, which has just been issued by the hospital committee of King Edward's Hospital Fund for London, is the first of a new series, as compared with those of previous years the present statement is larger and ever more interesting. A footnote on an early page recalls that the issue of these reports began with that for the year 1903, and was printed for private circulation only, as were those of the four following years. The first public report appeared in 1909, and contained the figures relating to sixty-six hospitals for the previous year. A new series began in 1922, when an analysis of the general fund income was added, and now, again, change has been rendered necessary by the revision of the system of hospital accounts and the extension of the Fund's area of operations from a radius of seven miles to one of eleven. The present report deals with 134 hospitals individually and collectively, coloured graphs have been added to indicate the gratifying progress during the past five years. The available beds increased from 13,270 in 1922 to 14,170 in 1925, and 14,470 in 1926. The in-patients numbered 209,700 in 1926, as compared with 194,200 in 1925, and 167,900 in 1922. Out-patient attendances have grown from 6,357,000

in 1922 to 7,163,000 in 1925, and 7,455,000 in 1926. The total cost incurred was £3,058,000, an advance of £700,000 on the year 1925 and of £407,000 on 1922. An analysis of the cost of working at each separate hospital is compared with the average cost for the particular group, the case of the teaching hospitals, for example, the average was £234 for each occupied bed. In an appendix to the report there are tables showing the consumption of certain articles of food on a basis of 100 persons per day, for patients and staff separately and combined. The cost in 1926 was £3,019,000, as compared with £2,485,000 in 1922, an increase of £534,000. Between 1925 and 1926 there was a drop of £103,000, due mainly to a large fall off in legacies. The result was that after an aggregate surplus for each of the years 1923, 1924, and 1925, 134 hospitals had an aggregate deficit of £39,000 for the year 1926, when the number of hospitals with deficits was fifty-five, while seventy-nine had surpluses. Of the total expenditure of £3,058,000, about £586,000, or 19.2 per cent, was covered by income from investments and £983,000, or 32.1 per cent, by patients' payments and other receipts on account of services rendered, while £1,432,000, or 46.8 per cent, was provided by voluntary contributions, including legacies. The total income was 98.7 per cent of the expenditure, leaving a deficit of 1.3 per cent. In addition to the general fund income for maintenance purposes, the hospitals received £280,000 in endowment, and raised £479,000 for building and equipment, bringing the total receipts in 1926 to £3,778,000. The amounts received for buildings and equipment have permitted a steady increase in the number of available beds, as well as other extensions and improvement. The hope is expressed that this report will assist hospital managers to check any excessive expenditure, reducing it whenever it cannot be justified and thus following one of the recommendations of Lord Cive's committee for the re-establishment of the finances of the voluntary hospital system.

### COUNTRY HOSPITAL FOR BRISTOL CRIPPLED CHILDREN

As stated in a previous issue the Bristol Crippled Children's Society and the Bristol Orthopaedic Hospital have amalgamated. The joint body has bought 65 acres of land at Winford in Somerset for the erection of an open air hospital school for non-tuberculous crippled children. This site, approved by Sir Robert Jones, is on a spur of the Mendips six miles from the centre of Bristol. Here there will be ample room for expansion and space enough to provide country annexes to all the city's hospitals should the need arise. It is proposed that a hospital with three wards of sixty beds each should be built, and work will shortly be started on the first ward with its operating theatre and administrative block. The fund of the joint body amounts, at present, to £20,000. It is estimated that at least £40,000 is needed for the erection of the first ward, and £10,000 for each additional ward. When the new buildings have been erected the support from local bodies such as the Education Authority, and others will be sufficient to make the institution pay its way. The experience of other open air schools amply proves that the greater the number of minutes the mother spends in maintenance for each child, and the better the progress of the society avoiding any further appeal to the generosity of the public.

### R A F HOSPITAL AT HALTON

A new hospital for the Air Force was opened at Halton by Princess Mary Viscountess Lascelles on October 3rd. Sir Samuel Hoare, Secretary of State for Air, and the Government were not intended to duplicate hospital facilities where military, naval, and civil hospitals were already existing. Last year some 1,200 patients were admitted from the R A F to naval and military hospitals. Halton is the largest Air Force station in the world and the hospital there would be the principal hospital of the Air Force. It contained 204 beds, including twenty for officers and nursing sisters and twenty-three for the wives of officers and airmen. It would admit patients not only from the Air Force station at Halton, but from the Air Force stations outside the range of naval, military, or civil hospitals, and would be a great asset to the Air Force.

<sup>1</sup> Statistical Report on the Income and Expenditure of One Hundred and Thirty Four London Hospitals for the Year 1926. London: Spottiswoode, Ballantyne and Co. Ltd 1927 2s 6d net 2d post free.

to get as much sunlight and air as possible and to reduce dust and labour in cleaning its wards were floored with rubber thanks to the generosity of the Rubber Crovers' Association and a flat roof for natural sun treatment had been provided. There was a well equipped operating theatre, to the lighting of which careful attention had been given. The Air Force. Sir Samuel Hoare continued, was rightly proud of its medical and nursing services, and of the splendid work its medical officers and nurses did at home and abroad, often in the face of great difficulties. There was no service where a higher standard of health was so constantly needed, and no service where efficient surgical help was more urgently required to meet the inevitable strain and risks of life in the air.

#### DENTAL SERVICE IN INDUSTRY

In his address, which we reported on October 8th (p. 655), given at the opening of the winter session of the Royal Dental Hospital, which coincided with the inauguration of the John Hampton Hale research laboratory. Sir Walter Fletcher emphasized the importance in preventive medicine of the proper development and preservation of the teeth. The matter is also highly important in industry so that with some firms the worker before engagement is required to possess a properly cared for set of teeth, and provision is made for their maintenance in good condition by dental clinics attached to the work. The Industrial Welfare Society has issued a pamphlet entitled *Dental Service in Industry*, as a guide to firms in establishing dental services. It is stated that not only is efficiency greatly increased if toothache is absent but also that a works dental service leads to a remarkable decrease in illness from indigestion, gastritis, influenza tonsillitis, anaemia, and rheumatism. It is suggested that for young workers the treatment provided should be free of charge but compulsory, the reasons being that children now come from their schools with teeth properly attended to but are not entitled to dental benefit under the national scheme before the age of 21. To older workers charges are made but these are less than the cost of private dental treatment while other advantages accrue to the worker. Thus the treatment is carried out in the firm's time examinations and consultations are free payment is made by weekly deductions varying with the scale of wages and where the treatment is voluntary the firm may find it possible to bear a part of the cost. Large firms with over 3,000 workers may employ full time dentists smaller firms a part-time dentist or one who visits the works once or twice a week. Usually a contract may be made with a local dentist to treat the workers at his own surgery at lower rates than those for private patients. The pamphlet contains a large amount of information about the choice of dentist by employing firms, the construction and appointments of the surgery the organization of the clinic, and the cost involved. Firms are also advised to obtain the co-operation of outside agencies such as the Hospital Saving Association and the approved societies. The value of this advice will certainly be recognized if and when dental treatment becomes a part of the State's responsibility for health. In such event we may presume that well organized dental services rendered by reputable firms will be linked up in some way with the national service.

#### RADIOLOGY IN PULMONARY DISEASES

Under the auspices of the Joint Tuberculosis Council a post-graduate course on radiology in tuberculosis and diseases of the lungs, will be held at the Victoria Park Hospital, from November 21st to 26th. Throughout each day there will be an exhibition of special radiograms, and lectures and demonstrations will be given by members of the hospital staff. The following subjects will be dealt with on the six successive days respectively: the radiogram in non-pulmonary tuberculosis the various stages of pulmonary tuberculosis pulmonary tuberculosis in childhood, the use of lipiodol spontaneous and artificial pneumothorax and pleural effusions, and intrathoracic tumours. Demonstrations will be given also on common errors in radiological diagnosis and on the use of x-ray apparatus. There will be a museum demonstration on anthracosis and the causes of enlargement of mediastinal glands. A lecture on pleural adhesions will be given by

Dr S. R. Glayne. The fee for the course is three guineas, and further information may be obtained from Dr William Brand, the honorary secretary of the post-graduate courses, The Larches, Farnham Royal, Bucks.

## Ireland.

#### DR GAUSSEN OF DUNMURRY

A REMARKABLE tribute was paid to Dr D. P. Gausson of Dunmurry, co. Antrim, on October 25th, when a meeting attended by a large number of persons of every class and creed was held to present a testimonial and address to him. The chair was taken by the Right Hon. J. Milne Barbour, M.P., Minister of Commerce for Northern Ireland, who said that Dr Gausson was leaving after occupying the post of medical officer for forty-two years. He was the friend of all, had aided them in their hours of trial, and had given of his best to all on every occasion, he had taken a leading part in sport and in all the activities of life, and when the war came he had offered his services and had gone out for his country. Mr. Barbour then presented to Dr Gausson the address, to which more than six hundred persons had appended their signatures, and a cheque. Miss McCance handed to Mrs. Gausson a fine silver salver, and spoke of her valuable services on all occasions. Numerous others spoke and bore testimony to the high qualities of Dr. and Mrs. Gausson. Dr. Hunter, as a brother practitioner, gave expression to Dr. Gausson's worth. Dr. Gausson had been president of the North of Ireland Branch of the British Medical Association and of the Ulster Medical Society, and stood amongst the highest in the local ranks.

#### KNOWING EXPECTATION OF LIFE

Professor Joseph W. Bigger, M.D., president-elect, Dublin University Biological Association, gave an address on the expectation of life and the bacteriological laboratory. One method of ascertaining the expectation of life was that used by insurance offices where premiums were regulated by a table known as the O.M. table, which had been constructed from the actual experience of sixty British insurance offices between the years 1863 and 1893. A second method was founded on the census returns and the deaths registered in a single year or over periods of three or ten years. The life table method reflected faithfully the healthiness or otherwise of the particular year or period of years. According to the latest life tables of England and Wales, those based on the experience of the years 1920 to 1922, a male aged 25 years had an expectation of 44 to 48 years. According to the O.M. table the expectation of life was 39.55 years. The expectation of life was now greater for all males, healthy and sick together in England and Wales by about five years than it appeared to be for those carefully selected men who insured their lives. Medical science was constantly advancing—now along one line now along another. At one time physiology showed the most marked progress. That was followed by bacteriology and to-day biochemistry was spreading new and attractive vistas. Bacteriology was still a new subject it was little more than fifty years since thanks chiefly to the work of the two intellectual giants Pasteur and Koch, bacteriology was firmly established as a science—an appreciation of the facts of which were necessary for any real understanding of medicine and surgery. In conjunction with pathology the action of bacteria on the human and animal bodies was investigated, and the methods by which the body resisted carefully examined. Bacteriologists made no nice distinctions as to the animal and vegetable kingdoms in the early days, for all disease was then province. Questions of transmission of disease were also being investigated and it was soon realized that man might be infected not only by another man but also by animals, as in anthrax and tuberculosis. The practical importance of these discoveries could not be over-emphasized for by knowing how and by what insect a disease was spread they could frequently stamp out the disease. It was not unfitting, the lecturer said, in this connexion to recall the death of Adrian Stokes, he had to use his

diseases. Accurate diagnosis was half the battle in itself, but neither the State nor the local authorities had the assistance of the laboratory. In most civilized countries facilities for laboratory diagnosis and for the detection of carriers of infectious diseases were available, but here lagged behind. The time had come, Dr. Biggar (continued) for the public to realize what hygiene could do, and to insist on it being done in order that the present generation might reap the harvest that bacteriology had sown as it was being reaped in other countries. It was time that Ireland should follow this lead, and engage in serious efforts to prevent those diseases which were known to be preventable.

GENERAL COUNCIL OF EDINBURGH UNIVERSITY

The statutory half-yearly meeting of the General Council of the University was held on October 28th. Principal Sir Alfred Ewing presided over a good attendance. Dr R McKenzie Johnston, one of the assessors appointed by the Council of the University Court, having intimated that he did not wish re-election, the two assessors to the University Court appointed were Alexander Miles, MD, FRCS, and Sir Norman Walker, MD, FRCP. Reference was made to the loss which the University had sustained during the past session by the death of Professor Harvey Littlejohn of the chair of forensic medicine. A draft ordinance for the foundation of a Buchanan chair of animal genetics was considered, and it was intimated that the University Court had received gifts towards the department of research in animal breeding as follows: £10,000 from the International Education Board, New York, £10,000 from Lord Woolavington towards the endowment of the chair, £20,000 from the International Education Board and £16,000 from the development commissioners towards the cost of buildings, and £10,000 from the Empire Marketing Board, with £1,000 from the Highland and Agricultural Society, towards endowment. A report was received regarding a conference of representatives from the various Scottish universities which had been held at Perth in March regarding the status of doctors' degrees. It had been decided that the degree of DD and LL D should be continued to be conferred *honoris causa* only. This was approved by the University Council. It was intimated that the University Court had approved of certain changes in the clinical examination for the MD degree. The examination for this degree would, in future, consist of two parts—a major and a minor—to suit the experience of bachelors in medicine who had been working along different lines. The examination might, in future, be taken with the major part, consisting of clinical medicine and some special branch of medical science or practice possessed by the candidate, and the minor part, or the examination might be so fixed that the major part consisted of a special branch of medical science or practice possessed by the candidate, together with clinical medicine as the minor part. An application of the Council brought out some interesting figures as regards the numbers attending Edinburgh University. The number of graduates on the roll of the General Council at January 1st, 1927, was 16,855, as compared with 12,222 on the corresponding date in 1914. The total of related students in the year 1926-27 was 4,139, as compared with the average figure of 4,038 for the previous ten years. In the medical faculty the number of matriculated students in 1926-27 was 1,017, as compared with 924 in the preceding year, and 1,055 two years previously. The increase in the number of medical students is shown more emphatically by the fact that the number of first year students entering the medical curriculum was 242 in 1926-27 as compared with 177 in 1924-25, and compared with an average of 189 for the preceding five years. The income of the University for the year ended July 31st 1926 has been £243,170, as against an expenditure of £214,267, leaving a surplus of approximately £28,000. The sum received for fees for tuition, examination, etc., was £93,730, while the sum paid in salaries of the teaching staff was £130,000.

Dr. Bigger went on to trace the connexion between the expectation of life and the bacteriological laboratory. Expectation of life might be increased by postponing the age of death, or, what amounted to the same thing, by preventing avoidable death. In what way could the biological laboratory do that? There were five chief functions of the laboratory, each with its own influence on public health, these were research, diagnosis, control, prophylaxis, and therapeutics. Of these, research was by far the most important, and sufficient had been said to make clear how much could be done by research to demonstrate the cause of many infectious diseases. To illustrate the influence of the bacteriological laboratory on the expectation of life the lecturer submitted tables showing the expectation at various age periods in different years. The expectation of life in 1920-22 was greater by fourteen years than in the period 1871-80. In the last half-century the death rate had fallen by 21 per cent. Apart from figures, however, no one would deny the great advance of surgery in the half-century, and the number of lives now saved which fifty years ago would undoubtedly have been lost. He made the bold claim that for virtually all the advances made by surgery, for nearly all the lives saved, the credit must be awarded to bacteriology. It had been estimated that the total number sick at any time throughout the year was about double the number of deaths occurring during the year. In the Irish Free State, in 1925, more than 43,000 deaths occurred, and, on that basis, 86,000 were sick every day. By saving one death, particularly one death from an infectious disease, many days of sickness and the cost of treatment were saved and the labours of the sick permitted to enrich the country. Many years ago the value in potential labour of an English agricultural labourer was assessed at £200. On that basis the Free State lost £8,600,000 each year in the deaths of its people. He did not wish to stress unduly the financial aspect, for the pathos of unnecessary death should in itself be a sufficient spur to fresh achievement, but he realized the truth of Andrew Balfour's dictum "Demonstrate material monetary benefits resulting from hygienic measures and you may easily the day." That hygiene did pay, and pay handsomely, was just beginning to be realized. The people of Ireland should understand these facts. The first thing, perhaps, was to teach hygiene better to the medical student, to teach him normality and prevention, rather than abnormality and disease. Such incidents must be prevented as that reported from a village in County Dublin the other day, where the medical officer condemned the water supply because five cases of diphtheria had occurred. Instruction must be given in the schools, but an attempt must also be made to reach the adults by posters and handbills and through the newspapers. Not only the public, but the local authorities, and even the Government departments, were lacking in vision. The medical men engaged in the public health service were, for the most part, wretchedly paid, and in a number of recent cases country authorities were unwilling to appoint medical officers on grounds of economy. Such is the filsest of false economy, for a country which is not prosperous cannot afford to indulge in the luxury of ill health. It would be a very inefficient medical officer of health who could not save twenty lives a year—a saving surely worth £1,000, without considering the corresponding saving in sickness. Dr. Bigger said that bacteriology had led to the saving of very many lives, but even with the incomplete knowledge as yet possessed it could save very many more. The way had been pointed out, but the public health authorities had not followed it. Public opinion must force them to do their utmost to save the lives which present knowledge allowed them to save. Cases of infectious diseases were treated in hospitals at the expense of the community, but there was no provision except of the most general description for the prevention of those diseases. Laboratory facilities were available, at the public expense, for the diagnosis of venereal diseases, but what of diphtheria, tuberculosis, enteric fever, and many other

The habitable and invested property of the University amounted to over £1,700,000. The benefactions acknowledged during the year 1925-26 had amounted to over £44,000.

#### MIDWIVES AND MATERNITY HOMES (SCOTLAND) Act, 1927

The Scottish Board of Health has issued a circular to local authorities drawing their attention to the Act of the present year which amends the Midwives (Scotland) Act of 1915 and provides for registration and inspection of maternity homes. The Act came into operation on July 29th 1927. One of the new provisions enacts that any person not certified as a midwife who attends a woman in childbirth may do so only under the direction and personal supervision of a qualified medical practitioner. Protection is, however, afforded to persons attending a case of sudden or urgent necessity. Students undergoing training in midwifery are also excepted. Midwives are given the right of recovering reasonable compensation from the local authority when suspended from practice to prevent the spread of infection. Payments in connexion with maternity and child welfare schemes are also sanctioned. The section relating to medical assistance in case of emergency now provides that the fee paid to the doctor instead of covering "one subsequent visit" shall cover "such further visits as shall be prescribed by the scale" fixed by the Scottish Board of Health. Another section provides that for any areas in which a maternity service and child welfare scheme is not in operation the local supervising authority shall provide the services of a midwife or doctor when necessary with power to recover the fee from the husband or guardian. With regard to registration and inspection of maternity homes, this section of the Act comes into operation from January 1st 1928 and imposes a penalty on any person who therefter carries on a maternity home unless it is registered. The fee payable for registration is to be 5. The registration is effected by the local supervising authority but may be reduced or cancelled if the authority is not satisfied that the person is fit to carry on the home or that the situation, sanitation, accommodation, staffing or equipment is not fit for a maternity home. Homes together with their prescribed records may be inspected by officers of the local supervising authorities and by officers of the Scottish Board of Health. The local supervising authority has power to exempt from the inspection and registration any hospital or similar institution not carried on for profit. Local authorities are instructed in the circular as soon as possible to give notice by advertisement or otherwise to ensure that persons carrying on maternity homes in their areas are made aware of the requirements of registration.

### Correspondence.

#### WHAT IS COMPARATIVE MEDICINE?

SIR—In the report of the meeting of the Section of Comparative Medicine of the Royal Society of Medicine (BRITISH MEDICAL JOURNAL, October 29th pp 783 and 787) no actual definition of "comparative medicine" is given. As I study comparative medicine seems so extensive that it can only be defined somewhat as follows:

The study of disease and its treatment by comparison, in human beings, animals and plants and in relation to race or variety, sex, age, place in family, climate, season, soil, food and mode of life (as modified by occupation, habits and surrounding influences).

It must of course necessarily include the study of normal as well as pathological anatomy and physiology and must partially depend on a variety of other scientific knowledge.—I am, etc.

London W1 Oct 28th F PARKES WEBER

#### TUBERCULOSIS OF THE KIDNEY

SIR—I have read with great interest the account of the discussion on renal tuberculosis at the Annual Meeting held in Edinburgh last July (BRITISH MEDICAL JOURNAL, October 8th pp 625-633), and hope you will allow me to raise a few points.

Regarding Professor Fullerton's method of retroperitoneal catheterization of the ureters by open operation, I would like to mention that in 1913 and 1914 I had four cases on which I did a similar operation, but, instead of making two oblique incisions, I exposed the pelvic portions of both ureters by means of a single median incision. The badly infected ureter was recognizable at a glance. It was thick and hard and was stretched like a bowstring across the pelvis. The apparently healthy ureter was catheterized through an incision about an eighth of an inch long in its wall.

Recently I have not found it necessary to expose the ureters for the purpose of making a diagnosis as I have adopted a different method. No patient with one perfectly healthy and unobstructed kidney ever has permanently high blood urea. On the other hand, normal blood urea does not guarantee the integrity of one kidney, as it may be found where both kidneys are only slightly damaged. If, therefore, a patient suffering from advanced renal tuberculosis gives a high blood urea the disease is bilateral, and I feel that it is unnecessary to catheterize his ureters; as operation is contraindicated. If he gives a normal blood urea the ureters should be catheterized, and in most cases the disease will be found to be unilateral. In this way it is possible to weed out most of the inoperable cases without putting them to any discomfort. I have never failed to catheterize the ureters in any case with a normal blood urea, and therefore have not been driven to expose them by open operation in order to make a diagnosis.

I note that Sir John Thomson Walker stated that chromocystoscopy has little value in deciding whether the kidney is tuberculous. Strictly speaking he is correct, as a delay in the appearance of the colour or a diminution in its intensity is found in a host of conditions other than renal tuberculosis. But if tubercle bacilli have been found in the urine a poor diminution of the dye on one side is compared with the other is strong presumptive evidence of involvement of that kidney. I believe that, in order to obtain the best results from this test, only a small quantity of indigo-carmin (5 c.c. of a 0.4 per cent solution) should be injected into a vein. I never give intramuscular injections as the time of appearance of the colour is so variable (from six to ten minutes with a healthy kidney). The excretion of the dye commences four to five minutes after an intravenous injection. Again if a large quantity of the dye is injected the blue coloration is so intense that the cystoscopic medium soon becomes obscured and in addition it may be impossible to discover any difference in the intensity of the colour coming from the two ureters, although one kidney may be actually eliminating much more dye than the other. If two solutions of the dye are very dilute a slight difference in their concentration is readily recognizable by the shade, if they are both strong the colour is so intense that a considerable difference in their concentration cannot be detected by inspection. After an intravenous injection of a small quantity of indigo-carmin, not only is the first appearance of the dye easily recognized, but any difference in intensity of the colour from the two sides is usually well marked.

Of course, a good elimination of the dye does not preclude a minute tuberculous lesion of the kidney. The results of this test must always be controlled by catheterization of the ureters before operation. Chromocystoscopy is a test not of renal tuberculosis but of the functional value of the kidney. Tuberculosis rapidly destroys the kidney's excretory value and therefore this test is of definite though indirect use—I am, etc.

London W1 Oct 1st

J SWIFT JOLY

#### DISEMBOWELMENT AND SHOCK

SIR—I noticed in your issue of September 24th (p 569) a letter referring to the capacity of the human organism to endure the shock of being disembowelled. The following incident may be of interest.

During the war I was medical officer to the 33rd Battalion Canadians and in the battle of Givenchy the first Canadian battalion was very badly cut up, owing to the fact that one or two of the battalions of the British Division on our left met with obstacles which caused our

left flank to be in the air. On our immediate left was a Highland battalion. During this engagement a Highlander walked into my dressing station with his arms crossed in front of his abdomen. He was deathly white and sank to the floor. We placed him on a stretcher and asked him what he would like best, and he asked for a piece of bread, which was given to him. When he held up his hand to receive it, it was observed that he was holding several coils of intestines in his arms. He had been cut across the abdomen with a bullet as mortally as if it had been done with a knife. His intestines had not been perforated. He was given morphine, and dispatched as rapidly as possible to a clearing station in the rear. Unfortunately I was not able, in the heat of the moment, to follow his career.

His fortitude was typical of many of the British soldiers to whom it had been my privilege, from time to time, to render first aid—I am, etc.,

A. K. HAYWOOD, M.D.,

October 13th

Superintendent, Montreal General Hospital

\* Dr. C. E. Morris (Holywell, Flintshire) sends us a note of a tradition current in the Flintshire upland about a certain Captain Morgan, who, while on his knees, and holding up his escaping bowels in one hand, slew with his sword his three assailants.

### PYREXIA DURING THE PUERPERIUM

SIR,—I am surprised at the number of practitioners who rush into print on insufficient information. Your correspondents, regarding the above, have failed to appreciate that the Ministry did not intend the terms "puerperal fever" and "puerperal pyrexia" to be synonymous. Every case of a temperature of 100.4° for more than twenty-four hours is not notifiable as puerperal fever, nor is every woman with a headache and a temperature due to mammary irritation or constipation. The Puerperal Fever and Pyrexia Regulations state definitely that puerperal pyrexia is reserved for that class of a rise of temperature which cannot be notified as puerperal fever. The Orders relative to the above are neither unjust nor ridiculous as stated, but if, as your correspondents have deduced, fever and pyrexia are to be used as synonymous terms, then I agree with the Northumberland practitioner that this is indeed meddlesome legislation—I am, etc.,

Health Department,  
Sunderland, Oct 31st

A. STUART HEBBLETHWAITE,  
Medical Officer of Health

### PREVENTION OF MATERNAL MORTALITY

SIR,—By this time many practitioners have read the annual report issued by the Ministry of Health.

Encouraging as many of the sections are, some of them make depressing reading, and in this category is the reference to the mortality of women in childbed. The new midwifery was introduced solely with the idea of reducing mortality. It has now had at least five years' trial. During the last three the death rate, both from puerperal sepsis and from all other causes, has gone steadily up. Meanwhile the birth rate has rapidly fallen.

If these be the results of non-interference, surely it would be better to trust more to art and less to nature. Of course, in a civilized community there is no such thing as entirely natural labour, but there is "assisted" and "unassisted" labour. The latter undoubtedly involves longer suffering, and the mortality figures appear to show that it also means increased risk—I am, etc.,

A. CAMMELL STARK

Wanstead, E 12

### "THE HISTORICAL ASPECTS OF QUACKERY"

SIR,—Sir James Barr's last letter makes it very difficult for me to continue this correspondence, but Dr. Kenelm Reid seems to be under a misapprehension which I would like to remove.

In his letters Dr. Kenelm Reid has given to remarks of mine a far wider interpretation than was intended or than can correctly be read into them. The remarks in question applied only to those who "believe" that "all diseases diagnosed and treated by means of two boxes

containing some simple electrical apparatus" persons I naturally designated "the followers of Abrams" since this was the theory admittedly held and put forward by Abrams himself.

Dr. Kenelm Reid makes it perfectly clear in the first paragraph of his letter that he, and presumably all the editor of, and those who contributed anonymously to, the book *Abrams' Methods of Diagnosis and Treatment*, do come within this category, since this book, as quoted by Dr. Kenelm Reid, does not pretend to support the extravagant claims.

My remarks were not meant to apply to, and, I venture to suggest, if perused carefully could not be read as applied to, those who do not advance such claims. While I regret that my words have been misconstrued, it is obvious that a suggestion which has not been made is not capable of withdrawal—I am, etc.,

Edinburgh, Oct 31st

A. J. CLARK

### SECOND ATTACK OF PITIRIASIS ROSA

SIR,—In your issue of September 24th Dr. Gordon Edolston (p. 549) gives an interesting memorandum on a second attack of pityriasis rosea, and Dr. Graham Little in your issue of October 8th (p. 663) mentions several cases cited by Drs. Whitfield, Dore, and Gray.

One week ago a young doctor in this city consulted me. He was suffering from an attack of pityriasis rosea of three weeks' duration, the herald patch having been near the right nipple. The rash was profuse and of the macular type, and he had felt "out of sorts" for the previous three weeks. He told me that in 1917 while in the army, he had been in hospital for two weeks with a rash which had then been diagnosed as pityriasis rosea.

A curious fact in both this case and that of Dr. Edolston is the length of time between the first and second attacks—three and a half years in Dr. Edolston's case and five years in the case reported above. The well known fact that recurrences of pityriasis rosea are extremely rare leads one to think that in the above cases only temporary immunity was conferred by the first attack—I am, etc.,

IRVING H. McCRAW

Belfast Oct 25th

### "SYMPTOM-COMPLEX" OR "SYNDROME"

SIR,—What exactly is the pathogeny of the expression "symptom complex"? So far as I know it has no existence in French, being replaced by the more elegant and equivalent in English "syndrome". Is there an expressive and definite word "syndrome"? Is there a reason for the retention of this clumsy Greco-Latin hybrid in English medical literature? Its appearance in journals and textbooks—I speak from the viewpoint of the press—seems to have coincided with that of the French word in the last few years when research was distinguishing diseases as entities from mere associated groups of symptoms—the sense in which the scholarly professor of medicine at the University of Edinburgh uses it of pernicious anaemia on p. 671 of the *Journal*, October 15th, 1927.

There appear to be several objections to the use of "symptom complex". On the other hand "syndrome" from the Greek *συνδρομή*—association or group—seems sufficient for our purpose. It can be used by itself or with the name of a disease—thus the syndrome of typhoid fever meaning the group of symptoms we associate with that ailment, or we can say, with Professor Gulland, pericarditis is a syndrome rather than a disease—I am, etc.,

A. A. WATSON, M.D.

Cannes, Oct 17th

### A PROPOSED ASTHMA RESEARCH COUNCIL

SIR,—Sir James Dundas-Grant has done well to draw attention again (October 29th, p. 804) to the frequent association of nasal disease with asthma, and to the benefit which often results from the cure of the nasal disease. It is not, however, with obvious nasal disease that the omission of a rhino-scope examination is likely to be a mistake, but rather with those cases of nasal disease which have been termed latent, and especially those in which there is no nasal affection though the condition has such beneficial effects on asthma as the



has come to look upon the association of uterine disease with asthma as fortunate for the patient in that its cure is followed in most cases by great benefit to the asthmatic and frequently by disappearance of the attacks.

The relationship of the two affections is a matter for more extended discussion than is possible in a letter. Asthma is by no means always nor indeed in most instances, obvious. It must be looked for, and the only definite method of diagnosis is by examination of the contents of the cavity. Laryngeal examination and transillumination are not definite and it is because this is not sufficiently recognized that so many cases are overlooked. What is more, too—and this is of special significance in regard to asthma—uterine disease is much more common in children than is generally supposed. The signs and symptoms are masked by the presence of adenoids—I am, etc.,

Glasgow Oct. 20th.

W S SYME

### THERAPEUTIC ABORTION

Sir—Of late a new and disturbing medical term has made its appearance in increasing prominence in the columns of the *Journal*—namely, "therapeutic abortion." May I, a humble general practitioner, inquire the meaning of the term? Is it used to describe the failures of the obstetric art or is it used to cloak the criminal abortions? As I consider them induced by those leaders of the profession who profess to see in the desire of well-to-do couples to avoid parenthood sufficient mental upset to justify the destruction of an unborn, but living and viable human being?

I submit that the use of the term is unmoral and scientifically unjustifiable. It is degrading to our ancient art and it can but lead to a lowering of our professional status in the eyes of the public to see in the columns of the leading medical journal of the world discussions as to when the slaughter of an unborn child may be carried out. Abortion is never justified, even when carried out at the behest of a governing power, as in Prussia at the present day. I venture to predict that the increasing laxity in our regard of the sacredness of human life will if unchecked lead in time to discussions under the head of "therapeutic homicide."

I have waited for those of greater standing than myself in the profession to tackle this matter, but in vain. Perhaps it is fitting that the general practitioner should come forward to protect family life—I am, etc.,

London N.W.5 Oct. 19th

P P DALTON

## Universities and Colleges

### UNIVERSITY OF OXFORD

THE Vice-Chancellor announces that Sir Archibald Garrod, KCMG, MD, FRS, has tendered to the Prime Minister his resignation of the office of Regius Professor of Medicine which he has held since 1920. The resignation will take effect as from December 31st 1927.

### UNIVERSITY OF CAMBRIDGE

At a congregation held on October 25th the following medical degrees were conferred:

MD—C E Newman  
MR BChir—G B W Walker, G A Q Lennane  
BChir—E H A Walker

### ROYAL COLLEGE OF PHYSICIANS OF LONDON

An ordinary quarterly meeting of the Royal College of Physicians of London was held on October 27th when the President Sir John Rose Bradford was in the chair.

#### Members

The following candidates having satisfied the Censors Board were admitted to the Membership:

L McD Allen MD Otago Doris V Baker MD Lond I RCP  
D David MD Lond L RCP H V Dick MB Camb  
L RCP A Erian L RCP N T Glynn MB Camb L RCP  
W G C Goldberger MB Camb J C E Hyden MD Melb  
Major F H V Ridge I MS MB Camb L RCP F C Seward  
M K Loni L RCP G E P Sutton MB Lond L RCP J M  
Twigg MB New Zealand L H Whitby MFC, MD Camb L RCP  
M L Young MB Camb L RCP

#### Licences

Licences to practise were granted to the following, 175 candidates who had passed the final examination in Medicine, Surgery and Midwifery of the Licensing Board in England:

Mary E. A. Allen F W Allinson S W Allinson J V Almyerda \*Joan  
Anderson B J F Apow C Arlles M J Ashman J V Bamford  
O A Beadle W J H M Batten C A Bence F W Bessy J H P P  
Boncant A R Powell W V Boyle W F R Branch D J Brinton  
Ruth M Brittan L Brown J R Buchanan E S C Aery C S  
Carter R W Carlwright A J W Channing W A Clark F Clayton  
Jones Amy G Clegg M Coleman M Coll A B Colman A W  
Cubitt E C C Dake Ethel C Davies R B Davis R de Souza  
P M Deville W E Dorian C H Egan Antolnet E B P Fili  
D Fili S Farrel O J Farr H G Ford Helen M G Foster  
J L Franklin L W Freeman C R F Frezzer T O Gar and  
S Gifford Edith Giles G G Gilleam \*Barbara M L Glover P J  
Cooneyardene E J Grad A W T Green F Grundy Brenda O  
Hallett A B Hatch W J Healy P A Hill L T Hilard  
W A C Horton Esther M Hoskin C Maci Honsden Lillian J  
Hubble F O H Huddy F H Hudson S P Hendon T J  
Hughes F H Hunsford W A Hutton S Inderden C L M  
Inkster E D Irvine E T James T F James B R M  
Johnson R P Jones D F Kanaar C A Keeble W R Feizer  
Richard I Kessel H A Kidd K Angles L Landan L O  
Lalor L W Larcene J T Lewis M Liberson A W Liles  
Edith G Linnex F F Linscomb D H Lloyd J Lloyd A Long  
P H Lorez W McCConnell A McMea Ter H J Maister H E  
Mansell Jeryl I Mappin W H Miller W Milling n D P Mitra  
R V Mone A M A Moore P H L Moore D T P Morris T C  
Mort T Norton Gertrude M Nicholson W A Nicholson A T  
Pasgan W R S Incebridge M D Patel M Patel A Pascock  
J H Pascoe G M Phaske L M G Pilot G W Pottier  
D Preiskel W J E Radford P R Paine B D Pawlin  
B R R R I Reddy W C Rees W V Potche I M Robson  
R Roderick R Roce Mona M Rossell Cruise A Jola C J n s an  
P G Sali J I Sepwell R Saran S Scheinfeln T C Scott  
H Shenoda V C Shroff Catherine E M Siddall T C Silverman  
T E N Simpson M R Sinclair E T Slater F Smith  
F Smith G H A Soaya F T C Spoor e \*Joan Saador R J  
Sweets T R Stevens D W S mart J H R Thomas L G Thoma  
Doris B Tones Sybil E Tremellen S L Tunnello I P  
Tupling H L Vaidya Isabel Vallance J H Walnwright Nora  
Wamsley A J Watson J R S Webb W A S Welsh A R  
Whitton P L Wickremesinghe J W Wise W J Wilkin  
G H J William S T William W A Wood E C Wynne  
Edwards

\* Under the Medical Act 1875

#### Appointments

On the nomination of the Council Dr Robert Arthur Young CBE Dr Joseph Shaw Bolton Dr Grafton Elliot Smith and Sir Percy William Lawsett Smith KCB CMG were elected Council members to take the places of Dr A G Phear Sir St Clair Thom on Dr Bedford Pierce and Sir Leonard Rogers.

Sir Francis Champneys was re-elected a representative of the College on the Central Midwives Board.

Dr R A Young was reappointed a member of the Committee of Management.

#### Lectures

The President announced the appointment of Dr A G Gib on to the British Law Lectureship for 1928 and of Dr J Graham Forbes to the Midwifery Lectureship for 1929.

#### Prize

The President announced the award of the Jenks Memorial Scholarship for 1927 to James Ramsay Minthead Martu formerly of Epsom College.

The President announced that the Gilbert Blane Gold Medal had been awarded to Commander A W McKinnon MB BSc and the Weber-Pries Prize to Dr A Stauley Griffith of Cambridge.

#### Appointment of Representative

Sir E Farquhar Buzzard Senior Censor was appointed to represent the College at the centenary celebration in June 1928 of the incorporation of the Institution of Civil Engineers by Royal Charter.

The President was appointed to represent the College on the Organizing Committee of the International Congress of Military Medicine and Pharmacy to be held in London on May 6th to 11th 1929.

#### Designation of Fellowship

The designation of the Fellowship by Dr J G Taylor (Chester) was accepted with regret.

#### Diploma in Obstetrics

A communication was received from the Society of Apothecaries stating that the Society had decided to institute a Diploma in Obstetrics.

#### Diploma in Pathology

A communication from the British Pathological Association regarding the desirability of instituting a special Diploma in Pathology was referred to a committee for consideration.

#### Committee of Management

The Committee of Management recommended that the following universities be added to the list of institutions where graduates in medicine are admissible to the Final Examination in Medicine, Surgery and Midwifery under the conditions stipulated in Section III of the old regulations and paragraph in the letter III of the regulations dated January 1st 1923: Germany University of Cologne, Spain University of Barcelona, Memphis University of Tennessee College of Medicine.

The Committee reported that in accordance with the conditions laid down in April 1920 by the Royal Colleges the following recognized courses of instruction for DPH in the following institutions: Haffkine Institute Parel Bombay, London School of Hygiene

and Tropical Medicine (the five months' course recognized for the course of parasitology only), University of Lucknow

The Committee also reported the retirement of Dr R A Young C B E, and Mr F J Steward from the Committee under the conditions of paragraph vi Part I, of the scheme for constituting the Examining Board in England

#### Miscellaneous

A letter was read from Mr F G Hallett expressing his appreciation of the action of the College on his retirement from the office of Secretary to the Conjoint Board

Communications from the Royal College of Surgeons reporting the proceedings of the Council of that College were received

After some formal College business had been transacted, the President dissolved the meeting

#### Obituary.

DR FRIDRICK JOHN WILLIAM COX, who died on October 7th, at his residence in Bowdon, Cheshire, in his 70th year, was the son of the late Dr Cox of Innerleithen. He received his medical education at Edinburgh, where he obtained the diplomas L R C P, L R C S in 1880, and graduated M B in the following year, he proceeded M D in 1893. After practising at Eccles for some years with his brother he went to Bowdon in 1897. He held the appointments of senior surgeon to the Manchester Ear Hospital, and consulting rural surgeon to the Buxton Cottage Hospital, the Altrincham General Hospital, and the Manchester Warehousemen and Clerks' Association. Dr Cox was a member of the Edinburgh Royal Medical Society and the Manchester Medical, Pathological, and Clinical Society. He took an active interest in the British Medical Association, and in 1902 was vice-president of the Section of Otolaryngology at the Annual Meeting at Manchester. He was a member of the executive committee of the Altrincham Division in 1904 and 1910, vice-chairman of the Division from 1907 to 1908, and chairman in 1909. He was also a member of the executive committee of the Mid-Cheshire Division in 1915.

DR HENRY WILLIAM EVANS, who died on October 25th, at the age of 37, received his medical education at Guy's Hospital, and obtained the diplomas M R C S, L R C P in 1913, in the following year he graduated M B, B S Lond, and proceeded M D in 1920. At the outbreak of war he received a commission in the R A M C and went to France in 1915. While on the Somme he was isolated with his ambulance company for two days, he continued his work under extremely difficult conditions until relief came, and for this he was awarded the Military Cross. He was invalided home in 1917, but went out to Egypt and Palestine in 1918, and took part in Allenby's capture of Jerusalem, where he remained until December of the following year. He returned to Guy's Hospital in 1920, and was appointed resident obstetrician to Mr Bellingham Smith. In 1921 he married and settled at Reedham in Norfolk, becoming eventually a partner with Dr Eliot Blake, he removed to Brundall in 1923. Throughout his life he took great interest in sport, and at Bedford Modern School he was in the first rowing four, a member of the first fifteen, and won the school cup for running. On leaving school he played for the East Midlands fifteen, and at Guy's Hospital joined the Artists' Volunteer Corps and won the Territorial championship for running. He was chosen to represent the British Isles at the Stockholm Olympic Games, but was unable to spare the time for this. A colleague writes: "It is difficult to express in words the rare qualities which Henry Evans possessed. In his work he was not only brilliant, he was essentially sound. He was a man of wide interests, and took ever more pleasure in literature than in sport, in which he excelled. He was gifted with sympathy tempered by a keen sense of humour, and with emotions controlled by sound judgement. He was deeply loved by all who knew him, and won the affection and confidence of his many patients, rich and poor alike. He leaves a widow with two young children."

#### Medical News.

UNDER the auspices of the Health Organization of the League of Nations an international continuation course in public health commenced at the house of the Society of Medical Officers of Health, 1, Upper Montague Street, W.C.1, on November 3rd, and will continue until December 1st. The opening address is being delivered to-day (Friday, November 4th) by Sir George Newman, on the development of public health administration and practice in England. The lecturers include Dr Foranelli, deputy director of the Federal Public Health Services, Austria, Colonel L. W. Harrison, Professor B. Nocht of Hamburg, Dr I. J. H. Conits, Sir Henry Gauvain, Dr F. E. Tremante, M.P., Professor G. Y. Giglioli, lecturer on industrial hygiene, Florence, Dr A. W. J. MacFadden, Dr Charles Porter, Professor F. Neufeld of Berlin, Professor C. Parquet of Vienna, and Dr W. M. Willoughby. A few tickets for the course are available for medical officers of health, and may be obtained from the executive secretary, 1, Upper Montague Street, W.C.1.

SIR STCLAIR THOMSON will deliver a lecture for the Fellowship of Medicine on bleeding from the nose and throat at the Medical Society, 11, Chandos Street, Cavendish Square, on November 7th, at 5 p.m. There will be demonstrations on November 9th by Mr. Greeves at the Royal London Ophthalmic Hospital at midday, and by Sir William Wilcock at St. Mary's Hospital at 3 p.m., another demonstration will be given at the Cancer Hospital on November 10th, at 3 p.m., by Mr. Cecil Rowntree. The lecture and the demonstrations are free to medical practitioners. From November 14th to 26th St. Peter's Hospital will hold a special course consisting of clinical instruction, cystoscopes, and lectures on diseases of the urinary tract. A three-week course in medicine, surgery, and gynaecology, occupying the mornings and some afternoons, will begin on November 14th at the Royal Waterloo Hospital. A series of clinical demonstrations upon selected cases will be given daily at the West End Hospital for Nervous Diseases, at 5 p.m., from November 21st until December 17th. A special course for the general practitioner will be held at the London Temperance Hospital from November 21st to December 3rd, at 4.30 to 6 p.m. every afternoon. At St. Mark's Hospital there will be a week's special course in proctology from November 28th to December 3rd. Copies of syllabuses and of the *Post Graduate Medical Journal* may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE annual address arranged by the medical staff of the Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, W.C., will be given on Friday next, November 11th, at 4 o'clock, by Mr. Ernest B. Waggott. The title of the address is "On Observation."

AT the next meeting of the Optical Society to be held at the Imperial College of Science on Thursday, November 10th, at 7.30 p.m., a communication on the resolution of gratings by the astigmatic eye will be made by Messrs J. R. Hamblin and T. H. Winslet, and Mr. O. Aves will discuss the design and trial frame.

THE Medical Officers of Schools Association will hold a general meeting at the house of the Medical Society of London (11, Chandos Street, Cavendish Square, W.1) on Friday next, at 5 p.m., when Mr. W. Rowley Bristol, F.R.C.S., orthopaedic surgeon to St. Thomas's Hospital will read a paper on the commoner disabilities of bones and joints in adolescence.

FOUR lectures on insanity and the history of its treatment will be given by Sir Robert Armstrong Jones, C.B.E., M.D., at Gresham College, Baslinghall Street, London, E.C.2, on November 7th, 8th, 10th, and 11th, the first will deal with the nature of insanity, the second will be an historical survey, and in the third the report of the Royal Commission will be discussed. The last lecture will be illustrated by lantern slides of old and new treatment. The lectures will be given at 6 p.m. on each day and are open free to all.

THE annual dinner of the Royal Society of Medicine will be held at the Hotel Victoria, Northumberland Avenue, W.C.2, on Wednesday, November 16th, at 7.30 p.m. Lord Darling is to be the society's guest of honour.

THE fifty-first anniversary dinner of the Central Graduate's Club of St. Bartholomew's Hospital will take place on Wednesday, November 23rd, at 7.30 p.m., in the Hotel Victoria (Oak Room), with Dr. John F. Morris in the chair. The honorary secretaries are Dr. Henry J. Morris and Mr. Reginald Vici. Price of dinner 12s. 6d., exclusive of wines.

THE Sheffield medical dinner will be held at the Grand Hotel Sheffield on Thursday November 10th at 7.45 p.m., when Professor A. J. Hall will preside. Professor H. R. Dean of Cambridge will respond to the toast of The Medical Profession. There will be musical items during the evening. Applications for tickets (12s 6d, exclusive of wines) should be made by November 8th to the honorary secretary, Dr Plesance 2 Ormeau Road Fulwood Sheffield.

THE annual dinner of the Renouveau Association of the Prince of Wales's Hospital Tottenham, N. will be held at the Trocadero Restaurant Piccadilly Circus W. on Friday, November 11th at 8.15 p.m. The chair will be occupied by Mr. Edward Gillespie. The price of the dinner will be 12s 6d (exclusive of wines) for members and their guests. The secretary is Dr J. Browning Alexander, 42 Harley Street W. 1.

THE annual dinner of the Society of Medical Officers of Health will take place at the Piccadilly Hotel, London, W., on Thursday November 17th. The president, Dr James Whetley, will take the chair at 7.30 p.m. The society has arranged to hold five general discussions during the present session. On November 18th the subject for discussion will be health aspects of the Factories Bill. On December 16th health aspects of the Poor Law reform proposals. On January 20th recent advances in the knowledge of food and on February 17th the control of smallpox. These meetings will all be held at 5 o'clock at the house of the society, 1 Upper Montague Street Russell Square W.C. On April 23rd the society will meet at Bath and a discussion will take place at 3 o'clock on the causes of the decline in tuberculosis mortality. The first of the four opening speakers being Sir Robert Philip, President of the British Medical Association.

THE medical staff of the Royal Dental Hospital, Leicester Square W.C. will be at home on Saturday afternoon, November 25th, when the hospital will be open for inspection and courses of interest shown. The dinner of past and present students of the hospital will take place the same evening at the Trocadero Restaurant, Shaftesbury Avenue, at 7 o'clock, under the presidency of Mr J. S. Amore.

DR C. S. MEERS F.R.S. will take the chair at a discussion organized by the British Institute of Philosophical Studies when the question whether the new psychology is a department of education or of medicine will be opened by Dr H. Crichton Miller and Mr. Kenneth Pichmond. It will take place on Tuesday next at 8.15 p.m. at the Royal Society of Arts, 18 John Street, Adelphi W.C. 2.

THE third annual Norman Lockyer Lecture of the British Science Guild will be given by Dean Inge on Monday, November 21st, at 4 p.m. in the Goldsmiths Hall, Foster Lane E.C. when the president of the Guild, the Right Hon. Sir Alfred Mond Bt. M.P. will be in the chair. The subject of the lecture will be scientific ethics. Admission is free and tickets may be obtained from the secretary of the Guild, 6 John Street, Adelphi W.C. 2.

THE educative value of E. F. Harrison's work in pharmacy will be the subject of an address given by Mr E. Saville Peck M.A. at the first evening meeting of the Pharmaceutical Society of Great Britain which will take place on Tuesday next at 8 p.m. Afterwards Harrison's lectureship medals will be presented to the lecturer and to Mr F. H. Carr, C.B.E. F.R.C.I. who will be remembered that Harrison was for many years pharmaceutical adviser to the BRITISH MEDICAL JOURNAL and wrote the books *Secret Remedies* and *More Secret Remedies*.

SIR JOHN ROBERTSON who recently retired from the office of medical officer of health for Birmingham has been presented by the principal officers of the Birmingham Corporation with a set of 10 English cent glassware. He was also presented at a meeting of past and present members of the Birmingham Public Health Committee on October 23rd with a silver tea service, a copy of Groves's *Dictionary of Music and Musicians* and an illuminated engrossment of the resolution adopted by the Health Committee on September 23rd.

DR CHARLES EDWARDS J.P. of Andover has accepted the invitation of the Aldermen's Committee to be nominated as mayor. At his election on the council three years ago he headed the poll and his work on it has won general approbation. Dr Edwards received his medical education at Guy's Hospital and in 1900 obtained the diploma of M.R.C.S., L.R.C.P. He graduated M.D. Durham in 1920. He is surgeon to the Andover Hospital and is an honorary licentiate member of the St. John Ambulance Association. He is a representative of the Winchester Division on the Southern Branch Council of the British Medical Association.

DR JOHN PRIESTLEY who has already announced, is retiring from the post of medical officer of health for Lambeth after thirty-two years' service, has been presented by the local members of the medical profession with an inscribed silver salver. In making the presentation at a meeting at

the Lambeth Town Hall on October 27th the mayor, Dr R. S. Pearson, said that Dr Priestley during his term of office had succeeded in making Lambeth one of the healthiest boroughs of the kingdom. The other speakers included Dr F. N. Kay Menzies, Dr Harvey Norton, and Dr V. G. Fenton.

DR E. A. GREGG, J.P. ex Mayor of St. Pancras has been presented by his colleagues on the borough council with his portrait while Mrs. Gregg was the recipient of a small mirror or ear. In making the presentation Alderman Collins acknowledged the strict impartiality with which Alderman Gregg had carried out his duties whilst mayor and had proved himself to be a man of outstanding personality.

DR GEORGE ROBERT BRUCE (M.O.H. Hastings) has been elected a Fellow of the Royal Sanitary Institute.

THE anonymous donor who gave £750 in response to the Lord Mayor's appeal at the opening ceremony of the New Wing of St. Mary's Hospital, City Road on October 26th to complete the sum of £3,000, which is the estimated cost of the building, was Mr H. Clifford Turner. This is Mr Clifford Turner's third generous donation to the funds of this hospital.

THE Critchfield House convalescent home at Brighton is established on a small estate bequeathed for the purpose by Miss Rose Greene. It is intended for gentlewomen of limited means, especially those leaving hospital after an operation or acute illness, so as to give them an opportunity of completing their convalescence before resuming their active duties in life. It is open to persons of all religious denominations. It can accommodate seven patients, and is conducted on the lines of a first-rate nursing home with as few rules as possible so that the inmates may feel at home. As the endowment is not sufficiently large to pay the whole outlay a charge of 30s. to £2 a week is made but medical attendance when necessary and medicine are provided free of charge. The institution is managed by a committee which meets weekly and we are indebted to Dr C. Percival White, a member of the House Committee for these particulars. There is a resident trained matron and nurse. Persons merely requiring a holiday, and cases of phthisis, acute cancer, infectious diseases, mental trouble and the drug habit, are not admitted. The home has been open for two years but it appears to be insufficiently known as the number of applications received is not sufficient to keep it always full. Information can be obtained from the Matron, Critchfield House, 5 Ilwood Road, Brighton.

THE ninth annual report of the Bedford Comitee Catholic Mental Welfare Hospital for Children for the year 1926-27 has just been issued. It has a prefatory note by the Archbishop of Birmingham and contains an interesting account of the methods and aims of this institution written by the administrator and superintendent the Rt. Rev. Monsignor Newsome who discusses the mental deficiency problem in the light of Roman Catholic philosophy. The hospital is situated at Defford near Worcester. It was first opened for the reception of patients on October 1st 1917. The report is fully illustrated and contains an appendix from the research department describing an investigation into the correlations of "mental ages" with manual, social, and industrial abilities.

THE eighth annual report of the Walter and Eliza Hall Institute of Research in Pathology and Medicine at Melbourne covers the year ending June 30th 1927 during which a book on hydatid disease has been completed for publication, and a study of pancreatic regeneration concluded. Further work on streptococcal strains is in progress and a preliminary study has been made of the organism's concern in puerperal sepsis. An experimental investigation has been continued with a view to determining whether there is any relation between cancer and tuberculosis. Other subjects under consideration include the pathological histology of the dental tissues, the mechanism of compensatory renal hypertrophy, and sarcoma of the testis.

AN attractive advertisement of Egypt and the Sudan has been issued by the Tourist Development Association of Egypt. The cover of the book shows a design from one of the panels in the vaulted chamber created by Thutmose III to the goddess Hathor. The book contains a series of articles on the sights, scenery, and mystery of Egypt which are interesting and readable. It is profusely illustrated with photographs, and should be quite useful in furthering the objects of the association. The book is obtainable from Messrs. Selig, Ltd., 163 and 167 Fleet Street E.C. 4.

PROFESSOR EMIL ABDEPHAUDE of Halle and Professor Max Nonne of Hamburg have been nominated honorary members of the Royal Academy of Medicine at Rome.

DR PAUL DELEEN of Liege has been nominated president of the Belgian Society of Otorhinolaryngology.

THE State vaccination institute of Berlin has recently celebrated the 125th anniversary of its foundation.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

**ORIGINAL ARTICLES** and **LETTERS** forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring **REPRINTS** of their articles published in the **BRITISH MEDICAL JOURNAL** must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to **ADVERTISEMENTS**, as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are **MUSEUM 9861, 9862, 9863, and 9864** (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are

**EDITOR** of the **BRITISH MEDICAL JOURNAL**, *Antiology Westcent, London*

**FINANCIAL SECRETARY AND BUSINESS MANAGER** (Advertisements, etc.), *Articulate Westcent, London*

**MEDICAL SECRETARY** *Mediscera Westcent London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Racillus, Dublin* telephone 4737 Dublin), and of the Scottish Office, 6 Drumshough Gardens Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh).

### QUERIES AND ANSWERS

"**OBSTRUCTION**," who contemplates having a colostomy performed, would like to have the experiences of some medical man who has undergone this operation especially as to the amount of disagreeableness thereby entailed and the amount of time spent daily in dressing the wound. Is the mental picture that every medical man has of this condition an exaggerated one?

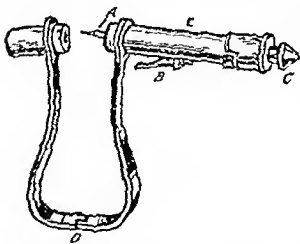
#### SPA TREATMENT

"**R.P.S.**" asks for information about the baths at Jura in Peru, said to be efficacious in gout.

**SURGON CAPTAIN E. H. MIDLIN, R.N. (ret.)** asks for advice in the choice of a spa for the treatment of chronic uticular rheumatism and fibrosis, with a certain degree of arterio sclerosis. He has thought of Dordrecht or Bath.

#### BORING THE LOBBLE

**DR. JAMES BROWN** (Stuckley, Birmingham), sends us a sketch (reproduced herewith) of an instrument which is used by jewellers to puncture the lobule of the ear. A is a trocar and cannula, B is a trigger, C a pull back to set the apparatus, and D a hinge, when set, the trocar and cannula are withdrawn into the tube. "I have used this instrument several times," Dr. Brown adds, "the 'operation' can be done quickly and accurately and is practically painless. The cost of the



Instrument is about 10s 6d, it can be obtained from the Wilmot Manufacturing Company, Camden Street, Birmingham."

#### STOMACH COUGH

"**M.B. CANTAB**" asks for help in self treatment. He has suffered for years from persistent night cough, the performance being always the same, waking from 1 to 2 a.m.—that is roughly five hours after last meal—with violent irritation in the throat, coughing incessantly for about half an hour or more until flatulencies in the stomach and can be expelled, when the irritation ceases and rest can be resumed. Condition diagnosed by phys. clin. as nervous hyperchlorhydria, but treatment by dieting and various stomach mixtures has been unsuccessful. Bromides occasionally relieve, but are undependable. Alkalies taken at the time shorten the attack and hasten expulsion of flatulencies but taken at bedtime seem powerless to ward off the attacks, which have persisted for some ten years. Teeth good, throat normal, general health good, and no conscious indigestion by day.

#### INCOME TAX

##### Free Quarters

"**P.E.A.**" holds an appointment as assistant medical officer to a convalescent home at a salary plus free quarters and board in the home. Are his free quarters assessable to income tax?

It seems that the authorities recognize that the home is entitled to exemption from tax, Schedule A but there is a

statutory qualification to such exemptions—"or for as is occupied by any individual officer whose total annual income amounts to £150." Although "I.L.A." has the free quarters of the statutory occupier of the premises as a whole, the authority administering the home, and the return of the value of the quarters as liable to tax should therefore be of a restriction of the exemption granted to the authorities in other words, the tax is payable, but by the treasurer rather than by our correspondent.

#### Cash Basis

"**A.W.S.O.**" has been assessed for the past twenty years on a cash receipt basis. He has now been asked, through the assessor by whom his returns are lodged, to revise his figures so as to show them on the basis of "fees earned." For various reasons this would prove very troublesome.

Unless the practice is expanding there would apparently be no ground for believing that a revision to the value of fees earned would effect any material change over a period of twenty years and in such circumstances it is understood that inspectors of taxes do not press for the change to be made. We suggest that our correspondent should communicate with the inspector—or preferably see him if practicable—and explain the particular difficulties in meeting his request, including that of the specific valuation of outstanding debts, and endeavour to show him that compliance is unnecessary. Theoretically the inspector is right but on the assumption made above his request is not in accordance with the normal practice, and would not, we believe, be supported on appeal to the Commissioners appointed to hear appeals against assessments. In any case insistence on the request would have to be backed by a previous amendment of the existing assessment, which apparently agrees with the cash basis return.

### LETTERS NOTES ETC

#### THE REGISTRATION OF NURSING HOMES

**MISS L. RAMSON**, President of the Incorporated Midwives' Institute, writes: We feel that your readers are not sufficiently aware of the dangerous provisions that have been inserted in the Nursing Homes (Registration) Bill. These place the duty of inspecting nursing and maternity homes in the hands of the smaller local authorities (in many cases the rural or district councils) and propose the repeal of Part II of the Midwives and Maternity Homes Act 1926. This Act, which has been in force satisfactorily since passed, placed the inspection of maternity homes under the same authority as the midwives—the county councils and the county borough councils. If the new bill is amended as passed, the result will be dual inspection of the home being under one authority and the midwives working in it under another, with conflicting rules and regulations, the possibility of undesirable administrative work, of the influence of personal friends and vested interests, and the certainty that the smaller authorities would not be able to provide well trained, whole time inspectors with expert knowledge.

#### MINISTRUAL "U. CHIANINNESS"

**COLONEL P. BLOOMER GHIS** (Tollington) writes: Whilst I do not believe that the usual brief handling of food by a menstruating woman will decompose the food, I know by actual experience that the prolonged contact between the hands of a menstruating woman in the process of rubbing salt, etc., for the preservation of hams will produce a decomposition and render the hams uneatable. This fact is well known to the farmers who live in Herefordshire, Radnorshire, and Breconshire.

#### SOY BEAN FEEDS AS CULTIVATED MEDIUM

**MAJOR H. ST. ANNAUD AGATE** (Salisbury) writes: In the **BRITISH MEDICAL JOURNAL** of October 22nd (Hygiene para 379) there appears an extract from the *Lancet* dated 1st June 1927 under the heading of "Soy bean seed as a culture medium," by L. Vitale. I should like to point out that in my original communication entitled "The standardization of a culture medium" published in the *Journal of the I.C.C.*, dated March 1922 I mentioned soy beans as being among the substances used in the preparation of culture medium. I have used it, with the addition of 0.5 per cent of marmite. I have used this for about eight years with uniformly satisfactory results. I can, therefore, confirm L. Vitale's experience.

#### A CORRECTED PRICE

The price of *The Inert and Its Social Adjustment* which was reviewed last week, is, we are informed, 5s. and not 3s. 6d.

#### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical schools, and of vacant resident and other appointments (as published in the *Supplement* at pages 51, 52, 53, 54, and 55) will be found at pages 50, 51, 52, 53, 54, and 55 of the *Supplement* columns, and advertisements as to participating in the columns, and advertisements at pages 54 and 55. A short summary of vacant posts will be found in the *Supplement* at page 51. Columns appears in the *Supplement* at page 51.

## The FitzPatrick Lectures

ON

THE HISTORY OF BRITISH MIDWIFERY  
(1650-1800)DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS  
OF LONDON

BY

HERBERT R. SPENCER, M.D., F.R.C.P.,

EMERITUS PROFESSOR OF OBSTETRIC MEDICINE, UNIVERSITY COLLEGE  
LONDON

DR. HERBERT SPENCER said that he had chosen the subject of "The history of British midwifery from 1650 to 1800," partly for the personal reason that it was one in which he was interested and partly for the patriotic reason that it had been neglected by British writers. While admirable general histories of midwifery had been published by foreign writers and exhaustive memoirs of individual British obstetricians had been produced, no detailed account of the work of British obstetricians of the period had hitherto appeared by a British author. The lectures were an attempt to remedy the deficiency.

British midwifery at the commencement of the period was not in a satisfactory condition. It was conducted mainly by women of whom many were without the education, knowledge or character requisite for its proper practice and who maintained a determined opposition to male practitioners. The opposition was to some extent justifiable inasmuch as in the earlier part of the period male practitioners made use of destructive instruments only and had little experience of normal labour. The position of the male practitioner was long that of a consultant, as the birth of George IV. for example, the Queen was attended by Mrs. Draper while William Hunter remained in waiting in case his help should be required to deal with complications. The position began to change after the introduction of the forceps, which were coming into general use by the year 1733; the practice of midwifery was then rapidly taken up by male practitioners under the titles of men midwives, midmen or androboe hogynists. The opposition of the midwives during the transition period was naturally great and according to the fashion of the time, accompanied by much poisonous abuse exemplified by such phrases as "great-horse-god mother of a be-midwife"—the shaft levelled at Smellie by Mrs. Nibell. But by the end of the century the new situation was accepted and the opposition had died down.

*The Anatomy and Physiology of Pregnancy and Labour*

The first original work on midwifery published by an Englishman was the chapter "De partu" in Harvey's *De Generatione Animalium* (1651), the English edition of which appeared in 1653—a work that justifies Aveling's description of Harvey as the Father of British Midwifery. The scientific part of Harvey's work consists in criticism based on his own observation and experiments of previous opinions concerning the anatomy and physiology of the foetus; the practical part gives evidence of extensive personal experience and is in the main devoted to the recommendation of patient watchfulness and gentleness, in ordinary cases imitating Nature and in difficult cases, "where there is necessity for handiwork in the business," employing podalic version. Harvey was held in high esteem as an obstetric physician in his day, and it was he who introduced into British obstetric medicine the wide view, the scientific spirit and the conservative practice which have been its characteristics. His death occurred on June 3rd 1657 and his body, "lipped in lead" and enclosed in the marble sarcophagus provided by the Royal College of Physicians, rests in the parish church of Hempstead in Essex.

In the study of the anatomy of the pelvis, pregnant uterus and foetus the British obstetricians of the eighteenth century took a leading place, and the illustrated

works of Hunter, Smellie and Denman have not been surpassed by their successors. William Hunter, brother of John Hunter the celebrated anatomist, was born in 1718 at Long Calderwood, Lanark. His most valued contributions to obstetrics are anatomical, and he did a great service by insisting on the importance of morbid anatomy. His great work on the gravid uterus, the outcome of the examination of the bodies of pregnant women extending over twenty-four years, is the finest of the kind and is illustrated with plates worthy to rank with those of Albinus. In addition to illustrations of the foetus, it contains dissections of the musculature of the uterus and illustrations of the decidua. Hunter was the first to describe the decidua reflexa and to show that the decidua was the lining of the uterus and was not derived from the ovum. He also gave a description of the retroverted gravid uterus and of the symphysis pubis in pregnant women, and claimed the discovery of the placental circulation, a claim also made by his brother John, and the cause of the estrangement between the two which lasted till Hunter's death in 1783. As a practitioner his place is a modest one. He carried conservative treatment to a harmful extent and failed to appreciate the value of the forceps, thinking it "a thousand pities it was ever invented, while others were using them at the time with success. He was a great perhaps the greatest anatomical teacher and his large and remunerative practice provided him with funds for the promotion of his anatomical studies and teaching which were the chief interest of his busy life and to found the Windmill Street School of Anatomy, which he built and endowed. Hunter was buried in St. James's Church, Westminster, and left the use of his museum to Matthew Baillie with reversion to the University of Glasgow where it is now preserved.

The credit of laying the foundations for the study of the mechanism of labour belongs to Sir Fielding Ould, born in Glasgow in 1710, appointed Master of the Rotunda Hospital in 1759, and author of a *Treatise of Midwifery* (1742) which shows a distinct advance on the original obstetrical books which had previously appeared in English. He made a great advance in treating labour as a mechanical process and in pointing out that the position of the foetal head at the brim and the movements of the foetus were due to the elliptical shape of the pelvis and of the shoulders and head of the foetus. He also clearly recognized for the first time that the head rotated and did not during its passage, have its long axis at right angles to that of the shoulders, but turned its chin towards one shoulder.

Ould was followed in the same line of thought by Smellie whose work forms the basis of our knowledge of the mechanism of labour. Smellie endeavoured to reduce the art of midwifery to the principles of mechanism, ascertained the make, shape and situation of the pelvis together with the form and dimensions of the child's head, and explained the method of extraction from the rules of moving bodies in different directions. He studied labour in contracted pelvis and gives an admirable description and illustration of the rachitic pelvis. He also published a case of generally contracted pelvis associated with short stature and of a pseudo-osteomalacic rachitic pelvis and he recognized the transverse contraction of the pelvic outlet in a case where "the lower end of the os ossa ischia were scarce three inches asunder." He gives measurements of the pelvis and was the first to measure the diagonal conjugate and showed that the greatest diameter at the brim was the transverse. The measurement of the true conjugate we owe to Wallace Johnson, a pupil of Smellie's. Smellie made important improvements in forceps: devised the scissors-perforator and the curved and double articulated crochets; discovered the rotation of the head in occipito-posterior positions by means of his forceps, was the first to apply the forceps to deliver the after-coming head in breech presentations and showed that the difficulty in contracted pelvis occurs at the brim and that in these cases the head usually lies with its long axis in the transverse diameter, with the sacrum deeply placed. Smellie's literary fame rests on his two great works: 1. *Treatise on the Theory and Practice of Midwifery* and 2. *Set of Anatomical Tables*. The plates in the latter work show the pelvis, external genitalia, the pregnant uterus at various months with its

Abstract of two lectures given on November 21 and 28th. The full text will be published shortly in a volume by Messrs. John Ball, Son and Daniel, Ltd.



contents, twins, the process of normal labour with illustrations of various positions of the head, the application of the forceps in head and breech delivery, the head impacted in the pelvis, with overlapping cranial bones, breech presentations, the application of forceps to the after-coming head, the head left *in utero*, and instruments with their mode of application. These plates are superior to any that had hitherto appeared, and Michaelis, the classical writer on the "narrow pelvis," says "they have perhaps achieved more in the spread of correct ideas of labour than all the books which have ever been written on the subject." William Smellie—the Master of British Midwifery—whom Fashender in his *Geschichte der Geburtshilfe* styles "one of the most important obstetricians of all times and countries," was born at Lunenburg in 1697. He studied medicine at Glasgow and began to practise in Lunenburg in 1720. In 1735 he first learnt of the existence of the forceps, and, recognizing the importance of the instrument, in 1738 moved to London, strived to teach midwifery there, and soon achieved great success both as a teacher and practitioner. In 1759 he returned to his native country, and spent the remainder of his life on his property at "Smellom" in preparing notes of his cases for publication, in which work he was aided by the literary ability of Tobias Smollett. He died in 1763, and was buried in the cemetery of St. Kentigerna, Lunenburg.

#### The Management of Pregnancy and Normal Labour

The importance of pre-maternity care of the pregnant woman was recognized in 1724 by Maubray, who gave it as one of the duties of the man-midwife or midwife-boethogynist to watch the patient during pregnancy so as to prevent all "preternatural disorders," and throughout the eighteenth century particular attention was paid to diet, hygiene, and evacuations of the patient. John Maubray is worthy of remembrance as the first teacher of practical midwifery and the first to suggest the building of a lying-in hospital in this country. He was the author of two books, *The Female Physician*, containing all the diseases incident to that sex, in virgins, wives and widows, to which is added, *The whole Art of New improved Midwifery*, published in 1724, and *Midwifery brought to Perfection by Manual Operation*, published in 1725, in which he appears as a teacher of theoretical and practical midwifery to students, and appealed for the building of a hospital for lying-in women now more than two hundred years ago. His first book met with a "very kind reception," and is, in fact, both learned and entertaining. It is in this work, in the chapter on "deformed conceptions," that the remarkable description of the "sucker" occurs, which he had seen issue from the womb of a woman whom he was attending in labour on a vessel in the Zuyder Zee. The creature was stated to be so common amongst the seafaring people as that scarce one in three escaped this strange birth. It is described as being "likest of anything in shape and size to a Moorhound, having a hooked snout, fiery sparkling eyes, a long round neck, an uncounted short tail and an extraordinary agility of feet." In its cries and noises it had somewhat the semblance of a demon, "which indeed," says Maubray, "I took it for the first time I saw it, and that none of the better sort." There is no documentary evidence that Maubray was other than an abstemious man, and the explanation of the phenomenon remains obscure. His unrelenting efforts to establish a lying-in hospital never reached fruition, the project met with opposition, the fate of so many new undertakings. But his educational scheme was an entire success. His object was to give students the opportunity of obtaining their obstetrical knowledge in this country, instead of resorting to the barber-surgeons of Paris. He arranged to give two courses of twenty lessons each, which he considered sufficient to qualify any serious student, and, further made provision, at great expense to himself, of a sufficient number of pregnant women, upon whom the students might practise the touch and perform deliveries, everyone in his turn. In this way he flattered himself that in time he would stock not only London, but the whole of Great Britain, with a set of as good expert practitioners of midwifery as any other country whatsoever could boast of. John Maubray died in 1732, "justly esteemed as an honest public-spirited man."

Sir Richard Manningham (1690-1759) who examined Mary Tofts, the "rabbit breeder" at established the first British lying-in wards in 1733.

As to the management of normal labour, the room of the period was hot, crowded, and all around the bed surrounded by heavy curtains in accordance with the universal custom of the time and the patients freely supplied with alcohol. It was only toward the middle of the century that midwives were persuaded, mainly due to the influence of Charles White and Leake, to abandon and omit the alcohol. Charles White was the author of an important *Treatise on the Management of Pregnancy and Lying-in Women*, in which full and judicious instructions for the hygiene of pregnant and parturient women are given. White states that, by attention to the proper management, out of the whole number of patients who had delivered he had never lost one by "the puerperal fever, low nervous, putrid malignant, or milk fever." He was a Manchester man, born in 1728, in the year 1767 he founded the Manchester Infirmary, where he held the position of chief surgeon for thirty-eight years. On the resignation of the post, owing to a disagreement with the management, he took a leading part in founding a "hospital in charity for attendance upon poor married women in their own homes," which developed into the St. Mary's Hospital, Manchester.

John Leake (1729-92) founded the New Westminster Lying-in Hospital in 1767. A severe and very fatal epidemic puerperal fever which occurred in that hospital was the occasion of his making a close study of the disease. He published notes of all the cases and of several of the post-mortem examinations. He opposed the view, then generally held, that the exudate on the intestines consisted of corrupted milk, and considered it to be "pure matter due to inflammation of the uterus." "The disease," he says, "truly inflammatory in the beginning, may be putrid by absorption of the purulent fluid which, if old leaven, will taint the blood." He held that the second and third were concerned in the causation, and recommended that hospital beds should not be too numerous, that special delivery beds should be instituted, the wards well ventilated, and the patient supplied with clean linen, further that disinfection should be carried out by such means as the smoke of burning wood, brimstone strewn on the floor, and whitewashing. Leake was buried in the north cloister of Westminster Abbey.

In Harvey's time patients were delivered on the "three-legged stool," but in the eighteenth century the patient delivered as a rule on the bed. The left lateral position, that usually adopted, although in special cases the patient was placed in the dorsal, reclining, sitting, or in the knee position, the last was often adopted in cases of severe labour, and, at times, for the application of the forceps. A change for the better occurred in the conduct of labour when men midwives came into practice. It had invigorated against the "sunder and more giddy" officious midwives who, lest they should become unpopular at their trade, do mightily lecture themselves and their friends the exclusive frenzy by medicinal potions, and Harvey's friend Willoughby complained of the "horrible stretchings" with which the midwives tormented their patients.

An important contribution to the management of labour was made by John Harvey in his recommendations of abdominal manipulation and pressure for the delivery after the afterbirth. His directions are given in a treatise on the preservation of the perineum and the delivery of the placenta, in which he says:

"As soon as the child is committed to the care of the accoucheur apply his hand to the belly which it will feel the contracting uterus. Then lay the flat of his hand over it, let him be a light touch, and bring it downwards or towards the pubis, and the uterus sensibly contracting and often will be of the size as to be certain that the placenta is expelled. The method we will seldom have any long to do, and help it through the external orifice, which much remains to be done."

Harvey was a teacher of midwifery at Westminster with Smellie, whom he succeeded. It was especially Harvey's advocacy of patience in the conduct of normal labour, and his

of nature, which, followed by successive teachers—Smellie, Hunter, Denman—formed the guiding spirit of British practice for the next century and a half, and it was that conservative practice which impressed the great Viennese obstetrician, Boer, who, having studied abroad, came over to England and “learned in France what Art, in England what Nature, could do.” He introduced the English practice into the great lying-in hospital of Vienna, which became under his mastership the greatest lying-in institution in Europe. From 1784 to 1822, during the last thirty-three years of which Boer was at its head, the mortality from puerperal fever was 125 per cent. Under his successor the mortality rose in the maternity ward, where medical students were admitted, to 99 per cent, whereas in the wards attended by midwives (who did not practise dissection) the mortality sank from 55 per cent to 33 per cent. It was this great difference which led Semmelweis (in 1842) to attribute puerperal fever to “putrefying animal substances” from without, and to order that the attendants should wash their hands with a solution of chloride of lime before attending midwives cases.

### Cesarean

Cesarean version was not much in favour with British obstetricians. Smellie abandoned it in favour of podalic version, which then became the favourite method of delivery in difficult cases. He was the first to apply the forceps to the after-coming head and is also sometimes credited with being the first to deliver by what is described as the Mauriceau-Smellie-Veit method but which would be more correctly called Giffard's method, since it was he who invented it. Giffard (a man midwife and surgeon who died in 1731) was the author of a work entitled *Cases in Midwifery* in which are given short accounts of 225 mostly difficult or dangerous cases attended by himself. He describes the manoeuvre thus:

I clapped one hand flat upon the breast and with the other taking hold above the shoulders drew towards me but the head did not readily follow. I therefore passed my fingers up to the child's mouth supporting the breast with my wrist and arm and putting one finger in the mouth and two others upon the cheeks. I pulled towards me and at the same time drawing with my other hand above the shoulders brought out the head.

Internal version was the operation usually performed. Bimanual version was performed by Pugh (1754); external version had not yet appeared in British practice.

### Forceps

The forceps were invented by a member of the Chamberlen family, probably by Peter Chamberlen the elder of that name—a barber-surgeon distinguished obstetric practitioner and physician to the Court, who died in 1631. The invention brought great credit to the Chamberlens, who were a family of obstetricians, and considered themselves justified in keeping it a secret for their own pecuniary advantage. The actual instruments used by them were discovered in 1813 in a secret space under the floor of a closet in Woodham Mortimer Hall, near Malden in Essex, formerly the residence of Dr. Peter Chamberlen, nephew of Peter the elder, they are now preserved in the library of the Royal Society of Medicine. Details of the invention, however, became known long before that date and the merit of first publishing an account of the forceps belongs to Edmund Chapman, a surgeon and man-midwife who was in practice for several years at South Halstead in Essex before settling in London, where he became the second public teacher of midwifery. The account appeared in his *Essay for the Improvement of Midwifery* (1733) and two years later a second edition of the *Essay* gave an illustration of forceps of his own designing in which the pin was omitted, he having accidentally discovered that the lock was equally firm without it. The first illustration of the Chamberlen forceps appeared in Giffard's work before mentioned, which was published in 1734. Chapman states that the forceps were well known in 1733. The original form was straight, and the modification by the introduction of the pelvic curve appears to have been invented independently and at about the same time by Levret in France and in this country by Smellie and Benjamin Pugh. The latter who practised as a surgeon in Essex, was the author

of a *Treatise on Midwifery* (1754), in which are contained illustrations of the long and short curved forceps. Smellie became acquainted with the forceps (Duse's) through Butler's *Edinburgh Medical Essays* (1735), and finding them inefficient set about to improve them. He contrived his short forceps, which proved the most efficient instrument of the time. By the invention of the lock which did away with the necessity of a movable axis for the blade, and by the later adoption of the pelvic curve, he produced an instrument which has not been essentially modified or improved by succeeding obstetricians. Although Smellie took so prominent a part in the development of the forceps he was restrained in the use of them, for he states that “only 10 out of 1,000 labours required instrumental delivery.”

### Fillet and Lever

The fillet was used occasionally by the eighteenth century obstetricians and ingenious contrivances were invented for passing the traction-cord over the child's head. Chapman must have had some liking for the instrument, since he kept his method of using it secret when he published the account of the forceps. But after Smellie had pointed out that it was liable to tear the scalp of the child and Pugh had expressed the opinion that “all kinds of fillets were but idle things” it was generally abandoned by skilled practitioners.

Not so the lever. This instrument underwent many modifications from the original model of Roonhuyzen, one of the best designs being that of Lowder, a well known lecturer on midwifery in St. Saviour's Churchyard, Southwark, and graduate of the University of Aberdeen (1775). Several manuscript copies of Lowder's lectures are in existence and show him to have been a judicious and interesting teacher and an experienced practical obstetrician. He gives an excellent account of the pelvis and its measurements and discusses the possibility of detecting pelvic deformity by general inspection, stating that deformity may be suspected if the patient has had rickets or has a great falling in of the back and projection of the nates,

“but,” he adds, “here we must be certain that the appearance of the falling in of the back and projection of the nates is not owing to the fashion the ladies have nowadays of wearing cork rumps.” Some claimed that Lowder's lever was equal or superior to the forceps, but it is clear that they must have used the instrument to alter the position of the child's head rather than to extract it. An ingenious modification was Aitken's “living lever,” in which the curve of the blade could be increased after it had been introduced so as to form a sharply curved surface by which to make traction on the occiput and thus convert a “face” into a “vertex” presentation.

### The Treatment of Contracted Pelvis

The conservative principles which underlay the practice of Hunter, Smellie, Hunter and Denman led to difficulties when applied to severe degrees of pelvic contraction. Minor degrees allowed version or the use of the lever or forceps and it is surprising to read how seldom any other method was required. It is to be regretted that we have no exact statistics of the mortality of cases so treated, but the rarity of cases in which one or other of these operations was not possible suggests that cases of severe pelvic contraction were less often met with than at the present day. In order to get over the difficulty in severe cases British obstetricians proposed to diminish the size of the passenger, either by the induction of premature labour (first carried out by Dr. Macaulay) or by reducing the size of the child by restricted diet (first carried out by Lucas of Leeds in 1794).

Symphysiotomy, which was performed for the first time in England by Welchman in 1782, has never gained general favour among British obstetricians. In the eighteenth century it was condemned by the Hunters and Denman and only favoured by Lerke and Aitken, the latter in 1785 proposed his “new pelvotomy,” the precursor of the modern pubiotomy, in which the ramus of the pubis and ischium were to be sawn through on each side “so that the anterior segment of the pelvis becomes movable and yields to the pressure of the child so as to allow delivery.” John Aitken was a surgeon and man midwife who practised in Edinburgh,

and founded, in 1784, a lying-in hospital in which about 100 women were delivered annually.

Cæsarean section in the eighteenth century was almost always fatal to the mother. In Ireland it had once succeeded, and then it was performed by an ignorant midwife, Mary Donally, in 1738-39, in England the first successful operation was performed by Barlow of Bolton in 1793, and in that case the child did not survive. The operation was stigmatized by Ould as a "detestable, barbarous, illegal piece of inhumanity." Although Smellie and Buton in the middle of the century, and Hamilton and Denman at the end, had accepted the operation for cases of extreme pelvic contraction, Osborn denied that either Cæsarean section or symphysectomy was ever a justifiable operation. He described cases of the severest degree of pelvic contraction in which he had been able to deliver by means of craniotomy, and, recognizing that the recovery of the mother depended on its being performed before she became exhausted, he extended the indications to cases which perhaps might have been delivered by forceps, and thereby attracted a good deal of censure, especially from foreign obstetricians, as the enthusiastic advocate of mutilating operations. In favour of Osborn it must be remembered that Cæsarean section and symphysectomy were at that time almost uniformly fatal, that British obstetricians have always regarded the child's life as less valuable than the mother's, and that fatal results to the mother from craniotomy depend almost entirely on its being performed too late. William Osborn, a friend and fellow lecturer of Denman, was born in London in 1735. In 1770 he joined Denman in founding a school of midwifery, and became one of the most successful teachers, more than twelve hundred practitioners of midwifery having attended his lectures.

For the performance of craniotomy either a guarded knife or scissors was employed, of which Smellie's scissors-perforator was the most practical. In the extraction of the child's head after perforation the crochet was mostly used—at first the straight instrument, afterwards the curved crochet, and finally (by Smellie) the double crochet. Opinions differed as to whether the instrument should be fixed inside or outside the skull. The forceps were also used for extracting the head (Smellie), or the forceps with a crochet at the end of the blade (Pugh).

#### *Hæmorrhages and Convulsions*

The hæmorrhages most frequently recorded at this period were of the ante-partum variety, due to separation of the placenta either normally situated or prævia. Gifford was the first British author to point out the occurrence of true placenta prævia, as distinguished from prolapse of the organ. The treatment was sometimes rupture of the membranes, but usually podalic version. Post-partum hæmorrhage was treated mostly by sedatives and tonics, but sometimes by local styptics, the disadvantages of which were recognized. Cold applications were also employed. There is no record of the employment of manual compression of the uterus. Several cases of hæmorrhage due to inversion of the uterus are described, in some of which recovery followed the reduction of the inversion. A few cases of rupture of the uterus are mentioned, one of these is illustrated by Denman in a fine plate.

Convulsions were treated by bleeding, blistering, opiates (extract or tinct thebæic), hot baths, and clysters. The temporal artery or jugular vein was often recommended as the vessel to be opened.

#### *Ectopic Gestation and Hydatidiform Mole*

Interesting cases of these conditions were published by Gifford, with illustrations. The ovum of the ectopic gestation was passed by the rectum, to which the sac adhered. The case of hydatidiform mole terminated fatally a year after the delivery, a tumour being found in the uterus, which was thought to be the placenta, but was probably a chorion-epithelioma.

#### *Summary Review of the Period*

It may be said that during the one hundred and fifty years after Harvey published his *De Generatione Animalium* a great advance was made in the science and

art of midwifery. This was chiefly due to the introduction of male practitioners, many of whom were men of learning and devoted to anatomy, the groundwork of knowledge. The institution of lying-in hospitals by these male practitioners had an important influence in promoting teaching and research. The general introduction of the use of forceps placed in their hands means, previously unknown, of delivering women, and by its results gradually came the opposition of the midwives, surgeons, and physicians to the new class of men-midwives. The establishment of the College of Physicians in instituting a diploma of "Licentiate in Midwifery," was not without influence in improving the status of those practising midwifery, although it ceased to be granted in the nineteenth century.

The characteristic of British midwifery at this period was conservatism. Although by some practitioners carried to excess, it led to laudable attempts, exclusively directed to avoid the operations of craniotomy which endangered child, and of Cæsarean section and symphysectomy which so often proved fatal to the mother.

The forceps were sometimes used unnecessarily then, now, but the abuse of operative methods of delivery is much greater at the present time, and no better corrective of that abuse could be prescribed than a study of the careful records of the British obstetricians of the seveneenth and eighteenth centuries, showing the resources of that "perfect operative" Nature in effecting delivery.

## CHEMICAL CHANGES ACCOMPANYING MUSCULAR ACTIVITY

BY

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As the subject open for discussion deals with the chemical changes associated with muscular activity it is necessary in the first place to consider the nature of the constituent which probably play a part in the energy changes associated with activity. These chemical changes are mainly concerned with the transformations of glycogen. As the transformations are brought about by the action of enzymes within the muscle, those must at all times be present. The evidence of enzymatic changes having been in progress, and thus it is to be expected that the products of ferment action should be present in varying amounts, the variations depending upon the conditions under which the muscle has been placed. Thus when muscle is removed from the body and the conditions are such that the removal of the products of ferment action cannot be effected either by oxidation, owing to the predominantly anaerobic conditions existing, or by diffusion away from the muscle, then we should expect to obtain evidence of the accumulation of the products of degradation of the glycogen. The extent of the breakdown process will be determined by the activity of the ferments under the physical conditions existing, by the inhibiting effect on the enzymes of the products of their activity, and, in the case of acid production, by the reaction alterations in the medium. It is therefore evident that in intact, and in moribund in minced muscle tissue, living or dying, and under anaerobic conditions, the enzymatic products of the anaerobic degradation of glycogen should increase. The relative amounts of the glycogen and the products of enzymatic action on this carbohydrate in muscle tissue has been quickly removed from the body, and in the case of ferment action is checked by such a process as fermentation will give some information as regards the equilibrium established normally between the mother and the products of its enzymatic disintegration.

On examination of such muscle tissue it is found that there are present, in addition to glycogen, a number of products which have been derived from it—namely, in the case of polysaccharides, hexoses, phosphoric acid, and lactic acid, and hexoses, and lactic acid, not to speak of products of fermentation.

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precursors of the lactic acid. The work of Fletcher and Hopkins may be regarded as the starting point of the modern investigations. These investigators emphasized, in the first place, the rapidity of the formation of lactic acid in muscle under anaerobic conditions, especially in minced muscle tissue, and in the second place, the extent to which this process might be checked by rapid freezing. Their work also directed attention to the aerobic removal of lactic acid and the significance which they attached to the so-called lactic acid maximum attracted the attention of other investigators, and has undoubtedly been of great value in the search for the immediate precursors of lactic acid. It is not necessary in this brief statement to refer at all fully to this work, nor to the investigations which rapidly followed, as they have been so well summarized in special articles and monographs by Embden,<sup>2</sup> Meyerhof,<sup>3</sup> and A. V. Hill.<sup>4</sup>

The study of the rapidly changing phases of activity in stimulated muscle is an extremely difficult one. From the thermodynamic standpoint the investigations of Hill and Meyerhof have given extremely valuable information. They have shown that the initial phase in a contraction is essentially an anaerobic one, and therefore it is during this stage that the products of ferment action on the glycogen may be expected to appear, and up to the period of aerobic recovery, to accumulate. The periods dealt with in a single muscle contraction are so short that it is naturally impossible by chemical analytical methods to follow the process in the way that has been so successful in connection with heat production. Although much ingenuity has been shown in the endeavour to trace these changes, there is still some difference of opinion as regards these initial anaerobic chemical changes during the contraction of muscle. The initial anaerobic heat production according to Hill and Meyerhof is associated with the formation of lactic acid from glycogen, and the neutralization of the former by the bases readily obtainable from the alkaline salts of such weak acids as the proteins and phosphoric acid. There is still some uncertainty as to whether the lactic acid production is the sole source of the initial anaerobic heat production.

Recent Embden and his fellow workers<sup>5</sup> have dealt with this question, and have expressed the view that in muscle contraction the early exothermic changes in the anaerobic phase possibly have their origin in changes in the physical state of the intrafibrillar colloids. Whether such changes play a part in the initial anaerobic phase or not it is necessary to gain as much information as possible regarding the cycle of changes through which the enzymatic degradation of glycogen takes place. It is for this reason that it appears to me advisable to refer more fully to recent work on the enzymatic processes in muscle carried out by Meyerhof and his school,<sup>6</sup> as these investigations are gradually elucidating the problem which is so difficult of solution—namely the role of the phosphates in the intermediate carbohydrate metabolism in muscle. To Embden and the Frankfurt school we are indebted for the knowledge that we possess regarding one (or more) of the phosphoric acid esters met with in muscle—the so-called lactacidogen. They have studied carefully the conditions under which this body is formed and undergoes disintegration, and have contributed valuable information regarding its general nature. For the first time the close association between alcoholic fermentation by yeast and the carbohydrate transformations in muscle was shown, and now we find that at each step in the further investigation of the role of the phosphates in the two processes, striking similarities in behaviour are becoming manifest.

It appears evident that an extremely important role is played by labile phosphoric acid esters in both mechanisms, but it is extremely difficult to determine from chemical analyses the exact nature of such bodies. The time has certainly not yet arrived for dogmatic statements in connection with the relationship between the free phosphate and its labile and stable ester forms. Evidence however, is accumulating that the chemical constitution of the stable form is different from that of the unstable one and that the former may be regarded as the store of hexose phosphate which has passed out of one active stage in the production of lactic acid. The formation and disintegration

of this stored more stable hexose phosphate may, however, be influenced by alterations in the condition of the living muscle tissue. The recent suggestion of Meyerhof and Lohmann (quoted by Neuberg and Lebowitz)<sup>7</sup> regarding the probable mechanism in the case of yeast fermentation is of interest, and a process of the same type may possibly occur in muscle. The suggestion is to the effect that in the first stage of the esterification process two molecules of hexose may react with two molecules of phosphoric acid to form two molecules of the monophosphoric acid ester, and that in the second stage one of the molecules of this ester may take up another molecule of phosphoric acid to form the diphosphoric acid ester leaving one molecule of reactive sugar free. If such a process does occur, the diphosphoric acid ester may be regarded as the stable form, having passed out from the active cycle and become a storage product. The part played by such esterification processes in rapid changes of activity in muscle has still to be made clear but from the study of the enzymatic transformations of the precursors of the esters, when the process is carried out slowly with the extracts of muscle prepared by the Meyerhof method, much valuable information has already been obtained. These extracts have been obtained from amphibian and also from mammalian skeletal muscle, and they can be tested under conditions when the main action is an amylolytic one, or one of esterification with or without lactic acid formation. I have also carried out a number of experiments with similar extracts from mammalian muscle, and in general my results confirm those obtained by Meyerhof, Lohmann, and other associated workers.

Some of the most striking results obtained from these investigations will now be referred to. The first change effected in the carbohydrate cycle is the amylolytic one, carried out by a ferment with a temperature range of activity greater than that of the others. Thus this action in mammalian muscle can take place at temperatures not only suitable for subsequent esterification (20° to 37°) but at higher temperatures (40° to 45°), and also at acid reactions which would inhibit the later process of esterification and glycolysis. If the process be studied at 25° to 37° under conditions where there is a free supply of glycogen, and only the small amount of free phosphate extracted from the muscle by the cold saline solution then following the amylolytic process, there is an esterification one which is accompanied by lactic acid formation. If such an extract contained, for example, per cubic centimetre, slightly over 0.5 mg.  $H_2PO_4$ , in the form of free phosphate along with, say, 6 mg. glycogen, esterification would proceed slowly with an approximate equimolecular production of lactic acid and removal of free phosphate. This formation of lactic acid can proceed until practically all the free phosphate has disappeared. It is evident that in such a case a process is going on by means of which an ester in a stable form is being produced along with the lactic acid. Such a process might be accounted for by the production of a monophosphoric acid ester in the first place (the unstable form), followed by the taking up of an additional molecule of  $H_2PO_4$ , so that in the process at each stage two molecules of the monophosphoric acid ester would be transformed into one of the diphosphoric acid ester, leaving a molecule of reactive sugar for lactic acid formation.

The stable hexose diphosphate so formed may, however, like the original ester in the muscle, be itself the source of lactic acid production, just as pure alkaline hexose diphosphate in solution may be broken down by muscle extracts to form in equimolecular proportions lactic acid and phosphoric acid. This process is essentially different from the first one as regards the necessary activating agents. For the first process the co-enzyme is required and for the second it is not. The phosphoric acid set free in the disintegration of the hexose diphosphate may, however, be used up, on the addition of glycogen or starch, and thus the muscle extract may initiate again the combined processes of esterification and lactic acid.

What, then is the effect of a fluoride addition to a mixture capable of carrying out such esterification and glycolysis? In those circumstances, just as in muscle tissue, esterification alone proceeds, not only without lactic acid

production, but very frequently, with an actual disappearance of part of the acid originally present. The esterification process in this case has resulted in the formation of phosphate esters of a stable form.

A most interesting accompaniment of this purely esterification process, without lactic acid production, is an increase in acidity, and the swing in reaction is of the same order as in the case of the less complete esterification with accompanying lactic acid production which use the natural changes in the saline mixtures without fluoride. This rise in acidity in fluoride mixtures in which esterification is proceeding is undoubted. According to Meyerhof and Suranyi both the mono- and the di-phosphoric acid esters are stronger acids than orthophosphoric acid. Meyerhof and Suranyi compare this rise in acidity accompanying the linkage of phosphoric acid with the sugar with the well known increase in acidity which boric acid shows on condensation with mannitol. There can be no doubt that such a change does occur during the enzymatic process, and the acid swing on esterification, even in such artificially well buffered solutions as 0.025-0.030 molar phosphate, is a constant feature of fluoride esterification without any lactic acid production. The reverse effect of diminished acidity, produced by a simple hydrolysis of the stable ester without or with very little lactic acid formation, has also been noted by Meyerhof.

Before leaving this subject reference requires to be made to the action of such extracts on glucose, fructose, or other hexoses. Only under special conditions—and the same is true for muscle tissue itself—can the hexoses undergo esterification and glycolysis. The natural muscle extract, therefore, contains the necessary activators for the complete glycolysis of glycogen or starch, and not of the hexoses, or at least of those only to a slight extent.

Meyerhof has obtained distinct lactic acid production of the fermentable hexoses with fresh extract of rabbit's muscle. I have been unable to detect anything beyond a very slight acid production, and that not sufficient to change the reaction of a 0.025 molar phosphate solution. When, however, an activator obtained from yeast is added, these hexoses break down with great rapidity. In the process half is esterified and half broken down to lactic acid. The lactic acid production in the first phase is proportional to the amount of free phosphate present, and on the addition of more phosphate esterification increases.

It is therefore to be borne in mind that the normal carbohydrate present in muscle is the one from which the carbohydrate-phosphate transformations most readily start, and that, in the process of degradation of glycogen, esterification associated with a rise in acidity occurs, and also that labile esters are intimately concerned with lactic acid production. From what has already been said it is evident that the intermediate stages in glycolysis are concerned with labile ester forms which it may be impossible to identify in the chemical examination of resting or active muscle tissue.

In the study of the chemical changes accompanying activity of muscle investigators have naturally directed attention mainly to the glycogen, lactic acid, and the lacticidogen. Enrichment upon the glycogen store and equivalent production of lactic acid in anaerobic transformations has been established, and the fate of the lactic acid in oxidative recovery has been very thoroughly investigated by Meyerhof and Hill. The transformations of the intermediate body, lacticidogen, have been more difficult to elucidate. Being an intermediate body, the amount present at any time is conditioned by the balance struck between its formation and its breakdown. In any definite type of muscle, therefore, it is present at a fairly constant value, and even in activity the rate of its breakdown may only slightly exceed that of its formation.

Embsen and his fellow workers have, in a series of investigations dealing with direct and indirect stimulation of isolated muscle preparations, studied the increments in free phosphate and lactic acid derived from the precursor lacticidogen. It is necessary to bear in mind that, as regards the phosphoric acid increments, these are set free by the breakdown of what is possibly the stable ester form. The preliminary investigations of the Liggletous\* point to a possible unstable phosphate compound which they term

phosphagen and which is apparently gradually broken down on stimulation, in rigor, etc. The inorganic phosphate values given by those who use the Embden technique and any other method which involves a possible acid hydrolysis, according to these writers, include the phosphate bound in this labile form. Lohmann and Jendrossky, as well as Embden, have considered the possible hydrolysis of the hexose phosphates under those conditions, and this at least be said—the more stable ester does not break down. The small number of analyses published giving the effect of action on the free phosphates and phosphagen indicate that the low original free phosphate values obtained by the investigators remain unaltered, and phosphagen disappears—that is to say, a labile phosphoric compound has passed into a stable form. That the stable form is produced by the Embden technique, and that additional phosphate and glycogen may be esterified to the stable form under fluoridation is undoubted. Certainly much more work requires to be done on the labile compounds before our knowledge of the initial changes in activity can be regarded as satisfactory.

According to the recent work of Landen the lactic acid rise in activity is not limited to the initial anaerobic period of activity. The accumulation of lactic acid which occurs in the separated muscle on stimulation is to a large extent prevented under conditions where the blood supply is not interfered with. As many of the earlier researchers dealing with this subject are somewhat unsatisfactory, I have recently carried out a series of experiments dealing with the chemical changes in muscle, with blood supply intact, after stimulation and during the period of recovery. In all cases (in the cat) the muscle stimulated on one side could be compared with the same muscle on the resting side, or the stimulated one with the stimulated and subsequently recovered muscle on the other side. The stimulation was just sufficiently strong to bring out contractions, and the rate of the faradic stimulation was one or two per second. The periods of stimulation varied from fifteen minutes to two hours, with recovery periods of eight minutes' to two hours' duration. The results may very briefly be summarized. In all cases the water content of the stimulated muscle was higher than that of the resting one, and within eight minutes of the cessation of stimulation it showed a distinct decrease.

In practically every case, even after fifteen minutes' stimulation, the lactic acid content had risen and the glycogen fallen. In nearly every case the lactidogen values after stimulation were below the normal. When the stimulated muscle was minced and subjected to the action of fluoride, the amount of stable hexose phosphate formed was smaller than in the case of the unstimulated muscle treated in the same way. This was most evident when excess of the precursors of the ester, glycogen, and phosphates was added to the mixture. Within an eight minute period for recovery the muscle, which was practically free from glycogen when examined immediately after the stimulation, had commenced to replenish the exhausted store. The percentage of water fell during the recovery from 79.8 to 78.5 per cent, the lactic acid rose, and lacticidogen removed, but there was no early evidence of fresh buildup of lacticidogen. After a longer period of recovery (twenty minutes) the storage of glycogen, the removal of excess lactic acid and water, and the return of the lactidogen to its original value were all evident. The recovery of the esterification process under fluoride followed the restoration of glycogen by the muscle.

It appears, therefore, that during the period of stimulation there is an entrance of water which occurs rapidly, and this is accompanied by the changes which are characteristic of incomplete aerobic recovery. There can be no doubt that, after a period of activity which has resulted in practically complete removal of glycogen, the muscle is able to contract almost as well as at the outset. The energy cycle of changes is evidently now starting with the products of the enzymatic disintegration of the glycogen.

It appears probable that changes in permeability in active muscle fibres are characteristic accompaniment of activity, and that even after moderate stimulation there is a disturbance in the water exchange resulting in a rise in fluid. The free phosphate (determined by the method) when calculated for water-free muscle (Embsen's



ring the period of stimulation and a fall during that of recovery. Throughout the periods of activity and recovery there must be a free interchange of anions between the muscle fibres and their environment, but the phosphate ion is free by disintegration of the hexose phosphate does not rapidly leave the muscle. During the period of recovery the excess free phosphate is used for esterification.

It is to be hoped that soon the nature of many of the chemical changes associated with activity which are still unknown may be cleared up—for example, the transformations in the sugars prior and subsequent to esterification, the nature of the immediate precursors of the lactic acid, and the mode of the endothermic conversion of lactic acid to glycogen.

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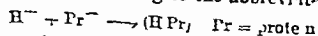
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# DISCUSSION

Professor Otto MEYERHOF (Berlin) considered that the significance of the chemical processes accompanying muscular activity, which were first laid bare by the pioneer work of Fletcher and Hopkins on lactic acid lay chiefly in their supplying energy for the mechanical work. Summarizing a recent investigation in his laboratory, he said that energy was measured by heat of reaction, and therefore the problem arose of correlating the heat during and after contraction with the chemical processes occurring simultaneously. A V Hill had discovered that the heat was divided into two distinct phases of about the same magnitude, the first phase (so-called initial heat) coinciding with activity and independent of oxygen, and the second phase (so-called delayed heat or heat of restitution) continuing for several minutes after the mechanical response but only in the presence of oxygen. Professor Meyerhof had demonstrated some years ago that the first anaerobic phase was dependent on the formation of lactic acid from glycogen the second phase on an oxidative process in which only a quarter of the lactic acid or a corresponding amount of carbohydrate was burnt, while three-quarters were re-oxidized to glycogen. During the anaerobic phase there were liberated on the average 390 calories per 1 gram of lactic acid which number was named the caloric quotient of lactic acid. When this acid was removed in the restitution phase with combustion of 1/4 gram of glycogen hydrate, one expected

$$\frac{3780}{4} = 945$$

representing the heat of combustion of glycogen hydrate per gram and 390 calories the reversal of the heat liberated in the first phase. These 555 calories were 1.4 times the 390 calories of anaerobic heat. Thus anaerobic heat stood to oxidative heat in the proportion of 1 to 1.4 this proportion was similar to the findings of Hill and Hartree in their myothermic experiments. The speaker then considered the question as to how the 390 calories of anaerobic heat were to be explained. The difference of the combustion heats of dissolved glycogen and diluted lactic acid—the initial and final products of the reaction—amounted only to 160 to 185 calories according to the speaker's own measurements. Exactly the same value was found during the formation of lactic acid in cut muscle suspended in phosphate solution and also in recent experiments in which the glycogen was fermented by the muscle enzyme in aqueous solution. Undoubtedly the mere transformation of glycogen into lactic acid only accounted for about 160 calories. But in the intact muscle the lactic acid reacted with muscle protein according to the abbreviated equation



by de-ionizing the protein. If the whole or the lactic acid reacted in this way 140 calories would be liberated corresponding to the heat of de-ionization of proteins. But as was found in collaboration with Dr Lohmann, only half of

the lactic acid formed during fatigue was neutralized by alkali proteins, the remainder by phosphate and other buffers. Therefore only about 70 + 10 = 80 calories were to be expected from neutralization. Altogether 260 to 270 calories were covered by known reactions, and for the origin of about 120 calories the explanation was lacking. Attempts for many years to find a higher heat of de-ionization in the living muscle or a measurable amount of energy by colloidal changes had been in vain.

P and G P Eggleston in the Instituto of Professor A V Hill and Fiske at the Harvard Medical School, had simultaneously found that two-thirds to three-quarters of the whole phosphate in muscle which was believed to be inorganic was in reality in a very labile combination, which, as Fiske had demonstrated, contained besides phosphate also creatine in equivalent amount. This labile compound, named by the Egglestons "Phosphagen," was decomposed in large part during the anaerobic fatigue during the oxidative restitution it was rebuilt similarly to the carbohydrate. In experiments which were made in collaboration with Dr Lohmann concerning the breakdown of phosphagen by muscle enzyme, Professor Meyerhof had found that sugar and lactic acid were never formed in this way. Preparations of phosphagen, about 90 per cent pure, showed a molecular weight, dissociation curves before and after splitting, and kinetics of hydrolysis which agreed with the simple formula of 1 molecule of phosphate and 1 molecule of creatine obviously bound together by the amino group of the creatine thus it was a phosphamide with the structure  $R-NH-PO(OH)_2$ .

In confirmation of the suggested constitution was the fact that all the known simple phosphamides behaved similarly, they were stable in alkaline and unstable in weakly acid solutions. The splitting of phosphagen into phosphate and creatine gave a heat formation of 150 to 160 calories per 1 gram of phosphoric acid on the other hand it was found, in confirmation of the work of the Egglestons that during muscle activity the ratio of phosphagen breakdown to lactic acid formation was not constant but decreased with fatigue. However, in an anaerobic fatigue of average degree leading to an accumulation of 2 mg of lactic acid in 1 gram of muscle, 80 to 90 per cent of the available phosphagen was split. This meant a production of 1.5 mg of inorganic phosphoric acid, or 0.75 mg of phosphagen phosphoric acid per milligram of lactic acid, which gave 120 calories. This was exactly the value which was so far unaccounted for as a portion of the "caloric quotient." Thus the heat of contraction was caused not only by the anaerobic splitting of carbohydrate and associated physico-chemical reactions, but also by a second metabolic process, till now completely unsuspected—namely the formation of creatine from a precursor. It followed, on the other hand, that the caloric quotient could not be exactly the same during the whole course of fatigue, but must sink from a higher to a lower value corresponding to the diminishing amount of phosphagen split. The ratio between phosphagen split and lactic acid formed was about twice as high in the beginning of fatigue as in the calculation used above. The decrease of the caloric quotient in higher degrees of fatigue was found in the speaker's earlier experiments an increase on very short stimulation was indicated, but could not be proved because of the insufficient accuracy of the measurements. He stated that it is purposed to reinvestigate this shortly. All voluntary muscles formed lactic acid from glycogen during mechanical work, while the occurrence of phosphagen was limited. Eggleston had not found it in the muscles of invertebrates in which E Mellanby had shown that creatine was lacking. The speaker had found that the muscle of the crab (*Astacus*) contained no phosphagen, but another phosphate compound which behaved similarly in chemical and physiological respects and was apparently a substitute for phosphagen. Probably therefore phosphagen like bodies played a universal part in the activity of striated muscle. It was most remarkable that while the main part of phosphagen was restored only in oxidative recovery a small part of the amount split during the tetanus was immediately afterwards rebuilt apparently in the moment of relaxation. The energy for this might be afforded by lactic acid formation, or the restabilization might be immediately due to

the mechanical and elastic change corresponding to Hill's heat of relaxation. Although the older hypothesis of a double mechanism in muscle, tonic and contractile, due to creatine and lactic acid respectively, had not been verified in these experiments, some dualistic theory regarding the part played by creatine and lactic acid formation in contraction apparently had now become necessary. There were doubtless several other metabolic changes during activity of muscle, such as the formation of ammonia studied by Tashiro, Embden, and Parnas. Professor Parnas in Lwow (Poland) had found that during injury, rigor and also during mechanical work ammonia was formed, in quantities of about 1 molecule  $\text{NH}_3$  to 14 molecules of lactic acid, in proportion to the amount of work done. But the amount of ammonia was quite independent of the presence or absence of oxygen, and remained unchanged during recovery. This  $\text{NH}_3$  was given up to the blood stream in the intact animal and was apparently the cause of the increased nitrogen metabolism during work, found by Rubner, Cathart, and others. While this reaction is well as others completed the intimate picture of the metabolism of working muscle, he believed that the chemical happenings decisive for the supply of energy were now quantitatively known. In addition to the breakdown of glycogen and its resynthesis in recovery, the splitting of phosphagen and its rebuilding from creatine and phosphite furnished an important part of the energy supply of muscle, both together were responsible for the heat of contraction.

Professor G. EMBDEN (Frankfurt-on-Main) directed attention to the problem of ammonia production in muscular contraction. The question arose during work on lactic acidogen, the muscular substance which formed lactic and phosphoric acid. The extraction of this substance from fresh muscle was very difficult because it was associated with a nitrogen-containing body, finally, however, the two substances were completely separated. The lacticidogen could be isolated as a crystalline bromine salt and as an amorphous barium salt, of a hexosemonophosphoric acid of a special kind. The nitrogen-containing substance was definitely identified with an already known body—namely, adenosinphosphoric acid, which had not till now been found as a mononucleotide in nature. Adenosinphosphoric acid seemed to occur in a rather large amount in fresh muscle, though during its isolation the greater part was lost. The fact that adenosinphosphoric acid could be got especially out of quite fresh muscles, while inosinic acid was obtained from the extraction of muscles not quite so fresh, led to the conclusion that there was a very close biological connection between the two substances, which, as the formula showed, only differed in this respect—that in the purine nucleus in place of the inosinic acid had an hydroxyl group and the adenosinphosphoric acid an amino group. The adenosinphosphoric acid could easily pass into inosinic acid by simple hydrolytic de-amination, and this led to the idea that the formation of ammonia in dying muscles, previously observed and recently confirmed by Grd Andersen, might have its origin in this de-amination. Grd Andersen had thought that this *post-mortem* ammonia formation might have its origin in *in-vivo*, while Meyerhof, who had found ammonia formation in isolated diaphragm muscle, believed that it came from proteins. Rebeleg, Selters, and Embden had shown that the spontaneous formation of ammonia in dying muscle was greatly increased by the addition of the sodium salt of adenosinphosphoric acid. Gerhild Schmidt had been able to transform adenosinphosphoric acid into inosinic acid by the effect of a ferment solution procured from muscle. These processes, which were originally found in dying muscle, were later recognized as characteristic accompaniments of activity. The lactic acid formation in dying muscle had long been known, when Fletcher and Hopkins investigated the formation of this acid during activity. Also the production of inorganic phosphoric acid was at first recognized as a dying phenomenon and only later as a characteristic accompaniment of every muscular contraction. The close relationship between chemical processes in active and in dying muscle had led the speaker to investigate whether there was ammonia formation in active as well as in dying muscle. Experiments by Richings, Embden, and War-

meier had shown that severe fatigue of isolated muscles was associated with a very great increase in ammonia content. Quite independently Parnas and Morolowski had described ammonia formation in the case of isolated frog muscles, and it could also be demonstrated during muscular activity in the living frog. The gastrocnemius of frogs which did not jump and whose ammonia content was about 2.2 mg. for 100 gr. muscle. In frogs killed forty-five minutes later, it increased to 5.1 mg., and seventy-five minutes later, ammonia reached 9 mg. The resting of previous isolated muscles was followed by the disappearance of ammonia both in isolated muscles and in living animals, the ammonia content in one case was 13.8 mg. before, and after 1 hour's rest 9.6 mg. These frogs had been examined in May, in the other summer months ammonia increased so strongly, owing to the frogs being less active. Thus in June the ammonia content was 2.6 mg. before and 2.1 mg. after rest. Great variations were only seen in the month of May, at which time the frogs were much more lively than at any other time. At every time, however, the quantity of ammonia was greater in the frogs than in quiet ones, and in the esculenta species than in the *temporaria*. In general, less was found during the night than in the day, and a well marked concentration in living frogs might be regarded as a sign of fatigue.

When the gastrocnemius of both sides were tetanized a short time in the same circuit, and the muscles of one side then immersed in liquid air at the height of tetanus, while the muscles of the other side were fixed after a resting period of ten to sixty seconds the ammonia content of the muscles which were immersed later was found to be much lower than the others. This result was obtained in five winter experiments performed in frogs which were in good condition. Recent experiments by Miss Kristensen and Miss Schumacher indicated that the ammonia split off by a quite short tetanus was not rebuilt or at least not completely rebuilt during relaxation. In these experiments the first muscle was not immersed at the height of the tetanus, but immediately after relaxation the second one minute later. In all experiments in which the muscles relaxed immediately after the cessation of the stimulation less ammonia was found in the muscles later immersed. It seemed as if the muscles of frogs kept for a long time in the laboratory were less able to re-synthesize the ammonia split off during tetanus, and the same was true for frogs caught only a few days before the experiment during summer heat. Such muscles behaved after one short tetanus like fatigued muscles. Therefore it seemed necessary to perform experiments concerning the reversibility of the ammonia formation during muscular contraction on frogs on such frogs which had been caught immediately before the experiment.

From the experiments mentioned it was evident that during muscular contraction not only lactic acid and phosphoric acid were formed, but also ammonia appeared. Twenty years previously Slosser, working on dogs, had found in augmentation of ammonia during muscular activity, and recently Tashiro had shown that during stimulation by single induction shocks isolated frog muscles gave off more ammonia than resting ones. The latter experiment could be explained apparently, as well as the augmentation of ammonia in the moment of contraction by a diminution of muscular acidity at the moment of contraction. Some years previously it was found that the lactic acid and inorganic phosphoric acid were ruled by the same mechanism, and in both cases it was found that adenosinphosphoric acid brought about much more rapidly than inorganic phosphoric acid the disappearance of inorganic phosphoric acid. The experiments were performed on the preparation of rabbit muscle. It seemed probable that the effect of adenosinphosphoric acid might be of the greatest importance for the rebuilding of lactic acid after muscular work. In the experiments on frog muscle phosphoric acid was determined in the phosphagen content. The differences, therefore, in the phosphagen content as is known from the work of the French school, could not be split in strong acid reaction, could not be detected. The experiments should accordingly be repeated with attention to the phosphagen change. Nothing of the

about the energy change effected by the ammonia reaction in muscular contraction. The hydrolytic deamination of adenosinophosphoric acid in the formation of the acid, on endothermic reaction, could be toned up by secondary processes following the de-amination regarding the importance of ammonia formation in the genetic changes, experimental investigation was required to determine whether all the ammonia formed in muscular contraction came from adenosinophosphoric acid, or whether there were other sources of ammonia. Unpublished experiments by Wassermann emphasized that there was no other ammonia-forming substance than adenosinophosphoric acid (perhaps adenosin). In every future attempt to explain the entire process of muscular contraction from a chemical viewpoint attention would have to be paid to the ammonia reaction during contraction.

Dr F. GOWLAND HOPKINS (Cambridge) remarked that there was a time-honoured assertion that the biochemist did not have to deal with the actual events in living tissue, but since from the very moment his methods were applied to them the tissues ceased to be alive. This assertion had been shown to be baseless by the advances already made in the chemistry of muscular activity. Progress had been real that they had, perhaps, become unduly light-hearted in contemplating the problems, recent discoveries had shown that there were complexities hitherto unsuspected. Some important points sharp differences of opinion were developing, but since those who disagreed were experimentalists and not theorists, ultimate agreement would eventually be reached. The speaker referred to the study in his laboratory of muscles which, after a prolonged stay in oxygen at low temperatures, had become completely insensitive, their irritability being again restored by immersion in solutions of certain electrolytes. The facts observed seemed likely to throw light upon the conditions which determined a normal response to a stimulus.

Professor T. H. MILLAR, in reply, referred briefly to the nature of the linkage of the phosphoric acid in the compound described by Professor Embden, and commented on the importance of the recent investigations which had just been reported. Within a comparatively short period our knowledge of the chemical changes in muscular activity had been greatly extended.

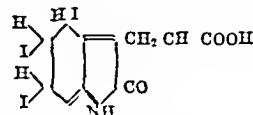
### MISCELLANEOUS PAPERS

FOLLOWING the discussion on the chemical changes accompanying muscular activity a number of short papers dealing with physiological and biochemical subjects were read. Brief abstracts of some of these are printed below.

#### THE CONSTITUTION OF THYROXINE

Dr C. R. HARRINGTON (London) detailed briefly the steps which led up to the isolation of thyroxine in the pure condition. It appeared that the first indication that the physiological action of the thyroid gland was concerned in any way with iodine was obtained by Koerber (1895), who made the observation that the administration of iodine had a favourable therapeutic effect in cases in which the thyroid function was deficient. In the same year the significance of this observation was extended by the work of Baumann, who demonstrated the actual presence of iodine in the thyroid gland, and was further able to indicate a rough parallelism between the iodine content of various preparations of the gland and their physiological activity. This discovery made it at once apparent that any attempt to isolate the active principle of the gland involved a systematic pursuit of the iodine. Baumann himself started experiments in this direction, and found that simple extraction of the gland with water and alcohol removed relatively little of the iodine, which, therefore, was apparently bound up more or less firmly with the proteins. On the other hand hydrolysis of the gland with dilute sulphuric acid yielded a product (iodothyron) which contained variable but larger amounts of iodine (5 to 14 per cent) than the original gland and also showed an enhanced physiological activity. In the light of present knowledge this substance was to be regarded as impure thyroxine.

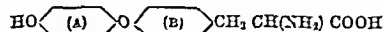
A similar substance was obtained by Hutchinsan (1898) by peptic digestion of the gland, and by Oswald (1902) by acid hydrolysis of an iodine-containing globulin which he extracted from the gland with dilute saline. By no method, however, could iodothyron be prepared with a constant chemical composition. No further progress was made with the problem until, in 1919, Kendall announced the isolation of a pure crystalline substance from the thyroid which contained 65 per cent of iodine, and which exhibited in a high degree the typical physiological action of the gland. On the basis of elementary analysis Kendall ascribed to this compound the empirical formula  $C_{15}H_{13}O_4NI_4$ , he further propounded a constitutional formula



regarding it as a derivative of oxindolepropionic acid (hence the name "thyroxine"), and as being ultimately derived from tryptophan. This formula, however, presenting as it did inherent chemical improbabilities, was advanced without any experimental support.

The continued absence of any evidence as to the true chemical nature of thyroxine led Dr Harrington, in 1925, to take up the problem of its constitution. For this investigation the primary requirement was the possession of a fairly large amount of the pure substance, and a method had therefore to be devised which would give a better yield than the very small one obtained by Kendall. The method of the latter worker consisted in hydrolysis of the gland with 5 per cent sodium hydroxide followed by a complicated process of salting out of the thyroxine, first as the barium salt and then as the sodium salt, the ultimate yield being 0.001 per cent of the original gland. It was found that a considerable improvement was effected by substituting barium hydroxide as the hydrolytic agent and by conducting the hydrolysis in two steps, a preliminary mild hydrolysis of the whole gland being followed by an intensive hydrolysis of the partially purified product. In this way about twenty-five times Kendall's yield of pure thyroxine was obtained, and it became possible to accumulate a sufficient quantity of material for the investigation of its chemical structure.

The first step in this investigation was the removal of the iodine, this was accomplished by means of hydrogen and palladium, a method which could easily be shown to induce no secondary changes in the molecule, and which therefore yielded a product which was certainly identical with thyroxine, save for the substitution of the iodine of the latter by hydrogen. This iodine-free product (desiodothyroxine) proved to have the empirical formula  $C_{15}H_{13}O_4N$ , which, in turn, indicated that the formula of thyroxine must be  $C_{15}H_{13}O_4NI_4$ . Desiodothyroxine further turned out to be an  $\alpha$ -amino-acid with one phenolic group and two benzene rings in the molecule, a systematic process of degradation indicated, indeed, that the formula was



that is to say, that the compound was the *p*-hydroxyphenyl ether of tyrosine. The correctness of this hypothesis was proved without great difficulty by the synthesis of this compound and the identification of the synthetic product with that obtained from thyroxine. Thyroxine was therefore proved to be a tetra-iodo derivative of the above compound.

The synthesis of desiodothyroxine did not, however, assist in the synthesis of thyroxine itself, since the four iodine atoms could not be introduced directly, nor could direct evidence be obtained as to the positions occupied by these atoms. The fact that two iodine atoms were apparently taken up directly with ease, together with various other considerations, led to the hypothesis that in thyroxine, the iodine atoms were present in pairs, one in each of the benzene rings A and B. Since it was evidently the inner ring B which was resistant to direct iodination,



the actual pinprick. Professor McDowall suggested that the emotions which caused this vaso-constriction might be looked upon as conditioned sensory stimulations. In physiology it had long been known that actual sensory stimulation caused a rise of blood pressure. It was very interesting that the rise of blood pressure which could occur under conditions of mental stress might be considerable. For months he had his blood pressure taken daily, and quite accidentally it was found that on one occasion before an important lecture his blood pressure rose from a normal of 110 to 160, and remained up for several hours. Previously Leonard Hill and more recently Gillespie had shown similar rises of blood pressure in response to mental effort. He had little doubt that this rise of blood pressure was designed for the facilitation of muscular activity, which in a civilized life did not necessarily accompany or succeed mental stress.

Their next step had been to determine how far these two causes might influence ordinary individuals at work. The investigation was just in its infancy, but even already some very suggestive points had cropped up. His colleague Wells had found that in some individuals there was a diurnal variation, which they believed to be associated with mental stress. There was often in women a pre-menstrual fall and a post-menstrual rise and what was extremely interesting from the toxicologic point of view, a definite influenzal fall and a post-influenzal rise. The same individuals when fatigued did not show the diurnal variation.

These observations were being extended to other forms of toxæmia with a view to determining if the response to other toxins was the same and if so, to what extent different individuals responded similarly.

#### NATURAL ARREST OF HAEMORRHAGE

Professor JOHN TAIT (Montreal), in a communication dealing with the natural arrest of hæmorrhage from a wound, said that throughout the animal series there were arrangements whereby any accidental wound of the blood-containing system became plugged by the intervention of the blood. The common belief was that the plasma was particularly and exclusively involved in closing any accidental orifice. In all the invertebrates possessed of blood or body fluid it was the corpuscles that played a part; they adhered to the edge of the wound in the vessel and by successive accumulation became aggregated into a resistant gummy mass which acted as a plug. A similar phenomenon also occurred in the case of vertebrates, the corpuscles involved being the special elements called spindle cells or thrombocytes. The question then arose whether coagulation of the blood plasma assisted in arrest of hæmorrhage. Where the bleeding occurred into the meshes of areolar or connective tissue coagulation was induced. If the vessel previous to puncture had been carefully denuded of its adventitial sheath the only method of arrest was by agglutination of thrombocytes—platelets in the case of the mammal. The speaker illustrated his remarks with lantern slides.

#### THE CIRCULATION RATE

Dr H. WHITRIDGE DAVIES (Leeds) and Professor B. A. McSWINEY (Leeds) contributed a joint communication and described experiments in which estimations of the circulation rate in dogs were made by the Henderson-Haggard ethyl iodide method. The results showed very considerable disagreement with those determined simultaneously by another and more reliable procedure. It was found that the most important fundamental assumptions of the ethyl iodide method were erroneous: thus the coefficient of distribution of ethyl iodide between alveolar air and arterial blood was found to be approximately 52 instead of 20 as stated by Henderson and Haggard. Moreover considerable quantities of ethyl iodide were found in the mixed venous blood. Under certain conditions the difference between arterial and mixed venous concentrations of ethyl iodide was approximately equal to the alveolar concentration multiplied by two. This fact would account for the reasonable results obtained in many instances, the two errors tending to cancel one another. Such a cancelling was however purely fortuitous and could not be relied upon. In some cases, where pulmonary embolism occurred, the relation between the concentration of ethyl iodide in the arterial

blood and in the mixed alveolar air was markedly disturbed. Similar disturbances would occur in any pathological condition in which the normal relationship between alveolar ventilation and pulmonary circulation was upset. The automatic method of sampling alveolar air described by Henderson and Haggard, when applied to dogs gave results which were remarkably consistent and reasonable. The alveolar carbon dioxide pressures agreed closely with those of the arterial blood obtained indirectly by determinations of its carbon dioxide contents and dissociation curves.

## OPTIC NEURITIS

### I—ETIOLOGY DIAGNOSIS PROGNOSIS

BY

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By the term "optic neuritis" the oculist usually means a certain type of morbid changes which he sees at the optic disc on examination of the fundus of the eye. He recognizes, however, that parts of the nerve other than its distal end, though not visible with the ophthalmoscope, are also liable to be affected by changes such as oedema or inflammation, and in speaking of the cases he usually employs the term "retrobulbar neuritis."

The optic disc has been perhaps the most carefully studied of all the parts of the fundus oculi, and naturally very complete descriptions of the morbid appearances have been given, and even the relation of these appearances to local pathological and anatomical findings have been fairly well made out, though opportunities for the anatomical and pathological examination of early cases of optic neuritis are of very rare occurrence.

During the long time that has elapsed since the early descriptions of morbid appearances at the disc a great deal of confusion seems to have gradually developed, owing to a vague, uncertain, and variable nomenclature. New names intended to define or describe certain types of disc change have been introduced and terms such as "optic neuritis," "papilloedema," "choked disc," "papillitis," and "neuro-retinitis" are now freely used. The sense in which the oculist uses these terms will depend a great deal on the view he has formed, or has been taught, regarding the etiology or the pathological significance of the changes he has under observation. In my opinion the classification of cases of optic neuritis should be based on a full investigation of the cases as a whole, and not merely on the observer's idea of the type of disc changes present. When the cases are studied from this wider point of view it will be readily admitted that those associated with increased intracranial pressure may be at once placed in a class by themselves. This differentiation depends not only on the type of the disc changes—for example, the amount of swelling—but also on the examination of the vision (the absence of any pronounced visual disturbance in the early stages being of paramount importance in the diagnosis). Many of the older case records where optic neuritis or double optic neuritis is noted as occurring, but without proper record of the presence or absence of visual symptoms, leave the reader guessing as to the significance to be attached to the term "optic neuritis."

With regard to the study of the changes at the disc I can well believe that the use of the Gullstrand ophthalmoscope is of the very greatest importance, and I hope that the younger school of ophthalmologists in this country will have more opportunity of using this valuable instrument than their predecessors have had. While freely admitting that many cases of disc change can be instantly and correctly interpreted as due to intracranial pressure, there are many cases where, especially in the early stages, the diagnosis cannot be made with any certainty from the disc appearances. Vision at least in the early stages is in the vast majority of the cases little if at all affected.

\* The opening paper of a discussion on optic neuritis in the Section of Ophthalmology at the Annual Meeting of the British Medical Association at Edinburgh. The President, Dr A. H. H. Sinclair, was in the chair.



Any noteworthy defect of central vision must be fully investigated in order that its cause and significance may be rightly understood. Careful study of the visual fields may in certain cases be of the greatest importance in helping to locate the position and extent of an intracranial disturbing factor. The results of lumbar puncture, as determining the presence or absence of increased pressure, or in revealing the presence of cellular elements or microorganisms in the spinal fluid, are often of great value. The part played by the x-ray plate is familiar to us all, though some may agree with me that the interpretation of x-ray photographs of the skull requires much careful study and experience. In my opinion the reading of the x-ray specialist is often of less value than that of the clinician who has studied the case in its various aspects, and is also equipped with a wide personal experience of x-ray photography of the skull. The Wassermann reaction is now so uniformly taken in cases of this kind that it hardly requires mention. The co-operation of a neurologist in seeking to establish a full diagnosis is taken for granted. Having, then, made up our mind by careful study of a case that the disc changes are a manifestation of increased intracranial pressure, what descriptive group name shall we give it? "Papilloedema" is simple and expressive, but hardly tells us enough—merely, indeed, that the disc is swollen. Some expression such as "pressure-oedema" seems to be needed, and Dr. Triguera has boldly coined the term "pleiocephalic oedema" to define the type of change met with in this group.

With regard to the etiology of the disc changes in this group, there is now a general consensus of opinion that the intracranial pressure is the all-important deciding factor, and further, that the changes observed, at any rate in the early stage, are due primarily to an oedema of the tissues involved. In what way the increased pressure acts—whether, for example, by pressure on the retinal vessels inside the nerve sheath, or by obstruction of the flow of fluid along the lymph paths in the nerve—does not seem to be yet fully determined. Experiments on animals to bring about increased intracranial pressure seem to have been most successful in producing disc changes when direct fluid pressure was used. Apparently it is very difficult indeed to produce by artificial means a slowly increasing intracranial pressure such as is caused in man by a growing cerebral tumour. The theory that the papilloedema (or choked disc) was caused by the action of irritating or toxic fluids circulating within the nerve sheath seems now to have fallen into disrepute, and is negatived by many clinical observations, and by the fact that the relief of pressure is so effective in bringing about disappearance of the swelling of the disc. This was specially shown by the great pioneer work of Victor Horsley, who proved once for all that after timely relief of pressure by operation, the swollen disc will more or less quickly sink to its former level, and the stage of atrophy with ultimate loss of vision be prevented.

In recent years Cushing and Walker in America, by great advances in methods of examination and a highly elaborated and brilliant surgical technique, have demonstrated to the world that intracranial procedures of extraordinary magnitude and complexity can be carried out with comparative safety. While recognizing the limitations and very serious risks of these procedures, I would nevertheless support the view that cases of increased intracranial pressure with changes at the disc should be operated upon in the early stage, so that the patients may have the best chance of retaining vision. Those cases in which more than a palliative trephine is indicated should, in my opinion, be operated upon only by a surgeon who has had very special training and experience in this class of work. Brain abscess may be said to form a special group of cases treated on special lines. Once the stage of optic atrophy is reached experience has shown that the results of operative treatment are apt to be very disappointing. In some cases, indeed, operation seems to have hastened the onset of blindness. Only in definitely syphilitic cases does medical treatment seem to have any real chance of effecting a cure. From occasional cures of this kind sprung, no doubt, the old maxim "Try iodide," a method of treatment which used to lead to much unwarrantable delay. As you are all

aware, prolonged increased intracranial pressure is caused mainly by intracranial neoplasms, but also by cysts, abscesses, gummatous or tuberculous nodules, intracranial aneurysm, and blood extravasations, and in some cases by sinus thrombosis, meningitis, skull deformities, etc.

I should like here to allude to those cases of optic neuritis following severe penetrating head injuries. The vast amount of evidence obtained during the war has shown that disc changes are of very frequent occurrence in these cases—say in 30 to 50 per cent. Only some of these cases appear to be due to increased intracranial pressure. In very many of them there is the added complication of sepsis, often with the retention of foreign matter within the cranium. In many of these cases the general symptoms are so severe that anything like detailed investigation of visual symptoms is quite impossible, and no really accurate clinical differentiation of the type of disc changes can be made. Having no personal experience of this type of case, I should like specially to hear something of the experience of those among us who saw very large numbers of these cases during the great war.

I will now pass on to consider the cases of optic neuritis not depending upon increased intracranial pressure. These are due, in the main, to inflammatory processes in the nerve or its sheath which may lead directly or indirectly to disc changes. In a very large proportion of the cases, however, these inflammatory processes are situated too far from the eye to produce any visible signs at the disc during the acute stage, though later a certain amount of atrophic change almost always becomes visible. In cases with changes at the disc the amount of swelling is usually much less than is so often typically shown in the former group. It may be worth while to give a very condensed rendering of Behr's description of this type from von Hippel's article in the *Gräfe Saemisch Handbuch*, though, as I have already stated, it is impossible to establish a diagnosis by ophthalmoscopic examination without consideration of the whole clinical picture.

"This type does not present the transparent glassy swelling of the papilla so characteristic of the oedema accompanying increased intracranial pressure. The disc rapidly becomes less transparent and the lamina invisible. The roots of the vessels become veiled by swollen nerve fibre tissue. This veiling of the vessels extends some way from the disc. The colour of the disc is usually redder, the veins are apt to be greatly distended, and the arteries small."

While a description of this kind may hold good in many cases, still, as I have already said, it is often impossible to make any certain differentiation of type by ophthalmoscopic appearances. Disturbance of function comes into prominence in this group. Central scotomata with visual failure is common and characteristic, though not invariably present. This failure of vision seldom depends upon any changes which may be visible at the disc, but on the presence of inflammatory foci in the course of the nerve, and the defects in the field of vision will depend on the position and severity of the lesion interfering with nerve conduction. The course of these cases is variable, and in some the general condition of the patient gives evidence of severe general disease, as, for instance, in syphilis or meningitis. These cases do not form a clinical group so well differentiated as the previous group due to increased intracranial pressure. For clinical and descriptive purposes I have tried to subdivide them, following in the main von Hippel's classification.

(1) A somewhat small group characterized by inflammatory processes which develop within the nerve sheath and spread by contiguity to involve the nerve. In the early stage vision may not be much affected, and in a large proportion of cases it is the peripheral, rather than the central, part of the field that first shows visual disturbance. In this group syphilis is a very important causative factor. This probably accounts for certain cases of optic atrophy in young children with a positive Wassermann reaction. A case of the kind with severe infiltration of the meninges, nerve and optic disc is figured in von Hippel's article. I have not seen a large number of cases of syphilitic meningitis affecting the optic nerve and with changes at the disc, but I think all I have seen showed changes in the vitreous in the shape of opacities. I have examined many cases of optic neuritis in patients with meningitis, mostly from ear trouble, and

in my experience the disc changes did not usually appear till a very late stage of the disease and may have been due to increased intracranial pressure. Tuberculosis appears to be a very rare cause of optic neuritis except in cases of intra-cranial nodules causing pressure oedema of the disc.

(2) I now pass to the great group of cases of optic neuritis due to toxins circulating in the blood and giving rise to an inflammatory focus in the optic nerve. Very occasionally infective organisms may actually settle in the nerve but the great natural tendency to recovery in this group of cases negates the idea of actual microbial infection of the nerve being anything but an extreme rarity. In some few cases the inflammatory process affects the nerve head directly but usually it is extra-ocular or retrobulbar. If close to the eyeball signs of inflammatory action are likely to appear at the disc. The swelling in this case is however an inflammatory reaction due to the toxins in the neighbourhood. Our specialty shows in a variety of ways how easily this may take place—for example, in swelling of the orbital tissues before there is actual invasion from an inflamed sinus, or great oedema of the conjunctiva from a str.

The symptoms, course, and prognosis very seldom appear to be modified by the presence or absence of changes visible at the disc. In the majority of the cases disc changes are absent in the early stages, and the diagnosis of optic neuritis has to be made from a careful study of the visual disturbance and of the history and general symptoms. As a rule one eye only is affected. Changes at the disc if present, usually amount merely to a varying degree of redness and swelling with a blurring of the margins, but in some cases the swelling may be very gross, and accompanied by retinal haemorrhages. The diagnosis is made not from the disc changes but, as I have just stated, from consideration of the visual disturbance and of the case as a whole. The visual disturbance is usually very obvious owing to the presence of a central scotoma of a fairly large size. According to Trinquar the centro-caecal type of scotoma is common while arcuate defects from the blind spot arching over the macular region are also of frequent occurrence. The scotoma is usually intense but may vary in different parts. In some cases the scotoma breaks through to the periphery by a narrow neck.

Recovery of peripheral vision usually precedes the disappearance of the central defect. Even when normal vision by the test type has been restored a careful examination will often show slight depression of the central area especially for small coloured objects. In many cases recovery is only partial and in nearly all cases more or less pallor of the disc appears as a permanent record of the attack. Probably many slight cases where vision is less disturbed never seek medical advice recovery rapidly taking place. Chronic cases are very rare unless we admit tobacco amblyopia into this group (I do not propose, however to deal with these forms of toxic amblyopia due to alkaloids and other poisons).

Care should be taken in the diagnosis of retrobulbar neuritis and in cases with a small central scotoma a very careful examination of the macula must always be carried out. In hysteria we have to deal rather with a peripheral than a central field defect. It has also to be remembered that the lesion may be situated far up the nerve and, by involving the chiasm, cause a defect in both fields. Among well established causes of retrobulbar neuritis disseminated sclerosis holds the first place. I remember well reading the original account of the after history of cases of retrobulbar and unilateral optic neuritis examined in the Tübingen Clinic. Since that time among my private cases I have had several patients in whom disseminated sclerosis in its fully developed form followed a retrobulbar neuritis after the lapse of many years. The importance of this connexion between the eye condition and this wide spread nervous affection is everywhere recognized.

There remain, however a large number of acute cases for the origin of which an adequate explanation is wanted. Some perhaps many of my audience will at once say to themselves "This explanation has been found it is of course merely an invasion of the nerve from the posterior nasal sinus." After the researches of Onodi and others

on the anatomical relations of the optic nerve to the posterior ethmoid and sphenoidal sinuses this explanation appears most convincing and plausible, but to me the proof is altogether wanting. I admit at once that many cases of retrobulbar neuritis, mostly of a chronic persistent type, have arisen from involvement of the nerve in the inflammatory affection of a sinus, and I also admit that these cases have undoubtedly been cured or relieved by free operation on the diseased sinus. What I do not yet believe is that the common acute retrobulbar neuritis which ophthalmologists so often meet with has been proved to be due to a spread of inflammation or of inflammatory products from the sinus into the nerve, in such a way as to create an inflammatory focus which would explain the symptoms.

I have worked in this department of the Infirmary for more than thirty years, and during a large part of that time this department has been in closest touch with a highly organized, up-to-date, and very energetic ear and throat department situated at our doors. During that time our department has been in the habit of sending to the ear and throat department a large number of cases of acute sinus trouble the patients having come to us on account of pains in the neighbourhood of the eye suggestive of trouble especially in the frontal or ethmoid region. In the great majority of the cases our diagnosis was confirmed by our rhinological colleagues and proper treatment employed. None of these patients came to us on account of visual disturbance which is of course, the outstanding symptom of retrobulbar neuritis. Very rarely have I seen a case even of severe sinus trouble sent to us from the ear and throat department on account of a visual defect, although our colleagues were well aware of this possibility. So far as I know the ear and throat department has never sent us a case of acute sinusitis with complaint of visual trouble.

Some years ago the Scottish Ophthalmological Club had a meeting with the rhinologists belonging to a similar club to thrash out this vexed question, which was at that time so prominent in the medical press, especially in America. A committee was formed of oculists and rhinologists to co-operate in the investigation of these cases. The oculists were to examine the cases of sinus trouble for visual disturbance, and the rhinologists were to examine the noses of cases of optic neuritis for nasal disease in any form. The inquiry began with some enthusiasm, but faded away to nothing because little if anything was ever found, the oculists finding the eyes of the sinus patients healthy, and the rhinologists finding the noses of the retrobulbar cases healthy after careful investigation, but without opening the sinuses.

Now I was educated for a long time in the Vienna school, and am an ardent admirer of the critical sagacity of that school. I therefore read the recent publication of Professors Møller and Hirsch with great care but, I am afraid, I still remain abjectly unconvinced. Møller as von Kries takes up a rather extreme position. He admits that retrobulbar neuritis occurs very rarely in severe sinus disease, and ascribes the type commonly seen to acute sinus trouble of a kind which apparently gives no signs in the nose to ordinary examination. Hirsch's account of changes found in the mucosa on opening the sinuses is to me unconvincing. Møller lays great stress on the success of operative treatment, the successful methods of treatment being of the most varied kinds and ranging from the boldest surgical interventions to scratching of the turbinates or the mere application of cocaine or adrenaline.

Unfortunately, I have had no time to look over the old records of acute retrobulbar neuritis, but I know that it has always been regarded as a disease where the prognosis was almost certainly favourable. Curiously enough I have had experience of several private cases where operation was deferred, and where recovery took place before the nose was interfered with. Think how the rhinologists and the patient would have been alike impressed by the almost miraculous restoration of vision within a very short time after the operative treatment on the nose. I do not know any kind of cases in the whole range of medicine where one is more likely to be deceived with regard to the efficacy of operative measures than these cases of acute retrobulbar

neuritis in young adults. After all, how many patients do we meet with in hospital or in private practice with one eye blind from an atrophy probably due to this cause? With regard to the pathological findings in the mucous membrane of the sinuses opened by operative intervention, one is struck by their insignificance, and would like to hear further reports on these findings. However, I still remain open to conviction, and if there is time I should like to hear opinions on this really important question, for, after all, there must be some source of infection.

After this great group of cases which we class as retrobulbar there remain yet to be considered some small subsidiary groups, such as the neuritis following inflammation in the anterior segment of the eyeball, neuritis attending gross vascular disease, and the so-called neuro-retinitis, which is, of course, usually a sign of general systemic poisoning, as in Bright's disease and diabetes. None of these three groups seem to be suitable for discussion at the present time, and, as I have already stated, I have said nothing on such conditions as tobacco amblyopia.

I should like, however, to call attention to cases of severe affection of the nerve in myelitis, and to those rare cases of very severe acute optic neuritis with sudden blindness or extreme loss of vision. I will leave any discussion of these cases to Dr. Ronne and others with special knowledge of the subject.

## II—NOMENCLATURE OF THE CONDITION

BY

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The ophthalmologist must consider the diagnosis, inflammation of the optic nerve, not only on account of the danger which this disease by itself entails for the visual nerve of the patient, but he must also regard such inflammation as a symptom of serious affections of the brain of various kinds, symptoms which are of the greatest importance for the neurological diagnosis.

In order to be able to apply the information which the examination of the eye may give, it is naturally necessary that the neurologist should understand what meaning the ophthalmologist attaches to the terms by which he characterizes the various conditions. It is an unfortunate fact that the terms "choked disc" and "neuritis optica" have several meanings, and it is still more unfortunate that the two parties, ophthalmologists and neurologists, make use of the terms in these several meanings, so that misunderstandings are apt to arise.

The terms "choked disc" and "neuritis optica" are mostly used as ophthalmological morphological expressions, of which the former is employed for the swollen neuritic disc, the limit of swelling being conventionally fixed at an elevation of not less than two diopters. In this way the terms are clearly defined, and in practical respects this distinction is of importance because the swollen disc is far more frequently a sign of intracranial hypertension than the disc which is not swollen. But in itself it is not the degree of the swelling which interests the neurologist—he will ask the ophthalmologist about something quite different. Is the neuritic change of the disc an oedema which indicates disease of the brain—in particular an increased intracranial pressure—or is it an indication of a local inflammation of the trunk of the optic nerve?

But here there is clearly no question of ophthalmoscopic appearances, but of clinical, pathological, anatomical ideas which demand from the ophthalmologist a combination diagnosis with all its possibilities of error. It is true that this diagnosis is in most instances very easy, but sometimes the conditions may be rather more difficult.

It is not always a simple matter to decide whether in a given instance there exists a primary papillary oedema with functional disturbance resulting from secondary atrophy of the nerve fibres, or whether there is a primary lesion of the optic nerve with secondary papillary oedema. Here I will only mention the not very rare cases of choked disc with sudden initial blindness. Later on I will refer more fully to these cases, but will only point out here

that opinions do not agree as to indications for treatment in such cases, because the question as to the primary cause of the disease is not quite solved.

With typical fresh choked disc in a case of brain tumour reduced central vision as a consequence of macular involvement may erroneously cause the assumption of a primary focus in the optic nerve. In English it must be very well be reasonable to use the term "choked disc" for the ophthalmoscopic morphological idea, and, on the other hand, the term "papillary oedema" for the pathological-anatomical idea, but even a well considered and consistent use of these terms would not quite solve the difficulty.

The fact that papillary and optic nerve affections in cases of neuro-retinitis albuminurica are pathologically and anatomically very closely related to choked disc, possibly also in their pathogenesis, will probably not give rise to much difficulty, since such an important pathogenic symptom as hydrophos of the optic nerve sheath is common to both. From a clinical point of view the resemblance is striking, as the papillary oedema in albuminuric retinitis is almost always small. The pathological-anatomical identity in this case will hardly give rise to difficulties in diagnosis or in terminology.

The situation is less fortunate in regard to intraocular interstitial neuritis optica, which forms the opposite to the choked disc clinically, but not in pathological-anatomical respects. It is true there exists, particularly in Germany, a generally adopted opinion that papillary affections, as in the case of interstitial inflammations of the optic nerve, are of genuine inflammatory character, the same as the affections of the trunk of the optic nerve. This is expressed by the attempt to introduce special terms for genuine papillary inflammation—"papillitis," "entzündungspapille" (Behr)—and as a result Behr's attempt to attain ophthalmoscopically a reliable differential diagnosis between papillary oedema and papillary inflammation.

In my opinion, however, this method is not possible. The examination of a large number of optic nerves with a variety of affections, performed partly by myself, partly at my request by Hugo Thomsen, has shown me that even if there exists an actual inflammatory condition of the optic nerve, the papillary affection is, in the clear sense of the word, always an oedema. In one patient with a very severe syphilitic gummatous inflammation of the optic nerve, it appeared that the inflammatory infiltration almost reached the lamina cribrosa. Even in this case the papillary affection was almost purely an oedema, as there were only very slight cellular changes anterior to the lamina cribrosa. The general statement made here that the ordinary intraocular neuritis optica is an oedema of the condition of the papilla, immaterially whether the ophthalmoscopic change is due to an interstitial neuritis, to a tuberculous meningitis with secondary interstitial neuritis optica, to a gummatous infiltration of the optic nerve, or to a purulent meningitis, is supported by independent pathological-anatomical examinations, and is also in accord with F. Klauber's examination of neuritis optica in cases of bullet injuries in the skull. In my opinion there is reason to suppose that the idiopathic inflammation of the optic nerve, with which we are familiar in consulting practice and in which there is rarely an opportunity for pathological examination, behaves in a corresponding manner. It is not denied that, in the case of severe inflammatory processes in the optic nerve situated very far forwards, round cell infiltration may be observed to extend to within the eyeball. There is, however, a method which enables us to detect whether the inflammation of the optic nerve extends to the papilla itself to a recognizable degree. This sign is the appearance of opacities in the vitreous body. It is, in any case, difficult to imagine inflammation of the papilla with a clear vitreous body. A familiar with clouding of the vitreous in papillary affections, not only in the rarer cases of tuberculous gummatous papillary swelling, which may appear in the form of pronounced choked disc with opacities in the vitreous, but also in the more frequent neuroretinitis of the optic nerve after salvarsan treatment, in which the opacities of the vitreous are not uncommon (Sjögren). By personal experience I can confirm this, and I think it should be regarded as a real papillary inflammation.

If the opinion which has been expressed here is correct, it is obviously hopeless to attempt an ophthalmoscopic differential diagnosis between inflammation and oedema of the optic nerve. As in by no means few cases affections of this nerve arise from a combination of increased pressure in the brain and infiltration of the nerve, this cannot be done for other reasons also. We must surely, as in the past, be satisfied with restricting ourselves to the knowledge that the high grades of papillary oedema are most frequently caused by increased brain pressure. Normally the intraocular neuritis optica is the opposite to the so-called retrobulbar neuritis. Although nominally these two ideas are absolutely contrary the one to the other, they are not so much so in reality. This is because intraocular neuritis optica is an ophthalmoscopic term, while retrobulbar neuritis has in the course of time, become a term for a clinico-nosological group of diseases which is characterized by other features than the negative fact that no ophthalmological changes can be observed in the papilla.

There is, therefore, nothing against a retrobulbar neuritis occasionally showing the ophthalmoscopic picture of an intraocular neuritis and even so strongly that it can be called a choked disc but this is of course, the exception. In the group of retrobulbar neuritis I also include chronic toxic amblyopia, Leber's hereditary neuritis optica, the usual acute typical retrobulbar neuritis, and lastly the violent diseases of the optic nerve which not seldom introduce or accompany acute disseminated myelitis—that is to say, diseases which vary from the sudden development of bilateral total blindness to the almost occult affections of the optic nerve the only symptoms of which are atrophic decoloration of the temporal part of the papilla with normal vision, the picture we frequently find with commencing disseminated sclerosis.

Notwithstanding the undoubtedly different clinical characters which present themselves, and the entirely varying etiological factors which we can prove as the cause of these conditions we nevertheless find such common peculiarities that it is justifiable to classify them as a special group of diseases of the visual field related to each other. Of the clinically common features of these diseases which belong to the retrobulbar neuritis group the most constant is the negative central scotoma, and in particular its appearance where the ophthalmoscopic changes are slight or absent. The more acute forms are characterized by violent onset, accompanied by pains in the temples, pain on movement of the eyeball, and sensitiveness to pressure upon it. To these is added a more or less definite tendency to spontaneous recovery, which, indeed, is less distinct, though not quite absent in the more protracted forms. The exact connexion between these more chronic processes and the acute cases is proved by the circumstance that both may have the same etiology. Disseminated sclerosis can thus show itself both in acute disease of the optic nerve and in quite slowly developed atrophy of a type very much resembling intoxication amblyopia. Parallel to the tendency to spontaneous recovery is also the feature common to the whole group of diseases—namely, that the prognosis is rarely quite hopeless even though it may vary much in accordance with the etiology and the clinical type and, lastly the ophthalmoscopic final result the temporal papillary atrophy which is common to all the etiological members the group comprises.

On the other hand, this group of diseases is not characterized by any single one only of the symptoms mentioned. Otherwise typical cases of retrobulbar neuritis can show choked disc the orbital pains are often missing in the slow cases the tendency to spontaneous recovery may be but little apparent as in Leber's hereditary neuritis, but even here it still occurs in a certain small percentage of cases. The disease may also temporarily spread beyond the macular bundle and even cause total blindness, and the central scotoma may be absent while the other symptoms are typical (Ronne).

Whether a disease should be included as a form of retrobulbar neuritis must, therefore be decided according to its entire clinical picture and not in respect of a single instance or a single symptom.

Although the pathological anatomy of all these diseases is not in all respects particularly well known, it seems

that here also conditions may be found which are common to the whole group. As far as the acute forms are concerned it is beyond all doubt that the anatomical basis is an irregular and but little bounded plaque formation in the optic nerve. This is known both from disseminated sclerosis, myelitis, idiopathic retrobulbar neuritis, and retrobulbar neuritis in cases of ethmoiditis, in the more chronic forms also it appears that the same conditions occur. In a microphotograph of the optic nerve of a patient with diabetic intoxication amblyopia it could be seen that the degeneration of the macular bundle had a distinct and strong maximum in the most posterior part of the orbital portion of the nerve, quite as a plaque. In another case there was a focus of acute degeneration with lipid and fatty granular cells in the macular bundle in each optic tract quite distinctly outlined, while the bundle in front and behind was hardly pathologically degenerated. Corresponding conditions are also met with in cases of alcohol amblyopia, though more developed owing to the degeneration of the entire macular bundle in its whole length.

A point which is of special interest is the relation between axis cylinder and medullary sheath. As you know, it is a special peculiarity of disseminated sclerosis, and also of its optic nerve lesions, that the medullary sheath is destroyed before the axis cylinder, and this is considered to be one of the characteristic features of the disease. The question might be raised as to whether the bare axis cylinder in the optic nerve is a peculiarity common to the whole group of diseases here under discussion. As a matter of fact there is evidence in support of this view. In diabetic intoxication amblyopia this has certainly been observed by Frazer and Bonze as well as by myself in acute myelitis by myself, and in idiopathic retrobulbar neuritis with ethmoidal carcinoma by Birch Hirschfeld. Plaque formation in the macular bundle has been observed without any secondary degeneration of the medullary sheath, although the cases were sufficiently old to allow the development of such degeneration to have taken place. This can hardly be explained otherwise than by the preservation, partly at all events, of the axis cylinder in the plaque formations.

Even if the examination in this respect may not have been quite as complete as may be desirable there is some reason to suppose that this preservation of the axis cylinder may perhaps also form a common pathologico-anatomical feature of this group of diseases. If this should prove correct we may here possibly find the anatomical condition which determines the relation between all these etiologically quite different diseases. An explanation of the appearance of central scotoma is suggested by the assumption that the macular fibres may be more liable to the loss of their medullary sheath than the peripheral fibres while the almost automatic spontaneous recovery may be regarded as an adaptation of the axis cylinder to the loss of its sheath.

I therefore think that, in accordance with what I have stated, a disease which is characterized by a tendency to attack selectively the macular fibres should be termed "*retrobulbar neuritis*" and only such a disease. But not every disease with normal disc and central scotoma in the field is a retrobulbar neuritis, an accidental localization in the macular bundle of an accidental disease does not, of course, fall under this definition.

After this general review of the three clinical types of papillary oedema neuritis optica, and retrobulbar neuritis, I shall with more regard to the clinical and pathologico-anatomical details, mention a group of diseases of the optic nerve which in a certain way, lie midway between these three clinical types, and which in the same manner are sometimes classified into one and sometimes into another of these types.

I should first like to remind you of the peculiar condition which is called choked disc with sudden initial blindness. Strangely enough it does not seem to have found a collective discussion in the literature, although this would be justified by its practical importance alone, as the question of operative treatment by trephining immediately arises in such a case. Cases have appeared in the literature in which a rapid palliative trephining was performed under

such conditions, and even with excellent results (Nacht, Uhlhoff, Botheig) in so far as, after the operation, sight was regained. It is true that such an apparently good result becomes somewhat more problematic when one sees that recovery or improvement of sight has also often occurred, either spontaneously or after various forms of treatment, in cases in which no operation had been performed.

In order to be able to classify these cases it is first necessary to recognize that the impairment of vision is of a different kind from the impairment which results from secondary atrophy in papillary oedema. This appears from the fact that recovery occurs as a rule, when improvement of vision in ordinary secondary atrophy after papillary oedema would be out of the question, or, at the most, only possible within very narrow limits, even in cases where trephining has removed the increased intraocular tension and with it the cause of the papillary oedema.

The problem can therefore be formulated thus: Is the sudden visual impairment a direct consequence of the choked disc (papillary oedema), or are both parallel and relatively independent effects of the same cause (say an increased intraocular tension), or is the choked disc (papillary oedema) a consequence of the lesion of the visual path which has caused the impairment?

The first possibility, that the papillary oedema may be the direct cause of the loss of sight, appears to me to have very little probability. It is hardly justifiable to compare this motile blindness with the usual observations which occur in choked disc (papillary oedema) because the transitory forms are completely absent.

One might sooner think that the increased intraocular tension causes the weakening of sight in other ways than by the choked disc (papillary oedema)—for example, by pressure on the chiasma by the dilated third ventricle. By such means it is assumed that certain forms of bitemporal hemianopia arise through stretching of the optic nerves, but positive evidence that bilateral total blindness can be caused by such means does not exist.

The third possibility, that the ophthalmoscopically visible papillary oedema is the consequence of a disease in the trunk of the optic nerve, and therefore without analogy with the choked disc of brain tumour, is, in my opinion, the real explanation. Microphotographs of sections of the optic nerve in such a case of choked disc with bilateral initial anisometropia show a sharply outlined plaque (in one only of the sections of the nerve shown) as the most conspicuous feature. Microscopically this plaque is seen to be of a purely degenerative nature, arising from a complete destruction of the medullary sheath, the place of which is filled with a close packing of lipid and fatty granular cells. Another series of sections, through the chiasma from the same case, show that here there are several similar plaques, amongst which is a single large one which extends obliquely through the chiasma from one optic nerve to the opposite tract. This, in combination with the plaques in the nerve, gives a sufficient explanation for the bilateral blindness.

Although the *post-mortem* examination in this case showed that there really existed a brain tumour, it is beyond all doubt that the blindness was not due to choked disc, as the blindness appeared about one month before death, and the otherwise typical and severe choked disc developed only immediately after the appearance of the blindness.

In my opinion it should also be considered as certain that most cases of this kind are not due to a real tumour in the brain, but use recovery from the main disease very often occurs. I shall later on show that I regard these cases as instances of severe acute retrobulbar neuritis. But I should like to draw attention to the apparently paradoxical feature that the appearance of this optic nerve disease is always, or at all events very often, accompanied by diffuse general brain symptoms, such as headaches, vomiting, torpidity, and slow pulse, which would naturally be explained as signs of increased tension in the brain. There exists thus a peculiar and not easily comprehensible connection between the disease of the optic nerve and a

diffuse acute disease of the brain which is often termed pseudo-tumour cerebri.

If it should be thought that under these conditions it would be reasonable to assume a slowly growing brain tumour to be the cause of all cases of this kind this is definitely contradicted by the fact that an affection of the optic nerve of absolutely the same clinical and anatomical character appears in another well known condition, where a tumour in the brain is quite out of the question. I refer to the affection of the optic nerve which so often introduces the appearance of disseminated myelitis. Here we find a not very common, but quite typical, pathological picture which is so closely related to multiple sclerosis that it may justly be called *retinite sclerosiformis*. The resemblance between these two diseases shows itself in many ways (Ronne), but most in the conspicuous fact that the affection of the optic nerve very often precedes the appearance of the spinal symptoms.

In the literature there exists an ample collection of cases of this disease, and on going through these a large number will be found which are initiated by choked disc and sudden blindness (Ludon, Brinno K. Stocking, Rosenfeld, Tschirkowsky, Chisholm, Knapp, Dieschfeld, Ronne), and it is quite characteristic that it is almost the rule that in the commencing stage of this disease the erroneous diagnosis "brain tumour" is made. This diagnosis is frequently amended only after the symptoms of myelitis appear, or at the *post-mortem* examination. The microscopic examination of the optic nerve shows quite unmistakably that the anatomical cause is the same as in the case I have mentioned above—namely, the formation of plaques without the essential phenomena of inflammation, but with an enormous accumulation of lipid and fatty granular cells in the place of the completely destroyed medullary sheath.

In other cases the affection of the optic nerve which precedes the development of the myelitis has a somewhat different character—namely, that of a typical retrobulbar neuritis with orbital pains, characteristic central scotomata, and normal ophthalmoscopic appearance—but still with the same histological picture of irregular plaque formation in the nerve (Abelsdorf), while between these two extremes there exist all possible transitory stages.

On perusing the literature we undoubtedly gain the impression that the affections of the optic nerve are of different kinds as they appear under various names—choked disc, neuritis optica, or retrobulbar neuritis. A closer examination, however, shows that in reality they must represent one single etiological and clinical unit. This may already be deduced from the above-mentioned fact that affections of the optic nerve often precede spinal affections, and, furthermore, from the decided tendency to spontaneous recovery, the progress of which is not interrupted by death, and lastly, from the circumstances, not yet discussed, that the disease is almost constantly localized in the chiasma (Schmid and Gunnar, M. Tschirkowsky, Dolin, Kall, Shrikey and Lawford, Ronne).

It follows, therefore, that the character of the visual fields is determined by this localization, and bitemporal hemianopia has been frequently found (Noyes, Steffen, Elschning, Schanz, Seguin, Ronne). Sometimes a central scotoma has been observed as evidence of a retinal character, but of special interest is the peculiar change in the form of the field defect observed at times—namely, the change from central scotoma to bitemporal hemianopia or vice versa (Noyes, Steffen), or from bitemporal to bilateral defects (Ronne). Later I will discuss more fully this change in the field defect which takes the form of an improvement in the original defect, together with possible improvement in the original defect, together with possible improvement in the original defect. Here I will only state that the cause must undoubtedly be looked for in the plaque formation in the optic nerve, possibly in the healing of previously formed plaques simultaneously with the new formation of others.

The same condition which appears as the serious choked disc, with sudden anisometropia, can also appear in combination with myelitis, or isolated as cerebral pseudo-tumour, while the less violent affections of the optic nerve in myelitis have parallels in independent affection of the



optic nerve at the chiasma without additional special symptoms. Such cases are characterized by plaque formation in the optic nerve and the chiasma and therefore, show partly hemianopic forms of the visual field of varying character. In such cases it is naturally much more easy to study and follow the character and progress of the affection through the form of the defect in the visual field.

These idiopathic cases have, in their general symptoms, in many respects the character of retrobulbar neuritis—sudden commencement often with orbital pains and pain on movement and, in their further course a tendency to recovery. Also, in some cases, the characteristic features of the visual field will closely approach the retrobulbar neuritis type—for example by showing a one-sided temporal hemianopic central scotoma, a type of field defect to which Traquair has given the name "junction scotoma" because it must be due to a lesion at the junction of the optic nerve and the chiasma. In other cases this scotoma will widen to a characteristic three-quadrant scotoma or to bitemporal or homonymous hemianopic central scotomas.

But the condition which is the most interesting is the change in form of the defect in the visual field. This change has often a law bound character the defect naturally shifting across the surface of the visual field. It may wander quite successively and even, as if it corresponded to serpiginous disease which progresses at one point and heals at the point first attacked. Such a type can appear in cases where the affection develops in one optic nerve only, but it can be more easily followed where it appears in the chiasma and the visual fields therefore show hemianopic forms. Here it will be most frequently found that a hemianopic field passes over into a central scotoma, or vice versa, but peculiar changes in the appearance of the field may occur. I will illustrate this by a few cases in which a number of examinations allowed the development of the disease to be followed.

The first case begins with a symmetrical bitemporal downward defect of the visual field. The peripheral defect gradually shrinks and a central scotoma of the usual type forms in the right field whereas in the left a temporal hemianopic central scotoma appears which however, gradually extends somewhat to the nasal half of the field by the formation of a three-quadrant scotoma. Then improvement occurs, resulting in almost complete recovery.

In another case the field defects began as bitemporal hemianopia—in the left field a temporal hemianopia formed in the right a temporal hemianopic central scotoma. In the left eye while the visual field type—temporal hemianopia—remains until recovery (complete recovery), the centre of the field is wholly lost and anisotropia almost develops but later the temporal half of the visual field which was originally most affected is restored, so that the visual field changes from bitemporal to left-sided homonymous hemianopia. Eventually complete recovery ensues. Central vision and the visual fields are restored and only a temporal atrophy of both optic discs finally remains.

A third case shows a nasal hemianopia in the left field which gradually recovers by the formation of an annular scotoma. In the right field a colour defect for red in the lower nasal quadrant, from the periphery to the blind spot persists during the whole progress of the case.

The first visual field in this series was taken four days after the sudden commencement of the disease. The supposed plaque was assumed to lie in the forward left corner of the chiasma.

I have in the course of years seen a by no means small number of cases varying as it true in the ophthalmoscopic picture from choked disc to normal disc and in the affection (defect) of the visual field from double-sided total blindness to limited scotoma lasting from a few days to several months, but always with certain points in common which seem to unite them into a collective pathological picture. In particular, I refer to the storied onset the general or hemianopic central scotoma combined with hemianopic peripheral defects of the visual field in various combinations, and lastly the decided tendency to spontaneous recovery either partial or complete.

The close relation of the pathological picture to retrobulbar neuritis appears to me to be certain. The difference

lie, I think, in the chiasmal location, which is indicated by the findings in the visual field and the pathological anatomical examination. And even if textbooks of ophthalmology have not as yet dealt with independent acute inflammatory conditions of the chiasma, not a few cases have occasionally been mentioned in the literature which correspond to the description I have here tried to give. In recent times I have, in describing the picture of this disease, received the support of renowned authors—in Germany of v. Heppel in Scotland of Traquair.

The diagnosis must of course, be made essentially by the aid of a careful examination of the visual fields, which should be specially directed towards ascertaining whether the margins of the defects, for a shorter or longer distance show a hemianopic limit line in one or both fields. Total and complete hemianopias are only exceptionally found.

I cannot here enter more fully into the technique of such an examination but will only point out that for this purpose the mechanical perimeter cannot be used. Only when the test object is moved freely in the hand, so that the direction of the movement can be chosen by the examiner at right angles to the outline of the defects found can a good result in this direction be expected. For the same reason the campimeter has a decided superiority over the perimeter.

It can be understood that such a pathological picture is also of importance for our therapeutic measures. In my opinion most cases of choked disc with sudden blindness are of this nature and it is evident that if this ophthalmoscopic picture is caused by a focus in the optic nerve, it cannot be regarded as an indication for the performance of a palliative trephining—partly because it does not tell us anything about the height of the intracranial pressure, and partly because the condition itself does not exclude spontaneous improvement even after a long time has elapsed and lastly because there is always a possibility of a myelitis spinalis, which may be caused by so serious a measure as the operation will always be.

The lighter cases, in which the chiasmal hemianopia is the principal symptom, are easily mistaken for the effects of tumours and inflammatory conditions which attack the chiasma from outside and I would specially caution against labelling a patient with the diagnosis "syphilis" because a chiasmal hemianopia has improved under a so-called diagnostic antisyphilitic treatment is repeatedly mentioned, spontaneous improvement frequently occurs.

Nosologically these cases lie at the tangential point between choked disc, neuritis optica, and retrobulbar neuritis. Whether we give them one of these names or, as I think would be most correct, regard them as cases of retrobulbar neuritis localized in the chiasma, is in itself of secondary importance, and will have to be decided by future investigation, particularly in regard to the pathological anatomy of the disease.

### III—OPTIC NEURITIS AS AN AID TO DIAGNOSIS

BY

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My remarks will deal briefly with some aspects of optic neuritis which have presented themselves to me in private ophthalmic practice in the out-patient work of the Glasgow Eye Infirmary and in the wards of the general hospitals.

In the general hospital the ophthalmic surgeon is naturally concerned chiefly with cases selected by the physician or surgeon in which it is expected that the ophthalmic surgeon will be able to give help in diagnosis. Consequently optic neuritis presents itself for the most part under two aspects—namely, (1) as the papilloedema associated with intracranial tumour, meningitis, and other cerebral diseases, and (2) as the optic neuritis or neuroretinitis of renal disease. The immense value of choked disc as an aid to the diagnosis of intracranial new growths as well as its comparative lack of value in the localization of the tumours, is well recognized. At the stage when

these cases usually come under observation the considerable, circumscribed swelling of the disc, the distension and tortuosity of the vessels, and the other characters of choked disc are usually well established, and, taken in conjunction with the other symptoms of the case, leave little doubt as to the diagnosis. No doubt the integrity of central vision in the majority of cases of papilloedema accounts for the fact that the earlier stages in the evolution of the condition are comparatively seldom observed, but it should not be forgotten that choked disc does pass through a stage in which it cannot be distinguished from other varieties of optic neuritis. If the term "papilloedema" is made to include all the optic disc changes in which oedema is a feature, whether they are presumed to be inflammatory or not, it will naturally be applicable to a cerebral tumour optic neuritis from its earliest to its latest stages. "Choked disc" obviously cannot be so applied. Ulthoff, in his Bowman Lecture,<sup>1</sup> defines choked disc as a prominence of the papilla of at least 1.5 to 2 diopters, and he speaks of the necessity of drawing such a precise line, yet he himself includes under "choked disc" a case with little or no swelling, which he believes to show the beginning of choked disc, as well as cases of neuritic atrophy with very slight swelling. The confusion likely to arise from this use of terms is apparent, and points to the desirability of some authoritative definition.

Of definitely unilateral choked disc I have very little experience, but I have recently had under observation a case under the care of Professor Archibald Young in the Glasgow Western Infirmary.

The case was obviously one of cerebral tumour, and the principal ocular signs were pronounced choked disc in the left eye, with merely a slight mistiness of the nasal border of the right optic nerve, a large central scotoma in both fields of vision, with complete loss of the nasal half of the field in the left eye and of the upper temporal quadrant in the right. Other signs were a slight paresis of the right facial nerve and complete nerve deafness on the left side. While unilateral choked disc does not necessarily imply a tumour on the same side of the brain, the field defect in this case pointed to a basal situation, and I endeavored to localize the tumour as involving the lateral aspect of the chiasma in such a way as to interrupt both crossed and uncrossed fibres to the left optic nerve as well as the crossed fibres to the right. At operation this was confirmed and the tumour almost completely removed. The patient, unfortunately, died on the following day, and at the post mortem examination it was found that the tumour, a meningioma, had sprung from the inferior aspect of the left temporo-sphenoidal lobe and part of the adjacent frontal, stretching and compressing the left optic nerve from its outer side also pressing on the pituitary and causing absorption of the bone of the sella turcica. Ulthoff has explained the absence of choked disc in certain basal tumours as due to the occlusion of the communication between the arachnoid space and the optic nerve sheaths by the tumour, but in this case it seems more likely that the choked disc on the affected side was due to direct interference with the venous and lymphatic circulation, and not to elevation of the general intracranial pressure.

The optic neuritis of meningitis differs from that of cerebral tumour in being less prominent and more diffuse, but in tuberculous meningitis, in my experience, the disc swelling is apt to resemble that of intracranial tumour in being of a steeper and more circumscribed character, while in quite a large proportion of the cases diagnosis is simplified by the presence of tubercles in the choroid.

In a special study of 61 cases of cerebro-spinal meningitis during the Glasgow epidemic of 1907<sup>2</sup> I found optic neuritis in 5 cases (8.2 per cent). I have no figures indicating the percentage frequency of optic neuritis in lethargic encephalitis, but I have observed the sign in two cases in private practice. One of these when seen was in a late stage and diagnosis had already been established. The other was a young woman who was seen six weeks after the beginning of an illness which had been characterized by intense headache and sickness with some convulsive attacks. Diplopia was noticed when she began to recover. When examined she had ptosis of the right external rectus muscle, slight ptosis in the left eye, and in intense double optic neuritis with both haemorrhages and exudates on the swollen disc. The fields of vision were full and central vision almost normal. Cerebral tumour was suspected, but further observation in hospital established the diagnosis of lethargic encephalitis, and the patient made an excellent recovery with disappearance of the optic neuritis and diplopia, and restoration of normal vision.

In the surgical wards I have been asked to see a number of cases of head injury, and two of these which came under my notice about eighteen months ago are perhaps worth mentioning in this discussion.

The first was a boy, aged 16, who had a fall from a height of thirty feet. Details of the accident were lacking. When I saw him, six days later, central vision was good and the fields of vision were of full extent, but both discs showed papilloedema (1.5 D of swelling) and there was paresis of the right external rectus muscle. No doubt there was in this case a fracture of the base of the skull, but the papilloedema, in view of the excellent vision and field, could not be due to haemorrhage into the optic nerve sheaths. It would appear rather to have been, as in cases reported by Lister and Holmes,<sup>3</sup> secondary to oedema of the brain produced by concussion.

The other case, which was seen about the same time, concerned a young man of 23, who, on the day of admission to hospital, was riding a motor bicycle and collided with a motor car. He remounted his cycle and went home and was even able to go for a walk, but, in the course of his outing headache developed, and on reaching home he collapsed into unconsciousness. There was no evidence of direct injury to the head. His left pupil was found to be larger than the right and less active to direct light stimulation. When examined in detail, six days after the accident, vision was very much poorer in the left eye than in the right. Double vision was present and tests showed paresis of left external rectus and of the left inferior rectus. The right optic disc was slightly hazy, but the left presented a marked papilloedema with some haemorrhages on its summit and with great distension and tortuosity of the veins. A perimetric tracing showed a homonymous defect situated in the upper right quadrants of both fields. In this case there was ample evidence of fracture of the base of the skull. Leslie Paton in his paper on "Ocular symptoms in subarachnoid haemorrhage"<sup>4</sup> states that "when a condition of amblyopia or amaurosis is present and changes in the discs are seen within a few hours of the development of the cerebral symptoms, and the pupil reaction to light is lost or, if present, is not well maintained, the papilloedema is most probably due to haemorrhage into the nerve sheath." These criteria seem to be satisfied in this case, whence it may be assumed that the unilateral papilloedema was due to haemorrhage into the optic nerve sheath. The homonymous quadrant field defect was an interesting feature and indicated damage to the corresponding segment of the left optic tract. I have had an opportunity of re-examining this patient nearly two years after his accident, and it is interesting to find that although the field defect remains almost unchanged, indicating permanent damage to the optic tract, there has been complete recovery of central vision, and the optic discs are in every respect normal.

A case of a more unusual type, also seen in one of the surgical wards, was that of a man, 36 years of age, who had suffered from gastric ulcer of long duration.

Nine days after a gastro-enterostomy he suffered from haematemesis and melena, and the vomiting was associated with neuralgic pains in the left forehead and eye. About a week later he discovered great loss of vision in his left eye, and my examination showed that the visual acuity of that eye was less than 1/60, that the field of vision was reduced to a small area immediately above the fixation point, and that there was a definite papilloedema in the same eye. He was seen again ten days later, and already the condition of the disc was one of atrophy with blurring of its margins. No vascular changes were visible. The condition increased to all but complete atrophy, and blindness in the affected eye.

It would seem that this was an example of the rare form of amaurosis which may follow loss of blood from the stomach, bowels, or uterus.

It is said to be characteristic that the dimness of vision does not come on until several days after the haemorrhage, and apparently there is no direct relationship between the extent of the haemorrhage and the severity of the visual loss. The most complete and permanent loss of vision is supposed to occur when the stomach is the seat of the haemorrhage, as in this case. Pallor or atrophy of the disc seems to characterize the later stages of the condition, but in some cases this was certainly preceded by neuritis as in the present example. The pathogenesis of the condition is still unexplained, but its occurrence in one eye only, as in the case quoted, shows that the lesion must lie in front of the chiasma. Von Graefe and Jaksch<sup>5</sup> believed that the blindness was due to extravasation of blood at the base of the skull and into the sheath of the optic nerve. Horstmann<sup>6</sup> attributed it to optic neuritis, Ulrich<sup>7</sup> to stasis in the retinal veins, and Theobald<sup>8</sup> to thrombosis of the central retinal artery, but neither of these explanations carries us very far.

Another rare form of optic neuritis came under my notice recently in the Maternity Hospital.

The patient, aged 26, was in the third or fourth month of her second pregnancy. She was admitted to hospital with her amenias, this condition ceasing a day or two after admission. At the same time great dimness of vision was noticed, and I

asked to see her three days later. The pupils were of medium size and moderately active to light. There was a large albinotic defect in the centre of each field and fingers could be counted with peripheral vision at a distance of about one foot. Ophthalmoscopic examination showed a rather unusual picture: a wedge-shaped temporal segment of each disc corresponding with the papillo-macular bundle being pale and swollen, the swelling invading the adjacent retina. After a further period of three days the vision was reduced to bare perception of light and the swelling of the discs was more prominent, while in the left eye one flame-shaped haemorrhage had appeared just outside the disc margin in the 2 o'clock position. In a few days even light perception was lost; further haemorrhages had appeared and the swelling was tending to invade the rest of the optic disc. Slight but definite reduction of the oedema followed a lumbar puncture. The patient died nine days after my first examination and the *post-mortem* examination revealed nothing which satisfactorily explained the cause of death.

Probably the optic nerve affection which has been most frequently reported in association with pregnancy is a chronic retrobulbar neuritis but Greenow, who discusses the question in the *Gräfe-Saemisch Handbuch*,<sup>8</sup> states that it may take the form either of an optic neuritis or of a retrobulbar neuritis. A Knapp reports three cases in which the discs are described as pale with blurred outline. I have found no record of a case in which the ophthalmoscopic picture resembled that in the one here described. The condition is usually attributed to the toxæmia of pregnancy, but the nature of the toxæmia is very little understood. The presence of albuminuria is not an essential factor. Miss Evans of Liverpool<sup>9</sup> read a paper giving the results of certain investigations into the cause of the toxæmic conditions of pregnancy—oedema, albuminuria, hypotæmia, accidental haemorrhage, jaundice, and eclampsia. Being disappointed with the results of biochemical research, she instituted bacteriological tests, and found coliform and other organisms in the urine of patients suffering from these toxæmic disturbances. In the case I have just described bacteriological examination was only carried out in the case of the throat, micrococci being found in the direct smear and staphylococci and streptococci in the culture. The urine showed a small amount of albuminuria on several occasions which may have been accounted for by the presence of pus. Fehling's solution was reduced on two occasions, and the fermentation test for sugar was only weakly positive. Bile was usually present, and diacetic acid and acetone were practically constantly found. The only other finding which might have some bearing on the optic neuritis was the presence during life of some evidence of disease of the ethmoidal and frontal sinuses. This was confirmed at the *post-mortem* examination but the rhinologist did not consider it at all likely that it had given rise to the optic nerve disease or that it was connected in any way with the patient's death.

Ever infirm out-patient work forces one to realize the difficulties inherent in the subject of optic neuritis for the conditions under which the work is carried on often make it difficult to obtain the completeness of investigation which these cases demand and many of them are under observation for too short a time to enable their immediate course and after-history to be traced. Nevertheless, one has to try in the course of the daily round to sort the cases of optic neuritis into their etiological groups and to seek for rational lines of treatment. As far as possible we follow up the investigation of the eye with primary tests: Wassermann test, examination of the ear, throat, nose and teeth, and investigation of the central nervous and other systems. In this connexion we have had the benefit of expert rhinological assistance and we are tempted to try to estimate the frequency and nature of the association of optic neuritis with disease of the nose and its sinuses and to determine how far operation on these structures is of value.

The difficulty of this aspect of the subject is demonstrated by the enormous amount of literature which it has already produced. It must be admitted that a great deal of this literature is of little value since conclusions have been based on material which has not been carefully investigated. This particularly applies to the many interesting reports of single cases which have shown striking improvement in vision after intranasal operation. We have all seen such cases. A young woman suffered from a unilateral blindness of acute onset. She has a papilloedema or retrobulbar neuritis, and there is evidence of nasal sinus

disease. Operation is carried out, and in a few days vision is restored. Undoubtedly, in many such cases the satisfaction of patient, oculist and rhinologist lends too much weight to the *post hoc* argument and the case is claimed as proof of the causal relationship of sinus disease with optic neuritis. Similarly, cases are reported where vision has been restored after removal of a septic tooth or of unhealthy tonsils. The weak point in these cases lies in the fact that so many of them belong to the type of optic neuritis which tends to rapid recovery without treatment, and that if their after-history could be traced some, if not many of them, would be found later to manifest signs of multiple sclerosis. But when all such unsatisfactory reports have been eliminated, the literature contains records of a vast amount of serious work on the subject. Unfortunately, even conscientious investigators have not yet succeeded in reaching anything like unanimous conclusions on these important problems.

- 1 What type of nasal disease gives rise to optic neuritis?
- 2 What are the clinical characters of an optic neuritis which has its origin in disease of the nose or nasal sinuses?
- 3 At what period is operative intervention called for?
- 4 What should be the operation of choice?
- 5 How does operation effect improvement or cure?

I cannot attempt to review the literature bearing on these questions, but may illustrate the difficulties of the subject by a few references.

Of the eight cases reported by Garin Young as benefiting by nasal operation two only showed any purulent secretion. Oskar Beck<sup>10</sup> examined the mucous membrane from the sinuses in successfully operated cases and found changes which suggested merely a serous catarrhal inflammation. He concluded that disturbance of ventilation of the sinus was the principal factor in causing the optic neuritis. Liebau<sup>11</sup> in clinical investigations found the optic nerve most often affected in congestive catarrhal nasal condition without polyp and without purulent secretion.

Many other authors report successful cases in which the sinus disease was "latent" that is, there was no clinical evidence of its existence, and nothing was revealed at operation. Opposed to this are the conclusions expressed by E. D. Davis,<sup>12</sup> who in analysis of fifty-four cases of optic neuritis sent to him for rhinological examination, found four in which there was nasal sinus suppuration. They were unilateral, of some duration and rapid and permanent improvement in sight was obtained in three, the fourth being already in the atrophic stage. Twenty-three of the cases presented no evidence of nasal trouble, and did not come under either multiple sclerosis or any other definite category, and the six cases were acute in onset and recovered spontaneously, that is to say, in the hands of another observer they might have been dealt with as cases of latent sinus disease, and credit for the recovery given to operation. Onodi's successful cases also showed gross suppuration of ethmoidal and sphenoidal cells.

The characters of the optic neuritis vary a good deal in different reports, sometimes being described as a retrobulbar neuritis, in other cases as a visible papillitis, it may be even with haemorrhage and retinal exudates. On one point there is a fairly general agreement—namely that there is no characteristic defect of the visual field which enables optic neuritis of nasal sinus origin to be distinguished from other forms of optic neuritis. But, as Traquair<sup>13</sup> points out, a careful investigation of the visual field may enable us to exclude pituitary tumour and other conditions which do give rise to characteristic changes in the visual fields. This, of course, is not always possible. The acute cases, for example, are usually seen by the oculist at a stage when the affected eye is so blind that no delicate field tests can be carried out, and the character of the scotomata can only be worked out when the condition has definitely begun to recover. Of the cases of rhinogenic optic neuritis which I have had under my care at least one-half showed some degree of papilloedema, accompanied in several by a few small haemorrhages near the disc. Most of these were unilateral and acute in onset. The

conditions found by the rhinologist included septal deflections, turbinal hypertrophy or granularity, and disease of the ethmoid and sphenoid cells. Operation was performed about three weeks after the onset of the visual defect, and improvement began in about one week from the date of the operation. Vision was almost, if not quite, completely restored, but the affected disc remained a little pale.

One such case, which was not submitted to operation, seems to illustrate the influence of a "chill" in determining the onset of the optic neuritis. The patient, a woman of 49 received a bad drenching while berry-picking. She continued at work with severe pain above the left eye. In a few days the left eye went dim, and a week later the right eye also. When seen, right vision was "fingers," and left vision "no light perception." The discs both showed a moderate degree of swelling. For some days matters got worse, the swelling of the discs increased, and a haemorrhage appeared on one. Vision was reduced to doubtful light perception in both eyes. Recovery was very gradual and incomplete, a large relative central scotoma, most profound for colours, remained. In about a month the discs were normal but the best visual result obtained was 5/36 in the right eye and 5/60 in the left. Nasal examination had revealed deflection of the septum, granularity of the middle turbinal, and unhealthy mucous membrane in the region of the right and left ethmoids, but, as I have mentioned, no nasal operation was performed.

Very few of my cases of retrobulbar neuritis, whether acute or chronic, have shown evidence of nasal sinus disease, and in the absence of clinical signs nasal operation has not been recommended. The acute cases have, of course, made a good recovery under medicinal treatment.

The most satisfactory example of the benefits of nasal operation was a case of retrobulbar neuritis of eight months' duration, with large central or caeco-central scotoma in both eyes, the vision of the right being 6/36, and that of the left 6/60. Septal deflection, enlarged inferior turbinates, and ethmoidal suppuration, were found and rectified by operation, and recovery began within a month and was complete in about three months. Slight temporal pallor of the discs remained.

A case which I have followed for two or three years with a good deal of interest was that of a man of 27 who when first seen, presented the history and signs of acute retrobulbar neuritis in the right eye, which had been painful and nearly blind for three days. When seen the right eye had merely light perception and the edges of the disc were hazy. He stated that the same occurrence had affected the left eye five years earlier, but with almost complete recovery. Vision in the left eye was 5/12, but the disc was in a condition of simple atrophy. The rhinologist found definite signs of ethmoiditis on both sides, and operated. Within a month vision in the right eye was 6/6, but thereafter it gradually failed again in the course of two years to 6/18. Meanwhile the left eye showed repeated variations between 6/4 and 4/60, but the puzzling feature of the case was the ebb and flow of the visual acuity along with steadily increasing pallor of the optic discs. Moreover, although two further nasal operations were carried out, improvement in vision did not seem definitely related to these procedures. I was tempted to look upon this as a case of retrobulbar neuritis of sinus origin, and there is no doubt that operation on the sinuses was justified, but I have always felt apprehensive that signs of multiple sclerosis will develop, though none have shown themselves during the period of observation.

Multiple sclerosis probably accounts for a larger proportion of the cases of retrobulbar neuritis than does disease of the nasal sinuses, but since optic neuritis, like other symptoms of this disease, may be an isolated phenomenon, we may have to wait a considerable time before the diagnosis of multiple sclerosis is confirmed by the appearance of other nervous manifestations.

H. Henson of Hamburg<sup>12</sup> emphasizes the importance of the duration of the central scotoma in retrobulbar neuritis due to multiple sclerosis. He says that multiple sclerosis may cause either a transient scotoma lasting three or four weeks and ending in complete recovery, or it may cause a central scotoma which lasts longer and does not show a tendency to recover, but the retrobulbar neuritis of the latter type never lasts more than three months without the appearance of other nervous signs of the disease.

The case which I have just referred to, and another which concerns a man of similar age in whom no signs of nasal sinus disease or of any other organic disorder have appeared in the course of three years' history, lend me to doubt the reliability of this dictum. It seems to me that we are still in need of more definite criteria to differentiate these varieties of optic neuritis from one another.

On the question of the operative treatment of these cases I am inclined to adopt a conservative attitude. The universally admitted fact that the great majority of cases of acute retrobulbar neuritis recover without interference does not preclude one from believing that such cases are

due to nasal sinus disease, but it is quite a sufficient argument against operation in the earlier stage. Moreover, if it is true, as van der Hoeve<sup>14</sup> says, that in rhinogenic retrobulbar neuritis degeneration of the nerve does not occur, and that recovery can be obtained, even if blindness has been of some duration, there is the excuse for immediate operation, although, if the condition is such that the rhinologist considers operation called for on other grounds, there seems no reason why this should not be carried out. Since, in most cases, retrobulbar neuritis, whatever its origin, recovers within five or six weeks, and the retrobulbar neuritis of a multiple sclerosis is a transient phenomenon, it is usually so safe to recommend medicinal treatment for a period of six to eight weeks. At the end of that period if improvement has not set in and the condition of the nose is suspicious, operation is justified. I have experience of cases in which sinus operations have been carried out in the absence of clinical signs, but many convincing cases of the kind have been reported. Certainly any radical treatment of the interior of the sphenoidal sinus in these cases is to be deprecated, at the most "ventilation" of the sinus is justified, and it may be enough to carry out some simpler procedures, such as submucous resection of the septum, or removal of the end of a turbinate bone which is blocking the sphenoidal ostium. The rationale of the treatment in so-called "latent" cases has been much disputed, but it has been suggested that the benefits may be merely the result of local "bleeding," and these of us who are familiar with the effects of blistering, leeching, and other vasomotor reflex phenomena will not deny the possibility of similar results from minor operations in the nose, or even from the application of adrenaline and other drugs to the nasal mucous membrane.

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#### DISCUSSION

Professor J. VAN DER HOEFF (Leyden) maintained the view since the origin of the affection of the optic nerve in high intracranial pressure was not inflammatory this condition should be distinguished from other types of optic neuritis. He added that ophthalmologists ought to be thoroughly conversant with x-ray photographs of the skull. During the procedures of decompression of the skull and lumbar puncture, ophthalmoscopic examinations of the patient should be made. An early operation should be advised if increased intracranial pressure if the visual power was to be retained, since if there was delay decompression might even hasten atrophy. The origin of retrobulbar neuritis was manifold, and the relative percentages of the several causes of the condition varied in different countries and cities.

Dr. H. M. TRAQUAIR (Edinburgh) emphasized the need for a revised terminology in optic neuritis, and suggested the term "plerocephalic oedema" for the swelling of the optic nerve in increased intracranial pressure. "Papillary oedema" was an unsatisfactory term in this connection since oedema of the disc occurred often apart from increased intracranial tension. He divided optic neuritis into two groups—those of the plerocephalic oedema type and those cases of optic neuritis in which an inflammatory lesion of the nerve or its sheath was diagnosed. He thought that rhinogenic optic neuritis should be confined to cases with an actual inflammatory focus in the papilla, while atrophy should be provisionally included as a form of optic neuritis.

Dr. GEORGE YOUNG (Colechester) described a case of plerocephalic oedema in a young woman who had been lying down by a motor car. She was unconscious, had widely dilated pupils, and was found by a motor car.

pupils low temperature, slow pulse and appeared to be moribund. Hemiplegia was present but there were no signs of fracture of the skull both eyes had extremely choked discs. After trephining over the posterior Kronlein point and opening the dura, the patient obtained relief. The choking of the discs and the papilloedema disappeared, and she recovered health and full vision.

SIR J. H. PARSONS (London), was one largely responsible for the introduction of the term "papilloedema" deprecated the further complication of the nomenclature of these conditions. It was true that papillitis manifested itself first as a slight oedema, to be followed later by cellular infiltration, but the same condition was produced by inflammation in other parts of the body and the distinction of papilloedema from papillitis or optic neuritis is parallel to the use of the general terms "oedema" and "itis" (indicating inflammation). He concluded that Prof. or Ronne thought that many cases of retrobulbar neuritis were associated with plaques in the optic nerve containing degenerated medullary sheaths with many intact axis cylinders as in the well known lesions of disseminated sclerosis. This was a very illuminating suggestion, but it must be remembered that the symptoms of retrobulbar neuritis often preceded any pathognomonic signs of disseminated sclerosis by intervals which might extend to several years.

DR. DE SCHWEINITZ (Philadelphia) referred to Koeppe's method of distinguishing choked disc and optic neuritis by means of the slit-lamp especially in the early stages of these conditions. Although the test (the absence of "inflammatory cells" in the first instance and their presence in the second) was not universally accepted it deserved to be used more often. Although he fully recognized the difficulty of making a differential diagnosis in certain cases of optic neuritis and choked disc he believed that a clinical distinction should be maintained papilloedema (choked disc) indicating a condition in which oedema was the dominant factor, and optic neuritis one in which an inflammatory process was concerned. Clinically he was guided by Marcus Gunn's description of the six stages of choked disc (papilloedema). The surest method of preventing the end-result of choked disc—namely atrophy—consisted in a release of the increased intracranial pressure to use Victor Horsley's expression, by an operative procedure, usually so-called palliative trephining other things being equal. How long an operation should be deferred must depend upon frequent testing of the acuity of vision and charting the visual field especially the size of the "blind spot" or more accurately that of the increasing size of the peripheral amblyopic zone. He agreed in deprecating operative intervention with relation to the paranasal sinuses and was convinced that infected sphenoidal disease was a definite etiological factor in many cases of retrobulbar neuritis and more frequently the case than the observations in England would seem to indicate. He was in accord with Professor van der Hoeve that in certain cases after due trial of conservative measures operation was required, which should be performed by one skilled in this type of operative work. He did not refer to acute retrobulbar neuritis with its well known visual field disturbances and other clinical signs, which depended on various causative factors and was often a self limited disease.

DR. W. H. WILMER (Baltimore) agreed that in certain chronic optic nerve inflammations greater emphasis was laid upon the sinuses in America than in other parts of the world. The ordinary x-ray photograph of the sinuses often failed to show pathological conditions in the cells around the optic canals. At the Oxford Congress Dr. Tyson had exhibited a picture of the optic canals of a man who was gradually losing his sight from a post-neuritic optic atrophy in spite of the facts that all recognizable sources of infection had been excluded or removed and that the sphenoid and ethmoid cavities had been opened four times. The picture showed the complete removal of all diseased cells except those just around the optic nerves. Dr. Wilmer had seen this patient and doubted whether the removal of the diseased cells could be removed without injury to the optic nerves themselves. Yet in the absence of any blind-

ness was inevitable, and further operative procedure seemed to be justifiable. In some cases of chronic retrobulbar neuritis the cottony appearance and vision returned after the removal of several possible toxic sources. It was often impossible to say which was the cause of the trouble.

SIR WILLIAM LISTER (London) referred to the form of papilloedema found during the war in cases of injuries to the head or of concussion. He thought that there was nothing characteristic about the appearances. There were the three primary signs—swelling of the disc, blurring of the edges, and fullness of the veins. There was very slight swelling and it could be recognized very much more easily by the bending of the vessels as they passed off the disc than by measurement with the ophthalmoscope. This pointed to the condition having been due to a very slight intracranial pressure.

DR. WILDER (Chicago) quoted the statement of Dr. Paterson that around the eye there was frequently evidence of the presence of oedema when inflammation was not present though it might be impending. Such oedema, which began round the orbit might be equally of inflammatory nature, though the stage of inflammation had not been reached. It seemed that in some of these conditions there were plaque formations such as Professor Ronne had described which might be the beginning of inflammatory oedema and might ultimately result in severe disturbances. In many cases the inflammatory oedema lasted long enough to produce definite trouble, this also suggested that if it was very transitory recovery would be rapid, if it continued for some time a degenerative condition might ensue. In some operations upon the sinuses the results were so pronounced and startling that there must have been some connexion between the sinuses and eye condition. With definite inflammation and clear evidence that there was some infection of the sinuses operation became justifiable.

SIR GEORGE BRANT congratulated the office bearers on the choice of subject for discussion. Optic neuritis was far from being a topic which justified the rigid maintenance of fixed opinions. It was necessary to keep an open mind, and to be ready to accept new ideas when presented.

DR. J. V. PATTERSON in his reply stated that he did not take up the position that intranasal disease was never a cause of retrobulbar neuritis. In his opinion in ordinary cases of retrobulbar neuritis adequate nasal cause was seldom present.

DR. ROSS, referring to a remark made by Dr. Paterson regarding vitreous opacities in optic neuritis said he had examined a great number of specimens in cases of lesions of the optic nerve and had never found inflammation present anterior to the lamina cribrosa. Any change occurring in front of the lamina was always an oedema.

## VITAMIN A DEFICIENCY AND UROLITHIASIS \*

BY

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SOME years ago Osborne and Mendel<sup>1</sup> drew attention to the frequency of calculi in the urinary tract of rats fed on rations deficient in vitamin A. In 857 sections they found calculi 81 times. "In every instance," they wrote, "where calculi developed the animals were without an adequate source of the fat-soluble vitamin." Later, in 1920, on the occasion of a vitamin symposium of the New York Medical Association, Mendel said:

When it is recalled that phosphatic calculi deposited in a neutral or alkaline urine which in turn frequently owes its reaction to bacterial decomposition are found extensively among peoples living for example in the tropics and the Far East on diets quite unlike the mixed regime of most Americans and Europeans the possible reaction of the calculi to dietary factors is at once prominently suggested.

A paper read at a joint meeting of the Section of Pathology and Bacteriology and of Comparative Medicine at the Annual Meeting of the British Medical Association, Edinburgh 1927.



On this McCollum<sup>2</sup> wrote

"Osborne and Mendel observed calculi of calcium phosphate in the urinary tract in 91 [read 81] animals among 857 necropsies, 43 per cent of these had not had a satisfactory supply of vitamin A. In McCollum and Simmonds's experience calculi have occurred so frequently in animals whose diets contained an abundance of this factor, but were faulty in other respects, that it would seem to be the results of general debility rather than lowered vitality brought about by specific cause"

The contradiction in the observations of the experimenters led me to control the records of the rats of the laboratory of the Netherlands Institute of Nutrition. I have examined 886 rats, picbalds and albinos, of which 405 were males and 481 females. Among them are 241 rats (see

Diet	Number of Rats	Cases of Calculi	Other Lesions		
			Haematuria	Cylindruria	Xerophthalmia
Adequate vitamin A	211 { 108♂ 133♀ }	0	0	0	0
Deficient vitamin A	645 { 297♂ 348♀ }	130♂ 67♀	46	12	92

table) which certainly never suffered from vitamin A deficiency. Their diet consisted in wholemeal bread, raw milk, butter or cod-liver oil, raw carrots or cabbage, and, now and then, some cheese and spinach or lettuce. In none of these 241 rats (108 males and 133 females) were calculi found. Hence the conclusion does not seem too bold that in healthy, adequately fed rats calculi do not appear, or are at any rate rare.

Among the other 645 animals (297 males and 348 females) 197 cases of calculus were found—namely, in 130 males and 67 females. These rats had been fed on an A-deficient diet. Among them were some that were fed on a rickets-producing diet. That all these rats suffered from vitamin A deficiency was shown by clinical examination. They grew little, and the mortality among them was great. In a number of those I examined the oestral cycle was disturbed. There were also many cases of xerophthalmia. That this eye disease did not occur still more frequently must be attributed to the short life of many rats. The search for calculi was made with care. In all cases the pelvis, the ureters, and the bladder were examined, and, to make quite sure, the bladders which were apparently without calculi were also investigated microscopically. In this way it was possible on several occasions to find concretions invisible to the naked eye. X-ray photographs were taken of many of the rats.

That calculi are more frequent in males than in females has its natural explanation, already given in the Hippocratic book *De Aere Locis et Aquis*—namely, that the urethra of females is short and wide.

Most of the calculi consisted of calcium phosphate or of a mixture of calcium phosphate and calcium oxalate. Calcium oxalate concretions occurred in rats on McCollum's rickets-producing diet. A number of rats suffered from haematuria. However, this did not occur so often as might have been expected, considering the frequency of the calculus. Though probably caused by the lack of vitamin A, it is yet of less frequent occurrence than calculus, and is not directly connected with it, for in many cases of haematuria there were no calculi, while in many cases of calculi in the bladder there was no blood in the urine.

Contrary to all expectations, obvious cystitis was rare. As a rule the urine was clear and its reaction to litmus was acid. In most cases of calculus, on microscopic investigation the mucous membrane proved to be normal and the surface layer of the epithelium intact.

Calculi may soon appear in case of vitamin A deficiency, the production of calculi in three or four weeks proved to be very common. Several times I found formations in the urine, in shape resembling crabs, they were straight or bent crystalline cylinders of calcium phosphate or oxalate. This discovery led me to examine the kidneys, and I found that, in vitamin A deficiency, lime deposits in the tubules are frequent, not to say constant. These lime deposits are found throughout the kidney, especially

in the tubules, but never in the glomeruli. According to the shape of the tubules, they are straight, bent, or sinuous.

Altogether I examined 254 rats with regard to their kidneys, 76 had had a satisfactory supply of vitamin A, and 178 had suffered from vitamin A deficiency. Of the 76 rats, 10 had lime deposits in their kidneys, but these deposits were very small in number, one, or at most two, to a section. Hence I believe that with healthy, adequately fed rats lime deposits of any size in the kidneys may be said to be exceptional. On the other hand, calcium deposits in the tubules were almost constant in the rats suffering from deficiency of vitamin A, of 178 rats deposits were found in 158 (87 per cent), whereas there was a frequency of calculi in the bladder of only 35.4 per cent.

As a control I first extirpated one of the kidneys from a number of rats on an ordinary diet, and then withheld vitamin A from their food. I then, after some time, killed those which had not already died from the consequences of the operation or some other cause. In 14 rats which died within three to fifteen days after the operation there were no lime deposits in the extirpated kidney nor in the other one, 9 other rats fed in the same way also had no lime deposits in the extirpated kidney, but in 7 of them, after more than twenty days of vitamin A deficiency, I found deposits in the remaining kidney. These lime deposits form quickly, in one case of deficiency in vitamin A they had been formed in thirteen days.

From what has been said above it may be concluded that in rats there is without doubt a connexion between deficiency in vitamin A and the formation of phosphatic calculi.

It is known that absence of the fat-soluble vitamin from the food causes typical changes in the epithelium of the mucous membranes—for example, keratinization, witness the xerophthalmia and the lengthening of that stage of the oestral cycle characterized by the horny cells. Probably such a morbid change of epithelial cells of the tubules gives the impulse to the deposition of lime, which deposition, once liberated, grows to larger concretions in the bladder.

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## EFFECT OF EARLY INDUSTRIALISM ON THE HEALTH OF THE COMMUNITY

BY

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THE popular view is that the effect of industrialism on the health of the community was necessarily bad, but the fact is that the population of Great Britain grew at an unprecedented rate during the period 1760-1860. To account for this, an increase in the birth rate was postulated; there is, however, no evidence for this, and definite evidence for a decrease of the death rate. An estimate of the death rate for England and Wales in the middle of the eighteenth century shows that, on a rough average, it was 35 per 1,000. In the year 1815 it had been reduced to about 20 per 1,000. In the middle of the eighteenth century the death rate in London and other large towns was 50 per 1,000, while in 1815 the death rate in London was about 30 per 1,000. These figures give very little support for the contention that economic advance was at the expense of health. The main part of the population in the middle of the eighteenth century were living in comparatively isolated rural communities, in which the death rate is usually very high. It is not primarily a hot climate which is responsible for diseases like plague, but the lack of hygiene, along with the uncertainty of food supply. Plagues were frequent in medieval Europe, and scurvy certainly and rickets probably were present. The towns were without the elementary sanitation, overcrowding was rife, and the

\* Read in the Section of the History of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927, the 14th day, J. D. Comrie in the chair.



## ABNORMAL DEVELOPMENT OF BLADDER IN A NEWLY BORN INFANT

THE details of the pregnancy and confinement of the mother of the infant whose case is recorded below I have been unable to obtain, except that it apparently was a normal nine months' pregnancy. The abnormality, however, is a very unusual one.

Externally the abdomen was an enormous size there was no trace of an anal opening, male external genital organs were present. The fluid which had caused the distension of the abdomen was lost during the confinement and six pints of fluid were required to re-distend it to its original condition, so that a photograph might be taken. On opening the abdomen an enormous cyst was found to occupy the pelvic, right and left lumbar, and subphrenic regions. A kind of diverticulum passed upwards, behind and to the right of the coils of intestine, which were smaller than normal for a full term infant. The lower end of the large intestine was greatly dilated with meconium, and it was adherent to the upper and back portion of the left side of the cyst, the gut, however, had no opening into it, but ended blindly. The right kidney could not be distinguished, but its position below the suprarenal gland was indicated by some thickened tissue at the upper end of an enormously dilated ureter. There was a greatly dilated left hydronephrosis with only a small amount of kidney tissue persisting. Its ureter was enormously dilated like that of the right side, and the two ureters passed downwards intramurally in the wall of the cyst. The interior of the cyst presented the appearance of a distended and greatly hypertrophied bladder, marked by numerous diverticula and ridges due to the hypertrophy of the underlying muscle. The ureters opened by two exceedingly small orifices which were by no means easy to find. The lower or pelvic portion of the cyst was perfectly smooth, and there was no trace of an opening from it to represent a urethra. The testes were smaller than normal and lay on the lower part of the dorsal surface of the cyst. They were connected to it by short, well developed vasa deferentia which crossed transversely and opened into a shallow diverticulum of the cyst. There were no seminal vesicles present.

It would appear that this "cyst" was an enormously distended cloaca, and the shallow diverticulum—which was smooth and had a wall thinner than the rest of the "cyst" and into which the vasa deferentia opened—that part of the urogenital sinus which should normally form the prostatic portion of the urethra.

The condition of the bladder in this case is most unusual, and I have been unable to trace any similar case recorded. It would appear to be caused by the absence of any outlet from it for the flow of urine, and as there was such an enormous accumulation of urine present it raises the interesting question as to the period when the kidneys began to secrete.

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## Reports of Societies.

### LEGAL PERILS OF THE DOCTOR

At the meeting of the Hunterian Society, held at Cutlers' Hall in the City of London on November 7th, a discussion took place on "The legal perils of the doctor." Mr. MORTIMER WOLFE presided, and among those present was Mr. Justice McCARDIE, but he took no part in the discussion.

Dr. JAMES NEAL (general secretary of the Medical Defence Union) said that the doctor, in addition to the legal obligations of the ordinary citizen, had certain obligations imposed upon him under a number of statutes, and certain others by the traditions of his profession and the Warnings Notices of the General Medical Council. It was strange that the teaching of law should have no place in the medical curriculum, in view of the many respects in which a doctor was open to legal action. A doctor was always at the mercy of an hysterical or insane patient, and very often, in order to avoid publicity, he was tempted to settle by the payment of money a claim which ought never to have been made. A patient was entitled to recover damages for negligence—fortunately not for failure to cure—and negligence was a vague, indefinable thing, not governed by statute, although the subject of judicial rulings from time to time, it was a matter of fact rather than of law, and therefore a matter for a jury. Although the bench had displayed a tolerant, even a lenient, attitude

towards the medical profession, it was by no means certain that a jury would take the same view. Turning to certification, Dr. Neal said that this bristled with perils. Every medical man should take scrupulous care to certify only to such facts as were within his personal knowledge. With regard to the British Medical Association's proposal for strengthening Section 330 of the Lunacy Act by the appointment of assessors to sit with the judge, he did not know to what extent this would serve to protect the certifying doctor, and there would still remain the danger that action might be taken against the doctor on the ground that the statements in the certificate were a libel on the patient. Some similar protection to that accorded to a witness in a court of law should be granted, though he would not desire such protection to be made absolute and thereby to screen the doctor who had acted carelessly or in bad faith. Dr. Neal deplored the fact that medical men who had successfully resisted in the courts allegations against their professional competence or care should be mulcted in large costs owing to the fact that the plaintiff had proved to be a man of straw.

Dr. RUSSELL said that he had been in the habit of looking on the doctor as the high priest of civilization, in control of the actions and liberties of the people. But the doctor had not got the protection accorded to the high priest, nor had he the sacrosanct character attaching to the *tribuni plebis* in Roman times, he remained a citizen to be "shot at." No society of medical men would desire that doctors should be exempt from penalty if they had been reckless or negligent in the treatment of their patients. The simple rule that medical men should follow was honestly to do their best for every patient with the utmost skill at their command. He did not see how any adequate training in law could be introduced into the already overcrowded medical curriculum, as Dr. Neal seemed to desire, and a partial knowledge of law might be worse than ignorance in leading men astray. Nor did he understand a suggestion by Dr. Neal that doctors should be exempted from the payment of costs in actions in which they had been successful but in which the other party had proved to be a person of no substance. That was a misfortune from which many litigants, not doctors alone, suffered. Lawyers could not consider a question merely from the point of view of one class of the community. He did not know on what grounds doctors were to be made an exception, nor from what source the costs were to come. As to certificates, the immunity given to a *visa voco* witness in the law courts, which was granted in the interests of the administration of justice, could scarcely be extended to the certifying doctor. There were undoubtedly cases in which doctors were casual in their matters, sometimes reckless, occasionally, it might be, not bona fide, and no one wished to protect a medical man from the consequences of his action in such cases, so that there could not be complete immunity. He was not surprised that doctors were rather afraid of certifying at the present time, but the legal members of the Royal Commission on Lunacy were unable to devise anything better than appeared in the report. As for the suggestion that there should be medical assessors, he did not quite know what such persons were to do. Owing to old historical traditions naval assessors sat with the judge in admiralty actions, but that was the only case in which the judge was supposed to be unable to understand evidence and to need someone to interpret it for him. A strong case would have to be made out for any extension of that practice, and if medical assessors, why not assessors in other cases involving special conditions of skill?

Mr. HERBERT WATKINSON said that as president of the Medical Defence Union he had known actions which had all substance to be brought against doctors, and yet the all solicitors for the plaintiff never failed to get medical men to go into the witness box to testify against a professional colleague. Nor were the medical men who gave evidence under such circumstances obscure members of the profession, frequently they were leading members. Often the evidence they gave would never be recognized by their professional colleagues if those colleagues were on the jury. He instanced a case against a medical practitioner, in which he and other medical witnesses who gave evidence con-

the doctor's behalf thought might well be laughed out of court, but in which an eminent surgeon appeared on the other side. It was just as well that that eminent surgeon said in the witness box was not said by him when he was sitting for the Fellowship examination of the Royal College of Surgeons! Sir Herbert Waterhouse went on to deal with cases of blackmail, major and minor, the latter comprising those cases in which, when the patient was confronted with the doctor's bill, he made persistent allegations of negligence as an excuse for not paying. A doctor accused of negligence should, for the sake of his profession, fight the case out.

Mr RAYNER GODDARD, speaking from a quarter of a century's experience at the bar, said that it might be no consolation to the doctors, but nevertheless it was true, that members of every profession (the bar excepted) were open to action for negligence. But when the number of doctors on the *Medical Register* was borne in mind, together with the number of consultations which must take place daily and hourly, and was compared with the small number of actions brought against medical men, he did not think that the peril of legal action need haunt the doctor's sleep. With regard to the point raised by Sir Herbert Waterhouse about opposing evidence from other members of the profession, he pointed out that the medical profession, like every other, had members who were incompetent, unskilful, and negligent and should a person be treated by one of these to his grave and avoidable injury, it would be a shocking thing if on taking action against the practitioner, he could not find a medical man to give evidence for him simply because the profession was in a clique in which no doctor must give evidence against another. Doctors were, as a rule very loath to give evidence against another, and a lawyer might be pardoned in advising a client to proceed if he found that he was in a position to call other doctors. The speaker thought it incumbent upon a doctor, if he honestly believed that another practitioner had inflicted a great wrong upon a fellow citizen to assist the ends of justice. As for that palladium of British liberties the jury, he noted that the trend of recent legislation was to take cases away from juries but his own experience was that juries were by no means prone to take views antagonistic to doctors. He also made a suggestion for lunacy certification, that no person should be confined in an asylum unless his case had been considered by a panel of three medical men and that it should not be possible to bring any action against a doctor who in good faith referred a case to such a lunacy panel. In cases of emergency where the patient showed homicidal or suicidal tendencies the doctor might be allowed to give an emergency order for restraint to hold good for a few days until the case could be brought before the panel.

This concluded the speeches of the "openers" but as it was now 11.15 p.m. not even the staying power of the Hunterian Society was equal to a prolonged general discussion. Dr THOMAS GUNN dealt with some points, urging that if a judicial authority could not be found to take the responsibility for certification some other way must be sought and that it was unfair that medical men should be under this peril when at the same time they were bound to perform a public duty. Dr PERCY SMITH did not see why the medical certificate should not be regarded as a statement on oath for the purposes of evidence in court. He said that it was by no means true that all patients resented detention; he was accustomed to receive grateful letters from patients, now discharged for whose detention he had been responsible. Dr NEAL briefly replied.

## PSYCHIATRY AND THE REPORT OF THE ROYAL COMMISSION

THE presidential address in the Section of Psychiatry of the Royal Society of Medicine was delivered on November 8th by Dr R. LANGDON DOW, whose subject was "Psychiatry and the Report of the Royal Commission."

Dr Langdon Down reminded the Section of the circumstances in which the Commission was set up, and of the

general character of its report. Sometimes the reports of Royal Commissions were laid by on the shelf, but this was unlikely to happen in the present instance because the matter called urgently for legislation, which the Minister of Health had indeed promised would be forthcoming in the new year. As to the general value of the report there could be no question. It gave a decisive answer on matters previously in debate. It laid down in clear terms the principles which should guide the Legislature in dealing with the insane, adopting in the main the principles which had been urged by the medical profession, and it repudiated the notion that there existed any substantial abuses. On examining the report in detail, however, Dr Langdon Down found certain matter for criticism, especially in the procedure recommended for placing involuntary patients, when there was a prospect of recovery within a short time, under care and treatment without recourse to full certification. His objection to the Provisional Treatment Order by which it was proposed that this should be done was that it contained the judicial intervention and formality which was the real objection in certification. The term "certification" referred comprehensively to the whole procedure of a reception order made by a magistrate who had before him one or two certificates signed by medical practitioners. What the patients and their friends objected to in certification was not the expression of medical opinion or diagnosis on the certificate, but the whole procedure which invested the certificate with the forms of law, and inevitably suggested a penal aspect. A German medical practitioner, writing about the working of the English law in this respect, stated that he had found it difficult to understand the introduction of what was apparently a penal side into this procedure, and asked if this did not cause confusion. The essential fact in certification which made it abhorrent to those faced with it was the share taken by the representative of the law.

The Provisional Treatment Order proposed by the Royal Commission, strangely enough, accentuated the duties of the justice and elaborated them in various ways. It was, in essence, the very procedure of certification over again. Such a procedure was in no way calculated to approximate the treatment of mental to that of physical disorder. It was true that the doctor's signature was to be attached to a "recommendation" instead of to a certificate but could it be supposed that to style a certificate a "recommendation" would do anything to allay objections? Nor would it be more acceptable because it was limited to a month and was termed provisional. The failure of the Commissioners to bring their proposals into harmony with the principles laid down in their own report was much to be deplored. They had assumed as a self-evident fact that the only proper safeguard was the judicial authority, and that his intervention before treatment was undertaken was a vital principle of universal application. In this the Commission was deferring to a public prejudice, instead of which it might be expected that a Commission would endeavour to guide public opinion. But it appeared from the proposals that, while changes might be made in various directions, no change must be suffered in respect of the legal formality which the public would look upon as a safeguard. Yet even under the present lunacy laws there were various departures from this principle. For example, a lunatic might be detained in the workhouse for fourteen days on the certificate of the medical officer of the institution. By an accumulation of periods under different sections of the Act as long a time as twenty-three days might elapse before the justice was called upon to make a summary reception order, and it was not suggested that abuses had in fact occurred through these extra-judicial periods of detention. In Scotland also the principle had been departed from, without any evil results. It was admitted on all sides that adequate safeguards were necessary, but the unsatisfactory form of the proposals offered in the report was the result of assuming that the judicial authority was the only proper safeguard. In fact the intervention of the justice was the one safeguard which tended to be somewhat illusory in practice. The judicial authority was the one party to the procedure on whom apparently no real responsibility fell. The real and

effective safeguards depended on the vigilance and experience of the Board of Control and on the trustworthy and responsible way in which the medical share in the work had been done. If the justice was to be brought into this Provisional Order procedure it should be at the request of the patient, when his function would be clearly defined, and his decisions, being invited by the patient and supported by the medical evidence he would be entitled to call, would be on the merits of the case.

Dr Langdon-Down suggested tentatively a proposal for avoiding these objections. All patients requiring mental treatment should be dealt with, in the first instance, either by a voluntary application or a preliminary authorization for treatment, the latter to be made by a relative, friend, or public official, supported by two medical opinions to the effect that the patient required treatment for his mental condition in a place recognized for such a purpose, and the admission of the patient for treatment should be reported to the Board of Control within seven days. The patient should be given the right to call in a judicial authority if he considered that he ought not to be placed under treatment, and if the justice decided, after taking medical opinion, that the patient should continue under treatment, he would make an order accordingly. The preliminary authorization would be valid for fourteen days, but capable of extension. It would have the advantage over the Provisional Treatment Order, which retained the judicial procedure while actually weakening the medical safeguards, that it emphasized primarily the need for treatment rather than the need for detention, and did not complicate and confuse the procedure by a hopeless attempt to classify cases for this purpose by prognosis. It was only an extension of the present Urgency Order or the proposed Emergency Order, making its duration the more useful period of fourteen days instead of seven, and therefore it could not be taken to contravene any vital principle of law or public policy.

Turning to the risks under which the certifying practitioner laboured, Dr Langdon-Down said that under the law as it stood the intervention of the justice added no safeguard to the doctor, and therefore the elimination of this authority would add nothing to the doctor's risks. There was little or no dispute that the whole legal position of the medical practitioner in regard to the risks which confronted him in certifying the insane involved grave injustice. This was reaffirmed by the Royal Commission, which sought to ameliorate the position by transferring the burden of proof as to carelessness or bad faith. But even that proposal, as it stood, might fail to give the required protection unless the further proposal were adopted to strengthen Section 330 by appointing an independent medical assessor to sit with the judge in these cases. With this addition the doctor would have fairly substantial protection. Dr Langdon-Down then dealt with the question of witness-status, and the practical difficulties which were in its way, and he mentioned the remarks of Mr Justice McCaigie, made since the report of the Royal Commission was issued in delivering judgement in the case of de Freville v Dill, when the judge suggested that the cause of the detention might be, not the doctor's certificate, but the justice's order. In that case action would lie, not against the doctor, but against the justice, or, in the procedure just outlined, against the person who made the preliminary authorization. The profession and public were governed, however, not by Mr Justice McCaigie's views, but by the judgement he had to deliver, and by the law as commonly interpreted, and the doctor stood in a very hazardous position. It ought not to be necessary for some unfortunate victim to have to carry his case to the House of Lords. The profession had the right to ask that the law on this matter should be just and unequivocal. If there was doubt about interpretation, why should not the matter be cleared up forthwith by the House of Lords appointing, if necessary, a panel of judges as it did once before, in the McNaghten case?

Sir ROBERT ARMSTRONG JONES proposed, and Sir MAURICE CRUICKSHANK seconded, a vote of thanks to Dr Langdon-Down. The former said that he was unable to agree to the proposal to eliminate the justice.

## THE PRESENT POSITION OF SPINAL ANAESTHESIA

At the meeting of the Section of Anaesthetics of the Royal Society of Medicine on November 4th a discussion took place on the present position of spinal anaesthesia.

Dr CECIL HUGHES, president of the Section, in a brief introduction, said that the method of spinal anaesthesia had now been in use for over a quarter of a century, many papers had been published on the subject, embodying observations on thousands of cases, and the time had come to assess the value of the method as a routine procedure. The mortality was very slight, and such deaths as had occurred could mostly be attributed to the serious condition of the patient at the time, to an admittedly bad choice of anaesthetic, or to an overdose. He gave a synopsis of the recent papers on the subject, and then described his own technique, in which he used 5 per cent. stovaine, with 10 per cent. sodium benzoate and caffeine citrate, in distilled water, in 2 ccm. ampoules. He preferred to combine with this method a light degree of general anaesthesia, sometimes so light that consciousness was scarcely abolished. He avoided the method in cases where there was low blood pressure to begin with, myocardial degeneration, or spinal trouble. The class of operations most suitable for spinal anaesthesia were those on the lower abdomen, and he thought that in difficult pelvic operations, particularly urological and gynaecological, the use of spinal anaesthesia had already lowered considerably the post-operative mortality. The fall of blood pressure during anaesthesia, without marked increase of pulse rate, had seldom caused him anxiety. In a few instances under his own observation as large a drop in blood pressure as 60 per cent. had occurred, but the pulse rate was only slightly increased, and on the patient being returned to bed there was rapid recovery. Constant blood pressure readings should be made throughout serious operations under spinal anaesthesia, but the most important danger signal was the pulse. The position of operation was important. When the Trendelenburg position had been employed, return to the level should not take place for at least two or three hours. It was very important to keep the patient on an inclined plane, with the head low, this was the position in which he should be taken from the operating room, and the foot of the bed should be raised. Except in a few of his cases, any nausea or vomiting had been slight, and headache was extremely rare. This he attributed to his use of a small and sharp needle, reducing to the minimum the size of the hole in the theca. He had had two cases of external rectus paresis, one of which lasted for some weeks. There were also a few cases of transitory stiffness of the muscles of the neck. Abdominal distension had occasionally occurred, but this was by no means peculiar to operations under spinal anaesthesia. When undesirable after-effects followed operations under general anaesthesia, it was difficult to pin the anaesthetic down as the sole cause for the reason that there were several other possibilities which might be suggested, but with such complications as had been reported in connexion with spinal anaesthesia there were no loopholes. He could not explain how these rare sequelae occurred, nor how they might be avoided. Until failures as well as successes were reported it would not be known how spinal anaesthesia compared with other methods.

Mr J. P. LOCKHART-MUMFORD said that inhalation anaesthesia which caused vomiting and loss of appetite during the days immediately following operation was distinctly prejudicial to the work which the surgeon could do. It was no more than begin, and he was prepared even to run a rather greater risk with the anaesthetic if the method was free from these disadvantages. He thought that for operations up to the umbilicus there was no reason to prefer about regional anaesthesia, which was a difficult method, when spinal anaesthesia was available. In his opinion any really serious drawbacks attending the use of spinal anaesthesia had been due to faulty technique, such as the injection of an unsuitable substance or careless use of the needle. He had experienced only the trouble of the lowering of the blood pressure, to which everyone was accustomed, and in one case diplopia. In spinal anaesthesia



a patient was at the mercy of gravity. If, four or five minutes after the spinal anaesthetic was injected, the patient was slumped so that his head and chest were lower than any other part of his body no serious trouble was likely to ensue. The patient should always be moved on a trolley—the position could not be maintained properly on a stretcher. The keeping down of the head averted subsequent headache, at least to any more than a mild degree. The solution employed in his experience had been storaine Billou's, 10 per cent. He had never seen any case of idiosyncrasy to storaine.

Mr. CORDON TAYLOR said that he had used spinal anaesthesia first of all in cases where he expected shock. When amputations and severe operations were done on the lower limb spinal anaesthesia was extremely useful, as it also was in excision of the rectum and gynaecological operations. A second class of cases in which he had used it consisted of those in which the patient had some general constitutional disease rendering the administration of a general anaesthetic impossible or inadvisable. In a third class of cases he had used it for his own comfort, these were cases in which he felt the operation was going to be mechanically difficult, such as for carcinoma of the pelvic colon.

Dr. H. V. PACE said that he had always been in the habit of giving slight general anaesthesia before making the spinal injection, this was for the comfort of the patient, and he had not found the result affected. For the last four years he had been using a very fine needle—22 standard wire gauge, the usual needle of commerce being 16 standard—and in his last 100 cases with this small needle only one had headache had occurred. It was not only after the operation that the head should be lowered, but the patient should be sloped with the head lowest all the time from the injection onwards or at least from a very few minutes after the injection.

Dr. Z. MEXELL had heard of a good many complications following spinal anaesthesia, and severe headache was reputed to be a very common sequel. The neurologist, indeed, now recognized a definite disease known as storaine-rabies. Cases had come to the National Hospital—even cases of children where no question of ordinary rabies would arise—who showed complete loss of intelligence, small pupils etc., following on spinal anaesthesia. He did not know that the fall of blood pressure which was quite definite was a serious complication because it was quite easy to combat this and for some time he had been accustomed to give either a fairly big dose of camphor or some strychnine immediately after making the spinal puncture. His objection to spinal anaesthesia as a routine was the uncertainty of its action. He could not judge what dose it was necessary to give to any individual, the anaesthesia following a fairly uniform dose varied enormously with different persons, as did the length of time which it lasted. If a surgeon was relying on the anaesthetist to give a proper anaesthesia for longer than three-quarters of an hour or an hour a general anaesthetic became necessary. In America very little spinal anaesthesia was done there it was regional or splanchnic when an injection anaesthetic was given.

Dr. C. F. HADFIELD had given storaine Billou's solution for ten or twelve years, and had had none of the ill effects mentioned in the discussion. At his hospital (Prince of Wales, Tottenham), largely a local hospital to which the same patients returned time and again, although spinal anaesthesia had been regularly practised not a single case of so-called storaine-rabies had ever been seen. He had to confess however to a certain mortality with spinal anaesthesia and he was of opinion that the mortality with storaine was greater than with ether. One puzzling case which had shaken his faith in spinal anaesthesia was that of a woman otherwise healthy, operated on for fibroid. Under the anaesthetic she became blue and could not get respiration. Artificial respiration was tried and proved impossible, oxygen was introduced without result and the woman herself made efforts to get breath and could not and death ensued. He had discussed this case with Dr. H. H. Dale who pointed out a parallel condition in an animal given a fatal dose of histamine. On such an animal it was impossible to do artificial respiration, if oxygen were forced into the lung it would burst into the pleura but

it would not get into the alveoli. Apparently what happened was spasm of the small bronchioles. Dr. Hadfield personally did not like to combine a light general anaesthetic with the spinal analgesia. He thought better results were obtained with "trilight sleep." With regard to headaches, these seemed less likely to occur after a serious than after a minor operation, probably because, after a serious operation, the patient remained very still for a long time, whereas after a minor operation he moved about.

Mr. H. F. G. BOYLE believed that there was a bigger mortality with storaine spinal anaesthesia than with most other anaesthetics, and other members spoke of a possible toxic action of storaine. Mr. HOWARD JONES thought that if novocain were used instead of storaine fewer bad results would be reported. He had abandoned storaine some years ago on account of its relative toxicity. He also believed that the fall of blood pressure was less with novocain than with storaine. Mr. ASHLEY DALT thought that patients should be kept in bed for several days after spinal anaesthesia. Dr. P. J. CLARKE had seen two instances in which spinal anaesthesia was followed by paralysis of the rectum and incontinence. Both patients had a positive Wassermann reaction. Dr. JOSEPH BLOMFIELD said that the discussion had brought out the fact that there were two sides to the question, and it certainly could not be claimed that the method of spinal anaesthesia was the right one in all circumstances. He mentioned two cases reported in a French journal, of loss of control of the bladder lasting, for eighteen months and for three years respectively after spinal anaesthesia. Dr. CECIL HUGHES briefly replied to some of the detailed points raised.

## TROPICAL DISEASES AND PARASITOLOGY

The Section of Tropical Diseases and Parasitology of the Royal Society of Medicine held its first meeting of the new session on November 3rd with Major General D. HANLEY, a vice president, in the chair. A number of papers on tropical diseases and parasitology were read.

### *Blastomycosis Cutis*

Dr. ALDO CASTELLANI read a paper on "Blastomycosis cutis." Any pathological condition of the skin he said due to yeast-like fungi was usually called blastomycosis. The term "yeast-like" was a useful practical term referring to roundish or oval fungi with no mycelium. Two main types of the condition could be recognized—blastomycoid and cryptococoid. The former were larger cells with a well marked double contour due to the thick membrane. The internal granulations were larger than in the cryptococoid type in which they were sometimes absent. The lesions however, were similar, although the parasites were totally different in culture. There was no need, however, to adopt a fine botanical classification, and he usually separated them by observing the fungi in a hanging drop culture. If free budding cells were present the fungus belonged to the genera *Saccharomyces*, *Cryptococcus* etc., while if budding cells were absent it belonged to the genus *Blastomyces*. Clinically several types of blastomycosis existed. The commonest was blastomycosis verrucosa while other types were blastomycosis ulcerativa profunda (*Coccidioides* type), blastomycosis gumma, blastomycosis glanialis, and blastomycosis furunculosa. Blastomycosis verrucosa was characterized by raised patches with a verrucose or papillomatous surface resembling skin tuberculosis or warts. It had several subtypes. The commonest affected the skin only, and although cosmopolitan in its distribution it was commonest in the tropics and sub-tropics. The second type affected the oral and nasal mucosa as well as the skin, and was found mainly in South America. The third, affecting the tongue, had been reported from Ceylon and the last type affected the skin first or all, but later became systemic, with a general infection and pyrexia.

The speaker then described cases illustrating the various types. He said that blastomycosis ulcerativa profunda affected mainly the deeper organs, and rarely caused any skin lesion. It was due to a *Cryptococcus*. Blastomycosis

glutealis caused a diffuse induration of the skin in the gluteal region, and tended to become chronic. It possessed numerous sinuses discharging a thin pus, and was caused by a species of monilia or cryptococcus. Blastomycosis fungicola was very distinct clinically from the other types, and, indeed, it resembled ordinary boils to such an extent that it could only be distinguished from them with difficulty. It was often on the scalp, and the hair sometimes fell off, causing permanent baldness. In unopened sores the fungus was found in almost pure culture, but in open boils it was so heavily masked by a staphylococcus that diagnosis was difficult. It could be cured by doses of potassium iodide. There were other superficial conditions of the skin caused by yeast-like fungi, and called blastomycosis epidermides. These were of two types. The first showed no sign of inflammation, and consisted of brownish patches resembling dirt on the skin of the chest and limbs. Cryptococci were found on scraping the lesions. The second was mainly inguinal, where the skin was reddened and slightly inflamed. There were no raised edges to the patches, however, and there was only slight itching. It was often secondary to a fungus of the generic epidermophyton or trichophyton.

Dr. Castellani wished to emphasize three main points. Blastomycosis was not tropical, but cosmopolitan. It was first from 1910 in the southern United States, and it also occurred in Europe. Blastomycosis was not caused by a single species, genus, or even family of fungus.

Blastomycosis was best treated with massive doses of potassium iodide (one drachm three times daily), and if such quantities of the drug were badly tolerated large doses of sodium bicarbonate should be administered with them.

#### Malaria

Dr. BROUGHTON ALCOCK drew attention to the importance of house infection in the transmission of malaria, and showed a series of slides illustrating the difficulties which planters in Malaya had to face in attempting to eradicate mosquitoes. Malaria was still very common in some of the estates there. Mosquitoes indoors were more often infected than those out of doors, and he recommended house destruction of mosquitoes every eight to ten days by means of sulphur fumes or some similar measure. Houses should be planned in these areas on suitable lines, and trees should not be planted too near the houses, as they afforded protection for the insects.

Dr. SCOTT MACFIE communicated a paper on a species of malarial parasite from a baboon which resembles *Plasmodium vivax*, but only very slightly enlarges the red cells. The parasite appeared to be pathogenic for the monkey. Malaria in apes was of special importance to the medical man, and types identical with the human species had been identified in apes, although experimentally they had not been transferred to man.

Dr. J. GORDON THOMSON discussed the stippling of the red cells in malaria (Mayer's dots), and drew attention to the irregularity with which the typical picture could be obtained. It apparently depended on some staining reaction of which we were still ignorant.

Dr. CHRISTIE HENDERSON described a case of human retinomyiasis of the eye. The infection had been required through Stenson's duct. The case was cured by means of large doses of potassium iodide.

#### OBSTETRICS AND GYNAECOLOGY

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on October 21st, the president, Mr. COMYNS BERKELEY, in the chair, Mr. A. L. WALKER showed a specimen illustrating rupture of the uterus following Cæsarean section.

Mr. Walker said that the patient had had a Cæsarean section performed two years previously, followed by an aseptic puerperium. It had been originally intended that the labour should proceed naturally, but at its onset she was seized with violent abdominal pain, and developed signs of internal hæmorrhage. She was only admitted to hospital eight hours after the

appearance of the symptoms, and was then in so serious a condition that complete hysterectomy was performed at once. The Cæsarean section scar of the uterus was found to consist merely of fibrous tissue over a considerable extent, and rupture had occurred through part of this. An ovoid hole, almost the size of a hen's egg, was found on the maternal surface of the placenta, visible through the uterine perforation. The patient made an uninterupted recovery.

Mr. A. C. PALMER, in a brief communication on the incidence of carcinoma of the body of the uterus, mentioned the figures quoted by previous observers, and recounted a series of cases at King's College Hospital and the London Hospital. He concluded that the condition occurred at an earlier age than had been previously thought. He referred to one case of a sarcomatous polypus which had been discovered in a patient aged 19.

Sir EWEN MACLEAN then read a paper, illustrated by lantern slides, describing his visit to some of the medical schools of Canada and the United States of America. He made special reference to the teaching of obstetrics and gynaecology, and to the training of midwives.

#### ACUTE EAR CONDITIONS

At a meeting of the Brighton and Sussex Medical Surgical Society on November 3rd, the President, Dr. DONALD HALL, in the chair, Dr. A. CROW read a paper on "The acute ear."

Dr. Crow deplored the attitude of textbook writers who treated of deafness, otorrhoea, tinnitus, meningitis, and the dismal end-results of the acute ear as though they were casual occurrences, the appearance of such preventable symptoms called not for complacency, but for scandalized comment. The signs and symptoms of an acute ear were deduced from a consideration of the essential anatomy and pathology, they were temperature, pain, bulging drum, primary mastoid tenderness from congestion of the mastoid emissary vein, slight deafness, and perhaps vertigo. By means of blackboard drawings, the various appearances of the normal and abnormal drum were indicated, and the differential diagnosis was discussed. Emphasis was laid on the need for early paracentesis once tension in the middle ear had been diagnosed, for one was not primarily dealing with an abscess, but with a threat to ultimate function by reason of tension in the most delicate piece of mechanism in the body. Hence there could be no delay, as in the case of abscesses elsewhere, for the wall of resistance to be built up, such a process fixed the stapes, caused sloughing of the membrane, immobilized the ossicular chain, and drove infection into the bone, establishing a chronic otorrhoea. Dr. Crow maintained that paracentesis was an operation of general practice, and he described the procedure in detail. Dealing with the question of mastoiditis, it was shown that here, on the other hand, no special function preservation was involved, but life itself was threatened by the proximity of a potential abscess to vital structures, although it might be argued that the preservation of hearing and the preservation of life were of approximately equal importance. Charts of the prognosis of the acute ear were demonstrated, and an attempt was made to show that after the subsidence of the acute otitis element any return of either pain, temperature, or tenderness was a diagnostic of mastoid pus, yet secondary mastoid tenderness was not a sign to wait for, the dangerous cases, with deep-seated pus, presented no such sign. Dr. Crow held that a needless amount of mystery was associated with middle-ear diagnosis. If a patient was seen twice daily, and the pain and temperature carefully charted, and if it was remembered that the essence of diagnosis was appreciation of the sequence of symptoms, the situation being clarified by free middle-ear drainage, then he could see no difficulty about establishing a diagnosis, at any rate in patients above the age of 3. A new sense of responsibility in regard to the hearing function was needed. Deafness being a disability more dreadful than blindness, and only a little less terrible than insanity, pity for its victims had no sincerity if it did not translate itself into a resolve to protect them from a similar fate.

## THE LIVER TREATMENT OF PERNICIOUS ANAEMIA

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on October 28th, the president Dr G E NESBITT in the chair, Dr H I MOORE read a joint paper by himself and Dr A R J DUNGAN on the Minot-Murphy diet in the treatment of pernicious anaemia.

Dr Moore discussed the principles of this liver diet in the treatment of the disease and reviewed the literature. The details of five patients treated in this way and observed for from seven to twelve months were given. In all the cases clinical improvement started within a few days of beginning treatment there was a marked and rapid increase in the number of red blood corpuscles and the haemoglobin the leucocytes tended to increase in number and the colour index diminished in four cases, and anisocytosis and poikilocytosis disappeared. In fact, complete remissions with practically normal blood counts were induced in all the patients and the remissions had persisted to the present. The tongue signs also cleared up and the patients were able to resume their normal modes of life. It was concluded that the Minot-Murphy diet treatment of pernicious anaemia was astonishingly successful in inducing a remission.

Dr A R J DUNGAN explained that by reason of the conditions under which the work was carried on a more detailed laboratory study of the cases was not possible. The colour indices had been calculated on the classical basis but owing to the marked sex and age variations in both red cell count and haemoglobin content he doubted whether this procedure was altogether advisable. The success of the liver diet might possibly be a point against the theory that chronic intoxication was the cause of pernicious anaemia since it seemed unlikely that bone marrow undergoing continuous slow poisoning would recover function so dramatically after the administration of a comparatively simple chemical substance. On the other hand, the anaemia might be the result of damage caused by a previous infection such as was believed to occur in the pancreas in diabetes. In some of the cases of Minot and Murphy the actual red corpuscle volume had increased more than fourfold under treatment and had blood volume studies been possible in the present series they would presumably have shown a similar result.

Dr L ABRAMSON said that he had treated three patients by this method. The first, a case of pernicious anaemia was so ill on admission to hospital that he could not tolerate liver or any solid food and the treatment had not had a fair trial. The second, a typical case of pernicious anaemia was admitted to hospital with a red cell count of 1,310,000 per cmm and a haemoglobin percentage of 35. After nineteen days of liver feeding the red cell count had increased to close on 4 millions per cmm, and the haemoglobin to 60 per cent. Improvement in reticulocytes described by Minot and Murphy was not noted in this case. The third patient treated had severe secondary anaemia and showed no improvement on liver treatment. Dr Abramson remarked that it would be necessary to wait for some years before the results of this treatment could be determined. It was encouraging to read that patients had been followed for over three years, without relapse occurring. The liver treatment was an important departure in therapeutics generally, and in regard to pernicious anaemia it was not only a promising therapeutic method but was likely to clear up the etiology of this hitherto obscure complaint. He thought that the success of liver feeding controverted the theory of intestinal toxemia.

Dr V M STACEY reported the case of a woman, aged 25, who for three months prior to admission to hospital had had pernicious anaemia symptoms and a typical blood picture. She had been unable to take arsenic by the mouth but had had arsenic injections. One week after liver treatment had been started there was very marked improvement and she left hospital eventually healthy and fit, though a little

anaemic. She was now in excellent health, and was taking liver and hydrochloric acid daily. In the diagnosis of doubtful cases of pernicious anaemia he thought the most reliable test was the estimation of bilirubin in the blood. Since he had started this he had never found a case of pernicious anaemia in which it had not held good.

Professor PARSONS said that perhaps the new knowledge of the value of liver feeding in pernicious anaemia would later on throw light on the functions of the spleen in relation to blood formation.

Professor BIGGER asked how much of the liver extract referred to by Dr Moore was obtained from a given weight of liver substance. He also asked if liver treatment had been tried in such forms of secondary anaemia as bothriophthalmus anaemia.

Professor J M O'CONNOR said that he could hardly regard liver treatment as being successful owing to its action on the bone marrow. If the results were due to bone marrow stimulation a distinct change in the white blood corpuscle count would be expected, the polymuclear cells increasing out of proportion to the lymphocytes.

Dr A R PARSONS thought that the real difficulty was to treat pernicious anaemia in the relapse. No one could yet say that the results of liver treatment were going to be permanent, but it was encouraging to note that Minot, even in cases of a third attack, had got nearly as good results from it as he had in first attacks.

Dr R A Q O'MEARA stated that the microscopical picture of the bone marrow in pernicious anaemia was not one of destruction, but of very active regeneration. A toxic origin of the disease was suggested by the peculiar cases in which pernicious anaemia started with achlorhydria, followed by subacute combined degeneration, and later by symptoms of anaemia. He agreed with Dr Stacey that the van den Bergh reaction gave valuable information as to the nature of the anaemia, and he thought it would be interesting to see the effect of liver treatment on the bilirubin content of the blood.

Dr H QUILLAN mentioned the case of a patient of his who was not able to take liver at first, but was now able to take a certain amount. In cases like this a liver extract or powder would be a great improvement. He had treated two other patients, one had greatly improved, but the other had remained very much the same since the start of the treatment.

Dr E T FREEMAN asked if any alteration at all had been noticed in the blood pressure of patients who had taken large quantities of liver.

Dr MOORE in his reply, said that he believed a blood pressure lowering fraction had been isolated from the liver. He thought that care should be taken for the present about mentioning the word "gland" until it was found out whether the substance mentioned was a hormone or not. It had been stated that the liver was much more effective given raw than if given cooked. In some cases he had found that the blood pressure had risen, but only to a slight extent, and not more than would be accounted for by the patient's general improvement.

At a meeting of the Newcastle and Northern Counties Medical Society in the Royal Victoria Infirmary, Newcastle, on November 3rd, Dr STANLEY RAW in the chair, Dr J C SPENCE read a paper entitled "The liver and pernicious anaemia, in which he reported the results of cases treated in the Infirmary by the liver diet of Minot and Murphy.

Dr Spence first paid tribute to the manner in which these American workers had approached and pursued their researches, furnishing a good example of the application of the scientific method to clinical problems, the result would rank as one of the most important discoveries in medicine in recent years. Their discovery had a greater significance than the mere provision of a cure for pernicious anaemia for it would probably throw fresh light on physiological processes in the liver and in the generation of blood cells. Dr Spence described the results of empiry-

ing a liver diet, or an effective liver extract, in twenty successive cases of pernicious anaemia which had been treated in the Newcastle Infirmary since the beginning of the year, and contrasted these with ten control cases in which older methods of treatment had been used. These results confirmed those of Minot and Murphy. In nineteen cases there had been a prompt and rapid rise of red blood cells, with quick improvement of the patient's general condition. One patient alone failed to respond, for some reason which was not yet clear. In the nineteen successful cases the red cells had risen to more than 4½ million within two months, and in some cases had reached 6 million. The tendency to relapse when the adequate amount of liver in the diet was not taken continuously was mentioned. Dr Spence drew attention to the fact that the response to this diet appeared to be quantitative, depending on the amount taken, and that harm might result from taking too much liver after the stage of cure had been reached. This was illustrated by three patients who had eaten a pound of liver daily for three months after the blood cells had been restored to their normal level. In each of them the red cells reached 6 million, two of the patients suffered from acute gout, and the third developed the more serious complication of venous thrombosis with oedema of the legs. This suggested that it was necessary to control the dosage of the liver by frequent blood counts, in practice it was found that when a cure had been established it was sufficient in most cases to maintain the patient's condition by giving about eight ounces of liver three times a week. The danger of provoking gout would probably be overcome when treatment by liver feeding was replaced by the giving of an effective liver extract. Following the lines laid down by Cohn, an extract had been prepared in the chemical pathology department of the Infirmary which had been used with success in three cases, the patients were given daily 20 to 25 grams of this extract, a reticulocyte crisis had been produced, and a rise of red cells with improvement of the symptoms followed within seven days. The sudden appearance of reticulated red cells in the blood stream was one of the most interesting and important signs of the restoration of the bone marrow to its normal state of function. A clinical sign, which was almost equally dramatic, was the rapid abolition of the tongue symptoms. These had disappeared in one severe case before any rise in blood cells had taken place, and before the height of the "reticulocyte crisis" had been reached, they might be the first sign of improvement. Dr Spence discussed the bearing of Minot and Murphy's work on the pathogenesis of pernicious anaemia. It appeared to dispose of the prevalent theory that a haemolytic process was concerned. Haemolytic streptococci in the gut had probably nothing to do with the disease.

## JAMES MACKENZIE INSTITUTE

### Superficial Abdominal Pain

At the James Mackenzie Institute for Clinical Research, St Andrews, on October 18th, Professor JOHN FRASER (Edinburgh) read a paper on superficial pain as an aid in the differential diagnosis of abdominal conditions. He believed that superficial pain in one or more of its various manifestations might offer enormous assistance in the elucidation of an otherwise obscure problem, and paid a tribute to the lasting value of the work of Sir James Mackenzie on this question. Professor Fraser dealt particularly with the manifestations of superficial pain—hyperaesthesia, and referred pain. In each instance he interpreted the phenomenon in terms of the anatomy and physiology, and the signs and concluded by an attempt to assess their value. Hyperaesthesia and hyperalgesia in spinal areas, the irritating upon an irritability of certain of the deranged viscera having arisen as the result of afferent impulse from the reception of a second somatic stimulus transmitted from the surfaces corresponding to the one so as to be represented was apt to be magnified or altered.

to the sensorium as a hyperalgesia or a hyperaesthesia. Professor Fraser found the most striking manifestations of the sign in connexion with appendicitis and infection of the gall bladder. In appendicitis it was positive in 58 per cent of cases. When present the distribution was remarkably constant along the area described as Sherris triangle, the distribution of the tenth and eleventh dorsal nerves. A great variety of factors might explain the incidence of the sign, and evidence was adduced to show that the responsible stimulus arose early in the pathological sequence, and that it might be due to the stretching of the mucous surface of the organ affected. For example, some of the most distinctive records arose in connexion with threadworms and concretions in the appendix. When the gall bladder was concerned the sign was more likely to be associated with small mobile stones than with a single large fixed stone. A variety of different diseases were considered in respect of the sign and the results of clinical referred pain was dealt with on a similar plan. The commonly accepted explanation of the sign was the projection to the surface by a disturbed sensorium of stimuli originally recorded as afferent impulses from a distant viscus. It was recorded that the evidence of the sign was more constant than that of hyperalgesia and hyperaesthesia, but great significance was attached to the difficulty of distinguishing true referred pain. This question was discussed in relation to the various manifestations of pain in appendicitis, and the significance in this connexion of epigastric pain. Various lesions were dealt with in detail, and an interesting record was noted in respect of the reference of pain in relation to gall bladder and common duct affections. The paper concluded with a short reference to the problem of local tenderness and the interpretation of muscular rigidity as a manifestation of underlying visceral disease.

### Symptomatology in Dyspepsia

On October 25th Dr R. O. ADAMSON (Glasgow) read a paper on some aspects of symptomatology in dyspepsia as met with in general practice. He referred first to the important place of the stomach in the alimentary tract and its governance by the autonomic nervous system in order to explain the wide appeal of disturbed gastric function. The subjective symptoms and the objective signs of dyspepsia were detailed, and all cases of dyspepsia and its symptoms were allocated to a place in a classification including disorders of the alimentary tract, whether of the stomach or some extra-gastric part of the tract, and disorders of the body outside the alimentary tract but still disturbing the gastric function. Some anatomical, physiological, and chemical details were considered in the light of their bearing on symptoms and function, on various types of dyspepsia, and on the relation of the stomach and symptoms to adjacent organs, such as the gall bladder and pancreas. The importance of the psychic factor in many cases of dyspepsia in practice was alluded to, also of the influence of that factor on gastric secretion and motility, with reference to the various limitations of gastric analysis. Focal symptoms were considered in more detail, especially the significance of discomfort and pain in relation to ingestion and various disorders and diseases of the stomach. Reflex symptoms, masquerading as gastric dyspepsia, were referred to, also the simulation of dyspepsia in the early symptoms of disease in organs remote from the alimentary tract. Dr Adamson next cited cases exemplifying some focal symptoms of nausea and vomiting, acid eructations and flatulence, considered flatulence in relation to aerophagy and other disturbances. Remote symptoms he dealt with as a whole and as an expression of autonomic nervous disturbance or toxemia, and he stressed the need for exhaustive inquiry into cases with various groups of symptoms. In conclusion, he discussed the manner of dyspepsia at different ages, and dealt on the necessity for the general practitioner to be familiar with the life-line of the patient, so as to regard dyspepsia as a thing in itself, but as a manifestation of disturbance of a complex organization.

## Rebelsus.

### CIVILIZING THE UNCIVILIZED

Mr. Pitt-Rivers's book on *The Clash of Culture and the Contact of Races* deals with some of the urgent problems which face the administrators of our dependencies in the government of native races, for whose welfare we are responsible in various parts of the world. He has studied at first hand the primitive communities in New Guinea, in the island's north of New Guinea and in the Society Islands, in order to find out why these communities exhibit a tendency to depopulation and extinction. It was to be supposed that by conferring the blessings of Western civilization on these peoples, their social elevation would be a conspicuous result, this, however, has by no means been the case. Certain races, it is true, have assimilated Western ideas with such advantage to themselves that their benefactors are not without apprehension as to the ultimate result, this is so with the negro population of the United States. But as a rule contact with Western civilization has been followed by race degeneration. Thus in the islands of Melanesia and Polynesia and other parts of the Pacific a great number of the populations are, as the author shows, declining and in many cases have declined to the point of extinction. This fact has been a frequent subject of official and unofficial inquiries during the past fifty years. In Tasmania the problem has ceased to exist, and is of small importance in Australia, for the simple reason that the Tasmanians have already died out and the aboriginal Australians are rapidly following the road to extinction. In the sweltering and fever-stricken islands of Melanesia and Polynesia, where native labour is indispensable, we are apparently fast exterminating the races which it is our best interest to preserve.

Many reasons have been given in explanation of the decadence of these populations, some refer to the effects of European interference—namely, change of habitat, the concentration of dwellings, European clothing, European food, the recruiting system and the segregation of the sexes on plantations, the abolition of the communal system and the authority of the chiefs, alcohol introduced diseases, obstacles to marriage, the abolition of native warfare and head hunting, the increase of infant mortality under the new conditions, and the abolition of polygamy. Others on the other hand, hold that the decadence is inherent in the native life and manners, Sir Hubert Murray, for example, has expressed the opinion with regard to certain Papuan tribes that 'it is difficult to imagine that people with such habits as they exhibit should ever increase, the only cause for surprise is that they should ever have come into existence at all.'

Mr. Pitt-Rivers has submitted these reasons to searching criticism and has come to the conclusion that decadence is due less to any specific cause such as alcohol, than to the disruption of the native civilization that has followed the introduction of Western ideas. With their cherished traditions and ideals, such as they are, shattered, it is no matter for wonder that they are unable forthwith to bridge the gulf which separates them from our modern civilization, which even to ourselves has its unattractive features in its wars and revolutions, its strikes and the drab conditions of the industrial regime, the natives must experience the discomforts of an entire misfit. By the destruction of their interest in life they become maladapted, a circumstance which throughout organic life is found to lead eventually to extinction. This fact was recognized by Stevenson, who was acquainted with conditions in the Pacific, he noticed that "where there have been fewest changes, important or unimportant, salutary or hurtful, there the race survives. Where there have been most, important or unimportant, salutary or hurtful, there it perishes." It is true that some races may perhaps possess no potential adaptability and in such cases it is not difficult to see what the effect of a disruption of the native civilization must be with the authority of their traditions gone, the purely animal

instincts would have the ascendancy. But even where a race has a high degree of potential civilization the tendency would be in the same direction if the disruption of the old tradition were not accompanied *passu* with an assimilation of the new. A middle course would seem to be the right way—retention and transformation of the old rather than its abolition. Some of our more enthusiastic pioneers in their civilizing propaganda among the natives would do well to take to heart the following advice of Gregory the Great, who, writing (D 601) to the Abbot Mellitus, said:

When therefore Almighty God shall bring you to the most reverend Bishop Augustine our brother tell him what I have upon mature deliberation on the affair of the English decreed upon viz that because they have been used to slaughter many oxen in the sacrifices to devils, some solemnity must be exchanged for them on that account as that on the day of the dedication, or of the nuptials of the holy martyrs they may build themselves butts and celebrate the solemnity with religious feasting and no more offer beasts to the devil but kill cattle to the praise of God in their eating. For there is no doubt that it is impossible to efface everything at once from their obdurate minds because he who endeavours to ascend to the highest places by degrees or steps and not by leaps.

Gregory's wisdom was justified in the result.

### DIAGNOSIS BY SIMPLE CLINICAL EXAMINATION

Felix LEJARS's book on clinical examination and diagnosis was first published in 1923, but although the edition was exhausted within a few months four years have been allowed to elapse before the issue of a second. The author has re-examined the whole work in order to make good any discoverable omissions, and has added 187 new figures. The new volume contains over 900 pages (not too many for the matter in hand) and 1,094 illustrations, most of them photographs from life, and may unhesitatingly be pronounced one of the best books of its kind in existence. It was written expressly for practitioners, this does not mean that it is not equally useful for students, but merely that the author visualizes not only abstract clinical facts and deductions, but has in mind also the practitioner at work and the patient under examination. All through the impression is received that Lejars in practice is himself being depicted, and that the book is in fact, a summary of his own long experience. In dealing with the subject he holds that, in the presence of a regional affection, two main questions arise. What should be thought of? and How is the region to be explored? These two questions mark out the ground plan of the book, a region is named, the lesion which should be thought of first is mentioned, and the steps of the exploration required to establish a diagnosis are then described, on the supposition that this lesion is eliminated from the diagnosis a second lesion is named, and the appropriate exploration described, and on so with all the other lesions that may affect the region. Great stress is laid on clinical exploration by eye and hand, which the author states, should precede all others. At the present day numerous special methods have been introduced—physical, chemical, and bacterial—but although they are important they have in no degree diminished the value and the necessity of learning the traditional method, and the latter should in every case be resorted to in the first instance. It is still essential for the practitioner to have an expert knowledge of and skill in conducting exploration by sight, palpation, and percussion, and if this traditional method is conducted in orderly fashion and according to its own proper technique it yields invaluable information. It is to this traditional exploration that the author devotes his book illustrating it with an abundance of figures which show the technique in actual application on patients suffering from the diseases under discussion. The latter fact renders the descriptions particularly vivid and confers on them in some measure the character of actual clinical demonstrations.

There is however, no attempt to belittle x rays and other modern methods of exploration, and where these are of primary importance as in supracondylar fractures of the femur, the fact is clearly stated, but the main object

*The Clash of Culture and the Contact of Races* By George Henry Lane-Fox Pitt Rivers. B.Sc. Oxon. London: G. Routledge and Son. Ltd. 1927. (Med. Sc. pp. xiv + 412. 1 plate. 18s. net.)

*Exploration Clinique et Diagnostique Clinique* Par Felix Lejars. Neuvième édition entièrement refondue. Paris: Masson et Cie. 1927. (Poés. 8vo pp. xii + 911. 164 figures. 160 fr. sans majoration.)



of the book appears to be to inculcate the necessity of possessing an expert equipment in the time-honoured methods of examination, and these are expounded in a masterly manner which renders the work one of high value.

### DISEASES OF THE HAEMOPOIETIC SYSTEM

THE ninth instalment of the *Nouveau Traité de Médecine*,\* edited by G. H. ROGER, F. VIDAL, and P. J. TEISSIER, is devoted to diseases of the blood and haemopoietic organs, and is written by nine contributors and admirably illustrated. M. Charles Aubertin, who supplies some of the most important articles, begins the volume with an account of the anaemias, in the article on chlorosis, written in collaboration with M. Mouquin, attention is drawn to the widespread declension of this once common malady, but the suggestion is thrown out that this may be in part due to more systematic blood examinations and a correspondingly more accurate diagnosis of secondary anaemias. A special chapter is devoted to the chloro-anaemia (oligosideremia) of young infants, which is identical with ordinary chlorosis and also is cured by iron. Pernicious anaemia is regarded as not absolutely commoner, but only more often diagnosed than in the past, and under this heading are included two special forms described in America—sickle-celled and phagocytic anaemias. After a separate description of aplastic anaemia there follows a full account of the grave symptomatic anaemias, the technique of transfusion being illustrated by a number of figures. Other forms of treatment of the grave anaemias are, of course, mentioned, but presumably the volume was in print before the effect of feeding with liver in pernicious anaemia became well known. The study of diseases connected with changes in the red blood corpuscles is completed by MM. Aubertin and Mouquin's article on polycythaemia and Vaquez's disease or erythraemia.

The blood conditions characterized by changes in the white cells and most of the diseases of the lymphatic glands occupy 240 pages, and are well described by M. A. Clerc. Under the heading of lymphadenie or lymphadenomatose there are included a number of conditions, such as Hodgkin's disease (entitled lymphogranulomatose maligne), mycosis fungoides, lymphosarcomatosis, and a number of glandular enlargements of undetermined origin without leukæmic bleed. M. Emile Weil divides haemophilia into the familial and the acquired forms, and in discussing the differential diagnosis refers to Osler's disease, meaning thereby not erythraemia (Vaquez-Osler's disease), but hereditary telangiectases, and thus supplies an eponym to be welcomed and adopted. The same authority writes on the pathology of the bone marrow and of the lymphatic glands, and, together with MM. Le Sourd and Pagniez, on purpura.

The last, and perhaps the best, section of this fine book of reference is on the diseases of the spleen, by MM. C. Aubertin and Leon Kindberg. Among the primary tumours of the organ splenoma, a term not familiar to British ears, is described as the commonest, and composed of giant and multinuclear cells derived from the macrophages of the spleen. There are good accounts of chronic splenic anaemia, which is rightly distinguished from Banti's disease or the complication of hepatic cirrhosis and of Gaucher's splenomegaly. Altogether this volume well maintains the reputation of this well known system of medicine.

### WORD-BLINDNESS AND MIRROR-WRITING

THE special disability in reading shown by some children and known as "word-blindness," and the phenomenon of "mirror-writing" shown by other children, are well known and interesting oddities. More attention has probably been given to the cases of word-blindness owing to the interest they afford to the ophthalmic surgeon, who generally discovers them, for at the outset the difficulty of the child is commonly thought to be due to inability to see. Further, the condition of these cases was so admirably worked out by the late Dr J. Hinselwood of Glasgow in his several papers and his book on the subject. Up till

now the two conditions of word-blindness and mirror-writing have not been thought to be related. Now the psychologists have taken a hand in investigating them, and they suggest that there is a connexion. A monograph has been issued in the series Harvard Monographs in Education, entitled *Special Disabilities in Learning to Read and Write*. There is a most detailed investigation of a case of word-blindness by Miss E. E. Lord, some account of mirror-writing by Mr L. Carmichael, and the two pieces of work are correlated by Dr Walter F. Dearborn.

The two conditions are held to have certain features in common, a consideration of which may be reciprocally illuminating for the understanding of each condition. Word-blindness has until recent years remained the concern chiefly of the neurologist and ophthalmologist, and has usually been regarded by them as either a congenital defect or an acquired and pathological condition due to some lesion in certain areas of the brain. Mirror-writing has, on the other hand, usually been looked upon as one of the possible consequences of a mere biological variation—namely, of extreme left-handedness. Although it has been more commonly observed in the subnormal, it has not itself been regarded as congenital (although left-handedness has been so considered) or distinctly pathological. The educational psychologists who have more recently interested themselves in these conditions have come to hold much the same point of view in regard to extreme reading disability or word-blindness as has been generally held in regard to mirror-writing. They have argued that disability or inability in reading forms simply "the far end of the normal distribution" of the abilities in question, have questioned the existence of congenital factors, and have considered "the possibility that inhibiting habits, however acquired, may be at the bottom of the inability." Cyril Burt has described such a situation. "Backwardness specifically in reading is often due to illness or absence between the ages of 6 and 8. It is during this period that the ordinary child is taught to read. If he fails to learn to do so then, he is still, on the grounds of age, transferred at the usual time from the infants' department. Once in the senior school he meets with nobody who feels it his business, or perhaps with nobody who feels himself able, to teach a child the rudiments of reading, and so he lingers on, and a few years later appears, in a very literal sense, word-blind." Usually, however, specific intellectual shortcomings may be discovered which, even under changed conditions and the most capable instruction, limit the individual's learning.

To connect word blindness and mirror-writing seems at first glance to be a wide stretch. But there are interesting cases. There is the "tail-endor" reader, the left-handed subject who appears to be also left-eyed, as it were, who tries to read from the right instead of from the left, and who reads "saw" as "was." There are also reported a greater incidence of speech defects amongst the left-handed, which points to further complication in their learning to read.

The subject is dealt with in a most interesting fashion in the paper included in this monograph from Harvard.

### A CRITIC OF HOSPITAL GOVERNANCE

Dr M. B. SHIPSEY of Birmingham is possessed of an intense antagonism to present methods of hospital management, and he has delivered his soul in a pamphlet which is entitled *The Present System in Hospitals Generally, with Special Reference to the Hospitals of Birmingham, and a Review of the Medical Profession Pertaining to Hospitals and Other Sidelights*. The title is lengthy, and would cover a vast deal of matter. But from his pages it would appear that his real aim is an attack upon hospital governance by laymen. "Hospital committees," they seem to be retired business gentlemen pumped up by their

\* Harvard Monographs in Education. *Special Disabilities in Learning to Read and Write*. By Elizabeth E. Lord. Leonard Carmichael, and Walter F. Dearborn. Studies in Educational Psychology and Educational Measurement. University Series. London: Milford, Oct. 1927. Cambridge Mass.: Harvard University Press. 1927. 64 pp. 6s. 6d. net. University Press. (Superiorly in Hospitals Generally) By Michael B. Shipsey. *The Present System in Hospitals Generally*. By Michael B. Shipsey. M. B. Shipsey. Leicester: The Blackfriars Press. 1927. (Gr. 8 & 10 12 13. 3d.)

\* *Nouveau Traité de Médecine*. Publié sous la direction de MM. G. H. Roger, F. Vidal, P. J. Teissier. 1882. IX, Affections du sang et des organes hématopoïétiques. Paris: Masson et Cie. 1927. (64 x 10, pp. viii + 802, 8 plates, 184 figures. 80 fr. sans majoration.)

own exalted opinions of themselves puffing, pompous, exalted, transcendent, almighty hospital governors, so much do they take it upon themselves to ponderously overshadow the real work done in hospitals by one body alone, viz, doctors, whilst not forgetting those who assist the medical profession, i.e., nurses." He is equally caustic in his comments upon the guardians of the poor who administer the great infirmaries. The author has a free flow of words and a rich vocabulary of descriptive adjectives, but we think he has so far overdone his argument as to cause a smile where he would desire to invoke agreement. His objection of ecclesiastical intrigue amounts almost to the level of the spy mania shown in certain quarters in the near past. He writes of the hospitals of Birmingham, and we have some knowledge of the members of hospital boards of that city, and know them to be sane, sensible men and women who give lavishly of their time and substance to the hospitals. The writer of this note has served upon no fewer than six voluntary hospitals in London and the country, and in some in such a capacity as brought him into intimate relations with his board. During a period of thirty years he has found nothing of the monstrous domination alleged by Dr Shipsey, who argues that the management of the hospitals should be in the hands of the doctors. Most hospitals have medical committees, and through these the staff exert an effective influence. It might be a questionable advantage for the staff to have to deal with "serving of tables," if they did, how would their proper work fare? We commend to Dr Shipsey the study of the quaint old story of Jotham. The trees went forth to appoint a king over them and they said unto the olive tree, Reign thou over us. But the olive tree said unto them, Should I leave my fatness wherewith by me thou honour God and man, and go to be promoted over the trees? And for like reasons the vine and fig tree refused the high office, only the bramble was willing to take on the job.

### SKIN DISEASES

The third edition of Dr ORMSBY'S well known textbook on *Diseases of the Skin*\* reminds us again that the growth of textbooks resembles in many ways the growth of certain classes of insects, not only is there a general increase of dimensions but besides, an incomplete metamorphosis is brought about by the suppression of some features and the development of others as successive editions make their appearance. Textbooks, however, unlike insects, never reach finality—the latest edition is never the perfect in age. If perfection be unattainable Dr Ormsby has at least produced a work which is as complete as it is possible to make it, and as up to date as a determined pursuit of the latest dermatological publications can achieve. Our only criticism of the exhaustive references he has provided is that he might perhaps have been a little more discriminating in his choice of observers to quote. One omission is rather surprising, there is no mention of the recent work on treatment of ringworm of the scalp by thallium acetate. This work we owe chiefly to Buschke, and it is a step of great importance. Otherwise we have nothing but praise for Dr Ormsby's magnum opus, which should be in the hands of all interested in dermatology. It is clearly written and well illustrated. There are only three coloured plates but there are many well reproduced photographs which bring out excellently the points to be emphasised.

The *Outlines of Common Skin Diseases*, by Dr T. C. CURRIER of Baltimore, is intended to form an extremely short cut to arguino is of the cutaneous disorders more frequently met with, and we can easily imagine that it will prove useful to practitioners whose knowledge of dermatology is not profound and who are so placed that they find it difficult to obtain help in the problems of practice. The section on the regional distribution of the common disease, should be particularly helpful. One item

in that list, however, we must take exception to—that is, the mention of psoriasis as first among such lesions found on the face. Although it is true that in severe cases psoriasis may occur there, this is so rare that its presence is noteworthy, and it is never seen on the face in the absence of lesions on other parts. Other sections include hints on diet and cancer, a few notes on treatment and some dermatological aphorisms. There are a number of illustrations, which, although extremely small are clear. The author is careful to point out that he does not intend this pamphlet to take the place of a textbook, it certainly could not.

### NOTES ON BOOKS

No profession, we imagine is recruited more largely than medicine from the Rugby football field and the game certainly owes much to the generations of medical students who have thrown themselves into it for the glory of their schools. Guy's is indeed the oldest club now playing and the Rugby Cup Tie is still the great sporting event of the hospital year. There are still among us veterans of early international matches in the seventies—J. A. Macdonald, E. B. Turner, and his brother C. R.—and leading figures of later decades such as Andrew Balfour, J. R. C. Crebber, C. T. Scott, E. T. Morgan and Louis Craig while in recent years L. G. Brown, W. D. Doherty, R. Cove Smith and D. J. MacMunn have helped to build up the forward game of today. These names and many others are honoured throughout the medical schools of England, Scotland, Ireland and Wales and their mere recital should be excuse enough for mentioning the appearance of a new book, *Pugger*\*, by W. W. Wakefield (the English captain) and H. P. Marshall, which every lover of the game will want to read. The first part consists of Wakefield's own reminiscences, the second is a full length treatise on the theory and practice of modern Rugby football and the third is a compendium of club histories and international records etc. for statistically minded devotees. The whole thing is very well done and elaborately illustrated, and those who disagree with one of the authors' many precepts will like it none the worse for that. Every page breathes the true spirit of the game.

As part of the campaign it is carrying out to educate the public in the need for proper care of their teeth the Dental Board of the United Kingdom has lately issued a small book entitled *Hygiene of the Mouth and Teeth*†. This has been prepared primarily for the use of teachers and the Board proposes to make a wide distribution of copies to public elementary and secondary schools in the British Isles. The contents are written in simple language logically arranged and well illustrated. An informal introduction is contributed by Sir Francis Duke, a former chairman of the Dental Board, in which he acknowledges the help given in the compilation of the volume by Dr H. C. T. Langdon, medical officer of the Board of Education and a member of the Executive Committee of the Board's Dental Health Education Committee.

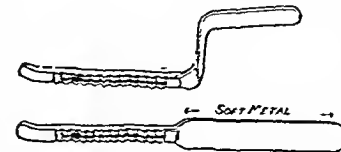
\* *Pugger*. By W. W. Wakefield and H. P. Marshall. With forewords by James Baxter and Vice-Admiral P. M. R. R. C. B. C. M. G. London: Longman, Green and Co. Ltd. 1927. (Demy 8vo pp. xi + 491. 63 figures, 15s. net.)

† Published by the Dental Board, 41, Hallam Street, London, W.1. Price 1s. 6d. post free.

### PREPARATIONS AND APPLIANCES

#### MODIFICATION OF THE THOMSON-WALKER PEPPACOR

Mr JOHN S. LEVY, U.C. assistant surgeon, Royal United Hospital Bath, has devised a new blade for use with the Thomson-Walker pattern of bladder retractor. It is made of soft metal, which can be moulded to fit the vesical wall and prevent it from puckering in front of the prostatic pouch. The instrument is made by Messrs Maw and Sons Ltd., 7, Aldersgate Street, E.C.1.



#### AN IMPROVED RING PEPPACOR

Messrs Allen and Hanbury Ltd., 48, Wigmore Street, London, have manufactured a new form of combination ring pessary. It is fitted with springs, like the ordinary watch ring pessary and is padded with moulded sponge rubber with an outer covering of smooth sheet rubber. The advantages claimed for the Wigmore Spongy Ring Pessary are that it is more comfortable than the unpadded watch ring pattern and more resistant than the un-reinforced sponge rubber appliance.

\* 1 Practical, 127 Third edit. (Med 8vo p. xi + 14. 5 plates. 11s. net.)  
\* *Outline of Common Skin Diseases*, by T. Caspar Culver, M.D. London: Baillière Tindall and Cox, 1927. (4 x 8 pp. 5s. 6d. figures, net.)

## WOOLWICH WAR MEMORIAL HOSPITAL

OPENING BY THE DUKE OF YORK

H R H THE DUKE OF YORK, accompanied by the Duchess, visited Woolwich on November 2nd to open the general hospital which that borough has erected in memory of its more than six thousand citizens who lost their lives in the great war. The building stands in thirteen acres of ground on the highest point of Shooter's Hill, more than 400 feet above sea-level. It is newly opposite the famous Bull Inn, where Dick Turpin is reputed to have put the landlady on the fire, and hereabouts must be the spot where Don Juan mused on the morality or otherwise of the great city which he saw below him to the north and west.

The hospital is being built in three sections, of which only the first has been completed. This section accommodates 110 beds, including a maternity ward with six beds and two isolation beds, together with a sunlight and electro-therapeutic department. The second section will comprise, in addition to two more ward blocks, a paying patients' pavilion, a nurses' home, a laundry, and a pathological department, and the third section two more ward blocks, bringing up the total number of beds to 344. The administration block for the whole hospital, with a noble architectural frontage, has also been completed.

The greater part of the population of Woolwich appeared to participate in the opening proceedings. Probably never before has a hospital been opened within the sight and hearing of so vast a multitude. The ceremony took place in the open air on a very high dais, and the usual devices of microphone and loud speakers made the speeches audible at a great distance. Opportunity was taken for some military display, and a guard of honour from the Royal Artillery Depot was mounted in front of the hospital, with which was a contingent of men and women representing the British Legion, the Old Contemptibles' Association, and the British Red Cross and the Order of St John of Jerusalem. Their Royal Highnesses were received by the Mayor of Woolwich (Councillor Brieffoot), the chairman of the Hospital Fund (Mr E H Kemp), the secretary superintendent (Mr Edwin Radford, J P), and others, and among those presented were Lord Dawson of Penn, who is consulting physician to the new hospital, Sir Berkeley Moynihan, Bt, who is consulting surgeon, Mr Cecil Rowntree, honorary surgeon and chairman of the medical committee, Dr C F T East, honorary physician, and Dr W Cowie, representing the medical practitioners of the district.

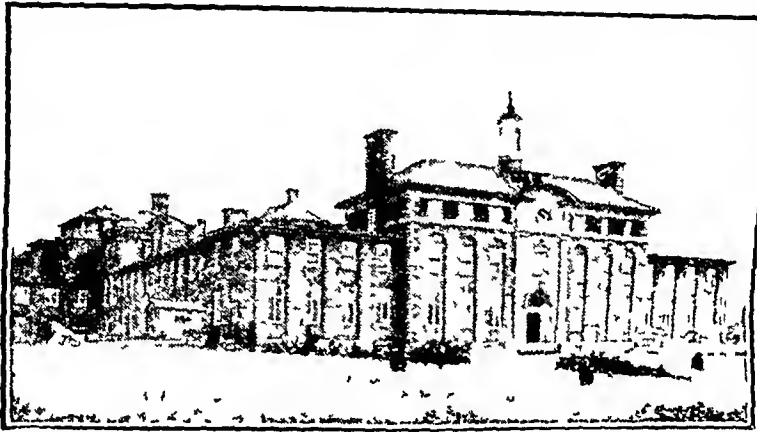
The first act of the royal visitors was to unveil a Book of Remembrance in which the more than six thousand names of the fallen are inscribed. One page of this volume is to be turned every day, following a custom practised at Canterbury Cathedral and perhaps elsewhere, and the book has been placed in a specially built hall, panelled with coloured marbles, very simple and beautiful in character, and to be perpetually lighted. Of those whose names are recorded over five thousand fell in army service, and some hundreds more in the navy, but the names of one hundred are included who were killed in the process of manufacture of guns and explosives at the Royal Ordnance Factory, and fourteen who lost their lives in air raids.

After the party had taken their positions on the dais, the chairman, Mr E H Kemp, read an address in which he referred gratefully to the generous local response which had been made, despite industrial distress, to the appeal on behalf of the hospital. The Council of King Edward's Hospital Fund for London had encouraged and urged the

completion of this, the first general hospital to be erected in the county of London since the war, and had given liberal support. It was hoped soon to announce that the entire cost of the building and equipment so far as it has at present gone—approximately £210,000, including the cost of purchase of land and of erecting the administration block—had been raised. Just over £200,000 of this amount is in hand, as well as £21,300 as an endowment fund to assist in future maintenance. Mr Kemp expressed the hope that the hospital would be regarded as the first link in a chain of such institutions on the outer fringe of the county of London, thus relieving the pressure on the older hospitals in the inner metropolitan area.

THE DUKE OF YORK, in opening the building, said that no more fitting monument could be erected to the gallant men and women of the useful town who laid down their lives in the war. He was glad to learn of the keen interest taken by the garrison itself in this work, also of the help given by the women and children of Woolwich. He praised a scheme of weekly collections on the hospital's behalf, and added that he would be pleased to learn that some of the great City companies, who are so generous in their allocations, were supporting a hospital taking patients who would otherwise go to increase the strain upon the older London institutions.

After a short service of dedication by the Bishop of Woolwich, the Duchess of York received gifts including several of £1,000 each to name a bed. One gift of £500, towards the cost of the x-ray and electro-therapeutic department, was presented by Dr John Clarke, on behalf of the medical practitioners of the Woolwich district. Another was a gift of £2,500 being a refund of the purchase money of half the grounds in which the hospital is situated, presented, in memory of his parents, by Major



Photograph by

[Verars Sims and Co, London]

ADMINISTRATION BLOCK AND PART OF THE FIRST SECTION

C E S Phillips, a past president of the Roentgen Society and well known for his contributions to x-ray physics. Dr W Cowie of Woolwich gave £50 for the purchase of ten wood chairs for the centric court, one of the local county secondary schools contributed £144 for apparatus for light treatment, and several elementary schools donations of £25 each for the equipment of cots in the children's ward. A further gift was a wireless installation, with headphones for each bed, and eight loud speakers, by the "Daily News Wireless for Hospitals" Fund.

A short description of the hospital appeared in the JOURNAL of May 14th (p 892), but reference may again be made to the spaciousness which is the first impression on the mind of the visitor. The cubic space allotted to each bed multiplies several times the minimum required by the Ministry of Health. Another feature is that all the arcades are laid out as Dutch gardens, and in this first section there are eight sun balconies, in addition to three lawns, making the hospital virtually a convalescent home. The hospital includes every modern device of heating and sanitary engineering. There is a red-tiled water tank on the roof of each ward, with a capacity of 8,250 gallons. Two Lancashire boilers have been installed to supply hot water and steam to all parts of the hospital, three calorifiers to re-heat hot water and steam supplies to parts remote from the power house, an economizer plant for partially heating the cold water supply to the boilers by means of waste steam, and a soot-blowing and flue-cleaning plant.

The population to be served by the hospital is approximately 300,000, but before the whole of the hospital is functioning that number may be very largely exceeded, owing to the new housing schemes which are developing in this locality.

## British Medical Journal.

SATURDAY, NOVEMBER 12TH, 1927

### BRITISH MIDWIFERY IN THE XVIIth AND XVIIIth CENTURIES

PROBABLY few are aware of the fine chapter of British scientific progress and discovery, in the obstetric branch of medicine that is covered by the seventeenth and eighteenth centuries. It is one in which British medical men, whether obstetricians or not, cannot fail to be interested, and in which it is legitimate to feel some patriotic pride. That so little should be generally known is readily explained by the lack of a connected history of the period, such as is necessary in order to grasp the significance of the movement. The deficiency has now happily been removed by Dr Herbert Spencer's FitzPatrick Lectures which are evidently the outcome of many years of historical research; they are to be published shortly in a volume which will without doubt take a permanent place as a standard contribution to the history of medicine. Meanwhile a brief account of the result of his labours is published elsewhere in this issue (p. 853). Full justice could only be done to the subject by such a review of the movement from beginning to end as is related with freedom from partiality and with careful regard to accuracy as to the facts in the lectures. We may however here direct attention to one or two points which will serve to justify the inference which a perusal of the work compels—that our countrymen were the pioneers in the growth of obstetrical knowledge. At the commencement of the period it cannot be said that there existed any real knowledge of the mechanism of labour—the foundation of obstetrics. Normal deliveries were then undertaken not by practitioners, but by women who were generally ignorant actuated by trade considerations and devoid of all traces of the scientific spirit and male practitioners, who were consulted in the event of complications, can have had little or no experience of normal labour at all. For knowledge of the anatomy of the parts concerned in normal labour and of its mechanism we are indebted to the researches of Harvey, William Hunter, Ould and Smellie. As regards the mechanism of labour more particularly, it was Ould who first studied the subject in its true light as a problem in mechanics while the splendid work of Smellie carried the research to completion added to it the investigation of abnormal labour and gave to the world a conception of the process of labour which is recognized as the foundation of present knowledge. Again the means of effecting artificial delivery were at the beginning of the period extremely limited. The obstetrical practice of the time in its more favourable aspect is probably summed up with fair accuracy by Harvey when he recommends extreme forbearance and reliance on Nature in the conduct of normal labour and the adoption of podalic version in cases where any handiwork in the business is required. To this should be added in the hands of less conservative obstetricians certain measures mostly of a destructive kind.

The whole outlook of obstetrical practice was transformed by the invention of the forceps by Peter Chamberlen—one of the most beneficent in the whole history of medicine. Here again the invention was

followed up and brought to perfection in this country. Chapman dispensed with the pin having found that the blades locked firmly without it, Smellie invented the short form and (contemporaneously with Pugh, and Leviet in France) added the pelvic curve, and finally, by the invention of the lock produced what is essentially the form of instrument in use at the present time. Again in the management of the lying in room the old English obstetricians set on foot a series of reforms which quite obviously headed directly towards the aseptic and antiseptic treatment, and although eclipsed by the subsequent work of Pasteur and Lister theirs deserves to be remembered. The midwives who controlled the lying in room to the exclusion of male practitioners, though not universally lacking in intelligence, were under the influence of a bad tradition. Notions of cleanliness were crude in those days fresh air was diligently excluded from the patient and the over-heated lying in room by means of curtains and draperies, and the patient was plentifully doped with alcoholic erudles. On the supercession at the bedside of the midwives by the male practitioners these conditions underwent an immediate change for the better and Charles White Leake, and others gradually revolutionized the hygiene of the lying in room. Caudles and foul air were done away with, the close aggregation of patients discontinued, separate delivery beds instituted, cleanliness as regards the room, the patient and the attendants enjoined, and the attendants directed to wash their hands. In addition direct means were recommended with a view to combating infection, the lying in rooms were to be purified, and for this purpose the fumes of burning charcoal or sulphur were employed and the walls of the room whitewashed. What the old obstetricians understood by infection is clearly indicated by some passages in the records. It is stated that it may arise from putrid animal matter outside the body that the condition is in the first place an inflammation restricted to the uterus that the peritoneum becomes secondarily inflamed, and that the poison may act like a leaven and putrefy the whole body. When we add that there also existed a tradition introduced by Harvey and William Hunter, that treatment should be as far as possible conservative and that reliance should be placed on Nature in a process that is essentially physiological, it is obvious that English practice had its own marred characteristic features which were excellent in many respects. This was appreciated beyond this country, and there appears to be little doubt that Böer was influenced by it in his management of the great lying in hospital in Vienna. The low rate of mortality in that institution was the means of drawing the attention of Semmelweis to the hands of medical students as a source of puerperal infection and of his recommending the employment of chloride of lime as a disinfectant.

Dr Herbert Spencer has as far as the material allowed, introduced the obstetricians themselves to us in his lectures and many personal details add interest to the narrative. In some respects, indeed purely personal considerations were influential in moulding the course of events. This was the case with the Chamberlen family who acting apparently on the principle of beginning charity at home, carefully preserved the secret of their invention of the forceps retiring to the privacy of the closet and secreting the instrument beneath the boards when not in use. Not that they made a secret—on the contrary, they openly boasted of possessing a means of delivery surpassing in efficacy anything dreamt of by the midwives, and they

thereby reaped great credit for themselves. But the nature of the invention was bound to leak out, and when the secret became generally known among the male practitioners the midwives perceived that their business was in peril. The "halings and stretchings" with which they are stated to have tortured their patients were threatened by this secret and humane invention. Hence arose between the midwives and the male practitioners that battle royal which has already been graphically described by Dr. Spencer in a former work, and which inevitably ended in the discomfiture of the former at the point of the forceps, as one may say, the male practitioners remaining masters of the field, or bedside.

The profession, we believe, will be very ready to acknowledge the debt it owes to Dr. Spencer for introducing to it the old English obstetricians, with the names of many of whom we were unfamiliar—Ould, Osborn, Leake, Denman, Chapman, Aitken, Giffard, Manningham, the genial Maubray, and many more whose lives and works he has recorded.

### ERGOSTEROL, VITAMIN D, AND RICKETS

The progress of the investigations recently made with regard to ergosterol and vitamin D and the prevention and treatment of rickets has been noted from time to time in our columns during the last few months, and the scattered observations may with advantage be gathered together. The importance of the subject, both from the practical and theoretical point of view, fully justifies this.

Following on Hopkins's pioneer work, published in 1913, Mellanby, in 1919, suggested that rickets was a disease due to the absence from the diet of some accessory food factor, probably vitamin A. Other workers, particularly of the Glasgow school, contended that, since rickets could be prevented by fresh air and sunlight, there was no need to postulate the existence of any such accessory substance. The observation that rickets could be prevented, even in the absence of sunlight, by a diet containing cod-liver oil seemed definitely to establish the "deficiency" hypothesis, and the fact that cod-liver oil was still effective after the destruction of the vitamin A which it contained tended to prove that the factor involved was not identical with the latter. The existence, therefore, of another accessory factor had to be assumed, and to such a substance was assigned the name "Vitamin D."

Later work has justified both hypotheses. It was found, in the course of the post-war relief work at the Viennese hospitals, that children could be kept free from rickets or cured of the disease either by being freely exposed to sunlight, or by receiving a liberal milk ration, provided that the milk was obtained from cows that had been pasture fed. The milk of animals that had been stable fed on oilcake was comparatively ineffective. This "experiment" was the result of chance, in that the patients were under the control of separate groups of workers who held divergent opinions on dietetic matters. It therefore happened that in the case of one group of children attention was concentrated on the caloric value of the diet, while in that of the other particular heed was paid to the provision of accessory substances.

Not long after the Viennese results became available it was independently reported by two sets of workers that experimental rickets could be prevented if the food given to the animals was subjected to the action of ultra-violet light, although it was quite in-

active before exposure. Other observations show that animals fed on a rickets producing diet might be kept free from the disease if they were periodically subjected to the influence of ultra violet light. Apparently the accessory food substance and ultra violet light could each protect against rickets. The accessory substance must be included in the food, the radiations could act either through the food or directly on the body.

Chemical work had suggested that the accessory substance was associated, in foodstuffs, with that fraction which, though soluble in fat, could not be saponified by treatment with alkali. This "unsaponifiable residue" contains a number of substances, among them cholesterol. Chemically cholesterol is a complex alcohol, and is very widely distributed in nature. It is found both in animals and plants. It is relatively abundant in vertebrate nervous tissue. It occurs in the bile, and the bile acids bear to it a fairly close chemical relationship. It can be detected in the blood and its amount estimated. Probably it plays a part in fat transport and fat metabolism, and it is supposed that variations in blood cholesterol in certain morbid conditions are of diagnostic significance. In spite of the relative abundance in which it occurs, very little hitherto has been known of its function, and, in spite of much work, the details of its chemical structure are not yet established. It was shown, however, that if antirachitic foodstuffs were subjected to chemical fractionation the active substance was most closely associated with the cholesterol fraction. These observations led to the testing of cholesterol itself for antirachitic properties. It was found that cholesterol, apparently chemically pure, possessed none, but if it was exposed to ultra violet radiations it regained them. It was also found that there was an optimum period of exposure to ultra violet rays, at the end of which the maximum activity was developed. After this the potency, instead of increasing, actually fell off. Moreover, by chemical means, it was possible to recover 99.9 per cent of the rayed material as chemically pure cholesterol, incapable of further activation. Though the original specimen of cholesterol had fulfilled the ordinary chemical and physical tests of purity, the conclusion seemed inevitable that it had, in reality, contained traces of some other substance which, under the action of the light, had been changed into the vitamin. Though the recovery of 99.9 per cent as pure and inactivatable cholesterol showed that the amount of this substance must be very small.

A well known method of purifying cholesterol is to precipitate it as the digitonide. The fact that this process did not separate cholesterol from the substance then called "pro vitamin" suggested strongly that the latter must be a sterol. The fact that it is destroyed by bromine and other oxidizing agents as well as by over irradiation, suggests that it is a sterol of a highly unsaturated nature. It was observed that the spectrum of ordinary cholesterol contained certain very marked absorption bands in the ultra violet. These bands disappeared after irradiation, and this suggested that they might be due, not to cholesterol, but to the accompanying pro vitamin. It remained to discover the substance responsible for the absorption bands. A search among the sterols other than cholesterol brought to light the fact that the spectrum of ergosterol showed the bands of great intensity. Feeding experiments proved that irradiated ergosterol will protect rats from rickets in doses of less than one ten thousandth of a gram.



probably the minimal dose is in the neighbourhood of one fifty thousandth of a milligram.

Ergosterol is a sterol, first prepared from ergot. It is, however, as events have shown, very widely distributed. The work discussed has made it clear that vitamin can be produced from ergosterol the pro-vitamin, by natural or artificial ultra violet light, either in the animal's food or in its body. For the animal to secure a supply of this vitamin D two factors must be present—ergosterol and ultra violet light. It is evident that vitamin D must fulfil an important part in calcium metabolism. Where exactly, according to our present conceptions, it is to find a place is not yet clear, though it seems likely that its action is connected with the absorption of calcium salts from the intestine, but it must, of course, influence other factors besides absorption. There is every reason to hope that these discoveries will lead to the determination of the chemical nature of vitamin D but the problem is a difficult one—the chemical constitution of cholesterol is still obscure, and until that has been elucidated it is hardly likely that the constitution of ergosterol will be understood. At present no method other than irradiation is known for converting ergosterol into the vitamin.

#### CANCER OF THE LARYNX

The shades of Sir Felix Semon and Sir Henry Butlin must have been well pleased if they revisited the Royal Society of Medicine last week. It is as due to their efforts that the operation of laryngofissure became a well established procedure. At the Section of Laryngology on November 4th Sir St. Clair Thomson exhibited four patients on whom he had performed this operation respectively two and a quarter, three, four and a half and five and a half years previously for intrinsic epithelioma. These four patients were medical men, and all are now actively engaged in medical practice. They demonstrated better than any mass of statistics could do that this operation preserves a satisfactory voice and ensures lasting cure. The day before Mr. Lionel Colledge, in the Semon Lecture (of which we published a full abstract last week), showed that when intrinsic cancer has advanced too far for thyroid fissure a lasting cure can still be obtained by a complete laryngectomy. It is generally acknowledged on the continent that laryngofissure has been particularly studied in this country, thanks to the initiative in the last century of Semon and Butlin. It is a surprise to read that an American laryngologist who has performed a large number of complete laryngectomies should say, "as experience accumulates the sphere of the thyrotomy contracts." Sir St. Clair Thomson's unique experience in this operation has warranted him in asserting that, although laryngectomy is occasionally indicated for neglected and extensive intrinsic cancer, yet as such cases will become rarer with progress in the education of the public and the training of the laryngologist, so will laryngectomy become a less frequent operation, while laryngofissure will be more often performed and with greater success. As his statistics show, laryngofissure, if carried out with correct technique should be free from danger to life and should be followed by an adequate voice and lasting cure. As much cannot be said for laryngectomy. The President of the Section, Mr. Harold Barwell, in opening the session again urged the importance of both the public and the profession appreciating the necessity of obtaining a skilled laryngological opinion on any case of hoarseness persisting for more than three weeks. As this increases the sphere of laryngectomy will contract, and the brilliant results of become still more marked.

#### COLOUR VISION

SOME time ago the British Association appointed a committee "to report upon colour vision, with particular reference to the classification of colour blindness." It consisted of Professor Rort, who has recently been engaged upon original work in this subject, Dr. Mary Collins, whose book upon colour vision was reviewed in these columns about a year ago, and Dr. Edridge-Green, whose work upon this subject is well known, with Sir Charles Sherrington as chairman. The report summarizing their labours was presented to the British Association last September, and has now become available. Broadly speaking, its recommendations may be considered under two heads, the first dealing with nomenclature, the second with methods of testing. With regard to the first, it appears to be recommended that in the generic sense the term "colour blindness" should be dropped, and "hypochromatism" or "hypochromatopia" used in its stead. Two classes of defects are recognized—"blindness," denoting a decrease in sensitivity to a special region of the spectrum, and "confusion," denoting a decreased ability to discriminate different colours. It is suggested in the report that these two defects may occur separately. At present it is generally admitted that colour vision is a function of three variables (red, green and blue), normal people are therefore known as trichromats. In the largest class of colour-blinds one of these variables is absent and two only are present, these subjects therefore are known as dichromats. Those who see the whole of the spectrum as one hue (that is, the total colour-blind) are monochromats. The second group (that is, the dichromats) is subdivided into three subgroups—protanopes, deuteranopes, and tritanopes, corresponding respectively to the condition of red-, green-, and blue-blind, the terms being used descriptively and unprejudiced by any theory. These terms it is proposed to abolish, and the number of colours which are recognized in the spectrum taken as a measure of the degree of colour discrimination, after the manner of Edridge-Green's classification as penta-, tetra-, tri-, di- and mono- or a-chromats. Thus it appears that a patient would be classified on the following scheme—namely, as (1) red blind (that is, decreased sensitivity to light) from (say) 6,200 Å to the end of the spectrum and (2) as suffering from red yellow-green confusion. The old method of classification cannot be considered perfect but at least it was founded upon a very wide experimental basis. The same can hardly be claimed for the new classification, its dual nature, while certainly not adding to its simplicity, is probably superfluous. The report also outlines the methods recommended for the testing of the colour blind. First, sensitivity is measured by determining the threshold to light of different wavelengths. It is recommended that a spectral apparatus with a shutter for isolating a narrow region of the spectrum should be used, the intensity being varied by an episcotister or a photometric wedge. Two extremely important matters, however, are left out in the recommendation. It is by no means clear whether the "threshold to light" means the light (colourless) threshold or the colour threshold, presumably the latter is meant, for the achromatic (light) threshold in the colour blind is normal (König). Again, the report does not attempt to define the state of adaptation of the eye during the test—a most important and fundamental consideration in such a problem. With regard to the second question—the testing for confusion—it is recommended that it should be measured by the minimum change of wave-length which will produce a change of hue at two wave-lengths only—5,850 and 4,850 Å, a difference of over 50 Å being taken as standard. (Incidentally, such an examination itself would take several hours.) But it may be asked whether it necessarily follows that if subject thinks 5,900 and 5,850 Å (both in the γ

orange) are the same, he is going to confuse red and green. This, we are inclined to think, is the whole practical problem. Colour vision is notoriously one of the most difficult of physiological problems, and we cannot see that this report has gone very far to render the subject more comprehensible or its accurate detection more practicable.

#### AMERICAN HOSPITAL POLICY

ELSEWHERE in this issue we give an abstract of a report made to the Legislative Assembly in Victoria on hospitals recently constructed in Canada and the United States. The report is the result of a tour made by a delegation in order to gather information which should be useful to Melbourne, where it has been decided that improved hospital accommodation and better methods of training medical students are necessary. The delegation did not visit Europe, because it was believed that there it had not been possible to do much in the way of hospital construction since the war. Everywhere on the North American Continent the delegation found a well developed tendency to combine university, medical school, and hospital under one control. The report deals with the large hospitals only, which, with one exception, were found to be independent, or, as we should say, voluntary hospitals. Sometimes voluntary and municipal hospitals were combined, and then the voluntary management was supreme over both. They found one vast municipal hospital—the largest hospital in America—but it was the only one of the kind they saw. Its architecture, planning, and management did not impress them, "all the evils of political control being visible on every hand." Hospital reconstruction is the order of the day in the United States. In all the principal centres visited any hospital of more than fifteen years' standing was considered to be obsolete or obsolescent, and was either in course of rehabilitation or on the point of being replaced by a new building on another site. Amazing buildings are being erected—vast blocks, square set, towering into the sky, that call to mind the stern solidity of the ancient keep of Rochester Castle, but on such a Bismarckian scale as to make that ancient fastness seem no more than a sentry box, for these structures run to twenty stories high, yet all around there appears to be land enough and to spare. For the most part the hospitals charge their patients, some by fixed fees, some on sliding scales. In all there is a highly developed "social service department," the officers of which determine the patient's capacity to pay, and also play the part of fairy godmothers to the patient after leaving hospital. There is ample provision for the poor and for the rich, but there is a dearth of accommodation for the middle classes, the "white collar brigade," and serious efforts are being made to meet this deficiency. A phase of hospital work growing in the States is the use of scientifically trained dietitians. They are part of the regular staff. A difference of opinion is only found on the point whether there should be one diet kitchen for the whole hospital or one for each floor. This staff is responsible for the quality of the food, its preparation and distribution, and for furnishing the menu when a special diet is ordered by the doctor. It also teaches the nurses. Social service or almoner's departments are organized and financed as separate departments, with fully trained staffs, and there is association of social and philanthropic work and a reduction of overlapping in charities. Everywhere the delegation found the close association of medical teaching by university or medical schools with hospitals controlled by the schools, and where this did not actually exist plans for it had been made. In the schools there were very many laboratories for work and research, but few classrooms, and one great university had gone so far as to abolish the class system, and relied on the individual work of the student, but

therein was a rigorous selection of students and power to refuse inefficients. Stress was laid upon the necessity for separation of the teaching of undergraduates and post-graduates, the latter require specialties, the former do not.

#### THE COAT OF ARMS OF THE ROYAL SOCIETY OF MEDICINE

DURING the past fortnight or so Fellows of the Royal Society of Medicine will have noticed a change in the title page of the weekly diary and circulated from 1, Wimpole Street. The familiar though not very effective reproduction of the Society's seal has given place to a little less block of its new coat of arms. The history of this heraldic device is briefly as follows. Sir StClair Thomson, when he was President last year, felt that a Royal Society ought to possess a suitable coat of arms. He had already generously given the Society a beautiful old wrought gold presidential chain, and it seemed to him that a president's badge in keeping with it would make the thing complete. A committee was formed to discuss the matter, and an heraldic Achievement by Mr Martin Travers was unofficially submitted to the College of Heralds, who approved it without criticism. Formal application was then made in Sir StClair Thomson's name, and a Patent of Arms was issued in due course. A gold badge based on this design is approaching completion, and will be handed over by Sir StClair to



Sir James Berry, his successor in the presidential chain, at the annual dinner on November 16th. The technical description of the coat of arms is as follows. Arms, per pale vert and gules, the serpent of Moises or, entwined round a tau cross argent. Crest three sprigs of the herb "all heal" proper. Supporters, on the dexter side a representation of St Cosmas and on the sinister side a representation of St Damian both proper. Motto, "Non est vivere sed valere vita." The shield bearing the serpent is divided vertically, half being red, symbolizing surgery, and the other half green, for medicine. On the red side stands the surgeon holding a knife, and on the green side the physician with an Italian drug jar. The two figures are the martyrs SS Cosmas and Damian, who flourished in Italy in the early days of Christianity, and were adopted as the patron saints of medicine and surgery. They appear very largely in this capacity in Catholic Europe, and indeed also in England, for they were the patrons of the ancient Guild of Barber Surgeons, and are depicted in silver on the beautiful instrument case which used to be carried in the processions of the Guilds in the Middle Ages. The representation of these saints on the new coat of arms, which strikes us as pleasant and simple in its symbolism, is taken from a stained glass window in the Pazzi Chapel in Florence, the presidential badge consists of the shield done in coloured enamel and gold with the motto encircling it.

#### GERMAN ANTI TUBERCULOSIS ORGANIZATION

THE Italian Ministry is now engaged in an inquiry into the best method of combating tuberculosis on a national scale. The report of a commissioner, Dr Segri, who was sent to Germany, has recently been published, in which deals with finance, organization, and treatment. Tuberculosis was brought into the scheme of national insurance by a law passed in 1900, which enacted that all persons

<sup>1</sup> La Lotta Antitubercolare in Germania. By Dr. Arl. Segri. Bologna. L. Cappelli. 1926. (Sup. nos. 870, pp. 113. 1 figure. L. 1.)

affected with tuberculosis should be regarded as incapacitated from work and entitled to insurance benefit. In practice the scope of the law appears to be restricted to some extent, owing to the limited requirements as to notification existing in certain provinces. The scheme is financed chiefly by the national insurance department but substantial assistance is also derived from numerous communal and provincial benefit societies, from the clubs of the miners, railwaymen, and industrial and commercial workers, from the Red Cross Society, and from various religious institutions. The financial basis of the scheme is considered to be sound and its organization efficient. Contributions were readily forthcoming when it was realized that an extension of life for three years, or of working capacity for that period would effect a saving of 360 marks on each person insured. The organization of the campaign is in the hands of a central committee in Berlin with twenty-eight subordinate committees in various parts of the country. Their duties are to collect the necessary funds, co-ordinate economic and technical measures, establish new institutions, issue yearly reports on the working of the scheme, and carry out propaganda. During 1924 the funds administered by the central committee amounted to nearly 660 million marks. The organization comprises 1462 members, and consists of a presidium of thirty-three members, a committee of fifty, and a general assembly which meets annually. On the presidium and committee are several Ministers of State, presidents of medical and insurance societies, bankers, hygienists and others occupying public positions. Notification is made in the first instance to the health authorities established in the cities, and from these the cases are reported to the local tuberculosis dispensaries (Tuberkulosefürsorgestellen) which are the advanced posts in the campaign. The primary function of the dispensaries is to make the diagnosis, ascertain the type of the disease, and prescribe the appropriate treatment and to this end they are provided with a skilled personnel and a complete up-to-date laboratory equipment. If domiciliary or ambulatory treatment is considered desirable this (Heilfürsorge) is superintended by the medical director of the dispensary. The dispensaries have the equally important function of scrutinizing the hygienic condition of the patient's home and the state of health of the inmates (Heimfürsorge), and in case the latter run any risk of infection, of procuring the isolation of the patient either in a separate room or in some anti-tuberculosis institution (Wohnungsfürsorge). The functions of the dispensaries are therefore mainly diagnostic and prophylactic. Where institutional treatment is indicated, a distinction is made between cases considered curable within three months and those requiring more prolonged treatment. The former are sent to sanatoriums situated mostly in the mountainous districts of the country and at present capable of accommodating 24,400 patients. Some difficulty seems to be experienced in clearly distinguishing the cases suitable for sanatorium treatment and a considerable proportion of unsuitable cases gain admittance to these institutions. This is recognized as a defect in the system, which requires correcting. More protracted cases are admitted into special hospitals for tuberculosis, into the tuberculosis wards of the general hospitals, into convalescent homes, and open air institutions.

#### PRESENTATION PORTRAIT OF SIR BERKELEY MOYNIHAN

SIR BERKELEY MOYNIHAN, Bt President of the Royal College of Surgeons of England was presented on November 7th in the Lord Mayor's Rooms, Leeds, with his portrait in oils, painted by Richard Jack, R.A., and subscribed for by his friends and admirers in that city. The Lord Mayor, Alderman Hugh Lupton, made the presentation, and the

portrait is to be hung in the board room of the Leeds General Infirmary, with which Sir Berkeley Moynihan was connected from the time he was house-surgeon until last year. The gift was also a recognition of his work for the School of Medicine of the University of Leeds, in which he has been professor of clinical surgery since 1909. There was a large attendance of professional colleagues, pupils, and other friends, and expression was given to the high regard and affection in which Sir Berkeley is held by the Lord Mayor, Dr Wardrop Griffith and Mr T. F. Braime, who accepted the portrait on behalf of the Infirmary.

#### UNIVERSITY OF LONDON MEDICAL GRADUATES SOCIETY

As will be seen from a statement in our column of university intelligence it is proposed to constitute a University of London Medical Graduates' Society and thus add another to the already considerable list of clubs and societies recognizable by the Senate. In addition to such are the various political associations within the University and there are, or were, certain dining clubs, as well as the University of London Club in Gower Street. While there are no doubt adequate grounds for seeking to bring together more closely the graduates in medicine of the University, circumspection will be necessary in two directions if the success which we wish for the new society is to be achieved. It will be incumbent on the promoters to avoid needless overlapping with other long established medical societies for whose membership all medical practitioners are eligible and caution will be required not only in avoiding ordinary political activities but also those questions of university politics which have often so sharply divided the alumni of the University of London.

#### THE ROYAL SOCIETY

The Copley Medal of the Royal Society has been awarded to Sir Charles Sherrington, O.M., G.B.E., M.D., for his distinguished work on neurology. A Royal Medal has been awarded to Sir Thomas Lewis, M.D., for his researches upon the vascular system following upon his earlier work on the mammalian heart beat. The Buchanan Medal has been awarded to Professor Major Greenwood for his statistical researches and other work in relation to public health. The following medical names appear in the list of Fellows recommended by the President and Council of the Royal Society for election to the Council on November 30th: Treasurer, Sir David Prain; Joint Secretary, Dr H. H. Dale; other members of Council, Dr E. D. Adrian, Sir Hugh K. Anderson, Sir Archibald Garrod, Professor J. C. G. Ledingham, and Professor G. Elliot Smith.

As we have already announced the International Congress of Otolaryngology will be held in Copenhagen next year from July 30th to August 1st. To assist those attending it from this country a British Committee has been formed with Sir James Dundas-Grant as president, Sir St. Clair Thomson as chairman, and Messrs Lionel Colledge, J. S. Fraser, and F. W. Watkin-Thomas as honorary secretaries. Mr Sydney Scott is acting as treasurer and to him (130 Harley Street, W.1) should be sent the subscription of 5s. In return members of the British Committee will be kept informed of all arrangements with particulars of travelling to Denmark and the stay in Copenhagen. The committee is open to all members of the profession.

The King has nominated Sir W. Leslie Mackenzie, M.D., for reappointment as a member for Scotland of the General Medical Council for five years from October 28th, 1927.

## HOSPITALS IN AMERICA

## AN AUSTRALIAN DELEGATION

MELBOURNE, the capital city of Victoria, Australia, is exercised about the state of its hospitals. There is need for increased accommodation, and medical opinion demands better methods of training medical students than present arrangements allow. A committee was appointed which made certain proposals, including aggregation of the main hospital accommodation upon eleven and a half acres of land contiguous to the University in the northern part of the city. To ascertain the tendencies of modern hospital construction a delegation of three—Dr. the Hon. Stanley S. Argyle (Minister of Public Health), Mr. R. J. Love (Inspector of Charities and Secretary of the Hospitals and Charities Board), and Professor R. J. A. Berry (Dean of the Faculty of Medicine)—was appointed to visit America. Its report,<sup>1</sup> which was presented recently to the Legislative Assembly, begins by stating that "the priority of new construction in Europe during the past twelve years renders almost obligatory a visit to the United States on the part of those contemplating new buildings if they wish to be furnished with modern construction, equipment, and organization." The Rockefeller Foundation planned the tour of the delegation. New Zealand and Canada were also visited.

The report is of great interest, not only for what it has to say on the matter of buildings, equipment, teaching arrangements, and training of nurses, but also because it tells something of the quality of the patients and the terms on which they are admitted to hospital.

There were at the beginning of this year in the United States of America 6,946 hospitals with 859,445 beds and in Canada 458 hospitals with 62,500 beds. Hospitals used for teaching medical undergraduates number 316. Forty of these are owned by the medical schools of the universities, and a further thirty-seven are under their control. In about one hundred others some teaching is given. "Hospitals are no longer regarded only as institutions for the cure of the sick and injured, but as essential elements in the education of the community with regard to the causation, prevention, and cure of many of the diseases which afflict mankind." The average length of the medical course is four years, but there is a pre-medical scientific course of two years, many schools demand one year's work as an intern, and some are now requiring six months' work with an approved general practitioner in private practice. Some States require a further examination before practice is allowed. The American Medical Association has done a great piece of work in certifying hospitals fit for the reception of interns; these number 578, with 4,952 posts. Besides, there are others for special work. Students are subject to selection before admission to the schools. Of 20,000 applications made in the States and Canada last year only 6,500 were accepted.

## Vancouver

The University is eight miles from the city in a park of 600 acres. It has also a vast landed estate, which it may sell or lease. The city is expected to grow to the University, and a hospital will be built there. At present there is a town hospital of 900 beds.

## Toronto

The general hospital has 742 beds, and will shortly have 1,000. It has special departments, and a "workmen's compensation ward." Its revenue is £213,000, all, with the exception of £19,000 from endowments and subscriptions, derived from fees paid by or for patients. The hospital is opposite the University, and the staffs are associated. In the children's hospital of 250 beds it has been found in the past that 75 per cent of infectious diseases in the nursing staff arose in the isolation block. There are now glass cubicles and the nurses are masked, and infection has dropped to negligible proportions.

<sup>1</sup> Report on the Coordination and Correlation of Hospital, Medical Schools and Research Institutions in Canada and the United States of America. By Dr. the Hon. Stanley S. Argyle, M.B., M.R.C.S., M.L.A. Ordered to be printed August 16th 1927 by the Legislative Assembly of Victoria. Melbourne Government Printer. 1p. 37. Price 1/6d net.

## Rochester, N. Y.

Close to the University is the Strong Memorial Hospital, endowed by the Rockefeller Foundation and Mr. J. P. Morgan of Kodak fame, at the cost of £3,000,000. It is on a site of sixty acres. There are here two hospitals together—the voluntary and the municipal, making 430 beds. The two hospitals have one management and apparently one staff. Only members of the hospital staff may treat patients. An aerial photograph shows vast squared blocks of connected buildings some six stories high. The charge for a bed in a four bedded room is five dollars a day, and theatre and radiology fees are extra. There are private rooms at ten to fifteen dollars a day. In the latter cases professional fees are charged extra. The medical school is within the buildings, with clinical and pre-clinical laboratories (that is, anatomy and physiology, etc.), and there is a separate residential house for the junior staff. The school of dentistry is combined, and half a mile away are the fever, mental, and tuberculosis hospitals. The bacteriological laboratories comprise those of the University and of the city.

## Boston

Boston is famous for Harvard, the wealthiest private university in the United States. Its funded property is worth £15,000,000, and it spends \$235,000 a year on its medical schools. The medical school is three miles from the University and adjoins a large teaching hospital. Others in the city are also used for teaching. The Massachusetts Hospital which was founded in 1811, has two distinct parts: one for the poor, the other a "community" hospital—that is, for paying patients—where fees from five to fifteen dollars a day are charged. The fee to the doctor, who must be a member of the staff is extra. This pay department is distinct from the general hospital though under the same management, it has its own kitchen, theatres, and dispensary. It has 106 beds, and is eight stories high. Need is felt of some intermediate provision for middle class patients, and this is being arranged. More than half the cost of the whole hospital is met by patients' payments.

## Yale University, New Haven

The medical school is new, and opposite the hospital which is to be rebuilt. As in other American schools, it was noticed that "few lecture rooms were provided, but an abundance of research laboratories." Insistence is made here on the fundamental necessity for housing pre-medical sciences close to the clinical schools. The scheme of the outpatient department presented some novel features. The patient makes an appointment with an officer of the institution to be examined by the physician or surgeon. "Stragglers" without appointment are seen last, 90 per cent come by appointment. There are no hours of waiting in outpatient halls. Since the department is called a "dispensary," and the name is in ill odour it is to be changed to "clinic for ambulatory cases." In the school a rigid selection is practised, only 50 per cent of the students desiring admission are accepted, some 15 per cent are asked to withdraw as inefficient. The class system has been abolished, students may work more or less as they please, and the final examination determines whether the time of the student has been well or ill spent.

## Columbia University, New York

Columbia University is quite separate from the clinical schools which are scattered through the city. But the defects of this plan are felt, and concentration on a site of twenty acres is planned. By agreement the University and the Presbyterian Hospital are building a colossal hospital and medical school at a cost of £4,000,000. It appears to be an enormous structure, some parts of which are twenty stories high. Mount Sinai Hospital is described as being old (some parts of it were built fifteen years ago!), there are 600 beds, and patients pay from £2 10s a day upwards for maintenance. The need for middle class accommodation is felt, and is being met. In the city the delegation found one critic of the concentration tendency. Dr. Dougherty, the director of the Jewish Hospital, "considered that the tendency would prove of more value to the specialist than to the general practitioner."

## Philadelphia

Here is the University of Pennsylvania the oldest in the States. University, medical school, and hospital combined so long ago as 1873. The staff of the hospital is

University faculty. It has 550 beds (73 maternity). In the general hospital were found for the first time the large old wards of twenty five beds. But it is to be rebuilt at the charge of the city. The theatres are faced with marble, which is held to be cheaper in the end than tiles. Here is a food handling clinic where all persons engaged in handling food in the city are regularly examined, it is part of the city public health work.

#### Baltimore

Again at the Johns Hopkins Hospital and School, Baltimore rebuilding was in process. There was also co-operation between the hospital and city authorities. An aerial photograph shows a vast series of blocks some running to ten or twelve stories high and yet there is ample land all round. Of the patients received into hospital, for each one that pays in full four do not, 46 per cent paid nothing, and 78 per cent less than full cost. But it is claimed the arrangements are identical for all classes of patient, with the exception of the private room. In the school each department occupies one whole floor, each has its own animal room. There are numbers of small laboratories, and few lecture rooms.

#### Detroit

In this city of great works, containing as it does the Ford and Dodge factories there are four hospitals, but none are teaching institutions. The Ford Hospital is not for the employees of the Ford works but for private patients, it receives patients at a charge of 18s to £1 12s a day for nursing and maintenance, and from 4 to 14 guineas a day for professional services. There are additional fees for radiology, theatres and pathological work. The building cost £220 000. Of the four hospitals one is maintained by the city for the poor.

#### Ann Arbor

At Ann Arbor, forty miles from Detroit, is the home of the University of Michigan. The residential population is 25,000 but there are 12,000 students, for whom there are ten departments in the University. In the last four years the State has spent £2,000,000 for new buildings. The hospital belongs to the University, and cost 1½ million sterling. There are 1150 beds. All the patients pay or are paid for. The staff is full time and not allowed private practice, either in or out of the hospital. There are ten acres of floor space and two miles of corridors, twenty wards of eighteen beds each, thirty six two- or four bedded rooms, and many private rooms for which the charge is ten dollars a day. In one corridor there are eleven operating rooms, two set in pairs with common service rooms. There is communication between all parts by pneumatic tube, so that patients' records are sent through without delay. There is a heart centre with an electrical recording device connected with all parts of the hospital. In the theatre attached there is a similar arrangement whereby all the 150 students listen simultaneously to the heart beats of the patient under examination. The plans and elevation of this minor city hospital are truly amazing.

#### Chicago

The medical school of the North Western University is being rebuilt at the cost of £1,000,000, the gift of a lady in memory of her husband. The building is in the heart of the city on land reclaimed from the lake. It is fourteen stories high. The first seven and the fourteenth comprise the medical school, the rest the dental school and research quarters. There is no hospital on the site but two are to be built to give 1,100 beds. The patients will pay on a sliding scale according to their means as certified by the social service department. The cost will be £1 a day. At present medical teaching is carried on in ten hospitals in the city here and there and the defect is apparent. Six miles out of the city is the Chicago University and its new medical school with a hospital. A noble structure is being erected to combine all under one roof.

Cook County Hospital is an institution the like of which was not found by the delegation elsewhere. It is maintained by the Cook County of the State of Illinois. There are 2,600 beds, a number which is being increased to 3,200 the ultimate aim being 4,000. The bulk of the staff are part time (twenty hours a month) in an honorary capacity. There are sixty six interns who serve eighteen months. Students from the University of Illinois attend here for their fourth year. The patients are all supposed to be indigent poor and pay nothing for maintenance or treatment. There are no outpatients. This is

the first free hospital maintained and managed by a county council that I have seen. It did not impress me with its architecture, planning and management, all the evils of political control being visible on every hand.

The delegation also visited the Mayo Clinic at Rochester, Minnesota, which has often been described. The general conclusion reached was in favour of the proposal for the reconstitution of the Melbourne medical school, and of the desirability of combining and correlating the hospitals, medical school, and research institutions in one site, contiguous to the University.

## A CLINIC FOR PHYSICAL TREATMENT IN LONDON

In a previous issue (September 17th, p. 502) we referred to a proposal to establish in London a clinic for physical treatment (primarily for insured rheumatic persons), on the lines of those already existing in Berlin and elsewhere in Germany. We have received the following memorandum from the secretary of the London Clinic Subcommittee, British Committee on Rheumatism (International Society of Medical Hydrology, 6, Bentinck Street, W.)

### I—The Problem

According to official statistics, more than 370,000 individuals under the National Health Insurance Act alone seek relief annually from the pain practitioners for rheumatic diseases. London has an insured population of 2,400,000. There are therefore many thousands of rheumatic persons who require treatment in London.

There are many varieties of disease included under the general term rheumatism.

(1) Acute forms which confine the patient to bed (a) rheumatic fever (b) acute rheumatoid arthritis, (c) the more acute forms of inflammation of fibrous tissues. With these the clinic would not deal—it is an *ambulatorium*, not a hospital. The patients must be able to walk or be fit to be brought to it.

(2) Subacute forms (a) in the soft tissues—lumbago, sciatica, fibrositis, etc., (b) in the joints (arthritis) and periarticular tissue.

(3) Mechanical impediments which follow acute or subacute attacks, or disability due to accident or injury.

The object of the clinic is (a) To treat the subacute and chronic forms of rheumatism and prevent the development of mechanical disabilities. (b) To attempt to resolve the exudations and adhesions which have already formed, to restore the patient's working capacity and to alleviate many conditions that cannot be completely cured. A large proportion of persons affected with rheumatism are still at work, and it is believed that many more might remain at work if they could be treated at the clinic after working hours. (c) To carry out systematic investigations.

### II—Means at our Disposal

In general the patient will have at each visit two or more of the following methods applied in succession, and this combined treatment will be continued, usually three times in the week for from two to four weeks, slight cases requiring only brief treatment. These physical methods do not necessarily exclude other forms of medical or surgical treatment.

(1) Heat and cold and movement in water, vapour, and hot air—locally and generally applied.

(2) Manipulation and exercises alone or in combination with heat by the hand or by douches or whirling water.

(3) Radiation—as heat light and invisible rays (ultra violet and infra red) from arc or mercury vapour or other lamps.

(4) Electricity—as constant current to resolve exudations and promote nutrition, as interrupted current to cause movement of muscle fibres and as high frequency current (diathermy) to raise the temperature of deep-seated parts.

Like many drugs, physical remedies are sedative or stimulant.

(1) Subacute cases require warm application of water or vapour and gentle manipulation. These are sedative remedies, they relieve pain and allay congestion and nervous and circulatory excitement.

(2) Chronic cases require brief and intensive application of heat, with strong manipulation. These are stimulant remedies.

The value of periodic physical treatment in such cases is illustrated by the fact that at a recent visit to the clinic at Amsterdam a young man with spondylitis deformans was accepted for a second course of light baths, and a train of 30 with progressive muscular atrophy, for a second course of electric baths, both of which had been "greatly relieved and able to carry on a fair previous treatment." A young woman a "centimetre" with arthritic polyarthritis and much crippling was reported as carrying on her work with the assistance of a course of baths every year.



By causing active hyperaemia and increasing the circulation of blood and lymph and the local nutrition they help to remove the effects of former disease or injury. They act also powerfully on and through the skin, and indirectly on the nerve centres and general nutrition, by stimulating elimination and metabolism. Cold douches and sprays are also used as stimulants to the nerve centres and metabolism.

### III—A First Demonstration in London

It is proposed that the clinic shall be made available for men and women patients, whether insured or not. Such clinics have proved their value in other countries, and have for many years formed part of their national health insurance systems. The institution of physical clinics is, moreover, justified by long experience at our spas, where external methods, by mineral water and by plain water, combined with other physical procedures, are systematically employed for out-patients and other persons affected with rheumatic and chronic or incipient diseases.

A demonstration clinic in London will serve (1) To familiarize the medical profession and the public with the value, scientific use, and combination of physical methods. (2) As a centre for many lines of investigation—for example, on the functional disturbances occurring in early cases, on causation, on the influence of occupations, and on therapeutic classification.

A certain proportion of cases will, upon examination, prove to be unsuitable for an out-patient clinic. Arthritis, for example, can only be properly treated by baths at a certain phase in the disease. Others will be referred for hospital or dental treatment, and others for spa treatment at one of the British spas. The suggestion that such a clinic would be a "London spa" is incorrect. A spa is a health resort with specific waters, for those who need or can afford a complete change as well as treatment. Medicinal waters cannot be synthetically prepared.

Following the experience of the Continental city clinics for insured persons, provision is to be made for a normal estimated number of not less than 400 cases a day. Allowing for an average period of three weeks' treatment, this will provide for between 11,000 and 12,000 individual cases per annum. It is stated that 300 cases a day are treated in the small clinic at Amsterdam, 700 to 900 a day in one of the friendly societies' ambulatories or clinics in Berlin, and about the same number in the fine clinic at Dresden.

Such a mass of clinical material will necessitate the appointment of a medical director and staff having expert knowledge of physical methods of treatment. The medical director and his colleagues, who will be responsible for the various departments—hydrotherapy, light, ionization, etc.—must be experienced in diagnosis and in those modes of treatment. Clinical assistants and trainees, paid and unpaid, will be required for the daily work of the clinic. It is proposed to begin the operations of the clinic on a modest scale, but in premises which can be easily adapted to accommodate increasing numbers of patients. Tabulated reports, showing the number and nature of the cases treated and the results, will be periodically published. It is anticipated that young practitioners and attendants will be trained at the clinic for undertaking similar work elsewhere.

It is recognized that the systematic combined use of physical methods on a large scale will be to some extent a new thing in medical practice in England. The proposed clinic will be founded with the definite purpose of providing facilities for concurrent investigation and treatment for incipient, subacute, and chronic diseases, particularly for rheumatic diseases in insured persons, and also for the results of injuries. It should be and will be, conducted in the spirit of co-operation with the voluntary hospitals and with the British spas.

## England and Wales.

### EXTENSION OF SHEFFIELD ROYAL HOSPITAL

THE new out-patients' department of the Sheffield Royal Hospital has been formed by converting a chapel adjoining the hospital, and includes a spacious waiting hall, medical and surgical examination and dressing rooms, and departments for ophthalmology, otology, rhinology, and laryngology. A small operating theatre, a research laboratory, and a dispensary are also provided on the ground floor, on the first floor is a new operating theatre for minor operations, together with an anaesthetic room and recovery room and a lecture room for the use of students and nurses. Mr F. M. Osborn, chairman of the board of management of the hospital, stated that the total expenditure on the new department would amount to nearly £20,000. During last year the daily average number of persons visiting the

out-patient department was 700. The Minister of Health, in declaring the department open congratulated the Sheffield Joint Hospitals Council on the good work it had done in securing co-operation and furthering economic and noted with satisfaction that the penny in the pound scheme was now yielding £100,000 a year for current needs. Mr Chamberlain emphasized the preventive aspect of the work in out-patient departments, and suggested that further improvement was possible in facilitating co-operation with general practitioners. The Minister also opened a new maternity and child welfare centre in Sheffield, which had been erected at a cost of £15,540, he commented on the fact that infant mortality had been more than halved in the town during the last twenty-five years. The attendances at the old centre for the first nine months of this year numbered 589,000, as compared with 550,000 for the whole of last year. Systematic visiting of children between the ages of 2 and 5 had also been instituted, and during the small-pox epidemic in the early months of 1927 the visits that had been paid to homes numbered 2,665.

### TUBERCULOSIS IN LANCASHIRE

During 1926 the death rate from pulmonary tuberculosis in Lancashire was the lowest on record for the fourth successive year. Low records were reached also by the death rate from non-pulmonary tuberculosis and the number of notifications of new cases of pulmonary tuberculosis. This may be contrasted with the fact that, during the ten years before the war, there was in this county little or no decline at all in the deaths from pulmonary tuberculosis. In his report for 1926 Dr G. Lissant Cox, the central tuberculosis officer of the Lancashire County Council, expresses the opinion that far fewer cases of tuberculosis escape being notified in that county than in many other parts of Great Britain. This great improvement in notification is attributed to closer co-operation between general practitioner, the local medical officers of health, and the tuberculosis officers. Dr Cox directs special attention to the value of heliotherapy and x-rays in the diagnosis and treatment of tuberculosis. As to heliotherapy, it has been found best that the patients should be treated three times each week, with an interval of at least one day between exposures. In a series of ninety-one patients at the Ashton-under-Lyne centre in whom the disease became quiescent and apparently cured, the average duration of the light treatment was rather under ten months. Previous to heliotherapy these patients had had an average of sixty-three months' treatment by other methods. At the Lancaster centre the average duration of treatment by light of fifteen patients was three months, as compared with an average of thirty-eight months by other methods of treatment previously. Dr Cox comments on the economy of time and expense which would seem thereby to be obtained. Heliotherapy was found to give very good results in lupus and in adenitis with abscess formation and skin involvement. It is emphasized that each patient requires individual care and attention as regards the initial dose and the gradation of exposure, a test radiation should precede treatment in order to determine the sensitivity of the skin. No permanent ill effect, either local or general, followed artificial light treatment. The county possesses nine x-ray plants, five being situated in dispensaries and four in county sanatorium hospitals. The number of skiagrams taken during 1926 was 4,791, as compared with 4,115 in the previous year. Dr L. Fagan Stewart contributes to the report a number of skiagrams of interesting pulmonary cases with clinical descriptions. He regards the x-ray examination as part of the clinical examination, the diagnosis being based on all the evidence available. In the earliest stages of bone and joint tuberculosis a skiagram may fail to reveal abnormality, but in tuberculosis a skiagram may suggest the presence of disease, though clinical symptoms suggest the presence of disease of the hip, this is said to apply especially to tuberculosis of the hip, knee, and spine. The absence of x-ray evidence cannot therefore, be accepted as contraindicating the existence of early tuberculosis. The use of x-rays was found particularly helpful in detecting such non-tuberculous conditions as early osteo-arthritis of the hip, early spondylitis deformans, Kohler's disease, and Schlatter's disease. Besides helping diagnosis, skiagrams of patients at intervals during treat-

ment made clear what changes were occurring, and sometimes determined whether operative intervention was required. Dr Stewart strongly advises that in all cases of non-pulmonary tuberculosis a skirgram of the chest should be taken, since a pulmonary lesion is frequently found which has become quiescent and does not give rise to symptoms. It is proposed to make a further study of the behaviour of such pulmonary lesions in the combined case.

## Scotland.

### EDINBURGH CITY AND THE UNIVERSITY.

THE question of financial assistance from the city of Edinburgh to Edinburgh University was raised at a meeting of the Edinburgh Town Council on October 27th in connexion with a speech which had been made at a recent graduation ceremony by Principal Sir Alfred Ewing. He had adverted to the help given to English universities by municipalities, and asked whether it was possible for the Corporation to assist the University of Edinburgh to a greater extent than it did. Treasurer Guest said that the question was not new. The relation which existed between the Corporation and the University was good, and at the present time the Corporation regularly assisted the University in two ways by means of a fixed annual payment of £2,170, and by relieving the University from liability to pay burgh assessments which was a very valuable concession. The Corporation also from time to time made special grants in response to special appeals. It was pointed out that while in England a large municipality exercised the function of the education authority and could thus impose rates for the purpose of giving grants to universities, in Edinburgh the education authority was a separate body and independent of the Corporation. An education authority in Scotland had power to make grants to universities which would be payable out of the rates, but the corporations of cities had not this power.

### EDINBURGH RECTORIAL ADDRESS.

Sir John Gilmour, D.S.O., M.P., Secretary of State for Scotland, before he delivered his rectorial address to the students of Edinburgh University, received the degree of LL.D. from the Chancellor, the Earl of Balfour, who recalled that the recipient was an old student.

The Lord Rector, after noting the healthy and gratifying growth of the University's social activities and of the number of its chairs and lectureships proceeded to deal with the development that had been associated with science and medicine. Every faculty, he said, had expanded greatly in recent years but the lion's share of this expansion had fallen to science and medicine, studies which came in contact with one another on many points. The last hundred years had witnessed a tremendous change in man's attitude to Nature and an immense increase in his command over natural forces. The islands, small as they were, had produced a large proportion of the men by whom this progress had been made possible. The names of intellectual giants like Faraday, Darwin, Lister and Kelvin leapt to the mind at once. Towards the close of his long and memorable career Lord Kelvin was reported to have said that his chief regret in growing old was that he could not hope to live to see the wonders which he was certain that the twentieth century would reveal. In the years that had elapsed since his death much had happened to justify his forecast. What Britain needed more than anything else at the present juncture was men and women of learning who had mastered the main principles of the new knowledge and had grasped the importance of applying this to the things of everyday life. From the time of their foundation the universities had had a preponderating effect in moulding our civilization through their influence on what was highest in the intellectual life of the people. They were now called upon to assume a higher responsibility than ever. It was their increased activities on the practical side that touched the general body of the nation most nearly. Improved health and increased prosperity were the fruits for which we looked to the seeds now being

sown in the laboratories. The strategic front of medicine had changed more and more. Its real aim in the future must be not to cure but to prevent—not to remain passively on the defensive and await the onset of disease, but boldly to assume the offensive. That depended, of course, on a very close observation of symptoms in individuals but it demanded also what medical research had been giving in increasing degree—a knowledge of the nature of the organisms to whose presence diseases were due, as well as of the means by which their ravages could most effectually be checked. The first achievement of Pasteur had been to save the silk trade of France by identifying the two diseases of silkworms and by showing how their germs could be detected and destroyed. His second was his demonstration of a simple means for securing immunity of sheep and cattle against anthrax. Research along similar lines into other animal diseases and plant diseases was full of potentialities for good. That was why the Lord Rector welcomed so heartily such developments as the Rowett Research Institute at Aberdeen and the new chair of animal genetics in Edinburgh. Knowledge had travelled far beyond the point which Virgil had reached when he wrote his *Georgics*, and there was still a long road ahead. He concluded by saying that what all could do was by diligently using their own minds and by earnestly seeking to extend their own opportunities to others, to help to swell the tide, on the force and set of whose currents depended the prosperous voyaging of humanity. After the conclusion of the address a luncheon was held in the University Union, at which the Lord Rector referred to the great record the University had behind it, and said that that record was as nothing to the record which was before it, that was in the hands of the younger generation. In the evening, Principal and Lady Ewing, supported by Sir John and Lady Gilmour, held a reception in the library of the old University. A dance was organized by the Students' Representative Council in the McEwan Hall.

### ANIMAL BREEDING RESEARCH DEPARTMENT, EDINBURGH.

The seventh annual report of the Animal Breeding Research Department of Edinburgh University gives a record of the work done in the new institute established during the past year at West Mains Road, Edinburgh. Dr F. A. L. Crew, director of the department, states that about thirty acres of land are at present used for the maintenance of experimental animals, while the department uses six laboratories in the neighbouring chemistry block of the University. The function of this department is to secure and democratize knowledge concerning the physiology of reproduction and inheritance, with special reference to the animals of economic importance. Lord Woolavington recently donated £10,000 towards the endowment of a chair of animal breeding in the University, and this department is managed under the joint control of the University and of the East of Scotland College of Agriculture. It has been in existence on a small scale since 1920, and recently received an offer of £30,000 from the International Education Board, contingent upon a further £30,000 being provided by the University and other private sources. Much work has been done in connexion with the study of sheep's wool, experiments having been in progress regarding the inheritance of various colours and patterns. It has been established, among other things, that a dominant black colour exists in the Black Welsh Mountain breed of sheep as well as in the Pechald breed while a recessive black is common to several breeds. Various recessive patterns have also been studied. A peculiar malformation of the limbs, found in lambs which are usually born dead or die soon after birth, has also been studied and found to be a definitely heritable character. Experiments have been continued in regard to the analysis of the Clydesdale breed of horses. Some 1,500 pedigrees have been tabulated and examined. It has been shown that remarkably little inbreeding has taken place in the Clydesdale. Work on cattle has also been continued, which is mainly a matter of collecting data for several years and analysing results. Data regarding the inheritance of the dun colour have been collected, and are almost ready for publication. Partial sex transformation

in cattle has been recorded, as this department had previously found to exist in the case of poultry. Work dealing with superfoetation in pigs and the increase of winter milk production in goats has also been in progress. In regard to fowls, experiments have been carried on regarding the duration of fertility in eggs, the role of the thyroid in determining characteristics, and the relation between and plumage, as well as numerous other points. As regards other laboratory animals, a study of calcium metabolism has been carried out in the rabbit, the migration of the ovum has been studied in the rat, ovarian implantation in the mouse, and some facts regarding the attitude of the wings in Polish flies. An appendix gives a bibliography of the various publications which have been issued from this department.

#### VACCINATION PROSECUTIONS IN EDINBURGH

Three prosecutions as the result of parents refusing to allow their children to be vaccinated were heard recently at Edinburgh Sheriff Court. In one case the father, on being asked to plead, began a statement to the effect that vaccination had never done any good, that his refusal was not a crime, and that there was no offence of this nature on the Statute Book. The sheriff intervened, and stated that if the man did not plead properly in answer to the charge he would be committed for contempt of court, whereupon the refusal to allow the vaccination was admitted. In each case a fine of 25s was imposed, including 15s expenses.

#### WORK FOR THE CRIPPLED CHILD

At a lecture and demonstration in the Music Hall, Edinburgh, arranged by the Edinburgh Association of the Chartered Society of Massage and Medical Gymnastics, Miss Gertrude Heifeld, F.R.C.S. Ed., who presided, said that a massage clinic had been established at the New College Settlement in Edinburgh, where 1,023 treatments had already been given to poor children under the direction of a medical officer, the fees being graded according to the circumstances of the patient. Miss Margaret Morris of the School of Dancing, London, gave an exhibition of remedial exercises with the help of members of her staff. The basis of this work, she said, lay in combining remedial exercises with an appeal to the artistic sense in the production of harmonious movements. If dancing did not help everyone to stand, walk, and breathe better it missed its aim. Dame Agnes Hunt, D.B.E., R.R.C., the founder of the Shropshire Orthopaedic Hospital, said that slumps and bad food were responsible for nearly one-half of the cripples. Next to prevention in these matters came early treatment. Almost all cripples could be taught to earn their own living, and this ideal had to be set before the mind of every cripple.

#### HEALTH LECTURES FOR INSURED PATIENTS

At a meeting of the Insurance Committee for the city of Edinburgh, held on October 27th, arrangements were discussed regarding a proposed series of health lectures by doctors on the committee's panel to their own insured patients. It was reported that, following on the resolution of the committee to provide courses of lectures, a number of doctors in the city had been approached and had agreed to participate in the scheme. The general idea is that each doctor should lecture to an audience of his own patients only. The committee agreed to arrange meantime for four lectures by doctors in various parts of the city as an experiment. In order to ensure that the lectures would be prominently brought before the insured persons concerned, an invitation to attend the lectures would be issued by the committee to every patient on the lecturer's list.

#### SCOTTISH SERBIAN HOSPITAL

A public meeting was held on October 26th in the hall of Queen Margaret College, Glasgow, to appeal for funds on behalf of the Children's Hospital in Belgrade. The hospital had been founded by Dr Katherine Maephail, a Glasgow graduate, and was said to be the only hospital for children in Jugoslavia. A committee representative of women's organizations in the West of Scotland was appointed to raise money for the institution. Miss David

Mason, wife of the Lord Provost of Glasgow, who presided, said that the hospital had become not only a centre for child welfare work but now also a training school for Serbian nurses. The Marchioness of Aberdeen spoke of a visit to the hospital last year and of the sympathy which Serbian women felt for this country, and of their hope that this hospital would not be abandoned. Dr Katherine Maephail, the original founder of the hospital, said that she and her staff were working hand-in-hand with the Serbian Government, but foreign support had been greatly diminishing, and for some years the main support had come from the "Save the Children" Fund in London. The Serbian Ministry of Health was very anxious that the work should continue, and British support was very necessary for this.

#### PROPOSED HOSPITAL FOR HADDINGTON

During the course of last summer an appeal was made by a local committee in Haddington for a sum of £7,000 to provide a cottage hospital for Haddington and the surrounding district. Towards this a sum of £2,881 has already been collected. Mr John Vert of Pendleton, Oregon, U.S.A., who had been born in Haddington and was the son of a former provost of the burgh, had intimated his desire to give £7,000, the sum necessary to erect the building. Conditions attached were that the hospital should be called the "Vert Memorial Hospital," and that the committee should undertake to make every effort to raise at least another £7,000 for a permanent endowment fund. Mr Henry Vetch, a local proprietor, also offered to give one acre of ground as a site for the hospital. A donation of £1,000, from Mr Frank Hoisburgh, Cleveland, Ohio, a former resident of the burgh, was announced.

## Ireland.

#### MEDICAL REGISTRATION IN THE IRISH STATE

The first meeting of the Irish Free State Medical Registration Council, constituted under the Medical Practitioners Act, 1927, was held on November 1st in the board room, Government Buildings, Dublin. The Minister of Local Government and Public Health, General Mulcahy, who was accompanied by Mr McCarron, secretary to the department, and Dr Stephenson, chief medical adviser, received the members, all of whom were present. Their names were given in this column on October 29th (p. 800). Dr Denis Coffey was unanimously appointed President of the Council. The Council proceeded to consider the steps necessary for the establishment of the *Free State Medical Register*. Under the Act the Register must be established not later than May 28th, 1928.

## Correspondence.

#### "WEST AFRICAN YELLOW FEVER"

SIR,—I was glad to observe that in your note on yellow fever in West Africa (October 29th, p. 798) you did not fall into the error, which appears to be now common, of using the term "West African yellow fever," which implies that there are at least two varieties of that disease, a fact which has not, so far as I am aware, yet been proved. In conversations, in 1924, with Surgeon General Carter, U.S.A. (the greatest authority, then living, on that disease), at Kingston, Jamaica, and also in Panama, he expressed a very decided opinion that West Africa, and not the West Indies, was the original home of yellow fever. If this view is accepted "yellow fever" is the proper name for the disease as it appears in West Africa, and no qualifying adjective is necessary.

In a paper by Oskar Klotz and Winifred Simpson in the *American Journal of Tropical Medicine* (vol. vii, No. 5, p. 271), entitled "Jaundice and the liver lesion in West African yellow fever," I find the following:

"Intensive studies upon yellow fever have been made upon the Western Hemisphere and the clinical data and logical findings which have given us the picture of the disease have been based upon observations made in the Americas."

also. Only a few pathological reports upon spread of the not dealing with the disease as a whole have been published by Steven on Turnbull, and Seidlin in relation to the disease known as yellow fever in West Africa. (The initials are mine)

This, I submit, does a great deal less than justice to the work and reports of the Yellow Fever Commission (West Africa), appointed by the Secretary of State for the Colonies in 1913, of which the late Sir William Leishman, Sir Ronald Ross, and Sir William J. Simpson were the original members, and of which I had the honour to be chairman.

The reports of that Commission and of the investigators who were sent out to West Africa, among them was the late Mr. Broot, dealt very fully and exhaustively with the disease in all its respects, and I am not aware of any important additions to our knowledge of that disease which have since been made, with the exception of those for which we are indebted to the late and grievously lamented Adrian Stokes.

I note in the paper just mentioned the following:

It is not our purpose to discuss the parallelism of the lesions of the various organs in fatal cases occurring in Africa and in America. Suffice it to say that in a pathological study of the materials from thirty-five fatal cases taking place in Nigeria and the Gold Coast we were led to conclude that no fundamental difference was to be noted.

An erroneous bacteriological observation would appear to be an inadequate reason for a change in the name of a disease.—I am, etc.,

JAMES K. FOWLER,  
Chairman late Yellow Fever Commission  
(West Africa)

London W. 1.

#### WATER SUPPLY AND IODINE IN RELATION TO GOITRE

SIR—In your issue of September 24th (p. 559) you say: "There is a tendency to consider that deficiency diseases are almost synonymous with avitaminosis." To this view exception is taken, and you state that deficiency of certain inorganic salts in the diet amongst them iodine, may give rise to disease. The mention of iodine presumably refers to endemic goitre. I would refer your readers to the issue of January 15th (p. 24), where McCarrison states that deficiency of iodine had no relation to goitre in the Sanjour school. McCarrison has recently published (*Indian Journal of Medical Research*, 1927, vol. xv) a paper on "The experimental production of a new type of goitre unrelated in its origin to iodine," in which he recapitulates the present position with regard to the relation of iodine to goitre. In speaking of the various types of goitre produced by him experimentally, he says:

With the possible exception of those caused by the administration of cultures of fecal bacteria the goitres produced in this way are preventable by increasing the intake of iodine proportionately to the hygienic conditions of life of the animals or of the excess of fats or of lime in their food.

In the examination of a series of 84 samples of soil taken from different parts of Derbyshire I found that the limestone soils contained an average of 59.0 parts of iodine and the gneiss soils an average of 18.0 parts of iodine per 10 parts of soil. Yet it is on the limestone, and particularly these places deriving their water supply from this formation that colloid goitre has in the past been so prevalent.

The examination of the iodine content of water supplies derived from the limestone and the millstone grit shows that the absence or presence of iodine in these waters in no way related to the present prevalence of goitre in districts depending on them. My own survey work in Derbyshire has shown that there is approximately three times as much goitre of a marked character in children drinking water from the limestone as in those who drink water derived from the millstone grit and if these places which draw their water from deep borings in the grit, which certainly tap water from the limestone underneath, were excluded the marked relation between goitre and drinking water derived from the limestone would be still more obvious.

But there are exceptions to the rule on both sides which have puzzled me greatly, and it is only on reading McCarrison's paper that I have been able to put upon

the solution. He proves very conclusively that deficiency of vitamins A, B, and C in the modern diet of the people, and particularly vitamin B, even in the presence of abundant iodine, can give rise to a type of goitre hitherto undescribed.

In view of the confusion which exists in regard to the causation and prevention of the thyroid diseases included under the generic term simple goitre the results of the experiments are illuminating. If it seems likely that the type of goitre here described be found to occur sporadically among the white flour-eating peoples then the view that all simple goitres are due to iodine deficiency and preventable by the prophylactic use of iodine must be abandoned. The experimental evidence here produced makes it probable that in western countries this new type of goitre will be encountered in its progressive stage in childhood and in young women whose food contains much vitamin poor carbohydrate, little suitable protein and less green vegetables and fruit, and in its retrogressive stage in older subjects whose food has similar faults. If this should prove to be so iodine will neither prevent nor cure the disease but a well balanced diet rich in vitamins will.

It is interesting to note that Otto Steiner in 1924 came to a very similar conclusion concerning goitre in some parts of Switzerland. The subject is one of importance in practical medicine, and McCarrison's paper is deserving of the widest notice.—I am, etc.

HEANOR DERBYSHIRE Oct 26th PHILIP H. J. TERTON, M.D.

#### CONVULSIONS DURING GENERAL ANAESTHESIA

SIR—I have read with great interest the discussion on epileptic convulsions occurring during ether anaesthesia reported in the *BRITISH MEDICAL JOURNAL*.

In my recent book *Epilepsy* (German edition, J. Springer, Berlin, English edition to be published shortly by Bailhere Tindall and Co.) I have been able to assemble evidence afforded from experimental work on animals and from clinical cases which goes to prove that the period of transition from unconsciousness to consciousness as in waking from sleep, is the period *par excellence* for the occurrence of epileptic phenomena. Further, a latent tendency to epileptic manifestations is frequently betrayed for the first time at this period. Although the example quoted relates to the normal experience of transition from unconsciousness to consciousness—that is, waking from sleep—the period of transition from unconsciousness induced by a narcotic, by suffocation from immersion in water, strangulation or other accident to consciousness, is associated with the same tendency as regards the demonstration of epileptic phenomena. The evidence afforded seems to me to suggest the question: Why are epileptic manifestations so comparatively rarely seen in persons emerging from anaesthesia?—I am, etc.,

ALAN CRIDAM, M.D. L. J. J. MUSKENS

SIR—I note that in his letter in the *JOURNAL* of October 29th (p. 886) Dr. Pinson adheres to his original suggestion as to the cause of ether convulsions—that is, that they are "the outcome of the extensive action of the CO<sub>2</sub> in patients who are sensitive to this naturally and who are under the influence of ether." This still seems to me hardly adequate to fit all the facts. Why, for instance, have they only appeared during the last few years? I can find no reference to them prior to the articles by Dr. Pinson in the *JOURNAL* for May 28th and the late Dr. S. R. Wilson in the *Lancet* of the same date, and all the cases quoted are comparatively recent. Either used to be frequently given in circumstances much more favourable to high CO<sub>2</sub> concentration when closed inhalers were more in vogue. Why have they appeared predominantly in Manchester, where the bomb is probably used more extensively than elsewhere? Dr. Pinson cites eleven of his fifteen cases as occurring with the bomb and the only other experience of true convulsions which I have seen reported occurred with the bomb. It may be a matter of pure coincidence but it seems to justify investigation on the lines I suggested.

As regards chest complications I can only say that Dr. Pinson's experience has differed from mine.—I am, etc.,

CHAS. W. NORRIS, M.D. H. P. FAIRLIE

*Epilepsy*, Part I ch. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

# CONVULSIONS DURING LOCAL ANAESTHESIA

SIR,—I have read with interest Dr Liston's letter on this subject in the *BRITISH MEDICAL JOURNAL* of October 29th (p 806)

On March 6th, 1925, I extracted the right upper lateral incisor of a man of about 40 years of age. The local anaesthetic used was locosthetic, a preparation containing 0.75 per cent. of cocaine hydrochloride and one part in 50,000 of adrenaline chloride, and the quantity was something less than the recommended dose of 1 ccm., which contains one ninth of a grain of cocaine. After waiting three or four minutes after the injection the extraction was carried out without difficulty or pain. The patient rinsed his mouth with two tumblers of water in succession, and then, probably 10 to 15 minutes after the injection, he had a violent epileptiform convulsion. He lost consciousness, his breathing became stertorous, and his skin and conjunctivae assumed a jaundiced hue—not purple, as in Dr Liston's case. In this condition the patient kicked a bracket table, two feet higher than the seat of his chair, and drove it through a plate glass window.

A few seconds later he recovered, but was not able to leave the house for an hour, at the end of which time I sent him home under escort in a taxi cab.

He stated that he had never had a fit before. On two occasions since 1925, using novocain, I have extracted teeth for this patient, without any unpleasant results—I am, etc.,

London, W1, Nov 1st

A J MAURICE, L D S Ed

## MANAGEMENT OF MENTAL DEFICIENCY

SIR,—The report of the Board of Control must interest greatly those engaged in mental deficiency work. Taking the remarks seriously

1 I agree entirely as to the good results obtained from institutional treatment, provided the cases go there early enough. Those institutions are undoubtedly better planned in which patients are disposed in separate blocks, such as Monksall, and, in the case of simple epileptics, at Chalfont St Peter. This arrangement allows of much more accurate classification, and has several other considerable advantages not touched upon in the report. I am convinced that any prospective colony should be arranged upon these lines.

2 *Marriage of Defectives*—This is so obviously undesirable that no comment is needed.

3 *Sterilization*—While at once admitting that the operation, in its most successful issue, would not obviate the necessity of institutions, I believe that suitably selected cases would relieve pressure elsewhere and afford many cases the greater freedom they can reasonably claim. While agreeing with most of what Dr Turner (Report, p 44) says, I still think that a minority, however small, have a claim to special consideration both on their own account, and also for financial reasons. I refer to this point again in my memorandum upon hostels.

4 *Ascertainment*, however accurate, is not to be considered an end in itself. It is equivalent only to requiring ground for a colony and in proceeding no further. Ascertainment in Devon is commendably high. I think I may say that all engaged in the work here take this as a strong incentive to renewed activity for some tangible results to their labours.

5 *Supervision* to a certain extent is the supplement to ascertainment, and, pending increased institutional treatment, is perhaps the best means of keeping in touch with known defectives. The size and geographical nature of Devon, however, make both ascertainment, and especially supervision very difficult—more so, I fancy, than is realized by the Board of Control itself.

6 *Occupation centres* are admittedly excellent, and do much both in reaching those cases for which institutions have no room, and those whose parents are unwilling to send them from home. We have few in Devon, and, were there more, access to them would be difficult unless special transport facilities were provided. The want of them might conceivably be met by setting up special classes in some of the smaller towns and larger villages.

7 *Guardianship*—I do not share the Board's optimism with regard to this scheme. It is most difficult, often impossible, to get the right sort of guardian in the right locality. Most cases suitable for modified "discharge" require great care in the choice of environment in every sense of the word, and it is most difficult to combine suit-

ability as regards patient, guardian, environment, and accessibility. The ideal solution of the difficulty of providing for leave of absence and discharged cases lies in the selection of hostels. These would afford the patient a feeling of personal freedom and change, combined with the knowledge that he or she was at least a partial wage earner, would relieve the ratepayers by producing a class of partial wage-earner, and would afford a feeling of safety, as to the disposal of patients, to the authorities concerned. I am quite aware of the difficulties involved in the scheme, but most difficulties can be overcome. For instance, in the more rural districts agricultural and road work might replace the usual work of the more ordinary hostel. I may also remark that sterilization might usefully be employed in many cases suitable for a hostel.

8 *Mental Deficients in Mental Hospitals*—I agree that this is in every way undesirable. Should the ordinary inmates in any way become aware of the presence of idiots and such-like, the effect upon their unbalanced minds might be devastating.

9 *Encephalitis Lethargica*—There is little doubt that we are now seeing many results of this in police courts and elsewhere. In looking over reports from our school medical inspectors I am much interested to note quite a number of children, classed dull and backward, who have definitely or indefinitely suffered from this disease. I am keeping a special record of these cases in order to be able to compare their past and future histories. I am doubtful whether these cases should be returned as normal to an ordinary school, though a large number of them are certainly not certifiable under the Mental Deficiency Act—I am, etc.,

Exeter Nov 6th

CLAUDE A P THURMAN

## CONTRIBUTORY SCHEMES HOSPITAL CLUB PRACTICE

SIR,—In your issue for October 22nd last (p 751) you refer to a scheme proposed for Birmingham which, in its injustices, fairly beats all other schemes so far heard of. You express an opinion on such schemes which happens to be on all fours with statements made by myself at the July Meeting of the Representative Body (*BRITISH MEDICAL JOURNAL*, SUPPLEMENT, July 30th, p 75), and it is a matter of surprise that so far no one has commented on that opinion. It is this:

"Contributory schemes are forms of insurance. They are just as much insurance as the insurance of one's house against fire. There is a tendency in some quarters to attempt to disguise this fact by a haze of philanthropic zeal on behalf of the hospitals. Such zeal is right and laudable, but it should not be allowed to blind the critical eye, so that it fails to scrutinize the details of the policy of insurance which is enacted under the guise of contributory schemes. A lack of care in the initiation of these schemes may mean a world of trouble later on, and possibly strained relations between the authors of the schemes, the hospitals, and the contributors, which might be avoided by a little cool criticism at the outset."

Everyone who concentrates on this question must agree with your statement, especially had you referred in the sentence to the "private practitioners." No distinction can be drawn between a scheme for the provision of domestic medical attendance for services within the competency of a general practitioner and another scheme for services which, as a rule, are beyond his competence. Both are forms of "club practice," however hidden under a euphemism. Under both the premiums paid should be adequate in order to make a reasonable payment to the practitioner for the services guaranteed by the scheme. If a practitioner refuses payment it does not make any less a case of club practice, whilst he lays himself out to the accusation that he is underselling his profession to his colleagues, for, in fact, he places himself on some lower plane than the doctor who opens a house to his patients for sixpence (with medicine nuncupate) in a district where half a crown is recognized by all as reasonable. And yet at the moment this is the attitude of many visiting staffs of hospitals.

The policy of the Association states distinctly that the beneficiaries under these insurance schemes are not to be considered objects for charity, but that the full cost required to pay, by adequate premiums, the full cost of



benefits offered and received. The policy also depreciates the conduct of such schemes by hospitals. But here, unfortunately, the reasons which would appeal to the profession are not stated and, if known would show that the proposal is especially pernicious. By conducting such schemes of club practice the hospitals are intentionally robbing in, and offering to provide in their club, many medical services which equally well, and with every consideration for the best interests of the patients, could be given either at the patient's home or at the private house of the specialist and be paid for direct.

By acquiescing in clubs conducted by hospitals the visiting staffs in areas where there are in addition to themselves medical practitioners able to give such services are not only foregoing for themselves legitimate fees, but are whilst being subsidized, underselling their competitive practitioners, and are therefore—possibly unknowingly—acting in a manner which all must own to be derogatory to our profession. When voluntary hospitals are taken over by the State, or when the provision of "additional medical benefits" for those in these clubs becomes a State concern, it will be very difficult for the visiting staffs to explain why from the State they should expect any more in form of payment than the kudos with which they were content when they served the clubs run by or for the voluntary hospital authorities.

The general practitioner and medical specialist not on the staff of a hospital complain that they are being undersold, that their patients who can pay full fees are being deprived, in consequence of this loss of practice, of that up-to-date skill and experience they are entitled to, and that all this is harmful to the public weal.

At the present moment many hospitals are further extending their out-patient and specialist departments—the necessity for which is in great part brought about by the to-be expected increased demand for free attendance consequent on the formation of these clubs.

It seems to be very little appreciated, even amongst those placed highest in the Association's organization how greatly these clubs are making inroads into what should be private practice and increased private practice.

The policy of the Association which would meet all the difficulties of the situation is succinctly stated in the resolution appearing on page 74 of the *SECRETARY'S* of July 30th last. If the visiting staffs of voluntary hospitals would bestir themselves and, linking up with the Division (or Branch) organization of the Association, thrash out an application of that policy which would apply to their area, securing its acceptance by their governing body, it would prevent the trouble, friction, strained relations and discussion in our profession which are likely to extend and to which you refer—I am, etc.,

Here Nov 5th.

E ROWLAND FORTHEGILL

### HOSPITAL POLICY

Sir—Mr Connell in his letter of October 8th (p 651), is to be congratulated on bringing to the front facts which are either not known, or, if known, deliberately kept in the background in discussions on hospital policy. As a general practitioner I venture to mention a few points and express a few opinions which, I think will lend support to the statements contained in Mr Connell's letter.

It is common knowledge, at least in this part of Birmingham that Dudley Road Hospital has become within the last five years, the best and most progressive hospital in the city. Why is it that a Poor Law hospital has so suddenly and so quickly emerged from "infamy" prejudice into such a high post on in popular estimation?

The reasons are not far to seek. To the wage-earning class the first question that arises when hospital treatment is required is: How soon can it be commenced? The people desire to get into hospital as soon as possible while at the same time they demand the highest standard of

treatment. It is erroneous to believe and imagine otherwise. Dudley Road Hospital meets these requirements.

The voluntary hospitals, on the other hand, are quite incapable of dealing with the large number of patients requiring hospital treatment in Birmingham. True, the number of beds is limited, but it is strange that if a patient is in a position to pay a consultant a fee beforehand, he can, in my experience obtain admission within a day or two of the day on which the consultation took place. If no fee is forthcoming, his name is put down on the waiting list, the period of waiting being anything from six months to three years. Such a long wait is both irksome and irritating to a working man, and tends to lead to a state of mind which is certainly not conducive to improvement in his general health.

Many get tired of waiting and ask me to send them to Dudley Road Hospital. Many, knowing too well of the difficulty of getting admitted to a voluntary hospital, ask me to send them to Dudley Road Hospital, while many—I think I could say most—now express a keen desire to go to that hospital.

In view of these facts it is little wonder that most of my patients receive hospital treatment, when required, at Dudley Road Hospital, it is the hospital of choice. I am able to get them admitted in either of two ways. First, by giving them a note to the relieving officer. Secondly, by giving them a note to attend the out-patient department of the hospital. The second method is new, and is due to the formation of a splendid out-patient department by the medical staff of the hospital. All emergency cases are admitted by the first method, and all less urgent cases by the second.

Mr Connell, in my opinion, is rightly indignant, and is fully justified in saying that Mr Herbert Eason's deductions are erroneous as regards Poor Law hospitals, and in particular as regards the hospital under discussion. I have no hesitation in saying that no hospital, either teaching or non-teaching, works with a higher professional standard or at a higher pressure than Dudley Road Hospital.

It is true that the medical staff can devote most of their time to the work of the hospital—they are not dependent on private practice for a livelihood—but it is far to have this hospital, which I maintain, is working at as high a pressure as a voluntary hospital and is absolutely essential to the general practitioner and the public, understaffed while the voluntary hospitals, which are not able to meet the demands made on them by the general practitioner and the public, would appear to be oversuffed? I do not think this is fair, but it will continue as long as the medical profession clings to the voluntary system.

Why does the profession cling to the voluntary system? Surely it is honest enough to realize that it is a system which can never supply the needs, in proper fairness, of the public, and to acknowledge that, at present, the Poor Law hospitals are making a great effort to meet those needs. These efforts are entirely on the part of the medical staffs, and I feel that they are to be congratulated on fighting such a hard battle, for they are opposed by a Poor Law system which tends to hamper and retard progress, and they are not receiving from their own profession the support and recognition they deserve.

Let us as soon as possible have a unified hospital system, but do not let us make the mistake of having it controlled by either a voluntary medical staff or a well meaning but incompetent lay body—I am, etc.,

Birmingham Oct 23rd

WILLIAM MCC MACPHERSON

### DENTAL RADIOGRAMS IN DIAGNOSIS

Sir—Mr Badcock's letter of October 22nd (p 755), on dental radiograms in diagnosis, raises a question of the utmost importance to both medical and dental practitioners. Very few would disagree with the statements made but the issue is much wider I believe, than the interpretation of dental radiograms. The relation between the doctor and the dentist certainly could be improved.

A greater knowledge of dental pathology would appear to be the solution for all practitioners. The dentist cannot know a special form of pathology without being more

<sup>1</sup> The resolution referred to is as follows: That the visiting medical staff of hospitals should seek to secure arrangements with boards of health for the allocation of recognition of their services in accordance with Section XII of the Voluntary Hospitals (United Kingdom) Policy of the Association since any laxity in securing such recognition is detrimental to medical work of all kinds and ultimately to the general public.

widely recounted than at present with the general principles of the subject. The medical practitioner has little opportunity of acquiring knowledge of dental diseases, the curriculum for any examination does not demand such knowledge, and, if demanded, hardly any examiner under the present arrangements is capable of conducting such an examination.

The number of medical students attending the dental departments of the hospitals for information, beyond that of extraction of teeth, is remarkably few. In fact, for the most part, medical men know nothing of dental diseases or their pathology. The commonest interpretation is that discoloration constitutes disease, frequently have I known a tooth stained black by the application of silver nitrate to be regarded as the worst tooth in the mouth. These remarks may be thought too severe, but I would not have them so interpreted, for until recent years only the few have regarded pathological changes connected with the teeth as of great importance.

What seems to have happened is that the medical practitioner, possessing in radiograms his only form of information upon dental conditions, has credited them with an excessive value, whilst the dentist, with a limited knowledge of pathology, has done the same.

Stereoscopic radiograms, when obtainable, are of greater value than simple films or plates, but each is made through such a thickness of bone that unless a marked change has resulted little information can be derived.

In the future some knowledge of dental conditions must be acquired by all medical men. The next issue, therefore, is educational. Can the curriculum be extended? I feel sure the time will come when all special departments will have to be attended and a separate examination conducted upon the elementary principles of each of these special subjects—I am, etc.,

London, W 1, Nov 1st

W WARWICK JAMES

#### "THE HISTORICAL ASPECTS OF QUACKERY"

SIR,—I should like to thank Professor Clark for assuring me that his remarks were not to be applied to the general body of doctors using Abrams's methods in England, but also to remind him that my misinterpretation of his words was perfectly excusable since he chose to bracket qualified doctors with quacks. On this account I maintain that his attitude really remains as indefensible as ever. I have sufficiently laboured the point that no qualified doctors, not even Abrams, can legitimately be bracketed with quacks by Professor Clark just because their views appear mistaken to him. Scientific criticism is possible without doing this sort of thing. For example, his views may also appear mistaken. If he had an intractable disease, and cures of which he observed to occur as the apparent result of a weird procedure, he would try that procedure himself, and his chief motive, as he well knows, would not be in underlying belief in magic. For this and other reasons I regard his views on the historical aspect of quackery as largely mistaken, but I do not therefore scorn them and bracket him with quacks. So far as I can see, escape from my criticism is only possible if he shows that I am under another misapprehension and that his remarks on quack practice were not applicable to any persons who possess or possessed medical qualifications equal to his own, whatever the nature of their beliefs.

I await his reply with interest, in the hope that I may be proved still further mistaken in my interpretation of his remarks—I am, etc.,

London W 1, Nov 5th

J KENELM REID

SIR,—With experience should have taught Professor Clark that in getting out of an untenable position he should act as a man with all due apologies. He now seems to have dropped both Abrams and Hahnemann, but he cannot get out of his head his idea, and that of nobody else, "that all diseases can be both diagnosed and treated by means of two boxes containing some simple electrical apparatus." He knows perfectly well that Abrams never confined himself to "two boxes," but was always trying something new. He often said that a problem solved is a problem dead, and rushed off to something else which his fertile brain saw

required solving. He did much more investigation of psychology than my friend Dr Kenelm Reid who at last has extracted a feeble apology from Professor Clark.

Some of Abrams's latest work was much on the lines as that of Dr Bissky. They were both investigating psychology on a physical basis and, *inter alia*, that determined when a man is speaking the truth. Although Professor Clark was, I believe, in London during the two visits of Dr Bissky I have not heard of him or any other person from Tavistock Square attending any of Dr Bissky's demonstrations. So far as I know there is only one of Dr Bissky's diagnostic apparatus in this country, and that is in the possession of an Abrams practitioner.

However simple the boxes may be in Professor Clark's estimation, they work, and that is the great point. There is no standing still in Abrams's methods any more than there is in wireless. Marconi says, "we are just entering what may be called the field of vibrations, a field in which we may find more wonders than the mind can now conceive."

Abrams tried hard to abolish the personal equation and substitute a mechanical contrivance for the human subject. Bunnell is at present working on the same line, but personally I am very doubtful about the nit of man ever being able to produce anything so delicate and reliable as the human nerve reflexes. We have always had the artist and the copyist, the latter should try as far as possible to imitate and emulate the former.

I would advise Professor Clark before he again ventures into print to try and get a knowledge of the subject with which he is dealing, and before again attacking Hahnemann he should see Dr Boyd of Glasgow, who will teach him a little physics as well as homoeopathy—I am, etc.,

London, Nov 4th

JAMES BAIR

#### ULTRA-VIOLET RADIATION AND VARICOSE ULCERS

SIR,—Dr Dore's letter (October 22nd, p 757) raises the following points: (a) My comments in the *BRITISH MEDICAL JOURNAL* of September 10th (p 472). (b) The indiscriminate use of actinotherapy and exaggerated statements of the results. (c) The role of ultra violet radiation in the treatment of varicose ulcers.

(a) My comments were made to draw attention to the wide divergence of opinion among dermatologists as to the value of actinotherapy. The following summary of the views of dermatologists who took part in the discussion on Dr Dore's paper at the Annual Meeting of the British Medical Association (*JOURNAL*, August 13th, p 255) will make this point clear.

*Chronic Septic Ulcers*—Dr S T Dore Benefited by ultra violet radiation. Dr F Gardner Useful. Dr A C Foxburgh Most useful.

*Pyrexia (Adults)*—Dr Gardner Aggravated. Dr W J O'Donovan Improved.

*Itch*—Dr O'Donovan Doubtful. Dr Gardner Improves. Dr Dore Inferior to x-ray.

*Psoriasis*—Dr O'Donovan Very occasional benefit.

*MacCormac* Very variable results. Dr Gilchrist (USA) Mystical. Dr Dore Little permanent improvement.

This difference of opinion amongst dermatologists is not confined to the above meeting. More instances can be quoted—for example, *Proceedings, Royal Society of Medicine*, March, 1927, Section of Dermatology, p 45 (558).

*Pyrexia of Bacter and Ravel (Adult)*—Dr O'Donovan Longed light therapy most successful. Dr G B Dowling Never seen any remarkable result from even six months treatment with the quartz lamp.

These differences of opinion, it is suggested, are due to differences in technique adopted by the above observers. None of them, however, actually mentioned what technique had been adopted in the different conditions treated. If the technique had been similar the results would have been more uniform.

(b) This is too big a subject to be adequately discussed here. The worst offenders are the people who have bought lamps, their training and knowledge of the subject being obtained from a manufacturer's pamphlet. If a lamp, it must be used on every part of the body and to justify its use good results must be obtained.

(c) Dr. Dore admits that varicose ulcers benefit by ultra-violet radiation, but evidently does not consider that it should be adopted as a routine method. What are the contraindications? All varicose ulcers are septic. All varicose ulcers are surrounded by skin with defective nutrition. New epithelium must be stimulated to grow over all ulcers. If ultra-violet radiation is of value in these three factors in some ulcers why not in others? It may not be necessary to resort to ultra-violet rays in small recent ulcers, but the problem is the large chronic ulcer in which the old methods have failed even when the patient is at complete rest, and where surgical intervention has given no relief.

With ultra-violet radiation I have succeeded in healing ulcers which had remained open in spite of continuous treatment for periods varying from twenty-four to five years—I am, etc.,

London W1 Oct 24th

M. WEINBERG

#### PAROXYSM OF AURICULAR FIBRILLATION

SIR,—Dr. Arthur Stephens has done well to draw attention to the singular communication of Dr. Brewis, under the above heading in the *JOURNAL* of October 1st (p. 595).

In this letter a case, diagnosed as auricular fibrillation, is described as exhibiting an impulse in the auricular area which could be both "seen and felt", further, that "the auricular systole was distinctly heard". Auricular fibrillation is a morbid state which shows us disconnected contractions of the individual auricular fibres, the result of which is complete paralysis of the auricle. It is possible that the contractile power of the fibres is undiminished, and that the paralysis results not from lack of power output, but solely from lack of concerted action. As it stands, Dr. Brewis asserts that a paralysed auricle yields an impulse which can be seen and felt, and is audible, *quod est et videtur*, for he will not contend that the fibrillary contractions will be visible, palpable, and audible.

From a clinical standpoint it would be better if cases of auricular fibrillation were labelled paralysis of the auricle—the consequence or inco-ordination of the fibrillary contractions—this so far as the auricle itself is concerned. We know, however, that at a pinch the circulation can dispense with the auricular systole, and that our concern, as physicians, is rather with the irregular action of the ventricle which attends upon the auricular fibrillation, and which may seriously impair the ventricular output, but that is another matter—I am, etc.,

London W1 Nov 5th

HARFINGTON SAINSBURY

#### PYREXIA DURING THE PUERPERIUM

SIR,—The legislative distinction between fever and pyrexia to which Dr. Hebblethwaite draws attention, is indeed a cause of confusion. Surely no one will deny that these words differ only in their derivation, the one from Latin, the other from Greek. Any dictionary confirms this.

Would it not be simpler to add the word "major" or "minor" to whichever of the two specified degrees of puerperal febrility—call it fever or pyrexia, as you will—has to be noticed? Statistical and administrative purposes would be equally well served, and the philologist would not be left wondering—I am, etc.,

B. FRASER BENSON, M.R.C.S., D.P.H.,  
Major late I.M.S.

Edinburgh Nov 6th

#### THERAPEUTIC ABORTION

SIR,—Dr. P. P. Dalton says in his letter (November 5th, p. 849) that "abortion is never justified," so he naturally deplores the term "therapeutic abortion" and he even asks what it means. It surely means abortion performed by a medical practitioner on purely medical—that is, pathological—grounds, the adjective differentiating it from that which is done on other grounds and which is still illegal, except perhaps in cases of pregnancy following rape. To protect family life "is certainly vital and abortion obviously so, where it preserves the health or life of the mother or of a foetus—I am, etc.,

London S.W. Nov 6th

BENJAMIN DUNLOP, M.B., Ch.B.

### Medico-Legal

#### ACTION FOR NEGLIGENCE AGAINST A SURGEON

In the King's Bench Division last week, before the Lord Chief Justice and a special jury, an action was heard in which Miss M. R. Beek claimed from Mr. Neil Sinclair, F.R.C.S., a London surgeon, damages for personal injuries caused by a burn during an operation. The defence was a denial of negligence and Mr. Sinclair counterclaimed £15 5s. as fees for his treatment.

Mr. Malcolm Hilbery, in opening the plaintiff's case, stated that her complaint was that during the performance of an exploratory rectal operation under an anaesthetic the defendant permitted her to be severely burned on the right knee by hot water to which the nurse Miss Verney had left in the bed. Counsel argued that there had been carelessness for which Mr. Sinclair was liable because the surgeon was responsible for the negligence of the person who assisted him at an operation and was under his control.

In her evidence bearing out counsel's opening statement Miss Beek described the after effects of the injury, and how the members of the jury the car on her knee. In cross-examination by Mr. Neilson K.C. she could not recall the nurse having told her that the accident was entirely her fault. Did he not tell you that the burn happened because she forgot to remove the hot water bottle from your bed before the doctor came? No. I cannot remember that. I do not agree with it.

Mr. Cecil Wakeley, F.R.C.S., stated that he examined the plaintiff on November 18th last year—the operation having been performed on March 31st—and found evidence of a burn of the third degree the nerve endings were left exposed in the scar. He agreed in cross-examination that certain duties at operations were usually left to nurses and that while a surgeon performing an examination was in general control he could not be watching for instance the effect of a hot water bottle in the bed.

On behalf of the defendant Mr. Neilson submitted that there was no case to go to a jury but his lordship said he would not stop the case at that stage. Mr. Neilson continuing said that Miss Verney, a highly qualified nurse, was employed by the plaintiff. Before the doctors arrived for the operation Miss Beek asked to keep the hot water bottle which he had in bed with her and Nurse Verney consented meaning to take it out when the anaesthetic was begun. She forgot to do so, however. Neither Mr. Sinclair nor the anaesthetist Dr. Bruce Poole had any idea that the bottle was in bed while the operation was in progress nor had they any reason to think there might be one. The nurse was in no sense the surgeon's servant although it was true that he had power to ask her to do something and if in carrying out such an instruction an accident happened he might be responsible. In this case however the defendant was not responsible for what occurred. So far as those duties were concerned which nurses always carried out a nurse was not the doctor's servant.

Mr. Sinclair in the course of his evidence said it was not until after his examination that he discovered the bottle which was then in the region of the patient's knee. During the operation his attention was directed entirely to what he himself was doing. In cross-examination by Mr. Hilbery he said that the idea that the patient might have a hot water bottle in bed did not occur to him. He took no steps to see if there was one but if he had found one he would have removed it. It was the duty of the nurse to see if such a thing remained in the bed.

Nurse Helen Verney gave evidence hearing out Mr. Neilson's references to her in his opening speech. It had been her intention, she said, to remove the bottle after the patient had settled down but she forgot about it. Mr. Sinclair could not have seen the hot-water bottle unless the bedclothes were turned down. After Miss Beek came round from the anaesthetic she told her that an unfortunate accident had happened for which she, the nurse, was entirely responsible.

Dr. T. Bruce Poole the plaintiff's usual medical attendant who gave the anaesthetic said it was the nurse's duty at an operation to see that the patient was ready for the surgeon in every respect and part of her duty was to attend to the hot water bottles.

Mr. Donald Armour, F.R.C.S., surgeon to the West London Hospital in giving evidence for the defendant described the modern surgical operation as a ritual carried out by a team each member being trained in his or her particular duty. It was the nurse's duty to see to the hot-water bottles in the course of preparing the patient for operation. The modern nurse he added was a highly trained and skilled technician not a surgical twentee. He would not regard it as part of his duty to ask the nurse if there was a hot water bottle in the patient's bed.

Mr. H. S. Soutar, F.R.C.S., surgeon to the London Hospital said that unless there was a separation on the functions of the operator, the anaesthetist and the nurse it would be impossible to carry out modern surgery. It would be most dangerous for the surgeon to let his attention stray to any matter beyond that on which he was immediately engaged. It was one of the nurse's functions to look after the hot water bottles.

#### Judgment for Defendant

The Lord Chief Justice at the conclusion of the evidence for the defendant withdrew the case from the jury and entered judgment for Mr. Sinclair holding that there was no evidence of negligence on the defendant's part to go to the jury. In doing so he said he would say nothing on the question of whether there was any real negligence on the nurse's part. It was easy to be

This book, *John of Gaddenden and the Para Medica*, was published in 1912, a few years after its author's

had obliged him to give up work in a London office and make his home in the country. John of Cadesden, who is depicted therein as the central figure of fourteenth century medicine in England, compiled his famous treatise *Rosa Anglica* or *Rosa Medicinæ* in 1314, and the suggestion has been made that he was perhaps the original of Chaucer's "Doctor of Physic" in the Prologue to the *Canterbury Tales*. In writing about him Cholmeley collected everything from medieval literature that bore on the subject; the book is a storehouse of learning skillfully displayed and a solid contribution to the history of medicine. His many other writings are for the most part scattered anonymously through the volumes of the *Lancet* for the past thirty years, but a few biographies from his pen may be found in the second Supplement to the *Dictionary of National Biography*. Books, flowers, music, and the company of old friends were the things he found best in life, and he had the good fortune to be able to indulge these gentle tastes.

As the editor of the *Lancet* says of him

Cholmeley always described himself as a happy man and the sources of this happiness lay in his own fine character. Much learning left him modest, a truly charitable nature freed him from all bitterness, he had no jealousies and his trained mental qualities gave him the power to enjoy beauty in all forms.

These two sentences touch off the man as we knew him, and it only remains to add a word in friendly recollection of a scholar-physician and a colleague of former days whose passing makes one more blank.

N G H

The sudden death of Dr R. L. ROUTLEDGE of Havdon Bridge is the result of a motor cycle accident while on his rounds, adds another to the long list of tragedies whereby medical men have lost their lives in the pursuit of their avocation. Dr Routledge was born at Rockhope in Weardale just fifty three years ago. He studied medicine at the Newcastle School, and graduated M.B., B.S. in the University of Durham in 1899. For a time he acted as one of the medical officers at the Newcastle Dispensary, and afterwards assisted Dr Gray of Strahope in his homeland. About twenty-three years ago he went to Havdon Bridge, where he took over the practice of the late Dr. Callender. Routledge soon became well known and highly respected in South Tyndale, where his practice included a scattered agricultural district. He was medical officer for the district, and took a great interest in everything which concerned its welfare. He was a strong supporter of outdoor sports, and was actively associated with the Havdon Bridge Cricket Club. He was a member of the Church Council up to about three years ago. In politics he was a Conservative. At the outbreak of the great war he joined the 4th Battalion Northumberland Fusiliers (Territorials), and served throughout. He took a great interest in the local branch of the British Legion. Professor Crev. Turner writes of him "Routledge was always cheery and optimistic, but unassuming and very human, content to minister to his patients and to find recreation in his own home and in promoting the welfare of his own village. He will be greatly missed and mourned far and wide, and not least in many a lonely homestead, for he was kindness itself to his poorer patients. He leaves a widow and one son, who is studying for his father's profession."

By the death of Dr ERIC GEORGE ALEXANDER WEMMES FULTON from lobar pneumonia, at the early age of 27, neurology has lost one of the most promising of its younger followers. The only son of Dr T. Wemmes Fulton, formerly superintendent of scientific investigations under the Fishery Board for Scotland, and lecturer on the scientific study of fishery problems in the University of Aberdeen, Eric Fulton was educated at Aberdeen Grammar School and University, where he graduated M.B. Ch.B. in 1924. He became clinical assistant to the West End Hospital for Diseases of the Nervous System, London, and later held successively the posts of house-physician, resident medical officer and in-patient registrar. In 1926 he was appointed resident

medical officer in charge of the post-encephalitis lethargica unit at the Northern Hospital, Winchmore Hill, of the Metropolitan Asylums Board, under the Ministry of Health, a post which he occupied at the time of his death, at the same time retaining his connexion with the West End Hospital for Nervous Diseases by acting as honorary clinical assistant in the out-patient department. At the West End Hospital Dr Fulton began a series of researches into the comparative diagnostic value of the different physical signs of upper neurone lesions, their significance and their explanation. In collaboration with Dr Woistener Drought, he also investigated in turn every method advocated for the treatment of encephalitis lethargica, both during the acute and the chronic stage. This work extended over several years, and Dr Fulton was still continuing trials of the later methods up to the time of his death. At the Northern Hospital Dr Fulton devoted himself to the study of the problems involved in cases of post-encephalitis lethargica, and some of the results of his observations are embodied in the reports of the Metropolitan Asylums Board, though much of his work, both at this hospital and the West End Hospital, unfortunately remains unpublished. At the time when he was taken ill he was collaborating with Dr S. A. Kinnier Wilson, the consulting neurologist to the Board, in the preparation of a paper on certain post-encephalitic phenomena. His keenness probably brought about his death, since, anxious to complete his investigations, he carried on until he collapsed. One year previously he had an attack of broncho-pneumonia, and for some months had not been in good health, yet he declined to take the rest advised. A colleague writes "Of kind and lovable disposition, Fulton endeared himself to all with whom he came in contact and his loss is sorely felt by patients and professional brethren. Had his life been spared, there is every reason to believe that a brilliant future in neurology lay before him."

Colonel PETER PIERCE M.S. T.A. who died on October 17th, in his 63rd year, received his medical education at Guy's Hospital and obtained the diplomas M.R.C.S. Eng., L.R.C.P. Lond. in 1889. After filling the posts of house-physician and house-physician at Guy's Hospital he was appointed resident house-physician to the Royal Leicester Infirmary. He practised at Tenterden, Kent, for many years, and later in Hove, Sussex, until the outbreak of war. He had always been keenly and actively interested in the Territorial division of the R.A.M.C. He was gazetted lieutenant in 1896, captain in 1899, major in 1907, lieutenant-colonel in 1918, and colonel in 1925. On August 4th, 1914, he was attached to the 5th Buffs, and went out to India in October of that year. In 1915 he served in Arabia with the Aden Field Force, going into action with the Aden Movable Column. He returned to India with the 5th Buffs in 1916, and was invalided home with dysentery. After a few months' sick leave he served first as member and then as president of a travelling medical board. About this time he was awarded the Territorial decoration. In 1918 he was appointed officer in charge of the military hospital at Hounslow, and in 1919 of the military hospital Kingston, returning to the Hounslow military hospital in November, 1919. In January, 1920, he was appointed medical superintendent of the Ministry of Pensions neurological hospital at Shotley Bridge, which post he resigned on being appointed deputy assistant director of medical services to the 42nd (East Lancs) Division for a period of four years. He was later regimental medical officer to the 4th (City of London) Royal Fusiliers from 1923 to 1925, and relinquished this post on his promotion to colonel. He retired, having reached the age limit, on August 4th, 1926. He was engaged in private practice in London up to October 6th last, when he went into a nursing home for a serious operation.

The following well known foreign medical men have recently died: Dr HENRY MEYER of Paris, member of the Académie de Médecine and an eminent paediatrician, aged 64; Dr ALBERT FLORENCE, honorary professor of pharmacology at the Lyons faculty of medicine; Professor MOSELER of Heidelberg, who received the Nobel



prize for physiology in 1910, Dr JOHN GOODRICH CLARK, professor of gynaecology in the University of Pennsylvania, aged 59, Professor RUDOLPH MAGNUS, aged 53, who occupied the chair of pharmacology at Utrecht, and was the author of much valuable work in neurology, Professor KORFF-PETERSEN, director of the Institute of Hygiene at Kiel University, aged 46, Professor PAUL ZWIRGEL, successor of Crede at Leipzig in the chair of gynaecology and obstetrics, Professor NICOLAAS VORHOEVE, who held the chair of roentgenology at Amsterdam, Professor P. KILBURG, a Budapest gynaecologist, Professor ARTURO GUZZONI DEGLI ANGARANI, director of the Obstetrical and Gynaecological Clinic at Modena, aged 69, Dr ERICH MEYER, professor of internal medicine at Gottingen, Dr LOUIS LAURENTIE, professor of obstetrics and gynaecology at Beirut, aged 41, and Professor SACHS, a Vienna dermatologist, aged 56

## Medical Notes in Parliament.

### Parliament Resumes

PARLIAMENT reassembled on November 8th to finish the business of the 1927 session, and is expected to sit till shortly before Christmas. The first business taken was the Landlord and Tenant Bill, followed by the Unemployment Insurance Bill. The Government hopes to pass into law both the Mental Deficiency Bill and the Nursing Homes Bill, though the opposition to the latter may be serious and the time available is scanty.

On November 8th Colonel Lane Fox informed Mr. Lunn that one of the candidates for the new post of medical adviser to the Mines Department had been selected and the usual inquiries by the Civil Service Commission were now proceeding. The name would be announced in about ten days.

On November 8th Sir Kingsley Wood informed Dr. Vernon Davies that the question of the necessity of allowing medical men to preserve professional secrecy in the Law Courts with regard to certain diseases was still under consideration.

On November 8th Sir Kingsley Wood told Mr. H. Williams that 104 schemes dealing with slum areas, covering approximately 14,000 houses, had been confirmed.

## The Services.

### HONORARY SURGEONS TO THE KING

THE following appointments as Honorary Surgeons to the King are announced: Colonel Thomas Kay, D.S.O., T.D., Assistant Director of Medical Services, 52nd (Lowland) Division, Territorial Army, vice Colonel F. H. Westmacott, C.B.E., T.D. (ret.); Colonel Reginald Ernest Bickerton, D.S.O., T.D., Assistant Director of Medical Services, 56th (1st London) Division, Territorial Army, vice Colonel A. D. Sharp, C.B., C.M.G., T.D.

### DEATHS IN THE SERVICES

LIEUT. COLONEL ROBERT WATERS, C.B., of White Fort, Tobermore, county Londonderry, died on August 6th, aged 92. He was born at Tobermore, and educated at Queen's College, Belfast, where he was exhibitioner and senior scholar. He graduated M.D. in the Queen's University, Ireland, in 1858, and took the L.R.C.S. Ed. in 1859. He entered the army as assistant surgeon in January, 1860, was promoted to staff surgeon in November, 1869 (a special promotion for his services in a cholera epidemic at Gambia), attained the rank of brigade surgeon in June, 1885, and retired in April, 1890. He served in the Ashanti war of 1873-74, when he was present at the actions at Amofof and Ordahsu, the destruction of Bequah, and the capture of Kumasi, was mentioned in dispatches in the *London Gazette* of March 6th, 1874, and received the medal with a clasp, and in the Sudan, in the Nile expedition of 1885, first as sanitary officer, later in charge of field hospitals at Korti and Abu Fatma, was mentioned in dispatches in the *London Gazette* of August 25th, 1885, received the medal with clasp, and the Khedive's bronze star, and was promoted specially to brigade surgeon, thus he twice gained steps by special promotion, though he retired, after thirty years, without having attained to administrative rank. In the old regimental days he served in the 21st Foot, the Royal Scots Fusiliers and later was seconded for service in West Africa, where he was principal medical officer of the settlements on that coast in 1873. Towards the end of his service he was principal medical officer of the Quetta district in 1888, and of the Sirhind (Amhala) district in 1889-90. He received the C.B. in 1891, and was a J.P. for county Londonderry.

Lieut. Colonel Henry William Pierpoint, O.B.E., Indian Medical Service, died on July 23th, aged 48. He received his medical education at Liverpool, taking the M.R.C.S. and L.R.C.P. (Lond.) in 1902, and subsequently the F.R.C.S. (1909) and the D.P.H. (Cambridge) in 1911. At Liverpool he took the Gee and H.J. Fellowships, and served as junior demonstrator of anatomy, demonstrator of pathology, and as house surgeon of the Royal Infirmary. He entered the I.M.S. as lieutenant on February 1st, 1906, when he passed in first, he attained the rank of lieutenant-colonel on August 1st, 1925. At the beginning of the war he served on the hospital ship *Syria*, and later in the East, as mentioned in dispatches in the *London Gazette* of June 11th, 1920, and received the O.B.E. on September 9th, 1919. Before the war began in 1914 he served on the Larko Persian Frontier Commission, and after the war was again stationed in Persia as residency surgeon at Bushire. For the last few years, however, he had been superintendent of the Al Ray Institute at Dehra Dun.

## Medical News.

THE Board of Governors has decided that for the future the "Cancer Charity of the Middlesex Hospital" shall be called the "Middlesex Cancer Hospital". The reasons for this change are that the Middlesex Cancer Hospital must be made self-supporting, and, while it will still remain closely associated with the general hospital, it is desirable to recognize the fact that it has become a centre of treatment for cancer patients from the earliest stages of the disease, half the beds are utilized for early cases which will yield to treatment while the other half are still available for cases which, under present conditions, are judged to be incurable.

THE next session of the General Medical Council will commence on Tuesday, November 22nd. The president, Sir Donald MacAlister, Bt., K.C.B., M.D., will take the chair at 2 p.m. and give an address.

THE Huxley Lecture on "Recent advances in science in relation to medicine and surgery" will be delivered by Sir Archibald Garrod, K.C.V.G., M.D., F.R.S., Regius Professor of Medicine in the University of Oxford, on Thursday, November 24th, at 3 p.m., in the outpatients' hall of Charing Cross Hospital.

DR. HENRY DEVINE, O.B.E., will deliver the Longdon Memorial Lecture before the University of Bristol on Tuesday, November 29th, at 8.15 p.m. The subject of the lecture is the reality of delusions.

THE Purvis Oration before the West Kent Medical Chirurgical Society will be given by Mr. Victor Bonney, on Friday, December 9th, the subject being puerperal sepsis.

AT the meeting of the National Institute of Industrial Psychology to be held on Friday, November 25th, at 5.30 p.m., in the Hall of the Royal Society of Arts, 18, John Street, Adelphi, W.C., a number of investigators will describe how psychology enters into the institute's factory investigations. The chair will be taken by the Earl of Balfour, President of the Institute.

AT the annual meeting of the Herefordshire Medical Society, to be held to-day (Saturday, November 12th) at 4.45 p.m., in the Town Hall, Hereford, an address on chronic urinary infection with the *Bacillus coli* will be given by Sir John Thomson Walker. The annual dinner will be held the same evening at 7.30 in the Green Dragon Hotel, Hereford.

THE annual autumn dinner of the Glasgow University Club, London, will be held at the Trocadero, Piccadilly, on Tuesday, November 29th, at 7.15 for 7.30 precisely. Sir Arthur Chamberlain, K.G., the Lord Rector, is to be in the chair, and the Attorney General will be the principal guest. Glasgow University men who, though not members of the club, desire to attend are invited to communicate with the honorary secretaries, 62, Harley House, N.W.1.

THE annual dinner of the London (Royal Free Hospital) School of Medicine for Women will be held at the Grosvenor Hotel, Strand, W.C.2, on Thursday, December 1st. The chair will be taken by Dr. A. G. Phear, C.B., at 7.30 p.m.

THE annual dinner of the Medical Legal Society will be held in the Holborn Restaurant, London, on Friday, December 2nd, at 7.15 p.m., with the President, Sir William Wilcock, in the chair.

THE College of Pestology will hold its annual dinner on November 22nd at the Connaught Rooms, London, under the chairmanship of William Bull, M.P., President of the College, with the President of the College, Sir Alfred Cripps, and Dr. Leonard Hill, F.R.S.

THE Fellowship of Medicine announces that Mr T G Stevens will give a lecture on the treatment of uterine prolapse on November 14th, at 5 p.m. at the Medical Society, 11 Chandos Street. On November 16th Dr S Rodhonso Clovio will give a demonstration at the Victoria Park Hospital for Diseases of the Heart and Lungs, at 10.30 a.m., on the pathology of tuberculosis and there will be a demonstration by Mr Ncume at the Royal London Ophthalmic Hospital, City Road at 1 p.m. On November 17th Mr Herbert J Paterson will give a clinical demonstration in surgery of the London Temperance Hospital, Hampstead Road, at 2 p.m. The lecture and demonstrations are free to medical practitioners. A special course in medicine, surgery and gynaecology begins at the Royal Waterloo Hospital on November 14th and will last for three weeks and occupy the afternoons and some mornings on the same date another course commences at St Peter's Hospital and will continue each afternoon for a fortnight. From November 21st to December 17th the West End Hospital for Nervous Diseases will hold a series of lecture-demonstrations in neurology, at 5 p.m. and from November 28th to December 3rd there will be a post graduate course in proctology at St Mark's Hospital. At the Infants Hospital and at the Blackfriars Hospital for Diseases of the Skin afternoon courses will be held from December 5th and continue to December 17th. Commencing on January 9th there will be a course in medicine surgery and the specialties at the Prince of Wales Hospital and another in diseases of children at the Children's Clinic. These courses will be followed by one in cardiology at the National Hospital for Diseases of the Heart and in psychological medicine at the Bethlem Hospital. Syllabuses and tickets for these courses may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W 1.

THE third annual dinner of the Isle of Ely Division of the British Medical Association jointly with the Isle of Ely Local Medical and Panel Committees was held at March on October 25th. During the evening Dr G H Stephens was presented on behalf of the practitioners of the area with a gold cigarette case on his retirement from practice and in acknowledgement of his fourteen years continuous chairmanship of the Local Medical and Panel Committees.

AT a meeting of the Central Midwives Board for England and Wales on November 3rd when Sir Francis Champney was in the chair it was decided to inform the London Hospital that the board was unable to accede to the request to suspend in respect of that hospital the rule that the first five patients should be intern cases. It was also resolved that the University of Birmingham having arranged for the holding of the necessary course of lectures to pupil midwives, no other course in Birmingham would be recognized. The board thanked University College, Leicester, for establishing courses of lectures and approved the scheme submitted. The report on the work of the board for the year ending March 31st 1927, was approved and will be transmitted to the Ministry of Health.

AT the twelfth conference of the National Special Schools Union at King George's Hall, Tottenham Court Road, on November 25th and 26th, the subjects to be discussed will include the after care of mentally and physically defective children and mental deficiency in relation to crime and rheumatism. The honorary secretary of the conference is Miss H J Knight, 16c Trinity Square, S E 1.

THE Winifred Munsteron Burke Relief Foundation at White Plains U.S.A., owed its origin to a wealthy founder who desired to relieve worthy men and women in times of sickness or misfortune. Opened in 1915 it has now a city home in New York to deal with the admission of patients and with the assistance to be given to them upon discharge 300 beds at White Plains and one or two smaller institutions for older boys and coloured patients. The patients for whom convalescent treatment was first provided were suffering from heart disorders. Later attention was given to what is called psycho-neurotic or neuro-psychiatric convalescence but the 60,000 patients who have been treated since 1915 include convalescents from many diseases both medical and surgical. The report of the foundation for the two years 1925-27 gives details of the 'reconstructive convalescent regimen' the 'occupational therapies graded into wage work' and the 'play care and psychotherapies' which are carried on in the buildings and their sixty acres of grounds. The length of stay of the patients varies from days to months with an average of three or four weeks. An interesting experiment has been tried in throwing open athletic fields and lawns to school and community recreations. This entitles the patients and incites them to be in milder forms of exercises. As the daily cost of each patient including transportation and the admission department is less than two dollars it would appear that the administration is economically conducted.

DR GRAHAM LITTLE M.P. for Lough University, has been elected an Honorary Member of the Royal Academy of Medicine of Rome, and a Fellow of the Royal Society of Physicians of Budapest.

LOUGHBOROUGH COLLEGE, Leicestershire, England, invites applications for the award of five open scholarships in the faculty of engineering, each of the value of £75 a year. The scholarships are open to all British subjects resident in any part of the Empire and are tenable at Loughborough College for the period of the full diploma course. Candidates must be not less than 16 years of age on October 1st 1928. Further particulars and forms of application (which must be returned not later than April 1st, 1928) may be obtained from the college registrar.

DR G N HENRY, divisional surgeon to the L Division (Lambeth) Metropolitan Police, has retired after thirty six years service with the Force.

WE have received the first issue of a monthly journal entitled *Revista de neuro oftalmologica y de cirugía neurológica* which was published in July at Buenos Aires under the editorship of Drs J Lijo Pavari and Dr Poque Orlando. The issue contains original articles on the photography of the fundus oculi, by Dr Pavio hemiplegia in flexion, by Dr J M Obarrío a post-encephalic syndrome by Drs M R Caster, A F Camner, and A Battro and circumscribed labyrinthitis by Drs J Bosavilhao and D Sibald abstracts from otolaryngological neurological and ophthalmological literature, and society intelligence.

PROFESSOR AUGUSTO METTI of Bologna, who has recently reached his 86th year, has presented sets of thirty six medical periodicals, including the BRITISH MEDICAL JOURNAL and the *Proceedings of the Royal Society of Medicine*, to the Medico-Chirurgical Society of Bologna.

THE fourth Brazilian Congress of Hygiene will be held at San Salvador in December when the subjects for discussion will include the epidemiology and prophylaxis of plague, domestic insects, biometry of children and adults, water supply, and prophylaxis of spirochaetosis.

PROFESSOR KERL of Innsbruck has been nominated director of the clinic of venereal diseases at Vienna in succession to Professor Finger.

PROFESSOR PAUL LECÉF, who occupies the chair of surgical pathology in the Paris Faculty of Medicine, has been nominated an officer of the Legion of Honour.

## Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring PEPPINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the BRITISH MEDICAL JOURNAL are JULY 5551 5552 5553 and 5554 (internal exchange four lines).

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EDITOR of the BRITISH MEDICAL JOURNAL *Antology Westcott London*

FINANCIAL SECRETARY AND BUSINESS MANAGER  
(Advertisements etc.) *Antology Westcott London*

MEDICAL SECRETARY *Mediscera Westcott London*

The address of the Irish Office of the British Medical Association is 46 South Frederick Street Dublin (telegrams *Brillux Dublin* telephone 4137 Dublin) and of the Scottish Office, 6 Drumshough Garden Edinburgh (telegrams *Scotat Edinburgh* telephone 2 351 Edinburgh).

## QUERIES AND ANSWERS

INTRAVENOUS asks for suggestions as to the best way of keeping syringes and needles so that they may be ready for immediate use without continue sterilization by boiling.

W G who suffers from coldness of the hand which is not prevented by ordinary fur lined gloves asks to be recommended some kind of gloves or other device which will meet his difficulty.

## STAMMERING

"H. L. E." asks for references to literature and suggestions as to home treatment of a boy of 14, who began to stammer at the age of 6, probably as the result of a long illness and an operation; he is left-handed in writing. His mother was a stammerer in childhood, but has outgrown the defect.

## STOMACH COUGH

Dr A. S. McNEIL (Liverpool) writes to suggest to "M. B. Cantab" that the symptoms from which he desires relief are probably due to abdominal visceroptosis, the "status" of which he complains being gases given off into the stomach and intestines by the blood vessels when, owing to the recumbent position of the body, they are allowed temporarily to resume an approximately correct anatomical position. The cough, of course, is reflex vagal in character. It would be wise, no doubt, to verify the position by a complete x-ray examination of the stomach and intestines, and if visceroptosis is shown to be present, a suitable abdominal support worn in the daytime would, I think, relieve. A little gentle exercise of the abdominal muscles, each night and morning, would also be advisable.

## PREVENTION OF SCABIES

A WOMAN member of the profession who contracted scabies over a year ago has three times got rid of it, but on each occasion has been reinfected after varying periods. This she attributes to wearing some article of clothing which has not been thoroughly disinfected. Women's clothing being what it is, she asks what is the best disinfectant for garments which cannot be boiled.

## GLOSSITIS

"G. O." asks for suggestions for the treatment of a woman, aged 30, who has an enlarged tongue, with fissures and patches of desquamation. It is intensely irritating and uncomfortable. The usual methods of treatment have been tried, as well as dental, gastric, and tonsillar treatment, and x-rays, without effect.

## INCOME TAX

## Partnership Assessment

"R. O." took over a practice from August 1st, 1924. His predecessor's figures were unknown and he paid tax for the period to April 5th 1927, on the basis of the amount of his earnings, as shown by accounts prepared for each of the two years to August 1st, 1926. He has been assessed for 1927-28 on £515 the amount of profits for the previous year—that is, to August, 1926. He has now been asked for a copy of his accounts to August, 1927. Has the Inspector any right to alter the 1927-28 assessment if the result of these accounts should show an improvement on the previous year's figures?

\* \* No, probably there is no intention to do so, but perhaps the local office is desirous of getting forward with next year's work—that seems the only explanation of the request.

## Expenses of Employment

"A. D. K." obtained an appointment as from May 1st, 1927. He found it necessary to purchase a car for £160, and receives an allowance for its use at 6d a mile. He calculates that the cost of the car, inclusive of depreciation, exceeds the mileage allowance. He asks whether he can claim to deduct anything in respect of the purchase of the car or the excess annual cost.

\* \* The purchase of the car represented capital outlay, and no allowance is due for that expense. On general principles "A. D. K." is entitled to deduct all expenses incurred solely, exclusively, and necessarily in the performance of his duties, but we think he will find it very difficult to convince the Commissioners that the county council allowance of 6d a mile is inadequate to cover all necessary costs of travelling—for example, is the car of the minimum horse power necessary for his work—and if that is so, it is useless to appeal.

## Locumtenent's Expenses

"Loco" has been taking locum work for the past few years through an agent, to whom he pays a commission of 1s for each £1 he earned. The income tax authorities have refused to allow him to deduct the commission as an expense.

\* \* Apparently, "Loco" is being assessed under Schedule E as for the profits of "employment" and it is agreed that the expense of obtaining employment is not deductible under the rules of Schedule E. We suggest that the basis of the assessment is wrong and that our correspondent should be assessed not as an employee, but as a man practising his profession in a special way. As such he would be assessable under Schedule D for the profits of his practice and in such a case the commission payable year by year would properly be deductible. If Schedule E is the correct basis of assessment it would seem that separate assessments should be made for each separate "employment," which presumably has not been done.

## Deduction for Use of Car

"D. M. M." states that the inspector of taxes declines to allow him to deduct the expense of using his car for travelling to the station to take trains on professional visits.

\* \* We can see no justification for the distinction. The professional journey starts from the professional headquarters—the surgery or consulting room—and the expense covers the whole journey out and back.

## LETTERS, NOTES, ETC.

## DISEMBOWELMENT AND SHOCK

Dr E. W. GOODALL (Hemlingford Abbots Hunt) writes in connexion with this subject (November 5th, p. 847) the following quotation may also be of interest. It is taken from chapter vii, Lane's *Manners and Customs of the Modern Egyptians*, which was first published in 1835. The writer is giving instances of extraordinary feats performed, for the purpose of reward, by the processions of the brides of wealthy families.

When the Seyid Omar married a daughter about twenty-seven years since there walked before the procession a person who had made an incision in his abdomen and drawn out a portion of his intestines which he carried before him on a silver tray. After the procession he restored them to their proper place and remained in bed many days before he recovered from the effects of this foolish and disgusting act.

Lane states that this incident was described to him by an eye-witness. But was the latter pulling the former's leg?

## CONSTIPATION IN INFANCY

Dr W. J. BURNS SELKIRK (Edinburgh, Birmingham) writes: When is a baby genuinely constipated? When rectal examination of the little finger determines the presence of a mass of faeces which the baby cannot pass? The rectum of the constipated is often empty. If when a baby defecates, the mellow is soft there has not been constipation. Under feeding or perfect digestion may only give one action in forty-eight hours. Even at some welfare centres syrup of figs is unjustly advised the natural reflex thereby impaired, and a drug-taking child and adult likely to result—then justifiably labelled 'constipated'. Most "constipated" babies are not constipated till submitted to human interference.

## TREATMENT OF VARICOSE VEINS BY INJECTION

Dr T. O. GREENE (American Presbyterian Mission, Peking) writes to call attention to a case of death following injection for varicose veins recorded by Dr O. A. Olson in the *Journal of the American Medical Association* (August 27th, 1927, p. 63). Dr Greene writes: A woman of 33 developed varicose veins during her first pregnancy. Two children, the youngest aged 2, were living and well. In 1924 she aborted in the second month. The Wassermann reaction was negative. No rupture of the veins occurred, and she was treated with elastic stockings until June 1927. So we have a typical uncomplicated case of varicose veins of several years' duration. On June 3rd and June 8th she received injections of salt solution and caloric. "She felt perfectly well until June 13th, when at 5 p.m. while playing with her children, she felt dead." Autopsy showed (1) varicose veins, (2) phlebitis and thrombosis of the right internal saphenous vein, the thrombus exhibiting a broken off end. (3) pulmonary embolism. It may be advanced that another solution would have given a happier result. If the rationale of this treatment is to produce a sterile phlebitis and consequent thrombosis, the underlying principle would seem dangerous, no matter what the agent used. To produce a thrombus or to risk producing a thrombus, in a vessel in which the current is directed towards the heart, and whose calibre increases in the direction of flow, would seem hazardous at least. The current in a varicose vein may at times be away from the heart, or stationary, but certainly it often is directed towards the heart. In the aetiological and surgical treatment of varicose veins there is the risk of embolism from the thrombus which would extend proximally from the highest point of venous ligation. A priori, this risk would be less than the risk of embolism following the injection of varicose veins.

PULMONARY MEDICATION BY RIGHT CARDIAC INJECTION. THE Academy of Medicine in Paris lately heard a paper by Drs Cherechewski, Florentin, and Desboursyres suggesting the injections into the right side of the heart might be used in the treatment of affections of the lung. Being dissatisfied with the results of attempts at disinfection of the lungs by repeated administration by the mouth by inhalation and by intratracheal injections, and finding intravenous injections difficult, the authors decided to try puncture of the right side of the heart as the surest point of access to the lung. They found that dogs tolerated very well an injection of 1 per cent solution of methylene blue and that at the end of ten minutes the lungs had taken on a grey colour with scattered blue points. In less than half an hour the colouring substance was distributed evenly throughout the lung tissue. The method was tested in a dog suffering from distemper, a solution of "collibacterin" (1 per cent) with methylene blue was injected into its heart for several consecutive days. The treatment was followed by marked amelioration of the general condition but did not bring about a cure. The authors think that the injections might be tried in pneumonia in man or animals when all other remedies have failed and for pulmonary tuberculosis in man.

## VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments are to be found at pages 36, 37, 33, 39, 42, and 44 of our columns and advertisements as to partnerships and other vacancies at pages 40 and 41. A short summary of vacant posts notified in the *British Medical Journal* appears in the Supplement at page 123.

## A Review

OF

## THE PRESENT POSITION OF KNOWLEDGE

AS TO

## PROSTATIC ENLARGEMENT

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BY

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## FUNCTION AND FORM

RECENT years have added little to our knowledge of the function of the prostate. It is not apparent that it has any internal secretion, or that it exercises any influence on metabolism, it is a secondary sexual gland.

The glands that make up the prostate spring apparently from all sides of the urethra but the anterior group ultimately atrophy. The gland mass that lies below the ejaculatory ducts is seldom the seat of changes and usually retains its spongy nature.

Long before birth the prostate has assumed its adult form and the gland tubules the distribution that persists throughout life. There is no indication of any division into lobes or lobules. The tubules run out from the side or posterior walls of the urethra, tending to bend forward as the distance from the urethra increases. In front there is very little if any gland matter. This glandless area represents an atrophy of tubules, not a fusion of constituent lobules. None of the tubules of the gland reach the surface thus leaving another non-glandular portion. Lastly, there is always a considerable thickness of non-glandular tissue surrounding the urethral canal.

## HISTORICAL

[The history of prostatectomy was then reviewed, beginning with the early work of McGill of Leeds (1887).]

From 1880 until the close of the century the operative treatment of enlarged prostate was undergoing a slow and painful evolution. In 1888 Harrison of Liverpool was advocating perineal section and prostatectomy, more especially in those cases of foul urine and degenerated kidneys and in this way seems to have laid the foundation of the present two-stage operation, but the general feeling of the profession can be gauged by the eagerness with which the so-called sexual operations were taken up. In the late nineties the operation of prostatectomy was again making headway, and the sexual operations having been found wanting were declining. In 1900, while the treatment of enlarged prostate was still chaotic, Freyer published his series of successful cases, which anyhow in this country, re-established prostatectomy as an operation of choice.

Since this time the suprapubic operation has found favour with most surgeons, and the technique of its performance has remained in the main unaltered. The perineal operation has, however, found some formidable advocates, and appears at the present time to be gaining ground.

## THE SEXUAL OPERATIONS

In 1775 John Hunter made the classical observation on the want of development of the prostate that resulted from castration in youth or infancy. Castration as a remedy for prostatic enlargement was suggested to White of Philadelphia by the shrinking of uterine fibroids after ovariectomy, the uterus being considered a homologue of the prostate. It was found by experiment that castration of adult dogs was quickly followed by atrophy of the prostate. In 1889 Griffiths had reported to the same effect.

Treatment by castration, although put forward as a

The report has been slightly abridged by the omission of some introductory matter.

demeically, was taken up with a rush, and, like many new treatments, was at first apparently efficacious. Even unilateral orchiectomy was reported to be efficient. The literature of the period, however, shows that castration could not be relied upon to cause an atrophy of the enlarged prostate.

Vasectomy was next proposed as a slighter operation, but one warranted to produce the same effect. It had a vogue, but gradually it also lost favour, and with it the sexual operations ended. Mr Shattock and I did some experiments to test this matter. We found that, while cutting off the blood supply caused an atrophy of the testicle, division of the duct left the testicle entirely intact. While in the midst of these experiments we discovered that John Hunter had made the observation in the human subject that the testicle developed and contained spermatozoa although there was no connexion between the testicle and its excretory canal. In vasectomy, as practised for the relief of prostatic enlargement, we have an example of how careful one must be to verify the facts before applying them.

## CAUSATION AND NATURE OF THE ENLARGEMENT

Two theories as to the nature of prostatic enlargement have alternately held the premier place—the infective and neoplastic. Nothing of interest in this connexion has come to light of recent years, except that Hugh Young by a careful statistical inquiry, has shown that gonorrhoea at all events, plays no part in the etiology. At present most people regard the enlargement as due to the growth of adenoma, and if this is accepted the cause of prostatic enlargement is the same as that of other such growths. In this association it may be useful briefly to allude to certain facts.

- 1 The growths reproduce fairly faithfully the histological features of the parent both as regards stroma and gland tissue.
- 2 Encapsulation is usually very complete especially in old standing case.
- 3 Sometimes however the encapsulation is incomplete and recalls certain adenomata of the breast.
- 4 The growths are often compound one adenoma comprising several small ones.
- 5 The time of appearance is late in life and this may have some connexion with the proclivity of the growths to become carcinomatous.

## POINT OF ORIGIN OF THE ADENOMATA

There is still some difference of opinion as to the exact place in the gland at which these masses arise. One school maintains that they are not true prostatic tumours, but arise in the subcervical glands or in those of Albarran, both of which are submucous, in far the greater number of cases however, the point of origin lies well within the prostate proper. The adenomatous masses usually arise in connexion with the acini which enter the prostatic urethra above the mouth of the ejaculatory ducts that portion of the gland which lies below seems little prone to this change and often retains its normal spongy texture after the rest has undergone a complete change.

## CAUSATION OF SYMPTOMS

The symptoms which must be of local origin since bladder function returns practically to normal when the obstruction has been removed, may now be discussed.

Frequent and precipitate micturition may be explained by thinning and then replacement of the contractile tissue about the internal meatus by the adenomatous growth.

Hesitant and interrupted micturition are more difficult of explanation. Hitherto they have been put down to the ball-valve action of the "third lobe." Now a growth behind the urethra that could act in this way is a rarity, and I would suggest that these symptoms are caused somewhat in the following way. The urethra is surrounded by an adenomatous mass which is under tension caused by its growth stretching the pathological capsule. The urethra is also bent at an angle so that it forms a kind of flap valve. For urine to pass, the pressure in the bladder has to be so adjusted that it can overcome the increased pressure within the urethra and at the same time be insufficient to shut the valve. Any departure from the

optimum bladder pressure will cause a cessation of the flow of urine. The distressing symptom of dribbling from the urethra after the act of micturition should have been finished may be accounted for by the elongation, stretching, and distortion of the canal by the adenomata which have replaced the normal contractile tissue or hindered its orderly action.

*Residual urine* is the most difficult symptom to explain—in fact, it never has been explained. The most ingenious solution is that which attributes it to the intravesical pressure on the varying cone-like projection of the prostate into the bladder. When the bladder is full the cone will project but little, but as the organ empties the cone will offer a greater surface that is subject to pressure, with the result that the urethra becomes occluded. Unfortunately for this explanation a vesical cone is not always present.

I would suggest that residual urine is really a case of bladder posttome. Fullness of the bladder is a relative term. The usual act of micturition, when once the initial stimulus of distension has been given, is continuous. The bladder during the process of emptying will contain from time to time an amount of urine which in process of filling had produced no desire for micturition. If the act of emptying is slow or interrupted, as it is in prostatic trouble, it is possible to imagine that the impulse necessary to carry the act to completion becomes dormant or fails to be again initiated, to speak in homely terms, the bladder imagines itself to be empty.

#### THE FATE OF THE CAVITY LEFT BY OPERATION

Even before the revival of prostatectomy it was asserted that the procedure consisted in the total removal of the prostate. This was given as an explanation of the success of the operation. It is, however, now, I think, generally admitted that the modern operation for prostatic hypertrophy consists in enucleation of adenomatous masses from within the expanded outer portion of the organ, and that there is no real solution of continuity between the bladder and the urethra. That fact accounts in part for the almost unbelievable fact that the operation is very seldom followed by stricture.

After the enucleation the urethra and bladder are joined by a ragged cavity, which may be at that moment of very considerable dimensions. Very soon after the removal of the adenomata, or rather at the very moment of their removal, the cavity contracts centripetally, so that not only are the sides of the cavity approximated, but the bladder is at the same time approximated to the urethra. This contraction is brought about by the resilience of the remaining part of the prostate, and it may be remembered that it is this resilience pressing on the central adenomatous mass which is in part the cause of the urinary difficulties. This contraction at the time of operation is a very real thing, and gives rise to considerable difficulty if the surgeon wishes usually to explore the cavity. After the operation the cavity continues to retract, so that in some cases within a few weeks a skigram of the bladder shows no sign of its existence. Sometimes, however, a distinct cavity remains for a considerable period, though micturition is perfectly normal. It might be urged that the existence of this cavity shows that the internal sphincter is out of action. There is, however, another explanation—it is possible that, in those cases in which a cavity persists, the growth has been largely intravesical, and that the top of the cavity corresponds, not to the internal sphincter, but to the level to which the mucous membrane of the bladder has been raised.

When an opportunity occurs of inspecting and digitally examining a bladder after prostatectomy, it is remarkable how little abnormality is to be made out, perhaps there is a small dimple at the internal meatus, or the meatus is not so dilatible as it normally is, and reminds one of the state of affairs in encystoma or in the so-called "Meisner's bru." Again, it is almost impossible to be sure by rectal examination whether the prostate has been removed or not.

The two-stage operation was introduced quite early in the history of prostatectomy to rest the patient who was worn down by sepsis and want of sleep. The indications

for its performance were at first almost entirely empirical. The discovery and perfection of tests of urinary efficiency have extended and rendered more accurate the indications for the performance of this operation.

It entails, however, certain disadvantages. The first is that there are two anesthetic administrations and two periods of anxiety and discomfort. The second is that the enucleation is made more difficult by the shrinking of the bladder, the hardening and contraction of the prostate, and the induration of the abdominal wall. In addition, the wound may become foul and phosphatic deposit give trouble.

If the two stage operation is decided upon, the relative merits of catheter and suprapubic drainage are to be considered. The catheter has been with many surgeons very successful, it avoids two operations, but it may give rise to a urethritis which is troublesome, and in some cases to a definite rise in the blood urea. Suprapubic cystostomy has the great advantage that the condition of the prostate can be accurately determined by the only certain means—namely, that of bimanual examination.

I have nothing to say about after treatment, except to express the opinion that, whatever is the means favoured to carry off the urine after prostatectomy, the less the prostatic couch is interfered with the better. I have been very free from secondary haemorrhage, and I attribute this to only washing the bladder out in exceptional circumstances.

#### URINARY EFFICIENCY

There are, of course, discrepancies between the various tests or parts of the same test, but in the main a fairly just estimate as to the efficiency of the kidneys can be formed.

Mention must here be made of what is, to me at all events, a difficult problem. When is the surgeon justified in refusing to proceed to a second stage prostatectomy? There are a certain number of patients on whom a drainage cystostomy has been performed, and whose urinary efficiency, as judged by the usual tests, has never fallen to a figure that would, in the first instance, have warranted a single stage prostatectomy, although in other ways they seem to be in good health.

The question to be decided is this: What percentage of urinary efficiency is to be taken as justifying completion of the operation after a period of drainage?

The mechanism whereby the loss of efficiency of the kidney is brought about is still unsolved. It is doubtful what effect the obstruction to outflow has on the constituents of the urine and what is the ultimate fate of a kidney whose duct has been completely occluded for varying periods.

The rapid improvement that takes place in some cases after drainage of the bladder is mysterious. Perhaps the easiest explanation is that which attributes recovery of drainage to vascular compression and not to histological change.

#### BACK PRESSURE

It is usual to attribute the troubles of the kidney simply to "back pressure," but when the subject is examined more carefully it is not so easy to understand how the kidney is subjected to an obstruction lasting over a long period. It is not very obvious why we speak of back pressure in connection with the kidney and do not use the term when we talk of obstruction in connection with other ducts and the intestinal tube. It is an unfortunate expression, because it sometimes leads to the belief that the pressure which injures the kidney originates in the bladder as the result of tension or of muscular contraction.

The pressure that dilates the ureter and distends the kidney is the secretion pressure of the kidney, and it is of interest to consider what are the pressures in the bladder that hinder the ureter in propelling the urine into the bladder, so long as the meter can get rid of the urine, the kidney will be shielded from any noxious pressure.

I am indebted to Mr. B. W. Williams for the observations incorporated in Table I. These show the pressures in the bladder of some cases of retention. The pressures, by means of a water gauge and have been reduced to



metics of mercury, as more readily appreciable. The pressures recorded are those found in the intervals between spasms of the bladder.

TABLE I—Pressure in Bladder in Cases of Retention

Case No.	Duration of Retention	Bladder Pressure in mm. Mercury	Amount of Urine	Case No.	Duration of Retention	Bladder Pressure in mm. Mercury	Amount of Urine
1	36 hrs.	8-10	35 oz.	6	12 hrs.	34	46 oz.
2	7 days	2-25	85 oz.	7	24 hr.	27	50 oz.
3	48 hrs.	22-25	45 oz.	8	24 hrs.	15	50 oz.
4	overflow	19	29 oz.	9	22 hrs.	8-10	30 oz.
5	3 days	29	47 oz.	10	24 hrs.	24	40 oz.

It will be seen that the maximum pressure which the ureter has to overcome in a case of acute retention of urine is about 34 mm. of mercury. The pain occasioned at such a pressure is not to be endured; the individual is compelled to seek relief. From this it appears that any high pressure that may act injuriously on the kidney must be of very short duration.

In most patients even in those with a considerable amount of residual urine the pressure against which the ureter has to work must be very slight. In fact, it is difficult to see that the pressure in the bladder in most cases of residual urine can be greater than that which pertains in the ordinary course of filling of the bladder. It follows that there are three possibilities, which are: (1) that the kidney is extremely sensitive to any obstruction or (2) that the damage done is in the nature of a sudden catastrophe (during an attack of retention) or (3) that we must seek some unknown cause of kidney deterioration.

#### THE SUPRAPUBIC AND PERINEAL OPERATIONS COMPARED

While the suprapubic method of operating has been chosen by the great majority of surgeons, the perineal has been practised by surgeons of great repute and experience, one of whom has probably the lowest mortality of anyone. It is therefore useful to inquire whether there is any reason for the majority to change their methods. It is claimed that (1) the perineal is the more scientific, in that the enucleation is more deliberate and is performed under the eye; (2) the ejaculatory ducts can be saved or ligated; (3) the urethral wall can be left intact and (4) the loss of blood is less.

To take these points one by one:

1. Some surgeons might say that by using a large vesical incision the enucleation can be carried out as openly and as deliberately by the suprapubic as by the perineal route. Putting this contention aside for the moment it may be considered whether the enucleation under the eye is a material advantage. Removal of the adenomata is not a matter of delicate and difficult dissection but really consists in entering a line of cleavage already established and following it to its end. It therefore matters little whether this is done under the eye or not. An accurate judgement that all adenomata have been removed can be formed by bimanual examination when the suprapubic route has been used.

2. As regards the preservation of the ejaculatory ducts, if it could be shown that children had been born to patients who had undergone perineal prostatectomy it would be a point in favour of that operation as a restoration *ad integrum* is always desirable. I am unaware, however, that a man has ever begotten a child after a prostatectomy. As regards a man's virility apart from power of procreation we have already seen that section of the vas produces no effect. It is not very clear whether the occurrence of epididymitis is caused or prevented by rupture of the vas. If opening the canal can cause an infection to spread to the epididymis, it cannot be denied that infection can occur with an intact vas or one in which the lumen has been obliterated by ligature after rupture. In the matter of the vasa, therefore, it does not seem that

the perineal method has any advantage over the suprapubic operation.

3. My observations on many *post-mortem* and operative specimens have led me to doubt the possibility of leaving the urethral wall intact in any but a very small and insignificant number of cases and I should not be influenced on this account in the choice of the operative route.

4. If excessive bleeding could be certainly and effectively diminished by the perineal route that would be a very good argument in favour of its adoption.

5. As regards restoration of function, and absence of a perineal operative sinus the suprapubic method leaves little to be desired.

Professor Hans Wildholz, in a recent communication, has advocated the use of the perineal method and the suture of the neck of the bladder and the distal portion of the prostatic urethra. He also states that the mortality of the operation is less than that of the suprapubic method, that the former method leads to a smaller rise in the blood urea that sepsis is practically abolished and that union takes place *per primam*. If other surgeons can reach the same results it will be a great argument in favour of the perineal method.

#### BEST TIME FOR OPERATION

It is fortunate that although the adenomata may be multiple, they are usually all of an age so that when they have necessitated operation their removal is not followed by the formation of others. It should be the aim of the surgeon to remove the obstruction before the urinary function is depressed.

If the prostate is large and resilient and the life of the patient is disturbed by his trouble the decision to operate presents no difficulties. On the other hand if the prostate presents no great departure from the normal and the patient is willing to put up with what discomfort he has most surgeons would, I think, be willing to wait, provided the kidneys are efficient and the patient can be watched.

More difficult are those cases in which the life of the patient is being somewhat disturbed by urinary troubles and examination by the rectum reveals a prostate perhaps a little large but not much altered in shape or size. Such a case may prove to be one of simple prostate which has not greatly enlarged or not enlarged toward the rectum, a case of carcinoma, or 'prostatic bar'. I know of no sure way in which the matter can be settled except by opening the bladder and bimanual palpation.

It has been truly said that if an individual is destined to have trouble with his prostate he is lucky if the organ, so to speak, ripens quickly about the age of 60. The kidneys will most probably be in good condition; a single-stage operation is possible, and there is a prospect of many years of health and enjoyment of life.

#### CARCINOMA

Hitherto the treatment of carcinoma has not been satisfactory either from the operative or radiation point of view.

Operative treatment involves the entire removal of the gland. This is a difficult and tedious procedure. It has been accomplished however in a limited number of cases by the perineal and by the transpubic routes and the feasibility of a satisfactory union of the bladder and urethra demonstrated. If the mechanical difficulties of removal have been got over it cannot be said that the difficulties of diagnosis sufficiently early to justify a serious operation, and offer a reasonable prospect of cure have been surmounted. Herein to my mind, lies the crux of the question. The diagnosis of carcinoma is usually made on the hardness, the nodularity, the fixation of the prostate as felt per rectum and the inelasticity of the internal meatus as felt from the bladder. By the time that the signs of malignant disease are irrefutable, as judged by a rectal or cystoscopic examination, the time of successful intervention is probably past. The rigidity of the internal meatus, which is a useful sign, can only be ascertained after a suprapubic cystostomy; this is a distinct advantage if the prostate is to be excised by the perineal route.

Again, there is the difficulty of diagnosing carcinoma from that undifferentiated group of affections that may be classed under the term "post-urethral bar."

Adeno-carcinoma in its own way presents almost as great a difficulty. This condition may be diagnosed in the process of enucleation of a presumed adenomatous mass, or it may not be diagnosed until after a microscopical examination.

Here the surgeon has three courses open to him: (1) He can proceed forthwith to total extirpation of the prostate, removal of which will have been made all the more difficult by the already accomplished operation. (2) He can wait and put the matter before his patient. (3) He can allow the bladder to close, if it will, and establish a suprapubic drain when obstruction supervenes, which usually happens within six months.

#### RADIATION

Radiation has been carried out from the urethra, from the rectum, and by means of needles introduced through the perineum or through the bladder; deep therapy has also been used.

Radiation in carcinoma of the prostate is in the same condition as radiation for carcinoma in other parts of the body. We are slowly and painfully groping our way towards a better knowledge. There are many groups of observers doing good and careful work throughout the country, but I cannot help wishing that someone who has the means would by his generosity render possible a more intensive study of the subject.

Professor Sidney Russ of the Middlesex Hospital has kindly prepared for me the accompanying table of the radium publicly owned in the countries named. The figures for the British Isles include the radium held by the London, Manchester, and Glasgow institutes.

TABLE II—Estimates of Radium Publicly Owned (1927) for Medical Purposes

Country	Population (Millions)	Grams of Radium	Grams per Million
Australia	6.2	10	1.60
Denmark	3.3	2	0.59
Belgium	7.5	4	0.53
France	40	18	0.45
British Isles	45	11.5	0.25
Sweden	5.5	1	0.18
Germany	56	2	0.04

#### MORTALITY

It is extremely difficult to arrive at a just estimate of the mortality of any operative measure. It is almost always better in private practice than in hospital, owing to the different social classes from which the patients are taken.

I may give, in the first place, a few instances of figures given by individuals. In 1893 White of Philadelphia gave the mortality of the perineal route as between 13 and 14 per cent, and that of the suprapubic as 20 to 25 per cent. In 1912 Fiebert gave the mortality in 1,000 cases as 5½ per cent, and stated that in the last 100 cases it had fallen to 3 per cent. Hey Grove, commenting on these figures, said that he had taken the mortality for all the available large hospitals in the kingdom and found it to be 40 per cent. Hugh Lett in 1913 said he believed that the mortality of hospital patients was 20 per cent. Fullerton stated in the same year that his mortality in 55 cases was 7.2 per cent.

Hugh Young, in his *Practice of Urology* (1927), gives his mortality for the perineal operation as 3.4 per cent in 1,049 cases, and Wildbolz just recently has stated that his mortality for the suprapubic method (105 cases) is 15 per cent, and for the perineal operation (305 cases) is 6.5 per cent. These figures show very real differences.

Through the courtesy of some surgeons I am able to show some figures from different London hospitals, which are a good guide, as showing the results in one class of patients.

TABLE III—Statistics of Prostatic Enlargement and Prostatectomy from Four London Hospitals  
(The figures are the last available)

	Total	Died	Mortality	Individual Mortality
Enlarged prostate	831	131	15.8	13.1—13.5—17.8—22.1
Prostatectomy	621	88	14.2	12.9—14.5—17.5—20.8

An absolute mortality has a definite value, but a more satisfactory way is to contrast two sets of comparable statistics. Thus I can fortunately do Mr. Max Page, in the *St. Thomas's Hospital Reports* for 1910, published the results of prostatectomy at St. Thomas's Hospital, and these can be compared with more recent figures (see Table IV).

It is at once apparent that the mortality from prostatic trouble has not materially fallen, that of prostatectomy has fallen from 20.2 per cent to 14.5 per cent, but the total operative mortality has somewhat risen.

It will be seen that the surgeon has been more chary in performing the one-stage operation, and that the deaths that formerly would have been recorded under prostatectomy are now found under cystostomy. If hospital statistics are to be improved the patients must seek help earlier than hitherto.

A striking fact is the good results that follow the two-stage operation, in spite of certain disadvantages.

In conclusion, I think one may say that, whatever is the true mortality of prostatic enlargement, the outlook for the prostatic patient has improved out of recognition since 1886.

TABLE IV—Simple Enlarged Prostate

Treatment	1905-1910 Total Cases 131 Died 23				1922-1925 Total Cases 219 Died 44					
	Suprapubic Prostatectomy		Suprapubic Cystostomy		Suprapubic Cystostomy		Suprapubic Prostatectomy		Total	
	Total	Died	Total	Died	Total	Died	Total	Died	Total	Died
	69	14	20	4	41	21	77	9	63	12
Method mortality	20.2		20.0		51.2		11.7		17.6	
Prostatectomy mortality	20.2								14.5	
Total operative mortality			20.2				22.5			
Total mortality			21.7				22.1			

# THE ADMINISTRATION AND THERAPEUTIC USLS OF OXYGEN

## I—OXYGEN ADMINISTRATION\*

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THE first consideration with regard to oxygen administration is the object to be attained. Oxygen administration is necessary in any circumstances where the tissues are labouring under the disadvantage of oxygen lack. Following the classification of Barcroft† we may divide these conditions into three types. In the first of these anoxic oxygen lack, owing to alteration in the atmospheric environment or to impairment of the gaseous exchanges in the lungs, the arterial blood does not contain its normal amount of oxygen. In the second, the anæmic type of oxygen lack, owing to deficiency or alteration of the hæmoglobin, the blood is unable to carry the oxygen which is presented to it in the pulmonary alveoli. In the third or stagnant type of oxygen lack the arterial blood contains its normal amount of oxygen but, owing to local or general circulatory causes, an insufficient amount of blood reaches the tissues which are therefore deprived of oxygen. The untoward effects of all these three conditions can be overcome, more or less completely, by the administration of oxygen, but the amount of oxygen necessary to attain this end varies.

In the anæmic and in the stagnant type of oxygen lack it can be assumed that the arterial blood is carrying as much oxygen as it is capable of doing in combination with the hæmoglobin and in order to increase the amount of oxygen carried to the tissues it is necessary apart from therapeutic method directed towards improving the circulation to increase the amount of oxygen in simple solution in the blood plasma. This can only be done effectively by increasing greatly the partial pressure of oxygen in the air in the lungs. Normally the lung alveolar air contains approximately 14 per cent of oxygen, which at ordinary barometric pressures is equivalent to an oxygen pressure of approximately 100 mm of mercury. At this pressure the amount of oxygen in simple solution in the blood is 0.3 volume per cent while, assuming the percentage of hæmoglobin to be normal the amount of oxygen in combination will be 18.5 volumes per cent. If the partial pressure of oxygen be raised to 720 mm, which would occur if the subject inspired pure oxygen, the amount of oxygen in combination with hæmoglobin would remain unaltered but the amount in simple solution in the plasma would be increased to 2.2 volumes per cent. This would provide a considerable increase in oxygen available to the tissues, and would be sufficient to overcome the tissue oxygen deficiency in some cases of anæmic and stagnant oxygen lack.

As regards the anoxic type of oxygen lack, such a high alveolar oxygen pressure is seldom, if ever, necessary. The conditions met with clinically where oxygen lack of this type occurs are pneumonia, pulmonary oedema, acute bronchitis and various other acute and chronic inflammatory diseases of the lungs. In a general way it can be stated that in such conditions owing to inflammatory or oedematous thickening of the alveolar epithelium oxygen is able to pass into the blood less readily than normally. According to the severity and the extent of such abnormality a variable degree of increased partial pressure of oxygen in the alveolar air is necessary in order that normal amounts of oxygen may reach the blood. In certain clinical conditions there may be a combination of the stagnant and anoxic types of oxygen lack, such for example, occurs in conditions of congestive cardiac failure. In such circumstances owing to the cardiac lesion, the blood supply to the tissues is greatly diminished while increasing oedema of the lungs produces the anoxic type of oxygen lack, consequently the myocardium suffers more and

more from oxygen deficiency and so can less readily perform its functions, thus producing a vicious circle of the most ominous type. The relief of tissue oxygen lack of all types can be attained by increasing to a sufficient degree the pressure and, therefore, the percentage of oxygen in the alveolar air of the lungs.

Ordinary air contains approximately 21 per cent of oxygen, and in normal circumstances the alveolar air of the lungs contains some 6 per cent less. In order to raise the alveolar oxygen percentage it is necessary either (a) to increase the amounts of air breathed without increasing proportionately the metabolic demand for oxygen or (b) to increase the percentage of oxygen inspired. In order to increase the amount of air breathed some form of respiratory stimulus is necessary. The amount of increase must be large, but however large it is it is impossible to increase the alveolar oxygen percentage above approximately 18 per cent. Carbon dioxide forms the most potent respiratory stimulant and Table I shows the increase in pulmonary ventilation and in alveolar oxygen percentage which can be attained by the administration of this gas. This, however, is not a satisfactory method of dealing with the majority of clinical conditions in which there is anoxic oxygen lack. It offers, however, a valuable means of dealing with oxygen lack due to carbon monoxide poisoning.

TABLE I

Subject	Respiratory Rate	Pulmonary Rate	Respiratory Minute Volume (Litres)	Litres CO <sub>2</sub> expired per minute at 1 litre inspired air	Alveolar Air	
					CO <sub>2</sub>	O
H. W. D.	9.0	72	6.47	—	Per cent	Per cent
	10.0	72	7.35	—	5.70	14.21
	10.5	72	13.97	0.6	5.68	14.23
	10.5	70	15.5	0.7	5.53	16.62
	12.0	70	19.17	1.1	6.61	16.74
A. W. R.	11.0	70	7.1	—	5.9	14.83
	11.0	70	7.7	—	5.21	1.89
	11.0	73	13.0	0.5	6.19	16.91
	13.5	65	17.9	0.8	6.42	17.43
	15.0	70	21.2	1.4	6.87	17.65

The percentage of oxygen in the inspired air may be increased in one of two general ways. By the first the patient may be placed in a large chamber or some type of bed tent where the oxygen percentage can be raised to any required degree. In practice however it is difficult by means of the oxygen chamber to attain an oxygen percentage of more than 60, and, in any case the high initial cost, the necessity for skilled supervision, and the imperative need for elaborate precautions against fire, limit the use of oxygen chambers to comparatively few large institutions. I do not wish, however, to deprecate the use of oxygen chambers for in certain chronic respiratory diseases, where prolonged oxygen treatment is necessary, or in such severe acute conditions that the patient is unable to tolerate a mask or other ordinary means of administration, an oxygen chamber is extremely valuable.

It is possible to arrive at somewhat similar results to those attained in the chamber by "closed circuit" methods of oxygen administration. In such a method the patient inspires from a suitable apparatus (spirometer or Douglas bag) filled with the desired percentage of oxygen. By a suitable arrangement of valves the expired air passes through purifiers which remove carbon dioxide and water, and then returns to the inspired air container oxygen being added in accordance with the metabolic requirements of the patient. This amount can be gauged by the initial rate of diminution in volume of the spirometer or bag. By maintaining this volume at a constant the percentage of oxygen in the inspired air remains steady. For administering oxygen in such a manner a Benedict or Krogh metabolism apparatus is quite suitable. Such an apparatus has also been devised by Dr. Poulton. A further advantage of these two methods is that assuming the chamber or breathing circuit to be free of leaks the amount of oxygen needed to maintain a constant percentage is only that required to fulfil the metabolic requirements of the subject, an amount which would seldom exceed half a litre per minute. Although this advantage holds in practice with

\* The opening paper of a discussion on the therapeutic uses of oxygen in the Section of at the Annual Meeting of the British Association of Physicians, 1927.

"closed circuit" methods, yet in the case of the chamber the loss of oxygen due to leaks and to the necessary entry and exit of nurses and others is very considerable. In the oxygen chamber at the hospital of the Rockefeller Institute, New York, the amount of oxygen required to maintain the oxygen in the chamber at 40 per cent was approximately of the order of 5 litres a minute, and this in spite of the fact that the chamber was carefully designed and was built almost regardless of cost. Considerably larger amounts were necessary in order to maintain the oxygen percentage at approximately 60. A description of this chamber has been published by Bungei.<sup>2</sup> As regards the Guy's Hospital chamber, Campbell and Ponton<sup>3</sup> state that it was "not easy to raise the average percentage of oxygen during the twenty-four hours much above 40 per cent."

The second general method consists in the addition of oxygen to the ordinary inspired air, and, in order to know the percentage of oxygen inspired, it is necessary to have as accurate as possible an idea of the rate of oxygen flow and the total amount of air breathed. Thus, for example, oxygen administered at a rate of 2 litres a minute to a patient having a total respiratory volume of 5 litres a minute would be more effective than in a case where the total respiratory volume was 10 litres a minute. With a simple apparatus in which the oxygen flow is continuous, the oxygen flowing during the expiratory phase of respiration would be completely lost, so that the effective flow of oxygen added to the inspired air and actually entering the respiratory tract would be 1 litre a minute. In the first case the patient would be inspiring 4 litres of air containing approximately four-fifths of a litre of oxygen, and 1 litre of pure oxygen, so that the total amount of oxygen would be one and four-fifths litres in 5 litres, or 36 per cent. In the second instance the amount of air breathed would be 9 litres containing one and four-fifths litres of oxygen plus the one litre of pure oxygen in a total of 10 litres—approximately 28 per cent. The alveolar oxygen percentage would be respectively 30 and 22, very approximately. So, in order to gauge more or less approximately the effect of a given amount of oxygen, it is necessary to know the total respiratory minute volume as well as the rate of oxygen flow. If, however, the method adopted for the administration of oxygen enables the gas to be conserved during the expiratory phase of respiration, then the effect of a given rate of oxygen flow will be approximately doubled.

From these considerations it can be seen that, knowing the total respiratory minute volume and the rate of oxygen flow, it is easily possible to calculate the percentage of oxygen in the alveolar air. When this is done and compared with the actual observed alveolar oxygen percentage, a figure can be obtained which indicates quantitatively the percentage efficiency of any given method for the administration of the oxygen. Comparisons of various methods were made in this manner by Dr. Gilchrist and myself.<sup>4</sup> Table II shows figures which illustrate the results obtained. The very low figures obtained for the tube and funnel and nasal catheter methods are due mainly to the fact that only half the oxygen administered by these means enters the respiratory tract, the other half being carried away with the expired air. It is rather surprising that the nasal catheter showed figures which are only slightly better than those for the tube and funnel. It can be seen, however, that with large rates of oxygen flow a considerable increase in alveolar oxygen percentage can be obtained by both of these methods, but the low efficiency percentage indicates the very considerable wastage of oxygen necessary to attain this object.

It will be well, perhaps, to consider briefly rates of oxygen flow. Not infrequently in hospital wards, even in the wards of big teaching hospitals, oxygen is delivered from a funnel held at a varying distance from the patient's face, the gas bubbling through a wash-bottle at rates at which the bubbles can readily be counted. We have set up similar apparatus and found that the maximum rate at which the bubbles can be counted is approximately five a second. When a flow meter was placed in series with such a system and with such a rate of bubbling, it was found that the actual rate of oxygen flow was not more than a quarter of a litre a minute. Analysis of a sample

TABLE II—Showing Percentage Efficiency of Different Methods of Oxygen Administration at Various Ratios of Oxygen Flow to Respiratory Volume per Minute

Method	Rate of O <sub>2</sub> Flow L P M	Respiratory Volume L P M	Calculated Alveolar O <sub>2</sub> per cent	Observed Alveolar O <sub>2</sub> per cent	Efficiency per cent
Tube and funnel*	2.0	6.2	40	27	43
	4.0	6.1	67	29	43
	8.0	6.2	94	47	43
Nasal catheter	2.0	6.2	40	28	53
	4.0	6.7	62	33	53
	8.0†	6.2	94	43	37
Haldane	2.0	9.5	31	32	100
	3.0	8.7	42	41	100
	4.0	8.5	52	50	96
	8.0	9.0	85	69	77
	9.5	9.2	94	67	63
D. G. apparatus with nasal tube	2.0	6.2	40	42	100
	4.0	8.8	51	50	97
	8.0	8.7	93	65	67
D. G. apparatus with mask	10.0	10.7	91	92	99
	9.0	8.9	91	92	97
	5.0	10.5	53	53	100
	4.0	10.5	45	44	97
	2.0	10.5	30	30	100

\*The funnel was touching the nose and chin when the rate of O<sub>2</sub> flow was 2 and 8 litres a minute. It was 2 in. from the tip of the nose when the rate was 4 litres a minute.

†There was great discomfort at this rate of flow.

of alveolar air after breathing for five minutes at this rate of flow showed an oxygen percentage of only 15.2—a negligible increase above the normal. With a rate of flow of 2 litres a minute, the oxygen percentage rose to 27. At this rate the oxygen passed through the wash bottle in a continuous and vigorous stream. In general it can be said that, with the small rates of oxygen flow usually adopted, the tube and funnel and nasal catheter methods are absolutely ineffective, that the increase in alveolar oxygen percentage is so small that, apart from possible psychological effects, no benefit to the patient can possibly be attained. This probably accounts for many of the statements to the effect that oxygen administration is of little or no benefit. In the administration of other drugs, in the regulation of diet, indeed in the application of almost any therapeutic agent, quantitative methods of dosage are used. Surely with all the facilities of modern science similar quantitative methods can be used in the administration of oxygen. It is only with the certain knowledge that an effective concentration of oxygen in the inspired air or alveolar air has been obtained that it can justly be said whether or not oxygen is of benefit.

There is a further objection to the nasal catheter method. The rate of oxygen flow necessary to produce a satisfactory increase in the alveolar oxygen percentage is so large that great discomfort is caused, except in subjects where the respiratory minute volume is small and the necessary rate of oxygen flow therefore less—as, for example, in infants. For minor degrees of respiratory disturbance an alveolar oxygen concentration of somewhere between 25 and 30 per cent will be sufficient to abolish oxygen lack. This can be attained by the tube and funnel or by the nasal catheter with an oxygen flow of approximately 5 litres a minute and a respiratory minute volume of not more than 10 litres a minute.

The first widely adopted method of administering oxygen quantitatively was that of Haldane,<sup>5</sup> which was introduced during the war and used with very marked benefit for the treatment of war gas poisoning. The oxygen is delivered into a small bag attached to a mask, and remains in the bag during the expiratory phase of respiration. During inspiration oxygen is sucked from the bag, and from an additional opening in the mask sufficient amount of ordinary atmospheric air are inspired to satisfy the total respiratory requirements. During expiration the slight increase in pressure, due to the air passing out through the opening in the mask, is sufficient in ordinary circumstances to hold the oxygen back in the bag. Provided the oxygen is conserved during the expiratory phase, a saving of 50 per cent of the gas is effected. Such a rate of oxygen flow can be regulated as desired by means of a reducing valve and calibrated needle valve. It is

figures already shown in Table II it can be seen that where the rate of oxygen flow is not greater than half the respiratory minute volume this apparatus shows a very high degree of efficiency, but where the rate of oxygen flow approaches the respiratory minute volume the efficiency falls very markedly. This is due to the fact that however much oxygen is flowing a certain amount of air will be sucked through the expiratory opening of the mask. Yet in practice, on account of its simplicity the Haldane apparatus remains the most suitable for ordinary clinical use its disadvantage being merely that it is almost impossible to obtain an alveolar oxygen percentage of much more than 60 such a high concentration is however seldom necessary. A further disadvantage is that although the rate of oxygen flow can be fixed at any desired amount, yet the apparatus affords no means for determining the total respiratory minute volume. Hence, unless this is independently obtained it is impossible to calculate the alveolar oxygen percentage. In order to overcome this deficiency a modified form of apparatus was devised by Dr. Gilchrist and myself.<sup>44</sup>

The apparatus comprises a suitable cylindrical head attached with a reducing valve and a true adjustment regulating valve. From this the oxygen passes through a simple type of flow meter calibrated in litres per minute and reading up to 15 litres. From this point it passes to a bag of a capacity sufficient to hold approximately 5 litres of oxygen it then passes through a valve and thence to the mask. The valve should be of such a type as to enable the flow of gas to be observed and for this reason it seemed to us that the old fashioned type of Muller water valve would be the best. This not only acts as a valve but in addition serves to moisten the oxygen and further if it be surrounded by an outer vessel filled with hot water the stream of oxygen can also be warmed. It is not considered that warming per se is very necessary the advantage of the warming is that a larger quantity of water vapour is taken up by the gas at the higher temperature and this overcomes the tendency to uncomfortable drying of the upper respiratory passages when high percentages of dry oxygen are used. The mask has the usual pneumatic rubber pad surrounding it which enables it to be applied without any leakage. The body of the mask is fitted with three openings, through the first the oxygen passes from the Muller valve the second is an expiratory valve and the third an extra air valve which can be completely closed or opened to any desired extent. When this valve is closed and the mask is applied without leaks the flow of oxygen must be made sufficiently large to satisfy the total respiratory needs of the subject. If the rate of oxygen flow is too great the bag will become overdistended and the oxygen, instead of bubbling through the Muller valve only during the inspiratory phase will pass continuously through it the excess passing directly out through the expiratory valve on the mask.

This is what should always be done at the commencement of administration. Before applying the mask to the patient the oxygen should be turned on at a rate slightly greater than what is considered a probable respiratory minute volume and the bag allowed to become well filled. If the mask before the oxygen is turned on be applied to a patient suffering from oxygen lack the discomfort of the patient will be greatly increased and he will not infrequently adopt a psychological attitude which will render the further use of the mask very difficult. Normally when a mask is applied the subject immediately consciously or unconsciously experiences the feeling that his air supply is going to be restricted and he instinctively takes a big breath. Unless there is air or oxygen passing through the inlet tube in sufficient quantity to satisfy his demand the state of mind mentioned above will be established hence the necessity for a very liberal supply of oxygen during the first minute or so. If the rate of oxygen flow be less than the respiratory minute volume, the extra air valve mentioned above being closed then the bag will become more and more empty until a point is reached where before completion of an inspiration, the bag will be completely empty. By watching the bag and adjusting the rate of oxygen flow so as to avoid the two alternatives—namely, (1) wastage of oxygen through over-

filling the bag and (2) failure to satisfy the respiratory needs due to emptying the bag—a rate of oxygen flow can easily be attained which is just sufficient to satisfy the respiratory requirements of the patient. A reading of the flow meter at this point indicates very approximately the patient's respiratory minute volume. In the circumstances the patient will be breathing pure oxygen, which for therapeutic purposes is not usually necessary, this being merely a preliminary proceeding to estimate approximately the patient's respiratory minute volume and so determine the rate of oxygen flow necessary to produce any desired alveolar oxygen concentration.

TABLE III—Showing maximum percentage of oxygen of final air in the alveolar air at various minute volumes of respiration when oxygen at different rates of flow is added to the inspired air—for example a subject breathing at 6 litres per minute and with 3 litres of oxygen per minute added to the inspired air should have an alveolar oxygen percentage of 51

		Respiratory Minute Volume in Litres													
		3	4	5	6	7	8	9	10	11	12	13	14		
Litres	1	41	34	30	28	26	25	24	22	21	20	19	18	17	16
	2	47	40	36	34	32	31	30	28	27	26	25	24	23	22
	3	51	44	40	38	36	35	34	32	31	30	29	28	27	26
Per	4	54	46	42	40	38	37	36	34	33	32	31	30	29	28
	5	56	48	44	42	40	39	38	36	35	34	33	32	31	30
	6	58	50	46	44	42	41	40	38	37	36	35	34	33	32
Minute	7	60	52	48	46	44	43	42	40	39	38	37	36	35	34
	8	62	54	50	48	46	45	44	42	41	40	39	38	37	36
	9	64	56	52	50	48	47	46	44	43	42	41	40	39	38
Oxygen	10	66	58	54	52	50	49	48	46	45	44	43	42	41	40
	11	68	60	56	54	52	51	50	48	47	46	45	44	43	42
	12	70	62	58	56	54	53	52	50	49	48	47	46	45	44
Flow	13	72	64	60	58	56	55	54	52	51	50	49	48	47	46
	14	74	66	62	60	58	57	56	54	53	52	51	50	49	48
	15	76	68	64	62	60	59	58	56	55	54	53	52	51	50

Table III taken from the paper by Gilchrist and myself shows the alveolar oxygen percentages produced by a combination of respiratory minute volume and rate of oxygen flow within normal limits but in general it can be said that with an apparatus such as this or that of Haldane, which conserves oxygen during the expiratory phase, a rate of oxygen flow equal to one-fifth of the respiratory minute volume will raise the alveolar oxygen percentage to 30. Where it is one-fourth the percentage will be 34 one-third 41, one-half 67 and where the rate of oxygen flow equals the respiratory minute volume the alveolar oxygen percentage rises to its maximum of slightly more than 94 per cent the remaining gas being the normal 5 to 6 per cent of carbon dioxide. The preliminary administration of pure oxygen at a rate equal to the respiratory minute volume should immediately abolish the urgent symptoms of oxygen lack unless the latter be of the anemic or stagnant type of a very severe degree. Much lower concentrations are usually sufficient. Therefore the rate of oxygen flow is then reduced to such a proportion of the respiratory minute volume as is required to produce whatever alveolar oxygen percentage may be considered necessary. The extra air valve is then opened to the required extent. If too much extra air is given, the normal amount of oxygen will not be sucked through the Muller valve with each inspiration, and the bag will tend to become overfull. If too little extra air be given the reverse will be the case, and the bag will be sucked empty. So that the same observation of the bag and the flow of oxygen through the Muller valve is necessary in adjusting the extra air orifice as in the initial determination of respiratory minute volume.

The description suggests that the method may be unnecessarily complicated but it works well in practice. Precise knowledge of the alveolar oxygen percentage is much more than a mere academic nicety not only is there the satisfaction of producing a definite effect but also the percentage of alveolar oxygen necessary to abolish the symptoms of oxygen lack affords a quantitative indication of the severity and extent of the pulmonary damage. Where not more than 40 per cent of alveolar oxygen is necessary—that is to say, where the rate of oxygen flow is not more than one-tenth of the respiratory minute volume—the mask can be dispensed with, for it has been found that the forked nasal tube, described by Gilchrist and myself,<sup>44</sup> is perfectly efficient for such rates of oxygen flow. We have found this to be the case even where the patient has fallen asleep and



breathed partly or mainly through his mouth. The forked nasal tube can, of course, be used only in cases where there is no nasal obstruction.

Full descriptions of the symptoms of oxygen lack will be found in the published works of Haldane,<sup>7</sup> the monographs of Lundsgaard and Van Slyke,<sup>8</sup> Means,<sup>9</sup> and Meakins and myself.<sup>10</sup> Oxygen administration is necessary mainly in the treatment of anoxic oxygen lack, and here the ideal is to administer just sufficient oxygen to restore the oxygen saturation of the arterial blood to its normal level. This requires facilities for blood-gas estimations which are not generally available. There are, however, other and simpler criteria of adequate oxygen administration.

The first criterion is the abolition of cyanosis. It is possible, however, that this may occur before the oxygen lack has been completely abolished. Moreover, a significant degree of oxygen lack may exist without any appreciable amount of cyanosis, for, as has been shown by Lundsgaard and Van Slyke,<sup>8</sup> cyanosis, apart from that of the stagnant type, does not occur with an arterial oxygen saturation of more than 80 to 85 per cent, a moderately severe degree of oxygen lack, the normal arterial oxygen saturation being approximately 96 per cent. Hence it can be seen that rather more oxygen should be given than is just sufficient to abolish cyanosis completely. Moreover, as Meakins<sup>11</sup> has indicated, the aim in the treatment of acute respiratory conditions is to prevent rather than to treat cyanosis and oxygen lack.

The second criterion is the relief of dyspnoea. This cannot always be brought about. In many respiratory diseases the respiratory embarrassment is due to causes which continue to operate after the oxygen lack has been abolished by effective oxygen administration—for example, pleural friction. It can, however, be dogmatically asserted that the respiratory embarrassment is always aggravated by oxygen lack. Hence the effect of oxygen administration will always be to produce a certain amount of relief to dyspnoea, although in certain cases the subjective relief may not be very great, especially in those cases where the oxygen lack is accompanied by carbon dioxide retention. A very good example of different types of oxygen lack is given in the experiments on rapid breathing by Binger, Brown, and Burch.<sup>12</sup> These observers produced pulmonary embolism in two different ways. In the first case they produced embolism of the pulmonary capillaries by the intravenous injection of a suspension of starch granules. After a certain point a marked increase in respiratory rate occurred, frequently associated with arterial oxygen deficiency. When this oxygen lack was abolished by oxygen administration there was a certain amount of reduction in the respiratory rate, but to nothing like the normal level. Apparently some reflex, probably due to irritation of the branches of the afferent vagi in the lungs, was concerned in the maintenance of this abnormally rapid rate. In the other series of experiments embolism of the larger branches of the pulmonary arteries was produced by the introduction of seeds of various sizes. In this case increase in the respiratory rate also occurred, associated with anoxaemia, but on abolition of the anoxaemia by oxygen administration the respiratory rate returned to its normal level. In certain conditions, therefore, oxygen administration may produce a fall in respiratory rate associated with relief of dyspnoea. Such, however, is not necessarily the case, and the continuance of respiratory embarrassment is not always an indication that the oxygen lack has not been effectively abolished and that oxygen therapy has been ineffective.

A third, and probably the most reliable, criterion of successful oxygen administration is a fall in pulse rate. This occurs even in normal individuals when increased percentages of oxygen are breathed, while in conditions of oxygen lack, of both the anoxic and stagnant types in congestive cardiac failure, effective oxygen administration produces quite considerable and significant diminutions in pulse rate, the only exception, so far as I am aware, being in a case of circulatory failure with heart-block, described by Meakins and myself,<sup>10</sup> where administration of oxygen appeared to restore the conduction of the cardiac impulse and the pulse rate was approximately doubled.

Barach,<sup>13</sup> in assessing the value of oxygen therapy in the treatment of pneumonia, notes the diminution of restlessness, promotion of sleep, and the tendency to a delirium. It cannot, however, be too strongly emphasized that the changes in the central nervous system of a delirium is a manifestation of the result of oxygen lack and that they should be prevented by the early administration of oxygen. Once these changes have occurred, relief of oxygen lack may prevent their further development, but does not always abolish them. As a physician, I may I appeal for caution in the use of stimulant drugs in the treatment of pneumonia. These can only increase the excitability of the central nervous system and intensify the demand of the tissues for oxygen. Sedatives may, however, be safely employed, provided that oxygen lack is prevented by effective oxygen administration.

In the treatment of acute respiratory diseases the value of oxygen administration is to tide the patient over the period of functional deficiency and so prevent damage to the central nervous system, myocardium, and other tissues. In this way it may be compared with the restriction of carbohydrate intake in diabetes and of nitrogenous intake in certain types of acute nephritis. Barach,<sup>13</sup> writing of the effect of oxygen administration in lobar pneumonia, states that "the value of oxygen treatment is felt to be supportive and not curative. In severe dyspnoea with cyanosis oxygen treatment has appeared to prolong life until such a time as the immunity mechanism was able to accomplish recovery."

Similarly, in the treatment of the respiratory embarrassment of congestive cardiac failure, the prevention or relief of anoxic anoxaemia will prevent further myocardial damage, and tide the patient over the critical period until the measures directed towards circulatory improvement have their effect.

Lastly, the value of oxygen administration in the treatment of chronic respiratory diseases may be briefly mentioned. Brieff and his co-workers<sup>14</sup> have found that many patients suffering from chronic disability resulting from air gas poisoning were permanently relieved by temporary residence in the oxygen chamber. Similar encouraging results have recently been reported by Campbell and Ponton<sup>15</sup> in cases of chronic bronchitis and emphysema. Dauterband<sup>16</sup> has shown the value of oxygen in relieving dyspnoea and diminishing the amount of cough and expectoration in cases of pulmonary tuberculosis.

Knowledge of the functional changes in chronic respiratory diseases is all too scanty, and the means at present adopted for their relief all too few. Investigation of the blood gases and of the respiratory exchange affords quantitative evidence of the functional deficiency, while estimations of the vital capacity and lung volume, combined with other simple physical measurements, indicate the extent and severity of the structural changes. All these investigations are necessary for an exact estimate of the value of any particular method of treatment. The relief of functional deficiency, even when only temporary, allows various healing and restorative processes to come into play and breaks what is frequently a vicious circle. In view of the very great importance of chronic respiratory diseases as causes of ill health and of economic loss, it is not possible to appeal too earnestly for more extensive investigation, which would involve active co-operation between physiologists, immunologists, and clinicians. The first is a fruitful one, and the workers would have before them the certainty that their labours would result in the relief of much suffering.

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## II—INDICATIONS FOR OXYGEN THERAPY

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ALTHOUGH the symptoms and signs of anoxæmia are protean, it is recognized that the two chief clinical manifestations of general anoxæmia are dyspnoea and cyanosis, that the onset of the former usually precedes that of the latter and that dyspnoea is often so urgent as to call for speedy, or even immediate relief. Chronic anoxæmia of lesser degree may interfere gravely with the functional efficiency of various organs and tissues, and ultimately lead to structural changes in them.

It is mainly in the hope of relieving severe dyspnoea that oxygen is administered. If dyspnoea and cyanosis were due solely to deficient oxygenation of the blood in the lungs it might be thought that the deficiency would be met by adding oxygen to the inspired air, and thus restoring to a normal level the oxygen tension of the alveolar air and the oxygen saturation of the arterial blood. Unfortunately the problem is not so simple, nevertheless this is the essential basis of oxygen therapy.

The methods of administering oxygen are far from satisfactory. The volume of oxygen that is delivered from the cylinder is only approximately known, no knowledge regarding the amount inspired by the patient while that which diffuses into his pulmonary capillaries is largely a matter of conjecture. In the administration of oxygen a common fault is to give too little. If oxygen is required we must give ample—not less than 2 litres a minute. This corresponds approximately to a free, rapid bubbling of the gas through water in a wash bottle. Oxygen is rapidly absorbed and rapidly consumed; there is no mechanism for the storage of oxygen in the fluids or tissues of the body. Any good effect derived from oxygen therapy is extremely evanescent, often lasting for not more than a few minutes. If oxygen is required it ought to be administered as continuously as is possible, to administer it for a few minutes every few hours or even several times an hour is of very little if any value. I never use a glass funnel held some inches from the face; a moulded glass face mask is more efficient and it is less irksome to the patient than either an oral or nasal tube. Haldane's apparatus is the most economical and reliable, I use it regularly in hospital practice.

Clinical observation indicates that oxygen therapy relieves dyspnoea and cyanosis in some patients; in them the fault must have been deficient oxygenation of the blood in the pulmonary capillaries. In other cases in which oxygen therapy is of no value the free entrance of oxygen into the alveoli may be prevented owing to various causes—such as tracheal compression, laryngeal or bronchial spasm, pulmonary emphysema, accumulation of secretion in the air passages or the presence within the alveoli of dropsical fluid or inflammatory exudate.

Again, oxygen therapy may fail because the dyspnoea is due to causes other than faulty oxygenation or the blood in the lungs; it may be the result of a pathological increase of metabolism as in hyperthyroidism. Here the abnormality in respect of oxygen is not a lack in the supply of oxygen to the tissues but their excessive consumption of oxygen. Moreover, the exophthalmic patient whose heart is sound is not dyspnoeic when at rest. Oxygen is likewise of no service in the dyspnoea of uræmia, in which the tissues receive too little oxygen because the lack of bromoglobin involves an inadequate transport of oxygen to them. Even though the uræmia be profound and causing those structural changes with which the physician and pathologist are familiar the patient is seldom breathless while he is at rest. Diabetic dyspnoea, the air hunger of Kussmaul, has certain distinctive features: the depth of the breathing is greatly increased, the rate is seldom raised. The dyspnoea resembles that following the breathing of air containing an increased content of carbon dioxide and is therefore presumably not due to want of oxygen. Dyspnoea in diabetes is a sign of grave acidosis; it is not due to anoxæmia but to increased hydrogen ion concentration of the blood with consequent disturbance of the acid base

balance, and the administration of oxygen affords no relief. The dyspnoea of the terminal phases of renal disease has other characteristics, one of which is that the respirations tend to become periodic. Periodic, or Cheyne-Stokes breathing is seen also in other states notably in those which cause great increase of intracranial pressure. Oxygen is not a satisfactory remedy for the dyspnoea of renal disease; the primary cause of which is probably a retention acidosis not an anoxæmia. In hydropic cases pulmonary oedema must gravely interfere with the diffusion of oxygen from the alveolar air into the pulmonary capillaries and in my experience the addition of oxygen to the inspired air does not lessen the dyspnoea. Cheyne-Stokes breathing when artificially induced, is one of the late manifestations of oxygen want, and can be relieved by the inhalation of carbon dioxide or oxygen, when it is primarily of cerebral origin it may be abolished while the patient is breathing air to which a little carbon dioxide is being added but the breathing quickly becomes periodic again after the additional carbon dioxide has been discontinued. In the same case oxygen, too will render the breathing regular, but the benefit, though more lasting than that of carbon dioxide is again of short duration. Thus, to be of benefit, the administration of oxygen must be practically continuous.

Oxygen therapy is not indicated in very rapid breathing (tachypnoea) without dyspnoea, such as was not infrequently observed during the war in cases of "shell shock" and disorderly action of the heart, and oxygen is neither needed nor beneficial in the condition usually termed "hysterical dyspnoea," of which the following is an illustrative case.

A young woman of nervous temperament collapsed soon after a sudden fright. The face was ashen grey with a slightly cyanotic tint in the lips and ears the pulse rapid and feeble, the blood pressure low and the breathing so shallow and rapid as to recall that of a pupa panting in the sun. She looked as if she might die at any moment yet there was no organic disease. Oxygen was administered by Haldane's apparatus without any benefit. The addition of a little carbon dioxide to the inspired air at once lowered her respiratory rate to 24 a minute, the breathing became deeper and all the urgent signs vanished. Some weeks later she was readmitted in a similar urgent state. While breathing air enriched with oxygen the rate of breathing rose from 45 to 59, but the addition of carbon dioxide lowered it from 43 to 33 a minute.

I conclude that the initial fright had caused deep breathing, an excess of carbon dioxide had been eliminated, and the ratio between the carbonic acid in the blood and the plasma bicarbonate had been disturbed, the blood reaction being shifted towards the alkaline side. The disturbance was therefore an alkalosis from loss of carbon dioxide; it is sometimes termed "respirin" but is more aptly designated "hypocapnia." In such a condition oxygen is of no avail.

In the treatment of circulatory failure oxygen plays but a minor part. The myocardium is enfeebled and the circulation is retarded. The blood passing slowly through the capillaries becomes unduly desaturated in respect of oxygen, and has added to it an excess of carbon dioxide. Thus the anoxæmia of circulatory failure is primarily a stagnant anoxæmia. So long as the pulmonary circulation remains efficient the blood passing through the lungs becomes again fully oxygenated, enrichment of the inspired air with oxygen does not increase the oxygen saturation of the arterial blood. In the later stages of circulatory failure with persistent dyspnoea even at rest, orthopnoea, cyanosis, and dropsy the lungs are the seat of venous congestion and oedema. The patient's breathing has become more rapid and less deep, the vital capacity is lowered, and the oxygen content of the alveolar air has fallen. The anoxæmia which now ensues is in itself harmful and may cause the breathing to become more shallow and rapid. Thus a vicious circle may be established. It is in this later stage of circulatory failure, with urgent dyspnoea, that I always administer oxygen, though realizing that neither on the circulatory failure nor its cause has it any direct influence. Oxygen therapy is more likely to be beneficial, lessening both cyanosis and dyspnoea when intense dyspnoea has begun suddenly and recently, as in the early phases of auricular flutter, paroxysmal auricular fibrillation, and paroxysmal tachycardia, than when it has

developed gradually and lasted for a considerable time. In the former group of cases oxygen may afford some relief until the paroxysmal disorder of the heart terminates spontaneously or until by appropriate means we have controlled the ventricular tachycardia or restored the normal cardiac rhythm. Even in the group of chronic cases there are some, notably the chronic fibrillators with a very rapid ventricular rate, in whom oxygen lessens the cyanosis and dyspnoea, and, I believe, helps to tide the patient over the phase of grave cardiac failure. In chronic myocardial failure associated with a normal cardiac rhythm there is seldom any benefit to be derived from oxygen therapy.

It is evident that the administration of oxygen can have no influence on the cyanosis due to a congenital septal defect of the heart so large as to permit of much venous blood (at least 38 per cent according to Lundsgaard and Van Slyke) being shunted from the right to the left side of the heart. We are therefore safe in concluding that if the cyanosis of congenital heart disease disappears while oxygen is being administered there is certainly no large septal defect. The cyanosis of congenital pulmonary stenosis may vanish during the time of oxygen administration, but the effect is so transient that it cannot be regarded as of any therapeutic value.

It is in disease of the respiratory system that imperfect oxygenation of blood in the lungs, with resultant dyspnoea of severe degree and the need for oxygen therapy, is most frequent. The anoxaemia may be due to two factors: (1) lessening of the volume of air which enters the bronchioles, as in tracheal compression and bronchial asthma, and (2) interference with the diffusion of oxygen through the alveolar walls into the pulmonary capillaries, as in acute pneumonia and pulmonary emphysema. Both factors doubtless operate in causing the anoxaemia of pulmonary emphysema and acute pneumonia. In emphysema marked dyspnoea and deep purple cyanosis may persist even while the patient is kept at rest in the semi-recumbent posture, and the frequent administration of oxygen then affords more relief, even though temporary, than is obtainable by any other means.

It is in acute pneumonia that oxygen is most often administered. More than thirty years ago I learned from that wise physician of great clinical experience Sir James Affleck that oxygen therapy may be of great value in acute lobar pneumonia. To-day that opinion is still true. All recent research on the oxygen saturation of the arterial blood in pneumonia, with a demonstrable rise of the percentage oxygen saturation from an unduly low level to one approximately normal during the administration of oxygen, is in harmony with the observations made long since at the bedside that oxygen may be helpful in acute pneumonia.

Every pneumonic patient is dyspnoeic, but it does not follow that he needs oxygen. In the treatment of acute pneumonia oxygen is not my first line of defence—my sure shield is good nursing—not is it my second or even my third line. Nevertheless just as the special constable had his part to play during the war, so, too, my oxygen therapy help to some extent in the fight against pneumonia. Many patients make an uninterrupted recovery, having never needed oxygen, digitalis, stimulants, or hypnotics. There is one indication for the administration of oxygen in pneumonia—an indication which should never be neglected—and that is cyanosis. There may be differences of opinion regarding the relative parts played by cardiac, vascular, and pulmonary factors in the development of the cyanosis, but there can be no question that the administration of oxygen may relieve both the dyspnoea and cyanosis, and therefore by combating anoxaemia tend to obviate cardio-vascular failure. The faintest trace of cyanosis in the lips, ears, or nose is a call for oxygen. The call becomes urgent if the cyanosis is pronounced, when that ominous combination of pallor and cyanosis develops it is usually too late to hope for much benefit from oxygen therapy. If oxygen is indicated in pneumonia it should be given freely and as continuously as possible. It is undoubtedly more valuable in acute lobar pneumonia than in acute broncho-pneumonia.

While I am an advocate of oxygen therapy in pneumonia, it has never been my good fortune to observe any of the magical effects described by some writers. Acute pneumonia is always a serious disease. During a period of four years ending October, 1926, 895 cases of acute pneumonia (including acute broncho-pneumonia) were treated in the Edinburgh Royal Infirmary. Of patients who were in the first three decades, 92 per cent recovered, of those in or after the seventh decade only 35 per cent recovered. Anoxaemia is only one of many factors with which we have to reckon in pneumonia. At the extremes of life, in the destitute, the intemperate and the obese, and especially in profoundly toxic cases such as those during the epidemic of 1918-19, oxygen therapy is usually powerless to avert a fatal issue.

### DISCUSSION

Dr. R. HARRIS (London) said that he had examined the oxygen content of blood obtained by arterial puncture in various conditions, including pneumonia. It was remarkable that there was no drop in the oxygen saturation of arterial blood in this condition. This implied that the circulation through collapsed portions of lung must be extremely small, otherwise the arterial stream must inevitably be polluted with venous blood. He showed lantern slides illustrating experiments in which he had administered oxygen by various methods, and determined the oxygen content both of alveolar air and of arterial blood. He agreed that the funnel method was useless. He had obtained good results by the nasal catheter method though he found that if the gas were given at too great a rate much discomfort was produced. He showed that a small but not a negligible rise in arterial oxygen tension could be produced by such small amounts of the gas as 0.75 to 1 litre a minute when given by nasal catheter. He added that eating, coughing, and expectoration were not interfered with by the presence of the catheter. He discussed some satisfactory results which he had obtained with a mask he had devised, and which was demonstrated.

Professor C. W. GREENE (Missouri, U.S.A.) emphasized the necessity of continuous oxygen therapy from its commencement until the crisis which it was intended to combat had passed. The physiological reactions to an increased supply of oxygen were remarkably prompt. In processes of anoxaemia induced on normal men or animals, if, when the limit of endurance was approaching, a momentary flood of oxygen was supplied, then the heart slowed, the blood pressure decreased, and the respirations became almost normal in rate and depth—all in a few seconds; the skeletal motor reactions, the alimentary motor innervation, and other less easily followed asphyxial nerve reactions quieted down. When the anoxaemic condition was re-established these reactions were promptly returned. In disease—during anoxaemic crisis in lobar pneumonia, for example—the same conditions operated, modified by the toxæmia and the particular pathological condition of the patient. The danger of interruption of the extra oxygen supply is that the patient might not stand the shock of the sudden recurrence of the anoxaemic nervous reactions.

Dr. CARL H. CRITCHE (Mayo Clinic) stated that the oxygen treatment of pneumonia had been instituted during the last few years by Drs. Baerthly and Weber at the Mayo Clinic. They had used both the oxygen tent and the oxygen tent with success, though the latter was less complicated and was more suitable for ordinary hospital practice. By such means the cyanosis in pneumonia could usually be completely controlled. If treatment was continued for a sufficient period it might improve the patient's life. Most striking features were the reduction in temperature and the decrease in the fever. The reduction in the pulse rate and the decrease in the respiratory rate, however, emphasized the fact that anoxaemia was not the only factor in the mortality from pneumonia, and that by estimating also the relative importance of the other factors that the final value of oxygen therapy could be determined.

# THE RELATION OF THE SEX OF OFFSPRING TO THE TIME OF COITUS DURING THE OESTROUS CYCLE

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THREE are many who hold the opinion that in the case of the human as well as in other animals the length of time which elapses between the extrusion of the ovum from the ovary and its fertilization by the sperm is a decisive factor in determining the sex of the resulting individual. This hypothesis was elaborated at length by Thury (1863-1864), who maintained that an ovum when first extruded was female in respect of its potentialities, but that at some point during its passage along the genital tract it became male. Fertilization immediately after ovulation yielded a female, fertilization some time later yielded a male, and fertilization at points between these times resulted in the production of intersexual forms. Thury, applying this hypothesis to the problems of practical animal breeding, was able to claim that, in the case of cattle, service during the earlier phases of oestrus yielded a preponderance of heifer calves, whereas service towards the end of oestrus resulted in the production of an excess of males. Thury's hypothesis was accepted and endorsed by Braus (1871), Guirard (1903), and Bell (1914). But it is reasonable to question the validity of these observations, since it is now known that it is a matter of considerable difficulty to recognize the exact stage of oestrus exhibited by an animal such as the cow. Moreover, the exact relationship of oestrus and ovulation in these forms is not clear even yet.

It is the case, however, that recent work has revealed considerable evidence which seems to show that sex reversal of the egg before fertilization does occur in certain forms. The experiments of Hertwig (1906-1912), of Kishakovitch (1910), and of Witschi (1914) have shown, for example, that delayed fertilization and also the exposure of the ovum of the frog to high temperature before fertilization lead to a profound disturbance of the sex ratio among the resulting generation. If the male frog was permitted to fertilize half of the eggs of the female and was then removed, to be replaced after an interval to fertilize the remaining eggs, after the lapse of eighty-nine hours none but male offspring were obtained from the second half. It was established that this result was not due to a selective fertilization, to a sexually selective mortality among the embryos, or to the abnormal extrusion of the X-chromosome from the ovum during its maturation. The correct interpretation of the results would seem to be that some 50 per cent of the eggs were fertilized by X-chromosome-bearing spermatozoa to become genetic females (XX in chromosomal constitution) but that the conditions of the experimentation were such as to transform them into individuals with the characteristics of the male, the sex-chromosome constitution of the zygote being overridden by the effects of delayed fertilization upon the metabolism of the egg before fertilization. King (1912) has shown that desiccation of the toad's egg yields exactly opposite results. She obtained 87 per cent of females in an experiment in which the mortality among individuals of unknown sex was insignificant. The interpretation of her results would appear to be similar.

It has been found by Whitman (1919) and Riddle (1912, 1916) that the mating of pigeons and ringdoves belonging to two widely different zoological families results in the production of male offspring only, and that female offspring alone were obtained from the eggs of doves which had been forced to lay excessively and at an abnormally rapid rate. In birds the female is the digametic sex. Riddle was able to show that eggs which yield males can be distinguished from those which yield females, that males are associated with eggs of smaller size, higher water content, and less stored energy, and that the production of more but males or of none but females is associated with the antecedent production of eggs of one or of the other kind. He submits

that delayed fertilization leads to an increased metabolic rate in the egg and that a high metabolic rate leads directly to the development of a male type physiological state and characterization. Wide crossings involve the pooling of hereditary factors which in their action lead to the establishment of one or other kind of metabolic level, male or female, in the zygote. Extending his conclusions to the case of cattle, Riddle suggests that the greater production of males from eggs which have remained unfertilized for a period of hours is almost certainly correlated with an increased water content which the eggs obtain before fertilization. He grants that it is not established that the mammalian ovum does indeed take up water from the fluid it encounters in the reproductive passages, but points out that this is so in the case of every amphibian, reptile and bird so far examined. However, it still remains to be shown that what applies to the amphibian applies also to the case of the mammal.

Russell (1891) had collected data relating to the sex ratio of calves according to the time of service during the oestrous period, and this investigation was continued and extended by Pearl and Parsley (1913), who published the following data:

TABLE I

Time of Coitus	Total Offspring	Males	Females	Sex Ratio
Early in oestrus	243	123	125	53.4
Middle of oestrus	125	67	58	115.5
Late in oestrus	107	65	42	154.8
	475	255	225	113.3

From these figures the authors concluded that the time of service had an appreciable influence upon the sex ratio. In a later paper by Pearl (1917), however, additional data were considered, and the conclusion reached that there was no definite or permanent relation between the time in the heat period at which the cow was served and the sex of the offspring. The commonly held opinion of the breeder and the suggestiveness of the earlier data of Pearl and Parsley were to be regarded as unsoundly based on insufficient statistics, and the relation of time of service and sex as purely accidental and not significant. It is impracticable for private breeders accurately to record the beginning of oestrus, the onset of activity of the cow towards the bull cannot be regarded as a trustworthy criterion of the onset of oestrus.

In the case of the rat, if the methods of Long and Evans (1922) and of Slonaker (1924) are employed to detect the onset and progress of the oestrous cycle, it is eminently possible to ensure that coitus shall occur at any particular point during this cycle. In the rat the vagina is moist and of a pinkish colour during the di-oestrous phase of the oestrous cycle. During the phase of pro-oestrus, oestrus, and met-oestrus on the other hand the vagina is dry and whitish, and the vaginal lips are more or less swollen. Long and Evans have shown that through the systematic examination of vaginal smears it is possible to follow exactly the course of the oestrous cycle. For purposes of description it was found to be convenient to divide the cycle into stages. In stage 1 the vaginal smear consists solely of medium uniform sized epithelial cells, whilst the lips of the vagina are somewhat swollen. This stage lasts for ten to fourteen hours. In stage 2 relatively few cornified cells are present in the smear. The vagina is patent and its lips are swollen and of a characteristic purple colour. The onset of this stage is sudden, the change from stage 1 being complete in two to three hours. This stage lasts twelve to thirteen hours and it, together with the next stage, corresponds to true oestrus. In stage 3 the smear consists of large numbers of cornified cells, many of them cohering to form large clumps. The swelling of the vaginal lips is receding. This stage lasts twelve hours. True oestrus, therefore, occupies some twenty-four to thirty-six hours. In stage 4 leucocytes make their appearance in the smear which now consists of cornified cells and leucocytes. The lips of the vagina are no

\*A paper read in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association in Edinburgh 1927.

longer swollen. This stage lasts four to eight hours. In di-oestrus, lasting fifty to sixty hours, the smear consists of epithelial cells and leucocytes.

Sloniker, using the revolving cage, was able to show that the peak of physical activity of the rat coincided with the cornified cell stage of Long and Evans, and Cooley and Sloniker, employing these methods of estimating the exact stages of the oestrous cycle in the albino rat at which coitus was noted, carried out experiments designed to examine the relation of the time of service during the oestrous cycle and the sex ratio. They found that their results showed no appreciable difference in the sex ratio among offspring of matings during early and late oestrus. A ratio of 114.6 males per 100 females resulted from matings during early oestrus, one of 110.5 100 from those during late oestrus. The difference, though suggestive, is not significant, when the numbers of litters considered are taken into account.

In the human it is now generally accepted that ovulation occurs fourteen to eighteen days after the first appearance of the menses. At the time when most of the data concerning the relation between the time of coitus during the intermenstrual period and the sex of the child were secured, little or nothing was known concerning the correlation of menstruation and ovulation, and so many of them are not really useful.

The observation that the Jews exhibit a high secondary sex ratio has been explained on the ground that coitus is forbidden during the first week after menstruation, and that the ovum, therefore, overripe and potentially male when fertilized. But Pearl and Sulman (1913) failed to find any evidence that in the human the time of fertilization of the egg relative to the menstrual period had any influence upon the sex ratio among the offspring. There are data, however, which seem to suggest that such a correlation does exist. Both Siegel (1916) and Fuist (1886), for example, found that impregnations during the earlier days of the intermenstrual period yielded an excess of males, whereas later impregnation gave a preponderance of females, though Pivl (1916), on the other hand, did not observe this difference. Their data are tabulated below. Freeborn's (1916) figures show an excess of females in the case of impregnation during the first half of the intermenstrual period, an excess of males from those during the second half. Bolaffio (1922), on the other hand, noted exactly opposite results.

TABLE II

No of Cases	1-9 Days after Beginning of Menses			10-14 Days after Beginning of Menses			15-22 Days after Beginning of Menses			Authority
	♂♂	♀♀	Sex Ratio	♂♂	♀♀	Sex Ratio	♂♂	♀♀	Sex Ratio	
80	37	7	528 100	4	9	44 100	3	20	15 100	Siegel
193	40	18	222 100	23	28	82 100	27	33	82 100	Fuist
581	136	111	122 100	69	62	111 100	71	67	106 100	Pivl

The evidence is distinctly conflicting. Ewart (1922) has pointed out that one source of error common to all the above observations is their neglect of the fact that male fetuses at birth are some five to six days older than female foetuses. Siegel (1921) acknowledges the validity of this criticism, and an examination of his records showed that the average length of gestation of males was 272.6 days, whereas that of females was 267.5 days.

The subject is of such interest that it was thought to be desirable to undertake further experimentation. The albino rat was chosen as experimental material, six males from one and the same litter were used. They belonged to a strain which habitually had given an unexceptional average sex ratio (105.4 100 for a four-year period). One hundred females were used; they all belonged to the same strain as the males, being all related and line bred. The experiment was carried out during the period May to September. The experimental animals were maintained under uniform conditions in the colony house and the diet was the standard diet given to all the general stock.

The progress of the oestrous cycle was recorded by the method of Long and Evans. A drop of saline was placed on a microscopic slide, a metal spatula moistened with saline, was inserted 1.5 cm. into the vagina, and the vaginal wall gently scraped. The spatula was then stirred in the drop of saline on the slide and thus examined under a low-power microscope.

There are certain matters which have to be borne in mind in experimentation such as this. The older the animal the longer is the oestrous cycle, but oestrus proper is of longer duration in younger females. This usually begins in the late afternoon and continues throughout the night and the earlier part of the following morning. Service near the end of oestrus proper is effected only with difficulty in many instances, the female being at that time unreceptive. Further, the female will on occasion accept the male three to five hours before the oestrous cycle begins, so that it is very necessary to recognize the particular phase of the cycle by means of vaginal smears before coitus is allowed. By service early in oestrus is meant coitus during the first three hours of true oestrus, by later service, coitus during the last three hours of true oestrus, when cornified cells fill the microscopic field.

Fruitful coitus can be recognized by the presence of sperm in the post-coital vaginal smear, by the presence of the bouillon vaginalis and by the increase in weight of the female. She gradually becomes heavier and heavier up to the fiftieth day, and thereafter the further increase in weight is rapid in time pregnancy. Pseudo-pregnancy is not uncommon, however, more particularly in the case of coitus during late oestrus, and is to be recognized by the reappearance of oestrus fifteen days after service.

Allowances have to be made for a possible swing of the sex ratio with the chronological order of the pregnancy. In the case of the human there is clearly a relation between the age of the mother and the number of the pregnancy. Primiparae are usually 20 to 30 years old, second third and subsequent pregnancies occur in women over 30. Parkes (1924), for example, has shown that two thirds of primiparous pregnancies occur in women under 28 years of age, second and third pregnancies occur mainly between the ages 23 and 32, and fourth pregnancies occur between 28 and 37. It is recognized that the sex ratio swings with the chronological order of the pregnancy. It is higher in earlier pregnancies (Newcomb, 1904; Alford, 1872; Winckel, 1903; Hecker, 1874; Jattle, 1919). This swing may be related to the number of the pregnancy, to the increased age of the mother, or to both of the factors. Cooley and Sloniker (1925) and King (1915) have shown that this rule of a decreasing sex ratio with increase in the mother's age applies also to the rat, and Copeman and Parsons (1904) have shown that it holds also in the case of the mouse. In the present experiments it was decided, therefore, to consider only the third litter of each of the females. There is a progressive lengthening of the gestation period with succeeding pregnancies in the case of the rat. The second is some eight hours longer than the first, the third some six to twenty-four hours longer than the second. Coitus early in oestrus is associated with a somewhat longer gestation period than coitus late in oestrus, as would be expected, since it involves a longer interval between coitus and fertilization. The results of the experimentation may be tabulated as follows.

TABLE III

No of ♀♀	Time of Coitus	Total Litters	Female Litters	Total Offspring	Average Litter	♂♂	♀♀	Sex Ratio
59	First three hours of oestrus proper	35	15	189	5.4 ± 0.13	68	51	134 100
50	Last three hours of oestrus proper	23	22	159	5.7 ± 0.12	77	82	93 100
		63	37	348	5.53	145	133	109 100

The conclusions which emerge from this study are that it is true, with numbers that are much too small to be of any real significance—are entirely negative. It is



remembered that it is wellnigh impossible for any one investigator to conduct experimentation on a sufficiently large scale and that it is therefore desirable that experiments of this kind should be multiplied so that out of a considerable series adequate data may be secured. So far as they go the present figures tend to support the contention that the time of service in relation to the oestrous cycle is a factor of no importance in the matter of the determination of sex in the mammal.

#### Summary

In an experiment designed to examine the sex ratio among individuals resulting from coitus during the first three hours and during the last three hours of oestrus respectively in the rat no difference was noted between these two groups.

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#### Discussion

Dr JAMES YOUNG (Edinburgh) thought that it was impossible to discuss Dr Crew's paper until he had had time to read it and digest it. He looked forward to a further series of investigations by Dr Crew of an even more complete nature.

The PIR IDEY (Dr Haig Ferguson) complimented Dr Crew on his most interesting paper but was sorry that it should be thought that the mark was the product of still eggs.

Dr CREW, in reply, thought that objections would not be allowed to plead ignorance of this very important subject much longer. It was not the egg but the sperm which determined the sex but any abnormality affecting the egg would upset the sex-determining mechanism.

## UTERINE FIBROIDS AFTER THE MENOPAUSE

BY

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UTERINE fibroids may give rise to symptoms over a wide range of age, but in practice we find that a very large proportion of patients consult us for the first time between the ages of 45 and 50, and if we advise an operation the first inquiry of the patient is the possibility of an early menopause with the probability of cessation of symptoms. Naturally every patient wishes to avoid an operation and every right-minded surgeon wishes to save her this ordeal but he is expected to advocate the best method of treatment and, in giving this opinion, he must not allow his judgement to be unduly biased by sentiment. In deciding, for or against operation two important considerations must be borne in mind: first the fact that with uterine fibroids the menopause is frequently delayed and secondly the possibility of malignant and degenerative changes occurring in the fibroids after the menopause. It is the second consideration with which I wish specially to deal.

The more experience I obtain in my work the more impressed am I with the serious complications which may occur in connexion with these tumours after the menopause. It is impossible to calculate the percentage of fibroid after the menopause which undergo serious changes, since we only see those patients in whom the fibroid is giving trouble, but even if the percentage is small we must give due weight to the fact that the removal of fibroids in a comparatively healthy woman before the age of 50 presents a very slight risk, whereas the same operation in a patient over 60 or still more over 70 years of age for a fibroid which has undergone degenerative changes from which the patient's general health has suffered is a very much more serious matter. My own belief is that a patient with a fibroid of moderate or large size will yet more wisely in getting rid of it while in a good state of health than in running the risk of serious trouble developing at a later stage of life.

During the last six and a half years I have operated upon 62 patients for definite symptoms due to uterine fibroids after the menopause, and should have operated upon three others if their general condition would have permitted it. It is upon these 65 cases that I base this paper. During this same period I have been consulted by several patients in whom the fibroid was so small and the symptoms so slight that I have advised against operation; these cases are not considered. The majority of these 65 patients were between the ages of 50 and 60, but 8 were between 60 and 70 years of age, and 3 were over 70. In several instances patients complained of two symptoms either of which was sufficiently severe to call for operation, so in discussing these symptoms separately these patients will appear in both sections.

#### General III Health. Patient not Fit for Operation

There were three patients whose general health precluded the possibility of operation. One was 60 years of age with recent haemorrhage from the tumour but she had had a recent stroke and even if the tumour proved to be malignant I did not feel justified in subjecting her to any operation. The second was also 60 years of age and had severe pain in the lower abdomen, apparently arising from a uterine fibroid but she was in a very feeble state of health with mitral regurgitation and was not fit for an abdominal section. The third was an enfeebled woman aged 72 with a fibroid almost filling the pelvis and with a slight degree of prolapse. Many years previously she was told she had a fibroid, but was advised not to have it removed. With advancing years the tumour dropped in on the pelvis and produced more and more discomfort from pressure symptoms and now she is a confirmed invalid spending most of her life in bed or on the couch and

though possessed of all that wealth can give her, she drags out a miserable existence. Here, again, her general health precludes all possibility of operation, but if this had been performed twenty years ago she would now have been a healthy old lady, enjoying life, and a source of much greater happiness to herself and her family.

### Malignancy

There is considerable divergence of opinion about the incidence of malignant disease in uterine fibroids, but I think all will agree that a uterus which contains fibroids is much more likely to undergo malignant changes than one which is free from these tumours. I am convinced that the risk of this occurring in a fibroid uterus after the menopause is to be borne in mind when deciding for or against operation. In this series of 65 cases 6 had definite malignant changes in the uterus—3 sarcoma and 3 adenocarcinoma. Their ages varied from 49 to 56 years, and they had all passed the menopause several years.

The patient aged 49 years had an interesting history. Double oophorectomy was performed six years previously for haemorrhage due to a fibroid uterus, she was brought to me on account of recurrent haemorrhages and a thin watery discharge of almost one year's duration after five years' amenorrhoea. I found the cervix dilated by what I thought to be a fibroid polypus. I performed a panhysterectomy and found the fibroid polypus to be a sarcoma. The patient died of recurrence about four months later.

Sarcoma of uterine fibroids occurs much less frequently than does carcinoma of the body or cervix in uterus with fibroids, and it is curious to find in this small series that the two types of growth were present in equal numbers. If I investigated the figures over a longer period of years I am sure the proportion would be different.

### Haemorrhage after the Menopause without Malignant Changes

This is by far the commonest symptom, and in this series 24 complained of bleeding which commenced some time after the menopause, in 6 cases this was associated with other symptoms, which are mentioned in succeeding paragraphs. These patients varied in age from 47 to 68 years. The usual history was simply recommencement of bleeding after a number of years of amenorrhoea, and, as the only physical sign was enlargement of the uterine body with the fibroid, it was impossible to say whether that fibroid was undergoing malignant change or not, unless the patient was anesthetized and a diagnostic curetting was performed. In these cases I do not think that this would be good treatment, since an early adenocarcinoma is easily overlooked, while a sarcoma cannot usually be detected, moreover, a uterine fibroid which becomes active after the menopause, and produces haemorrhage, is not likely to be benefited by curetting, and is much better removed.

### Acute Pain

Nine patients complained of acute pain in the lower abdomen, in two this was associated with haemorrhage and in one with rapid enlargement. All these tumours showed advanced degenerative changes, two with red degeneration, while two had a subperitoneal fibroid with twisted pedicle. In each case the pain was acute and led for early operation.

### Chronic Pain

Some patients complained chiefly of this symptom, principally in the lower abdomen and back, and, in some cases, radiating down into the leg. These patients, on the average, were older than those in the preceding group, in the majority of cases, no doubt, the fibroid had diminished in size since the menopause, and was producing symptoms by pressure inside the pelvis. Three of these patients complained of other symptoms in addition to this chronic pain, but in all this symptom was of such severity that they desired operative treatment, even though one was 72 years of age.

### Torsion of the Uterus

This is a very rare complication, but by a curious coincidence I have had two cases within six months, and

it is worth giving a short note of each as they are different types of onset, one acute, the other sub acute.

The first patient, an unmarried woman aged 70 passed the menopause when she was 56 and was told before that she had a fibroid, but was advised not to have it removed. Sixteen months there had been recurrent attacks of abdominal pain with sickness, and on this occasion she consulted a doctor, who found a hard, tender tumour, which the patient had increased in size. This tumour extended up to the umbilicus and was so tender that I made a diagnosis of red degeneration. On opening the abdomen I found the uterus contained an intraligamentary fibroid at the fundus, about the size of a foetal head and twisted round in two complete circles at the level of the internal os, where they were attached to the cervix by a pedicle no thicker than my first finger. The uterus, tumour, and appendages were deep purple, almost black, in colour, and were easily removed by cutting through this small pedicle. In spite of her age and the severity of the condition the patient made an uninterrupted recovery.

This is a curious case, as there was no history of acute onset, merely recurrent attacks of abdominal pain and sickness extending over sixteen months, and this last attack was little if any more severe than her previous attacks from which she had recovered.

The second patient, also unmarried, was 56 years of age and had passed the menopause two years previously. When I saw her there had been severe abdominal pain for two days which was made much worse by her journey to see me, she was so ill that I sent her at once into a nursing home. As in the last case this patient had a hard, tender mass arising from the pelvis to the level of the umbilicus, and I found when the abdomen was opened that she also had a single intraligamentary fibroid the size of a foetal head, developed in the fundus. The uterus, fibroid, broad ligaments, and tubes were greatly distended and almost black in colour, they were twisted round in one complete circle at the level of the internal os. The tumour was easily removed, and the patient made an uninterrupted recovery.

### Torsion of the Pedicle of Subperitoneal Fibroids

Two patients, one aged 53, the other 54, were operated upon several years after the menopause for acute abdominal pain due to a subperitoneal fibroid with torsion of its pedicle.

### Pressure Symptoms

Uterine fibroids, after the menopause, shrink in some cases sufficiently to allow the tumour to fall into the pelvis and so produce pressure symptoms, which may manifest themselves in various ways.

**Retention of Urine.**—Four patients suffered from acute retention of urine which had required the passage of a catheter. In all cases the fibroid was well down in the pelvis, and no doubt before the menopause it had been of sufficient size to be held above the pelvic brim.

**Pressure on Rectum.**—Two patients complained of severe rectal symptoms, which had commenced some years after the menopause, and in each case there was a uterine fibroid lying in the pelvis and pressing on the rectum.

**Bearing Down.**—Two patients complained chiefly of this symptom, though in one case there was also severe flooding. Both patients had passed the menopause several years and the symptoms had only occurred after this period. In these cases no doubt the symptoms were directly due to the post-menopausal shrinkage of the tumour, which allowed it to fall to the bottom of the pelvis.

Sometimes after the menopause the tumour increases in size, and this also may produce pressure symptoms.

**Frequent Micturition.**—Two patients complained of this symptom. In one the tumour extended almost to the sternum and was very soft, evidently undergoing degenerative changes, whilst the other was smaller in size but extended into the abdomen, and, in addition, was giving rise to muchaching, dragging pain.

**Swollen Legs.**—One patient complained of swollen legs, and had a large, soft fibroid extending up to the umbilicus which was enlarging rapidly.

### Increased Size of Tumour

Some patients had noticed recent rapid increase in size of the tumour. Several years had passed since the menopause, the increase in size was due in each case to degenerative changes of the tumour, usually cystic in nature. The rapid increase in the size of the tumour was accompanied by haemorrhage in two cases and by pain in three.

### Degeneration Followed by Infection

It is to be expected that a fibroid which has undergone degenerative changes would readily become infected, and this is a danger to keep in mind, but in this series I have only one patient who had a rise of temperature before operation. In this instance the fibroid had undergone red degeneration—a type which readily becomes infected. Probably the small incidence of this complication is due to the degeneration producing other symptoms which called for operation before the tumour had time to become infected.

### Absorption from Degenerated Fibroids

This is a very common occurrence. In this series I have three patients who were operated upon for this cause alone, though no doubt many of the other patients were suffering from absorption in addition to the more urgent symptoms which called for operation. Each of these patients suffered in general health—loss of appetite and loss of weight, and they were anæmic. All had degenerating fibroids and improved in general health after removal of these tumours.

### Ascites due to Calcareous Degeneration

This is a condition I have met with occasionally, and though it does not occur in this series should be mentioned. Occasionally in a patient with ascites there can be felt a hard tumour of pelvic origin, which is diagnosed as a malignant ovarian tumour, but proves to be a subperitoneal uterine fibroid which has undergone calcareous degeneration, and by its hardness has so irritated the peritoneum as to produce ascites.

### Tenderness after Radium

A patient aged 52, had been treated by radium two and a half years previously for hæmorrhage due to uterine fibroids. Since this treatment she had complete amenorrhoea, but complained of severe pain in three abdominal scars due to radium burns, and great tenderness in the uterus which produced severe dyspareunia. The uterine fibroid was quite small and I did not advise any operation, but I think the case should be mentioned to illustrate the fact that treatment by radium so strongly advocated by some authorities is not entirely devoid of risk.

This is my experience of post-menopausal trouble from uterine fibroids during the last six and a half years—on the average ten cases each year sufficiently severe to require operative intervention. The number may not seem very large, but when we consider the increased risk of the operation in patients of advanced age, with resistance still further reduced by changes in these tumours I do feel that this should have considerable weight with us when deciding whether a patient with a fibroid uterus before the menopause should be advised to have it removed. I give it as my considered opinion that it is much safer for a woman with a fibroid of moderate or large size (quite apart from any symptoms it may be producing at the time) to have it removed before the menopause than to run the risk of malignant or degenerative changes, which so frequently occur after the menopause.

### Discussion

Dr BETHEL SOLOMONS (Dublin) was struck by the large percentage of malignant changes in Professor Shaw's series which seemed to show that those who favoured the treatment of fibroids by x rays were acting on the wrong lines. Whereas in many cases after the menopause hysterectomy was no doubt the best operation, he thought that in isolated instances myomectomy might be preferable. He warmly advocated the use of stovaine in these cases.

Professor LOUISE McILROY (London) agreed with what had been said, she was convinced that fibroids were caused by toxæmia. She related the case of a submucous fibroid in an enfeebled patient being successfully treated by pituitary extract, quinine and castor oil, as for the induction of labour.

Professor GIBSON FITZGIBSON (Dublin) was inclined to think that some of these cases were of actual post-menopausal growth, and not necessarily changes in fibroids. It was worth remembering that many women aged from

38 to 40 might nowadays get married, and it was therefore a question whether they should postpone an operation until after the child bearing age.

Dr W. TORRICE (Edinburgh) questioned whether malignant changes were generally so common as Professor Fletcher Shaw's figures suggested. His own experience of fibroids undergoing malignant changes was so limited that the risk might almost be ignored. If malignancy was so common, then operation should be performed for small fibroids and not reserved only for large ones.

Dr J. YOUNG (Edinburgh) thought that only a very small proportion of fibroids underwent malignant changes after the menopause. He also was strongly in favour of spinal anaesthesia in old and feeble patients.

Dr J. H. FERGUSON (Edinburgh) had seen three cases of torsion of subperitoneal fibroids and three cases of torsion of the uterus itself. One of the complications of torsion was collapse from hæmorrhage.

Professor FLETCHER SHAW, in reply, expressed surprise at the unanimity of those taking part in the discussion. In regard to the occurrence of malignant degeneration in fibroids, it was a very vexed question how frequently this occurred. Statistics varied enormously. His own impression was that a fibroid uterus was much more likely to undergo malignant changes than a non-fibroid uterus. He was not so convinced that malignant change was so common that every fibroid should be removed, but he thought it warranted operation in the case of the larger fibroids. In regard to anaesthesia, he agreed that the spinal method was the most suitable unless the services of an artist in general anaesthesia were available.

## SOME POINTS IN THE TECHNIQUE OF THE LOWER SEGMENT CAESAREAN OPERATION

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THE lower segment Caesarean operation is such a valuable procedure that it is necessary to bring its advantages and disadvantages constantly before the medical profession, especially in view of the fact that it is neither practised nor recommended in some of the larger hospitals which devote themselves to the teaching of students. No more illuminating argument for the advantages in the operation can be brought forward than the change in opinion of that broad minded and brilliant obstetrician Munro Kerr who in his *Operative Midwifery* (1916) stated that he believed that it would entirely disappear and be forgotten unless the caesarean in the lower segment was decidedly stronger than the one situated in the upper part of the body of the uterus. He is now well known as a strong supporter of the low segment operation.

It is necessary to discuss various points in technique as they arise, in order that some definite mode of performing the operation may be standardized to some extent.

One of the most instructive communications in recent years is the paper by Harris and Brown on the bacterial contents of the uterus. They show in this that the classical operation is the safest when performed at the time of clefion and that the bacterial content of the uterus becomes greater and advances higher the longer the woman is in labour. This might appear at first reading to be a reason for the adoption of the classical operation, but a moment's thought will dismiss this fallacious idea from the mind, for no matter in what part of the uterus the infection lies, be it high or low, it is obvious that the incision should be in the comparatively innocuous lower segment covered with bladder peritoneum rather than in the upper abdomen in close proximity to the intestines, with the likelihood of general peritonitis. These remarks apply particularly to placenta prævia. In this short series a central insertion of the placenta was







Professor McILWRAITH (Toronto) said that the lower segment operation was gaining in favour in Canada. They did not employ low section in placenta praevia or in cases where it was to be expected that the patient would go through a subsequent natural labour. He described a case in which the classical section had been performed when in a later pregnancy, rupture occurred, not through the uterine scar, but through the lower segment.

Professor HENDRY (Glasgow) welcomed the emphasis that had been laid on the opportunity for a trial labour which this operation offered. He did not think it was a good operation for placenta praevia, and he left the placenta inside as a general rule. He always used continuous catgut sutures, and had never found any necessity to drain.

Dr J H FERGUSON (Edinburgh) referred to the methods of sterilizing catgut, particularly the length of time required for each size.

Dr SOLOMONS, in reply, said that he found it difficult to say what size of catgut he used, as different makers seemed to employ different standards. Roughly speaking, the thicker the gut the longer it was left in the box. In spite of what others might say to the contrary, he would continue to drain when in doubt. His objection to leaving the placenta behind was that clots might arise when it was necessary to explore for it, and this would add enormously to the risks of the operation.

## THE UNIFICATION OF LOCAL HEALTH SERVICES.

### I—THE WORK OF A LOCAL HEALTH AUTHORITY

BY

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THE administration of the health services of the country is admittedly defective, and there is a general consensus of opinion that the time for unification is becoming ripe, although the precise method of accomplishing this and the difficulties surrounding it are still subjects of controversy. The defects which are to-day under criticism are very largely the product of the historical evolution of local government. The tendency of administration hitherto has been to create from time to time special local bodies responsible for the conduct of particular services wherever these could be organized as separately functioning independent units. It is not necessary to enter into the reasons for this multiplicity of services and the hesitancy to face the problems of unification. Modern ideas are causing the whole complicated structure to be regarded as, somewhat of an anachronism. The essentials of successful administration of the health services are now perceived to lie more in the direction of interdependence than of independence, and the phraseology in common use includes the terms co-ordination and co-operation, if not actual unification.

The various administrative bodies concerned in the treatment and prevention of disease now find themselves exposed to the atmosphere of modern thought. Their continued separation and isolation are becoming more and more subject to criticism. The nature of the functions they perform can no longer be regarded as falling into watertight compartments. A rigid separation between curative and preventive medicine can no longer be maintained as a working proposition.

The confusion has been still further augmented by the rapidly increasing responsibilities thrown upon local public health administration in recent years. Public health laws and regulations have followed one another in breathless haste, and bodies created for simple purposes now find them-

selves endowed with immense and complicated statutory functions. While larger local authorities have been able to absorb and apply these measures, the rapid growth in the scope of health services has raised acutely the question of the power of small authorities (apart altogether from considerations of expediency) to function efficiently, and many have indeed passed beyond this stage. It is quite clear and is recognized that efficiency, at least as regards major services, is proportional to the size of the area administered, its population, and its taxable value. This question of the size of the unit of administration lies at the root of the problem and is one of the reasons which have caused the whole structure of local government—its merits and demerits—to be reviewed in recent years from many angles. The determination of what is to be regarded as a suitable unit for local administration is a difficult but fundamental problem. The anomalies connected with the health services have become most apparent, and have helped to point the moral.

A brief summary may be given of the conceptions which have occurred to various reformers as contained in the results of the inquiries which have been conducted by the Local Government Board, the Government. All have recommended unification more or less strongly.

The Local Government Committee, known as the MacLellan Committee, 1918, recommended the abolition of the Poor Law and the merging of its functions in those of local authorities. It appears to be the declared intention of the Government to introduce a bill to give effect to this proposal. From the public health standpoint this would mean that the medical functions of the local authorities and the Poor Law authority would completely coalesce. It is interesting to observe the views then held by the late Sir Robert Morant, at that time permanent secretary to the Local Government Board. Looking far beyond the terms of reference to this committee, he signed the report on the following assumptions:

"I assume that before transference takes place the necessary extension by Parliament and by the Government departments of the various Acts and arrangements relating to the health of the people shall have been completed, on broad comprehensive lines, for securing the provision in all localities of public services, designed to prevent at least as much as to cure or to mitigate, all forms of ill health and disease, such various functions, where they are shared between two local bodies to be exercised by them in the closest organic co-operation with one another by interlocking representation of each on the other and by dovetailed schemes of work."

The Royal Commission on National Health Insurance, with commendable courage, recommended that "Insurance Committees be abolished and their powers and duties transferred to appropriate local authorities." This proposal would, if carried into effect, do more than fulfil their other recommendations, that the continually expanding medical services should be maintained in close relationship both with the centre and in their local administration, and that, considering any changes or developments in the insurance medical services, regard should always be had to the importance of the fullest possible co-ordination with other health services. The preamble to the Insurance Act of 1911 states that it is an Act for the prevention and cure of disease, and regarding maternity benefit from this point of view, it is clear that a sound insurance scheme should concern itself with the introduction of competent midwives into the homes of the beneficiaries, if it is to be truly preventive. But a service of this kind is a function of the local authority, and it is obviously anomalous that the former should be endeavouring to cover the whole ground. The former is dealing with the problem partially and imperfectly. No doubt such considerations led the Commission to say that the service element should be administered by the local health authorities.

The Consultative Council on Medical and Allied Services in England (1920) proposed a comprehensive scheme for the systematized application of medical and allied services which need not be given in detail. In the report which followed remarks occur: "Preventive and curative medicine cannot be separated on any sound principle." "The organization of preventive medicine has been insufficient because it fails to bring the advantages of the knowledge adequately within reach of the people." The Welsh Consultative Council (1920) propounded a similar

\* A paper read in the Section of Preventive Medicine at the Annual Meeting of the British Medical Association at Edinburgh in opening a discussion entitled "Should all public health administration be concentrated under a single department and the immediate control in each executive area be vested in a single individual?"

similar scheme which embodied the following "The Council have no hesitation in recommending that the future provision for the health of the people in Wales should be approached from the preventive side." The proposals contained in the reports amounted to complete reconstruction from the foundation. They were both iconoclastic and reconstructive. They made no attempt to pour new wine into old bottles feeling no doubt, that the old bottles were only fit for the scrap-heap. It is very doubtful whether legislation is likely to proceed in this country along such drastic lines. For our purposes, however, it is important to note the view that all curative and preventive, should be brought together in close co-ordination under a single health authority for each area.

As regards Scotland, the first recommendation of the Consultative Council (1920) was "Unification of the various local authorities concerned with health is urgently necessary as the next step on the way to the systematic organization of medical services throughout the country." Their second recommendation was "A complete and adequate medical service should be brought within the reach of every member of the community"—a view which led them to the logical conclusion that "medical benefit should be extended to dependants of insured persons," so as to secure a sound foundation on which to erect a complete medical service.

Recognizing that the application of convictions, however sound, would require to be brought into line with the scope and problems of local government, the Scottish Board of Health appointed a Consultative Council on a Reformed Local Authority for Health and Public Assistance which reported in 1923, having investigated the problem of local government in great detail. The difficulties of and the need for reform were succinctly expressed as follows:

(a) The overlapping and waste due to the distribution of the local administration of the health services among several different authorities in each area and (b) the fact that many of the administrative units are too small to carry out efficiently the powers and duties laid upon them by Parliament.

While town councils, county councils and district committees carry on the general public health services in their areas, other authorities administer in the same areas special health services for particular sections of the population. For instance, the Insurance Committee for insured persons, the education authority for school children, the Poor Law authority, the District Board of Control for the insane and mentally defective poor, and the local War Pensions Committee for disabled ex-service men. The two main recommendations of the Council were:

(1) The concentration of all health service in one local authority, if possible for each area, should be the immediate aim of reform, and (2) the unit of administration should be as far as possible consistent with the Scottish system of local government.

After much discussion and without complete unanimity, a unit for local health administration was fixed on the basis of a population of 50,000 persons. The report points out that there are in Scotland 201 autonomous burghs, 19 of which have populations under 1,000, 108 between 1,000 and 5,000, 57 between 5,000 and 25,000, and 17 with populations over 25,000 persons. It is clear that the smaller the burgh the more top-heavy becomes the administration of public health which includes such functions as housing and town planning, control of infectious diseases, including tuberculosis—maternity and child welfare, etc. One of the chief criticisms is that they are unable to appoint fully qualified officers and to provide the necessary institutions.

Contiguous to Glasgow there is a small burgh of 25,000 inhabitants depending for its major public health services on the adjacent city which undertakes the treatment of its infectious diseases. It would be foolish for this local authority to provide itself at this time of day with institutional accommodation. We need not, however, pursue the question of the appropriate administrative size of communities or consider the vigour with which objections are being urged such as doing nothing to offend the growing spirit of local government which unfortunately often takes the form of pride rather than of expediency.

It is, however, becoming clear that for certain special purposes large areas of administration are advisable. The

term "regional administration" is now a current one, such as is contemplated in the Electricity Supply Acts. Mr. I. G. Gibbon refers to the Merseyside Municipal Co-ordination Committee which has been formed by the towns of Liverpool, Birkenhead, Wallasey, and Bootle to provide for common action in some of their problems. Many public health problems could be dealt with similarly, for instance, hospital provision, housing, and town planning, smoke abatement and other matters.

Regional consultation and co-operation is at any rate becoming more and more a factor likely to enhance efficiency. As recent illustrations, I might quote the arrangement reached with certain other local authorities in the neighbourhood of the city, whereby gonorrhoeal ophthalmia and puerperal fever are treated in Glasgow institutions. Both of these afflictions require skilled attention and although in the latter case it may be difficult to set aside the necessary accommodation the principle involved is an eminently sound one. In a similar way orthopaedic work requires a still more involved co-operative system. The treatment of non-pulmonary, or, as it is called, surgical tuberculosis is best carried out in a large and well equipped institution. Similar considerations apply to the management of the late results of encephalitis lethargica. I have mentioned these points because they are essential to the efficient solution of the growing complexities of public administration.

The question of unification of local medical services may be looked at in the light of the principles underlying the preventive work of a local authority. This has grown up out of small beginnings, the first and sole function being the suppression of nuisances, just as the huge Poor Law system in its modern form grew up out of Poor Law relief. In the course of time there appeared other bodies endowed with medical functions. In this hierarchy of local administration the local authority is now the principal vehicle of health administration especially on the preventive side. It selects for attention an increasing large number of diseases, again, which administrative measures can have some hope of success, or where, as in the case of pneumonia, measles, and whooping cough, prompt institutional or other treatment is likely to reduce the consequences to the individual. It administers a large group of laws and regulations dealing with environment. Further, in its maternity and child welfare schemes it selects certain groups of the population for preventive attention, connoted by the term "welfare," a word which quite suitably expresses the modern conception of its functions.

The work of a local authority as regards disease has three guiding principles: (a) it selects particular afflictions, or even stages of an affection where prompt and suitable treatment may avert consequences to the community or to the individual; (b) the completeness with which a preventive field once selected is covered is an element in successful administration; (c) the study of environment in relation to disease is one of its prime functions.

No other local body fulfils these functions. The Poor Law authorities in some places—notably in Glasgow—are animated by high ideals. They have found by experience that it pays them to provide the very best treatment for the sick poor at the very earliest stages of their illness. It is one of the criticisms of the Poor Law that so few authorities have realized this. In practice, however, we find that the local authority and the Poor Law authority deal with the same diseases or with different aspects of the same disease. We may even find an ambulance of the local authority removing a patient with pneumonia, and shortly afterwards one from the Poor Law authority removing a patient with pleurisy from the same address. Although there exists very close co-operation the situation is full of anomalies and it is more than probable that the total institutional accommodation available in Glasgow—some 5,000 beds belonging to both authorities—could be distributed to better advantage during times of epidemic pressure, were they under unified control.

As regards the medical side of education authorities, here again preventive work reaches a high level; but this remedial work could quite well be extended to children under school age. The more the work of a local authority in its child welfare schemes reaches the child of school age,

the more difficult it is to find any rational basis for separation of function as between the two bodies. A very practical point emerges here. The remedial and preventive work of the local authority and the education authority are so closely dovetailed that the multiplication of clinics by the respective authorities for their own purposes is likely to lead to chaos and extravagance. To mention only one point, the provision by both authorities of dental or ophthalmic or orthopaedic treatment in separate buildings with separate administration, for the same area, is clearly unsound. The question of acute rheumatism and rheumatic heart disease in children is at present receiving much attention, and I confess to being in considerable doubt as to what precisely might be the respective functions of the two authorities when a complete scheme comes to be evolved.

The Insurance Act is an Act for the prevention and treatment of disease, and I have already mentioned the recommendation of the Insurance Commission that Insurance Committees should be abolished and their functions transferred to local authorities.

The modern tendency to separate diseases into compartments or specialties in separate institutions is giving rise to much complexity. The same remark applies even more forcibly to the multiplication of clinics for a variety of purposes. It has been found to be administratively convenient to provide clinics for tuberculosis, child welfare, and venereal disease. Remedial clinics for various other purposes are being suggested, while the general and special hospitals have their outdoor departments, as have also the Poor Law authorities on a smaller scale.

I feel quite certain that it will be left to someone some day to bring order out of confusion, and that in each appropriate area there will be established what may be called a health centre, within the walls of which will be combined facilities for the examination and treatment of all patients who may be referred to it for appropriate advice by the medical practitioners in the neighbourhood. The scope of such a centre can be only partially visualized at the moment, because a complete scheme of this kind, to be associated with a really preventive service in which the community and the medical practitioners of the areas could take part, presupposes the extension of medical benefit to dependents, and the unification of all public bodies engaging in medical work under one authority. There would thus remain the public health authority on the one hand, and the voluntary institutions on the other, both co-operating in a common cause. At present we are only partially organized for the proper application of preventive medicine in its best sense.

The whole essence of preventive medicine as applied to the community is the removal of conditions prejudicial to health, whatever these may be—from removal of nuisances to the provision of houses, and from the destruction of rats to a smokeless atmosphere, as applied to the individual it means the prompt detection and appropriate treatment of defects or diseases, it also implies the maintenance of the health of the individual with his active co-operation, assisted by a knowledge of the laws of health and hygiene. Now this covers a great deal of ground—indeed, the whole province of medicine as applied to the community. Every physician, every volunteer or official body concerned with health, is working within this ground. Preventive and curative medicine are thus proceeding hand-in-hand. The loom of medical science is busy weaving them together, and they will some day emerge completely interwoven without any tears or gaps in the fabric.

## II—THE FACTORY MEDICAL SERVICE

BY

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THE question for discussion, so far as the factory medical service is concerned, is one of immediate practical politics—more so, probably, than for other public health services. Our code of factory legislation has grown up distinct from other public health Acts, and claims an ancestry dating from 1802. It is administered by a highly skilled

expert staff of inspectors, the great majority of whom are not medically qualified. This staff has always formed part of the Home Office, but a transfer to the Ministry of Health would be merely a matter of central office allocation and would not in any way alter the present direct factory inspection from Whitehall.

This method of administrative control has been copied in Acts concerned with mines, alkali works, explosive factories and vivisection—wherever, indeed, technical knowledge is needed over and beyond what may be reasonably acquired in each executive area. It differs essentially from that of the Public Health Acts, which are administered by local executive authorities, advised and assisted, rather than coerced, from Whitehall. Here, however, such problems as those connected with water supply, housing, refuse disposal, and school medical inspection are common to each executive area, and knowledge concerning them may reasonably be acquired in each area.

This difference, however, does not necessarily run counter to the suggestion that locally one single person might control the factory medical service as well as other health services. This suggested control might interlock with an inspectorate centrally controlled, the advantages or disadvantages of the plan must depend on what is meant by factory medical service, now and in the future.

Apart from the cost of the Factory Inspection Department of the Home Office, the cost of all health provision in factories regarding such things as sanitation, cleanliness, overcrowding, ventilation, drainage, lighting, first aid equipment, cloakrooms, washing facilities, canteens, medical examination of young persons, and the like, is a charge on each particular factory. Each factory is a separate unit within an executive health area, and pays rates to the health authority of that area. The activities of the area health department are financed from the rates, they benefit the whole of the area.

A reason for giving special thought to day to factory health service is that there is before Parliament a bill for consolidating factory legislation. Such a bill was introduced in 1924 by the Labour Government. In a modified form it has again been introduced by the present Government. The sections concerned with industrial medical service, except for slight differences in drafting, contain the same provisions in both bills, they may, therefore, be regarded as non-controversial.

The provisions in the present bill indicate the scope contemplated for factory medical service. Hence some conclusions may be arrived at as to whether this service should in each executive area be vested in the immediate control of a single individual who also controls municipal, school, and all other public health administration. When considering the provisions of the bill medical service only will be reviewed, although the whole bill may rightly be envisaged as a public health measure.

The first medical provision (sec. 64) is a new one. It confers on the Secretary of State powers to make orders for special medical supervision. The occupier, in order to secure the health of the persons employed, may be required to make reasonable provision by arrangements for the special medical supervision of the workers. The precise way in which this new section will work can hardly be foretold until an order has been made under the proposed powers, but we note that the section contemplates the occupier himself making the provision, not the provision being made for him by some outside authority.

The next medical provisions are concerned with the duties of "appointed doctors," as the certifying factory surgeon of previous Factory Acts and of the Workmen's Compensation Act is now to be called. "Appointed doctor" is defined (sec. 132) to mean a medical practitioner duly appointed to act, and the Secretary of State or chief inspector may appoint (sec. 112) a sufficient number of duly qualified medical practitioners to be appointed doctors for the purposes of the Act, and may revoke any such appointment. The fees to be paid to appointed doctors for carrying out their duties are determined by the Secretary of State (sec. 113), and may be paid by the occupier if the duties concern the examination of young persons, or medical examination of workers by regulations made under the Act.

Appointed doctors may be called upon (sec 64) as heretofore to investigate special cases of death, injury, or disease, but duties under this section have in the past been unimportant. The main duties, as of old, will be concerned (sec 86) with the certification of young persons under 16 years of age for factory employment. Here the section contains a new plan in subsection (4) which runs as follows:

The Secretary of State may, after consultation with the Ministry of Health by order in force to the county council the duty of arranging for the medical examination and certification of young persons under the age of 16 years under this section.

This provision clearly contemplates the local health authority carrying out the duties of appointed doctors. The advisability of such action will be considered later. A further new enactment [sec 86 (6)] in this connection is that every local education authority must produce to an appointed doctor, for his confidential information so much of the school medical record of a young person as may be necessary to enable him to carry out effectively his examination previous to certification. There can be no doubt about the wisdom of this provision.

When the post of appointed doctor, as just outlined, is compared with that of certifying factory surgeon as it at present exists, the posts at first sight seem identical, and there does not appear to be any justification for altering the name which has existed since 1844. Yet the alteration in name cannot be merely the fancy of a drafting clerk. It challenges attention. We find that under codes of regulations applied to certain dangerous trades there have for long existed "appointed surgeons." These doctors, who might or might not be the certifying factory surgeons of the district have been chosen by the factory to carry out duties required by the regulations and have been submitted for approval to the chief inspector of factories who has then appointed them to act.

The work done by these appointed surgeons has always been recognized by the Factory Department to be good; not infrequently employers have extended the duties of the office to wider supervision of health matters than those embodied in the regulations under which the post of appointed doctor has been created. The thought arises then that the change of name may contemplate extending this type of appointment in place of appointments made, as now, for whole districts—appointments in which the factories have little to say but are compelled to accept and to pay. There is nothing in the bill against such contemplated action and action on such lines may prove to be the foundation of a real factory medical service.

Legislation as just outlined it is true does not contemplate a full and wide medical service; it does not stand in its way but it only provides for the prevention of ill being among workers. As usual legislation must not be expected to proceed ahead of progress; it can only register good custom and consolidate ground gained. It is a bulwark against backsliding, not a spearhead in advance. But there is a wider and higher factory medical service—that is, the maintenance of health. This service is of direct economic value to wage earners and to the public; it is this service the community needs and industry requires. It is in the light of maintaining such a service that the present discussion should be regarded.

In the past the office of certifying factory surgeon has not led to the evolution of a good factory medical service. What are the possibilities of such a service? The United States is exhibiting. Medical examination of all adults and young persons alike before employment, re-examination on return after sick leave, supervision of first aid and of all health hazards—in some cases even the establishment of a polyclinic to advise the home doctor (there are of course no private doctors in the United States) and the provision of rest homes in the country—a voluntary medical service with no legislative enforcement behind it, a service which, while it appeals to humanitarian motives, is recognized as good business. It pays; it reduces labour turnover, it lessens accidents, it minimizes sickness, it increases the quantity and quality of output. Labour is too costly and too scarce in America to be left uncared for, and this care ends in reducing costs of production.

A reason why the office of certifying factory surgeon in

the past failed to evolve on American lines may have been that a medical man was thrust upon the industry of a whole district from Whitehall, while also his fees were fixed. The doctor found his fees skimpy and tended to respond with skimpy service. Industry submitted, paid, but saw no reason to extend such service. Once each factory is allowed choice of doctor the picture should alter. In the past dismissal of a certifying factory surgeon for inadequacy has not occurred—how could a Government office dismiss its own nominee (often nominated owing to political influence)? But the office has always felt to be in a stronger position in criticizing the work of appointed surgeons and in insisting upon a high standard of work, and indeed has always obtained it.

Each factory is and should be recognized to be a unit possessing its own services for engineering management, technical production and medical supervision, all carried on in the interests of trade, just as each local authority possesses its engineers, lawyers and medical officers for conducting the business of the locality in the interests of its inhabitants.

The Ministry of Health calls for health activities, and then supervises and inspects the activities of the local authorities. The Home Office calls for compliance with the Factory Acts and then supervises and inspects the compliance accorded by each factory.

Any plan which contemplates a local authority carrying out medical services for a factory seems to be crossing the lines of efficient action. Craft the proposal to its logical conclusion and see the result. The local authority acting presumably through some extension of its school medical service would examine and certify young persons for employment for which purpose a more or less intimate acquaintance with the conditions of local industries would need to be acquired. The occupier would have no say in the medical personnel carrying out the work (which might change frequently), but would have to pay the prescribed fees and would be no more likely than at present to desire extension of such a service—and it is just this extension which is most needed. But allow that he did desire such extension on lines developing so advantageously in America, how could such service be provided by a county council through its medical staff? Either the occupier would have to engage further medical help to do the rest of the work, a plan which would cut in two and hopelessly spoil his medical service, or the county council would have to set aside whole time officers to do nothing but factory work when the only possible reason for the proposed plan—continuation of school medical service—would be lost, and the council would either be providing to the factories a useful service free or taking fees to pay for the service. But quite likely the occupier would object to paying the fees on the plea that he already through the rates is paying the salary of the medical officers concerned. If his objection were upheld he would receive a service of economic value to his business at the public expense. It would seem to be as reasonable for the county council because it employs certain engineers to insist on supplying factories with engineering service. The factories should supply their own medical service.

Maintenance of a good standard of work should certainly be ensured through inspection by which should be understood the distribution of information, help and advice, while penal and punitive action is kept in reserve. More and more is this becoming the spirit in which the factory code is administered; it has long been the spirit adopted by the Ministry of Health. A minimum medical service such as the present factory bill contemplates may be laid down by law, but industry under inspection should then be left to carry it out and develop it. So it may become as full of useful and humane activity as it is certain to be an economic proposition. The experience of the past has shown that a medical service inflicted upon industry may remain over long years futile, ineffective and incapable of full development.

# DISCUSSION

Professor F. E. WYNN (M.O.H., Sheffield) said that the proposed unification of these services was only a reversion to the findings of the Royal Commission of 1869. The

wisdom of those findings had never yet been seriously challenged, yet very little had been done in the way of adopting them practically. The Ministry of Health had been formed with a view to such unification of services, yet the health services were still administered centrally by a number of Government departments. He was convinced that there should be one Minister and one department co-ordinating all these services, and local unification and co-ordination would follow. He emphasized the importance of continuity of the health records, or "medical history sheets," of the individual from infancy, through school life, and until the advent of the insurance status. At present the records laboriously kept by different local departments were largely wasted. It was also, he thought, most important that junior medical practitioners entering the public health service should have an opportunity of studying all branches of the service. It was a bad thing for a newly qualified practitioner to be placed in a "compartment" where he saw only tuberculosis. That was not the way to learn the diagnosis of tuberculosis. He should have his fair share of clinical work in the isolation hospitals for infectious diseases, and in the maternity and child welfare and the school medical departments, with reasonable opportunities for studying general sanitation and administrative methods, including statistics and finance.

Dr J H MEIKLE (Edinburgh education authority) defined the position of the school medical service in Scotland, where the local education authority was quite separate from the county or burgh council. In some counties the local medical officer of health was also school medical officer, but this was not the case in other counties and in the larger burghs. Co-operation was, however, promoted by the issue of a memorandum in 1919. In Edinburgh there was regular interchange of information between the medical officer of health and the school medical officer. Dr Meikle thought that the school medical staff might preferably be controlled by the local education authority, and that the joint use of clinics by the two authorities would be economical.

Professor E W HOPE (University of Liverpool), in a memorandum which was read by the honorary secretary, explained how the conscientious recognition by various Government departments of their health responsibilities had led to overlapping, duplication, and expense. These departments were naturally reluctant to hand over to a central body duties which were already being efficiently discharged. Moreover, legacies of arrears of work due to the war complicated the situation further. There was still confusion in the definition of the respective scopes of operation of the authorities responsible for dealing with destitution and disease, thus the Poor Law authority was still charged with the administration of vaccination. Artificial and sectional defects minimized efficiency and increased expense. Professor Hope concluded that unification was desirable, and that one chief medical officer might well supervise and guide the activities of a staff engaged in the various administrative details directed towards the prevention of disease.

Dr F DITTMAR (Scottish Board of Health) said that of late years the large city parishes of Glasgow, Edinburgh, Aberdeen, and Dundee had established hospitals which were comparable with the large voluntary hospitals of those cities. In Glasgow those Poor Law hospitals already had their consulting staffs, medical, surgical and specialist. The time had now come when all work, both in connection with infectious diseases and general diseases, should be undertaken by the local authority responsible for the administration of public health in its area. This had already been done in Aberdeen, where the city council had, by mutual arrangement, taken over the whole of the Poor Law hospital service. The medical services of local authorities included the general administration of public health, the isolation and treatment of cases of infectious disease, and the administration and treatment of tuberculosis, maternity and child welfare, and venereal diseases. The education authority had its own medical staff, which naturally co-operated with the public health authority.

The medical officer of health, who was directly concerned with all questions affecting the health of the community, should be the head of the unified department of public health. In some cases this arrangement was already in force, but in other cases it had not been attained. Various reasons, partly financial. Many administrative difficulties could be overcome by enlarging the area of local authority. In factories the general sanitary and health conditions would naturally be under the general supervision of the medical officer of health, but special medical welfare work should be controlled by the factory concerned. It had already been demonstrated in the United States that such work was in the interests of both employers and employed.

Dr F N K MENZIES (MOH and school medical officer, London County Council) explained the present system of administration of public health in the London area. From this point of view, he said, there were many "Londons." There was the area of the administrative county, the City of London, water London, the Port of London, and twenty-eight metropolitan boroughs, varying in population from 50,000 to 350,000. In addition to these there were the various Poor Law authorities with different boundaries, and the Metropolitan Asylums Board. All these authorities were performing their different but often overlapping functions. The result was a remarkable example of apparent administrative chaos, but on the whole the scheme worked very well, although it involved overlapping, friction, unnecessary correspondence, and administrative waste. The whole problem, in his opinion, depended for its solution on finding the ideal unit of administration. Public health work had developed so much, and conditions varied so widely, especially as between urban and rural areas, that he was of opinion that each county should be left to formulate its own scheme, without any one scheme being regarded as a precedent for different areas.

Dr W F DUNN (factory surgeon and port sanitary officer, Manchester) said that if a factory prejudiced the health or comfort of a community by polluting the atmosphere, or rivers, or sewers in the neighbourhood, the community should have the right to interfere. But the processes in the factory itself were not the concern of the community as such. Such conditions must be regulated by the industry itself and not by the local authority. Already any industry which endangered the workers was governed by regulations which were drafted after consultation between representatives of the employers, the workers, and the Home Office. The administration of such regulations could not be undertaken by local authorities, certainly not with any hope of uniformity of action.

Dr J MIDDISTON MARTIN (county medical officer, Gloucestershire) gave as an illustration of the confusion that had arisen in public health administration cases in which a local authority had certain duties to perform in connexion with elementary schools and maternity and child welfare work, while the secondary schools and other branches of maternity work, including the supervision of midwives, were under the county council. The hope of those interested in the co-ordination of these services had been raised by the proposals of the Minister of Health with regard to the rearrangement of the Poor Law medical services, but those hopes had been dashed by the announcement of the present watered down proposals. He was convinced of the fundamental necessity of there being one authority with one administrative head for all the health services of a community.

Dr J P KISTOCH (MOH, Aberdeen) explained the arrangements under which the City Council of Aberdeen had been enabled to take over the whole of the Poor Law hospital service, thus bringing about a real unification of public health services. He did not agree that there was any good ground for the divorce of factory health from factory medical inspection from other departmental functions of hygiene, and he believed that in the future the factory inspector and the sanitary inspector should be



will be combined. Discussing the size of the unit of health administration, he said this might easily be made too large. Perfect co-operation could be arranged between a central city with highly equipped hospitals and medical experts and the surrounding county units—a form of co-operation which it should be the duty of the Government to encourage.

Dr H S BEABLE (Romford), representing the Pool Law Commission Committee of the Association, stated that unification and not merely co-ordination of all health services was already the settled policy of the Association, but such unification must begin at the centre—the Coventry and departments concerned, and local health committees must not be the committees as now known. They must be strengthened by the co-optation of representatives of the medical profession nominated by the local practitioners on the lines of the present Insurance Committees, with an Advisory Medical Committee.

Dr H SCARFIELD (late M.O.H. Sheffield) favoured experiments in the direction of unification by means of co-operation as had already been done in Aberdeen, Gloucestershire, Essex, and Cardiff, so as to relieve a single public medical and nursing service with the consequent saving of time and money. He agreed with Professor Collis that the factory health service was a special one and advocated closer co-operation between this service and the local public health department.

Dr D McKAIL (Glasgow) expressed the view that all the confusion that had arisen was the result of ignoring the general practitioner. He thought that no one should be admitted into the ranks of the public health service without

at least three years' experience of the "rough and tumble" of general practice.

Dr E H SNELL (M.O.H., Coventry) said it took the allied issues during the great war some three years to discover that success could only be achieved under a unified command. When the public health service learned the same lesson it would achieve the same result.

Dr W A LETHBRIDGE (Ministry of Health) emphasized the necessity of a general training in public health work of junior members of the service. The need for this would be increased by any further unification of such services. Difficulties had already been experienced in certain towns on the retirement of the chief official when it had been found that the subordinates, who were familiar only with the work of one subdepartment, were not qualified to take his place. As the scope of preventive medicine widened it would become increasingly difficult to find men capable of looking upon public health work as a whole, unless an effort was made to train the junior members of the personnel.

Dr A S M MACGREGOR, in a brief reply said he thought there was no doubt that the balance of opinion had been in favour of unification. He was himself convinced that some form of amalgamation of existing services was necessary and inevitable but he could not agree that the factories should be included in any such scheme. In Glasgow a number of factories had already made their own provision for health services and he was satisfied that this was the right line of development. He believed that the only alternative to a State medical service was "general practice" on a higher plane than had been known in the past.

## GROWTH IN ITS PATHOLOGICAL RELATIONS \*

BY

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THE cells of the body having attained during foetal life their destined characteristics of form and function, according to those of the organs of which they form component parts, lose to a varying degree their powers of reproduction. Some tissue cells have lost that power before birth, some retain it as long as life lasts, but in general the earlier the time at which complete differentiation of form and specialization of function have occurred, the less these powers can afterwards be displayed. At no time can we say that any normal cell however undifferentiated, has an unlimited potentiality of proliferation; its bounds and its destiny are set before it by natural factors, of which we have only the vaguest and most imperfect notions. From its behaviour in normal circumstances we are not entitled to assume that it had more than rigidly restricted powers of reproduction but by our observations of the phenomena of repair we can be certain that some cells at least have a hidden reserve of power and by cultivating normal tissue cells in suitable nutritive media outside of the body we can demonstrate that they are actually endowed with limitless reproductive powers which, in whatever way they are controlled are not exhibited in the living composite organism. Not every kind of tissue cell has been cultivated so far but since we have succeeded in growing such early and severely specialized cells as those of cardiac muscle and have seen these cells exhibit their characteristic physiological property of rhythmic contraction we may safely assume that all kinds of tissue cells have this potentiality. This autonomy is not lawless; each kind gives birth only to cells of the same class and characters they remain in close communion with each other; they tend to arrange themselves in the pattern that prevailed in the organ from which their ancestors were removed but when such a colony accustomed for many generations to its independence is returned to the animal

body the unrestricted power vanishes at once. It has been claimed that by employing certain agents which we have used to induce malignant change in body cells, the cultivated cells can so be affected that their reproductive powers will not be restrained even in the environment of the living body but the claim has not been corroborated. However that be it is now beyond doubt that tissue cells have inherent powers of limitless growth, and that these powers are kept in check by some inhibitory factor in the body.

Throughout life in normal physiological conditions we have tissue cells that are constantly being lost and replaced and others that in post-foetal existence remain constant fixed in number, and irreplaceable. The squamous epithelium of the surface and of cavities in communication with it, and the glandular epithelium of the intestinal tube, as well as of certain gland structures are examples of the former whilst ganglionic nerve cells serve as a good example of the other extreme. It is true that cells of the former class are quite highly differentiated in form and in function, but bearing in mind that in certain conditions in adult life a glandular epithelial cell may assume the characters of a squamous epithelial cell though the converse is more doubtful, we may say that the specialization is not absolutely rigid. In physiological replacement the activity is confined to the one tissue and adjacent tissue cells do not participate nor is the replacement out of uniformity with the original plan. Whether the connective tissues are normally in this state of continual renovation, or fixed and unchanging, is a question that in the nature of things cannot be determined.

In reparative processes following loss by wounds or degenerative lesions the active proliferation of connective tissue cells is such a predominant feature that the regenerative powers of other tissue cells are for the most part masked and overwhelmed but still it may be said that the latter exhibit the property in inverse relation to the degree of their specialization. At one extreme the epithelial tissues display considerable powers of proliferative regeneration, and at the other the reproduction of such rigidly specialized cells as cardiac muscle and nerve cells is wholly suppressed. There are signs that ordinary striped muscle cells make a feeble attempt at repair, but it can hardly be claimed that they actually multiply. When the injurious

\* The opening paper of a discussion in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association at Edinburgh 1927.

action is repeatedly inflicted—that is, when it becomes a question of irritation—the stimulus induces an exaggerated repair, and the multiplication of cells is excessive. This hyperplasia in the ordinary course of events is temporary, as, owing to the subsequent maturation of the connective tissue cells, with the consequent devascularization, a shrinkage to or below the original limit occurs. That the proliferation of cells should cease when the defect is made good is no less mysterious to us than that they should commence to multiply to fill the gap. In the same process are exhibited the inherent capacity of cells to multiply and the restraint exerted upon them when the original plan has been restored. Sometimes the inhibition is late in coming into operation, as in the case of keloid formation, but the phenomenon of arrest is always evident. As we pass to tumour formations the less do we see exerted this repression of an inherent power in the cells, until in the extreme degree of malignancy the restraint on cell proliferation is almost entirely removed.

The boundaries between reparative growth, hyperplasia, and neoplasia are impossible to define—in fact, a tumour is a localized hyperplasia, nor is there any strict separation possible between benign and malignant growths as a whole. The words "benign" and "malignant" are clinical terms, and though they can often be related to histological appearances in tumours, yet the relationship is by no means invariably close. The gradation of the various processes suggests a difference of degree rather than any qualitative distinction, in short, the cell in neoplasia acquires no altogether new capacity compared with the cell in reparative regeneration. It will follow from this that tumours can only arise from such cells as can regenerate, and the frequency with which cells take part in neoplastic processes will be inversely related to their degree of specialization. But at once we are confronted with the fact that tumours are found composed of cells which do not multiply in adult life. The work of Cohnheim, by laying particular stress on these exceptional tumours, and by referring all tumours to the same origin as he quite rightly attributed to them, has given them an undue prominence. If cardiac and voluntary muscle cells, ganglionic nerve cells, and cartilage cells do not regenerate in post-foetal life, we must either give up our contention or fall back on the explanation that tumours composed of these cells have arisen from them when they were still in an embryonic and less highly differentiated state. In the latter case we may imagine with Cohnheim that such cells were cut off from communion with their kind which went to form useful organs, that they lay dormant with their proper destiny thwarted and their innate powers of reproduction still preserved until such time as some unknown stimulus unloosed them.

Let us examine these disturbing tumours more closely. Cardiac muscle tumours are the rarest of all tumours, they are composed of peculiar cells which here and there display the characteristic striation in parts, they are small in size, they are accidental *post-mortem* findings, they have no malignant characters, and they are doubtless congenital. A peculiar feature of striped muscle tumours which are also pathological curiosities is that they are found mostly in situations where voluntary muscle does not normally exist, and then generally in association with other aberrant tissues, and it has been held that they originate from smooth muscle and not from striated muscle. At any rate, we have no satisfactory evidence of the formation of such tumours from adult striated muscle, and it is generally agreed that they originate from embryonic remnants. Rare, too, are tumours composed of nerve cells. Such tumours seldom show malignant characters, and they make their appearance evident at an early age. They are undoubtedly congenital. The retinal neuroma, on the other hand, which betrays its presence in early infancy, is highly malignant. Sometimes it is bilateral and sometimes unilateral. It is derived from one of the most highly specialized classes of cells in the body, but everything points to its origin before birth. These examples will serve to show that we must suppose a retention of embryonic proliferative properties to explain certain exceptional tumours, but it is easy to believe that they started as tumours when the parent cells were not rigidly specialized as that they arose in later life from

segregated cells that had lain dormant and deep. No one will deny that there are segregations of cells off in development and that they are by no means frequent, but that these isolated communities are not so different from normal adult tissues to neoplasia is open to question. Still, experiments on the production of cancer have led us to think that it is possible so to change the nature of the cells that while they may seem for a brief unaltered in microscopic appearance or in behaviour they will subsequently fling up in malignant proliferation. There is thus experimental evidence that may be adduced in support of Cohnheim's contention. The tendency to explain morbid growths is originating from embryonic faults is less pronounced now than formerly. For example, cartilage is a tissue which seldom if ever regenerates, and chondromata are not uncommon, and while we may see a developmental fault in the case of the echinoderm for the true chondromata and for the mixed cartilaginous tumours another explanation is feasible. It is probable that the connective tissue cell may form collagen or chondrocytes, or myxomatous, cartilaginous, or osseous rates in different circumstances. In pure chondromata the very frequent association of myxomatous and cartilaginous areas is very suggestive, and still more is this the case in the mixed tumours. When we reflect that a connective tissue may be found in arteries and can be produced in them experimentally by painting the vessel with such substances as silver nitrate, and, above all, when it can be produced by the injections in rats which will stimulate the production of cartilage and bone, we have no option but to believe that the connective tissue cell is not unalterably fixed in adult life and may exhibit rather surprising metaplasia.

The reproductive power of cells, as has been said, is in inverse ratio to their degree of specialization, but this is not invariably the case. The cells of the mammary gland multiply in preparation for their most highly specialized function—lactation, and probably also in response to the stimulus of the ovarian hormone. Malignant neoplasia rarely occurs in the mammary gland, which is not highly differentiated in function. It is remarkable that when a mouse is inbred for the development of strains with a high incidence of mammary carcinoma, the spontaneous tumours occur only in the females, and if the females are sprayed during the first few months mammary tumours do not appear in them. Thus a less functionally specialized epithelium is less prone to neoplasia than one more highly developed—in exception to the general rule. What the ordinary function of the mammary gland may be is unknown. The secretion of milk is certainly a very specialized function, but, after all, it is only occasionally that it is called forth. Malignant tumours of the breast are almost as common in barren women as they are in those who have suckled children.

On the other hand, the degree of malignancy in a tumour corresponds with the degree to which the constituent cells lose their functional properties. In the intestinal tract, for example, the secretion of mucus is, though perhaps not the chief, of the functional properties of the epithelial cells, but in carcinomata arising from the cells it can be shown by appropriate staining, that the function is very greatly diminished and in extreme cases may be entirely suppressed. The instances might be multiplied, but here again there are apparent exceptions to the rule. In melanotic cancers the intense production of melanin is characteristic, and though in parts of the tumours, indeed sometimes in whole metastatic nodules, the melanin may be largely wanting and the impression of blandness may be due mainly to the crowded with the black granules is very noticeable. Despite the great amount of investigation that has been done in the chemistry of malignant cells, there has been nothing to suggest in qualitative difference between normal cells, the differences being for the most part quantitative and inconstant. While recognizing this, we may say that the exercise of the reproductive power of cells is maintained at the expense of their specialized functions. The analysis of this inherent reproductive power of cells displayed physiologically, in repair, and in the

pre-sents problems of the first magnitude to all biological sciences, and is not the province of any one alone. It would seem as if the same principle were in action in the three phenomena, the resulting reaction being determined by the extent to which some inhibiting process was at work and in the almost complete absence of definite knowledge of this growth principle the pathologist is thrown back on the study of the inhibitions, how they are removed or how they may be fortified. The older conception of which Ribbert was an exponent, was that the inhibiting factors were purely environmental: if the restraint of the environment were weakened or removed the cells of a tissue would exhibit their innate property of unceasing multiplication. It has already been mentioned that by cultivating cells in suitable media outside the body this can be demonstrated, and that if these emancipated cells be returned to the animal body the process is arrested and we might be tempted to conclude that the arresting force was exerted purely by the environment. But if the cells cultivated have been from a malignant tumour originally, the implant will go on increasing and yet the environment in both cases is identical. From the impasse into which this has led us there are two ways of escape—either to assume that malignant cells have required an entirely new property not possessed in any degree by normal, reparatory, or benign tumour cells, or that they have developed in excessive abundance an already existing property. In the former case an easy explanation would be that in the cancer cells there is an extraneous agent remaining always intracellular, which stimulates these cells to division and multiplies with them. This conception forms the basis of the parasitic theory, which has been rejuvenated by the strikingly original investigations of Gre and Burnard and still more by their daring, and perhaps somewhat risky, conclusions. If we accept the other idea we shall have to conceive of a growth substance generated by the cells capable of being stimulated to overproduction. In wound repair we may imagine that there is a transudation of growth substance in limited amount which not only stimulates the particular parenchymatous cells to reproduction but also stimulates the adjacent connective tissue. In neoplasia the stroma formation is even more essential. It is difficult to conceive any other means of local stimulus to connective tissue formation than the outpouring of some factor from the neoplastic cells. So far no one has been able to isolate this hypothetical growth substance, and the evidence for its existence is indirect and of doubtful validity. As is well known animals may be 'immunized' against transplanted cancer by previous treatment with red blood corpuscles, spleen tissue and other unskilled tissues of the same species and the only difference that can be detected in the phenomena that follow the inoculation of grafts in the refractory and the control animal is that in the former no stroma formation is evoked. Although it is impossible to find in the refractory animals any of the known serum antibodies, we may imagine that the immunizing treatment has induced the formation of an antagonistic substance which neutralizes the growth substance poured out by the cancerous cells. There is another experimental observation which supports the notion of the outpouring of growth substance. In the transplantation of certain strains of mammary carcinoma in mice and rats sarcomatous transformation of the stroma tends to occur. In ordinary cases the stroma introduced along with the parenchyma in grafts always dies and is replaced by new stroma furnished by the new host but in these cases the stroma continues to proliferate. That the implication of epithelium of the same kind adjacent to a carcinoma is due to the same thing is much more dubious. But when all is said, we must confess that we have no explanation of the unceasing transmission of the acquired property from cell to daughter cell. That growth may be temporarily arrested in malignant neoplasia even for long years is certain but the cells so arrested do not lose their power. Heiman of the Crocker Research Laboratory has implanted a very active carcinoma into the midst of a slow growing transplantable fibroma of the rat, and in this fibrous prison the carcinoma lives but does not increase but if it is set free from its bonds, by the cutting up of

the composite tumour or by transplantation into a new host, it demonstrates its malignancy. Here the proliferation is quite arrested it may be for long periods but the malignant potentiality of the cells are not destroyed. Must we, then, conclude that there is a fundamental difference between the normal and the cancerous cell, and that the latter possesses some property quite foreign to the other, something extraneous? It is tempting to seek rest for our puzzled minds in such a belief, but when we face the fact that we can induce cells to become malignant by the use of certain carcinogenic agents long administered, and more especially the fact that we can biologically affect cells so that after a long period of normal quiescence they will break forth into malignant proliferation we must reconcile ourselves to the troubled doubts that may lead us to clearer knowledge.

#### DISCUSSION

Professor R. Mcm (Glasgow) said that the cellular proliferation underlying pathological growth constituted a fundamental question. No real explanation of it could be given at present little more could be done than to analyse and classify the factors concerned in its occurrence. Apart from tumour growth, cellular proliferation was recognized to result (1) from breach of continuity, (2) from irritation, and (3) in the case of certain tissues, from excessive functional demands, cellular hypertrophy being followed by hyperplasia. Each of these must be further analysed. But there were other examples of proliferation which could not be placed under these headings, as, for example, the regenerative proliferation of erythroblasts after haemorrhage and the proliferation of myelocytes in leucocytosis. The question as to what extent definite substances acted as stimuli to proliferation was very important. The excessive growth of certain tissues in hypophyseal superactivity was a well recognized example of such an occurrence, but in connexion with tissue culture it had become a practice to speak of growth promoting substances, stimuli, or trophics, and to explain the proliferation as the result of their action. It was very important to distinguish essential foodstuffs from true stimuli to growth. In the case of repair of wounds it had hitherto been customary to ascribe growth to the removal of the restraining effect of the adjacent cells. The proliferation occurred when the tissue balance was disturbed and continued until it was restored. The question was whether the phenomena could be explained on the hypothesis of definite stimuli supplied by leucocytes or other cells. Tissue cultures were unsuitable for determining the matter as in them the normal cell relationships were wanting and the fact that embryonic juice promoted proliferation was not enough to show that it was effective by itself. An example was still needed to show that such stimuli could cause proliferation when the relationship of cells was not disturbed. It must be borne in mind also that repair in mammals was the representative of the more complicated process of regeneration in lower vertebrates which latter in its turn was a reproduction of the phenomena of ontogeny. At present it did not appear justifiable or possible to explain the proliferative processes in repair as being the result of growth promoting substances alone.

With regard to neoplastic proliferation, it was important to recognize as regards conditions of occurrence two types of tumour—namely, that which might result from irritation of previously normal tissues and that which followed some disturbance of development. The question as to what extent tumours arose from displaced cells or 'rests' was a separate matter but the all important fact was that there were various kinds of tumour—such as neuroblastomas and blastocytomas—which must arise from cells which had not reached the adult state and which were sometimes multipotent. The recent work on tumours of the central nervous system illustrated this in a striking way, as it appeared that a growth might originate at any stage in the differentiation of the original medulloblasts. Again, a simple hepatoma resulting from congenital abnormality might become malignant and give rise to metastases, in cirrhosis of the liver the compensatory hyperplasia of the liver cells might pass on to neoplastic proliferation, and,

again, malignant properties might appear. What might be called the life history in the two instances was widely different, while the end-result was the same. Any explanation of tumour growth brought forward must apply to the two types.

Professor J SHAW DUNN (Manchester) thought that in spite of greatly varying cellular structure there was much in common in the general biological aspect and behaviour of simple tumours, while the malignant forms, though derived on the one hand from connective tissue cells, on the other from epithelial, and differing in intimate architecture on that account, showed more features of similarity than of difference, and were clearly separable from other active proliferative processes of known causation. The whole group of tumours retained a certain uniformity of general idea, which was borne out by the not uncommon occurrence of linking forms and of simple growths which ultimately became malignant. It appeared reasonable to suppose that, if new growths had not a common cause, yet there must be in the genesis some general etiological principle which would link together this group of morbid activities, somewhat as the conception of organismal infection linked together the diverse group of bacterial diseases, but a review of the etiological factors known to be concerned in neoplasia showed little or no suggestion of any such unifying consideration. Recent experimental work with certain chemical substances had shown that tumour growth, often with malignant characters, could be induced after sufficiently prolonged application, and this not only provided a direct explanation of a limited number of human growths, the industrial cancers, but suggested a similar explanation of some tumours of the alimentary tract where the irritating agents were not definitely isolated. Pre-existing damage was another factor that in some way led to cancer formation. Cancer of the liver was very rare apart from hepatic cirrhosis, and it developed on the latter in at least 3 per cent of cases. Cancer of the kidney was associated with pre-existing renal lesions. All were familiar with the development of epithelioma on scars. Again, the development of malignant tumours from simple tumours was not uncommon, and it was hardly possible to escape the conclusion that the more serious condition was predetermined in the earlier cellular activity, however that, in its turn, might have been caused. The influence of true hereditary factors in the production of tumours was evident from the occurrence of such malignant forms as retinoblastoma, more simple tumours as angioma and neurofibroma, and simple tumours liable to become malignant, such as polyposis coli. In neurodermatitis pigmentosa the coincidence of two factors would appear to be necessary—an hereditary susceptibility, and the irritant action of the physical agency, sunlight. Whatever were the factors so diversely concerned the end-result was the same in all cases, and it was hardly legitimate to ignore the implications if an attempt was being made to discover any general etiological principle. The question as to whether this principle might be of the nature of a special type of organism had not been raised there, as there was no evidence available in relation to human or even mammalian growths which pointed definitely in that direction. The production of some tumours by external chemical agencies, and the predominant part played by true hereditary factors in the genesis of others, were facts which did not encourage belief in a specific organismal cause. The available data rather suggested that enlightenment must await a more complete knowledge of the conditions regulating cellular proliferation and the harmonious relationship between different kinds of cells in the tissues.

Professor E H KETTLER (Cardiff) believed that it was generally assumed that malignant and innocent tumours and simple hyperplasias were merely exaggerations of the normal physiological process of growth, but he thought that it might be doubted if these phenomena were really comparable, or even that all forms of malignant growths were examples of the same process. Was it justifiable to regard growth or enlargement as necessarily the same thing as cell multiplication? What was the difference, if any, between local and general growth? Even if these forms

of protoplasmic activity were fundamentally similar, must be admitted that they might be due to several different causes. The power to grow might be latent in it was inherent in all living matter, and might reveal itself at any time in response to an appropriate stimulus. It would scarcely seem necessary to seek for any further explanation of the ordered enlargement or growth of the developing individual than this inherent property of the cells, but even this form of growth was subject to control. It might, for example, be inhibited or increased by the presence or absence of various hormones. The phenomenon, therefore, was not simply an example of the inevitable performance of an inherited function, whether spontaneous or in response to stimulation, in adult life this became even more apparent. A substance which stimulated cells to multiply was produced in the degeneration of cell protoplasm, and presumably the cellular proliferation by which the healing of wounds was brought about was due to its presence. Its action could be demonstrated *in vitro* by the technique of tissue culture, and its presence had also been shown in the intact malignant cell. The suggestion was that the malignant cell differed from the normal in that there existed within it the growth promoting substance which normally was found only when cell protoplasm broke down. If this view was correct it was obvious that malignancy was not merely an exaggeration of the normal physiological process of growth, for the malignant cell had definitely acquired a new property. It was scarcely likely that the matter was so simple as this. The development of a malignant new growth appeared to be accompanied by a constitutional change, according to Murray's experiments, so that the other tissues of the body no longer reacted in the normal way to carcinogenic agents. Even in the simple healing of wounds the presence of some other controlling force besides the growth stimulating substance seemed probable, for how otherwise could be explained the nice adjustment of the covering epithelium in the healing of superficial wounds?

Though it was necessary to guard against too wide an application of the results of tissue culture, some observations by the late Dr Strauchen seemed highly significant, he had pointed out that the cell was at its most plastic and impressionable state during division, and had suggested that cell division was the process by which the cell could best reorganize its protoplasm so as to adapt itself to altered physiological conditions. If the cell was in a state of physiological equilibrium it remained quiescent or vegetative, but should this equilibrium be upset, usually by alterations in environment, it adapted itself by such a mingling and reorganization of its protoplasmic molecules as could only occur in the process of division. From this point of view, therefore, the growth or enlargement of a tissue might be the accidental result of a cellular proliferation which itself was purely protective.

Professor M J STEWART (Leeds) stated that a careful scrutiny of necropsies during many years for the presence of adrenal rests and epithelial heteroplasias of the stomach had shown that such occurrences were by no means uncommon, that they were unduly predisposed to tumour formation, in comparison with other tissues, could not be conceded. It was a different matter, however, to maintain that Cohnheim's theory thereby failed. It had to be admitted that no direct proof of Cohnheim's hypothesis had as yet been forthcoming, in the nature of things it was doubtful if this would ever be attainable. Yet the hypothesis remained an attractive one, especially to explain the origin of teratomas in situations other than the sex glands. It was not suggested that the hypothesis was wholly sufficient, but it might well cover a part of the truth. In addition some factor or factors must be present to account for the onset of proliferation. Most of the some additional explanation necessary in regard to malignancy—such, for example, as Adams' "theory of growth theory." It had been maintained that the fast growing cells of fully differentiated tissues were not capable of proliferation, and that all forms of tumour growth were by accident or from error and tear, as made good by multiplication of physiologically hypoplastic cells constituting the germinal and regenerative cells.

tissues. That was merely a generalization from what must obviously occur in the maintenance, for example, of surface squamous epithelium where proliferation was confined to the differentiated germinal layer. It did not seem a great step from such a conception to Cohnheim's theory of cell nests in relation to cancer. That cancer cells were able to remain in the tissues for considerable periods without appreciable proliferation was clearly shown by the experiments quoted by the opener of the discussion and by the numerous instances on record of metastases remaining dormant and inactive over many years.

Professor J. LOFFAN SMITH (Edinburgh) said that while recent investigation of tumour growth had dealt chiefly with etiology, the progress made had revived the question of the nature of the process. The discussion of this aspect of the subject had long been familiar in the contrast drawn between tumour, hypertrophy, repair, and regeneration. More recently cytologists had taken up the study of cell differentiation especially in relation to changes in ectoplasm. The application of biological methods to corresponding changes in tumour cells was a problem for future investigation. A certain approach to it had been made in Unna's study of skin cancer. Adopting as a basis of classification the architecture of the normal skin, he opened up a field of investigation. In the lower layers of the rete mucosum the cells maintained active division and afforded an example of continued growth. On division of the cells in these basal layers the growth of the skin depended. Two types of cell were produced—one which remained a basal cell with power of continuous division, and another which passed from the basal layer to become a prickle cell finally receiving the form and composition of a surface squamous cell. With this differentiation the power of division was gradually lost. There was therefore a double product from the original division. The architecture of the skin resulted from the production and maintenance of the two types of cell. In the one type there was continued division originating new basal cells and in the other there was differentiation in the direction of keratin scale formation and the power of division was lost. The haemogenetic tissue afforded another clear example of biological architecture. The primitive blood cell in division, continuously maintained, produced cells which remained primitive blood cells and at the same time cells to become gradually transformed into red corpuscles, the e, like the squamous cells had lost their power of division. In cancers of the skin, as Unna had shown the normal architecture was disturbed in a considerable variety of way. With this principle of interpretation as a guide he reached a classification of cancer of the skin according to the type of disturbance. Whatever might have been the result of recent work on etiology it must be acknowledged that it had provided a new means of investigating experimentally the process of cancer growth in relation to the process which in the normal tissue resulted in its biological architecture.

## LACRYMAL OBSTRUCTION ITS NASAL ORIGIN AND INTRANASAL TREATMENT \*

BY

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The exact pathology of lacrymal obstruction is still somewhat obscure. The part played by diseases or abnormalities of the nasal passages and accessory sinuses is considered to be more important than descending infections from the conjunctival sac. According to Kuhnt, nasal diseases are responsible for 95.7 per cent of cases of lacrymal obstruction while a leading textbook on ophthalmology quotes as causes inflammatory conditions of the nasal mucous membrane, simple catarrhal tuberculosis and syphilis, ulcers of the nose, tuberculous, syphilitic and lupoid and nasal tumours, especially polypus blocking the lower orifice of the nasal duct. Bruckner, although he regards nasal causes

as uncommon admits that in the majority of cases diseases of the lacrymal apparatus are nasal in origin.

The purport of this paper is to report the results of an investigation into the nasal condition of 120 cases of lacrymal obstruction observed by me during the last four years through the kindness of my colleagues at the Manchester Eye Hospital.

### Incidence

The susceptibility of the female sex to lacrymal obstruction is a well known fact, and, I believe, never been satisfactorily explained. In the present series 102 cases occurred in females and 18 in males.

The following table giving the age incidence of the disease shows that the greatest number of cases occurred between the ages of 30 and 60, but that of the three decades in this period the numbers of cases were practically equal.

1-10 years	4 cases
10-20	5
20-30	12
30-40	26
40-50	34
50-60	25
60-70	9
over 70	3

The oldest was 74 and the youngest 6 years. The shortest duration of symptoms, such as epiphora, was six months, the majority, however, had presented symptoms for two years or more.

### Etiology

Injury.—Any injury in the region of the inner canthus producing either a fracture of the infra-orbital margin or of the frontal process of the superior maxilla may mechanically obstruct lacrymal drainage. Similarly a chronic traumatic periostitis in the region of the lacrymal fossa following injury without fracture might be an etiological factor. A definite history of injury was obtained in only 5 cases (4.1 per cent). 2 developed an abscess over the eye immediately following the injury with subsequent epiphora, whilst 3 presented a definite scar, and in all the epiphora began immediately upon receipt of the injury.

Breadth and Width of Nose and Nasal Passages.—Whitnall has shown that the breadth of the lacrymal fossa varies with the shape of the skull, being wider in the brachycephalic and narrower in the dolichocephalic types. The lacrymal fossa is deepest at its base where it joins the naso-lacrymal canal, but Gerard has found that the canal is narrowest at the orbital opening, its lower end under the inferior turbinate body being wide and almost funnel shaped. Moreover the direction and inclination of the lacrymal passage is dependent upon the configuration of the facial skeleton, being influenced by the breadth of the bridge of the nose and of the nasal aperture, as also by the development of the maxillary sinuses. Testut showed that, seen in profile, the lacrymal fossa and canal slope gently backwards, forming an angle of 15 to 20 degrees with the frontal plane, while, viewed from in front, the fossa slopes outwards towards its lower end and the canal slopes inwards towards its nasal opening, together forming a curve the concavity of which is directed inwards, the summit being near the upper orifice of the canal—that is, the orbital opening. This lateral obliquity of the medial wall of the fossa is more marked in narrower noses. A narrow lacrymal fossa or an acutely curved lacrymal passage may more readily predispose to obstructive symptoms. The breadth of the nose and the width of the nasal passages were found to be distinctly narrow in only 13 cases (10.8 per cent), and in only one of these was the epiphora bilateral. The intranasal prominence of the lacrymal groove was a distinct feature in all these cases. In 15 cases (12.5 per cent) the nose and nasal passages were noted to be unusually wide and the epiphora was bilateral in 6 cases. In none of the series was the size of the nasal passages dependent upon any deviation of the nasal septum.

### Nasal Pressure Deformities and Reflex Neuroses

Onodi considers that "the ostium of the nasal duct may be wholly or partially occluded by hypertrophy of the turbinates, by polypoid and papillary degeneration of the anterior end of the inferior turbinate, by foreign bodies, dental cysts, syphilitic and tuberculous lesions, etc." And

\* Read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Edinburgh, July 1917.



again, "Changes which take up space or exercise pressure, such as tumours, polypi, the so-called bone cysts, cystic swelling of the middle turbinate, mucous or purulent, spurs and deviations of the nasal septum, will have a like effect." Apart from actual obstruction in the lacrimal passages, Onodi further considers that "there may be a reflex neurosis set up which can evoke from the nose a reflex epiphora." Fischer, quoted by Onodi, describes the cure of a large lacrimal sac the size of a hen's egg following the resection of the anterior end of the inferior turbinate body.

It is difficult to realize how pressure from an enlarged turbinate bone, deviated septum, etc., can mechanically obstruct a membranous lachrymo-nasal tube, lodged as it is in a bony canal. Alterations in the width of the nasal passages following such lesions, which would link the lacrimal canal, are a rarity. Stimulation of the nasal branches of the trigeminal nerve from nasal pressure deformities may reflexly excite excessive lacrimal secretion with resultant epiphora, but, without some obvious intranasal lesion which would mechanically obstruct the lacrimal passage, permanent distension of the lacrimal sac does not seem to me to be possible.

**Enlarged and Displaced Middle Turbinates.**—The middle turbinate was noted to be moderately enlarged in 12 cases (10 per cent), occupying the space between the nasal septum and the outer nasal wall, but with no deflection of the nasal septum. In no instance was there massive cystic enlargement of the turbinate. Six of the series presented a distinctly oedematous appearance of the anterior end of the turbinate body. In two cases (not included in the above) the turbinate enlargement was on the side with no epiphora. The anatomical relation of the middle turbinate body to the lacrimal fossa is of interest, since Thoisch found that in a series of 79 specimens the middle turbinate in 52 instances lay completely behind the lacrimal groove. In four instances (33 per cent) the middle turbinate was displaced outwards without any enlargement and not due to a deviated nasal septum. The peculiarity of these displaced turbinates is that the anterior tip of the lower border was distinctly curved outwards and pressing against the outer wall.

**Deviated Nasal Septa.**—In only 10 cases (8.3 per cent) was the deflection of the nasal septum severe enough to displace the middle turbinate against the outer wall. The epiphora was in nine instances on the side of the septal deflection, while the tenth presented a bilateral epiphora which was worse on the side of the deflection. In 15 cases the septal deviation was too slight to have any bearing on the etiology, while in 7 cases the septum was deflected towards the side with no epiphora.

**Inferior Turbinate Bone.**—Considering the anatomical relationship of the inferior turbinate body to the nasal opening of the lacrimal duct it might be thought that lesions of the inferior turbinate would be frequently seen in cases of epiphora. There were, however, only two instances (1.6 per cent) of moderate enlargement in the present series. It is, I believe, now generally accepted that the site of obstruction in the majority of cases is at the neck of the sac and not at the nasal orifice.

**Rhinitis.**—Atrophic rhinitis, usually a bilateral disease, was present in 7 patients (5.8 per cent). The epiphora was bilateral in 4 and unilateral in 3 instances. Hypertrophic rhinitis occurred in 6 cases (5 per cent), with bilateral epiphora in 3 patients, all boys, aged 9, 10, and 13 years, with marked hypertrophic rhinitis. Simple catarrhal rhinitis was only seen twice (1.6 per cent).

#### Accessory Nasal Sinus Disease and Lacrymal Obstruction

The lacrimal fossa in its upper half is related to the anterior ethmoidal cells, its lower half being related to the middle nasal meatus. According to Whitnall, in the majority of instances (54 per cent) the anterior ethmoidal cells extend as far forwards as the anterior margin of the lacrimal groove and even into the frontal process of the superior maxilla. Less frequently the lachrymo-maxillary suture (32 per cent) or the posterior margin of the lacrimal fossa (14 per cent) forms the anterior boundary of the ethmoidal labyrinth. Pus arising from a suppurative ethmoiditis not infrequently spreads through the

lacrimal bone into the lacrimal groove and point out the inflammatory condition of the anterior ethmoidal cells similarly extend through the lacrimal bone producing a local periostitis in the lacrimal groove. The neck of the lacrimal sac may thus be constricted. Moreover the anastomosis existing between the venous and lymphatic plexuses of the ethmoidal, as also the maxillary, sinuses and the mucous lining of the lacrimal drainage apparatus would appear to render the latter susceptible to obstructions in inflammatory states of these sinuses. The above occurred eight times (6.6 per cent) in the present series. There were two cases of closed empyema, four cases of cystic degeneration, and two or non-suppurative ethmoiditis with single polyp. There was no case of extensive suppurative ethmoiditis with multiple nasal polyp, nor was lacrimal obstruction found associated with an empyema of the maxillary sinus.

**History of Nasal Disease.**—A history of previous nasal trouble was a rarity, either spontaneously stated by the patient or admitted after interrogation. The majority of patients could give no explanation for the onset of the lacrimal obstruction and denied any knowledge of previous nasal trouble.

Table showing Incidence of Nasal Diseases of No. of cases examined 120

Nasal Lesion	Per cent Incid.
Injury	4.1
Breadth of nose and nasal passage—	
Narrow	10.8
Wide	13.3
Enlarged middle turbinate bones (moderate only)	10.0
Misplaced middle turbinate	3.3
Deviated nasal septum	8.3
Enlarged inferior turbinates	1.6
Rhinitis—	
Atrophic	5.8
Hypertrophic	5.0
Simple	1.6
Ethmoiditis—	
Closed empyema	1.6
Cystic	3.3
Non-suppurative with single polyp	1.6

#### Results of Intranasal Treatment

To test further the etiological factor of such nasal abnormalities as were discovered, treatment for them which was undertaken with the following results:

No relief of the epiphora or lacrimal sac distension followed non-operative treatment for the various types of rhinitis, except that in two cases of marked hypertrophic rhinitis some amelioration of the epiphora resulted from shrinkage of the inferior turbinate body induced by the electric cautery. In both of these cases the epiphora was very pronounced and the improvement would seem to follow the relief of the nasal pressure reflex.

The nasal septum was straightened, and where necessary the anterior end of the middle turbinate bone resected, in ten cases, but with no alteration in the epiphora.

No cure of the lacrimal obstruction followed ablation of a cystic ethmoidal labyrinth (four cases).

Complete recovery of the lacrimal obstruction followed drainage of pus in the two cases of closed ethmoidal empyema. The special interest of these two cases is the fact that there was no history of nasal purulent discharge, no free pus in the nose, and, in the first case encountered, the existence of pus was not suspected until operation. In each case the ethmoidal labyrinth had been converted into one large single pus sac.

#### Intranasal Drainage of the Lacrimal Sac (Whitnall's Operation)

This method of treatment, now so familiar, is the establishment of intranasal drainage of the lacrimal sac by removal of its inner nasal wall after exposure through the nose.

Intranasal drainage was performed 45 times, with complete recovery in 32 (71.1 per cent), moderate improvement in 8 (17.7 per cent), and failure in 5 (11.1 per cent). The term "moderate" is reserved for those cases in which slight epiphora when out of doors but in closed room the sac no longer exists. Included in this category are those who, when examined, present

tears at the inner canthus though the patients are quite satisfied. No case is included in the above figures in which operation has been performed less than six months.

J. S. Fraser, who has had a large experience of this operation, gives 73.4 per cent cures, and thus I think, is the experience of all those who have assayed the procedure on my large scale. The operation should not be attempted in the presence of acute dacryocystitis. Internal incision and drainage must first be established and the inflammatory condition allowed to settle down. A slit canaliculus does not preclude a perfect result.

#### Conclusion

It would appear from the present investigation that the incidence of nasal abnormalities, deformities, and diseases, in cases of established lacrimal obstruction, is a rarity. The failure in relieving the lacrimal obstruction following the resection of such nasal lesions was found with the exception of suppurative rhinitis which is in itself rare seems to preclude them as etiological factors in lacrimal obstruction. The absence of a history of nasal trouble in the majority of cases as also the rarity of the incidence of nasal disease would seem to render the nasal origin of lacrimal obstruction "non proven." That there is a nasal cause would seem to be undoubted but its exact pathology and incidence still needs further investigation.

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## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL

#### INTRATRACHEAL INJECTION OF LIPIODOL GENERALIZED IODIDAL RUPTION DLATH

Lipiodol consists of iodine dissolved in poppy oil and gives a very dense shadow under X-rays. It is considered a safe medium for injecting into the spinal canal for intratracheal injection and for injection into the uterine cavity and lipiodol tubes. Its use has now become so widespread that its untoward effects have a general interest.

L. W., a commercial traveller aged 40 had two attacks of pneumonia the first in February 1926. A nervous breakdown with loss of memory followed the removal of many teeth immediately after this first attack. In October 1926 he was in a nursing home at Margate for chest trouble for three months. He was admitted to the London Hospital on March 6th 1927 for a pulmonary and pleural eruption which had lasted since injections of antipneumococcal vaccine in 1926. The palms and sole had peeled twice since and he had been taking an arsenical medicine regularly.

He was a greynosed worried-looking man with a short frequent cough and greenish morning expectoration. The pulse was 83 to 96 and regular there was no fever the urine was natural the systolic blood pressure was 146 mm. of mercury the chest was symmetrical and resonant to percussion with a coarse bronchial rale on the left side. Heart abdomen and central nervous system presented nothing abnormal. There were numerous scattered purulent follicle in the lower abdomen and small scattered pustules in the hair of the lower abdomen and pubic region. The skin of the whole body was dry and slightly rough. The nails were curved over a little at their tip.

On March 11th a physician reported. Physical signs are suggestive of an old arrested fibrous lesion of slight extent at both apex but more in the left than in the right. This seems to be borne out by radiological examination. Investigation by X-rays after lipiodol injection would be useful.

The patient was seen by an aural specialist on March 14th on account of vertigo. No aural cause was seen there was light on in Germany. The stapes and tubular had been operated on.

On March 31st an injection of 20 ccm. of lipiodol was given by the intratracheal route and a X-ray plate of the lung taken. Laboratory examination showed that the blood cholesterol was 109.4 mg. per cent. The Wassermann reaction was negative and tubercle bacilli absent from the sputum (three investigations). Pans from an abscess of the abdominal wall yielded *Staphylococcus*.

aurus Blood culture (May 7th) was negative. Cultures of vesicles on forearms (May 3rd) were all sterile.

The temperature had been very irregular and had risen to 101.0 by April 9th. On April 19th great numbers of small boils were appearing over the trunk and limbs. The voice was very hoarse and the cough more frequent and ever. On May 6th both forearms were covered with vesicles. Three days later the general condition was definitely worse. He was very weak clear mentally, complaining of no pain unable to cough with any force. He showed umbilicated driving vesicles all over the trunk face and limbs. On the legs many small scabs had come away leaving raw granulating areas. Several who saw the patient during the last three days were suspicious of variola. No contact case of variola developed. The vesicular fluid did not give any colour with starch paper. No iodides were found in the urine.

The patient died from bronchitis and heart failure on the evening of May 10th. No post mortem examination was permitted. During his stay in hospital the patient had been treated by opiate doses of X-ray barbitone for sleeplessness varied by chloroform and local dressing.

This patient began to go downhill very definitely after the intratracheal injection of lipiodol. The eruption was one of the recognized types of rash that may follow the absorption of iodides.

W. J. O'DONOVAN, O.B.I., M.D.,  
Physician in charge of Skin Department, London Hospital.

#### PALPABLE GALL STONES IN AN UNDISTENDED GALL BLADDER

The following case is of interest inasmuch as I have never before seen a case or heard one demonstrated where gall stones in an undistended gall bladder were palpable through the abdominal wall.

A man aged 46 consulted me in May 1927 for an attack of pain in the upper abdomen. It was not extreme nor definitely of a colicky type but was described more as a soreness.

The patient gave a history of repeated attacks of similar pain at intervals during the previous five years. The first, in 1922 was accompanied by a rigor and by vomiting but on subsequent occasions there had been no vomiting. The only physical sign present was tenderness on pressure in the epigastrium and in the right and left three-fourths nothing in the nature of a lump could be felt on his first visit.

On July 14th he again presented himself as he had another attack of pain. On examination a hard spherical lump which seemed the size of a large marble was felt some two inches below the tip of the ninth right costal cartilage. It could be pushed about freely within the radius of about two and a half inches and pressure on it caused definite uneasiness.

In spite of the fact that the history was somewhat suggestive of cholelithiasis or at any rate cholecystitis I felt that the lump by virtue of its ease of palpation on hardness and mobility could hardly be the gall bladder.

A barium meal having revealed no abnormality of the stomach or duodenum laparotomy was advised to ascertain and deal with the cause of the repeated attacks of pain. The patient was admitted to Swansea General Hospital where he was kept under observation for a week. On admission the presence of the lump was confirmed by Mr. C. L. Isaac and his house-surgeon Mr. A. H. Holme. Three days later it could not be found but two days subsequently it was again felt in its original position and of its original size hardness and mobility.

Laparotomy was performed on July 25th by Mr. C. L. Isaac who on opening the abdomen immediately found and demonstrated the gall bladder undistended but obviously inflamed freely movable and full of stones. Cholecystectomy was performed and the patient made a good convalescence.

Although of lean build, the patient was not wasted and his abdominal muscles were quite well developed.

SWANSEA G. H. KINGSTON KNIGHT

#### HEREDITARY DEFORMITY OF THE FINGERS

The recently reported case of this condition prompts me to record one somewhat similar with which I came in contact a few weeks ago. In my case the feature on which I wish to lay stress is the fact that the deformity has been transmitted through both male and female members of the family at also differs anatomically from that already published.

A girl aged 6 years said by the mother to be a 6½ months child exhibited the following deformity. Each finger consisted of only two phalanges the proximal ones being of average length but the distal shorter than the normal. The latter had rudimentary nail which did not extend to the ends of the fingers. The thumbs had each only one phalanx bearing a shortened nail similar to the fingers. The child's feet showed no abnormality though her sister aged 10 had slight webbing of the toes. One of her brothers aged 14 had no nails on the second and third digits in adult brother with this deformity suffered little or no disability in earning his livelihood as a labourer.

<sup>1</sup>Valentine C. Diagnostic use of Lipiodol, *London Hospital Gazette* 1927, vol. 2, p. 2.



anaemia was present in all forms of heart failure, but the irritability of this type of breathing in congestive failure was probably associated with the necessity for free pulmonary ventilation in the production of the alternating phases of apnoea and hyperpnoea. The peculiar features of paroxysmal dyspnoea or cardiac asthma were described, and especial attention was directed to the beneficial action of morphine in ending the attacks. A study of these paroxysms suggested that in certain circumstances dyspnoea might be a dangerous reaction which might drive a damaged heart to final failure, and that morphine should be used more freely than was customary in the treatment of dyspnoea. The danger in the use of morphine was that it depressed the respiratory centre so that an increase in the anaemia might result from inefficient oxygenation of the blood in the lungs. When the centre was fatigued this danger would outweigh the benefits, but if the methods for administering oxygen were improved the use of morphine in the relief of dyspnoea could be greatly extended.

#### Extensive Oedema of the Foot

Mr GIRDLESTONE showed a girl, aged 18, who had been sent to him by Dr Frankland West in 1923 with the whole leg and foot intensely swollen and oedematous, and severe pes cavus. There had previously been ulceration of the foot which was suggestive of perforating ulcer. The condition had been coming on gradually for a long time. It was later elicited that the girl had cut the sole of her foot some years before. She had never been abroad, no filaria were found in her blood, and there was no history of streptococcal lymphangitis nor of any streptococcal infection. At that stage no warmth of the foot was noticed. The oedema yielded slowly to elevation, the claw-foot remaining. She was admitted to the Wingfield Hospital last March and an operation was performed including tenotomy of the short muscles of the foot, wrenching with Thomas's wrench, amputation of small toe of the left foot, filleting of the fourth toe, transplantation of the extensor proprius hallucis to the neck of the first metatarsal, and arthrodesis of the interphalangeal joint of big toe. No abnormalities of the tissues were discovered. The foot healed well, but soon after removal of plaster and the resumption of walking in an ordinary shoe a perforating ulcer appeared under the third metatarsal head. This had persisted to the present, there being a slight sero-purulent discharge from it, but no granules. The foot was now felt to be hotter than the other, and there was considerable oedema of the foot and leg again. The x-ray picture showed extreme rarefaction of the fourth and fifth metatarsals with pathological fracture of the neck of the fourth and some fungating bone round the fourth and fifth metatarsal heads. All this time the patient walked perfectly and without any pain whatever. This latter point in particular together with the x-ray picture, indicated the possibility of a trophic condition associated with some lesion of the central nervous system. Recently Dr A. G. Gibson had found no sign of such lesion, he had, however, suspected the possibility of mycetoma (Madura foot). He had taken a culture from the depth of the sinus and grown a mould.

Dr A. WATERFIELD stated that he had seen a large number of Madura feet in the Sudan, but none resembling this. There had never been such extensive oedema and the lesion had been much more localized.

#### Pathological Specimens

Dr GIBSON showed (1) A small carcinoma occluding the lumen of the common bile duct near the entry of the cystic duct which had caused an enlargement of the gall bladder and extreme jaundice. In the hepatic ducts there was a general cholangitis with abscess formation throughout the right lobe of the liver. The patient had died from cholangitis and suppression of urine. (2) A heart from a man aged 63 which showed a healed patch of ischemic necrosis with marked absorption of the inner part of the wall of the left ventricle in the field of the descending branch of the left coronary artery which, though patent at its origin and for 1½ inches from its origin, became extremely narrow and admitted only a pin. The main

branch of the left coronary artery was blocked by a recent clot. The patient had had four years previously a cardiac attack, with breathlessness, pain, and cyanosis from which he had completely recovered, except for slight attacks of thoracic discomfort. He had had a similar attack a few days before death.

## Reports of Societies.

### PAINLESS CHILDBIRTH

At a meeting of the North of England Obstetrical and Gynaecological Society in Liverpool on October 28th, the President Professor W. GILBERT SHAW, in the chair, Mr S. GEORGE WILSON (Liverpool) read a paper on "twilight sleep."

Mr Wilson said that he had investigated the question of scopolamine narcosis on the lines recommended by the committee appointed by the Section of Obstetrics and Gynaecology of the Royal Society of Medicine in 1917. He had treated a series of 32 cases which included 16 primiparae and 16 multiparae. He considered his results under the various heads adopted by the committee. To exclude sensory impulses a quiet room was selected which could be darkened. Cotton wool soaked in oil was placed in the patient's ears, she was kept in bed and discouraged from talking, conversation being carried on in whispers. Observations were made, and the delivery performed, by the light of a small shaded lamp. The injections were commenced in primiparae when the cervix was dilated to the size of two fingers, and in multiparae when labour had definitely commenced. The first injection consisted of omnopon grain 2/3 (Rocho) and scopolamine hydrobromide grain 1/150 (B and W). Each subsequent injection consisted of scopolamine grain 1/450, and in no case was the omnopon repeated. The second and third injections were given at hourly intervals. Subsequent injections were given at longer intervals—from one and a half to two hours, according to the condition of the patient. If labour ceased entirely as it did in four cases, the injections were withheld until it recommenced. The average number of injections was 4.5. Injection of pituitary extract was employed in 17 cases (9 primiparae and 8 multiparae) chiefly in the second stage to augment the expulsive contractions of the uterus. The amount of pituitary for a single injection never exceeded 0.25 ccm. In primiparae the average duration of labour was fourteen hours forty-five minutes, and the proportion after commencement of treatment was five hours forty-one minutes. In multiparae the average duration of labour was sixteen hours twenty-six minutes, and the lapse of time after commencement of treatment was six hours five minutes. The longer period in multiparae was explained by the exceptional length of some of the labours. In all but two cases the uterine action was altered by the injections, lengthening of the intervals between the contractions being the chief alteration. The strength and duration of individual contractions were also diminished. These changes were most marked between the second and third injections during the second hour, and were ascribed to the action of the omnopon for in the majority of cases the pains increased again in force and frequency to culminate in expulsion of the foetus. In four cases labour ceased altogether during the treatment, in one case for eighteen hours, another for six, and in two others respectively for four and two hours. Voluntary expulsive efforts did not arise automatically, but as a rule the patient made them when instructed to do so. The pulse and respirations were unaltered. Observations on the blood pressure during labour did not show any relation between the height of the blood pressure in millimetres of mercury and the character and frequency of the uterine contractions. It was noted that, as a rule, the blood pressure tended to fall during labour. Thirst was noticed invariably and nausea occurred in a few cases, some of the patients complained bitterly of the pain especially in the second stage. Sleep between the pains was present in every case,

slight restlessness and a moderate amount of mental confusion were noted as being associated with the uterine contractions in the most successful cases. Marked restlessness, difficult to control, and tending to occur in periods of uterine relaxation, was taken as an indication for postponing the next dose of scopolumine. Uncontrollable excitement was never seen. The pupils were normal and reacted to light. The corneal reflex was also normal. A key or a pair of scissors was usually the object shown to the patient for the memory test. The memory of the object shown was never at fault. General anaesthesia was only induced in five cases at the end of the second stage, in three cases for forceps extraction, and in two cases in which it was feared anaesthesia had been lost owing to the interval over which injections had been stopped when labour had ceased. Delivery of the child was spontaneous in all but four cases, when forceps were used, two of these patients were multiparae with contracted pelvic outlets, and two primiparae, one with twins, and the other with poor pains and a rigid perineum. In the latter case analgesia was so good that in anaesthesia was unnecessary. In one case the placenta was delivered by Credo's manoeuvre. In nine cases it was noted that haemorrhage associated with the third stage was more than usual, but it was never excessive. In one case the child was stillborn, this occurred in a primipara with premature rupture of the membranes and weak pains. In the other cases the children were born alive and were discharged healthy. In no case the child showed varying degree of apnoea, but could come on later on being left alone in a warm place. All the babies were thirsty for the first twenty-four hours. Sleep after delivery was untroubled and it was found that the better the sleep the more successful was the case. The establishment of anaesthesia only was attempted, as the condition of mind in a child too great an intoxication. "Flash" of memory was produced by stimuli being applied during the coming of the anaesthesia. The anaesthesia was usually, however, applied. The best guide to the condition of the patient between the pains, and her reaction to uterine contractions. The optimum condition was that of amnesia between the pains, with a moderate degree of sedation and muttering delirium associated with the uterine contractions. The cases fell into three groups: (1) complete amnesia in which the patient remembered nothing of the labour (17 cases), (2) incomplete amnesia in which the patient had islands of memory formed and remembered incidents during the labour (17 cases), (3) failed amnesia in (3 cases). During the puerperium the condition of the patient was markedly better than in normal case, and there was less exhaustion. Three cases of pyrexia occurred in association respectively, with pyrexia, suppurative inflammation of the perineum and retention of membranes with delayed involution of the uterus. Lactation was normal in all cases. Mr Wilson concluded that the treatment was very good for the mother, lessening the mental and physical strain of labour, but it exacted unremitting attention from both the medical practitioner and the nurse. The uterine action was definitely diminished, and so labour tended to be prolonged. This might be counteracted, however, by the use of pressor substances, or by methods of artificial delivery. There was no danger, either to mother or child, if the effects of the injections were carefully observed. The memory test was a disadvantage. Strict precautions must be taken to exclude all adventitious stimuli.

The President said that twilight sleep had been much boomed when introduced twenty years ago. It then fell into disrepute and the time had now come to take a clear and dispassionate view of it. He himself did not make use of it to any great extent. The great disadvantage was the amount of time involved.

Dr Lacey asked if Mr Wilson had noticed an abnormal number of persistent occipito-posterior positions of the vertex. He thought that the opinion was due to delivery rather soon after the injection of morphine. He used ether at the end of the second stage to diminish the pain, and it also tended to stimulate the infant. He agreed that the use of pituitrin was necessary to excite the uterine contractions. He gave scopolumine grain 1/100 for the

first dose, and grain 1/200 subsequently. A good nurse was essential and attention to the bladder was necessary.

Professor MISS PHILLIPS asked if the patients complained of drowsiness of the mouth. He said also that the preparation of scopolumine used was of importance.

Mr WILSON, in reply, said that he had not had any persistent occipito-posterior positions in this series. He did not consider it was true "twilight sleep" if an anaesthetic was used. He had not had any patients who remembered then thrust during the labour.

#### Sequel of Radium Application

Mr W. W. KING (Sheffield) showed a specimen of carcinoma of the cervix arising in a case in which radium had been inserted for the treatment of menopausal bleeding.

The patient was a 2 para, aged 50. Four years before he had treated her with radium sulphate in the uterine cavity for menorrhagia due to a fibroid the size of a golf ball. The cervix was noted as healthy at the time. Five months ago a blood stained discharge had commenced, which recently increased in quantity. A fairly advanced carcinoma of the cervix was found, and the uterus was removed by Wertheim's hysterectomy. The specimen showed that the cervix was occupied by an extensive growth, apparently a squamous-celled carcinoma, spreading on the surface of the cervical mucosa. The cavity of the uterus was practically obliterated. The fibroid present at the fundus was compact and cellular. The ovaries showed no ova in the cortex but marked hyaline changes in the vesicular walls.

Mr J. L. STACY asked if any cervicitis had been noted as a result of the action of the radium before the onset of the carcinoma, and Mr KING replied that there had been no symptoms of it.

Dr LEITH MURRAY (Liverpool) showed sections of the endometrium and ovary after intracavitary radium.

The uterus and ovaries were removed from a nullipara aged 39, who had had a full sterilizing dose of radium inserted into the uterus four months previously to induce the menopause for pain and menorrhagia. Persistence of the pain, due to endometriosis of the ovaries, led to hysterectomy. In the sections the endometrium was represented by an irregular disorganized layer scarcely thinner than normal endometrium. A round-celled deposit was abundant, glands were wholly absent and hyaline areas in the deepest layers and in the adjacent muscle were very obvious. The ovary on the other hand, remained healthy, vascularized but without distinctly normal ova. A small part of the endometrial mucus was seen in the section showed no degeneration. The difference between these sections suggested that the radium acted as a local and caustic agent on the endometrium.

The President asked whether it was generally believed that the action of radium introduced into the uterus was on the endometrium, or on the ovaries. Professor B. BELL asked what was the dose of radium given. He said that Dr Forsdyke had proved that the action of the radium was produced by its destruction of the endometrium. Professor MISS PHILLIPS said that he had three specimens removed after a radiation, which he had lent to Dr Forsdyke, and which proved that radium exerted a destructive action on the endometrium and not on the ovaries. Dr LEITH MURRAY said that he did not know the dose of radium used, it was said to be a "full sterilizing dose."

#### Foreign Bodies in the Genital Passages

Mr LEVINSON ROBINSON (Liverpool) showed the following specimens: (1) A taper and a crochet hook he had removed from the uterus in two cases of self-induced abortion. (2) A foreign body he had extracted from the vagina of a puerous woman, seven months pregnant. The patient sat down violently on a pot of vaseline, which entered the vagina and became imbedded in the upper part of the vagina, requiring an anaesthetic for its removal. (3) Two men, showing injuries to the cervix, from fatal cases of criminal abortion, alleged to have been procured by knitting needles. Mr ROBINSON said that these specimens were intended to emphasize the importance of careful pathological investigation in cases of suspected criminal abortion. It was necessary to demonstrate the fact of pregnancy, and also to prove that a suspected injury was neither accidental in origin nor the result of disease. These points could only be determined by experts, and it was essential that the type of case should be submitted to a gynaecologist and a pathologist in addition to a medico-legal expert, who might be neither.

The President said that it was very difficult to decide what should be done from the legal point of view when one



was called in to similar cases. Dr DONALD asked what was the coroner's verdict in the two fatal cases of criminal abortion. In a similar case which he had treated, the patient died, and there was a verdict of *felo-de-se*. Professor B. BELL said that he had once had three cases of septic abortion at the same time which had all been procured by one person whose name was given, all the patients recovered. He placed his evidence before the medical officer of health, who made investigations collected evidence, and eventually stopped the activities of that particular person. Dr McMEYER said he had had two fatal cases, but in which he had informed the police. Mr J. W. LAND ROBINSON in reply said that the verdicts in the two cases were respectively (a) septic abortion and (b) septic abortion following self-inflicted injury. In a local discussion Mr Justice AVERY had said that the police should always be informed. The British Medical Association had stated that the patient should be persuaded to inform the police. In practice he thought that if the patient recovered nothing was said.

#### Uterine Inversion

Mr S. GEORGE WILSON (Liverpool) showed a specimen of complete inversion of the uterus.

The patient aged 30 was a three-gravida. A healthy male child was delivered with the breech presenting. Twenty minutes afterwards compression of the uterus was employed for bleeding when the whole uterus and part of the vagina became inverted. The placenta was almost separated, it was removed and the fundus uteri drenched with hot lotion till it retracted. A tentative attempt at a reposition failed and the patient was treated with morphine grain 1/4 saline solution and warmth for moderate shock. She died three hours later. The specimen consisted of the pelvis with the uterus and the vagina inverted showing the broad and infundibulo-pelvic ligaments greatly stretched and the ovaries and tubes out of sight in the cavity of the inverted uterus. There was no intraperitoneal bleeding and the bottom of the pouch of Douglas was markedly raised.

Dr F. H. LACEY (Manchester) also read notes of a case of inversion of the uterus.

A primipara aged 23 was admitted to hospital suffering from an acute inversion which had occurred ten hours previously after an apparently normal labour. The midwife expressed the placenta when the inverted uterus was noticed. The patient was in a condition of profound shock. After treatment of the shock some hours later an attempt at reduction was made but failed owing to oedema. Averting a reposition was tried and failed. The patient had pre-eclampsia for three months and had white leg. She suffered from menorrhagia and was in very bad health. Nine months later he was better an attempt was made at replacing the uterus by inverting the cervix and anterior wall of the uterus. This failed until sutures were put in the fundus of the uterus and were pulled up through an abdominal incision. Then the uterus was easily replaced and the patient made a good recovery.

Professor MILLS PHILLIPS quoted the following figures of 184 cases collected from the *Lancet* and *British Medical Journal* up to 1912. 43 patients had died (23.4 per cent). Of the 171 who died without treatment of any kind, usually before the arrival of a medical practitioner. Of those in which the condition had been left unredressed often undiagnosed and treated as chronic inversion there were 49 cases of whom two patients died of sepsis (4 per cent). The body of the uterus had been twisted off and torn away by the midwife in two cases both patients recovered. In the case of immediate replacement the figures were as follows:

	Cases	Death	Percentage
Marked shock	79	24	30
No shock	23	0	0
Shock not mentioned (probably absent)	11	0	0

Replacement had been deliberately postponed until the shock had passed off in the case of one patient who recovered. In the *Lancet* and *British Medical Journal* 1912-1926 there had been recorded 34 cases four patients died (11.8 per cent) one of these before the arrival of a medical practitioner. Seven cases had been left unredressed some undiagnosed they had been treated as chronic inversion without any fatality. The figures for immediate replacement in this series were as follows:

	Cases	Death	Percentage
Marked shock	6	3	57.5
No shock	9	0	0
Shock not mentioned	3	0	0

Replacement had been deliberately postponed until recovery from shock in 7 cases without death ensuing in any of them. Professor PHILLIPS thought that treatment of shock was essential before making an attempt at reposition. Miss KINGS said that she had seen a patient who had suffered from inversion twice. The PRISONER stated that he had seen three cases, one of which had been followed by puerperal sepsis and later by death due to intestinal obstruction caused by adhesion of a loop of intestine to the fundus of the uterus. In reply Mr WILSON and Dr LACEY said that they thought the shock was due to stretching of peritoneum, with possible compression of the ovaries in the inverted uterus and the treatment in the first place was that of the shock.

#### Concealed Accidental Haemorrhage

Mr W. W. KING (Sheffield) read details of a case of concealed accidental haemorrhage treated expectantly.

The patient aged 46 was eight months pregnant with her twelfth child. Fourteen hours before admission to hospital she suffered from faintness, repeated vomiting and acute abdominal pain. On admission she was extremely ill, the face was pallid, the mouth and tongue were dry and the respirations were short, jerky and rapid. The pulse uncountable at the wrist was 120 at the apex beat. There was a cloud of albumin in the urine. The uterus was tense, hard and tender. The patient who was a hopeless surgical risk was given 500 ccm of defibrinated blood and 20 ccm of thromboplastin and the blood pressure soon after was 100 mm of mercury. Two hours later the blood pressure was 80, she was given another blood transfusion and the blood pressure rose to and remained at 100. Labour then started and she was delivered in four hours of twins, with two pounds of blood clot. There was no post partum haemorrhage and recovery was uninterrupted.

In a paper read recently before this Society Mr KING had called attention to the fact that in concealed accidental haemorrhage the uterine muscle showed no histological evidence of disease or degeneration, and that it was functionally active and capable of strong contractions. The present case supported the fact of the activity of the uterine muscle and of the possibility existing in the expectant method of treatment of cases of concealed accidental haemorrhage.

Professor F. F. GUNN asked if the blood platelets had been counted in this case. He had found that they increased in number after confinement up to the eighth to tenth day. Dr WILLIAMS believed that treatment should be expectant, though he had performed Caesarean section in one or two cases. Mr KING in reply, said that the blood platelets had not been counted.

#### Squamous Carcinoma of the Uterus

Dr LEITH MURRAY (Liverpool) described a case of squamous carcinoma of the cervix occurring five years after removal of the appendages. He first saw the patient, who was then aged 36 and a nullipara in March, 1922, and removed both appendages for bilateral hydrosalpinx and bilateral cystic ovaries, together with a small subserous fibroid. In June 1926 she complained of bleeding for three months, and was found to have a cauliflower growth of squamous carcinoma arising from the cervix which filled the upper part of the vagina. An extended Wertheim's panhysterectomy was easily performed and two months later an application of radium was given. In six months there was a serious recurrence with ulceration into the rectum and she died five months later. Dr MURRAY asked if there was any direct connexion between the removal of the appendages and the development and degree of malignancy. He considered that the cauliflower type of growth was more favourable from the point of view of operability and prognosis.

Dr DONALD recalled a patient who had had both ovaries removed, she complained of vaginal bleeding and he performed a vaginal hysterectomy. She had had no recurrence in six years. He was of the opinion that the cauliflower growth was the most malignant and Dr J. E. GEMMELL agreed.

Dr LEITH MURRAY in reply said he was amazed at the early recurrence as there was no thickening in the broad ligaments and it was a very easy operation to perform. He then reported a case of columnar and squamous

carcinoma coexisting in a uterus. The patient was a multipara aged 53, in whom the menopause had occurred eighteen months previously. For four months she had had a foul blood stained discharge. The uterus was enlarged and there was a nodule on the cervix believed to be a small retention cyst. A total hysterectomy had been performed four and a half years ago. She had had four treatments with radium and had no recurrence. The specimen showed two different types of tumour: (1) a fungating growth in the corpus and (2) a dense infiltration extending from the external os upwards for two and a half inches. Above there was a columnar carcinoma typical of that in the body, while lower down was the usual squamous celled carcinoma with massive processes of squamous cells surrounded by considerable round celled deposit. The nodule of the vaginal cervix was obviously an area of squamous carcinoma not yet broken down.

#### *Organismic Infection*

Dr C. P. BURNSTAN (Manchester) exhibited a specimen of *Organismic Infection* in the uterus. The organ removed by subtotal hysterectomy presented two small tubercles, one on the summit of the fundus, and the other near the right cornu. There was a strong band two inches long from the tubercle on the fundus to the cornu. On section the tubercles were found to be soft and homogeneous, and microscopically each showed the presence of a female *Organismic Infection* surrounded by a very large number of cells. The patient had had an abdominal operation for prolapse eleven years previously and a vaginal operation for prolapse one year ago.

Mr A. GORDON led what symptoms led to the hysterectomy and Dr BURNSTAN replied that the patient complained of menorrhagia and he had found that the uterus was retroverted and fixed.

### PREGNANCY AND PARTURITION WITH CARDIAC DISABILITY

At a meeting of the Liverpool Medical Institution on October 27th Dr JONES HILL and Dr LIZARD HILL contributed jointly a paper on pregnancy and parturition in patients with crippled hearts. The paper was based on a record of fifty consecutive cases, and its object was to correlate the dangers and difficulties of pregnancy and labour with the disabilities and disadvantages of valvular disease. In these cases the degree of valvular disease was greater than is usually met with in general practice. The fifty cases included 13 primiparae with three deaths, and 37 multiparae with two deaths. Mitral stenosis was present in 47 cases and in 8 patients there was, in addition, some aortic regurgitation. Five patients were suffering from mitricular fibrillation superimposed on the valvular disease. The problems discussed in the paper were as follows: the advisability of marriage in the presence of valvular disease, the termination of pregnancy in the event of conception, the manner in which pregnancy should be terminated, the best methods of affording relief during the stress of labour, and the management of the patient after the birth of the child. Consideration of the series showed the remarkable value of careful ante-natal treatment, which lessened the extreme distress during pregnancy and robbed labour of many of its dangers. In the case of the five deaths, four patients had manifested indications of nephritis, which had come on shortly before labour, and was the factor responsible for death. A necropsy was obtained in two cases, and the nephritis was found to be of recent origin and of the parenchymatous type. It appeared that women with advanced mitral disease were liable to develop a typical form of parenchymatous nephritis as the result of pregnancy, and that this manifested itself late and greatly increased the gravity of the outlook. The record of these series of cases demonstrated the wonderful way in which patients responded to care and efficient treatment, and justified the taking of a much more hopeful view in dealing with this type of case than the one commonly accepted.

## Reviews.

### PRACTICAL PYELOGRAPHY

SINCE Voelcker and Lichtenberg carried out the two first successful pyelographies in 1906 great strides have been made in this method of renal investigation, and what was at first merely a curiosity in medicine has now become a widely used method of diagnosis. Dr ALEXANDER E. ROCHE's work on the subject will, therefore, be of great use to the many surgeons who are now practising pyelography and who desire an up-to-date treatise on the subject. In his preliminary chapter on the history of pyelography the author deals with the various solutions that have been employed for the purpose of outlining the pelvis of the kidney. Most of the work on which the book is based has been carried out at St. Peter's Hospital, and after trying various solutions the author has come to the conclusion that a 12 per cent solution of sodium iodide is to be preferred. But although sodium iodide is ideal in many respects, it lacks the antiseptic properties of sodium bromide and thionium. In order to make good this deficiency a 1 in 3,000 solution of mercuric iodide may be added. Stress is laid on preliminary aspiration before the injection of fluid, and great gentleness during the injections. If no pain has occurred after the injection of 10 ccm the author recommends that a picture should be taken in order to ascertain the degree of filling as a guide to the amount still required for injection. Provided scrupulous care be observed in the carrying out of pyelography, the method may be employed with a minimum of danger in all patients except those suffering from acute or severe chronic urinary sepsis, or from renal insufficiency.

Perhaps the most necessary adjunct of pyelography is that the surgeon should possess a thorough knowledge of the appearance of the normal kidney and of the varieties of pelvis and calices that may occur. For this reason Chapter 1, dealing with the normal renal pelvis, is probably the most important in the book. It is in mistaking a normal variation pelvis for an abnormality that the inexperienced pyelographer usually goes astray, and we commend this chapter to his careful consideration. The concluding chapters deal with pyelographic appearances in such lesions as hydronephrosis, nephroptosis, neoplasm, renal infections, and congenital defects. To illustrate these various conditions excellent plates have been appended. In the selection of the pyelograms for reproduction judgement has been shown, and the text has been written throughout with commendable clearness. Finally, for those requiring further knowledge on the subject, a bibliography of the authorities quoted in the text is appended.

Dr Roche's book is, we believe, the only British monograph on the subject, and it is fortunate that it has been written by one who is capable of clear expression and methodical arrangement and possesses excellent judgement. The pyelograms scattered throughout the book are excellent, and both the author and publishers are to be congratulated on its general turn-out. Altogether the book should be a welcome addition to the library of those who are interested in pyelography, and even those who are not capable of carrying out such expert manipulations will find in its pages much that will be of interest and value.

### THE TEMPERATURE IN TUBERCULOSIS

IT IS AN AXIOM in medicine that the earlier a disease is recognized the better the chance of effecting a cure. It is for this reason that so much attention has been directed in recent times to the early diagnosis of disease, and it will be generally accepted that in no disease is early recognition of more importance than in tuberculosis. The little book on *The Significance of Temperature Variations in*

*Pyelography its History Technique Uses and Dangers* By Alex. E. Roche M.D. F.R.C.S. Eng. With an introduction by Sir John H. K. Lewis and Co., Ltd 1927 (Demy 8vo)

*Tuberculous Disease*, by Dr P C VARIER-JONES, contains a study of continuous temperature records of man in health and disease, and of cattle after the injection of tuberculin.

The book is really divided into three parts. The first deals with the mechanism of instruments for recording continuous and quasi-continuous temperatures, and the second with the application and value of such charts especially in tuberculosis; the third part (Chapters 10 and 11) is a history of thermometry. The thermometer first used by Dr Varrier-Jones was an essential that devised by Gingeo, but later this was replaced by the electrical resistance thermometer of the Cambridge Scientific Instrument Company. The description of the instruments makes tedious reading and is not easy to follow.

The medical practitioner will wish to know something of the practicability, portability, cost, and usefulness of the apparatus, but on the first three points little or no information is given; nor are we told whether the patients object to its application for twenty-four hours in the groin or rectum.

The fourth chapter, in which normal temperatures are discussed, contains nothing novel but is a record of the opinions and observations of others, though it is illustrated by some of the author's own charts. The fifth chapter deals with tuberculosis and in it is defined a continuous temperature curve characteristic of tubercle. This curve which can be produced by exercise or tuberculin, is said to be characterized 'by a more or less rapid rise of temperature 99° or more, a temperature which remains above 99° for a period of eight to twelve hours, the plateau commencing usually, though not invariably, about 2 p.m. and extending until 10-11-12 o'clock at night or even later when there is usually a sudden fall often with but sometimes without a night sweat.' This statement seems to contain the gist of the thesis maintained in the book.

The tuberculin test for cattle receives some attention, the author thinks that after injecting tuberculin it is easy to miss a rise or fall when the temperature is taken every four hours. Although this example is used to demonstrate the value of the continuous method, it does not seem to be suggested that veterinary surgeons should provide themselves with this complicated and delicate instrument for the purpose of making these tests.

A chapter is devoted to the value of the method in the early diagnosis and in the course of tuberculosis; it is well illustrated by many histories of patients in which temperature charts are reproduced but it affords no real evidence that in early cases there are changes in the temperature before other physical signs are obvious.

Continuous temperature records may be of considerable scientific interest, but we believe that outside a laboratory or hospital they are not yet practicable. That they give information of value is obvious since the highest and lowest temperatures of a patient in the twenty-four hours are rarely brought out by the ordinary thermometer. After reading the book we are left with the impression that the method is still in its infancy. The apparatus is complicated, requires to be standardized and is cumbersome, and experience has taught that it is not without inconvenience to the patient. Unfortunately the book is not easy to read with comfort; the meaning is often obscure—for example the following is typical. Speaking of characteristic curves the author says:

A sudden fall is looked on as not only associated with the night sweat but with the exhaustion of the patient induced by the tuberculin reaction, a process quite distinct from the disappearance of the prexia or the formation of a well defined cavity the result of softening and the evacuation of the caseous material—the tuberculinizing centre.

Nevertheless Dr Varrier-Jones makes some good points, and we would especially draw attention to the changes in the temperature curves in tuberculosis as the disease advances.

*The Significance of Temperature Variation in Tuberculous Disease*, by P. C. Varrier-Jones, M.A. Cantab., M.R.C.S., L.R.C.P. London: Cambridge University Press, 1927. Pp. 111. 6s. net.

## MACLEAN ON DIABETES

Of the successful series edited by Professor HUGH MACLEAN, of 'Modern Medical Monographs,' the first by himself on *Modern Methods in the Diagnosis and Treatment of Glycosuria and Diabetes* was brought out in 1922, and is now in a fourth edition, a testimony to its popularity which almost absolves the reviewer from further comment. The revision of this edition provides the conclusions to be drawn from the more prolonged experience of the use of insulin. In connexion with the types of diabetes there is no doubt about the advisability of giving insulin to severe cases, cases with coma, and when in spite of diet ketonuria and well marked glycosuria persist, or about its danger in renal glycosuria, but there may be difficulty in deciding about mildly patients with much glycosuria though little or no ketonuria, in such circumstances the occurrence of any eye changes is an indication for insulin, as otherwise blindness may supervene. In cardiac degeneration and angina pectoris the employment of insulin is attended with great danger, and, if given at all, great care must be taken not to render the urine sugar free, for a mild hypoglycaemia might set up angina which is very likely to prove fatal. Professor Maclean points out that the anginal pains that patients have previously experienced may be mild, and that nevertheless, many tragic results have followed the free administration of insulin to such patients.

The pancreatic preparations for oral administration which at present are flooding the market have been found to be without any effect on diabetes. The most recent preparation for oral administration, the synthetic product synthulin undoubtedly diminishes the glycosuria and ketosis in some diabetic patients, but it has well marked toxic properties, and the gastro-intestinal and other disturbances thus excited prevent its use at present, possibly a somewhat similar product without these objectionable properties may be produced, in the meanwhile however, insulin must be regarded as the only useful substance in the treatment of diabetes. Such is Professor Maclean's opinion, and it will have great weight with the clinician.

## CORONERS' LAW

It is almost a hundred years since Sir John Jervis compiled his treatise on *The Office and Duties of Coroners*. The task of bringing the book up to date, in accordance with the Coroners (Amendment) Act, 1926, which came into force last May, has been undertaken by the coroner for the Liberty of the Tower of London, Mr F. DANFORD THOMAS. He found the work of correlating the various Coroners Acts no easy one, and the difficulties were increased by the number of rules and orders which have been issued recently. The first part of the book contains the Coroners Acts of 1887, 1892, and 1921, the Amendment Act of 1926, the Infanticide Act of 1922, and the Births and Deaths Registration Act of 1926, explanatory notes are appended to many of the sections of the Acts. Mr Danford Thomas then gives a very full account of homicide in all its forms, quoting numerous cases in which judges have laid down law and established precedents. Many of these pronouncements shed an interesting light on legal psychology, and though no doubt, in general effect the principles are sound, in individual cases they must lead sometimes to curious inequalities of justice. In this connexion decisions that have been given in deaths during medical treatment, and from accidents on the highway, provide food for thought. At the conclusion of this portion of the book, the editor describes an historic inquest on a policeman killed in a Christy riot in 1833. The public was so pleased with the coroner's jury for finding a 'glorious verdict of justifiable homicide,' that silver cups were distributed to the seventeen jurors. One of these cups is now in Mr Danford Thomas's possession.

*Modern Methods in the Diagnosis and Treatment of Glycosuria and Diabetes*, by Hugh Maclean, M.D., D.Sc., F.R.C.P. Modern Medical Monograph. Fourth edition revised. London: Constable and Co., 1927. (Demy 8vo pp. 21 + 212, 10 figures, 13 charts. 12s. net.)

*Sir John Jervis on the Office and Duties of Coroners*. Seventh edition edited by F. Danford Thomas, M.A. Oxon. With an historical introduction by F. J. Waldo, M.A., M.D. Cantab. London: Sweet and Maxwell Ltd. and Stevens and Son, Ltd. 1927. (Roy. 8vo pp. xvi + 354, 2 plates. 11s. net.)

It appears that Sir John Jarvis was responsible for the opinion that coroners were *ex officio* justices of the peace. In this he would seem to have been confusing "conservators of the peace" with "justices of the peace" as at present understood. The Coroners' Society has stated that in its opinion "a coroner should not act as a magistrate unless specially appointed and sworn in at quarter sessions." An interesting historical introduction to this seventh edition of Sir John Jarvis's book has been written by Dr J. J. Warne, coroner of the City of London, in which he traces the origin of the ancient office of coroner and describes the powers and duties of the various kinds of coroner still existing or recently abolished. Since the passing of the Coroners (Amendment) Act Dr Warne becomes one of very few remaining authorized "franchise" coroners. If and when the King relinquishes the power to appoint coroners for the Isle of Wight and the Duchy of Lancaster Dr Warne will share the distinction with the King's coroner, the coroner of the King's Household, and the coroner for the City of London.

It is naturally too early to expect Mr. Dunford Thomas to express an opinion on the working of the Coroners (Amendment) Act. But there is one point to which Dr. Warne drew attention at a recent inquest. Discretionary power is now given to coroners, in cases of sudden death from unknown cause, to order a *post mortem* examination, and it is tied with the cause of death suggested by the doctor to dispense with an inquest. Dr. Warne stated that his experience in the past twenty-seven years had convinced him that in such case of sudden death the public interest would be served by a full inquest followed by a public inquest in the presence of the relations with the doctor and a jury on oath. A jury might generally in these cases be dispensed with, but the relatives would be given the opportunity of examining the witnesses, and would be unable to feel that they had a grievance. In his comment on the discretionary power Mr. Dunford Thomas says that "it will throw grave responsibility upon the coroner, and not only will equally careful inquiries have to be made by the coroner's officer of all persons about the deceased at the time of death and the circumstances generally, but the coroner should as far as possible make himself acquainted with the character, attainments, and reputation of the deceased in his district, and it would be undesirable to allow *post mortem* examinations to be conducted at private houses, and further as the report from the medical man is not to be given on oath and in inquest held it is better in known or suspected cases to have the examination made by a medical man in attendance on the family, but circumstances alone would determine whether this course should be followed generally." It would seem therefore, that the wise coroner will not make much use of this discretionary power.

Mr. Thomas Ottawa's *Law and Practice relating to Coroners* is a compact and complete little textbook of the special knowledge essential to coronership. The general reader will also find much interesting information in the book. Thus he will learn that in outlawry, which is now obsolete in practice, it is the duty of the coroner to attend at the final court and pronounce judgement of outlawry against a defendant in default, and that while a man is "outlawed," a woman is "wived." Sunday is a lawful day to the coroner for ministerial acts, but not for judicial duties. He may hold an inquest in the open air if necessary, but not on licensed premises where other suitable premises have been provided for the inquest. Treasure trove is, as a general rule, returned by the Lords of the Treasury to the finder, provided that he has reported his discovery promptly, and handed over the treasure to the proper authorities, but coins and other objects required for national or other institutions are retained, and the finders receive such sums as the institutions pay as the antiquarian value of the objects, less a percentage deduction. Mr. Ottawa describes the fineness of the line between murder and manslaughter, whether the provocation received is sufficient to reduce

the charge to the milder finding, whether, in fact, the provocation is such as would deprive a reasonable man of self-control. Another word in which fineness of distinction has recently become emphasized is "negligence." The development of motor traffic, by increasing road accident, has made the definition of negligence necessary for the purpose of sustaining a finding of manslaughter. The negligence must have been gross, wilful, and unlawful, with absence of all reasonable care, and something more than mere inadvertence. For the motorist, we are afraid, homicide is somewhat of a gamble, since, in the absence of any authorized rule in driving, the definition of negligence is subject largely to the mood and inclination of the judge. Mr. Ottawa's book, being a textbook, contains very little in the way of expression of opinion.

#### MALARIA IN INDIA

Our output of published work, the result of observation and research in India, yearly becomes larger in amount and greater in importance. Among the number of valuable books which have appeared during the current year the volume on *Malaria in India*, by Major General Sir Patrick Hehir, stands by itself, perhaps in that in the width of its scope it forms a monograph for reference, while in its practical detail it will serve as a textbook for the malariologist in the field.

In the preface the author states that the new volume has grown out of his *Prophylaxis of Malaria in India* (1910), which, revised, enlarged, illustrated, and brought up to date is incorporated with it, and he invites particular attention to the sections on the economic and sociological questions connected with malaria in India and the economic problems concerned with quinine. The book is indeed the author's message to India, after twenty-five years' work on one of her biggest problems.

The scope of this work may be gathered from the arrangement of its contents. Part I (pp. 1-177) is divided into sections on the prevalence of, mortality from, geographic distribution of, contributory causes of, personal predisposing cause of immunity to, role of man in the distribution of malaria in India, epidemic and incidental malaria, the human malaria carrier, Indian anophelines and their habits, the malarial parasites of man, and includes a malaria map of India created by Lieut. Colonel Christophers. In Part II (pp. 177-242) the malarial fever, the clinical and chemical pathology, and the pathological anatomy of malaria, together with the treatment dealt with in Part III (pp. 245-450) are discussed. Methods of prevention of malaria in India, segregation of the healthy, isolation of the infected, notification and lethal measures, with a very full discussion on the control of quinine. The subjects next in order are mosquito control in detail from various aspects, with special sections on malaria prevention in towns, in villages, in schools, houses, in military encampments, in jails, in industrial works, and in the individual, with, lastly, chapters on malarial surveys, education, expenditure, and economic sociological questions connected with malaria in India.

Throughout the author refers to the investigations and writings of others, so that with his own observations and criticisms we have a most comprehensive treatise on the whole subject, and one brought well up to date in sections.

Without attempting to go into detail we may refer to two sections to which the author has himself called attention. The question of the provision of quinine or a similar product in sufficient quantity and at a sufficient low price is a problem of the first magnitude when considering the treatment of the cases of malaria which annually in India. They are estimated to number hundreds of millions. Sir Patrick Hehir urges that, until time is some synthetic product may replace quinine, the Government should own cinchona plantations, co-manufacture and regulate the distribution and sale of quinine. The chapter on the economic and sociological ques-

connected with malaria in India is extremely interesting. Malaria in India is not a problem to be measured by so many pounds of quinine, so many yards of mosquito netting, so many chains of drains, or so many gallons of kerosene—it is a problem bound up with the general rural economic conditions in the widest sense, with the people, their habits and customs. The author's rapid survey of these conditions gives evidence of a lack of understanding of some of these big problems in the government of India in the past, but at the same time gives comfort in that "excellent foundations are being laid" which "will produce results that will surprise the people themselves within the present generation."

We have alluded to this book as the author's "message to India." The principle underlying that message—namely, that it is the duty of Governments by investigations along the widest lines to understand the peoples they govern and their conditions—is a message of the greatest importance to the world.

### NOTES ON BOOKS

A SMALL volume containing tables of foodstuffs compiled by Drs HERMANN SCHALL and AUGUST HEISLER of Königsfeld, has been received. It contains such particulars as the protein, fat, carbohydrate, water, and calorie content of animal and vegetable foods, drinks, made dishes, patent foods, infant foods, and diabetic preparations, the nutritional requirements according to bodily measurements in both sexes, and the amount of vitamins, cholesterol, cellulose, lecithin, purin bodies, and mineral substances contained in various articles of diet. The tables are numerous and the volume seems to have no exact counterpart in English.

*How to Feed the Family* is a little pamphlet written by Colonel P. B. LEEHAN, professor of public health in the University of Edinburgh and issued at 6d. by the People's League of Health, 12 Stratford Place, London W.1. Professor Leeahan, in simple language, compares the human body to a motor car which requires fuel, oil, electricity, and repairs, just as the body requires warmth and power, vitamins, materials for repair, salts, and water. Standard diets for a family equivalent to three men in which hearts, herrings, and corned beef figure largely are then given from which each individual may obtain the requisite 3,000 calories at a total cost of 19s. 8d. to 25s. 6d. a week. The prices stated for various foodstuffs are those obtaining in Scotland, but a list of the more important English variations is given from which it is interesting to learn that oatmeal is cheaper in England. The pamphlet should be useful.

*The Book of the Words of Tobit* has been brought out in an attractive form with a well-written introduction occupying more space than the Book of Tobit, with the scholarly pen of Mr. ERNEST H. SHORT who has also edited the book of Revelations. Tobit and his only son Tobias were regarded as harbingers of good fortune to the blind and in the fifteenth century many Tobit pictures were painted as votive offerings for blind men. Saint Lucia was regarded in the same way by women for no other reason. Mr. Short says that the verbal association of the name Lucia (light) with the organ of sight, though the legend arose that this beautiful saint plucked out her eyes because a young Roman, inflamed by their lustre, gave her no peace from his attentions. The book is well illustrated by plates from the old masters, which Mr. Short pleasantly describes.

Major A. J. DAWSON is a well-known devotee at the shrine of the dog, even as the Egyptian was at the shrine of the cat. Hence perhaps the copious libations of word in his *Letters to Young Dog Owners*. But his treatment of his subject is sound and the would-be dog owner will find concealed in the letters all that he can want to know in the care and training of dogs. It would appear that Major Dawson's presumably imaginary correspondent found him reticent on the subject of health in dog, meaning thereby the administration of medicine. The author hopes that his letters have insured the

reader against any need for dog doctoring, but he has failed to achieve the consciousness of a veteran dog breeder whom he quotes. This authority was asked by a newspaper editor (a) how to doctor dog, (b) for a general policy and methods in disease and illness in dogs. His replies were (a) Don't, (b) avoid em.

A Dictionary of Bacteriological Equivalents<sup>10</sup> in English, French, German, Italian, and Spanish has been prepared by Mr. W. PARTRIDGE F.I.C., and will be found useful by those who wish to study papers on bacteriology published in the foreign languages mentioned.

<sup>10</sup> Dictionary of Bacteriological Equivalents. By William Partridge F.I.C. London: Baillière Tindall and Cox, 1927. (Post 8vo pp. xii + 341. 10s. 6d. net.)

### PREPARATIONS AND APPLIANCES

#### EPHEDRINE AND SYNTHETIC EPHEDRINE (EPHETONIN)

A DESCRIPTION of the physiological action of ephedrine, obtained from *Ephedra vulgaris* var. *helvetica* by Dr. K. K. Chen of the Union Medical College, Peking, was published in our columns on October 1st (p. 593). It was then mentioned that the drug had been found useful in asthma as a bronchodilator. Ephedrine acts like adrenaline but has the important advantages that it can be given by mouth and exerts a much more prolonged action than the latter.

Messrs. E. Merck have recently placed on the market a synthetic product which they state is identical in chemical constitution with natural ephedrine—that is to say, it is phenyl methyl amino propanol hydrochloride ( $C_{11}H_{15}NOHCl$ ). It is described as synthetic ephedrine and has been given the trade name ephetonin. The vendors claim that experimental and clinical trials have shown that ephetonin produces the same action as ephedrine. The production of this drug in a synthetic form is an interesting advance in science. The London agents are Messrs. H. R. Knapp, Ltd., 3 and 4, Clements Inn, Kingsway.

#### RUBBER SURGICAL GLOVES

Messrs. Allen and Hanburys (48 Wigmore Street, London, W.1) have sent us a sample of India rubber gloves, manufactured, they state, by a new process, which renders the rubber extremely tough so that it may be subjected to sterilization under high pressure steam. They claim that as the rubber is tougher a thinner glove can be used. The price is 2s. a pair or 21s. a dozen. The gloves have been tested for us by a surgeon, who writes:

I have operated twice with the gloves and find them quite satisfactory except that their touch is not quite the same as that of the I am used to. I understand that these gloves are made in London by means of a new process of vulcanization of the rubber which renders them thin, tough and durable and better fitted to withstand repeated sterilization under high pressure steam than the American gloves. The new gloves owing to their greater durability should effect an economy for general use in hospitals and as they are of British manufacture I feel that they ought to be strongly and widely recommended. I found them a little more slippery to the touch than the Miller (American) gloves I am used to, but the pair sent were a little too large for me. This would be obviated by more experience in using them. I understand that it is necessary to order a slightly larger size so that anyone wearing a 7½ would require an 8.

#### CONCENTRATED DIPHTHERIA ANTITOXIN

The Wellcome laboratories have for many years produced diphtheria antitoxin of a concentration of 1,000 units per cubic centimetre. Improvements in the separation of the antitoxin-bearing fraction of the serum have now made it possible to prepare a concentrated diphtheria antitoxin of 2,000 units per cubic centimetre. The achievement is indicated by the fact that only a minimal activity of 350 units per cubic centimetre for purified antidiphtheric serum.

#### A SIMPLE PLEXIMETER

Dr. I. Kovolman of Glasgow has invented a device made of vulcanite and shaped like a small spoon to serve as a pleximeter in percussion. The inventor claims that his use lesions can be more accurately localized in the chest and that it is very satisfactory in percussing the abdomen. He calls it the phalangoscope, and it is a simple device but in all pleximeters there must be some loss of that tactile sensation which is so informative in percussion when the finger is used. The apparatus is made by Thackray & Co., Great George Street, Leeds.

<sup>1</sup> *Nahrungsmittel Tabelle*. By Dr. Hermann Schall and Dr. August Heisler. Eighth edition. Leipzig: Curt Kabitzsch, 1927. (64 x 91 pp. 12s. 4s. 0.)

<sup>2</sup> *The Book of the Words of Tobit*. With an introductory Essay by Ernest H. Short and Reproductions of Paintings by the Old Masters. London: Philip Allan and Co. Ltd. 1927. (Demio 8vo pp. vii + 120. 12 plates. 10s. 6d. net.)

<sup>3</sup> *Letters to Young Dog Owners*. By Major A. J. Dawson. London: Philip Allan and Co. Ltd. 1927. (Cr. 8vo pp. viii + 159 illustrated. 6s. net.)



## British Medical Journal.

SATURDAY, NOVEMBER 19TH, 1927.

## PROSTATIC ENLARGEMENT

In his Bradshaw Lecture to the Royal College of Surgeons, published in the opening pages of this issue, Sir Cuthbert Wallace reviews the present position of our knowledge of prostatic enlargement. The condition is so common and so embarrassing to the sufferer, who is often overtaken by it while still capable of useful work, that the lecture will be read with great interest by general practitioners, for it discusses practical problems with which they are often confronted. It will also, we feel sure, be carefully studied by specialists, for to those who are so immersed in the details of some particular field of surgery, that they find difficulty in appreciating the chief landmarks it is of no little advantage when one with the experience of Sir Cuthbert Wallace mounts a podium and points out the main features of the landscape. In some directions much progress has been made in the study of prostatic enlargement, and fortunately this applies particularly to treatment, but, as the lecturer observes in his introductory remarks, our knowledge of the function and the pathology of the prostate remains more or less what it was at the end of the last century. Even when we come to the mechanisms of prostatic obstructions there is little that can be asserted with any degree of confidence. In Sir Cuthbert Wallace's opinion no satisfactory explanation has yet been offered of residual urine and of the deterioration of the function of the kidneys that results from the obstruction. His suggestion that residual urine is really a result of bladder posture is ingenious, but may not at once carry conviction. His theory is that if the act of emptying the bladder is slow or interrupted the impulse necessary for carrying it to completion does not arise. To some it will seem that this explanation exchanges one set of difficulties for another, we are still left wondering as to the cause that lies behind it all. In his effort to account for the ill effects of obstruction on the kidneys the lecturer, after showing that the commonly accepted view of back pressure is unsatisfactory, puts forward three possible explanations of the renal complications which follow, these are that the kidneys are extremely sensitive to any obstruction, that the damage done is in the nature of a sudden catastrophe, or that some cause must be sought for that is at present unknown. In other words, he has to admit that we are still completely in the dark.

It will be noticed that Sir Cuthbert Wallace lays very little stress on infection, either in speaking of the pathology of prostatic obstruction or in connexion with treatment. This omission, which was no doubt deliberate, is particularly striking when we consider that the chief direction the more recent efforts of operators have taken has been to attempt to reduce the harmful effects of infection on the convalescence of prostatectomized patients. Some surgeons believe that the chief danger of prostatectomy lies in the fact that it is of necessity a septic operation. In the hope of reducing this, new methods have been introduced with the object of allowing the field of operation to be

directly inspected, and tags of mucous membrane and torn tissue to be removed so as to prevent their forming a nidus on which organisms may flourish. In the lecturer's opinion these efforts to reduce infection would appear to be unnecessary, and he is even inclined to regard irrigation of the bladder and of the prostatic cavity with antiseptic fluids as inadvisable. The lesson that he would teach is rather that the less the prostatic couch is interfered with after operation the better. He attributes his comparative freedom from secondary haemorrhage to the fact that he only resorts to washing out the bladder in exceptional circumstances.

In speaking of mortality he showed that in his own hospital (St. Thomas's) the mortality from prostatectomy during the years 1922 to 1926 was 14.5 per cent, and that when with the prostatectomy mortality that resulting from suprapubic cystostomy was included it was as high as 22.5 per cent. Even if we admit that patients suffering from prostatic obstruction are usually bad cases for operation, and that they have too often postponed seeking relief until threatened with renal failure, prostatectomy must still be regarded as an operation attended with very grave risks. A study of the causes of death following operation shows that the majority of patients die as the result of not one, but of several complications, of which sepsis would seem to be the worst.

The lecture is provocative of thought, and we shall not be surprised if it gives rise to some controversy. We could perhaps have wished that Sir Cuthbert Wallace, in concluding this valuable survey of prostatic surgery, had indicated the direction in which future improvement is to be expected. However gratifying the progress that has been made since 1886, it is impossible to remain satisfied with the present state of affairs. We may hope that some future Bradshaw lecturer will be able to record an advance in prostatic surgery at least as great as that described by Sir Cuthbert Wallace.

## OXYGEN THERAPY

Our experience obtained during the war of the great value of oxygen in the treatment of gas poisoning did much to encourage its use in civil practice, and recognition of its importance as a therapeutic agent has increased considerably during the last decade. At the same time, it is notorious that the results of the therapeutic use of oxygen often are unexpectedly disappointing. Hence the papers on oxygen administration which appear in this number are of special interest.

The main principles which should govern the use of oxygen were set out clearly by Professor J. S. Haldane ten years ago.<sup>1</sup> Oxygen therapy is not likely to be found of much service unless these fundamental principles are clearly understood, and Dr. Whitridge Davis has done good service in restating them and in providing at the same time quantitative data which will facilitate their application in practice. The outstanding fact is, of course, that the normal alveolar air contains 14 per cent of oxygen, and that oxygen cannot be expected to produce benefit unless sufficient is given to raise this proportion by a significant amount. Dr. Davies has supplied us with figures showing the actual effects on the composition of the alveolar air produced by varying quantities of oxygen given by various methods. His analyses reveal the rather surprising fact that administration of oxygen through a nasal catheter is not

<sup>1</sup> Haldane, *BRITISH MEDICAL JOURNAL*, 1917, 1: 181. See also *JOURNAL*, 1919, 1, 65.

more effective than delivery into a funnel held over the patient's mouth, and hence some form of mask is essential if the use of the gas is to be effective. His results indicate that the smallest rate of flow likely to produce benefit is about two litres a minute and in this connexion he states that, when oxygen bubbles through water at the fastest rate at which the bubbles can be counted, the flow only corresponds to a quarter of a litre a minute, which is a quantity insufficient to produce any effect.

These conclusions are of great practical importance, for they suggest that the usual methods of giving oxygen are extremely inefficient, and further that the gas is very frequently given at a rate which would be too low to produce an effect even if the method of administration were efficient. The discussion on the paper suggested, however, the great need for careful clinical tests of these conclusions. Dr Hilton for example found that an oxygen flow of 0.75 to 1 litre a minute given by a nasal catheter might produce distinct benefit in certain cases.

The main physiological principles involved in the administration of oxygen are very simple, but the clinical applications of these principles are complex because of the great variety of the conditions that lead to anoxæmia. Even in a single disease such as lobar pneumonia we must assume that many degrees of impairment of the alveolar epithelium exist in those portions of the lung still functioning and it is probable that in some cases a very small rise in alveolar oxygen tension may just make the difference between sufficient and insufficient aeration of the blood.

An important point mentioned by Dr Ritchie was that in pneumonia the faintest trace of cyanosis in the lips, ears or nose is a call for oxygen. Professor Haldane has repeatedly emphasized the fact that oxygen should be given early before pronounced cyanosis occurs because severe cyanosis will quickly produce irreparable injury to the vital organs. Dr Davies did not discuss the use of subcutaneous injections of oxygen but it is difficult to understand how these can produce much benefit. In the first place, an adult at rest requires about a quarter of a litre of oxygen a minute and therefore the amount that can be introduced subcutaneously is negligible compared with the amount the body is using. In the second place the oxygen will be taken up by the capillaries and will only increase the oxygen tension in the local tissues and in the venous blood whereas the object of oxygen therapy is to increase the oxygen tension in the arterial blood which goes to the vital organs.

It is perhaps fair to say of our present knowledge of oxygen therapy that the main physiological principles involved are fairly well established and that what is chiefly needed is more clinical information based on accurate measurements to determine over what range of dosage oxygen can produce measurable benefit in actual cases of disease.

In his final paragraphs Dr Davies touches on another very important point—namely the possible value of oxygen in the treatment of chronic respiratory diseases. Professor Barcroft and his fellow workers produced very remarkable permanent benefit in patients suffering from chronic after effects of gas poisoning by treating them for a few days in an oxygen chamber. This method of treatment unfortunately is expensive as it involves a specially constructed chamber and large quantities of oxygen but a full investigation of its possibilities is obviously desirable in view of the serious economic loss caused by ill health due to chronic respiratory diseases in the adult population.

## TREATMENT OF RECTAL CANCER BY RADIUM

Radium has had an uphill fight for recognition, and may be said to have made good in spite of the enthusiasm of its early supporters many of whom advanced claims unjustified by the true facts. Recent developments—largely the outcome of the closely co-ordinated team work of some of the Continental clinics—have now placed radium therapy in such a position that, in regard to two or three at least of the common kinds of cancer it is beyond all question an important alternative to operative treatment.

Cancer of the cervix uteri and cancer of the lip and tongue have furnished so far the most convincing body of evidence as to the value of radium and although there is not yet complete unanimity—possibly owing to the fact that there are still some surgeons who have either not had or not taken the opportunity of seeing what is being done—there certainly is an ever increasing body of authoritative opinion in its favour, composed of those who have actually seen the results obtained in London, Manchester, Stockholm, Paris, Brussels and many other centres. All these successes would appear to have followed upon the introduction of the radium needles and the appreciation of the fact that in order to obtain good results the radium containing needles must be inserted actually into the substance of the growth, and must remain there a considerable time. It is easy to understand, therefore, that the more accessible the growth the better the results and that cancer in those situations to which access is difficult has not been attacked with the same energy and enthusiasm.

Cancer of the rectum has suffered in this way for not only are there considerable technical difficulties attending the mere insertion of the needles but an accurate estimate of the size of the growth is difficult to arrive at by the ordinary methods and in consequence the dosage is largely a matter of chance. On November 9th at a meeting of the Subsection of Proctology of the Royal Society of Medicine Sir Charles Gordon Watson described a method of radium treatment of cancer of the rectum by open operation. Briefly it consists in exposing the rectum by a posterior incision extending from the sacrum to the anus the coccyx being removed in order to allow adequate space for the manipulation necessary to estimate the size and extent of the growth and to assess the dosage indicated. The radium is employed in needles varying in length from 2 to 5 cm. which are so placed as to ensure that every part of the growth and its extensions receives a barrage of gamma rays of equal intensity. Roughly speaking the general aim is to ensure that every cubic centimetre of growth shall have at least 2 mg. of radium acting upon it for a minimum period of seven days. The method embodies, therefore, the general principle of a small dose for a prolonged period as opposed to the earlier and more general principle of a heavy dose for a short time. The speaker was able to show two patients in whom this plan of attack had been employed with such success as to cause complete disappearance of any evidence of cancer the growth having been replaced by a fibrous stricture.

This development of the surgery of access, which is now so important a factor in radium treatment is clearly of the greatest value and Sir Charles Gordon Watson is to be congratulated upon his enterprise and upon the success that has attended his efforts.

# TREATMENT OF EARLY MENTAL DISORDER

The treatment of mental disorder, whilst comprising all the methods employed in the relief of physical disease, has of necessity to include much more, and the psychological element must, in most cases, bulk largely in all therapeutic measures for the relief of mental illness, both in the mode of treatment and in the supervision and control of employment of direct suggestion. It is only necessary to compare the amenability of a medical or surgical out-patient department with that of a mental out-patient clinic to appreciate the difficulties which confront the physician when treating out-patients those suffering from mental disorder. In the third annual report of the Maudsley Hospital Dr Mapother, the medical superintendent draws attention to this difficulty. "In regard to treatment proper," he says, "it remains true that available methods are equally indispensable to the real efficacy of an out-patient clinic. In their absence such a department receiving a mixed clientele would be reduced to the absurd position of being quite impotent in respect of a large part of its out-patient cases. It would be easy, and in the present state of public feeling very dangerous, to exaggerate the extent to which out-patient treatment alone will suffice. The frequency of such treatment alone is confined to a relatively small class of 'functional' cases. In general it may be said that out-patient treatment (by which most out-patients receive psychotherapy) may be adequate (for example in the case of those with a purely obsessional) or even possible (as in many cases with a large element of chronic hysteria) but it is generally quite inadequate for patients with a severe and considerable disturbance of emotion or activity and to say apart from whether such disturbance renders the patient dangerous to himself or others." So it comes that the employment of intensive psychotherapeutic treatment is restricted in a large number of cases, is necessarily limited to a small number of chosen patients who for one reason cannot be admitted, but who are otherwise of exceptional promise. If, however, the treatment of mentally disturbed patients is impracticable on a large scale in an out-patient department, and has perhaps fallen short of the expectations which may be held of it, the treatment of such patients in the wards of such a hospital as the Maudsley holds out bright promise for the future, both as regards the enlargement of our knowledge of mental disease and the treatment of its many manifestations. We have come to consult the Maudsley annual reports as an authoritative source of information, both in the matter of diagnostic measures and therapeutic measures in the treatment of mental illness, and all the more so that Dr Mapother has from the first assumed a modest scepticism of outlook which makes us accept unhesitatingly his positive findings. The treatment employed at the Maudsley Hospital includes general treatment by established methods, and special treatment, much of which, although experimental, raises great hopes. Amongst the established methods of treatment carried out are hydrotherapy, physiotherapy (including Swedish drill, massage, and special exercises such as Fenchel's), electrotherapy, and special and occupational therapy. Among the methods of treatment used recently are the induction of relapsing fever in neurosyphils, the infective material was supplied to Dr Golla, director of the pathological laboratory, by Dr Plant of Munich. It is too early yet to speak of results. In the meantime Dr Mapother is content to observe that the prognosis of all forms of neurosyphilis is being modified as a result of treatment by induced pyrexia and by trypanamide, he favours a combination of the methods. Ultra-violet radiation has been followed by improvement in a number of cases. Of the various medicinal preparations which have been employed, ergot has brought about considerable benefit in cases with anxiety symptoms, and callosol, manganese and afoenol (a preparation of calcium chloride

combined with urea) are being tried, but so far without definite results. Somnifen has been extensively used, and as, in Dr Mapother's opinion, the best diurnal sedative for seriously agitated and hallucinated patients. In such cases it can be so administered by hypodermic injection as to produce a sort of twilight sleep. The complete recovery of confused and hallucinated cases after particularly long treatment with somnifen has convinced Dr Mapother that its use is not attended by the risk of producing dementia. Dr Mapother, Dr Golla, and their colleagues and helpers are tilling a difficult field. Positive results are not easy to come by, but their courage and skill are such that we believe a rich harvest awaits them and us.

## THE ORTHOPAEDIC HOSPITAL IN LONDON

WARREN the spacious and then new out-patient department of the Royal National Orthopaedic Hospital in Bolsover Street, Marblebone, was opened in 1909, it was not anticipated that within twenty years it would be found quite inadequate. But at that time the out-patient attendance numbered only 16,235, and, although the provision made for increase then seemed generous, no one concerned foresaw that in 1926 those attendances would have increased to 77,559, or nearly fivefold. Not only are the attendances more numerous, but the need for more accommodation for treatment has increased in a greater ratio, seeing that in this, as in other hospitals, great developments have taken place in the last eighteen years in the scope of electrical physiotherapeutic methods and of the application of radio-graphy. In 1909, moreover, the hospital possessed no workshop of its own, but was dependent upon instrument maker for all the appliances required by patients. Despite all the advances in the operative treatment of deformities a very large number of cases need retentive or corrective appliances after treatment, and these must be supplied before, or at least as soon as, the surgeon's work is done if the good gained is to be kept. Such considerations convinced the committee of management of the hospital that they must establish their own workshop, where appliances could be made or modified under the direct supervision of the surgeon or other hospital officers. An extension of the site in Bolsover Street was obtained from the ground landlord, who was then Lord Howard de Walden, but at the juncture the war put a stop to all building on it for some years, soon after the peace a temporary workshop was established with the help of the Ministry of Labour, in which a number of disabled pensioners were trained rapidly and successfully in surgical bootmaking. With the support of the King's Hospital Fund the adaptation of the old out-patient department as a part of the new building was undertaken, and the whole work has been carried to completion at a cost of £58,500. It is in this addition that the president of the hospital, Prince Henry, K.G., will receive the Lord Mayor and sheriffs when, on November 22nd, the Lord Mayor will declare the department open. The spacious and airy out-patient waiting hall is decorated in a manner unusual in such places. Bold designs in colour representing the twelve months of the year, painted in oil on canvas and waxed, relieve the monotony of the walls, and give the too often weary eyes of the patient or his or her friends something pleasant and beautiful on which to rest. The artist, who presented the pictures, is Miss Nan West. The surgeon's room, dressing rooms, and other necessary apartments open on to the hall, which is well lighted from above. There is a well equipped out-patient operating theatre, as well as accommodation for massage, the application of plaster, Pains, exercises, electrical treatment, light treatment, and x-ray work. The provision made in 1909 for the radiograph department soon proved absurdly inadequate. It is hoped that the accommodation and apparatus now provided

this department may be sufficient for all needs for years to come. The very well equipped and extensive workshop is placed in the basement, and affords facilities for a greatly increased and improved production of surgical appliances and boots. Thus remodelled and enlarged out-patient department remains in communication by means of a tunnel under Bolsover Street with the main building and its 200 beds in Great Portland Street, which was opened by King Edward and Queen Alexandra in 1909. This also had become quite inadequate to the needs of the hospital, and soon after the war the responsible authorities decided that more beds were urgently needed, but that it would be unwise to attempt to provide them on a costly site and in the gloom of a great city. The country branch at Brockley Hill Stanmore was the outcome of this decision. This is placed in an ideal situation, 400 feet above the sea, and, although only ten miles along the Watling Street from the Marble Arch, in quite rural surroundings. Besides the old country house and a wooden open air ward, permanent wards for open air and sunshine treatment have recently been built and are on the point of completion, as well as a new surgical block, provision is made also for the most up-to-date treatment of surgical tuberculosis and other crippling maladies, thus raising the number of beds now available here to 266. These extensions have cost over £80,000, and, taken together with the new out-patient department they have involved the charity in a debt of some £40,000. Three-fourths of the patients treated at the two hospitals are children, whose needs appeal with peculiar poignancy to the charitable, and it is hoped that this debt will be cleared off as soon as the needs of the institution are realized by the public.

#### SOME EFFECTS OF LIGHT

A CONTRIBUTION to the knowledge of a subject of considerable general interest has recently appeared in an article by J. V. SUPNIEWSKI, from the Pharmacological Laboratory, Cambridge published in the *Journal of Physiology* (October, 1927). It is on the action of visible light on organs sensitized by haematoporphyrin. The action upon the tissues of short wave length rays is becoming a subject of greater and greater interest, from the point of view both of theory and of practice. Visible light, on the other hand, has been shown to exert little action upon animal tissues, though, in the plant world, the phenomena of photosynthesis have long been familiar. It has, however, been shown that fluorescent substances such as eosin which give off rays of shorter wave length than those which they absorb can "sensitize" tissues and other material (for example, photographic plates) to light rays which in the ordinary course of events would exert no action upon them. The researches of Garrod in this country and of Günther and Venck in Germany, have placed the haemoglobin derivative haematoporphyrin in this category. Itself a fluorescent substance, it can be prepared in the laboratory, while its production in large quantities in the body gives rise to the disease variola vacciforme classed by Garrod among the "inborn errors of metabolism." Supniewski has shown that mammalian tissues can easily be sensitized to visible light by a comparatively brief immersion in Ringer's solution containing haematoporphyrin in strengths of 1 in 20,000 to 3 in 500,000. Although neither haematoporphyrin alone (unless it be in strong solution) nor light alone has any detectable effect, yet when exposed to light after being sensitized by haematoporphyrin isolated portions of rabbit intestine or uterus go into strong tonic contraction and die within half an hour or so. Similar effects are observed on the isolated heart. In the whole anesthetized animal intravenous injection of haematoporphyrin followed by exposure of the viscera to light results in violent contraction of the exposed organs rise of blood pressure, and finally death. The

injection of haematoporphyrin into normal albino rabbits, whose skins are unprotected by pigment, is also followed by fatal results. The author gives reasons for thinking that, in the case of haematoporphyrin, yellow light provides the most effective stimulus. The explanation of these phenomena is unknown. Undoubtedly they are of a general nature and fundamental importance. For their complete elucidation it may be necessary to await the application of the methods of molecular physics to the problems of biology.

#### ON OBSERVATION

MR. ERNEST B. WAGGETT delivered the annual address to the post-graduate class at the Central London Throat, Nose, and Ear Hospital on November 11th. His subject was "Observation," but he began with some general encouraging remarks, one of which was that while, in every generation, there were men who carved out for themselves a great position although everything was against them, in most careers good fortune was a large element. He could name men whose careers had been made by such a chance circumstance as standing at a particular door at a particular moment. The men upon whom fortune thus smiled had, of course, great qualities, and proved themselves capable of rising to the occasion, but it was likely enough that almost any of their less fortunate fellow students would have done equally well in the same circumstances. To watch the face of fortune for its fleeting smile was not a bad piece of advice. The qualities and activities which made up a surgeon could be, and duly were, nullified by the lack of acute observation. No man could be a great surgeon without the ability to perceive correctly. At the same time he begged students not to be discouraged when an error in observation had been proved against them. Such errors occurred in the best possible circles in the region of surgery in which he and they were interested. There were special pitfalls in that branch of surgery for example, the illumination that had to be employed, and the fact that images observed in a mirror were reversed. Incidentally he pointed out that it was an error to suppose that with monocular vision distances could not be judged. True, it was not so easy and natural to judge distances by monocular as by binocular vision, but it was perfectly feasible if only a clear image were fixed of first one and then another part of the picture. The phenomenon of parallax helped in this judgement of distance. He challenged students newly entering his branch of surgery to observe quite clearly and definitely any of the anatomical appearances of the ear nose and throat. He did not believe that during the first two months of such study 50 per cent of accuracy would be achieved. The newness to the students of the objects examined would, of course, at first be a help to observation rather than a distraction, but pre-entail familiarity would tend to produce sickness and would conflict against accuracy. Scarcely any artist could draw his wife's face without making her sit for her portrait, whereas he could draw a recognizable likeness of a railway porter whom he had seen for only a minute. Sargent's method was to stare at his subject for half an hour and then work at the canvas until that cupful of memory was exhausted after which he had another long drinking in of his subject. In surgical work this creation of an image in the memory was almost always essential, with the added difficulty that the inspection must be fleeting in time and all the more concentrated in intensity. Mr. Waggett urged the importance of not looking at too many cases in the hour. The out-patient room could create a world of heresy. A few cases should be concentrated upon, and the rest given a placebo with an order to return. A hasty examination was a thousand times worse than none at all. One cause of inaccurate observation might be defects of vision. Possibly glasses might be needed, and it

was worth while to make a point of that if mistakes were frequent. He urged also the employment of magnification. The small terrestrial telescope he thought to be one of the most valuable adjuncts to the bronchoscope. But, whatever the opinion about magnification, there must be clear, precise vision of every point. Besides unimpaired visual perception there were intellectual causes for wrong observation. Preconceived ideas of things were a fruitful source of error. It would be absurd to say that there must be no preconceived ideas, but in this region of surgery there is no normal typical appearance of structures, except perhaps the ossicles of the middle ear. Another extraordinarily potent source of error was anticipation of what one was to see. The habit of correct observation for any of these reasons had hindered the progress of medicine and surgery. To his own generation it seemed a thing incredible that it should have been left to Meyer of Copenhagen to discover adenoids. If a body of men whose general knowledge already gave them competence in the manipulation of patients would make a daily practice of complete detailed observation, some of them would almost certainly alight upon one of those chances which, when appreciated, led to a great stride in medical progress. Such studies had often come through chance observation. Thus did Röntgen discover X rays and Richet anaphylaxis. The most secure and the simplest method of becoming a great observer was to reduce the observations to drawing or writing, by which he made out nothing more than the case sheet. He also urged men to work in couples, and compare notes, and to avoid over-division, which might lead to re-examination. In conclusion, Mr. Wiggott reminded his audience that while accurate observation was essential to success, in itself it had nowhere. Observation, unless digested by contemplation and illuminated by insight, did not bear fruit. Moreover, while there was an observation which was microscopic there was also another kind of observation, made from the hilltops. It was in this wide outlook—though they had the power of microscopic envisagement as well—that Darwin, Pasteur, and Lister excelled, and thereby changed the whole surface of scientific thinking.

#### OLD MEDICAL BOOKS

As often happens about this time of the year, there are a number of rare and curious old textbooks being offered for sale in the principal London auction rooms. The sale of the Holford library at Sotheby's early in December includes a few first-rate examples, many of them in superb old binding, valuable in themselves apart from their contents. There is a first edition (Venice, 1528) of Paulus Aeginetii's *Opera medica*, an Aldine product. From the same printer, and the same year, is a copy of Celsus's *Medicinarum libri VIII*, in a very fine sixteenth century French binding. Another Aldine, in five volumes, is the works of Galen, 1525. There is also a Hippocrates of rather later date, Leyden, 1665, two volumes. More interesting than any of these is the first edition of Nicholas Leoniceus's *De Epidemia quam vulgo morbum Gallicum vocant*, the first printed work on syphilis, published at Venice by Aldus in June, 1497. In another collection, which Messrs. Hodgson are selling while this note is in the press, the following are noticeable: Michael Scott, *Physiognomica et de Procreatione*, about 1510, Galen, *de Morbis Cruribus*, Leyden, 1546, *Phlegmatism* (presumably a pseudonym), *Thesaurus de Remediis secretis*, Leyden, 1555, Tagantius, *de Chirurgia Institutione*, Leyden, 1567, Argenterius, *In Artem Medicinalem Galeni*, Paris, 1578, Stempnus, *de Morbis Internis*, Leyden, 1587, Ambroise Paré, *Opera Chirurgica*, Frankfurt, 1594, Mackenzie, *De Humanae Rationis Imbecillitate*, 1690—a curiously modern-sounding and provocative title, de Honppeville, *La Generation de l'Homme par le Moyen des Oeufs*, 1676—can this possibly be an anticipation of "Omnis Cellula de Cellula"? There are also

Belloste's *Hospital Surgeon, or a New, Gentle, and Easy Way to Cure Speedily all Sorts of Wounds*, 1701, and amongst a number of pamphlets, J. Browne, *Icterus Against the Circulation of the Blood*, 1701, Proceedings in the Management of Chelsea Hospital (appointment and dismissal of S. Lee, surgeon), 1753, Oliphant, *On the Usefulness of Vomiting in Fevers*, 1699, and many others.

#### SUPERANNUATION FOR LABORATORY ASSISTANTS

We are glad to learn that the London School of Hygiene and Tropical Medicine has adopted a superannuation scheme for the technical and laboratory assistants in its employ, who are grouped in definite grades, each with its scale of salary. As the Federated Superannuation Scheme for Universities does not embrace technical and laboratory assistants, the board of the school has drawn up a scheme for their benefit on the same lines and using substantially the same machinery. The scheme does not apply to any member of the staff whose remuneration is £100 per annum or less, it is optional for those with salaries from £100 to £160, beyond that it is compulsory for all new entrants. An amount equal to 15 per cent of the salary (5 per cent contributed by the employee and 10 per cent by the board) is to be applied in payment of a yearly insurance premium to secure either an annuity on retirement if the age of 60 or a lump sum under an endowment insurance policy. The memorandum embodying the scheme contains a proviso that any member transferring to another medical school or to another institution shall take the benefit of his own contributions and those made by the school. If he leaves the service altogether within five years of joining it he takes the benefit of his own contribution only, but if he leaves after five years he takes the benefit of both contributions. Provision is made also for members remaining in the service of the school after they attain the age of 60. The inauguration of this scheme, which we can well believe has been received with expressions of gratitude from those to whom it applies, should improve the status of laboratory assistants, and it is to be hoped that comparable institutions will adopt similar schemes, and thus pave the way for reciprocal arrangements in the case of transfers and promotions within the service.

#### NOBEL PRIZES

THE award by the Karolinska University of Stockholm of the Nobel prize in physiology and medicine for 1926 to Professor Johannes Fibiger of Copenhagen has now been officially announced. Professor Fibiger is best known to the medical profession for his work on the experimental production of cancer in rats. He succeeded in producing growths of the stomach and tongue by feeding the animals with cockroaches infested with a small nematode. The growths occurred in association with the impregnation of the worms in the tissues, this was, we believe, the first instance of the experimental production of cancer otherwise than by inoculation. The same University has awarded the Nobel prize in the same subjects for 1927 to Professor Julius Wagner von Jauregg of Vienna, who introduced the systematic use of infections with benign tertian malaria in the treatment of general paralysis of the insane, a method which has now been extended to certain other chronic nervous disorders.

We have already announced that the twentieth anniversary of the publication of Harvey's epoch-making book, *De Motu Cordis*, will be celebrated in London under the auspices of the Royal College of Physicians next spring. The date fixed for the celebration is from May 14th to May 18th. Invitations are now being issued, and it is expected that delegates from all countries will then gather in London to offer their tribute to the memory of the first and greatest of physiologists.



The David Lloyd Roberts Lecture  
ON  
CRIMINAL LAW AND INSANITY  
BY  
LORD HEWART

THE fifth David Lloyd Roberts Lecture was delivered on November 16th at the house of the Medical Society of London by the Right Hon Lord Hewart Lord Chief Justice of England, who took as his subject "Criminal law and insanity." Mr Herbert W Carson, President of the Society, was in the chair, and there was a very large attendance.

Lord Hewart began by remarking that the medical and legal professions seemed to have so much in common, and to be devoted in so unusual a degree to the public welfare, that any real misunderstanding between them upon a matter of public importance would be much to be deplored. Yet from time to time there were indications of a lack of complete harmony in the views with which the two professions respectively regarded or tended to regard, the attitude of the criminal law towards insanity. The true description of the subject-matter of that difference, or apparent difference, was of no small importance. The subject-matter was not insanity, but the attitude of the criminal law towards insanity. It was natural enough that the two professions should regard insanity from somewhat different points of view. That circumstance, far from being matter for regret was matter for satisfaction. What was to be regretted was a difference of view upon the actual and the proper attitude of the criminal law towards insanity.

*The Defence of Insanity Conditions it Must Satisfy*

The leading principle of the criminal law of England relating to insanity was still to be found in the answers given to the House of Lords by the judges in the *M'Naghten* case. Every man was presumed to be sane, and to possess a sufficient degree of reason to make him responsible for his acts until the contrary was proved to the satisfaction of the jury. In other words, the burden of proof, where insanity was pleaded, was upon the defence. It was not for the prosecution to establish the sanity of the accused, that was presumed. It was for the accused to prove if he could that at the material time he was within the meaning of the criminal law insane. The word was "prove," not "suggest" nor "indicate" nor "insinuate," nor any such word. Nothing short of proof was sufficient. In order to establish a defence on the ground of insanity it must be clearly proved that at the time of committing the act the person accused was labouring under such a defect of reason from disease of the mind, that he did not know the nature and quality of the act he was doing or if he did know it that he did not know he was doing what was wrong.

The meaning of these words was sufficiently plain. The crucial time was the time of committing the act, not some other time earlier or later. The sufficient defence of insanity, related to that time, must satisfy three conditions: the first two of which were in every case obligatory, while as to the third there was a choice of alternatives. It must be proved (1) that the accused was suffering from disease of the mind, and (2) that in consequence of that disease, he was labouring under a defect of reason. It must further be proved that that defect of reason was one of two particular kinds: and it was here that the alternatives arose. The defect of reason due to disease of the mind, must be clearly proved to be such as either to prevent him from knowing what he was doing or from knowing that he was doing what was wrong. The defence was not required to prove both these conditions, but it must prove one of them.

*Different Standpoints of Physician and Criminal Lawyer*

This requirement, that the defect of reason must be clearly proved to be such as to prevent the accused from knowing what he was doing or from knowing that he was

doing what was wrong, served to illustrate the difference between the standpoint of the physician and of the criminal law. For the physician, it might be enough to find that the patient was suffering from disease of the mind and was in consequence labouring under a defect of reason. When the two facts were established it might follow, naturally, that the patient needed medical care and attention. But when the question was whether a person was to be excused from responsibility for what appeared to be a criminal act, the law insisted upon further investigation. Disease of the mind would not, of itself, afford an excuse, nor would consequential defect of reason. It must be further established that the defect of reason was of a particular kind and exhibited particular characteristics—that is that at the material time it prevented the accused from knowing what he was about, or, alternatively, from knowing that he was doing what was wrong.

Two tests at least were satisfied by this requirement. It seemed to be manifestly in accordance with justice and good sense, as it was in accordance with the principles of the English criminal law, that a man should be excused from criminal responsibility if, through mental disease, he was at the time of his act in such a state of unreason as not to know what he was doing. This was what was meant by "not knowing the nature and quality of his act." It meant, for example, that he thought he was peeling an apple when in fact he was cutting a throat. The like observation might be made when a man was, through a like cause, in such a state of unreason that, although he knew what he was about, he did not know that he was doing what was wrong. He recalled the case of a middle-aged woman who had strangled her mother in law, laid the dead body on the hearthrug and brought in the neighbours to see how well she had done her "duty." In the second place this requirement had the effect of providing a useful test and criterion which the evidence in the case might well enable a jury to apply. In other words what the prisoner had said or done, and the surrounding circumstances, very often yielded material which helped the judge and jury to perceive whether it was true to say that at the crucial time he did not know what he was doing, or that what he was doing was wrong.

The law did not presume to define insanity. That was a medical question. What the law considered was the conditions which had to be satisfied in order that a person might be excused from criminal responsibility, and that was a legal question. At present that question was answered in accordance with the principles laid down in the *M'Naghten* case. It was possible, no doubt, to find in textbooks, especially in footnotes, passages which seemed to entertain or suggest a broader, not to say a looser view, or perhaps to find here and there a similar passage in the report, whether accurate or not, of an individual summing-up. But the law remained, and it must not be forgotten that as matters now stood it was only the defendant who could appeal to the Court of Criminal Appeal, no such opportunity was open to the prosecution. Nor must it be forgotten that, while the physician tended to regard primarily the interests of his patient, the criminal law was concerned with public security. "When I am invited," said Sir Matthew Hale, "to pity the criminal, I reflect also that there is a pity due to my country." This was not to say that criminal responsibility should be imputed where it did not really exist, but it did mean that criminal responsibility should not be overlooked in those to whom it properly belonged.

*Criticisms of the Criminal Law*

Lord Hewart went on to say that he did not propose to waste time in the examination of the silly, the ignorant, or the captious criticisms which had from time to time been directed against the principle of the English law. There was a kind of controversy called "eristic" which sought triumph, and a kind called "dialectic" which sought truth. No serious person had any concern with arguments which did not seek to elicit and establish what was true. Charlatanism and chicanery, for which there was a rich and attractive field, might be left alone. It would be idle to dwell upon their suggestions, and worse than idle to advertise their authors. On the other hand it was necessary

to examine every argument or representation which did not at the time. The contest was brought to a point five years ago when, after a certain notorious trial for murder, a committee was appointed under a learned chairman, to consider any changes which might be desirable in the existing law where the plea of insanity was raised as a defence. The Council of the British Medical Association tendered evidence. The minutes were fully set out in the extremely interesting and valuable report of the Committee, dated November, 1923. The British Medical Association in substance approved the Rules in the M'Naghten case, but added the qualification that no act should be regarded as a crime if at the time when it was done the person who did it was prevented by defective mental power, or by any disease affecting the mind from controlling his own conduct unless the absence of the power of control was the direct and immediate consequence of his own default.

The Committee so far agreed with the report of the British Medical Association as to recommend (1) that it should be recognized that a person charged criminally with an offence was not responsible for his act when the act was committed under an impulse which he was by mental disease in substance deprived of any power to resist, and (2) that in other respects the Rules in the M'Naghten case should be maintained. Was this not manifestly a fundamental alteration in what he had just described as the third requirement or condition? If accepted it would be immaterial that the prisoner knew what he was about or that he was doing what was wrong; he would still be excused from criminal responsibility if he committed the act under an impulse which he was by mental disease in substance deprived of any power to resist.

#### *The Plea of Uncontrollable Impulse*

This suggestion whatever its merits, was not at all a product of the twentieth century. It was really the ancient and dangerous plea of the uncontrollable impulse, which in practice was so difficult to distinguish from the impulse that was not in fact controlled. The doctrine involved two propositions which were by no means of the same kind nor indeed upon the same plane. The first was a proposition of fact—namely that there were unfortunate persons in existence who though they knew what they were about and that they were doing wrong, were nevertheless impelled by diseased and irresistible impulse, to commit an apparently criminal act. The second was a proposition of legislative morality or expediency—namely that these persons by reason of their number or otherwise were of such importance as to require or deserve a fundamental revision of the criminal law. As to the first proposition a man lawyer would hesitate much before he ventured to express an opinion. The proposition belonged rather to the field of medical observation and experience. Let it be granted, for the sake of argument, that persons of this unfortunate type existed. The question remained whether, for that reason, it was just and necessary to make a drastic alteration in the criminal law. The door would be thrown wide open if the alterations were made. The objective tests for judge and jury would immediately and finally disappear. The crucial, the overriding the dominant question would come to be whether the prisoner was acting under an irresistible impulse. Upon what materials and with what guidance would the jury be called upon to answer that question? Would there be any such at all except the medical opinion which the prisoner might be fortunate enough to adduce in his favour, contradicted by the medical opinion offered by the prosecution?

And what were the true dimensions of the difficulty for which so far-reaching a solution was suggested? "It was established," said the report of the Committee already referred to, "to our satisfaction that there are cases of mental disorder where the impulse to do a criminal act increases with increasing force until it is, in fact, uncontrollable." The report here referred incidentally to mothers who were seized with the impulse to destroy children to whom they were normally devoted, but already a special statute which dealt with infanticide offered a

lenient alternative in cases of mental disturbance, falling far short of insanity, where a mother not yet fully recovered from the effects of childbirth destroyed her newly born child. The Committee went on to say: "In practice, in such cases, the accused is found to be guilty but insane." That was a very remarkable statement. It suggested that what was required was already done. If the proposed change in the law were made, the verdict in such cases would be that which was briefly, popularly, and inaccurately described as "guilty, but insane." But this verdict was, it appeared, in practice already returned in such cases. What, then, remained? "We appreciate," the Committee frankly added, "the difficulty of distinguishing some of such cases from cases where there is no mental disease, such as criminal acts of violence or sexual offences where the impulse at the time is actually not merely uncontrolled, but uncontrollable." Yet the far-reaching change in the law was recommended apparently upon the ground that "the M'Naghten formula is not logically sufficient."

#### *The Necessary Stringency of the Law*

Lawyers and statesmen would, he thought, hesitate long before they opened the door to an incalculable flood of mischief for the purely academic purpose of giving logical sufficiency to a formula. But the doctrine or theory of uncontrollable impulse was not in the least novel. It was older than M'Naghten, and might be taken to have been considered and rejected by the judges in that case. In 1859—seven years after M'Naghten—the matter was referred to by Baron Bramwell in *R v Haynes*:

If an influence be so powerful as to be termed irresistible so much the more reason is there why we should not withdraw any of the safeguards tending to counteract it. There are three powerful restraints existing all tending to the resistance of the person who is suffering under such an influence—the restraint of religion, of conscience and of law. But if the influence itself is to be held a legal excuse rendering the crime dispensable, you at once withdraw a most powerful restraint—that forbidding and punishing its perpetration.

In 1863 Mr. Justice Wightman (*R v Buntton*) referred to the doctrine as a most dangerous one, fatal to the interests of society and the security of life. As to the suggestion said Lord Hewart, which was more often implied than expressed, that under the law as it now stood some prisoners were wrongly held to be fully responsible, it might be doubted whether any lawyer knew of any such case. The tendency was the other way—to accept the defence of insanity upon too slender materials. This was regarded as humane to the prisoner, though it paid too little attention to the misery of prolonged confinement in a criminal lunatic asylum. For the security of the public on the other hand, could there be any real doubt that the comparative stringency of the existing law was necessary? After all, the mere fact that a man thought he was John the Baptist did not entitle him to shoot his mother. If a man of abnormally jealous disposition was suspicious of his wife, and his suspicions became what it was fashionable to call an "obsession," was he with impunity to kill her by poisoning, having done all that he could to conceal the crime? In cases where there was evidence of real mental disease, antecedent to the commission of the alleged crime, and there was no evidence of motive which might influence a sane person, juries had no difficulty in finding either that the prisoner did not appreciate the nature of his act or did not know it was wrong. "But if the law were relaxed in the way which has been suggested" (said Lord Hewart in conclusion) "it might well be that, in cases where there has been no such evidence of mental disease antecedent to the alleged crime, mental experts would be found to say that the alleged mental experts would be found to say that the alleged crime itself afforded evidence that it was committed under an irresistible impulse, and that upon that ground the inference might be based that there was mental disease. If so, the result might be to transfer to a section of the medical profession the question whether a great number of ordinary criminals should be held responsible to the law."

# BRITISH RADIOLOGY

WE announced a short time ago that the British Institute of Radiology was about to become incorporated with the Röntgen Society. The incorporation took effect on November 17th, when a general meeting was held at the Central Hall Westminster, and an address was delivered by the President of the amalgamated body, Sir Humphry Rolleston. The following day was given up to discussions in the morning the subjects were x ray and radium protection and x ray measurements, the first subject was introduced by Mr G W C Kaye, D Sc, the second (x ray measurements) was discussed by Professors J A Crowther, D Sc, F L Hopwood, D Sc, and L A Owen, D Sc by Mr C L S Phillips and Professor S Russ, D Sc. In the afternoon there was a discussion on the use of opaque injections as an aid to x ray diagnosis, it was taken under four heads: the nervous system (Sir James Purves-Stewart, K C M G, M D), the urinary system (Sir John Thomson-Walker, F R C S), chest conditions (Dr L S T Burrell), and gynaecological conditions (Dr R A Gibbons). In the evening a dinner was held at the Great Central Hotel, Marblebone. An exhibition of apparatus was open on both days.

## PRESIDENT'S ADDRESS

Sir HUMPHRY ROLLESTON, BART, KCB, MD, FRCP,  
Regius Professor of Physics in the University of Cambridge

THE Röntgen Society, founded in 1897 with the late Professor Silvanus P. Thompson as president and the oldest society which has as its fundamental principle the study of the x rays in their relation to medicine, the arts and sciences, has great traditions and played a notable part in the rise and development of radiology. In 1918 it founded the Silvanus Thompson Lectureship and Medal, the Röntgen Award in 1924 and is associated with the Electrotherapeutic Section of the Royal Society of Medicine in the administration of the Mackenzie Davidson Memorial Lectureship and Medal founded in 1920.

The British Association for the Advancement of Radiology and Physiotherapy (B A R P) founded in 1917 with the late Sir James Mackenzie Davidson as president and Drs R Knox and E P Cumberbatch as secretaries did much good service to radiology in its comparatively short life of seven years, thus it at once took steps to establish a Diploma in Medical Radiology and Electrology and thus was instrumental in getting the University of Cambridge to initiate this in 1920. For this new departure the B A R P worked out all the details of the course and undertook the teaching. It was therefore a most suitable nucleus for a British Institute of Radiology.

The conception of such an institute first suggested by the late Deane Butcher in 1906 was revived in 1917 when a committee of which the late Sir James Mackenzie Davidson was chairman and Dr R Knox secretary was formed, the proposal was taken up with infectious enthusiasm by Sir Archibald Reid who was supported by other leaders in medical radiology. The aims and scope of the Institute were broad. It was to serve as a meeting place of all interested in the subject—medical men in every department of practice, radiologists, physicists, technicians and radiographers, instrument makers and manufacturers—so that it might form a centre for consultation and co-ordination and serve as a bureau to supply information of all kinds to provincial overseas and foreign colleagues, and thus to have an international influence. Although the medical applications of radiology are very important its bearing on industry, arts and sciences and its relations to physics and to biology in its widest sense cannot be too much emphasized, thus in medicine the clinicians, pathologists, anatomists, physiologists and biochemists have much to learn from radiologists who in their turn will reap advantage from an insight into these kindred subjects and close co-operation with colleagues.

In the spring of 1923 a committee with representatives from the Electrotherapeutic Section of the Royal Society of Medicine, the Röntgen Society and the British Association for the Advancement of Radiology and Physiotherapy was formed under the chairmanship first of Dr R Knox and then of the late Sir Archibald Reid with first Dr G W C Kaye and then Dr John Muir as secretary. In April of that year the British Association for the Advancement of Radiology and Physiotherapy became the British Institute of Radiology and obtained the Board of Trade approval of its Articles of Association. It was therefore a most suitable foundation and nucleus for the British Institute of Radiology. Much help was given to the new project by the trustees of the Mackenzie

Davidson Fund who handed over the £1400 collected to the organizing committee. As a result of Sir Archibald Reid's enterprise a long lease was secured of 32 Welbeck Street, and in November 1924, a further, and as it proved somewhat optimistic appeal for £6000 was issued to pay off the bank loan of £2000 and to provide a nucleus for further development.

The objectives of the Institute were set forth as follows: (a) To promote the advancement of radiology and physiotherapy on scientific lines under the direct control of the medical profession protecting in every way possible the interests of those engaged in the subjects; (b) to secure legislative improvements in this connexion; (c) to provide for the delivery of lectures, the holding of classes and examinations, the establishment of scholarship and the granting of prize diplomas and certificates; (d) to arrange for the publication of papers, communications or treatises; (e) to promote and provide for research in experimental work and to establish grants and rewards in connexion therewith; (f) to establish and maintain a library and museum and to organize exhibitions of apparatus; (g) to establish charitable and benevolent funds for the benefit of persons engaged in radiology and physiotherapy.

The Institute opened its doors in January 1924, almost at the time of Sir Archibald Reid's tragic death at any period his loss would have been a very serious blow but at this critical juncture it might easily have been disastrous had it not been for the public spirit of the remaining guarantors A E Barclay and Stanley Melville and for the self sacrificing efforts of Robert Knox, G W C Kaye, Gilbert Scott (honorary treasurer) and others. The Institute weathered the storm, thanks to this help and to the devotion and skill of the secretary Dr John Muir who combines organizing ability with the knowledge of an expert radiologist. This year has seen the amalgamation of the Röntgen Society and the affiliation of the Society of Radiographers to the British Institute of Radiology.

The incorporation of the Röntgen Society and the British Institute of Radiology is a great achievement, it took two years of negotiations to settle the financial considerations and the problems raised by the special interests of the members. It was attained after prolonged discussions between the councils of the Society and the Institute, a revised form of Memorandum and Articles of Association has been sanctioned by the Board of Trade for The British Institute of Radiology Incorporated with the Röntgen Society, and Mr Geoffrey Pearce the successful treasurer of the Pontgen Society since 1915 is to continue to give his valuable services to the amalgamated Institute.

The Institute is governed by a body representing the high contracting parties, equally the interests of each must be respected and maintained—for example purely medical matters must on account of the control exerted by the General Medical Council and for reasons concerned with the educational activities of the Institute as regards the Diploma in Medical Radiology and Electrology of Cambridge, be in the hands of medical members and on this account it is desirable that the Secretary or Director of the Institute should have a wide knowledge of medical regulations.

The Institute now has a roll of more than three hundred active members and fortunately has the support of vigorous branches in the provinces, this is only in keeping with the extraordinary conscientiousness with which country members often from far distant centres, have attended the meetings of the council of the Institute.

Part of the important function of forming a home and centre for all interested in radiology is the existence of a good reference library, which was started by Lady Mackenzie Davidson's gift of the professional library of Sir James Mackenzie Davidson the recognized leader in medical radiology down to the time of his lamented death in 1919. Equally essential is a museum containing a collection of radiographic films and lantern slides illustrating completely the normal and morbid anatomy and physiology of the human body, and also though this is rather for consumption in the future, of comparative radiology.

Just as the Institute helps individual workers and brings them into touch with each other so will it unite for their mutual advantage and strength the various societies concerned with the subject. This alliance will enable joint action to be taken in matters vitally affecting the position of radiology as a scientific profession and the status and interests of the individual workers, thus by the formation of representative special committees on the lines of that on the protection of x ray and radium workers it would be able to express an authoritative opinion on various questions such as the educational requirements to be demanded from those undertaking this work and to consider delicate problems such as the short-circuiting of radiologists when radiographers report direct to medical men and the provision of services by voluntary hospitals to persons outside the classification properly accepted as defining hospital patients. As a centre for teaching it is of great value as has been abundantly proved by the instruction given to candidates for the Diploma in Medical Radiology and Electrology of the University of Cambridge. Further a most

essential object of the Institute, to which effort has yet to be given is research work in experimental laboratories, so that some work may be undertaken and the Institute become the centre of a worldwide organization for systematic investigation of the numerous unsolved problems which most urgently call for elucidation in the interests of mankind. For this purpose endowment to provide research fellowships and grants will be required.

The *British Journal of Radiology* since 1924 has really consisted of two journals—that of the Röntgen Society section, appearing quarterly and that of the British Institute of Radiology section, coming out monthly—edited respectively by Drs G. W. C. Kaye and Robert Knox with a representative editorial board. Now that the amalgamation of the Röntgen Society with the British Institute of Radiology has been happily accomplished these two sections of the *Journal* will be merged in one journal coming out monthly, so that there will be twelve instead of sixteen numbers annually. With these two experienced and enthusiastic Editors, able to call the willing members of the editorial board to regular meetings for consultation or for ready help at any time there can be no doubt that the *British Journal of Radiology* will reflect the combined strength of the united body. It has already done much for the Institute in several ways and special mention must be made of the self-denying abstinence whereby funds which might have been spent on improving the *Journal* have been devoted to the upkeep of the Institute.

The Society of Radiographers which became affiliated to the Institute in January 1927 was formed in 1920 with the assistance of the Institute of Electrical Engineers and the British Association for the Advancement of Radiology and Physiotherapy in order to give a definite professional status to those certified non-medical assistants who work in x-ray and electrotherapeutic departments. It grants a certificate of membership of the Society of Radiographers (M.S.R.) to those who pass a satisfactory examination. As evidence of the interest taken in the Society of Radiographers by medical men practicing radiology (radiologists) it may be mentioned that the late Sir Archibald Reid and Dr Stanley Melville were its first two presidents and Dr Robert Knox a vice-president. Its Article of Association laid down that

"no non-medical member (i.e. no member who is without the qualifications entitling him to practise in Great Britain and Ireland as a physician or surgeon) shall accept patients for radiographic, radio-therapeutic or therapeutic work except under the direction and supervision of a qualified medical practitioner and any breach of this regulation shall be deemed conduct unfitting the member guilty thereof to remain a member of the society."

In 1924 efforts were made to modify the restriction relating to making diagnostic reports on patients, but the General Medical Council vetoed the modification sent to them. This thorny question has several times been discussed but the Article of Association of the Institute of Radiology Incorporated with the Röntgen Society to which the Society of Radiographers is now affiliated provides that no member or associate who is not a registered medical or dental practitioner shall accept patients for diagnosis or treatment except under the personal supervision of a registered practitioner (Article 12). Further, as the result of the action of the General Medical Council, Section 3 of the Institute of Radiology's Memorandum of Association, which provides for granting diplomas and certificates of merit and efficiency, has been amended by the addition of the following words: "and that the holder of such diploma or certificate is not thereby entitled to undertake the medical diagnosis or treatment of patients except under the personal supervision of a registered practitioner." The medical supervision of the Institute of Radiology Incorporated with the Röntgen Society is bound by the regulations of the General Medical Council, and the present policy of the Institute, which is in accordance with the directions of the General Medical Council, enables radiologists to be united with radiographers for their mutual advantage. But any future change that would render it impossible for medical men to remain members of the Institute would obviously wreck the scheme of the Institute, which is remarkable for its exceptionally broad and democratic character. While there may not be any reason to anticipate such a calamity, it is perhaps well that all possible dangers should be clearly understood.

Sir Humphry Rolleston paid a warm tribute to Sir Archibald Reid. He said: "While welcoming you here to celebrate the incorporation of the British Institute of Radiology with the Röntgen Society our minds must naturally dwell on the memory of Sir Archibald Reid (1871-1924), who is so keenly interested in the establishment of this Institute and to whose personality, tact, and indefatigable energy the Institute owes its present home. To the service of radiology, the future of which he had so entirely at heart, Reid unselfishly gave his time that he should have devoted to the preservation of his impaired health. His painful disabilities were hidden by a light-hearted and kindly humorous manner which made him

a delightful companion, ever alert in mind and body and withal somewhat elusive. During the war he was president of the War Office X-ray Committee (1914-19) responsible for the x-ray arrangements for the British forces at home and abroad, and evolved out of chaos a most complete and satisfactory service for our armies on every front—a problem of enormous importance, but sorely and hindered by tiresome obstacles. He had vision, initiative, and a way with him of overcoming difficulties. To Archibald Reid British radiology owes much and to remind future generations of this debt the British Institute of Radiology might well place his portrait, painted and presented by his attached friend C. E. S. Phillips in the museum on the hall to be called after him, the like of whom we shall not see again but the memory of whose stimulating personality will long remain an inspiration."

## THE MEDICAL ASPECTS OF CONTRACEPTION

The National Council of Public Morals established, with official recognition, an inquiry in 1913 which became known as the National Birth Rate Commission, and issued a report in 1916, and a second in 1920. In 1921 it appointed a Special Committee on the Prevention of Venereal Disease, and since then has continued to be extremely active, thus it appointed another and a strong committee under the chairmanship of Mr. Charles Gibbs, which has now issued a report on *The Medical Aspects of Contraception*. This committee of fourteen authorities included several of the contributors, such as Sir Arthur Newsholme, Professor Leonard Hill, and Dr. A. B. Giles, to the work entitled *Medical Facts on Birth Control*, which was reviewed in our columns on March 12th last, edited by the Rev. Sir James Marchant, the general secretary of the committee on the medical aspects of contraception. Other members of the committee are Mr. C. J. Bond, Dr. A. J. Chalmers, J. S. Faubman, C. Porter, H. R. Spencer, Mr. A. Dunnett, M.B., Miss Frances Ivens, M.S., and Dr. I. H. A. Marshall, who also gave expert evidence on the vitality of the spermatozoon and the unfertilized ovum in the female generative tract. The committee held eighteen meetings, and had the advantage of evidence and statements from thirteen medical or physiologically minded men and women including Dr. R. L. Dickinson, a former president of the American Gynecological Society, and the president of the Committee on Maternal Health, New York secretary of the Committee on Maternal Health, Dr. Gestin, of which he is described by another witness, Dr. George Sturges, also of New York, as "a more radical member" as compared with his "extremely conservative" colleague, Dr. G. W. Kosmick, the editor of the *American Journal of Gynecology and Obstetrics*. Dr. Sturges, while regarding some results of contraceptive methods as worthy of attention, did not consider that there was at present sufficient evidence to decide "as to the best method or the desirability for a medical man to follow." Dr. Donn Hare's evidence, based on 4,000 cases seen in six years though not printed in full, occupies more than twenty pages, or a ninth part of the volume, and goes in detail into the technique and value of the various contraceptive methods and appliances. He recommends the use of the occlusive pessary with a jelly containing lactic acid as the failures with this combination proper carried out were not more than 5 per cent. The rationale of this method is that the normal acidity of the vagina, due to lactic acid produced by Doederlein's bacillus, destroys spermatozoa, that this acidity is neutralized by alkaline mucus poured out during the orgasm, and that the alkali may be counteracted by supplying more lactic acid. Many douches in use destroy this bacillus, and, moreover, some, such as lysol, mercuric, and hypochlorite, may set up inflammation. Lord Dawson, in his vigorous terms, stated the case for contraceptive methods criticizing other lines of birth control, and gave his opinion that the use of contraceptives as such has not been proved to be physically or mentally harmful. Crichton Miller agreed with Lord Dawson, and reduced the criticisms of contraceptives to the one heading of wanting to give complete freedom to the community in

<sup>1</sup> *Medical Aspects of Contraception* being the Report of the National Council of Public Morals, appointed by the National Council of Public Morals in connection with the investigations of the National Birth Rate Commission. Martin Hopkinson and Co., Ltd. 1927. (Pp. xiv + 104. 6d.)

matter of sex relations because of the risk of abuse. Dr Alice Robson said that when she went to the Cambridge Birth Control Clinic she anticipated that the wrong people might come for information, but that this did not occur. Mrs Cox, medical officer at the Wilworth Birth Control Clinic, and Mrs C J J Winter of the Wolverhampton Birth Control Clinic also gave evidence. The results of many hundred experiments on rats and on 250 mice in connexion with the comparatively new vitamin L and sterility as a deficiency disease were set out by Mr T A Webster, who was working in Professor Leonard Hill's laboratory, the wheat germ is the richest in this vitamin which also occurs in animal tissues, especially muscles, it is interesting to hear that this deficiency disease affects the sexes differently, it eventually destroys the male germ cells, but does not impair the ovary or ovulation, though causing a characteristic disturbance in gestation so that the foetus dies and is absorbed. Dr Bunnie Dunlop, honorary medical secretary of the Malthusian League, Dr C Killick Millard is a medical officer of health, and Dr R A Gibbons as an obstetrician provided further information to the committee.

The subject of birth control and contraceptives is beset with difficulties but is most important, and the committee selected to represent various views and having much evidence from different angles must have had a hard task to draw up even the conclusions which they all signed but in addition to their unanimous report there are three memorandums, and under them no fewer than seven out of the twelve signatures to the unanimous report are attached. The main body of the report is medical, and not concerned with ethical considerations, and its conclusions are not very startling, thus it will not surprise many to hear that the prevention of conception is being attempted by a large number of individuals and that this number is increasing rapidly, that operative measures, such as destroying the continuity of the vas deferens or Fallopian tubes are usually successful if correctly carried out on that abstinence while it is the obvious, and from the ethical point of view the ideal procedure, when it is desired that no children should be born is impracticable to the majority of young married people. The committee are definitely of opinion that strictly there is not any 'safe' period, though the chances of conception are materially less from about the eighteenth day after the first day of the preceding period until the end of the cycle, that in the close relationship of married life the effects of continued abstinence may be grave for persons of certain temperament and that the entirely successful contraceptive one that is sure, harmless, and simple, has not yet been discovered.

The committee would appear to realize that they have not reached the seal of finality on the contentious subject of contraceptives, as in one place their report is spoken of as an interim one.

## VOLUNTARY HOSPITALS IN GREAT BRITAIN

### EIGHTH ANNUAL REVIEW

The eighth annual report on voluntary hospitals in Great Britain (excluding London) for the year 1926 has been compiled by Mr R H P Orde, director of hospital services Joint Council of the Order of St John of Jerusalem and the British Red Cross Society. It has an introduction by Sir Arthur Stanley chairman of the Joint Council and may be obtained from the council's office 19, Berkeley Street, W 1 price 1s 6d post free.

The report summarizes the financial position of 755 hospitals and the work done in the year under review. Analyses are provided of the sources of ordinary income and principal items of expenditure. Other subjects dealt with are the function of the voluntary hospital in relation to the public health service as detailed in the paper read before the British Hospitals Association in June by Sir Arthur Stanley, the relation between voluntary hospitals and institutions provided by public authorities, and the importance of the almoners

department, the address delivered by Sir Berkeley Moynihan at the meeting of the Institute of Hospital Almoners in May being incorporated in the report.

### Financial Position

During 1926 the total receipts of the hospitals under review amounted to £7,916,816, the expenditure on maintenance and development was £7,666,596, leaving a surplus of £249,220. The number of hospitals with a credit balance on their maintenance accounts was 67.23 per cent of the total. The income fell as compared with the previous year by £222,404, while the expenditure rose by £546,506. Mr Orde has calculated that this relative deficiency of £768,910 denotes that each hospital but was poorer by £16 8s 4d, or rather less than 1s a day. He draws the conclusion that, although the total burden of the hospitals' deficit may appear heavy, it could be quite easily borne if well distributed. In order to obtain a more accurate survey of the financial position of the provincial voluntary hospitals, new tables have been introduced into the report this year with a view to showing whether the income was sufficient to meet the maintenance expenditure during that period. In previous reports it has never been possible to state definitely the number of hospitals which would be found to be paying their way if the extraordinary income and expenditure were taken into account. The new method of analysis elucidates this matter, and the results are illustrated by coloured diagrams. With regard to the extraordinary receipts, the suggestion is made that legacies follow in the train of organized appeals more often than is generally thought—a fact which appears to be better understood north of the Tweed than further south. While 437 hospitals with credit balances received practically one seventh of their income from free legacies, 219 with adverse balances received only one sixteenth in this way.

### General Statistics

The number of available beds in these hospitals was 46,815 and the total number of new inpatients during the year was 683,196. The total number of new outpatients was 2,757,415. These are definite advances over the figures for the previous year. It is estimated that the yearly increase in the volume of work which the voluntary hospitals have to undertake is approximately 40,000 inpatients and 150,000 outpatients. Mr Orde suggests that it is possible so far as the voluntary hospitals are concerned that the shortage of beds is not so serious as the Voluntary Hospitals Commission reported two years ago, but in the last few years the burden of traffic accidents has become increasingly heavy. It is thought that much of the inpatient work which these hospitals are consequently almost compelled to undertake could be equally well performed in less expensive institutions. At one hospital during the year an entire surgical ward of twenty-five beds was continuously occupied by patients suffering from the results of motor accidents whereas five years previously these beds were available for the treatment of ordinary surgical cases from the locality. Moreover, the rate of progress in providing accommodation is retarded at present by the uncertainty as to the future relation between the voluntary hospitals and those provided by the public authorities. The volume of work in the Scottish hospitals appears to have grown during 1926 approximately at the rate of 6 per cent in the case of inpatients and 9 per cent in the case of outpatients whereas the corresponding figures for the English and Welsh hospitals are 8 per cent and 6 per cent respectively.

### The General Outlook

With a view to obtaining information about the future relation between the voluntary hospitals and those provided by public authorities, questions were sent out early in 1927 to administrative officers of several large provincial voluntary hospitals. The inquiry related to the possibility and advisability of defining the spheres of activity of these institutions, the ability of voluntary hospitals to provide the funds to meet their needs within defined spheres, the alleged danger of the voluntary hospital losing its support owing to the existence of similar buildings provided by public authorities, and the devising of a scheme of co-operation which would preserve the character of the voluntary hospitals. Replies were received from responsible authorities in hospitals at Sheffield, Newcastle-on-Tyne, Dundee, Manchester, Oxford, Sunderland, Wolverhampton, Norwich, Chester, and Northampton, these are published, but no attempt is made to collate the results.



## MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY

THE annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society, Ltd., was held at the offices of the Company, 300, High Holborn, W.C., on November 14th, under the chairmanship of Dr. F. J. ALLAN.

### CHAIRMAN'S ADDRESS

THE CHAIRMAN said that the feature of last year's business was that although the amounts insured were greater the actual new premiums were smaller, this was accounted for by the large number of younger men who had joined the society soon after qualification, and were therefore entitled to receive a rebate on the first two years' premiums. While the expenses of the society had fallen, the gross rate of interest had increased. In common with all business concerns the society naturally felt the effects of the strikes of 1926, but on their cessation it recovered ground, with the result that it was one of the few insurance companies able to show an improved position. In a number of cases where members had had difficulties in meeting liabilities previously undertaken, the society had been able to make arrangements to assist them over the trying period. The claims for sickness benefit were above the average, and the influenza epidemic in the spring caused an increased expenditure of nearly £3,000. From statistics prepared by the secretary of the society it appeared that during the four years ending June 30th, 1926, 306 members had undergone operations, major and minor, and the number of weeks sickness experienced in those cases was 2,137, the average duration being six weeks six days. It was found that generally speaking, the greatest number of operations was between the ages of 30 and 50 years. Many grateful letters were received from members receiving benefit as the result of sickness or accident. Dr. Allan found that 24 per cent of the members drew benefit each year, fifty were permanently disabled and had been incapacitated for a long period, in one case a member had drawn benefit for twenty-four years. The importance and value of a permanent contract as compared with an annual one, which might be terminated at any time if a member began to make claims, needed no emphasis. Every endeavour was made to treat members fairly and justly, and the society paid what the member had insured for until he was able to resume work. The life assurance fund showed a steady increase. The excellent value given in the society's combined life and sickness tables had won the admiration of insurance companies. The total new sums insured had increased from £136,810 to £146,025. The rates offered by the society were low as compared with other companies, because they had not hitherto added a loading for the purpose of bonus or payment of commission to agents. To meet the wishes of some members, who were prepared to pay a small additional sum by way of an annual premium in the expectation of receiving a rate of bonus equivalent to that paid by other companies, the society had prepared a list of tables at a slightly higher extra premium, which would provide for a guaranteed bonus in addition to any other bonus which might be declared on the existing rates. The society had introduced a scheme for the assistance of practitioners purchasing houses, and also one to help young members of the profession to enter into practice.

The adoption of the report and audited accounts, having been put to the meeting, was carried.

### Election of Directors and Auditors

Dr. C. BATTAR and Dr. W. K. SIBLEY were re-elected to the board of directors, and Messrs. HAIBER, STUIGESS, and FISHER were reappointed auditors. On the motion of the CHAIRMAN a vote of thanks was accorded to the manager and his staff for their excellent work during the past year.

### Quinquennial Valuation

THE CHAIRMAN, in presenting the quinquennial valuation report, recalled that several members expressed doubts as to the wisdom of changing the society from a friendly society to a mutual company, but he considered that the present report amply justified the course adopted. The greater freedom given under the Life Assurance Companies Acts had contributed in no small extent to the success shown by the valuation. The Life Assurance Fund was being built up slowly but surely. The mortality experienced was only 55 per cent of the actual expected deaths, and the net interest was £4 10s. against 3 per cent assumed in the valuation, which, coupled with the low expenditure, was a source of profit. The surplus thus produced amounted to £21,850, and the cost of the bonus recommended was estimated at £12,117. It was the intention of the society to build up and conserve its resources in every possible way. The rates charged by the society for the "with profit" policies were about 9s. per cent lower than the average of other companies. The Annuity Fund had been valued on the latest

tables, which showed a longevity beyond that experienced on all previous tables. It had, therefore, been decided to strengthen it by a transfer of £3,000 from the reserve fund. A stringent valuation had been made of the Sickness Fund. The actuary had estimated that £245,071 was required to meet the liabilities of the fund, and as the fund amounted to £333,712 there was a surplus of £88,641. Acting on the actuary's advice, it was proposed to distribute £49,640 in the form of reversionary bonuses. As showing the progress of the society since the last valuation in 1922 the chairman enumerated the increases in the various funds, and said that the total funds had increased from £350,000 to £511,000. During the five years £125,000 had been paid to members in respect of sickness and accident, as compared with £98,000 in the preceding five years.

The recommendations suggested by the directors were then put to the meeting and adopted, and, on the motion of Sir WILLIAM WILLCOX, seconded by Dr. HARVEY HILLIARD, a hearty vote of thanks was accorded to the chairman for his work on behalf of the society during the past year.

## England and Wales.

### LORD MAYOR OF LIVERPOOL

THE election of Miss Margaret Berran as Lord Mayor of Liverpool is an event of medical interest because the proofs of her administrative capacity are to be found in works and enterprises closely related to practical medicine. As founder of the Child Welfare Association in Liverpool, she commenced work in a small way, but with fervid enthusiasm, dogged determination, and splendid pertinacity she has developed an association of unsurpassed activity and efficiency. As collateral enterprises, the institution of two hospitals and one convalescent home was almost entirely due to her personal initiative, while the scholars of the special day schools, "tired mothers," and many other groups of poor mothers and children in Liverpool owe much to her. In the development and direction of child welfare work she has done nobly by her native city. She has also been fortunate in a sympathetic and generous environment, and in a contemporary medical atmosphere exceptionally progressive. Nearly thirty years ago Sir Robert Jones and Dr. C. J. Micalister gave practical expression to their desire for therapeutic prophylaxis by obtaining the election of a county hospital with school for long-continued cases, such complete treatment for medical and surgical cases of illness in childhood was among the pioneer movements in the country. With the after-cure work involved Miss Berran's Child Welfare Association was in close touch, as it has always also been with all the activities of the official services in Liverpool dealing with children. The approach to a right appreciation of medicine through welfare work is not easy, but thirty years is a long probation. Miss Berran has proved herself a master in welfare work, and in the less emotional field of medicine it is hoped the coming year will find in her a true friend and a wise condutor.

### COST OF TUBERCULOSIS TREATMENT

A memorandum (122A/T) has been issued by the Ministry of Health containing, in tabular form under various headings, the weekly cost for each patient at certain residential institutions for the treatment of tuberculosis in England and Wales during the year ending March 31st, 1927. For the purposes of comparison the corresponding figures for the previous two years have been inserted when available. It is hoped that this information may assist authorities in deciding whether in a given case the various items of expenditure are on the lowest possible level compatible with efficiency, and so may enable them to administer their institutions economically. Since it is clear that full value for the expenditure incurred at any residential institution can only be obtained if the beds are constantly occupied, it is recommended that all possible steps should be taken to secure that vacant beds are filled without delay by suitable patients, in this respect the co-operation of authorities of other areas is advised. As in previous years the question of the proportion of staff to beds for patients is emphasized, and there are indications that in some institutions this matter still requires careful consideration.

## ALL-DAY VENEREAL CLINIC

The London County Council is being asked by its Public Health Committee to make a grant in aid to the West London Hospital to permit of the establishment there of an all-day clinic for venereal diseases. Such a clinic cannot be satisfactorily provided in the existing hospital building and the governing body of the hospital is prepared to erect a new building for the purpose at a total cost, including equipment, of £13,500. The grant proposed to be made by the London County Council will be £1,500 a year for the period (about thirteen years) necessary for the repayment with interest of a loan of this amount. The arrangements for the clinic will be subject to the annual approval of the Council and of the Minister of Health, and it will be a condition that the building shall be used under the scheme for the diagnosis and treatment of venereal diseases or other approved public health services for at least thirty years. All day clinics have up to now been established at five hospitals in London but the need for such a clinic to serve the western district, for which the West London Hospital is conveniently situated, has been felt for some time.

## Scotland.

## ROYAL SCOTTISH NATIONAL INSTITUTION COLONY

An appeal has been issued by Mr. John Buchan, M.P., in aid of the fund for the establishment of a colony in Scotland for the maintenance and training of mentally defective children. The proposed colony is to be established in connection with the Royal Scottish National Institution at Larbert Stirlingshire. The author of the appeal points out that in the old Scots life the village idiot was a familiar figure that the world of our ancestors where men and women crowded to witness public executions or went in throngs of a Sunday to stare at the lunatics chained up in Bedlam, was an inhumane world but was also a small world where life was slow and simple. In the Scottish rural parishes of former times an idiot had kindly treatment and led a not unhappy life. To-day however there was no room for this casual charity and the mentally defective, if uncared for, were apt to sink to the lowest depths of suffering and degradation. There was now a statutory provision for the care of mentally defective children but the provision ended at the age of 21, when the defective man or woman was cast upon the world. No one who remembered the tenderness with which Dickens had drawn characters like Jo and Maggie, Smike and Barnaby Rudge could contemplate without terror the future of any defective child in whom he might be interested and the world to-day was more intricate and difficult than the world of Dickens. A Royal Commission had reported upon the problem, and the Mental Deficiency and Lunacy (Scotland) Act was passed in 1913. Under that act a responsibility to provide for feeble-minded children was laid on district boards or control. Long before this time the Royal Scottish National Institution at Larbert had been founded in 1862. To-day it housed five hundred juvenile defectives to whose well-being infinite care and thought were given. This institution dealt with three classes—private pupils whose relatives could afford to pay for their maintenance, pupils who were maintained largely at the expense of public authorities, and thirdly, children who did not come under the definition of the Act but who were the offspring of recipients of small fixed salaries who could do little to support them. The latter class of children composed about one-tenth of the inmates and there was a tragically long waiting list for their admission. This large class which lay between the one in a position to pay and the one for whom public authorities were responsible could only be supported out of charitable contributions. In England there were several whole-life institutions for these persons; in Denmark there were farm colonies for the purpose and in some of the American States admirable provision had

been made for such cases, but in Scotland nothing had yet been done. The Royal National Institution, therefore, proposed to establish a colony on a neighbouring estate which it had acquired, where three hundred patients could be accommodated and trained for useful work. This would be the first colony in Scotland for the whole-time care of the mentally defective, and no less than £70,000 would be required.

## ANIMAL DISEASES RESEARCH

The Institute of the Animal Disease Research Association at Moredun Gilmerton near Edinburgh was opened on November 4th by Sir John Gilmour, Secretary of State for Scotland. The Duke of Buccleuch who presided, and the erection of the institute was one of the best things that had ever been done in the interests of agriculture in Scotland, and Sir Robert Greig, Chairman of the Board of Agriculture for Scotland, declared the institute as the spearhead of the attack on animal diseases in Scotland. Sir John Gilmour in declaring the institute open said that this enterprise was initiated by the great stock-breeding interests in the country and that it had arisen by recognition of the necessity for dealing with problems upon which the existence of flocks and herds depended. Scientists, professors and researchers had their place but there was still a difficulty in persuading the practical farmer and stockbreeder that the scientist was doing something for his real advantage. They must realize the enormous loss that fell upon the country every year from disease. It was known that diseased cattle might carry the seeds of trouble in milk to human beings and therefore the idea was growing that research in animal diseases was closely linked up with the progress and well-being of the community.

## VETERINARY TRAINING IN THE WEST OF SCOTLAND

Professor John Glaister, M.D., who presided at the annual prize distribution at Glasgow Veterinary College on November 9th said that 72 students had presented themselves in the past year for examination of whom 45 had passed (62 per cent). Four women students had attended the classes in the past year and it was expected that an increase of women students would take place during the coming session. Eight of the students were studying for the B.Sc. in Veterinary Science at the London University. Last year one of the students of the college, Mr. Thomas Johnston had won the Fitzwilliam prize given by the Royal College of Veterinary Surgeons to the student who obtained the highest aggregate marks in the examinations for its membership. Some difficulty had been caused by the withdrawal of the Government grant to the college on the grounds that there was no room for two veterinary colleges in Scotland. The Glasgow college had however no come to an end, and was to be continued. Lord Provost Macdonald thereafter presented the prizes.

## DR J. S. MUIR OF SELKIRK

Dr. John Stewart Muir, J.P., who is now 83 years of age and began his professional career in Selkirk as long ago as 1867 recently celebrated the fiftieth anniversary of his appointment as medical officer to the Selkirk Parish Council. The occasion was taken to entertain him at a supper in the County Hotel and to present to him a framed and enlarged photograph of the members of the council with himself in the centre of the group. The chair was taken by Mr. Robert Stark, chairman of the parish council, and Dr. Muir, in returning thanks, recalled some of his adventures while attending patients in wild or lonely places, the lonely places of Selkirkshire. Provost Ballin and Dr. Muir as the best loved man in the town and other tributes were paid to his great professional services and his good work in the public life of Selkirk and district. Dr. Muir was chairman of the South Lanarkshire Division of the British Medical Association in 1912 and is a past-president of the Edinburgh Branch. He was formerly surgeon lieutenant-colonel in the Border P.L.I., retiring with the rank of honorary colonel and holding the Volunteer Decoration.

## CENTRAL MIDWIVES' BOARD EXAMINATION

At the examination just concluded of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, out of 147 candidates 129 passed. Of the successful candidates 17 were trained at the Royal Maternity Hospital, Edinburgh, 48 at the Royal Maternity Hospital, Glasgow, 9 at the Queen Victoria Jubilee Institute, Edinburgh, 7 at the Elsie Inglis Memorial Hospital, 9 at the Royal Infirmary, Dundee, 9 at the Maternity Hospital, Govan, 2 at the Maternity Hospital, Aberdeen, 4 at the Stobhill General Hospital, 3 at the Baishaw Maternity Hospital, and 2 at the County Hospital, Bellshill, and the remainder at various recognized institutions.

## Ireland.

## POOR LAW MILK SUPPLIES

THE Minister for Local Government and Public Health of the Irish Free State has notified that from time to time he has observed that local Poor Law authorities experience considerable difficulties in regard to the quality of the milk delivered under contract to the institutions within their charge, and that legal proceedings under the Sale of Food and Drugs Acts on account of deficiencies of fats or other solids are not always attended with satisfactory results owing to the plea that the milk delivered was in the same condition as when it came from the cow. While this defence may exonerate a contractor from culpable manipulation, it leaves the inmates of public institutions, often invalids and young children, open to receive a milk supply of inferior nutritive value. The question of milk standards was examined by an interdepartmental committee, which recommended that as a means of educating public opinion with regard to differential milk values, local authorities, in placing their milk contracts for supplies to institutions or establishments under their control, should be advised to specify a minimum content of fats and other solids. The Minister concurs in this suggestion, and commends it to the favourable consideration of Poor Law authorities. The minimum specified in the contract should not be below the legal standards of 3 per cent for fats and 8.5 per cent for other solids, but it would be open to the local authority to stipulate for a higher requirement, having regard to the circumstances of the district and to the season of the year. The contract should include provision for a suitable penalty in case of non-compliance. Before accepting a tender the Poor Law authority, if also a public health authority, should arrange for a report on the condition of the premises and on the health of the cattle from their dairy inspection staff. If not a sanitary authority, they should apply to the sanitary authority concerned for similar information. An adverse report would be a sufficient ground for the non-acceptance of the lowest tender.

## Correspondence.

## THE LATE PROFESSOR ADRIAN STOKES

SIR,—I had not yet returned from South Africa when the obituary notice of the late Professor Adrian Stokes appeared in your issue of October 1st, and this and the subsequent correspondence escaped my notice until I re-read my *British Medical Journals* after my return to this country. As I happen to possess accurate records bearing on the subject of Professor Stokes's services at the front in 1914 and 1915, and as my information in this respect is in a sense unique, I venture to submit a few facts, which can be verified from a diary kept by me at the time.

At the end of September, 1914, I was acting as D A D M S at General Headquarters under the D D M S, Colonel O'Donnell (now Lieutenant-General Sir Thomas O'Donnell, KCSI, DSO, etc.). Visiting the hospitals at Braine in this capacity, I was shown several patients who seemed to be undoubted cases of enteric, and I returned to Ferre-en-Tardenois and reported the matter

to my chief, who at once telegraphed to the D M S, then on the lines of communication, asking that a bacteriologist should be sent to verify the diagnosis. Next day Adrian Stokes arrived on his own motor cycle—which he had had the wisdom to bring with him on proceeding to France—and reported for duty. He had been sent off from the lines of communication without any bacteriological equipment whatever, and with no very definite instructions as to what his duties were to be. This was disappointing, but not unnatural, seeing that the rapid change of base consequent on our retreat had considerably disorganized medical services in back areas. With Colonel O'Donnell's permission I at once called on the Adjutant-General, Sir Nevil Macready, and obtained, through his kindness, the sum of £60 to purchase technical equipment. This I handed to Adrian Stokes, and together we drew up a list of requirements, and, with a letter of introduction to the Pister Institute, he started straight away on his journey to Paris. There he purchased a microscope and a certain amount of glassware, and obtained, through the kindness of the Pasteur Institute, an ample supply of media, ready made and sterile. Packing all these items on his motor cycle he started, without any rest, to return to the front, and within a day was back at Braine working at the suspected enterics.

By October 3rd, within a few hours of getting to work, he was able to report that four of the suspected cases, in non-inoculated men, had given positive Widal reactions. On October 8th he sent me a further report recording fourteen positive Widal reactions and three positive blood cultures. This will suffice to show that he had got down to work at once and was already providing us with absolutely definite information. He continued this work at Braine during the remainder of the Aisne battle, and threw a flood of light on the gradual development of enteric in the non-inoculated reservists called up hurriedly to the colours on mobilization.

The true story of the organization of mobile bacteriological laboratories will be found in the article on the "Organization of Pathological Services" by the late Sir William Leishman, in the *Official History of the War* (Medical Services, Pathology), page 9, 1923. The first bacteriological laboratory to reach France arrived at St Omer on October 14th with Lieutenant Rowlands in charge. So great was the success of this laboratory that the director of hygiene determined to have mobile laboratories on somewhat similar lines fitted up for the hygiene department. The first of these latter arrived at St Omer on November 25th, 1914, under Lieutenant Myers Coplins, who afterwards did excellent work in the Second Army area. General Porter is mistaken in supposing that the Myers Coplins mobile laboratory was the first to be constructed, or that it was contemplated in August, 1914. The first laboratory was that constructed by the Lister Institute and which came out under Lieutenant Rowlands.

General Porter may be right in saying that Adrian Stokes took no part in the operations conducted by the medical services in the Second Army area, for dealing with the typhoid epidemic of 1915. The greater part of this work was done by the Friends' Ambulance Unit, acting under the able direction of General Porter and the D A D M S (Sanitation), Second Army, and it is to be hoped that their splendid services and those of two Belgian ladies, who organized a hospital close to Poperinghe, will one day be fully recorded.

It is, perhaps, not unnatural that General Porter should speak of the Second Army area only, but it is well to bear in mind that the Belgian civilians removed from their homes and from General Porter's area had to be dealt with somewhere else. As a matter of fact, they were dealt with, in the first instance, under arrangements made by G H Q at the Convent of Malassise, close to St Omer, where a general hospital was opened for the purpose, under the command of Lieut.-Colonel (now Major-General) Guise-Moore. At this hospital the bacteriological work was carried out by Adrian Stokes and Cecil Clarke, and their efforts for these Belgian patients from the Second Army area were unremitting.

In this connexion I venture to send you a letter received

by me from Adrian Stokes in May or June 1915, in which he gives particulars of no fewer than 1,000 typhoid patients investigated by him. The figures in the letter fully justify publication from the scientific point of view, and I hope that you will find space for it as a vindication of the work of Adrian Stokes in connexion with military and civilian enteries from the Second Army area during the typhoid outbreak referred to by General Porter.

May I add to the remarks of "A F H" a brief word in appreciation of the late Professor Adrian Stokes? Both during the early days of the war and later when, as adviser in pathology, I came into still closer contact with him, he appealed to me as one of the most reliable, original, energetic, and lovable of the officers engaged in bacteriological research at the front. Adrian Stokes's original letter is appended, though undated, I can place it in point of time from my diary. It was written by him in the stress of field work, and is all the more interesting on this account—I am, etc.,

Cardiff Nov 18th

S. LYLE CUMMINS

*Professor Adrian Stokes's Letter*

Dear Colonel Cummins

I have now some numbers that I think will interest you. Of 400 civilians whom I have examined 12 have been found to be carrying 5 are Eberth 5 are B and 2 are A. They are all faecal and all with two exceptions over 45 years one of the exceptions was a child of 5 and the other was only temporary. The other was a woman of 30. Of about 600 troops examined (both faeces and urine) I have got 4 carriers 2 B and 2 Eberth one of the Bs was either precocious or paradoxical they were all faecal. Of about 300 more whose urine only was examined there were no positives. The whole lot of 1,000 were done two ways by direct plating and also in one dilution of brilliant green the dilution which gave the best experimental results. 12 were positive both ways an Eberth and a B were found by direct plating when the B.G. plate was negative and conversely an Eberth and a B were found by B.G. plate when the direct plate was negative. I think that this indicates that it would be better to continue to do both methods but it does not take account of the fact that the B.G. plate is far easier to deal with and generally shows very many more colonies than the direct plate. They were always plated on Endo's medium. I have often had an absolutely pure growth from the B.G.

Now about the blood cultures of 650 done up to date I have had 33 positive. Going through the lists from the base and from your office I have found 11 whom I have bled and found negative who were subsequently diagnosed at the base. Now the cultures are looked at two days running—the first day after in or about eighteen hours incubation and the second after about forty-two so that if they were positive there is not a very great chance of my missing them and yet there is only about 75 per cent of positive results of possible. This is not so good as I had thought it should be and I don't understand it. The cases have not all been traced but three of them were bled within four days of onset and that should have been good enough. Can you suggest the solution? I apologise for this interminable screed.

Yours sincerely

A. STOKES

**MEDICAL CONFIDENCES**

SIR,—Your leader upon the effects of the McCarrick judgment in July last (July 30th, p. 178) gave weighty expression to the feelings of consternation amongst medical men at the prospect of being compelled to betray the solemn trust of their patients at the order of a judge. Since resumption of Parliament I have had the opportunity of conversation with some leading counsel in the House of Commons, and I have received from them very considerable encouragement for the suggestion that I should ask, under the ten minutes' rule, leave to introduce a bill securing, as the minimum concession, privilege from disclosure for communications made by patients to medical practitioners in pursuance of Article II (2) of the Public Health (Venereal Diseases) Regulations, 1916. I have obtained leave for a motion, which is now upon the Order Paper, for Tuesday, November 22nd, to introduce a bill, as follows:

Medical Practitioners Communications Privilege.—Bill to provide that certain communications between medical practitioners and their patients shall be privileged from disclosure in evidence.

and I am promised the support of a number of very distinguished lawyers in the House for a bill securing privilege restricted to the special case of venereal diseases. I should, of course, have preferred unrestricted privilege, and a clause which I had proposed to incorporate in

my bill runs as follows: "Confidential communications passing between a medical practitioner and his patient shall be privileged from disclosure where made for the purpose of obtaining or giving medical assistance in some illness from which the patient is suffering." I am, however, being earnestly dissuaded from attempting this wider purpose by distinguished lawyers in the House, who warn me quite frankly that there would probably be general opposition from lawyers to the enlargement of medical privilege to the same degree as the lawyers now enjoy. If your readers can in any way assist, by representations to their Members of Parliament, the acceptance of my motion on Tuesday, November 22nd the crying scandal of the present position—namely, the conflict between law and regulations in relation to the administration of the venereal diseases clinics might perhaps be removed—I am, etc.,

House of Commons Nov 18

E. GRAHAM LITTLE

**WATER SUPPLY, IODINE AND FOOD IN RELATION TO GOITRE**

SIR,—I was interested to see the letter in your issue of November 12th (p. 897) from Dr. Philip Turton, who, along with Dr. Ash, county medical officer of Derbyshire, has done an enormous amount of work in relation to goitre. His remarks regarding relation of vitamins to goitre are particularly interesting to me, as we have among our measures to prevent goitre, been recommending a diet similar to that advised by McCarrison and noted by Dr. Turton. The following is an extract from my school medical report for 1924:

*General Preventive Measures*

In addition to treatment in the schools the M.O.H. is at present and has been for some time carrying out in water supply and child welfare and school medical work certain general measures which he believes will tend to prevent goitre. The recommending of (a) a special diet containing vitamins and cod liver oil (which contains iodine in minute quantities) (b) cleanliness of habits (c) fresh air and sunshine and (d) removal of focal infections etc. leaflets for expectant mothers, infants, toddlers and school children containing these recommendations are distributed.

A leaflet issued to the parents of children attending school contains the following:

During the period of growth good fresh food with a large proportion of fats and vitamins is necessary. Recently acquired knowledge shows that for proper growth children require food rich in vitamins. These are especially necessary for pale, fatty and rickety children. The following are foods containing these vitamins or essentials for growth and health: Brown bread, eggs, oils (especially cod liver oil), milk, butter, liver, beef, suet and dripping, wholemeal fresh vegetables especially green vegetables such as cabbage, watercress, salad, potatoes, apples, oranges. Salads containing lettuce, etc. and fruit are very good as meals as they help to cleanse the mouth and preserve the teeth. Or all food, milk is the most necessary for a growing child.

We certainly have some decrease in the incidence of goitre in Glossop, but in addition to the advice given above we search for goitre in the early stages and administer iodine in suitable cases. Iodine, however, does not suit every case and in one part of our town with a lead-soluble water supply the administration of iodine appears to have no effect whatever. The causation of goitre is evidently complicated by a variety of factors. Perhaps a deficient diet associated with lack of sunshine may be among such factors, and I think it is wise therefore that we should not rely upon one panacea alone for the prevention and treatment of goitre—I am, etc.,

E. H. M. MILLIGAN, M.D., D.P.H.,

November 2, 1915

**RADIATION TREATMENT OF BREAST CANCER**

SIR,—The average medical man after carefully reading the account in your issue of October 22nd of the discussion at Edinburgh on the radiation treatment of cancer of the breast must, it seems to me, be left in a confused state of mind. On the one hand he reads that the use of massive doses of highly penetrating rays was advocated not only in the inoperable case, but also for post-operative treatment in all cases, including those in which there is at least a fair chance that the patient may do well even if left alone.

It was stated by the opener of the discussion that it was necessary to cause some erythema, and the possibility of subsequent ulceration was admitted. Reference was made also to the occurrence of an "x-ray pneumonia," and a case quoted in which a typical bronchiectasis remained. On the other hand, the inquirer will see that, so far as can be judged from a report of the subsequent discussion, no support was forthcoming for these views.

The general views of British radiologists were, I think, well expressed by Dr. Barclay, and may be summed up in the maxim, *nil nocere*. This applies especially in regards prophylactic-post-operative irradiation. The surgeon, if he has operated on what he believes to be a favourable case—a case which may reasonably be expected to remain free at least for some years—cannot be expected to recommend to his patient any method of after-treatment which involves risks.

Purely prophylactic treatment should take the form of short courses of x rays of medium penetration, given in divided doses spread over a few weeks. Such treatment should produce no visible effect on the skin other than a slight brownning, and, in a patient below par, should have a good effect on the general health. The value of such courses must be judged partly from observation and partly by inference. That many patients remain free for long periods under such treatment is undoubted, but the chief argument in favour of such a dosage system is to be found in the fact that similar treatment may cause the total disappearance of encysted metastatic tumours in some instances, and, in others, render inoperable cases operable. How these results are brought about is not clear. There is certainly no question of a "lethal dose" to cancer cells, although there may be some selective depressant action. Far more important is the stimulation of natural defence mechanisms, both local and general. These courses of x rays should be alternated with treatment by ultra-violet light. All x-ray therapy departments in large hospitals are overburdened with inoperable or recurrent breast cases. My experience is that while some of these patients seem to "live on" x rays for years, others, after a temporary improvement, relapse. The condition of such patients is terrible indeed. They are in pain, they are gradually losing weight, and their physical condition, combined with the fact that their last hope, x rays, has failed them, causes them to fall to the lowest depths of depression. About a year ago, at the Croydon General Hospital, I decided to try the effects of general light treatment on such cases. The results have in many instances been remarkable. The following are brief notes of two cases.

A spinster, aged 42, underwent radical removal of the left breast in January, 1925. Recurrence occurred above the left clavicle and she was operated on again on March 18th, 1927. Several glands were dissected out and the wound closed. She had a course of twelve x-ray sittings during March and April. She was losing weight and suffered from pain and depression. General light treatment was commenced on May 12th, and continued, with one month's intermission, till October 17th. The pain was relieved, the spirits raised and the weight increased by 7½ lb. The patient says—and similar expressions are common—"the sun treatment is life to me."

A spinster, aged 67, four years ago noticed a lump in the left breast, which has since increased in size. There was no pain but the lump had "itched" lately. When examined in April, 1927, the lump was fixed to the ribs, and there were glands in both axillae, also a gland in the right groin, which was removed by Mr. Cowell. The pathologist reported much fibrous tissue with a few small areas of carcinomatous cells. The patient had a course of eighteen x-ray treatments. She was very miserable and was losing weight. She was given light treatment before completion of the x-ray course. The light treatment was continued till August 6th. The patient was now cheerful, and had gained 6½ lb in weight.

There have been similar successes, and also some failures. On the whole, the results have surprised me. The more I see of breast cancer the more I am impressed by the part which general resistance plays in holding it in check. Apparently light can raise this resistance when x rays have ceased to do so. On the other hand, x rays may again have a beneficial effect after a long course of light.

At the French Hospital, and at the Croydon General Hospital, cases are sent for prophylactic x-ray treatment within a few days after operation. I would urge surgeons,

if they are going to send cases at all, to send them soon, and to those surgeons who continue to distrust x rays I say, at least send your patients for repeated courses by general light treatment, to which, if properly conducted, there can be no possible objection on the ground of risk.

In conclusion, I want to make it quite clear that I am a believer in deep or high-voltage therapy in its proper place. In pelvic cancer, in mediastinal invasion, in painful metastases of bone, and many other conditions, it is invaluable when carefully used. I have used it myself for over five years, and have felt the need of it so much in hospital practice that I have recently induced the Croydon General Hospital to equip a special department for this form of treatment. In the post-operative prophylactic irradiation of breast cancer intensive therapy is, however, entirely out of place—I am, etc.,

London W., Oct. 22nd

F. HERMAN-JOHNSON

### THE THERAPEUTIC ACTION OF CALCIUM SALTS

SIR,—In the *JOURNAL* of October 29th (p. 777) there is an account of the therapeutic action of calcium, from which one gathers that those who had studied the subject have very little opinion of its merits as a therapeutic agent. From my own experience and that of others there would seem to be something very far wrong with the methods used. I believe that such substances as calcium lactate may be very useful in such diseases as tuberculosis. I do not, however, wish to enter into this, but to refer to the action of calcium in the colloidal state, the particular substance I have used is Crookes's collosol calcium, which I have given extensively hypodermically and also by the oral route. The amount of calcium used is often very minute, as the strength is 1 in 2,000, and a dose of as little as 0.1 ccm may be sufficient to produce effects. It would seem therefore, that quantitatively it cannot have much effect.

The extraordinary rapidity with which this substance in some instances acts would seem to put it outside the class of ordinary therapeutic agents. I have known an empyema which had been discharging for weeks, the child rapidly getting worse, held up in a day or two and the patient recover in about a week from the administration of one teaspoonful of calcium (collosol) by the mouth at night. Ischio-rectal abscesses often of long duration will sometimes heal soundly in a week. In the case of the child quoted this effect could not be due to suggestion. Tuberculous glands may disappear rapidly. I am not wishing it to be inferred that these favourable results occur in every case, but they do occur in some cases. Last year I was consulted by a young man who was suffering so severely from his fever that he was unable to go to work. I ordered him one teaspoonful of collosol calcium by the mouth at night, and in a few days he was quite well, he took a little of the calcium this year, and was untoubled. This year I was consulted by a lady, aged 26, who since 1921 had been very much troubled with her fever, commencing in April and lasting till September, often being unable to go out, and her life a complete burden. I ordered her one teaspoonful of collosol calcium at night, she took this for six weeks and was no more troubled, even if she went into hayfever, she told me that this was the first summer she had been able to enjoy for years. I do not offer any explanation of the action of this substance, but that it does act I have no doubt—I am, etc.,

EDWARD E. PREST

Avishire Sanatorium (Llangatton),  
New Llanidloes Oct. 29th

### CURE OF VARICOSE VEINS BY PUNCTURE

SIR,—Much has been written of late on the treatment of varicose veins by injection, and different formulae are recommended. I have followed the literature with interest, but have not yet made use of the method.

To-day I have had an experience which has surprised me and may be of interest. Two months ago a lady was recommended by a specialist to have a series of intramuscular injections of her own blood (5 ccm), and she came into my hands. Her limbs were adipose, and there seemed no chance of finding the veins at the elbow without dissection.



She had a group of varicose veins in the left leg below the knee, and blood was drawn from the vein on six occasions. Six weeks later she wrote that she had had a slight recurrence of her skin trouble—much less severe than in her previous attack. She thought the treatment had done good—might she have a second series. On visiting her I searched in vain for her varicose veins. They had disappeared—I am, etc.

CLAUDE WILSON, M.D., M.R.C.P.  
Trenton, N.J.

#### QUININE BIHYDROCHLORIDE IN OBSTETRICS

Sir,—I can corroborate what Dr. Steel says (November 5th p. 827) about the value of quinine bihydrochloride in the treatment of puerperal sepsis. When practising in the East I saw many such cases (which had been attended by native nurses) and I never failed to effect a cure after the second injection. My first case was in the jungle many miles away from civilization—a multipara who had been confined four days previously. She had a temperature of 106° in the axilla, pain in the head and abdomen, and a foul discharge. I gave her an injection of 10 grains of quinine bihydrochloride. When I saw her early next morning the temperature was 99° and she had expelled a large mass of membrane. I gave her another injection that night and she made an uneventful recovery.

Since coming home I have seen three similar cases, adopted the same treatment and had equally good results. I always carry a supply of ampoules (P. D. & Co.) in my midwifery bag.—I am, etc.

BIRMINGHAM, NOV 11th

PROF. P. I. TON

#### JOHN OF CADDISDEN

Sir,—One hesitates at any time to intrude upon the expressed opinions of an illustrious and especially this, when the subject of it is a scholarly emanation of the profession like the late Dr. H. P. Cholmeley, but there is one untoward sentence in the excellent appreciation published in your issue of November 12th (p. 802)—untoward both in substance and in setting, for even if it were true there is no justification for association with the work or opinions of Dr. Cholmeley, and it is this: "the suggestion has been made that he [John of Caddisden] was perhaps the original of Chaucer's 'Doctor of Physic' in the Prologue to the *C Canterbury Tales*."

There is no suggestion of this in any chapter of Dr. Cholmeley's book *John of Caddisden and the History of Medicine*; indeed there is one reference which might be construed in quite a contrary direction. On page 71 he points out that, although the *Isis* is full of the beliefs and false pathology of the time, Caddisden makes scarcely any mention of "biological matters." In this he differs from his notable contemporary, John of Burgundy, who in his treatise *De Trinitate* lays it down as a necessity that those who presume to treat the plague should be well grounded in a knowledge of the stars. Chaucer's description is

With ther was a Doctor of Physic  
In al the world he was ther noon him lyk  
To speke of phisik and of surgerye  
For he was well grounded in a trewome

A few lines later, after referring to his doctor's knowledge of Esculapius, Apocryphus, and Cullen, he speaks of the works of Bernard (of Cordoba), Galien (Galenus), and Caddisden as forming part of his equipment. Chaucer had travelled far and read widely, and the "Doctor" is probably a composite picture; it is certainly more flattering to the medical profession than most medieval accounts are.—I am, etc.

VICTORIA INFIRMARY, CLIFTON, NOV 15th

J. A. M. CAMERON

\* We did not imply that the suggestion was made by Dr. Cholmeley. Sir Norman Moore in his article on John of Caddisden in the *Dictionary of National Biography* wrote: "His disposition, his peculiarities, and his reading

are so precisely those of the 'Doctor of Physic' in Chaucer's Prologue that it seems possible that Caddisden is the contemporary from whom Chaucer drew this character."

#### LUNACY LEGISLATION

Sir,—At the discussion at the Representative Meeting upon the report of the Royal Commission I pointed out that legislation might be introduced before the next Annual Meeting.

The Lord Chancellor at Northampton told us that the Cabinet was considering the report. The Minister of Health has said that the matter is urgent and the Chairman of the Board of Control has spoken in similar terms. In the circumstances I would urge that the British Medical Association should formulate its policy forthwith and that such policy should be supported by all members of the Association.

It will be impossible to construct a scheme which would meet the wishes of every individual but the present is a golden opportunity for improving the position of medical men in dealing with mental disease.—I am, etc.

FRANKLIN, NOV 9th

H. G. L. HAYNES

The importance and urgency of the matter is fully set out in the headquarters of the Association. The Lunacy Law Committee is meeting this day (Friday, November 18th) and may be expected to place its views before the meeting of the Council to be held on December 14th. The Council is acting on the assumption that early legislation is possible or not probable.

#### REFRACTION HOSPITAL

Sir,—My attention has just been drawn to a letter in the issue of October 29th signed 'A Bishop Hymn' in which reference is made to the 'London Refraction Hospital' in which it is stated:

The so-called hospital is no more than a meeting place where opticians collect some few patients, examine their eyes according to their capacity, and in trust their neophytes in their method.

The writer is evidently in complete ignorance of the facts. The number of patients attending the Refraction Hospital runs into some thousands per annum, less than a third of whom are sent by opticians. The opticians upon the staff in addition to their usual training in refraction have had the privilege of personal instruction in the detection of disease by ophthalmic surgeons.

The writer also states that the London Refraction Hospital would seem to be an attempt to combat the findings of the report of the Departmental Committee on the cause and prevention of blindness. The hospital building was purchased and the organization arranged some time before the report was published and before its contents could be known.

With regard to the word hospital the *British Medical Dictionary* defines it as a building for the benefit of any class of persons requiring public help.—I am, etc.

The Refraction Hospital  
London S.E.1, Nov 11

FRANK C. GREGG  
Lancaster

\* We have referred the letter to Mr. Bishop Hymn who writes: "Mr. Gregg is perhaps finding support for the comprehensive meaning that he wishes to attach to the term 'hospital' in the fact that there is to be found in one part of London a 'dolls' hospital' and in another a hospital for umbrellas. Whatever remote definition may be extracted from a particular dictionary it will hardly be contested that in common speech hospital means an organization where medical advice is to be obtained. When therefore Mr. Gregg's friends and their constituents to the hospital can here be any doubt that the great majority of persons so directed there are going to an institution staffed by qualified medical practitioners."

The suggestion that opticians' detritus of anatomical, physiological and pathological training can be made competent to examine disease in such a fashion as to extend the possibility of disease is of course absurd, and

still more absurd is the proposition that persons so "instructed" are efficient guides to succeeding generations of their junior colleagues. As Mr Gregg claims that his institution provides "public" help, it would be interesting to see the annual report and balance sheet, together with the names of the managers and supporters of the institution, so should thus learn the exact area from which this "public" support is supplied and the quality of the independent committee which governs the whole organization.

#### "THE HISTORICAL ASPECTS OF QUACKERY"

SIR,—Dr Kenelm Reid wishes me to say that no properly qualified doctor can legitimately be called a quack, whatever the nature of his belief. Sir James Barr, however, has recently (October 15th, p 704) expressed the opinion that "it would seem to me that in this country there are more qualified than unqualified quacks."

I suggest that Dr Kenelm Reid should settle this question with his friend Sir James Barr instead of demanding my opinion—I am, etc.,

Edinburgh, Nov 12th

A J CLARK

\*\* This correspondence seems to have reached a stage at which it cannot profitably be continued

#### THERAPEUTIC ABORTION

SIR,—Dr Binno Dunlop has kindly defined the term "therapeutic abortion" as "abortion performed by a medical practitioner on purely medical—that is, pathological—grounds," although he does not outline these medical grounds nor describe the pathological investigations carried out. He further states that "abortion obviously protects family life" where it preserves the health or life of the mother of a family" (whether he intends to exclude the primiparous woman I do not know). This is dangerous doctrine. Will he show us before he performs an abortion that he will, with certainty, preserve the health or life of the patient? Again, if he be logical in his belief, may I not ask him to kill off some of the very numerous old people whose inconsiderate demands for attention from their married daughters do, I assure him, definitely damage the health of these mothers of families? After all, they are finished with their life's work, whilst the infants of whom he recommends the slaughter have not yet started theirs, and are much greater assets to the State.

If abortions are to be procured on the grounds that the health or life of mothers of families is endangered, then abortion should terminate every case of pregnancy, for pregnancy is never quite safe, 3,000 women were killed by pregnancy last year. Dr Dunlop excludes from the term "illegal abortion" cases of pregnancy following rape. These are admittedly hard cases, but "hard cases make bad law," and another platitude asserts that "two wrongs cannot make a right." May I suggest to Dr Dunlop that he may not exclude any intentionally produced abortion from the term "illegal abortion"? There is in this country no such thing as a legal abortion, as some in our profession may find out one day to their cost.

Seriously, Sir, some of us are greatly concerned at the number of abortions performed at the present day, and suspect that they are more easily obtained by the rich than by the poor. A case mentioned last year in the JOURNAL was that of a barrister's wife who "did not want a baby." If women marry they assume certain responsibilities, and it is not for the medical profession to enable them to shuffle out of these responsibilities.

We general practitioners who do not perform abortions see Nature produce living healthy babies in all kinds of apparently impossible circumstances. I have seen a woman with aortic heart failure at the fourth month go to term and produce a healthy child. I have seen grossly tuberculous women produce healthy babies and recover. We wish to see less interference with Nature. Nature can well look after herself, and, working unhindered, will produce healthy babies to carry on the race. There is no need to replace the term "maddlesome midwifery" with that of "maddlesome abortion"—I am, etc.,

London, N W 5 Nov 11th

P P DALTON

#### HOSPITAL POLICY

SIR,—It is high time the medical profession tackled the question of hospital policy in earnest. Why are hospital staffs so keen on the voluntary principle, and why will they not carry out the declared policy of the British Medical Association? Is not the profession ashamed of the methods which have been used for raising funds for voluntary hospitals? Would not it be more dignified to accept State aid on agreed terms? Cannot the profession see that the hospital clubs will eventually lead to the same position, as did the old friendly society and other kind of clubs? What is going to be the effect of all the clinics and the hospital out-patient departments upon the general practitioner? To my mind the last question is the most important of all—I am, etc.,

Southend-on-Sea Nov 14th

FERDINAND REES, M D

#### ASSISTED EDUCATION OF DENTISTS

SIR,—From time to time, in my capacity as Registrar of the General Medical Council, I am asked whether I know of any fund from which the sons or dependents of medical men can receive financial assistance to enter the medical profession, and my reply has to be that some of the medical schools have scholarships for this purpose, but, apart from this, I do not know of any fund from which they can be assisted.

With regard to dentistry, however, the position is different. Unless the entry of students to the dental profession is increased, it is not improbable that in process of time there may be a shortage of dentists to attend to the needs of the public. In suitable cases, therefore, in which the requirements of the General Medical Council for the registration of students have been satisfied, the board is prepared to give financial assistance, by means of bursaries, to pay the cost of fees and instruments, and in some cases maintenance is given in addition.

So far as is known, there is scarcely any other great profession for the entrance of which such facilities are provided. As it is possible that medical practitioners may know of cases in which young men, in every way suitable for entering the profession of dentistry, are debarred from so doing by lack of means, it is desirable that the assistance offered by the Dental Board should be made known.

Further information will gladly be sent on application to this office. All letters should be addressed to "The Registrar of the Dental Board," 44, Hallam Street, W 1—1 am, etc.,

November 10th

NORMAN C KING

#### Obituary.

JOHN SINGLETON DARLING, M D, M Ch,  
Late President, North of Ireland Branch, British Medical Association

WE greatly regret to record the death, on November 8th, of Dr J Singleton Darling, at his residence in Lurgan, Anagh, at the age of 71. Dr Darling received his medical education at Trinity College, Dublin. In 1879 he graduated M B Dublin, and obtained the Diploma L M, R U I, in the following year he became B Ch, and in 1909 proceeded M D, M Ch. In the last year of his studentship he obtained a travelling scholarship and studied in Vienna. After practising for a short time in the West of Ireland he went to Lurgan in 1883, and was appointed medical officer of the Lurgan workhouse infirmary seven years later. As the result of his work and inspiration the infirmary came to be regarded as a valuable school of surgery, and Dr Darling became renowned throughout Ulster as a skilful operating surgeon. After the war the hospital was officially recognized by the Government as a centre for the treatment of ex-soldiers.

Throughout his medical career Dr Darling did all in his power to further the interests of the British Medical Association. He was a member of the North of Ireland Branch Council from 1897 to 1899, vice-president in 1900, and president in the following year. He was honorary treasurer of the Ulster Branch and a member of the Branch Council from 1903 to 1927, and during the same period honorary secretary of the Portadown and West Down Division. He

represented the Branch on the Council of the Association without a break from 1914 to 1927. Dr Darling was a member of the Irish Committee from 1909 to 1911, and from 1923 to 1927, of the Finance and Executive Sub-committee of that committee from 1923 to 1924, he was a member also of the Insurance Acts Committee from 1920 to 1922. At the Annual Meeting of the Association in Belfast in 1909 he was vice-president of the Section of Obstetrics and Gynaecology. He had also held office as president of the Ulster Medical Society.

In addition to his deservedly high standing in the medical profession Dr Darling won the respect and affection of all who came in close contact with him. He will be sadly missed by his patients and the inhabitants of Limerick and his loss will be deeply felt by his colleagues in the medical profession throughout the North of Ireland and on the Council of the British Medical Association. He is twice married.

Dr ALFRED COX (Medical Secretary of the British Medical Association) writes: With Darling I grew up one of my oldest friends in the Association and one who for many years embodied the nobility and influence of the Association in Ireland as few other men did. To Darling it was that we naturally turned for information about what was going on in Ulster. He was the man who was just as naturally asked to do anything we wanted doing in Ulster and we were always certain that he would not fail us. He was a splendid influence in promoting medical unity and he did as much as any man to prove that there was no line of demarcation in Ireland between members of the medical profession whatever the political situation might be. His genial disposition and obvious sincerity made him a general favourite in the Council and the Representative Meeting. Members of such bodies will join with the colleagues in Ireland in mourning the loss of a good man.

# JONATHAN DALGLISH M.R.C.S. (L.S.A.)

Newcastle-on-Tyne

By the death on November 9th of Dr Jonathan Dalglish Newcastle-on-Tyne lost her oldest medical practitioner. He was born in North Shields on February 2nd 1829 and although he had entered all his professional commitments there are still members of many families in the city to whom he had rendered kindly services and by whom his memory is cherished. A student of the Newcastle College of Medicine he completed his medical curriculum in London. Returning to the northern metropolis he became assistant to Dr Raine a well known and popular medical practitioner in his day who was surgeon to the North Eastern Railway Company. Dr Dalglish commenced practice on his own account in Westgate Road then a residential street he gradually built up a large connexion and subsequently removed to West Parade where he lived until 1901. During the years he led an extremely active life. He was one of the first disappearing type of the 'good old family doctor' guide and friend as well as medical adviser. On January 1st 1864 Dr Dalglish was appointed a district medical officer under the guardians a position which he held until June 24th 1901 when he retired with a pension after thirty-seven years of Poor Law service. He was one of the first six medical men to become a public vaccinator for the city in 1872 a year after the second Public Vaccination Act became law. The first Act was passed in 1867 and although there is no record of the fact it is more than likely in the intervening period he discharged such duties as the Act required.

In the latter years of the past century he conducted a mission in Surgeons' Hall on Sunday evenings. He retired temporarily to Harrogate where five months afterwards his wife died and he returned to Newcastle. He established a medical mission in Shieldfield, one of the crowded working class districts which he carried on single-handed for eleven years. While warmly interested in mission work he was not only a keen Biblical student and an example of the application of the tenets of the New Testament to daily life, but equally a close student of medicine even in

his declining years. He bought and read the newest editions of standard books on medicine, so that his library was kept up to date until the last few years when he began to suffer from cataract. This was a great blow, for he loved books. Unfortunately the blow was further embittered by great loss of hearing. The deprivations he bore with fortitude and patience, an example to all who came into contact with him and an illustration of the triumph of the faith which sustained him. A friend to all and a friend of none his funeral, in Old Lamond Cemetery on November 12th where he was buried beside the remains of his wife was attended by the civic dignitaries and members of the public bodies of the city and a few of his old medical friends and patients.

One of his sons, an ophthalmic surgeon died in Sunderland in 1910. Of the four sons who survive him Dr John Dalglish is a medical practitioner in Sutton Surrey one Mr Robert Stanley Dalglish had just closed his career of office as a much appreciated sheriff of Newcastle on the day his father died, one son lives in York here and the other in New Zealand. Three married daughters survive him.

# SIR PETER O'CONNELL M.D., M.Ch.

Consulting Surgeon Mater Infirmorum Hospital Belfast

There was universal regret when it became known in Belfast that Sir Peter R. O'Connell had passed away on September 24th at Marseilles where he had gone on holiday. Peter O'Connell who was born in Co. Caran, went to Belfast when a young man in 1853 after graduating M.D., M.Ch. R.C.L. and post-graduate study in Dublin London and the Continent. His reputation had preceded him, and the nucleus of the present Mater Infirmorum Hospital was founded by him in association with a few colleagues. There he laboured hard and as a result the present hospital was opened in 1900 with 200 beds. He was then appointed chief surgeon. In this sphere he had ample scope for his work and soon his operative skill and highly valued opinion brought him patients from all over Ulster. Though busily engaged in practice he found time for writing on various subjects and became interested in societies for the improvement of the people. He was prominent in a peak, and was elected as chairman of the city of Belfast. In the corporation he took a keen interest in public health technical and education matters. He was elected High Sheriff of the city in 1907 by whom he differed from him both in religion and politics but who recognized his great ability and he was elected a Knight Bachelor in 1903. He was also a deputy lieutenant for the city. He was a member of the commission which inquired into university education in Ireland and he might almost the establishment of the National and Queen's University. He was appointed a censor of the latter and acted as lecturer and examiner in surgery. He was elected president of the Ulster Medical Society in 1910-11. He retired some half-dozen years ago and went to live in the neighbourhood of Dublin. A colleague writes: In the Mater we shall miss his ready presence and his calm advice his sallies of wit and his profound but his name and fame are well known in its history. He has laboured for nearly forty years and future generations will gain a deep debt to his memory. To his widow Lady O'Connell daughter of Edward Hugh J.P. we tender our most sincere sympathy and pray that time may soothe the great loss which has befallen him.

The following well known foreign medical men and recently died Professor Max von GUERBER for many years director of the Institute of Hygiene at Munich and President of the Bavarian Academy of Sciences and Dr Otto POHN formerly professor of medicine and bacteriology at Zurich and 75 Dr JESSE LOUIS PROCTOR formerly professor of physiology at Cornell University and 77 Dr Max RICHNER one of the oldest and most distinguished rhinolaryngologists and Dr KURT OBER on former professor of the surgery of children at Jena and a Dr PHILIPPE of Medicine and surgeon to the Hôpital des Enfants Malades, Paris.

## Universities and Colleges.

## UNIVERSITY OF CAMBRIDGE

At a congregation held on November 12th the following medical degrees were conferred

M B B Chm.—J L Warner  
M B—W H Craib

## UNIVERSITY OF BIRMINGHAM

The following prize medals awarded for the past session were distributed at the meeting of the faculty of Medicine, held on November 11th, by the Vice Chancellor and Principal (Dr C Grant Robertson) Arthur Farnell Memorial Medal (Gold Medal awarded on Clinical Medicine, Final M B, Ch B Examination), Marjorie V Martin Sampson Gamace Memorial Medal for Surgery (Gold Medal awarded at Final M B, Ch B Examination) K P Fooks Prizes awarded by the University Clinical Board Senior Medical Prize (Gold Medal), Frances M Stookdale, Senior Surgical Prize (Gold Medal), V Goldman, Midwifery Prize (Gold Medal), R Anderson, Junior Medical Prize (Silver Medal), J W Notley, Junior Surgical Prize (Silver Medal), Beatrice M Willmott

## UNIVERSITY OF GLASGOW

At the congregation on November 12th the degrees of M B, Ch B were conferred upon Eric Dow, and that of B Sc in Pure Science on Martha Cleland, M B

## ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

The following officers have been elected for the ensuing year President Dr G H Edington Pastor Dr John K Burgess Honorary Treasurer Mr J H MacDonald Honorary Librarian Dr E H L Oliphant Representative on the General Medical Council Dr James A Adams Counsellors The above named office bearers *ex officio*, together with Dr John Henderson Dr H L G Leask, Mr R Barclay Ness Dr T K Monte Dr W G Dun, Mr J Iorhos Webster Dr J M Munro Kerr, Mr Thomas Kay, Mr John Patrick and Mr R M Buchanan S A M Sepher (Hong Kong) has been admitted (after examination) as a Fellow of Faculty

At the general meeting of the Faculty on November 7th Dr G H Edington the new president, was invested with a badge of office, presented by his predecessor, Mr R M Buchanan

## ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary Council meeting was held on November 10th, when the President, Sir Berkeley Moynihan, was in the chair

## Diplomas

Diplomas of Membership were granted to 178 candidates

## Learner

Mr Herbert Tilley was appointed to examine for the Diploma in Laryngology and Otology in December, in place of Mr A H Cheate, resigned

## International Congress of Military Medicine and Pharmacy

Sh Anthony Bowlby was nominated to serve on the organizing committee of the fifth International Congress of Military Medicine and Pharmacy, to be held in London from May 6th to 11th, 1929

## Members and Direct Representation

In reference to the resolution carried at the last annual meeting of Fellows and Members, the following resolution was unanimously adopted

"That in view of the result of the recent postal vote of the Fellows the Council is not prepared to take steps at the present time for altering the constitution of the College so as to give Members of the College direct representation on the Council"

## Retirement of Mr Hallett

The following resolution was passed

"On the occasion of the retirement of Mr Frederic G Hallett from the offices of Secretary to the Joint Examining Board and Director of Examinations in the Royal College of Surgeons, the Council desire to place on record their high appreciation of his services and the very warm regard which they entertain for him personally. Mr Hallett's powers of organization, his long experience in all matters relating to examinations, and his exceptional knowledge of regulations for medical education in this and other countries have been of great advantage to the College, and have given his services a special value and caused them to be held in the highest regard. The Council are fully conscious of the ability and zeal with which Mr Hallett has carried out his duties during the long period of fifty years, and they trust that health and happiness may enable him to enjoy in his retirement the rest which he has earned so well. His unfailing courtesy and readiness to help will not be forgotten by those who have had the pleasure of being associated with him in the control and management of the affairs of the College and the Council assure him that he carries with him their best wishes for his welfare in years to come"

## Medico-Legal.

## BRITISH MEDICAL ASSOCIATION v ALBERT PARTON AND PARTONS LIMITED

## MOTION FOR INFRINGEMENT OF COPYRIGHT PERPETUAL INJUNCTION GRANTED

In the High Court of Justice, Chancery Division, before Mr Justice Romer, on November 16th, the British Medical Association applied for an injunction to restrain Albert Parton and Partons Limited, of New Cross Road, London, from publishing or distributing a pamphlet which, they alleged, infringed their copyright

Mr C A Bennett, K C, and Mr H C Dickens were counsel for the British Medical Association, instructed by Messrs Hampson. Mr Parton conducted his own case

Mr Bennett said that the copyright which British Medical Association, declared to be two of their publications, *Secret Remedies* and *More Secret Remedies*, and the infringement was in a pamphlet published by the defendants called *The Greatest Exposure of Modern Times Patent Medicines* (so called), *What they cost and what they contain*, as exposed by the British Medical Association. When the case came previously before the court his lordship suggested to Mr Parton that he should consult solicitors. He had done so, and at the beginning of last week the British Medical Association received a letter from the solicitors stating that they had gone into this matter with the defendants. Mr Parton, as was to be gathered from his previous statement in court, was contending that under Section 10 of the Copyright Act, 1911, proceedings for infringement of copyright had to be taken within three years of infringement. He had been advised, however, that his offence was a continuing one, and in these circumstances defendant had expressed his willingness to attend at the adjourned hearing of the motion, that day, and to raise no further objection. He was also prepared, in order to avoid expense, to agree that the motion should be considered as the trial of the action. The British Medical Association was quite willing to put an end to the matter on these terms. There were, however, two defendants, Mr Parton and a limited company, of which he was the principal director and a substantial holder of the shares, and neither he nor the company had as yet "entered an appearance"

His lordship said that all he could do was to grant an injunction until the trial. In the meantime, the two defendants agreeing that motion could be treated as the trial, and the injunction made perpetual during copyright. He understood that the Association did not ask for damages

Counsel said that his clients did not ask for damages, but they did ask that defendants should deliver up on oath all copies of the pamphlet in their possession or power, and all printed sheets and type used for their production. He thought he was entitled to ask for that, also the costs of the motion

His lordship agreed, and, addressing Mr Parton, said that no doubt he had heard what counsel had said. Defendants had not what was called "entered an appearance." No doubt Mr Parton for himself, if not for his company, could enter an appearance that day by attending before the learned registrar, giving his consent to the terms mentioned, and then no further costs would be incurred

Mr Parton said that he would do this

Counsel said that there was one other matter. This was only a motion for infringement of copyright, but defendant had been addressing meetings at which he had tried to sell the remedies in circumstances which suggested that he was acting under the auspices of the British Medical Association. Counsel only desired to say that if he continued to do this it might be necessary to take other proceedings to stop him. The British Medical Association had no connexion with him at all

Mr Parton said that on his new flag, which he had used during the last three months, he had made no mention of the British Medical Association

His lordship said that Mr Parton would be well advised to cease to make any reference to the British Medical Association, and especially not to suggest that he had any connexion with them. His lordship then, subject to Mr Parton and his company "entering an appearance," granted the perpetual injunction asked for, with delivery up of copies of the pamphlet, and costs against the defendants

## A CONSULTANT'S FEE

At the West London County Court, on November 14th, before His Honour Deputy Judge Ralph Thomas, Sir Thomas Horder, Bt, M D, was sued by Mr Robert Sidney Provis, described as a "consultant in blood diseases," of West Kensington, for the return of five guineas, a consultation fee. Sir Thomas Horder

was presented by Mr Michael Rowe, barrister Mr Provis conducted his own case

Mr Provis testified that between 1918 and 1923 three of his brothers died from pernicious anaemia and he himself towards the end of that period contracted the disease. He consulted many medical men in this country and abroad and all of them gave him the same dreadful poisons to imbibe. Eventually he consulted Sir Thomas Horder, who asked him if he had had any injections and said that he would prescribe six injections, the nature of which he was not told. He asked Sir Thomas whether this would cure him and Sir Thomas replied "No but it will help you. The prescription was sent to Dr Spurgin of Bramhall together with a letter which Dr Spurgin said he had made and by Dr Spurgin he was told that the six injections were of salvarsan and that they could not be put into his body because he had no veins. He then went to Dr Arnold Renham of Manchester who gave him the first injection which paid off his harm and cured him. On the second occasion Dr Spurgin missed the vein with the result that the water was offered intravenously and it was only my own knowledge of the blood stream that enabled me to prevent that poison reaching my trunk. (At this point the judge remarked that he would hear better if the plaintiff did not address himself to the jury.) Continuing Mr Provis said that since that time he had himself acted in practice as a non-orthodox healer.

His Honour: How does that affect your case?  
Plaintiff: It has shown me that Sir Thomas Horder did not and I stand in my case. It was a very bad case and wrong treatment. I cut it out and I have cured others since. I maintain that Sir Thomas Horder took a course from me for a prescription which was worth a lot but endangered my life. I ask for the return of the five guineas. If a trial is to be made I am sure worth of the best I should have my return in court. I do not ask for damages.

Cross-examined the plaintiff was asked if salvarsan was not a remedy very commonly given to which he replied "Very common unfortunately. On another question whether in the existing state of medical science it was not the best remedy the judge interjected "Is he in a position to know that?" He is an "orthodox healer" which means an unqualified practitioner. Several letters which the plaintiff had written to Sir Thomas Horder were put in. One of them contained a cutting from the *Health Express* advertising Mr Provis and the remark was written (thereby by Mr Provis in what he admitted to be a different hand) coming from that named in the other letters. This man [meaning Plaintiff] is no fool.

The judge called attention to the letter heading "R S Provis Director of Natural Therapeutics" and to his assumption of the title "Doc or" and asked Mr Provis who gave him his degree.

Plaintiff: I claim the degree because there is nobody in this country who can see my knowledge.

His Honour: You are not entitled to call yourself a doctor?

Plaintiff: Doctor only means teacher.

His Honour: You have no degree.

Plaintiff: No degree recognized by the Government at the moment.

His Honour: Have you a degree which is not recognized? Who granted you your degree?

Plaintiff: Almighty God who endowed me with the most marvellous power of healing and preaching.

Extracts from other letters written by the plaintiff to Sir Thomas Horder were read. One of them headed "White Loas" contained the sentence "Large millers of white flour are not without interest in your lies. Another saw. It is my intention to let the public know you are a liar and another. I am not afraid of the old B.M.A." The plaintiff also stated that he had discovered the cause of cancer and consumption and that he had himself treated lots of cases of cancer which have gone well.

His Honour: What do you mean by that—that the patient died? Plaintiff: Oh no the patients recovered. It was the cancer that was cured.

He added on further cross-examination that it was not until he became acquainted with the Spallinger controversy that he realized that the treatment prescribed by Sir Thomas Horder was really blood poisoning. He knew that he had had blood poisoning in consequence of the treatment but he was not aware until that controversy that blood poisoning was part of the game. He was anxious to challenge Sir Thomas Horder to debate on the "white loaf" and other questions and was ready to engage a hall but he had not seized the present occasion for publicity. He wanted only the return of his fee.

Comment for Sir Thomas Horder submitted that there was no cause of action. There could be no question of negligence in administration so far as Sir Thomas Horder was concerned. Moreover plaintiff had admitted that Sir Thomas Horder had not promised to cure him. He could hardly deny that he was given a remedy commonly used by medical practitioners nor that he received the best advice available when he consulted Sir Thomas Horder.

Plaintiff in a final speech on his own behalf said that Sir Thomas Horder did not get his money until he had cured the plaintiff (that what he was prescribing would help him). He maintained that if one went to a high authority in the medical profession one expected something better than from a "ten and a penny practitioner."

#### Judgement for Sir Thomas Horder

His Honour in giving judgement said that plaintiff was not suffering that the fee was excessive but only that the result of the treatment advised by Sir Thomas Horder was that he got blood poisoning. His Honour agreed with the submission made by counsel for the defendant that there was no warranty or guarantee in the case in any way. Plaintiff asked Sir Thomas Horder for his advice. Sir Thomas Horder gave his advice and it was not

suggested that there was anything improper about that advice. Any improper administration of the medicine such as plaintiff alleged could not of course be brought against Sir Thomas Horder. Moreover the plaintiff himself said that he was not seeking to recover damages for anything that Sir Thomas Horder had done. The letters which had been put in and plaintiff's attitude in the witness box made one suspect that this action was not genuinely started for the purpose of recovering a fee paid to Sir Thomas Horder. He found for the defendant with costs and refused leave to appeal.

### Medical Notes in Parliament

THE Parliamentary Medical Committee is to meet on November 24th to discuss the prospects of the Nursing Homes Bill and Mental Deficiency Bill and also Dr Little's bill regarding medical confidences. A letter from him on this subject is published at page 957. The Parliamentary Medical Committee has not been consulted in the preparation of the bill. A deputation of medical members of Parliament to the Minister of Health on the same subject had previously been suggested though no arrangements had been made for it. The text of the bill is as follows:

BE it enacted by the King's Most Excellent Majesty by and with the advice and consent of the Lord Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows—

1 Any information obtained by a duly registered medical practitioner in regard to any person treated for venereal disease under a scheme approved in pursuance of Article II (2) of the Public Health (Venereal Diseases) Regulations 1916 S.P.C.O. 1916 (No. 467) shall be regarded as confidential and shall be privileged from disclosure under the court of law.

Provided that the information obtained shall have been obtained for the purpose of a cure or a sitting in a cure of a person so treated.

And provided also that this privilege shall not extend to any communication made with the object of committing or aiding in committing any fraud or crime.

2 For the purpose of this Act duly registered medical practitioner shall mean a person whose name is on the *Medical Register*.

3 This Act shall be called the Medical Practitioners' Communication Privilege Act 1927.

The Government which controls all the time of the House till the end of the session has not promised facilities for discussion.

#### Landlord and Tenant Bill Goodwill

The Landlord and Tenant Bill introduced by the Government to provide a remedy for hardships to business tenants under leases granted after its passage into law was considered by the House of Commons on report on November 15th Mr Wellock moved to extend to premises occupied for professional purposes the provision that compensation could be claimed for goodwill. He said that doctors had come together in particular areas in almost every town and it was possible for a landlord to turn out one and bring in another thus gaining the advantage of any improvement which had been made. Sir William Jovonovich said there was a difference between the goodwill of a doctor and the goodwill of an ordinary tradesman. The Government had agreed while the bill was in Committee that the professional man should have compensation for improvements. It would be better to wait a few years to see how the Act ran before considering its extension to other classes of occupier. The Committee on the bill had unanimously accepted the compromise that professional men should be entitled to compensation for improvements but not for goodwill. Mr Dalton said that the doctor dentist or other person given a choice would prefer compensation for goodwill to compensation for improvements which he agreed had to make. Sir Philip Pilditch said the Committee had agreed that the doctor or dentist should be given facilities for securing the goodwill of a business by putting up such a building as a garage. Mr Stephen remarked that a professional man who failed to put ten miles out could not expect his clients to follow him. Mr Wellock asked for guidance on clause 15 (3) which provided that in the case of premises used partly for professional or business and partly for other purposes the compensation for improvements and goodwill shall apply to improvements only and so far as the improvements are in relation to the trade or business. He inquired whether this subsection in the case of a doctor in a well known district would cover compensation in respect of that doctor's reputation. The Home Secretary said that it would. The amendment was then adopted by 165 to 53 and the report stage was completed.

National Insurance.—On November 16th Mr Chamberlain told Colonel Aspin that approved societies had no power under the National Insurance Act to establish dental clinics but a few could have been established by bodies indirectly connected with approved societies. He hoped soon to receive a report on the provision of dental treatment in clinics from the special committee representing approved societies and dentists to which he had referred the question. Answering Mr Hard's question Mr Chamberlain said that during August the average cost of a prescription under the National Health Insurance Act was in London £1.6d. Birmingham 7.6d. Manchester 8.2d. and Liverpool 8.5d. The average cost per



prescription for medicine for insured persons in Glamorgan during August last—the latest month for which figures were available—was 13,414. The Minister of Health has received from the Glamorgan Insurance Committee a letter protesting against Wales being ignored in the composition of the Pharmaceutical Distribution Committee. The committee he stated was constituted on the same lines as the Medical Distribution Committee, which has never contained any separate representation of the Welsh Insurance Committees. The two committees are already sufficiently large, and the Minister sees no necessity to increase them.

**Extensions of Voluntary Hospitals.**—In an answer to Mr. T. Williams on November 13th Mr. Chamberlain again said that he could not recommend any grant from public funds towards the cost of extensions of voluntary hospitals. Since the Oswestry Commission reported a considerable number of new beds had been provided or were in course of provision.

**Smallpox.**—Sir Kingsley Wood on November 14th, informed Dr. Vernon Davis that the number of cases of smallpox notified in August, September, and October were 561, 505, and 795 respectively. The total number of notifications from January 2nd last to November 5th inclusive was 12,729. These figures were subject to revision. Sir I. Gilman also told Dr. Davis that the numbers of cases of smallpox notified in Scotland during August, September, and October 1927, were 5, 2, and nil respectively. The total number of cases of smallpox notified in Scotland from January 1st, 1927, to November 5th, 1927, was 166.

**Baths at Poor Law Institutions.**—Mr. Chamberlain on November 14th, said his attention had been drawn to the remarks of the coroner at an inquest at Hammer Smith regarding the death of a woman through drowning in a bath full of water at a hospital, she having taken a bath against instructions. He said the importance of having keys to all hot water taps in the bathrooms of Poor Law institutions had for many years been emphasized by the central authority. Such keys had now been fitted at this institution.

**Proposed Medical Mission to China.**—On November 14th Lord Winton informed Mr. T. Williams that a proposed medical mission to China had been discussed by the Indian Government because a grant of facilities for British subjects to serve as non-combatants with one or other of the contending factions in the civil war in China would have been considered as a departure by the Government from its attitude of strict impartiality. The Government had advised British subjects to withdraw from the interior of China in order to avoid embarrassing incidents and it could not allow a party of British subjects to proceed to parts of China where such incidents were most likely.

**Foot and Mouth Disease.**—Mr. Guinness replying on November 15th to Lord Apsley said that the departmental committee which reported on foot and mouth disease in 1922 and 1925 expressed the view that the virus might be introduced from abroad through two classes of channels: (a) uncontrollable such as the movement of birds and airborne infection and (b) controllable such as the movement of human beings, importation of animals, feeding stuffs, packing materials, trolleys and men. To prevent the introduction of disease through the controllable channels a number of Orders were in force such as that prohibiting the import of hay and straw from countries in which foot and mouth disease was prevalent and of fresh carcasses from the Continent. Other Orders were designed to prevent the spread of infection once it had occurred in this country.

**Medical Inspector of Mines and Quarries.**—On November 15th Colonel Lane Fox replying to Mr. J. W. S. said that Dr. S. W. Fisher had been appointed medical inspector of mines and quarries. Since his demobilization in 1919 Dr. Fisher had practised in a colliery district in South Wales, where he had obtained general experience of mining conditions and of the treatment of mining accidents and disease. He had taken special interest in silicosis and myasthenia in which he had carried out research work, and in bent hand, bent knee and bent elbow.

#### Votes in Brief

Mr. Chamberlain told Sir Nicholas Grattan Doyle on November 16th that he had no power to curtail the activities of birth control societies and similar agencies.

Mr. Chamberlain told Mr. Bromley on November 10th that he was communicating with the Lancashire County Council about the future use for tuberculous patients of the Limeside Sanatorium, Lancaster, in which three patients had lost their lives recently by the flooding of the institution. There was no suggestion that all reasonable precautions had not been taken.

In reply to a question Mr. Chamberlain said on November 10th, that he was advised there was no danger that tuberculosis could be communicated to man by the consumption of fish. He did not propose to have investigations made with a view to prohibiting such sales.

Major Dixon states that no general instructions have been issued that the treatment allowances of men suffering from tuberculosis in consequence of war service should be withdrawn. The circumstances of each patient are considered in consultation with the responsible medical officer. The special difficulties which had arisen over such cases in the Ilford district were being investigated. The Minister of Health had considered the resolution passed by the Plymouth Insurance Committee urging the Government to enable and require local authorities dealing with tuberculosis—or groups of them—to formulate schemes for village settlements where suitable ex sanatorium patients and their families could be housed and appropriate remunerative employment provided under medical supervision on the lines adopted at the Cambridgeshire tuberculosis colony at Pipeworth. There

were three village settlements in existence, and a fourth was under consideration. Fuller experience of the results in these cases must be awaited before attempting such widespread and costly developments as the question suggested.

In the year ended June 1927, 117,000,000 gallons of milk were brought into London by the four principal railway companies—an increase of 62 per cent since 1923. At least 5,000,000 gallons a year are also brought in by road.

The Government of Burma has decided not to reopen the opium registers for Burman customers without a clear mandate from those affected.

The Prime Minister, on November 14th, told Mr. Tooker that he was aware of the importance attached by governing bodies of institutions for mental defectives to the Mental Deficiency Bill 1927 being passed into law at the earliest possible moment. He could not, however, add anything at present to his statement of last week about the prospect of facilities being given for its passage this session.

## Medical News.

SIR BIRKBECK MAXIMIAN will deliver the Mitchell Binks Memorial Lecture for 1927 in the Medical School of the University of Liverpool on Thursday, November 24th, at 4.30 p.m. The subject of the lecture, which is open to members of the medical profession, is 'The gall bladder and its infections.'

The first International Conference on Light and Heat in Medicine and Surgery will be held at the Central Hall, Westminster, S.W., on December 13th to 16th. Among those who will read papers on various aspects of ultra violet therapy and hundred subjects will be Professor Leonard Hill, Professor I. M. Heilbron, Dr. T. Hermann Johnson, Dr. I. Howard Humphris, Dr. H. Stanley Banks, and Dr. L. P. Cumberbatch. Foreign representatives who will read papers will include Dr. Jean Seldman (Paris), Dr. L. G. Dufostel (Paris), and Dr. Franz (Vienna). Each paper will be followed by a discussion. Tickets should be made to 17, Catherine Street, W.C.1.

The annual reunion dinner of the British Serbian Units Branch of the British Legion and of all friends of Serbia will be held on Saturday, December 3rd, at 7.15, at the Victoria Mansions Restaurant, Victoria Street, Westminster. The president, the Rev. R. G. D. Laffan, will be in the chair. Tickets can be obtained from the honorary secretary, Miss Mair, 24, Molecombe Court, Dorset Square, N.W.1.

Mr. A. Edwards will deliver a lecture for the Fellowship of Medicine on practical surgical details at the Medical Society, 11, Chandos Street, on November 21st, at 5 p.m. On November 23rd, at 2.30 p.m., a special demonstration will be given at the Prince of Wales's General Hospital, Tottenham, N.15, on November 14th, at 2 p.m., Mr. Whitechurch Howell will give a surgical demonstration at the Queen's Hospital for Children, and on the same day, at 1 p.m., Mr. Whiting will give a demonstration at the Royal London Ophthalmic Hospital, City Road, E.C.1. The lecture and demonstrations are free to medical practitioners. From November 21st to December 17th there will be a daily series of lecture demonstrations, illustrated by cases, at the West End Hospital for Nervous Diseases, at 5 p.m. A week's post graduate course in diseases of the rectum will be held at St. Mark's Hospital from November 28th to December 3rd inclusive. Two afternoon courses begin on December 5th and continue for two weeks, one at the Infants Hospital, under the direction of Dr. Lucie Pritchard, will cover all phases of the study of infantile diseases, and the other will be held at the Hospital for Diseases of the Skin, Blackfriars. During January the following courses will be arranged in medicine, surgery, and the specialties at the Prince of Wales's General Hospital and associated hospitals, in epidemiology at the National Hospital for Diseases of the Heart, in diseases of children at the Children's Clinic, and in psychological medicine at the Bethlem Royal Hospital. Syllabuses, tickets, and specimen copies of the *Post Graduate Medical Journal*, may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

A PRACTICAL course in the treatment of skin diseases and syphilis will be held at the Hospital St. Louis, Paris, from November 28th to December 20th, under the direction of Professor Jeansolme, assisted by Professor Schileau and the staff of the hospital. The fee is £250. Further information can be obtained from M. Buisson, Pavillon Bazin, Hospital St. Louis, Paris.

A POST GRADUATE course in neurology and psychiatry will be held in English, from January 2nd to February 28th 1928, in Vienna. Further information can be obtained from Dr. E. Spigler, I. Allostasio 3, Vienna I.

DR. G. ARBOUR SELPHENS has been appointed an alderman of Swansea.

PROFESSOR R B WILD who retired in September last from the Leech chair of water medicine and therapeutics in the University of Manchester was presented on November 11th with his portrait by Francis Dodd A.I.A., a set of Kilgiving's work, and an album of limnophone records of Beethoven's Symphony No. 3. The presentation was made by Professor G R Murray on behalf of Professor Wild's past and present colleagues in the Faculty of Medicine in appreciation of the valuable services he has rendered to the cause of medicine and education in Manchester. In accepting the gifts Professor Wild expressed a desire that the portrait should be given to the University, and the Vice-Chancellor gratefully accepted the offer.

The Minister of Health and the Minister of Agriculture and Fisheries have appointed a Joint Advisory Committee with Sir Horace Monroe K.C.B., as chairman to consider and report on the position with regard to the pollution of rivers and streams and on any legislative administrative or other measures which appear to them to be desirable for reducing such pollution. Among the members is Dr H M Lean Wilton, chief inspector of the River Board of the West Riding of Yorkshire. Communications may be addressed to Mr G C North V.C., one of the secretaries of the Committee at the Ministry of Health, Whitehall, S.W. 1.

A HOME OFFICE Order, which will come into force on December 1st requires that suitable washing facilities shall be provided in all factories and workshops in which sugar is used in the processes of icing, creaming, and filling biscuits and wafers. A weekly inspection is also ordered for the detection of early signs of dermatitis of the hands and forearms and in the event of any such susceptibility being detected arrangements must be made for the person to be transferred to work which will not expose him to contact with sugar.

An inquest was held on November 14th at Poplar on the body of Mr William Smart Harnett, aged 65 which was found in a dock last week. The medical evidence indicated that the body had apparently been in the water for ten or twelve days and that death was due to asphyxia from drowning. Mr Harnett will be remembered as the plaintiff in two prolonged lawsuits against medical men—Harnett v Bond and Adam and Harnett v Fisher—both of which were fully reported at each stage in these columns. He had been missing from his home for over a fortnight before his body was found. The coroner in his summing up recalled that Mr Harnett had been certified some time ago as insane, the fact that he was found, as the result of litigation not to be insane could have had very small bearing on his recent actions: there was evidence that for the past four years or so he had acted perfectly normally. The jury without retiring brought in a verdict of 'found drowned'.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

**ORIGINAL ARTICLES and LETTERS** forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring **REPRINTS** of their articles published in the **British Medical Journal** must communicate with the Financial Secretary and Business Manager, **British Medical Association House, Tavistock Square, W.C.1** on receipt of proofs.

All communications with reference to **ADVERTISEMENTS** as well as orders for copies of the **Journal** should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the **British Medical Association** and the **British Medical Journal** are **MUSEUM 5957** and **5958** and **5959** (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are **EDITOR** of the **British Medical Journal** **Antilogia Westcent London**.

**FINANCIAL SECRETARY AND BUSINESS MANAGER** (Advertisements etc.) **Articulata Westcent London**. **MEDICAL SECRETARY** **Medicera Westcent London**.

The address of the Irish Office of the **British Medical Association** is 16 South Frederick Street, Dublin (telegrams **Deccus Dublin** telephone 4731 Dublin) and of the Scottish Office 6 Drumhugh Gardens, Edinburgh (telegrams **Associate Edinburgh** telephone 24351 Edinburgh).

### QUERIES AND ANSWERS.

"I. A. wishes to hear of an institution where a patient could receive the latest treatment of locomotor ataxia. There are no mental symptoms. Payment to cover the cost of keep could be made."

### STOMACH COUGH

A CORRESPONDENT sends us the following note of his own case. The inquiry by M B Cantab in your issue of November 4th describes a condition which I have observed for some years though my case is not as a rule so acute. I is hard to understand a condition at once so acute and so quickly relieved but I suppose that for the individual at any rate there is a very small margin between the normal acid value of the gastric juice and an acidity which irritates the stomach wall. When the latter is established the patient is awakened by the discomfort and the pylorus contracts. Gulping of air which is involuntary but can be partly retrained by the will forms on all the stomach is sufficiently intended to provoke violent and painful contraction reflex coughing and ultimately vomiting. A very small amount of sodium bicarbonate taken on waking so lowers the acidity and diminishes the irritation that the previous reflexes, the contents of the stomach begin to move on and the passing of flatus hitherto inhibited takes place. The patient then the normal conditions of contraction pass down the bowels and resumed he goes to sleep almost at once and has no remembrance in the morning. The practical treatment then is a combination of two or three soda mint tablets immediately on waking and a cocaine lozenge (such as Glaxo) and keep a small amount of it slowly sucked. The latter probably stops the cough and greatly diminishes the risk of vomiting.

J B S writes: M B Cantab does not say how long I or how his cough first began. In those days I used to have coughs at undue exposure during the day brings a bill to be met for an attack of coughing in the morning. I am much perturbed thinking brings a sensation in the epigastrium of an almost soreness and attended by some faintness in the forenoon. I have arrived at the age when the legs easily get cold—this gives me a cough in the morning but no irritation in the throat. I had that gentle massage with gulping in the epigastrium and gentle pressure including the neck of some service. Distending to startle on as regards last meal.

### CATARACT AND ULTRA VIOLET LIGHT

A MEDICAL CORRESPONDENT asks whether there is any reason to suppose that treatment of cataract with ultra violet light is likely to benefit the condition.

We referred this question to Mr Bishop Harman who has been good enough to send the following reply. Ultra violet light is injurious to the eyes. The naked eye if it be formed on the macula will cause a scotoma or blind spot which may have permanent damage. Even when no actual lesion of the eyes the rays will set up severe conjunctivitis akin to the so-called blindness of the high Alps. The preliminary report of the committee on the Causes and Prevention of Blindness reported at the request of the Minister of Health (Dr Addison) on an outbreak of eye inflammation that had occurred in film studios. The attacks were due to the use of unfiltered or naked arc light rays. The mercury vapour lamp is milder in action but is capable of producing similar irritation if no screened. Users of ultra violet ray apparatus need to take special precautions by the use of suitable glasses (not merely tinted but opaque to the short rays) so as to protect their eyes from damage. It is obvious from these facts that treatment with rays will not benefit cataract. Indeed there is some evidence that liable to cause cataract. Cataract is common in India where excess of sunlight is found. It is true that food factors have some possible effect but since the earliest changes are commonly found in the lower half of the lens it is probable that this selection is the effect of light. When cataract is actually present—the lens then the lens is opaque—no form of treatment will alter the same operation. It is said that there is a cult of sun-worshipers in India who gaze at the sun for some time each day. One of these came to me as a patient recently. This Indian gentleman assured me that for one hour daily he gazed naked-eyed at the sun. On examination it was found that he had advanced cataract in each eye and his visual acuity was greatly reduced.

### COLD HAND

A M writes: I recommend W G who suffer from cold hands (Journal November 12th p 50) to try the following device which I made when I used a pedal motor cycle. I found to be the only method by which I could keep my hands warm in cold weather. Wear a pair of thick woolen gloves and over these a second pair made on the pattern of the former wearing gloves. (With a special comparison only for the thumb and all the fingers in one. I feel that the latter glove but for broken gloves this pattern is probably the best. I found probably better a more effective and certainly a better if W G drives his motor car. The second pair of gloves both pair must be loose and the outer pair must have separate fingers.

### INCOME TAX

Emoluments of April 1927

J P S. is resident in a medical office. The appointment was advertised as carrying a salary of £50 per annum, an unfurnished house valued at £50 per annum. The reduction of the authority making the appointment provides for an inclusive salary of £50 and this from this salary he

deducted £50 per annum as representing the value of the unfurnished house, etc." What should be the amount of the gross Schedule E assessment?

"J P S" rightly regards Mr Justice Rowlatt's dicta in *Cordy v. Gordon* as the source from which the answer should be obtained. We fear that the change in the terms of the resolution has weakened his case. In the first portion of his judgement Mr Justice Rowlatt appears to distinguish between (1) payment of a salary plus an emolument not convertible into money, and (2) payment of a salary on condition that part be spent in some prescribed fashion. *Tonnant v. Smith* settles the former case in favour of the taxpayer, but the judge seems to have inclined to the view that in the second case the taxpayer will normally be liable on the full amount on the "salary"—"he has been paid a salary, and what he does with the salary is immaterial." One point in our correspondent's favour is that the judge laid some stress on the fact that in the case he was dealing with the sum to be paid was variable, whereas the deduction from salary which "J P S" suffers is constant. It is clearly a distinguishing feature, but we think that, on the whole, the odds are against "J P S's" success.

#### New Practice

"RETURNING" has sold his specialist practice in London under covenant not to practise his specialty in England for five years, he will reside some distance from London and may do general consulting work, and also some work for the Ministry of Pensions.

"His income tax for 1928-29 should not take into account any results of the, then transferred, London practice, he will be starting a new practice, the income from which will, for the first year, be assessable at the amount of the fees earned in that year, less the expenses incurred in running them. With regard to expenses incurred partly for private and partly for professional purposes, the only guide we can give is to point out that the total should be reasonably divided according to the actual ratio of use during the year. The Ministry of Pensions work will apparently be such as to justify the inclusion of the emoluments with other fees as the product of general practice. On that basis our correspondent might fairly claim to include the car mileage of the journey to and from the Pensions Office as professional use, but his legal title to do so is not beyond doubt. If "Returning" does not put up a plate or set aside part of his house for professional purposes there is very little, if anything, that he can deduct as the expense incurred professionally by way of rent, rates, etc.

#### Locumtenent's Expenses

"W D M" was engaged as a locumtenent in 1926-27 and has since "settled down in practice." The inspector of taxes advised him to make one return, including locum and other earnings together, but now declines to allow him to deduct the expense of travelling about when doing locum work.

Strictly the "practice" earnings should be dealt with separately on the basis of the previous earnings of the predecessor, if more favourable to "W D M," but in either case the expenses of travelling about on locumtenent work should be deducted in arriving at an assessment on those earnings as one unit. The inspector's view seems to be based on the assumption that they are being dealt with under Schedule E as the earnings of employment, in our opinion that is not the correct basis of assessment of locumtenent fees, and, in any case, that is not the basis which is being applied, seeing that they are being assessed under Schedule D.

#### LETTERS, NOTES, ETC

##### FELLOWSHIP OF S. MICHAEL AND ALL ANGELS

We have received the following note from the secretaries of this benevolent organization:

"It is thought that members of the medical profession might be glad to know of a maternity home belonging to the Fellowship of S. Michael and All Angels a society existing for rescue work among girls of the educated and professional class. The fees are very moderate. All information can be supplied on application to the secretary, 5, Bloomsford Terrace, S.W. 1."

##### DISMEMBERMENT AND SHOCK

MR HAROLD HARTLEY, F.R.C.S. (Newcastle, Staffs), writes: Perhaps yet another quotation may be of interest. Razis an elder of Jerusalem to avoid capture by the troops of Nebuchadnezzar, attempted to kill him but through excitement "missed his stroke." He then ran and cast himself from the wall of the city, falling on his side. "And having yet breath within him, an angel, inflamed with passion, he rose up and though his blood gushed out in streams and his wounds were grievous he ran through the crowds, and standing upon a steep rock when, as his blood was now well spent he drew forth his bowels through the wound, and taking them in both his hands, he shook them

at the crowds, and calling upon him who is Lord of the life and the spirit to restore him these again, he thus died."—*Apocrypha*, II Maccabees, xiv, 37-46.

##### THE CAUSE OF VESICAL CALCULUS

DR. A. T. WATSON (C.M.S. Hospital, Annam, China) writes under date September 20th. In the *BRITISH MEDICAL JOURNAL* just to hand of July 30th there is an article by Lieut. Colonel R. McCarrison on the experimental prevention of stone in the bladder in rats. I thought that it was worth recording that to day a male Chinese child of 30 months was operated upon for stone and a calculus weighing 7 grams removed by the supra-pubic method. The child was still at the breast, though this was supplemented by rice and other foods. In view of the dramatic results obtained by Colonel McCarrison in preventing the formation of vesical calculi by adding milk to the diet of rats, this case, where the child had had maternal milk as its diet since birth, would suggest either that the maternal milk after the first year was very deficient in vitamins or that in the human subject the formation of calculi is not influenced either way by a diet of milk.

##### TOXICITY OF EPHEDRINE

DR. T. J. KITT (Stockport) writes: Ephedrine, which has been so well boomed in the lay press as a specific for asthma, still has its literature to acquire; therefore, I desire to record an experience which has just befallen me. The patient, a woman of 64 years, was given twelve half gram ephedrine tablets, with instructions to take one when the breathing became difficult. Two nights ago she sent to say that she was having asthma again, could she take more than one tablet? I replied, "Yes." I was called again at 3.30 a.m. to find that she had taken ten of these tablets in five hours without easing the asthma or apparently affecting her in any way.

##### A DISCLAIMER

We have received from Dr. A. C. MAGIAN (Manchester) the following letter, with a request for its publication:

I regret that recently an article purporting to be a personal interview with me and containing a highly sensational account of a lecture given by me to a medical society has appeared in the London press. The facts of the case are these. The wife of one of our members is also a press reporter to several daily papers. She read the circular sent to her husband, attended the meeting (she was not known by sight to me), and sent a report of my lecture to the papers for which she writes. The following morning before I was out of bed or had seen a newspaper someone, whom I took to be the publisher of a medical paper to whom I had sent an account of my lecture rang me up and asked me about certain points connected with it. I answered in good faith, and it was not until midday that I discovered the error. Later I tried to explain to some reporters who called that the lecture was a private one and must be closed, but my explanations only produced more "copy." I have written to the London and Counties Medical Protection Society and to the various people concerned.

##### CORRIGENDA

DR. R. J. CHURCH (London, W.) writes to point out that in the reports published last week at p. 879, some remarks on spinal anaesthesia were erroneously attributed to him. The only contribution Dr. Church made to that meeting was a minor query as to blood pressures, which was answered by the President, the two cases followed by paralysis of the rectum and incontinence were not reported by him.

DR. TIMPLE GREY (London, W.) writes: I am so substantially misreported on p. 877 of the *JOURNAL* that I am wondering whether I might ask you, please, to note what I did say, namely—that the judicial authority under the Lunacy Act must accept responsibility for the commitment of persons alleged to be of unsound mind, and that if the magistrates who at present sit for this purpose will not accept this responsibility, magistrates must be found—say a county court judge or a medical barrister—who will. This is what I had the honour to propose at Edinburgh.

DR. E. ROWLAND FOTHERGILL has called attention to two errors in his letter on "Contributory schemes: hospital club practice" published in the *JOURNAL* of November 12th (pp. 898, 899). The word "discussion," in the last sentence of the letter, should be "discussion," the resolution to which he referred is not that printed as a footnote to his letter, but the Brighton resolution published in the *SUPPLEMENT* of July 30th (pp. 74 and 75).

In the notice of the presentation to Dr. C. E. Stephens of a gold cigarette case on the occasion of his retirement from practice, published last week (p. 905), the initials were incorrectly printed.

##### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 45, 46, 47, 50 and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 203.

## The Huxley Lecture

## DIATHESIS

DELIVERED AT THE CHAPMAN CLINIC HOSPITAL,  
NOVEMBER 24TH, 1927,

Sir ARCHIBALD ARROD, K.C.M.G.  
D.M. LL.D. F.R.S.

REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD  
CONSULTING PHYSICIAN TO ST BARTHOLOMEW'S HOSPITAL  
AND THE HOSPITAL FOR SICK CHILDREN

"Men are called healthy in virtue of the inborn capacity of resistance to those unhealthy influences that may ordinarily rise unhealthily in virtue of a lack of that capacity. This passage from Aristotle's *Categories* written two thousand three hundred years ago may well serve as my text to-day."

We all know what we have in mind when we speak of health and disease, but it is not easy to frame definitions which shall embrace all that the terms denote. We still need to pay heed to the warning of that great teacher Thomas Watson, that disease must not be regarded as "a thing," or as the phrase goes "a separate entity" by which the body is possessed and dominated—something which can be contemplated apart from the body which it may invade.

As Aristotle's definition suggests, the state which we call health is one of unstable equilibrium maintained by means of a continual struggle, and no mere quiescent phase. Thus, in a recent lecture Andrievs spoke of the healthy body as one which "is not only perfectly adjusted to its surroundings but is capable of adjusting itself within reasonable limits to the circumstances of a rapidly changing environment." Disease on the other hand he defined as "a condition in which the body has fallen in lesser or greater degree, out of harmony with its environment." Another recent writer Draper defines disease as "an expression of reaction between a complex set of external circumstances, and an equally complex organism striving to survive in the midst of them." No narrower definition will suffice to include as it needs must do such widely different clinical and pathological pictures as those of small pox, malaria, scurvy, and myxoedema.

It is obvious that, as the word implies, disease is something appertaining to the patient and is neither an invading organism nor a poison introduced. Many of the outward signs and symptoms by which we recognize disease are evidences of the struggle which the organism is putting up against enemies which beset it, and as Andrievs pointed out in the lecture from which I have quoted, even inflammation and fever may be regarded as beneficial reactions. Bacterial infections do not necessarily cause disease only when the body begins to defend itself against attack does trouble arise. Nor must we forget, as we have been apt to do in recent years, that not all maladies come from without although the manifestations of those which do not are often provoked by external influences—trauma, exposure and the like.

It is an indisputable fact which has been recognized from early times, that some individuals, members of some families and of some races of mankind are far more liable than others to suffer from particular maladies, and around that basal fact have grown up the various doctrines of diathesis.

For some writers diathesis was nothing more than a predisposition to this or that malady, for others it was itself an extremely chronic disease which like the hidden mycelium of a mushroom bed, manifests itself here and there, and from time to time by outward signs. Others again gave a wider significance to the term as a liability to a group of allied affections, and spoke of an arthritic or a strumous diathesis. Some held that a diathesis might be acquired, but it was usually regarded as an inborn peculiarity. Lastly there have always been those who have looked upon the term 'diathesis' as merely a cloak for ignorance, a name masquerading as an explanation.

In medical writings of the first half of the nineteenth century the subject named diathesis and among its most exponents in this country were John A. Huxley and Thomas Laycock, who each had a wide influence in the Edinburgh school. The latter was claimed as diathetic diseases malady which we now know have hardly anything in common some of which are due to bacterial or protozoal invasion, others are due to the lack of some essential factor in the body.

Nor is it to be wondered at that the concepts of our fathers regarding the subject seem to us obsolete now when we read what they wrote upon it. It came to us in a fog for when their doctrines were formulated the theory of evolution had not yet emerged, the existence of chromosomes and the importance of the germ plasm were not suspected, the laws of heredity were just unknown, and hormones and vitamin had not been heard of. We who hold the keys which they helped to cut to fit, unexplored by them are well able to appreciate the pitfall which lay in their path.

The coming of cellular pathology and above all the growth of bacteriology and protozoology turned men's minds into other paths. Attention became concentrated upon the agents of disease rather than upon the constitutional factors which latter received but scant attention, the very conception of diathesis was discredited, and the word itself was relegated to the scrapheap of obsolete terms together with such words as "idiopathic" and "strumous."

Now once more the pendulum is returning from the limit of its swing, interest in constitution—which word has to a large extent replaced 'diathesis' and with a wider connotation—is reawakening more perhaps in other countries than in our own. A large literature in the German tongue has appeared in the past few years and to Naegeli's writings and to the work of Julius Bauer, a veritable storehouse of ideas and facts. I would express my indebtedness to American constitutional clinics are being established notably that of George Draper in which valuable work has already been done. In this country Hurst's *Role* and Ramsay's *Maintenance* have by their discourses quickened a new interest in the subject.

Despite the fact that in the *New English Dictionary* diathesis is defined as "a (permanent or required) condition of the body which renders it liable to certain special diseases or affections, a constitutional predisposition or tendency," we are little inclined to-day to admit a constitutional state or diathetic conditions, however long lasting which have been acquired and in this lecture I shall speak of inborn conditions only.

When I was honoured by the invitation to deliver this Huxley Memorial Lecture in Huxley's own medical school I determined that I would try to look at the doctrine of diathesis as it appears in the light of recent advances of science and to emphasize once more the importance of constitutional factors in connexion with the incidence and shaping of malady. With that aim in view I would ask you to detach yourselves as far as may be from the medical standpoint and to avoid for the moment the many sides in the struggle between man and his disease.

There are two main paths by which my subject may be approached, first by statistical and anthropometric methods on Caltonian lines. This method is being pursued in Draper's clinic. Draper who aims at approaching the subject from four different directions—physiological, psychological, pathological, and immunological—comes to the four parts of a Japanese research, although distinct form parts of a single problem. The second path is by study of particular examples. I will of the light which they throw upon the general problem. This might be styled an experimental method but the experimenter is not man but Nature. I will follow the second path that I invite you to walk with me to-day.

In pursuit of our inquiry we need to carry out the old brick very far to the chromosome into which in the work of J. B. Leathes, are packed from the beginning all that precedes if not our fate and fortune, at least our bodily character, ties down to the colour of our eyes. In the illuminating address from which I have quoted

Lenthes spoke of the chemical aspect of evolution as follows: "The deposition of matter in molecules or aggregates, unstable or incalculably variable, that has and retains the power of determining the deposition of matter not yet so disposed, in such a way as to conform to its own deposition, or to patterns which help it to exercise this power, is all that must be premised for the whole of evolution to follow." Such a conception would certainly not have been rejected by Huxley,<sup>15</sup> who as long ago as 1876 said that "to be a teleologist and yet accept evolution it is only necessary to suppose that the original plan was sketched out—that the purpose was foreshadowed, in the molecular arrangements out of which the animals have come."

It cannot fail to be that natural selection works through chemical as through structural modifications, nor can it be doubted that, as Huxley<sup>16</sup> maintained thirty years ago, the features in which an organism differs from type are foreshadowed in the germinal cells, and, indeed, in the complex molecules of which the germ cells are built up.

As evolution proceeds, from the single cell to the various of such units which constitute higher animals and plants, the somatic cells of which the various tissues are built up become specialized for the several purposes which they have to serve, the renal cells for their work and the hepatic for theirs, and in so doing lose at first part, and later almost the whole, of the power which the primary cells possessed of reconstruction and repair of tissues, such repairs as are possible are carried out by the underlying cells of the mesenchyme. Only the germinal cells retain the power of reproducing all the tissues and structures of the body, which renders possible the propagation of the species. Whatever may happen to the somatic cells affects the individual, but not the future of the race—just as in a hive the worker bees are specialized for the carrying out of their appointed tasks, but have no share in the continuation of the race, save in so far as they care for the fertilized queen, so may we think of the somatic cells as writing upon the needs of the germ plasma.

There is nothing at rest in the living cell, nor in the molecules of which it is composed, nor even in the atoms, with their restless electrons, which go to the making up of those molecules, and in the complex of physical and chemical changes which we call life there are infinite opportunities for departure from type. As evolution proceeds organisms are produced which differ in chemical structure as well as in form, until the proteins of a group of living things become so far differentiated that they behave as foreign proteins to members even of kindred groups. When that stage is reached interbreeding is no longer possible, the species has become established, and its main characters are thereafter maintained.

As the organism becomes more elaborated there are ever increasing opportunities of departure from type. As Andrewes says, "A chronometer can suffer from a greater variety of defects than an hour-glass."

Each one of us, and each such departure which he exhibits, is one of Nature's experiments. Huxley,<sup>17</sup> in an address delivered to the International Medical Congress in 1881, after speaking of the vital phenomena which furnish the normal and typical characters of the species, added: "Outside the range of these conditions the normal course of the cycle of vital phenomena is disturbed, abnormal structure makes its appearance, or the proper character and mutual adjustment of the functions cease to be preserved. The extent and importance of these deviations from the typical life may vary indefinitely, they may have no noticeable influence on the general well-being of the economy, or they may favour it. On the other hand they may be of such a nature as to impede the activities of the organism, or even to involve its destruction."

It is with unfavourable deviations that the student of diathesis is concerned, but if there were no beneficial ones there would be no evolutionary advance, progress could go no further, the species could, at best, be saved from regression. Unfavourable modifications tend to be elimin-

ated, because they diminish the capacity of the organism to conform to its environment, and among the factors at work in the elimination of the unfit none is more potent than disease.

A new departure may be both good and bad, and if the advantage outweigh the disadvantage it may persist. Thus, when man assumed the erect position, and gave up the hump-like support of the abdominal viscera which is an essential part of the vertebrate plan, he thereby laid himself open to a number of minor ills—varicose veins, herniae, and the like, but the loss was as nothing compared with the gain, which was no less than the mastery of inanimate Nature on this planet.

Modifications acquired during the lifetime of the subjects, as results of disease or accident, do not come within the scope of our inquiry. That they are not transmitted to future generations a great mass of evidence testifies, they concern the individual only, and not his family or race.

Mutations, the step-like variations which originate in the germ plasma, and are transmitted, are produced by addition to, subtraction from, or alteration in the factors of inheritance already present. The departure from type may be very slight, or so great as to justify the use of the term *per saltum*. Goodrich<sup>18</sup> pictures what may happen to a complex molecule by removal of an atom, or of an atomic grouping, and adds, "in some such fashion do we imagine the changes occur in the factors of inheritance."

Lenz<sup>19</sup> carries the same conception a step further, and suggests that on a physico-chemical view of the germ plasma it is not to be expected that it will undergo smooth, continuous changes, but rather that it will be changed in lesser or greater steps, by the removal or shifting of the positions of molecular groupings. I would venture one step further still, and point out that we know, from experimental breeding of *Drosophila*, that the same mutation may originate over and over again, in the same species, just as a given chemical reaction will be repeated as often as the necessary conditions are reproduced.

Some mutations are dominant in Mendel's sense, and others recessive, but the study of human inheritance on Mendelian lines is beset with many difficulties. For obvious reasons the proportions of normal and abnormal members in the small human families supply little reliable information, as compared with that afforded by the experimental breeding of plants and animals, and we are often driven to apply the knowledge which has been gained by such breeding experiments to human problems, despite the lack of numerical checks.

Thus albinism, a mutation common to man and lower animals, is shown by experimental breeding to be recessive, and the peculiarities of its incidence in man supply clues for the recognition of the recessive character of some other human mutations. We learn that a peculiarity which is wont to appear in several children of normal parents, and with quite unusual frequency in children of consanguineous matings, may be regarded as recessive. For, as Bateson pointed out long ago, a rare recessive character, to which both parents must contribute recessive genes, is far more likely to appear when parents are both members of a family which carries the recessive factors, and the rarer the anomaly the higher should be the proportion of such matings among the parents of those who exhibit it. Again, mutations which are transmitted through normal females to the males are regarded as sex-linked recessives.

On the other hand, a character which is handed down in a family from generation to generation, and affects a large proportion of its members, is probably dominant.

Some of the inborn and hereditary characters which originate as mutations are more obviously concerned with the structure of parts and others with their functions, and it will be convenient to consider them under these headings, but not to assume a sharp line of division between them. For if, indeed, all the potentialities of the future organism reside in the molecular arrangements of the germ plasma, we must assume that even structural anomalies have a molecular basis, and how greatly chemical factors may modify form is revealed by the study of



disturbances of the endocrine balance. Keith<sup>12</sup> has emphasized this, and not a few zoologists, notably Goodrich,<sup>13</sup> are ready to admit the influence of chemical factors upon animal structure, but we must be careful not to press such analogies too far for it is obvious that the malformations by defect or excess have little in common with the modifications of facial contour and bodily proportions which result from endocrine disturbances.

No two individuals of a species are exactly alike, and even monozygotic twins differ in their finger prints nor are the differences chiefly in structure. We human beings differ in a thousand ways—in form, in chemical life, in mental methods. Of many of the minor differences few of us are even aware and each of us is apt to think of himself as normal. In a mixed population such as ours all sorts of factors contribute to the average of the race and to its morbid liabilities. The time of life is not without influence the child has his own special maladies and his points of least resistance are not the same as those of the adult. Old people, too, have their special diseases and age confers a comparative immunity from other. Indeed we are faced with a problem of great complexity when we attempt to unravel the strands which go to the making of men.

Structural mutations are of all degrees. Some are doubtless improvements some may be classed as unimportant others, again, are obviously detrimental and some the most extreme are incompatible with survival. Minor malformations may be harmful in virtue of disfigurement which they cause or because they increase the risks of accident. When an important organ is malformed its function may be impaired and so life may be endangered as witness the graver cardiac defects and cystic disease of the kidneys. Once more a malformed part may prove a *locus minoris resistentiae* malformed cardiac valves are specially liable to be the seats of malignant endocarditis.

It would be easy to collect a number of examples of morbid effects of structural malformations but a very few must suffice. In his book *The Pedigree of Disease* Hutchinson cites spontaneous dislocation of malformed joints and the liability to intussusception which results from caecal mesenteric. Of far wider importance is the view put forward by Hurst who attributes the rarer appearances of the so-called hypertonic and dropped stomachs with the attendant differences in the gastric secretion to differences in the shape and length of the stomach. But it is something more subtle than the influences of anatomical anomalies which we have in mind when we think of diathesis or of constitutional liabilities to disease and I do not propose to dwell further upon that aspect of the subject to-day.

In the borderland between structural and functional anomalies lies a large group of diseases of which I propose to speak under the name of tissue defects seeing that they exhibit changes not in any individual structure or organ but in special tissues. To one large and important group of these often spoken of as heredo-familial diseases of the neuromuscular system Gowers<sup>14</sup> whose teaching was wont to suggest to his hearers fresh outlooks and new lines of thought assigned the name of 'abiotrophies'. Although inborn the maladies in question do not as a rule show obvious signs until after several years of life and thenceforward are progressive. Gowers pointed out that in some of them at least the nerve or muscle cells wither away like plants without soil, to be replaced by fibrous tissue—'tissue weed,' as he called it.

Some of the abiotrophies are dominants such as Friedreich's ataxia some are recessives and pseudo-hypertrophic muscular dystrophy is a sex-linked recessive transmitted by normal mothers to their sons.

The period of onset of such maladies is usually much the same in members of the same generation of a family, but there is a tendency for the onset to be earlier from generation to generation. As Mitt suggested in another connexion diseases which so behave tend to eliminate themselves—a virtuous circle, so to speak—but a sex-linked recessive ensures its own persistence.

The boundaries of the several diseases of the group are

not always clearly defined, and examples of more than one abiotrophy are met with in different members of the same family. In some cases or the myopathies defect of individual muscles are met with and in others areas of change have been found in muscles not obviously involved. Of less importance save as indications of structural instability are the miscellaneous malformations which are occasionally met with in association with an abiotrophy.

It has been pointed out by Martin, Julius Bauer and others that the abiotrophies are not limited to the neuromuscular system and are probably justified in including in this class certain maladies based upon hereditary abnormalities of the blood corpuscles red and white and especially congenital haemolytic jaundice. The brittleness of the red corpuscles in cases of that disease was first observed by Chauffard and is well known. Nageli also has observed that the erythrocytes which in the microscopic field appear to be microcytes are found nevertheless to exceed normal corpuscles in volume whence he concludes that they are more globular in form.

Nageli regards the abnormality of the red corpuscles as the primary feature of the condition which may only manifest itself by obvious signs under the influence of external stimuli such as infection or toxic agents. The haemolysis and splenic enlargement he regards as secondary phenomena and it is a well known fact that the fragility and abnormal form of the red corpuscles persist in greater or less degree after removal of the spleen. It will be mentioned however that there are those who hold that the primary trouble is in the spleen and that the abnormality of the corpuscles is secondary thereto. Congenital haemolytic jaundice is a typical family anomaly and behaves as a dominant Mendelian characteristic.

As tissue defects may also be classed certain conditions characterized by fragility of the bones. The warning signal of the best known of these is a blue colour of the sclerotics owing to a defect of the fibrous tissue of the sclerotics which allows the choroidal pigment to show through it. The anomaly has been met with in large number of members of the affected families and in successive generations. As they grow older the affected members who generally give a history of repeated fracture of bone on light provocation tend to develop osteosclerosis—an interesting example of the development of a progressive disease of sclerosis in the subjects of an inborn anomaly. The fragility would not appear to be due to any deficiency of lime salt in the bones but to a defect of the mesenchyme with a disturbance of connective tissue formation. More recently it has been revealed by x-ray examinations that in certain subjects the fragile bones cast uniform dark shadows as if solid throughout, as indeed they are in some cases. The fragility is ascribed to loss of elasticity and perhaps to loss of tubular structure. The condition which behaves as a recessive character and has been met with in children of first cousins with undue frequency is probably progressive, for various degrees of obliteration of the medullary cavities have been described. In advanced cases enlargement of the spleen and lymphatic gland has been observed, presumably to compensate for loss of bone marrow.

Of even greater interest from our point of view is the strange malady known as myositis ossificans progressiva. This too, seems to be an anomaly of the mesenchyme and Bauer suggests that the cells of the mesenchyme remain in the subjects of this disease the power which they normally lose of producing bony tissue. The bone formation occurs in the connective tissue in and around the affected muscles. Two features of myositis ossificans call for special mention. The first is the association with it, in more than 70 per cent of all cases, of congenital deformities of the great toes and in some cases of the thumbs also. The nature of the deformity is not so constant as its seat but the digits are usually shortened by suppression or a phalanx or by union of phalanges. This association is obviously some thing quite different from the occasional coexistence of miscellaneous malformations frequently met with but it is difficult to see what is the nature of the link between the malformation and the malady. The second point is early or recent or both primary transmission of myositis ossificans. A few instances

of its transmission are known, and in one remarkable case a father who had the digital deformities, but no myositis, had a son with identical deformities who developed myositis in childhood.

The tissue defects under discussion bear eloquent witness to the importance of constitutional factors in disease, but they have not in the past played any part in discussions on diathesis. Many of them, indeed, were little known, if known at all, when the earlier writers were occupied with the subject. They teach the important lesson that diseases which develop in later childhood, or even during adult life, may have as their underlying causes inborn anomalies of the germ plasma which may have been completely latent in earlier life, or may have shown a warning sign, such as blue sclerotics or the digital deformity of myositis ossificans. Nevertheless they do not conform closely to the conception of diathesis, they are, on the surface, too inevitable.

In the abiotrophies the tissue defects are the most potent causative factors, and the influence of external exciting causes is minimal. It may be that, as Rosenbach suggested, the vitality of the tissues involved is so low that even normal function overrules it. Such evidence as we have up to now as to the condition of the affected cells is almost wholly histological, and we do not know whether the trouble be due to some defect in the constitution of the cells themselves or to some abnormal substance in solution in the body fluids. The former appears the more probable explanation, and we possess one clue which may prove to be important—namely, the brittleness of the red corpuscles in congenital haemolytic jaundice and their peculiarities of size and form. These are clearly independent of the medium in which they are suspended, and as far as I am aware it has not been ascertained whether normal red corpuscles are rendered brittle by contact with the serum of a subject of the disease.

On the other hand, it can be established beyond doubt that in individuals whose metabolic processes are in some way deranged, the presence in the tissues of an abnormal product of metabolism or of a normal product in undue quantity, may give rise, under adequate provocation, to morbid effects of greater or less gravity. Here, indeed, is realized the underlying idea of most of the earlier conceptions of diathesis or predisposition, is of an intermediate state which, in the words of Germain Sézary, "n'est pas encore la maladie—mais qui n'est déjà plus la santé parfaite"—and which Jonathan Hutchinson described as "a condition of prolonged peculiarity of health, giving proximity to definite forms of disease."

In a lecture delivered as long ago as in the year 1855, W. H. Walshe<sup>4</sup> spoke of diathetic diseases as "apparently generated and sustained by an intrinsic blood poison, resulting from some perversion of the nutritive processes of the individual," a suggestion much in advance of the time at which it was uttered, but in the list of diathetic diseases which followed there were no signs of such prescience. In it were included maladies of almost every class.

If we are prepared to look upon the life of animals and plants as a complex of physical and chemical processes, and to recognize the importance of chemical factors in evolution, it was emphasized by Leitch in a recent address, we are bound to admit that the morbid predispositions of human beings depend, to a large extent, upon their chemical build and chemical life. Nor can we escape the conclusion that, seeing that differences can be shown to exist, some obvious and some subtle, in the metabolic processes of creatures of different genera and species, there must be differences, of like kind but of less degree, between the individual members of a species.

We should expect chemical mutations to be less obvious than those of form, but it is probable that they are not less numerous. A systematic search for such mutations would involve elaborate metabolic studies of large numbers of individuals, and much of the labour expended would probably be in vain. But just as one who carries out a systematic scrutiny of emergency notes would not fail to pick out a note with a wrong watermark, or one printed

upon discoloured paper, so some metabolic anomalies attract attention because they give some conspicuous sign, or, as in the case of pentosuria, are detected by response to some routine test in general use.

Some of the more conspicuous anomalies give rise to serious troubles sooner or later, and by the study of the more obvious errors of metabolism we gain insight into the possible effects of such deviations from the specific type, and by learning how a lesion or syndrome is produced in the few cases we may gain a notion of the mode of its production in the many.

In most instances the victims of metabolic anomalies show no morbid signs until the appropriate exciting cause comes into play, just as a sufferer from Raynaud's disease may spend his life in the tropics, unaware of his infirmity, which is revealed when he comes to a cold climate.

Among the diathetic diseases enumerated by Walshe cystinuria has a place. This anomaly had been known for half a century previously as a cause of calculus formation. We now know that cystin is one of the most important of the fractions of which protein molecules are built up—the bearer of the sulphur which they contain. Cystinuria is the sign of an error of protein metabolism in which other protein fractions are involved. A subject of this anomaly may live his life in ignorance of his infirmity, whereas a brother similarly affected may suffer almost continually from calculous troubles, often in an aggravated form. Cystin, in virtue of its insolubility in acid urine, is eminently suited to form calculi, and, given the necessary exciting cause, probably an infection of the urinary tract, the cystinuric will form stones. The presence of the crystalline deposit may favour the infection of the tract. Apart from this the anomaly has no obvious ill effects, even when tyrosine, leucine, xanthine, and putrescine are being excreted together with cystin.

Gout may be regarded as a diathetic disease *par excellence*, and it has found a place in all lists of such maladies. That it is hereditary has been known from ancient times, and it manifests itself by recurrent paroxysms, separated by intervals of apparent health. Like cystinuria gout may be described as a tragedy of insolubility, for it is hard to doubt that the tendency of uric acid to be deposited in the tissues as crystalline sodium urate is the leading factor in the attacks, as witness the tophi so often seen in the ears of its victims, and not seldom in and around their joints. Many factors contribute to provoke the attacks, such as seasonal influences, indiscretions of diet, overstrain, and injury, and the seats of the lesions are determined by traumata recent or remote, and even the special liability of the toe joint is probably due to the repeated mechanical insults endured by the only joint upon which we press in walking. Gout in a hemiplegic patient attacks the joints of the paralysed limbs.

In some members of gouty families very trifling provocation suffices to determine an attack, whereas in the immune a flagrant combination of all the exciting influences is powerless to do so.

The pathology of gout is hardly less obscure to-day than when my father found uric acid in the blood of gouty subjects eighty years ago. The majority of those who have worked at the subject hold that the underlying factor is an error of purine metabolism, but as to the nature of that error they do not agree. Others still maintain that the primary fault is one of excretion of uric acid due to a defect of renal function. On analogy the former explanation appears the more probable, but the evidence for renal origin cannot be dismissed lightly. It is a well known fact that the excretion of endogenous uric acid which is independent of diet, varies rather widely in different human individuals, and a systematic study of the amounts of uric acid in the blood and urine of children of gouty parents should yield interesting results. This much is certain, that in gout we are confronted with a highly hereditary malady, presumably based upon an inborn defect, the manifestations of which seldom appear before middle life.

The familiar osteo-arthritis of later life, which appears as the hip-joint disease of elderly people, Heberden's nodes, and the like, is often ascribed to an injury, or severe wear

and tear and in infection may be a contributory factor. In the great majority of instances there is no obvious underlying cause but in a few instances, at least the primary cause is an error of metabolism. Alcaptonuria the rare hereditary error of protein metabolism which is characterized by the presence in the urine of an aromatic acid, homogentisic acid derived from tyrosine and phenylalanine, was long thought to entail no evil effects but we now know that at the age of about thirty years the subjects of this anomaly show signs of blackening of cartilage and later in life they develop osteoarthritis. In these cases the articular disease shows peculiar features such as a pronounced stoop due to implication of the spine and a characteristic gait which are sufficient in themselves to rule out all other causes. In some families, notably one which Umber has described the joint trouble picked out the alcaptonuric members, whereas the normal brothers and sisters escaped. Here we have still more conclusive evidence that the morbid effects of an inborn error of metabolism may be very long postponed.

To take a more example. It is a familiar fact that individuals of the human race differ widely in sensitivity to light and other forms of radiant energy and that there have been evolved protective measures such as pigmentation, and to a less extent, linsities. Whereas the available evidence shows that exposure to light is a wholly beneficial, we know also that in certain cases exposure to light gives rise to diseases of the skin, and even of the deeper structures too. It has been shown moreover, that the introduction into the tissues of certain pigments, for the most part fluorescent substances, of which eosin is one may render an individual acutely sensitive to light. The pigments of the porphyrin group possess, for the most part, this property and such a pigment is present in traces, in the tissues and excreta of normal men. It is a tempting hypothesis that the traces may play an important part in connexion with the physiological actions of light and of ultra-violet rays.

In rare individuals porphyrins are present in excess and are excreted in abundance in the dark red urine and in the faeces. The bones become deeply stained, and the teeth also in some cases. Such haematomorphosis is congenital and recessive. Its victims are pitifully hypersensitive to light. When exposed to bright light they develop a skin eruption known as hydroa vacciniforme which produces deep scars, and brings about grave mutilation by destroying the senses of sight, and even trouble in deeper structures such as rigidity of the digits and deformity of the hand. All the evil effects may be avoided by protecting the patient from light.

It seems certain, on the other hand, that haematomorphosis is not the only cause of hydroa vacciniforme nor even its commonest cause, but it is significant that when cases of that affection are collated the recessive mode of heredity of the whole series closely resemble those of the porphyrinurias alone. It seems probable that in the cases without porphyrinuria the underlying cause is some other metabolic derangement, or even several such and that in the sensitivity of haematomorphosis to light we have a special illustration of a law of wide application.

In the conditions which have been referred to there is present in the tissues some unusual chemical product or a normal metabolic product in excessive dose in consequence of an abnormal arrest of metabolism which may be probably due to lack or some individual enzyme, the task of which remains undone. But just as lack of a vitamin or a hormone may bring about untoward results so it would appear that the mere absence of an enzyme may in itself be the underlying cause of morbid developments. Thus a disease probably results from the lack of the enzyme which brings about the formation of melanin but a much more striking example is afforded by that grave and remarkable disease, haemophilia, a typical sex-linked disease the central cause of which appears to be absence of a coagulative factor.

Hurst has suggested that constitutional achlorhydria which is not infrequently found in young children tends to run in families, and was detected by Bennett and Pale in four out of a hundred healthy students, is due to an inborn

error of secretion and I have little doubt that, as time passes the part played by hereditary chemical defect in providing the substructure of disease will prove to be much greater than in the present state of our knowledge it can be shown to be. On the other hand we need to beware lest such phrases as "error of metabolism" used without real justification, may become convenient cloaks for our ignorance.

The further we pursue the study of diathesis the more clearly do we realize its many-sidedness. New facts press at themselves at every step. On some of these the passage of time forbids me to say anything and to others I can only allude.

For example, it is by no means easy to draw a dividing line between diathesis and idiosyncrasy, and into the category of idiosyncrasy falls the remarkable hypersensitiveness to particular proteins which is so clearly linked up with the excretion of uric acid, the erythematous intermittent hydrarthrosis, and some forms of asthma.

Again I have said little of the converse of diathesis, the benign mutations which favour the individual in the struggle for existence. Difficult as it is to detect an error of the body chemistry by its evil effect which may be long postponed, it must needs be more difficult to detect the one which are harmless or have only good effects. Yet we can see how such favourable mutations have been utilized in the building up of the defensive mechanisms which are ready to be brought into play to counteract a poison introduced and which confer upon some individuals and on the members of certain families an inborn immunity partial or complete, from various infectious maladies. Nor have I said anything of what Draper calls the psychological part, the profound influences exerted by and through the nervous system in connexion with what are spoken of as functional maladies and the instability of the nervous system which is not uncommonly an inherited quality.

Indeed, this lecture of mine is like a jigsaw puzzle, some bits of which have been pieced together into groups which foreshadow the picture of which they form parts. But if it shall have served to throw any light upon the factors which underlie the conception of diathesis or shall help to reawaken interest in the constitutional factors which play so important a part in the incidence and shaping of disease, it will have attained its aim. Nor has it been wholly divorced from the practical side of medicine as the healing art for it tends to reveal that the better we understand the susceptibilities of our patients the better we shall help to stay what Francis Galton called "the steady and pitiless march of the hidden weakness in our constitutions through ill-health to death."

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## THE ACTION OF EXPECTORANTS.

BY

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When we take a broad survey of the field of therapeutics it would be fair to say that, though from one year to another there may be no dramatic advance, yet in the course of a decade or so, especially during the last half-century, there is hardly any branch of therapeutics which fails to show steady progress. This may be either in the way of discovery of new remedies, or in the more full and precise knowledge of the action and uses of older ones. When we think, for example, of such important groups as local and general anaesthetics, hypnotics, antiseptics, and specific remedies, instances of real advance in a few years spring to the mind. But there is one department of therapeutics in which little forward movement has been registered, not only in a decade, but hardly any even in the last half-century, and that is the group of expectorants. Indeed, I am not convinced that we are even so skilled in the use of expectorants as our grandfathers were, for, with less to learn, they had more time—and I sometimes think more enthusiasm—for observing at the bedside the action of drugs.

It may be profitable first of all to consider the reasons for this peculiar position in which the expectorants are placed. The first reason is the difficulty of measurement. When an effect can easily be measured, then advance is likely to be rapid. If it were as easy to determine the quantity of bronchial secretion as it is to measure the amount of urine, there would be by this time no such vagueness in regard to the effect of expectorants as still exists. In a case of bronchitis the amount of sputum may vary from time to time. It is difficult to get a control, and it is impossible to separate the sputum from the bronchial discharge. But in spite of these difficulties I venture to think that something more might be attempted in the way of actual measurement of the amount of sputum, so as to dispel the present confusion as to whether a substance increases or diminishes the bronchial secretion, or to discover in what clinical conditions an increase is certainly brought about, and how long it lasts. The chief clinical difficulty, however, is the absence of quantitative measurement.

But often where the clinical difficulties are great the problem can be solved by experiments on normal men or on lower animals. Here again, however, there are unusual obstacles in the way of estimating the effects of expectorants. For example, a distinguished physiologist, who had taken large quantities of ammonium chloride, mentioned to me that he had not observed any expectorant action from it, this is, perhaps, not so difficult to explain even if ammonium chloride has an expectorant action in disease. Normally we are quite unconscious of the existence of our bronchi. There is just sufficient secretion of the mucous surface to keep the passages moist, any excess of secretion is carried up by the cilia and swallowed. A healthy person need not cough, so that unless the secretion is so copious as to require coughing up—that is to say, is interfering with the channel—it is doubtful whether an increase of secretion would be brought to consciousness. On the other hand, in a patient with an inflamed bronchial mucosa with viscid sputum producing cough, a slight increase in the amount of secretion with lessened viscosity might enable the bronchi to be cleared at least temporarily, and the effect of an expectorant which would produce no noticeable effect on a normal person may be immediately discernible and grateful to a patient in such a condition. Normal people are therefore not good subjects for testing the action of expectorants. In laboratory experiments some of the difficulties met with in clinical observations can be overcome, but new ones are introduced. Measurement of the amount of bronchial secretion is easier. Such methods can be employed, for example, as applying small measured and weighed pieces

of absorbent paper to the trachea and comparing the relative increase in weight before and after the administration of expectorants. But other factors have to be reckoned with—for example, differences in reaction between a normal and an inflamed bronchus, the complicating effects of anaesthetics, and the differences between various species of animals. In brief, there are difficulties in the way of exact estimation of the action of expectorants, whether the experiments be done on normal or diseased persons or on laboratory animals.

Even the definition of expectorant is unsatisfactory. From its derivation the word originally meant something that aids the expulsion of a discharge from the chest, but it has come to be applied loosely to substances which either increase or decrease the discharge, and the word has also special associations with the treatment of cough.

## THE PHYSIOLOGICAL BASIS OF EXPECTORANT ACTION.

In order to understand the action of expectorants it is necessary to appreciate what is the physiological mechanism for protecting the air passages. As is usual with mucous membranes there is a double mechanism for this—a motor and a secretory. In the case of the thoracic air passages, with which only we are immediately concerned, there is an elaborate and highly ingenious motor mechanism, there are, in fact, three mechanisms. First, there is the propulsive movement of the cilia which line the mucous membranes, secondly, there is the co-ordinated reflex expulsive mechanism of cough, and lastly, there is the peristaltic movement of the muscle of the smaller bronchi. Now each of these motor mechanisms has its definite part to play in the scheme, the failure of one renders the whole mechanism defective, though not inoperative, because their activities overlap. They perform somewhat different functions, and are called into play under different conditions.

Let us take first the patient, continual movement of the cilia. The trachea and bronchi are lined with ciliated epithelium down to, but excluding, a short length of the terminal bronchioles. I remember, as a medical student, thinking that the propulsive action of microscopic cilia was one of those mythical forces that operate only in textbooks. It required only a slight experience of ciliary movement to alter this opinion. A class demonstration by Professor Schafer, in which was shown, projected by lantern, a piece of cork swept on by the ciliary movement of a strip of frog's gullet was an awakening and convincing demonstration of the power of ciliary movement. If properly aligned, a small strip of ciliated epithelium can be made to rotate a revolving drum. The ciliary movement is, in fact, a powerful propulsive movement, and it is this motor mechanism alone which normally deals with removal of bronchial secretion, cough is an exceptional and reserve mechanism. Continual secretion of mucus is necessary to keep the air passages moist, but with normal variations in this secretion the ciliary movement is competent to deal. It acts like a moving staircase, continually carrying up any excessive secretion till it reaches the throat and is swallowed. It has been calculated that this movement may propel solid particles at the rate of one inch a minute. The speed will vary with the size of the particles and with the viscosity of the secretion, but, under favourable conditions, the ciliary movement is able to bring up material from the very depths of the bronchioles in a few minutes.

A description of the expulsive mechanism of cough is unnecessary here. One point, however, which it is important to bear in mind is that the expulsive effect of cough is greatest nearer the larynx, and gets less nearer the lungs. Indeed, it has been stated that the expulsive force of cough affects the smaller bronchioles very slightly, if at all. It will be seen, therefore, that the smaller branches of the bronchioles, those which enter the lung itself, are in a perilous condition—they have no cilia, they are not reached by cough. It is here that the third motor mechanism comes into play. A definite peristaltic movement of bronchial muscle, as contrasted with a mere alteration in tone of this muscle, is supposed to be a property especially present in the muscle of the finer bronchi. Where cough and cilia fail this peristaltic movement takes their

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place. If this be so there is here revealed, as in all the regulating processes of the body, an extraordinarily ingenious and concerted mechanism.

In regard to the second protective mechanism—the bronchial secretion—this is necessary to keep the bronchial surface moist and to dilute irritants, and for this purpose the bronchial mucous membrane is supplied with a great wealth of glands. We seem to have little knowledge as to the regulation of this secretion under normal conditions—as to whether, for example, the glands are capable of eliciting the consistency or the composition of the secretion or whether this remains uniform. If the latter, then the consistency will subsequently vary, for example, according to the extent of evaporation of water, and consequently with the dryness of the air or the quickness of respiration. It may be conjectured that if this evaporation be excessive and an undue acidity of the mucus result this acidity will irritate the mucous membrane and cause a reflexly increased secretion. So could the consistency of the secretion be regulated.

This motor and secretory mechanism is in great part regulated by the nervous system. Efferent fibres of the vagus pass centrally from the mucous membrane, efferent fibres of the vagus pass down to the bronchial muscle and to the secretory glands. The bronchial muscle is also supplied by efferent fibres of the sympathetic. These afferent and efferent fibres converge upon a somewhat hypothetical cough centre which is related to, if not actually an integral part of the respiratory and vomiting centres. The latter are apparently not under direct nervous influence.

It is beyond the scope of this paper to enter fully into the nervous control. It will suffice for the present purpose to recall that under physiological conditions the movement of the cilia together with a continual and regular secretion of the glands is necessary for maintaining the integrity of the bronchial mucous membrane. Under abnormal conditions when the mucous membrane is irritated by noxious particles or by too profuse or too viscid secretion this irritation stimulates the cough centre and there results reflexly either cough or increased secretion or peristaltic movement of the bronchioles or some combination of these. It is in consonance with the view that the expulsive effect of cough is effective mainly in the upper air passages that it is elicited so most easily by irritation of the mucous membrane of this area.

#### METHOD OF ACTION OF EXPECTORANTS

I propose to deal almost exclusively with the methods by which the bronchial secretion can be increased by drugs, especially with a view to suggesting reasons for some clinical differences in the action of expectorants of which no explanation seems to have been given. Expectorants may increase the bronchial secretion by acting in one or a combination of four different ways depending upon their site of action. Upon these differences can be based a physiological classification of them. They may act (1) reflexly, (2) by stimulation of the vagus centre, (3) by stimulation of the secretory (vagal) terminations, (4) by direct stimulation of the secretory glands. This classification is not to be regarded as a mere academic curiosity. It is upon differences in site of action that the superior suitability of certain expectorants for certain conditions largely depends.

##### 1 Reflex Expectorants

A large number of drugs which have no common pharmacological property other than that of being gastric irritants have in the course of time come to be used empirically as secretory expectorants when given by the mouth. Many of these drugs have been used as emetics in larger doses. That there is some association between an emetic and an expectorant action has been known for a century or more. So far as I can find Christison is the first to give something of an explanation of this when he stated (1842) in regard to ipecacuanha that "the pulmonary mucous membrane would seem to be often stimulated to increased secretion by repeated small doses, although nausea be not produced probably in consequence of the lungs sympathizing with a gentle stimulus and increased secretion of the gastric mucous membrane."

A more modern explanation of this is that the increased secretion of the bronchi produced by ipecacuanha and other members of this group is a reflex, the afferent stimulus for which is the irritation of the gastric mucous membrane, the afferent path the sensory fibres of the vagus, the centre the vomiting centre (or possibly a centre for bronchial secretion) and the efferent path the efferent fibres of the vagus going to the bronchial glands.

What is a little unusual about this reflex is that normally the afferent stimulus for reflex bronchial secretion is irritation not of the gastric but of the bronchial mucous membrane. But it is a characteristic feature of vagal reflexes generally that the efferent side of a reflex can be discharged by stimulation of afferent branches of the vagus other than those normally concerned with the reflex provided that this abnormal stimulation is of sufficient intensity and duration. This as is well known is equally true, for example, of the cough reflex. Cough can be induced not only by the normal stimulus which is irritation of the tracheal or bronchial mucous membrane, but by irritation of other afferent branches of the vagus—as, for example, in the ear pharynx or pleura provided that it is of sufficient intensity and duration. A large number of expectorants belong to this group. Ipecacuanha, tartar emetic, ammonium carbonate, quill and senega all owe their expectorant action, at least in part, to gastric irritation.

I wish to consider in regard to this type of expectorant action certain points to which I have seen little or no reference made. It is well known that reflex bronchial secretion can be induced by any of these gastric irritants with doses which are insufficient to cause actual vomiting, but only certain emetics have come to be used as expectorants for example clinical experience has decided in favour of tartar emetic and ipecacuanha in preference to copper sulphate or zinc sulphate. This preference is not accidental. A reflex emetic must possess certain qualities if it is to be suitable for use as an expectorant and those qualities can be illustrated by a comparison. Copper and zinc sulphate irritate the mucous membrane of the stomach by combining with the proteins of the mucous membrane of the stomach. It is a rapid chemical action giving rise to a sudden and rather intense stimulation of the afferent nerve ends, emesis if it is to occur at all takes place rapidly. These emetics cannot be administered repeatedly as their chemical action would thereby cause damage to the gastric mucous membrane. The action of tartar emetic and ipecacuanha on the other hand is much slower but lasts longer. When for example they are used as emetics the onset of emesis may be delayed for fifteen to thirty minutes during which time sensations of gastric irritation are experienced and vomiting is apt to be repeated even with a single dose. Moreover when repeated small doses are given no serious gastric irritation is produced. It is fairly obvious therefore that there are two qualities which an emetic must possess before it can be of practical value in small doses as an expectorant. In the first place it must not produce so gross or intense an irritation of the gastric mucous membrane as to cause serious or permanent gastritis when given repeatedly. In the second place this milder gastric irritation must be sufficiently prolonged to cause a reflex bronchial secretion of sufficient duration to make the administration of the substance for this purpose worthwhile.

There is another point in regard to expectorants of this type for which some explanation may be found. The statement that ipecacuanha is a more effective and more certain expectorant in children than in adults has been made so often by different observers that it must have some basis in fact. The pertinent fact may be that the emetic centre in children is more active and more easily stimulated than in adults. It is plausible to suppose that the effects which accompany gastric irritation of this type and which are accompanied by reflex stimulation of the expectorant action is once well established more easily in children.

The opinion has been widely held that ipecacuanha and tartar emetic have compared with potent purgatives a superior merit in acute bronchitis. A reasonable explanation for this would be that the former have a more direct



action, which would be of value in lowering the temperature in febrile cases. This added effect is not produced by potassium iodide to the same extent.

### 2 Central Expectorants

Bronchial secretion can be excited not only reflexly but also by stimulation of the centre in the medulla. As has been already pointed out, this centre is closely associated with the vomiting centre, and therefore emetics which act centrally can be used, in subemetic doses, also as expectorants. Ipecacuanha probably acts to some extent centrally, and possibly also tarts emetic, though they act mainly by gastric irritation. Apomorphine, however, acts entirely by central stimulation, and it has been used to some extent as an expectorant. It has not proved therapeutically so valuable as ipecacuanha, probably because its action is too transient.

### 3 Stimulants of Secretory Nerve-ends

A number of drugs are known which stimulate the terminations of parasympathetic nerves, and consequently stimulate bronchial secretion, among a variety of other effects. The only one of this group which has been used therapeutically is pilocarpine, or its active principle pilocarpine. The employment of pilocarpine for this purpose has been almost given up. Great accuracy of dosage is required in prescribing it, otherwise so many unwanted effects, such as constriction of the bronchi, oedema of the lung, profuse sweating, and cardiac slowing, occur coincidentally with increased bronchial secretion.

It is possible, however, that there may still be a limited field of use for pilocarpine if the necessary accuracy of dosage could be attained. It has been observed that, especially in children, the bronchial secretion is increased by pilocarpine before other secretions, but, seeing that there are so many safer expectorants, this fact, even if advantage could be taken of it, would hardly outweigh the disadvantages of pilocarpine, unless possibly in one condition. When the central nervous system is profoundly depressed it is possible that reflex centres like ipecacuanha are relatively inactive, whereas the action of pilocarpine, which is independent of the condition of the central nervous system, would be unaffected. In these circumstances pilocarpine might be the most reliable expectorant.

### 4 Direct Stimulants of the Bronchial Glands

It was at one time thought that nearly all expectorants produce their effects by being excited through the bronchial glands and increasing their secretion during passage through them. The action of the majority of expectorants has now been otherwise explained, but certain expectorants still act in this way. The most important of these is potassium iodide. Iodides, like chlorides, are excreted by the bronchial among other glands, but the action of iodides on secretions is not simply due to salt action, as is shown by the fact that in iodism there is a pronounced swelling and increased secretory activity of the nasal, lacrymal, and bronchial glands such as does not occur with chlorides.

The action of iodides, like that of pilocarpine, on the bronchial secretion is independent of the condition of the central nervous system, and they are very reliable expectorants. There are two points in regard to the clinical use of iodides for which no entirely satisfactory explanation has been given. In the first place, the opinion is widely held that iodides are less useful expectorants for children than for adults. A partial explanation for this may be that iodides lack the diaphoretic and antipyretic action of the ipecacuanha group, an action which is of value in febrile bronchitis in children. Secondly, iodides are believed to have a peculiar value in some forms of chronic bronchitis. It is possible that this may be due, though exact measurements are wanting, to a more prolonged action than ipecacuanha, for example. It is also possible that in chronic inflammation of the bronchi iodides may have some action in resolving inflammatory deposits, similar to the known action of iodides in resolving gummatous material.

### OTHER CLASSIFICATIONS OF EXPECTORANTS

Classifications of expectorants other than that depending on their site of action have been used. There seems to be no known pharmacological justification for the attempt to divide them into stimulant and depressant expectorants. For example, senega and squill are classed with the former, and ipecacuanha and tartar emetic with the latter. It is also a tradition that the former are more suitable for subacute and chronic bronchitis, the latter for acute bronchitis. Senega, at least, appears to act exactly like ipecacuanha and tartar emetic, by irritation of the stomach. It has no known stimulant quality, and until it is shown to possess this it is misleading to call it a stimulant expectorant or to regard it as differing in respect of its expectorant action, pharmacologically or therapeutically, from ipecacuanha. The expectorant action of squill is likewise due mainly to gastric irritation, though it may act on the centre as well. But the term "stimulant expectorant" was applied at a time when very little was known of the pharmacological action of expectorants. Seeing that, nearly a hundred years ago, Christison pointed out that "there is not, as some still imagine, any sound reason for avoiding it [squill] in acute affections of the chest on account of its supposed stimulant operation," the time would seem to be ripe for abandoning this division of expectorants into stimulants and depressants, as also for challenging the idea that there is any known reason for avoiding squill or senega in acute bronchitis.

Where squill does definitely differ from these other three expectorants is that it has a digitals-like action on the heart and is also a diuretic. It is especially in chronic bronchitis that these added actions would be likely to be of value. It is not improbable, therefore, that it required its reputation in chronic bronchitis for these added actions, which would be more likely to be displayed in the days when it was given in larger doses. But to regard it as having some kind of expectorant action different from ipecacuanha would seem to be misleading.

It would be beyond the limited scope of this paper to attempt to deal comprehensively with the many facts of the action of expectorants in regard to which our knowledge is deficient. As has already been hinted, this deficiency is, broadly speaking, of two kinds. One is the want of satisfactory explanation for the employment of a drug which has been handed down to us from an empirical age, and the other is incomplete knowledge of the physiological actions of the drugs.

An interesting example of the former is the use of hydrocyanic acid in cough. Hydrocyanic acid has been used for a long time as a common ingredient in cough mixtures, with the reputation that it "relieves an irritative cough." Its value for this purpose is usually scoffed at in modern textbooks of pharmacology, and the criticism is probably well founded that the doses given are too small to have any direct effect, either on the cough centre or on the bronchial tubes. This, however, does not negative its employment, and a consideration of its pharmacological actions and the history of its therapeutic use will perhaps place it upon a more reasonable basis. It was originally given not by the mouth but as an inhalation, and in the *British Pharmacopoeia* of 1867 there was a "hydrocyanic acid" for the latter purpose. I believe that this practice originated in the use of inhalation of cherry-lime water. As hydrocyanic acid is known to exert a local anaesthetic action which is especially marked on mucous membranes, there is at least the possibility that, when inhaled, it would exert this action on the upper air passages. Here again we seem to have no measurement of the dilution in which an effective sedative action of hydrocyanic acid would be produced, but in any case the original use of hydrocyanic acid in cough was based upon a known pharmacological action. The practice of administering it by inhalation was given up probably from fear of accidents with so powerful a poison. But it still has a reputation for relieving cough when given by the mouth, and there is a pharmacological justification for its use even when given in this way.

As has already been shown, cough and bronchial secretion can be excited by irritation of afferent branches of the vagus other than those of the respiratory mucous membrane, if this irritation is of sufficient intensity or duration, and the action of a whole group of expectorants is due to this. If a pharmacological irritation of the gastric mucous membrane can excite cough or bronchial secretion, it is difficult to see how a pathological irritation of the same surface can fail to do so likewise. Indeed, a "stomach cough," especially occurring in children, in whom the reflexes are more active, was well recognized by older physicians. The action of hydrocyanic acid may well be that when given by mouth, it relieves cough by its anæsthetic action on the pharynx and stomach checking in fact the very reflex which ipæacuanha excites. It could thus clear itself of a reputation for uncertainty because, having no direct action on the respiratory system (in these doses), it would relieve cough only when this was secondary to pharyngeal or gastric irritation. Bruntton who after preliminary scepticism convinced himself of the reality of a stomach cough, gave a plausible explanation for the occasional relief of cough by sodium bicarbonate.

The action of hydrocyanic acid has been considered at some length because it warns against the condemnation of therapeutic experience merely because no obvious pharmacological explanation can be given, especially as this is to be remembered when this scepticism regarding the usage of our forefathers is accompanied by an ignorance of their methods of administration.

The deficiency of our knowledge of expectorants however does not lie only in an occasional failure to give a reasonable explanation of therapeutic usage. We have much to learn also in regard to the physiological side, and an important example may be given. As is now well known the vagus nerve supplies afferent branches not only to the bronchial mucous membrane but also to the bronchial muscle. A drug like pilocarpine may cause not only increased bronchial secretion but also constriction of the bronchi. We seem to have no knowledge however as to whether when bronchial secretion is provoked by reflex irritation—as for example by ipæacuanha—constriction of the bronchi is simultaneously produced. It may be that the secretory fibres of the vagus are more easily excited reflexly than the motor fibres. We have even less knowledge of the peristaltic movement of bronchi or whether this is excited by expectorants. These problems could seem to be not insoluble by pharmacological method. Christy has pointed out in regard to ipæacuanha that "expectoration is never so unequivocally augmented when nausea is also excited." This has also been emphasized by others. It may be that this merely signifies that with larger dose of ipæacuanha there is a more copious bronchial secretion. It may be, on the other hand that when doses large enough to produce nausea are given something else happens and it is conceivable that this additional factor is a stimulation of the motor fibres of the vagus with a resulting peristaltic movement of the smaller bronchi. The conjecture is excusable in so far as it affords a basis for experiment.

#### CONCLUSION

The object of this paper has been to attempt to give a clear exposition of the physiological basis for the action of expectorants and to summarize the present state of knowledge of secretory expectorants upon this basis. Suggestions have been made to reconcile the tenets of clinical experience with the known pharmacology of the drugs concerned where this reconciliation seemed possible. In many respects our knowledge of the action of expectorants and of their relative values in different conditions is far from complete. Many of the points in dispute can be decided only by observation of the effects of expectorants in patients with respiratory disease though the contribution which the pharmacological laboratory may yet make is not exhausted. Here however is a field of investigation for which ample clinical material is available. It is a field in which the general practitioner can play an important part.

#### DISCUSSION

Dr H. WHITPIDGE DAVIES (Leeds) considered that ammonium chloride acted only by its gastric irritant effect. When large quantities of this drug were taken in order to produce experimental acidosis the subject suffered from very considerable nausea. Moreover, Halliwell had stated that in order to avoid emesis in experiments of this kind it was necessary to take it in very dilute solution. After absorption ammonium salts were converted into urea and the amount which could be excreted into the bronchi must be infinitesimal.

Professor R. J. S. McDOWALL (London) said that it was well known by larvælogists that the bronchi contracted during inspiration. He thought that Professor Cunningham's suggestion of combining the use of expectorant with adrenaline might well prove most useful.

### DISCUSSION ON IMMUNITY

#### I.—CERTAIN PRACTICAL ASPECTS OF IMMUNITY

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In reviewing the great amount of work being carried out in immunology and its vast literature the general practitioner medical or veterinary has a right from time to time to ask of the worker in the field what advance in medicine have resulted—advances so generally accepted as to be reasonably considered permanent and which he must therefore be prepared to use in his practice. It is arranged that as Professor Browning is dealing with the more attractive explanation of the phenomena underlying certain aspects of immunity I should deal with what we may call the practical achievement of immunology in the recent past and also survey briefly the tasks just ahead, since comparative medicine is represented at this meeting by a number of the audience in human and veterinary medicine side by side may not be out of place.

In endeavouring to estimate future tasks and possibilities of advance what lesson can be learned from the immediate past. During the past century the death rate in many human diseases has been much reduced. The first spring at once to the mind in the case of infectious and zoonotic diseases—typhoid, cholera, diphtheria, scarlet fever, and plague. I do not know that a case can be drawn from veterinary epidemiology as a parallel.

If we endeavour to draw up an order of merit in the who have achieved this reduction we shall have to give the greater honour to the hygienist and sanitarian who insists on general measures of comparison and sanitation, fresh air, a decent allowance of space for the individual—that is the avoidance of overcrowding—and the guarding of food and water supply. Next in order would come the immunologist who prevents himself with such a syringe and needle. Last of all the clinician who after disease assumes the barriers set up by the hygienist and vaccinologist to-day treats his patients with more knowledge than of old and reduces the death rate of his virulent specific remedies such as antitoxin as in diphtheria or with greater clinical skill until he to-day expects a mortality not more than half that of an earlier day.

But still the contribution of these three groups of medical workers bear the same relative proportion in the advances of the future. In considering these lines of advance the teachings of general epidemiology and particularly those of experimental epidemiology and of the influence of resistance on susceptibility interfere on the mind. We are beginning to have a clearer idea of these points thanks to the work of Topley and other particularly of the exact way in which isolation of infected

\*Presented at a discussion at a joint meeting of the Society for Pathology and Bacteriology and of Comparative Pathology at the Royal Meeting of the British Medical Association on Edinburgh, June 27, 1907. Professor T. J. Macleod was in the chair.

groups of people and the division of these groups into small units may control infection.

The condition of nutrition of the animal exposed to infection may be of at least as great importance as the "virulence" of the threatening organism. To judge from our own experience over some years, it is almost capable of direct proof that a stock of guinea-pigs, for instance, with certain potentially pathogenic bacilli present in their intestinal flora, and therefore in their surroundings, may remain healthy and not show an outbreak of the disease in question until the content in vitamins, salts, etc., of their diet be reduced beyond a certain point, or their living conditions be made unsuitable by exposure to extremes of temperature, uncleanliness, etc. Present evidence suggests that the outstanding advances of the future will come more from the immunologist than from the sanitarian or hygienist.

We are perhaps apt to forget how big a part the man with the syringe and needle already plays. Some striking figures can be gleaned from recent veterinary literature. Thus we find that probably upward of two to three hundred thousand pigs are injected yearly on the Continent with swine fever serum, the number in the United States of America being apparently greater, in Holland and California alone probably half a million fowls are vaccinated against avian diphtheria in a year of undisturbed season. East Africa and India last year used between four and five million doses, in one year about two million dogs in America and Japan were vaccinated against rabies, eight million cattle were tested last year in the United States with tuberculin. The only large figures in human medicine that may here comparison be the millions vaccinated with the various typhoid vaccines during the war and those protected against tetanus with serum, and the 500,000 children in the United States who have been tested by the Schick method or immunized with diphtheria prophylactic.

If, then, we agree that the future is largely with the immunologist or vaccinator armed with syringe and stainless steel needle, we may well consider what he is to inject and how he may best inject it.

#### "Bacterial Vaccines"

In human medicine we may expect universal acceptance of the statement that immunity by thorough vaccination can be conferred on those brought into contact with typhoid and the paratyphoid fevers, bubonic plague, probably cholera and dysentery, and possibly, under certain circumstances, pneumonia, in veterinary medicine—anthrax, blackleg, chicken cholera, leptospiral jaundice, and haemorrhagic septicaemia, and probably swine erysipelas and avian diphtheria or "roup."

How best can we immunize in these diseases—with live or dead vaccines, at what intervals? For human work living or "attenuated" living vaccines have been used, but have gone almost wholly, and probably permanently, out of use. Presumably, as recently ably argued by Ledingham, the living bacillus will produce a higher immunity than a dead one, and perhaps the ideal vaccine would be a certain non-pathogenic strain. But in human work the tide has set strongly against living vaccines, because of the obvious danger of the non-pathogenic agent becoming pathogenic.

In veterinary work this same danger is well recognized. The only living bacilli widely used are those for swine erysipelas, contagious abortion of cattle, and "blackleg" of cattle and sheep. We must freely admit that we do not know what is the best method of using these agents. An examination of many of the commercial swine erysipelas vaccines available reveals a wide difference in bacterial content. The wisdom of vaccinating against abortion is much debated. Some authorities maintain that dead vaccine does not give sufficient protection to be of use. Another branch of the living vaccine because it may introduce exact infection and abortion into a herd previously free. A longer action than in the United States of a bacillus apparently that in chlo. of pathogenicity may help in solving may have some relation present it must be freely confessed similar to the known so much that we must wait until gummatous material as ripe judgement. The plan States of trying to build up ous exclusion of "retectors" will

be watched with interest. For many years "blackleg vaccines" containing live spores of *B. chauvoei* were used. Of late bacteria-free "vaccines," the filtered muscle juice of artificially infected cattle, or the simple filtrate from a culture of the organism, have come widely into use.

Various living "non-pathogenic" cultures of *B. tuberculosis* have been used during the past two decades. The latest is BCG, an "attenuated" strain used by Calmette and Guérin, it is believed by these workers to be completely non-pathogenic and to possess considerable immunizing power. Although much evidence in its favour is being brought forward on the Continent, the efficiency and safety of this vaccine have not been widely accepted in Britain or America. Kraus and Gerlach in Vienna, and various speakers at the recent Russian congress, sound a note of caution. Until we begin to have some understanding of the immunological relation of tuberculin to tuberculosis comparable to our present conception of the relations between toxin and antitoxin in diphtheria, one venno to progress in our attack on this disease remains closed. It is curious that ordinary "exotoxic toxins" of diphtheria, tetanus, etc., are toxic for the normal as well as the infected animal, whereas tuberculin, of which 0.1 ccm. will readily kill a tuberculous guinea-pig, is innocuous to healthy animals in doses fifty times as large. A clear understanding of the "tuberculin" reaction would probably give us the key to much.

We have examples of the successful use of filtrates of bacterial culture in Dick toxin for immunization in scarlet fever in human medicine, and of filtrate ("artificial aggrassin") for immunization against blackleg in cattle. Filtrate is also used for protection against braxy, the winter disease of sheep caused by *Vibrio septique*. Whether the braxy filtrate can be made of such antigenic potency as to yield an immunity equal to that given by properly balanced toxin-antitoxin mixtures is not yet certain.

Toxin deprived of all toxicity has attracted much attention of recent years. With formalized diphtheria toxin, rendered completely toxic to animals, good immunity to diphtheria can be secured. Whether this "toxoid" or "antitoxin" will eventually replace toxin-antitoxin (U.S.A.) or toxoid-antitoxin (England) prophylactic mixtures for immunization against diphtheria in man and tetanus in animals must be left unsettled until further experience has been gained. Toxin "detoxicated" with仁emolite of sodium (Larson) has been introduced during the recent past. It is doubtful whether this will replace the ordinary mixtures and formalized toxin, but here also we must wait the verdict of further experience.

Mixtures of the toxin-antitoxin (or, better, antigen-antibody) type have given satisfactory results on the large scale clinically or in fully controlled laboratory experiments in protecting against diphtheria, tetanus, and "gas gangrene." Most of this practice has been founded on our knowledge of the use of mixtures of diphtheria toxin and antitoxin. It is therefore interesting to follow the course of clinical and experimental diphtheria prophylaxis, though the toxin-antitoxin mixture and toxoid-antitoxin mixture, formalized toxoid (that is, "antitoxin"), and "floccules." In the Ramon method of titration when toxin and antitoxin are mixed in certain "neutralizing" proportions a flocculant precipitate is formed. A suspension of these insoluble toxin-antitoxin floccules when injected into animals produces good immunity. Similarly formalized toxoid toxin or "toxoid" when mixed with antitoxin causes "floccules" to form, and my colleague Mr. Glenny has recently shown that these floccules also have high immunizing power. It is hoped that the "floccule" antigens may prove less liable to cause reactions in sensitive adults than the ordinary prophylactics and may possibly shorten the course of immunization. Recent work by Glenny (unpublished) suggests that by physical agents the toxoid can be dissociated from the toxoid-antitoxin floccules, and thus yield a much "purer" immunizing agent than has hitherto been available. An interesting special use of toxin-antitoxin mixture has been made by Drilling in his successful work on the prevention of lamb dysentery. Here the ewe is given two widely spaced injections of the prophylactic, the second as near to the date of lambing as possible,

in order that the concentration of antitoxin produced in the mother's blood may be high when the lamb is born, and the lamb may thus have enough antitoxin derived from the mother to carry it through the dangerous period of the first few weeks of its life. So far as I know, this is the only instance of the intentional and satisfactory use in human or veterinary medicine of the well known transmission of maternal immunity.

Antigen-antibody mixtures are met with, as live swine erysipelas bacilli and antiserum, and are given either as a mixture made immediately before injecting or injected simultaneously but separately into the animal's body. In milder pig and swine fever the mixture used consists of the blood of an infected animal containing the live filterable virus and the blood of an immunized animal containing antibody. Both methods are used on a very large scale and are successful when properly made materials are used. The *crum* of commercial animals is not used in veterinary medicine. In the prophylaxis and treatment of human measles the serum of human convalescents where available continues to be the most satisfactory results to bestow according to the method adopted either complete temporary protection to the very young or ill when given very shortly after infection, or active immunity to those receiving the serum at a late stage, when it will allow only a mild attack of measles to occur. This use of the antitoxin-containing serum at different periods after exposure to infection closely resembles that common in England in dealing with swine fever. Here the serum of immunized pigs is used. It is given to the pigs, in contrast, who may have accidentally received from their fellows does of the virus of unknown size at various periods before the serum was given. A degree of immunity found in practice to be satisfactory is given by this method.

#### How to Use Injections of Vaccines, etc.

Some materials may give a reasonable immunity after one injection—for example, vaccinia and black leg vaccine. Here one uses a large amount of material consistent with safety, and no question of spacing of injections arises. But when giving a "course" of vaccine or prophylactic the question of the best spacing and dosage arises. In immunizing horses against tetanus during the war Glenn obtained a remarkable result when he found that horses receiving an initial injection and allowed to rest completely for three months produced within six months of entering a serum stable a higher concentration of antitoxin than horses immunized continuously over the same six months. This result suggests that a revision of methods of spacing ordinary courses of prophylactic vaccines might be wise.

Amongst promising and interesting lines of inquiry in the recent past we may recall that on the mosaic structure of antigens particularly in the group of pathogenic intestinal organisms on the chemical aspects of immunity, the relation of undulant fever to contagious abortion and the continued speculation in connexion with non specific therapy.

*Intigens*.—Much work has yet to be done before we understand clearly the import of the recent work on rough and smooth colonies (agglutination) and bacillary (enloplasmic) intigens heat-stable and heat-sensitive agglutinogens and type and group specificity but already the man concerned with the diagnosis of the intestinal pathogens particularly of the food poisoning group in men or pigs and other animals must bear all this knowledge in mind and he who makes vaccines must inquire whether he is to make his most efficient vaccines from "smooth" cultures only. Apparently not typhoid vaccines in use are thus made.

The stimulating work on the chemistry of the proteins carbohydrates and lipoids in immunity continues to grow and the astonishing changes in specificity that can be produced by introducing chemical groupings promise to lead far towards a rational conception of specificity one of the greatest puzzles of immunity but up to the present there is not much result from this field which concerns the daily work of the practitioner. So-called non specific therapy continues to attract a considerable amount of notice and some bacteriologists proceeding from the assumption that clinical benefit may in some cases be definitely due to this

treatment, seek an explanation in the production of re-activation of the leucocytes, etc. Since there are many instances in which the curing of an infection can be obtained by the use of the substance in controlled animal experiments, the laboratory worker cannot have a first-hand opinion on any part played in clinical medicine by these methods of treatment.

With regard to vaccines themselves, there is nothing of new significance in recent work. The attractive hypothesis of Heist and Solis-Cohen if confirmed may be helpful in diagnosis and the making of antogenous vaccines. The authors hold that a patient becomes infected with certain bacilli because the blood has an unusually low power of resisting growth of that organism, the patient's blood in a culture tube will therefore allow the infected bacillus to grow faster than any other pathogenic organism. Thus the patient's blood used in the culture tubes or plates is a favourable elective medium for the infecting organism which one wishes to obtain.

Recent inquiries suggest that some attack of epidemic mild jaundice may be due to leptospira and if so can be treated with the corresponding serum. But even if they are not due to this organism the general teaching is that the practitioner would be prudent to treat all patients as potentially highly infective and to take the same precautions with regard to infection of food by urine, etc. as in an attack of typhoid fever. The intimate relationship between the *B. abortus* and the organisms of undulant fever and malaria does not as yet affect the general practice.

From the Pasteur Institute have come three methods—vaccination per os the use of B.C.C. and of antiserum for local immunization which are attracting great interest probably more on the Continent than in England or America. Apparently under careful controlled conditions it is possible to show that by giving dead vaccine (without bile) by the mouth to rabbits the animals immunized against otherwise lethal dose of *C. coli* bacillus as my colleague Mr. Runge and others have shown. In the earlier work the margin between the effective vaccinating dose and a dose dangerous to the health or life of the rabbit was not very large and the immunizing results were capricious. Bacteriologists are not all agreed that these difficulties have yet been entirely overcome so far as the typhoid vaccines are concerned the oral method though it is used in France and elsewhere has not established itself in England or America.

Foot-and Mouth disease which three years ago cost about £4,000,000 has become less of a menace at the moment. The immunologist can hardly claim any part of the credit due to the methods of slaughter used. We may hope that by a combination of application of the results of experimental epidemiology and the promotion of research work going on in England and in the Continent directed to a study of the condition of survival and propagation of the virus and of active immunization we may eventually be able to face outbreak of this disease with a less loss of life than in the past.

In canine distemper the conference in England of Carr's work on the *filterable virus* and the *filterable virus* promising results obtained by Dr. H. and Dr. H. lead us to hope that a practical method of immunization if not already here is also at our disposal.

Of actual achievements in the recent past veterinary medicine can count to its credit the successful protection against brucella. The two methods in use—vaccination with filtrate alone or with toxin mixture—apparently both give good results.

Among pig diseases a most interesting development in the recent past has been the big outbreak in the United States and the frequent failures of vaccination in the latter part of the epidemic probably due to the use of vaccine of low activity that had to be employed in the emergency.

In the poultry world there are instances of the infectious disease bacillary white diarrhoea of chicks which has seriously attacked in England and the results of research applied in the field. In one instance I knew a batch of 2,000 fine chickens was reduced to 27 in about two weeks. It is reasonable to expect that by the application of the agglutination test and perhaps the intradermic test, the

dangerous infected hens may be so dealt with as to free infected flocks from the disease, financial loss being kept low by wise disposal of flocks during the process of "cleaning up" flocks. Poultry breeders whom I have met are agreed that it will "pay" to build up "B W D-free" poultry flocks.

With much trepidation I venture to say that I think veterinary practitioners would here play a useful and proper part if they would take deeper interest in this work and train the poultry breeder to look to them constantly for aid in their troubles. In "B W D," by testing and administration, and in rousing by vaccination, the veterinary surgeon can promise practical aid of high value to the breeder. Veterinary surgeons on the Continent and in America find it well worth while to pay constant attention to these diseases.

International and State control of immunological materials tends to increase. The new Therapeutic Substances Act will control all such materials used in human medicine. In passing I may remark that examination for some years of various veterinary "biological products" leads me to say that at least as strong a case can be made out for the need of control of such materials used in veterinary as in human medicine.

In reviewing recent work in practical immunology to me the two greatest puzzles seem to concern tuberculin and local infection in the presence of circulating antibody. I have spoken earlier of the baffling relation between tuberculin, the tuberculin reaction, and infection with tuberculosis. The second problem arises when we remember that it is possible to immunize a horse or rabbit against the pneumococcus until a small quantity of its blood will protect a mouse against many lethal doses of live pneumococcus, and yet the horse or rabbit may have a damaging local progressive infection in the heart valves or elsewhere.

Prish and Okell have shown that we can give scarlet fever antitoxin to a rabbit and so protect it against a dose of live streptococci that will kill a control rabbit in twenty-four hours, and yet the rabbit injected with the serum, though it remains quite well for perhaps a fortnight, will most probably later show an inflammation in the joints, which are then found to be infected heavily with apparently the streptococcus originally injected. The obvious explanation that the local nidus is shut off from the general circulating antibodies may be sufficient, but it does not meet all our doubts. The problem has an obvious bearing on the inefficiency of scarlet fever antitoxin for the relief of late septic complications despite its clear curative effect in the early treatment of scarlet fever.

In conclusion, the immunologist has reasonable ground for pride in the achievements of the immediate past and a confident hope that continued work will give further advances in the control of disease.

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## II—BIOLOGICAL PRINCIPLES IN IMMUNITY

BY

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FUNDAMENTAL in their importance were the discoveries by Behring and his co-workers that antitoxins appear in an animal as the result of immunization with soluble bacterial toxins, and that passive immunity can be conferred on a susceptible individual by injecting the serum of one which has in this way been rendered actively immune to toxin. The existence of passive immunity proves decisively that in certain cases the cell-free body fluid carries the immunizing property, or antibody as it is called. The earlier observation of Nutt<sup>1</sup> that the tissue fluids of normal animals may possess bactericidal properties also stimulated the analysis of antibacterial immunity, and it is now known that the lethal effect of an immune serum is brought about by a remarkable dual mechanism consisting of the specific

antibody and a labile normal function of blood plasma, the complement. The detailed study of these phenomena of immunity, extending over upwards of thirty-five years, has shown that they depend upon a general biological process which is worthy of attention on account of its great theoretical interest as well as its practical value. It has become evident that antibody production represents a response of living animals—at least of the higher forms—to the presence in their tissues of various foreign substances, poisonous or non-poisonous, dissolved or particulate (cells), which are classed as antigens. It is proposed to deal here with those aspects of the subject which are important on account of the biological principles involved and in which recent work has contributed materially to our knowledge. Accordingly, the following questions will be considered: (1) Antigen-antibody reactions, the variations which the antibody may manifest, the evolution of specific antibodies, the role of the reticulo-endothelial system, the nature of antigens, and specificity. (2) The part played by immunity phenomena in chemotherapeutic action. (3) Blüch's receptor hypothesis.

#### ANTIGEN-ANTIBODY REACTIONS

When an antigen and the corresponding antibody are brought into contact *in vitro* the evidence of reaction is often manifested by physical changes in the mixture, such as precipitation, lytic action, etc., which are so evident that it is necessary to remember that they may not represent the essential phenomena, but merely subsidiary results. Bozetti's fundamental experiments on the mechanism of agglutination of bacteria by an antiserum proved that the flocculation of the organisms—which is in this case the visible effect of the interaction—is due to the salt content of the fluid. When the salt is absent agglutination does not occur, hence the specific part of the phenomenon—namely, the union of antibody and antigen—might escape detection in the absence of a suitable indicator. The far-reaching consequences of this conclusion have gradually been appreciated. Now it may be stated that the manifestations of antigen-antibody reactions, so far as they are observed *in vitro*, depend mainly upon the accompanying physico-chemical conditions or "indicators," and are paralleled by the reactions of other colloids. On the other hand, the essential alterations consist (a) in the removal from the antiserum of its characteristic property (antibody), as when it is treated with a sufficient quantity of a particulate antigen, and (b) in alterations in the characters of the antigen—for example, loss of toxic action—which are due to the latter having combined with some constituent of the antiserum, the proofs being supplied by Martin and Cherry's experiment showing that toxin after the addition of the corresponding antitoxin ceases to be filterable, and also by the demonstration that the combination can be dissociated—for example, the dissociation of toxin from antitoxin or of haemolytic immune body from sensitized red corpuscles. Since there is in many cases evidence that combination of the antibody with the antigen does not cause the latter to be decomposed in any way, therefore a close analogy with ferment action is lacking.

Among the indicators which render antigen-antibody reactions evident an important part is played by cholesterol and possibly by other lipoids. As Browning, Cruickshank, and Mackenzie originally showed, cholesterol intensifies the complement fixation observed in the Wassermann reaction, likewise flocculation of tissue lipoids by syphilitic serum becomes apparent when cholesterol is added to the tissue extract, and cholesterol has a similar effect in the reaction between Forssman's antibody and extracts of heterogenous tissues. The influence of lipoids as indicators has been strikingly demonstrated in a converse manner by Hartley's carefully controlled experiments. He has shown that antitoxic serum extracted with alcohol and ether in the cold no longer flocculizes when mixed with toxin in Ramon's test, although, as Hardy and Gardner originally noted, the treated serum has lost none of its capacity to neutralize toxin when tested *in vivo*. Again, precipitation fails to occur when a serum and the homologous antiserum are extracted and then mixed (although normal serum so treated retains its power of leading to precipitin formation



when injected into an animal. These reactions apparently require lipoids to render them obvious (since the mere addition of the extracted material does not restore the original conditions, as tested by the precipitation reaction, the effect of the lipoids is obviously of a complex nature). On the other hand, an extracted antityphoid serum agglutinates *T. typhosus* in as high dilutions as the untreated serum and an extracted haemolytic immune body has lost none of its sensitizing action, so that here the serum lipoids are not essential.

The role of lipoids in immunity reactions is however not limited to their action as indicators, as will be seen later they may constitute the essential part of the antigen (Landsteiner's "haptens") so far as concerns specific reactions with antibodies *in vitro*. Also, the remarkable effects of certain lecithins in increasing or supplementing the activity of complement or complement components discovered by Cruickshank and Mackie must be borne in mind. Examples such as those quoted above, however, show that in order to demonstrate antigen-antibody reactions it may be necessary to adjust the physical conditions precisely and to have suitable indicator substances. In the case of flocculation phenomena—for example the Sachs-Georgi reaction with syphilis serum—both these factors play an important part. Here the preparation of lipid emulsions in a suitable state of instability is essential but may depend on conditions which are difficult to control. These phenomena are now being closely examined by the quantitative methods of colloidal chemistry, but it must be remembered that the immunity reactions are characterized by the element of specificity which is not yet capable of explanation in physico-chemical terms and if the investigations are to be fully fruitful this specific element must never be neglected.

#### Variability in Antibodies

It is of great importance to determine whether the response of the animal to the introduction into its tissues of an antigen which is summed up in the term "antibody production," is capable of qualitative as well as quantitative variations. Muller had held that such was the case for agglutinins the combining power of which increased during the process of immunization. Pick and Schwoner and Hirus insisted in the case of diphtheria antitoxin that different serums might be distinguished not merely by their relative richness in antitoxin as measured by Ehrlich's method but that the molecules of antitoxin in one serum might possess a greater affinity for toxin (avidity) than the molecules in another serum. At the time, however, the evidence on the point was inconclusive. In the case of a thermostable haemolytic immune body (rabbit or corpuscles) it was proved by Browning and Wilson that a qualitative change did occur in the course of immunization. The "immature" antibody obtained at an early stage when added to the red cells in certain multiple of the minimum haemolytic dose was deficient in the power of leading to fixation of an increased amount of complement as compared with that fixed under the influence of a single dose. A property possessed under similar conditions by the mature immune body (Muir). Further advance in the investigation of such problems was stimulated by Ramon's discovery that specific flocculation occurred on mixing concentrated toxin and antitoxin in suitable proportions and that, as a rule, the precipitate formed most rapidly in mixtures which were practically neutral when tested in animal experiments. Now Ramon observed that the rate of flocculation might differ greatly when the same specimen of toxin was mixed with different specimens of antitoxic serum and he concluded that this phenomenon was related to difference in the avidity of the respective antitoxins. Rechin, Maden and Schmidt have stated that antitoxic serums which flocculate toxin rapidly are more effective as curative agents than those which bring about flocculation slowly—that is the number of antitoxin units as measured by Ehrlich's method which is required to effect cure of rabbits which have previously received toxin, is smaller in the former case than in the latter.

The question remains as to whether the antibody molecules differ in themselves or whether other constituents of the serum are responsible for the differences. In the case of haemolytic immune body investigated by us it

appeared that the molecules of antibody underwent change, since in the particular animal the differences depended on the stage of immunization and were independent of the concentration of antibody in the serum. Again Muir, by injecting the same species of blood corpuscles into different species of animals, obtained haemolytic immune bodies which showed qualitative differences as regards effectiveness in leading to lysis by the same complement, although they combined with the same receptors of the antigen. Lojane demonstrated that the avidity of a natural antibody, the haemolysin for guinea-pig red cells present in ox serum, was increased temporarily after filtration through a Berkefeld filter this result was independent of any alteration in hydrogen ion concentration. Glenn and Okell found that while the flocculation rates of antitoxic serums derived from different horses varied greatly, the rate for a given animal might remain fairly constant although the antitoxin content of its serum underwent marked increase. The observation of the Danish workers also, that the curative power of an antitoxic serum probably suffers diminution in relation to the content in immunity units, when it is concentrated by salting-out suggests that other constituents exert some influence. Glenn and his co-workers have shown that with the serums of different horses there may be a marked discrepancy in the ratio of the amount of antitoxic serum which produces optimum flocculation *in vitro*, to that which neutralizes toxin as tested *in vivo*. In addition, their finding of two zones of flocculation—a rapid non-specific and a slow specific one—also points to the interfering action of other constituents of the serum. Accordingly, there is a considerable amount of evidence that the behaviour of antibodies may be influenced by other factors associated with serum. But the existence of qualitative differences among antibodies which combine with the same receptors of an antigen cannot be doubted.

#### The Fixation of Specific Antibodies

The introduction into the tissues of certain substances (antigens) results in the development of specific antibodies. This generalization requires very great qualification in detail since in the class of antigens all degrees of effectiveness in the stimulus to antibody production are met with again species races and individuals vary in their response to a given antigen. These considerations will not be discussed here. In a particular animal however the amount of antibody present in the serum at a given moment may be influenced by non-specific factors—for example the effect of injecting metallic salts—as appears from the work of Walbum—but the essential stimulus is the original injection of the specific antigen. In attempting to conceive the nature of the process of antibody production it is necessary to bear in mind the occurrence of natural antibodies. These in many cases cannot be related to any specific toxin. Thus the lytic antibody for sheep corpuscles found in human serum or that for ox corpuscles in guinea-pig serum would seem simply to be metabolic accidents. The behaviour of natural antibodies has no on the whole been investigated in great detail apart from Ehrlich and Morgenroth's original work on haemolysins and that of Landeiner and his co-workers (Reich, etc.) on haemagglutinins.

Dunlop has recently made an extensive study of the phenomenon of complement fixation produced by adding typhoid bacilli to normal guinea-pig serum (private unpublished) and as the property seems to throw light on the evolution of antibody-ance it will be discussed more fully. The results were as follows: (1) That a guinea-pig serum when present in a neutral or a concentration is deprived of its haemolytic complement by treatment with typhoid bacilli at 37°C. and for 24 hours but not all have a similar action. (2) Serum which has been treated with excess of typhoid bacilli at 0°C. (the latter then being removed by centrifuging) does not lose its complement when in contact with further quantities of typhoid bacilli at 37°C. (3) Typhoid bacilli which have been treated with guinea-pig serum at 0°C. or having been killed and resuspended in saline are found to lose their size

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so that when one adds to them serum treated as described under (2) the complement of the latter is removed (4) Again, guinea-pig's serum treated with sensitized stomata (blood cells previously heated at  $56^{\circ}\text{C}$  which have been placed in contact with the corresponding immune body), although it loses its complement, still retains the typhoid antibody, this is shown by the occurrence of complement fixation when the serum so treated is added to typhoid bacilli along with complement prepared by method (2)

From these results it would appear that one is dealing with a natural typhoid antibody. The non-specific properties of this antibody, however, are of great interest, for it may be removed by a variety of procedures, while the hemolytic complement of the serum, which is in extremely labile function, remains intact. (a) The typhoid antibody may be removed at  $0^{\circ}\text{C}$  by organisms other than *B. typhosus*—for example, *B. coli*—although the latter did not lead to complement fixation at  $37^{\circ}\text{C}$ . (b) Contact with coal-dust or powdered glass at room temperature also removes the antibody without affecting the complement. (c) The antibody may disappear from a serum which has been kept for several hours at  $37^{\circ}\text{C}$ , although the hemolytic complement is not affected by the treatment. On the other hand the antibody in the guinea-pig's serum which has been treated with sensitized stomata may withstand heating at  $56^{\circ}\text{C}$  for half an hour. Accordingly, the phenomenon investigated by Dunlop affords a striking example of a property of serum which has many of the characters of an antibody, and yet lacks the strict specificity and the stability of antibodies developed in response to immunization procedures. In this connection it should be recalled that Thiele and Embleton, on tracing the development of a hemolysis after the injection of foreign red corpuscles into rabbits, concluded that the only form of hemolysis is thermolabile and incapable of being reactivated by adding complement (in which respect it resembles many natural hemolysins), and that it was difficult to distinguish from complement. At a later stage the hemolysis was differentiated into complement and immune body, the latter, however, being at first thermolabile.

As appears from the work of Tineguchi and others, the changes in the serum in syphilis which lead to positive Wassermann and flocculation reactions are most probably of antibody nature. Now Sugden and Williams (privately unpublished) in analysing the action of serums (previously heated at  $56^{\circ}\text{C}$ ) on the "antigen" (alcoholic herit extract plus cholesterol) have found that syphilitic ("positive") serum differs from "negative" serum only in a quantitative manner, the former causing precipitation with a wider range of concentrations of sodium chloride than does the latter. It is especially noteworthy that this flocculation effect occurs with concentrations of serum which, on the analogy of the ordinary protective colloid phenomenon, might be expected to show no flocculation. Therefore there appears to be some specific feature in the reaction of serum with the lipid "antigen" which is a general property of serum, whether normal or syphilitic. Accordingly, the evidence as a whole indicates that a common prototype of immune antibodies exists normally in blood plasma in a relatively undifferentiated state, and that in some way specific characters and avidity are impressed on it or undergo intensification in the course of immunization with an antigen. This conception, which has much in common with views put forward at an early period by Landsteiner and others, finds further support in the observations of Benjamin and Witzinger and Doerr and Berger on active sensitization, and of Kriess and Hermann on the production of antibodies. According to these observers the introduction simultaneously (or nearly so) of two antigens may cause suppression of the immunity response to one of them. It must be noted that Ehrlich's receptor hypothesis is not contradictory to the view of an undifferentiated antibody prototype, since receptors are liable to qualitative as well as quantitative changes.

The question arises here as to whether the serum antibodies and complement which participate in immunity reactions may properly be called substances or whether

they are merely states of the serum components. As regards the specific immune antibodies there seems little doubt that one has to deal with substances. Improved methods of isolation, based on those of Kosikari or Hinton, may eventually yield antibodies in a pure state. Kosikari found that hemolytic immune body which had combined with the homologous red cells could be dissociated by treating the latter at  $55^{\circ}\text{C}$  with saccharose solution and then removing constituents of the corpuscles by extracting with ether (the sugar, etc., finally being removed by dialysis). In the case of the complement the conditions are more complex. In a given serum complement is not a homogeneous entity, also its toxic and combining properties vary independently. The separation of complement into so-called mid-piece and end-piece by Ferrata and others does not represent an analysis into fractions with constant well defined characters. Later, third (Ritz) and fourth components (Gordon, Whitehead, and Wormald) have been described. It has been shown by Browning and Mackie that the complement function may be distributed over a number of the fractions into which the serum proteins can be divided. Accordingly complement may be, in part at least, a state of plasma and serum rather than a substance (a view also held by Sachs).

### *The Role of the Reticulo-Endothelial System*

When a considerable volume of blood is removed from an immunized animal the newly formed plasma may contain at least as much antibody as was previously present. This well established fact points to the secretion of antibodies into the blood. Since the fluid content of the vascular system depends so greatly on the endothelium lining the vessels it has been concluded that these cells are the source of antibodies. The vascular endothelium in certain situations, together with other cells of similar nature in the organs which are all grouped under the loosely conceived term of "reticulo-endothelial system," possess also marked powers of accumulating in their interior particulate matter, including bacteria, as well as certain dissolved colloid substances (vital stains). The attempt has been made, therefore, to determine whether these cells play a significant part in the defence against infection by filling them with inert material and then injecting either the antigen or an infective agent. Where an antigen was injected the course of antibody production might be interfered with, where the animal was inoculated with a pathogenic organism its resistance might be altered. The conclusions reached by different observers have been at variance (cf. Bickling with Rosenthal and his co-workers). As regards resistance to a general infection Cappell (unpublished) carried out a critical experiment, he injected two series of mice with isomul-blue and tyram-blue respectively, three to five doses as large as could safely be given being injected subcutaneously at weekly intervals, and eight or nine days after the last injection the animals were inoculated intraperitoneally with varying amounts of virulent pneumococci. The range of doses of the organisms was such that in the control series of normal mice the individuality of the animals played an important part in determining whether or not an acute fatal septicaemia would follow. The results showed that there was no gross alteration in resistance to infection which could be attributed to the vital staining or so-called "blockade" of the reticulo-endothelial system. The striking effects which have been recorded by some workers refer mainly to numbers of animals too small to be conclusive, and the operative and other procedures usually lack adequate controls. It is very doubtful also whether it is possible to throw this system of cells as a whole out of action by any of the methods employed, since they are capable of rapid multiplication. In fact, Ledingham has shown that by infiltrating in areas of a rabbit's skin with Indian ink, which leads to local stimulation of the reticulo-endothelial cells, the intravenous response to vaccine introduced at this site may be completely abolished. Accordingly, although it would appear that the methods of experiment have not yielded conclusive evidence on the part played by the endothelial cells in immunity phenomena in general, one cannot doubt their importance in this respect.

### The Nature of Antigens

Until recently the evidence indicated generally that foreign protein substances or constituents inseparable from these were alone capable of giving rise to antibodies. Although Ford had developed a powerful antiserum to rabbit haemolysin a glucoside by injecting the latter into rabbits and Kurt Meyer had stated that antisera obtained by injecting rabbits with extracts (waters) of tapeworms fixed complement in the presence of alcoholic extracts of the worms little regard was paid to the phenomenon. Later however attention was directed to the specific lipoids when it was observed that the lytic immune body for sheep's red corpuscles which Forssman had developed in rabbits by injecting guinea pig's organs (Forssman's antigen) reacted in vitro with alcoholic extracts (lipoids) of tissues containing the Forssman antigen. It was shown that the lipid emulsion combined with the antibody (Georgi Taniguchi). Thus if an alcoholic extract of tissue containing Forssman antigen was added to Forssman antibody the latter became fixed and so was prevented from sensitizing sheep's red cells when the mixture subsequently introduced into the mixture. Complement fixation and flocculation are also manifestations of the reaction. The reacting constituent of the extract with the boiling of the alcoholic solution for several hours it resides in the leathier fraction of the extract—that is the portion precipitated by acetone from the etheral solution (Taniguchi). Similarly prepared alcoholic extract or the separated lecithin fractions derived from tissues which led the Forssman antigen fail to react with the Forssman antibody *in vitro*. Although these specific antibody reactions occurred in the test tube, the reacting lipoids when separated by extraction of the tissues with alcohol were found to be incapable of leading to the development of the antibody *in vivo*. But Landsteiner showed that a mixture of the lipoids with a foreign protein (pig's serum) when injected into rabbits caused the formation of an antibody capable of reacting with the isolated lipoids *in vitro*. (Of course, an antibody to the protein of pig's serum develops also.) It is noteworthy that the lipid antibody does not develop when lipid and serum are injected simultaneously but at separate sites also horse serum is not an effective substitute for pig's serum for the purpose of developing the lipid antibody (Heimann). Following upon this Sachs Klopstock and Weil demonstrated that rabbits will develop an antibody to their own tissue lipoids when injected with a mixture of alcoholic extract of rabbit kidney and pig's serum. Antisera which react with cholesterol *in vitro* have been obtained similarly a colloidal solution of cholesterol being employed along with pig's serum as the antigen. It would appear that in these reactions the lipoids are not mere indicators. Other example of substances apparently protein-free which react with specific antibodies are the "residues" of Zinsler and Parker and similarly the complex carbohydrates of pneumococci (Heidelberger and Avery) yeast (Muller and Tomesik) and tubercle bacilli (Landis and Dudley). All of these in high dilutions (for example one in several millions) flocculate *in vitro* with antisera to the corresponding organisms. Admixture with protein apparently cannot be responsible for the reactions observed. Further advance of knowledge in this direction however may prove difficult owing to the fact that none of these substance except possibly cholesterol, is yet obtainable in a chemically pure state.

### Specificity

The nature of specificity is still obscure but in certain cases some insight has been obtained. Anaphylactic experiments of Dakin and Dale indicate that egg albumins of different birds may be distinguished by the order in which the various amino-acids are linked in the albumin molecule. This was ascertained by treating the albumins with alkali and noting which of their constituent amino-acids were rendered optically inactive as a result—that is racemized. It was found that in the case of Lysine and methionine different amino-acids were racemized otherwise the proteins are chemically identical. As Landsteiner and his co-workers following Obermayer and Pick have shown that specificity can be modified by chemical procedures. Further Landsteiner by injecting

into animals protein combined with azo-bodies (which are stated to combine only with the tyrosine or histidine group of protein) has obtained antisera which gave the precipitin reaction with compounds formed by the particular azo-component present in the injected material in combination with apparently any protein substance but not with proteins combined with other azo-compounds. An example in antiserum to the azo-protein derived from metanilic acid plus horse serum precipitated azo-proteins derived from metanilic acid plus rabbit serum or globin gliadin or mucin etc but did not precipitate azo-compounds derived from the same proteins along with the azo her azo-bodies—namely with diazotized *p*-ar anilic acid. The antisera did not precipitate solutions of the azo-bodies when coupled with simple substance—or example tyrosine *m*-oxybenzoic acid or salicylic acid but on the analogy of the zone phenomenon the addition to a solution containing an azo-protein or the homologous azo-component had a specific effect in preventing precipitation by the corresponding antiserum. Thus metanilic acid when added to a solution of azo-protein derived from metanilic acid prevented precipitin formation in the presence of the corresponding antiserum but if instead *p*-ar anilic acid was added no inhibition of precipitation occurred in this case. Accordingly it would appear that here a relatively simple organic substance of known constitution—for example metanilic acid—acts *in vitro* as the receptor.

In connection with the specific properties of antigens it has long been known that different organisms may possess antigens in common. The work of Andrieu, Alkowitz and others on agglutinins is a great importance in showing that certain parts of organisms (for example those of the *Salmonella* group and *Escherichia*) may vary from time to time in culture apparently without change in their antigenic content—at one time one antigenic constituent predominating at another time another. The practical importance of this for serum diagnosis and immunization is obvious (see Bruce White) but it is mentioned here in order to emphasize the view that the existence of antigenic molecule can be judged only from their capacity to lead to antibody formation *in vivo* and to combine with antibodies *in vitro* accordingly differences which are detected by these criteria may have little significance for the biology of the organism. It cannot well be doubted that the organisms present in its identity in spite of varying its antigenic products.

### IMMUNITY AND CHEMOTHERAPEUTIC ACTION

There are certain infections in which the active principle of the tissues are capable of bringing about cure solely with the aid of extraneous chemical substances (chemotherapeutic agents). Such infections—for example that with *T. brucei* in man—are in principle curable by the course of the parasite increasing progressively in the blood and death occurring two or three days after the appearance. Not in the case of *Trypanosoma* the parasite is the administration of a dose of an antiserum of this infection may appear at first to be sufficient to cure the trypanosomes (containing) but the parasites increase in numbers in the blood and a fatal relapse is a result occurring in an untreated animal. The first few days are permanently and the treatment is curable. The effects of events has been observed by using example of the treatment with antitrypanosomal compounds (Brown, Cohen, Hingworth and Gelfand). In the case of a chemotherapeutic agent of this class which was used in the body for a long time the same phenomenon occurred—for example when the animal was treated with trypanosomes thirteen days after the drug had been injected. There seems to be only one satisfactory explanation of such behaviour of the parasites—namely that under the influence of the chemotherapeutic agent a proportion of the trypanosomes are destroyed and in consequence an immunity reaction is established in the remainder of them so be killed. A peculiar feature of the process is the indispensable part played by the drug. In the case the infection with *Trypanosoma* *repentum* runs a

The experimental work of the authors and the results are given in the following table which was published in the Journal of Biological Chemistry.

course comparable with that of a bacterial septicaemia, and in uninfected animals immunity phenomena may not appear among many thousands, unless perhaps in an exceptional individual in the form of a slight prolongation of life. But in larger animals, such as rabbits and guinea-pigs, just as in man, the disease has a prolonged course and there is ample time for immunization processes to occur. Nevertheless, death is the inevitable result in these animals in the absence of the chemical compound.

It is well known that cure of trypanosome infections by means of chemotherapeutic agents is followed by a degree of immunity. This may usually be demonstrated in mice by using a drug which is rapidly excreted, and after a few days re-inoculating the animals with the same strain of parasite as caused the original infection. The evidence of immunity consists, as a rule, in a prolongation of the incubation period before the parasites appear in the blood. A fact of striking importance, however, is that the immunity response following treatment by the same agent may vary markedly in degree with different strains of *T. brucei*. Thus, after curing mice heavily infected with the "Prowazek" strain, complete failure of the second inoculation to develop has been repeatedly met with, even when there was an interval of twenty-two days following the original infection. On the other hand, with the "Feix" strain (Elhlich) complete refractoriness has not been observed. Accordingly, it is clear that wide generalizations are not permissible from strain to strain. When one remembers that probably each individual host produces some degree of modification in the strain, the necessity for caution in drawing comprehensive conclusions becomes obvious.

It is likely that the immunity response developed under the influence of a chemotherapeutic agent may be more intense than can be produced by other means. Thus Kiantz found that mice inoculated with a mixture of *Sp. recurrentis* and *salivarium* developed immunity, as shown by delay of the infection following re-inoculation, and also by the organisms which appeared in the blood having the characters of a relapse strain. On the other hand, when the animals were inoculated with a mixture of immune serum and spirochaetes and were subsequently re-inoculated infection developed promptly, and the parasites had the serological characters of the original strain. Similarly, in experiments in which mice received repeated injections of blood swimming with *T. brucei* (Prowazek strain) or *T. equiperdum* killed by the addition of water, we failed to produce any immunity to re-inoculation. Such observations on the influence of chemotherapeutic agents are of importance in connection with human therapy, especially of an infection like syphilis in which rapid sterilization of the body is probably seldom effected, and in which, accordingly, the conditions are favorable for the development of an immunity response. It still remains to be determined how the processes may be regulated so as to produce the most favorable effect for the host.

Another immunity phenomenon deserving of attention is the suppression of one infection by a second. It is recorded by Metzger that when a general paralytic was inoculated simultaneously, for therapeutic reasons, with malaria and relapsing fever organisms the former infection alone developed. After antimalarial treatment the patient had a typical attack of relapsing fever, during which, for the first time, spirochaetes appeared in the blood. Similarly, another patient was inoculated with relapsing fever, and after the first febrile attack was infected with malaria, when the malarial parasites appeared in the blood the spirochaetes ceased to be found, when the malarial infection was treated the spirochaetes reappeared, although no further febrile attacks occurred.

#### ELHLICH'S RECEPTOR HYPOTHESIS

It is obvious that unsusceptibility to infective agents or their products, which is comprised in the term "immunity," results from many factors. Since both host and parasite are possessed of life and powers of adaptation neither can be regarded as altogether passive at any stage in the processes of infection. Accordingly, the interactions which result in immunity must be highly complex, and only in a few favorable circumstances where certain of

the mechanisms predominate can we hope to obtain a clear insight into the phenomena. Such is the case in antitoxic immunity—for example, to diphtheria or tetanus toxin—and to a less extent in other forms of immunity in which the production of antibodies can be demonstrated—for example, the resistance of an immunized guinea-pig to intraperitoneal inoculation with *V. cholerae*.

The acquisition of immunity without the development of antibodies has been repeatedly insisted on. A recent example is afforded by the hepatitis virus, according to Levaditi and his co-workers and others, required immunity in this case is accompanied by marked lethal action toward the virus on the part of the tissues both *in vivo* and *in vitro*, but the body fluids are practically devoid of bactericidal properties and the serum of an immunized animal does not confer passive immunity. Such instances are of the greatest importance as pointing to some further mechanism of tissue immunity, but at present a satisfactory analysis of the conditions is not possible. However, antibodies in general represent a reaction on the part of the host which is inimical to the activities of pathogenic organisms. Therefore to this extent the production of antibodies indicates the acquisition of immunity. But it must be remembered that titration of the antibodies does not necessarily afford an index of the degree of immunity; for, as has been shown—for example, by Muir and McDevie in the case of a haemolysin—the quantitative action of antibodies *in vitro* and *in vivo* may differ greatly.

Since antibodies are the most usual and obvious indication of immunity their mode of origin has always been an urgent problem. As an outstanding phenomenon of biological reaction also their development merits close study. Of the theories not readily capable of disproof that which requires consideration is Elhlich's. His hypothesis consists of two main points essentially as follows: (1) The antigen combines with certain portions of the protoplasm molecule which he called "receptors," or, in the terminology of organic chemists, "side chains." (2) Over-regeneration of the receptors of the cellular protoplasm follows under suitable conditions when the vitality of the cells is not seriously damaged by combination with the antigen, some of these receptors cease to remain attached to the protoplasm of the cells (sessile), and appear "free" in the blood plasma and there constitute antibodies. The originally wide acceptance of the hypothesis has been succeeded by much adverse criticism. Therefore it is necessary to examine it in the light of well established experimental facts. In the first place, the existence of receptors—that is, portions of the protoplasm molecule capable of combining with foreign substances—rests upon evidence which will scarcely bear any other interpretation. The case of serum-fast trypanosomes appears to be decisive. Elhlich, Röchl, and Gulbisson showed that serum-resistant strains resulted from brief contact of trypanosomes *in vitro* with an antibody-containing serum (derived from animals which had been infected with the trypanosomes and then cured by means of a chemotherapeutic agent, an interval being allowed to elapse after the injection of the drug, so that the latter might be eliminated from the body). The treated trypanosomes when freed from the serum and injected into further animals caused an infection which now failed to respond to injections of the antiserum and which preserved this resistance through many passages. Hence the conclusion is that the antibody has combined with a receptor of the trypanosomes and has led to disappearance of the receptor apparatus. The classical experiment of sensitization of red corpuscles by immune body and the transference of the latter from the sensitized cells to uninfected corpuscles of the same species placed in contact with them (Mun, Morgenroth) also requires for its explanation combination of the antibody with some portion of the red corpuscle stroma (the combination being in this case reversible). Whether the mechanism is regarded as purely chemical or as physico-chemical, it agrees with the receptor conception.

As regards the second part of the hypothesis, which was framed to explain the presence of antibodies in the blood plasma, it has not been possible to extract antibodies from any of the tissues of an immunized animal, and to this extent the identity between antibodies and sessile receptors

has not been demonstrated. Various reasons might account for this theoretically, however, the very delicate experimental method of Dole has indicated that in the guinea pig at least the blood free tissues (intestine muscle) of an amphibious animal are hyper sensitive to the homologous antigen—a result which is consistent with the conception of such receptors.

The relations between immunity and the anaphylactic state are still obscure but a characteristic feature is that both depend upon an immunizing procedure with the same sorts of antigens. The bearing of anaphylactic experiments in which the circulations or organs of different animals are conjoined will not be discussed since the conditions appear to be too complex for satisfactory analysis at present.

In conclusion it may be said that the receptor hypothesis in its essential form has not yet been disproved. Certain phenomena, however, such as those of zones and possibly also the Neisser-Wechsberg experiment for which elaborations of the receptor theory were devised are explained on the basis of the interactions between colloids. It must be remembered that immuno reactions take place in colloidal media and that the presence of colloid can alter profoundly the course of even relatively simple chemical reactions.

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## DISCUSSION

Prof. O. R. Marm (Chicago) said that the phenomena underlying immunity consisted in the presence of anti-bodies in the serum and in certain little understood alterations in the tissue cells. The properties of sera had been extensively studied and one of the most interesting recent discoveries was that by Ramon of the flocculation reaction in the case of diphtheria antitoxin. It might now be said that physical changes might result from the interaction of antigen and antibody in the case of all the so-called varieties of immunity. Flocculation, precipitation, agglutination, complement fixation were all

evidently closely related. But proceeding and in some way leading to, the physical change there was the specific union of antigen and antibody which was still the cardinal fact in serum reactions. The union seemed to be rather chemical than physical. The fact established by Obermayer and Pick and by Landsteiner, that the introduction of certain groups such as the azo and nitro into the antigen results in the production of a corresponding specific antibody clearly pointed in this direction. The dissociation of antigen and antibody which had been demonstrated *in vitro* in various cases was also noteworthy and important in relation to the phenomena of antibody production *in vivo*. Any classification of antibodies must be used with caution. It should not be supposed that an antiserum contained a definite number of distinct antibodies but rather that it had a non homogeneous content with overlapping moieties each of which could be recognized by some demonstrable physical reaction. The resulting reaction was thus an indicator of the specific chemical combination. The apparently limited number of antibodies which might be developed in an animal raised the question as to whether they all had representatives in the normal cell protoplasm. It was difficult to suppose that all possible antibodies were thus represented. It seemed almost necessary to suppose that the antigen in some way made an impression, as it were on the cell protoplasm and thus led to alteration in the constituent molecules before then appearing in the serum as antibodies. The fundamental changes in the cells in the process of immunization were demonstrated in various ways notably (1) by the reaction to antigen of an immune animal after antibodies had disappeared from the serum (as compared with a normal animal) (2) by the phenomena of local immunity (3) in a striking manner by the reactions of the tissues of an anaphylactic animal.

Profes or EGGREY L. OPIE (University of Pennsylvania) referred to Dr O'Brien's remark that elucidation of the nature of the tuberculin reaction would lead to the explanation of immunity in tuberculois and aid that hypersusceptibility and resistance seemed to be paradoxical. The intensified inflammatory reaction to foreign protein which was often designated as the Arthus phenomenon might be conveniently produced with crystalline egg albumen which acted as a simple antigen. Injected into the skin of a normal rabbit it caused no local inflammation and promptly appeared in the circulating blood. Injected into a rabbit immunized against it it produced an intense reaction at the site of injection and failed to enter the blood. By means of the precipitin test it might be quantitatively shown that the antigen was almost completely fixed at the site of injection into the skin. This local fixation of the antigen was followed by a severe skin reaction but vital organs were protected and no anaphylactic shock occurred. Similar experiments had helped to explain the relation of antigen to antibody with local and general sensitization. Injection of serum from an immunized animal into a normal animal rendered the latter sensitive to the local action of the antigen manifested by the Arthus phenomenon and to anaphylactic shock when antigen was injected into the blood stream. This process of sensitization might be reversed. Injection of antigen into a normal animal rendered it sensitive to the action of antibody so that if serum from an immunized animal was injected into the skin it caused intense local inflammation or if injected into the blood stream anaphylactic shock. The usual process of sensitization had been reversed but the result was the same. When antibody and antigen met within the tissues a reaction occurred and its nature depended upon the special physiology of the part which was the site of their union. Hence some inflammation occurred in the skin and anaphylactic shock when vital organs were implicated. The reaction on the basis of foreign protein were not chance phenomena but had a fundamental significance in the interpretation of immunity.

Lieut Colonel W F HARVEY CII IMS presented a report by himself and Captun K P K IYENGAR IMS on the rate of requirement, the duration and the restoration of immunity after loss in pigeon preventively.



inoculated against fowl cholera. The conclusions were cautiously applied to the case of man, with a view to maintaining certain themes. The first of these was that, though immunity might be maintained by means of vaccines, estimates of the amount of this immunity were probably too optimistic. What was required now was the separate determination by practitioners, hygienists, and immunologists of the degree of value of vaccines. The lines of research were statistical and experimental, and in both it was essential that some mode of strictly alternate case treatment should be adopted if chance was to be placed upon the experiences of the individual who used any particular treatment on animals or man. The experimental work of the authors related to some 750 pigeons, of which 600 were immunized with vaccine and 150 used as controls. A whole series of doses was invariably employed to make the test of the immunity attained. This was considered to afford a better picture than the usual method of minimum lethal doses and their multiples. The equivalent of an alternate series of cases was included as a control in every testing experiment. Batches of immunized pigeons were taken at intervals to test the rate of development of immunity, its duration, and its rate of loss. Then followed the testing of the remainder to determine whether the original immunity, which was induced by a minimum optimum immunizing dose of vaccine and had been lost, could not be restored by the use of much smaller doses than the original. This was found to be the case. The conclusions reached in regard to man were as follows: (1) Single doses of vaccine could produce immunity, but not of so high a degree as two or three doses. (2) Some immunity appeared within a week of commencement of inoculation. (3) Full immunity was obtained within three weeks of the commencement. (4) The duration of immunity after vaccination was shorter than is generally appreciated. (5) For reinoculation doses might be used which were less than even the smallest dose originally required to confer maximum immunity; the immunity so conferred was as great and lasted as long as, but no longer than, the original.

Professor D. C. MATTHEWSON, F.R.C.V.S. (Edinburgh), said that the difficulty in respect of the use of a living virus for immunization purposes might be met: (1) by inoculating at a time when the virus could not exert its full effect—for example, in epizootic abortion of cattle inoculation was used at least two months before the animal became pregnant, (2) by introducing the virus into a situation where it found itself under conditions of maximum difficulty and remote from the predilection site and the vital centres (in contagious bovine pleuropneumonia, for instance, the living virus was inoculated into the tip of the tail), and (3) by using the blood of a carrier as in bovine proplasmiasis, and controlling the effect of the inoculation by the exhibition of a drug (in this example triphenyl-blue). Nevertheless, the use of a living virus was only permissible in herds where the disease already existed. In the bacillary white diarrhoea of chickens the agglutination test was widely used for the detection of the carrier fowl, but the time which warranted rejection was still a debated point, an adoption of the standard of 1/25, as suggested by Doyle, would certainly increase the number of rejections. Roup had accounted for 5.8 per cent of the fowls subjected to *post-mortem* examination in his laboratory during the past thirteen years.

Dr H. D. WRIGHT (London) stated that the early workers had bequeathed the idea that immunity was largely a matter of antibodies acting with or without the co-operation of the body cells. The modifiable part of the combination was the antibody content of the blood, the cellular activity being more or less passive. This generalization could not be accepted in all cases. His interest had been aroused by two phenomena: rabbits inoculated with killed pneumococci, which had not developed demonstrable antibodies, could deal with virulent pneumococci much more effectively than uninfected animals; secondly, although in endocarditis enhanced antibody activity was found in the blood, the disease regularly terminated fatally. In the first case it was clear that antibodies, as at present recognized, were not necessary to the enhanced resistance.

The ordinary test, however, only detected a large amount of antibody and might entirely miss small amounts. Histologically the mechanism of removal was complicated, but the ultimate object was destruction of the bacteria by phagocytosis, failing this the infecting agent tended to become localized. The serum enabled the animal to deal with the bacteria as it would with inert particles—by aggregation and removal by the reticulo-endothelial cells and the polymorphonuclears. The second example illustrated the persistence of infection, a focus being established on a heart valve and persisting until death occurred. At the same time the general resistance to the organism was increased although the septicæmia persisted. This was because the blood examined had usually come straight from an infective focus without being subjected to the destructive action of the liver and lungs. The bacteria were not actually multiplying in the blood, and, if not continually removed from the focus, would be quickly eliminated. The thick barrier of thrombus on the valve prevented free phagocytosis. The problem of chemotherapy and serotherapy must, then, in large part be the problem of the penetration of the foci, which also might produce toxins of unknown nature. Dr Wright concluded that the fundamental principles of antibacterial immunity lay really in the interactions of antibodies and cells, and that the apparent exceptions must be studied carefully with the assistance of the histologist.

Dr W. H. ANDREWS (Ministry of Agriculture) stated that recent work on foot-and-mouth disease had yielded interesting facts in connection with the questions of local immunity and the importance of the channel of entrance of a virus. Professor Browning had referred to the apparent necessity of killing some of the typhlosums in an animal before an immunity reaction could be induced. Edwards's results with bovine surra supported this conclusion, but it was obviously very difficult to induce a similar reaction in the equine body. In connection with the specificity of antibodies the Brucella group deserved consideration, however difficult it might be to distinguish the corresponding antibodies, there could be no doubt that *B. melitensis* and *B. abortus* differed fundamentally in some physiological characters, and *B. abortus* was almost non-pathogenic for man. There was still much to learn of the relations of diet to disease, but striking evidence was available to demonstrate the influence of the diet of the host, not only on internal parasites, but also on ectoparasites, and on the resistance of the host to drugs. In addition to the successful campaigns against such diseases as cholera and plague there were instances of the application of equally successful measures applied to animal diseases, such as underpest and pleuropneumonia. In many large areas in Africa, and especially in South Africa, certain kinds of domestic animals could hardly exist formerly, but they now flourished there in large numbers, thanks to modern methods of prophylaxis, including measures for the destruction of invertebrate vectors. In connection with the treatment of a single form of helminthiasis (due to *Haemonchus contortus*) the swine of animal life had been really enormous. Prophylaxis must always be adapted to the special features of each case. For example, the virus diseases "horse-sickness" and "blue tongue" were very similar—indeed, almost identical—in many of their characters, and yet fundamentally different in some respects. For "blue tongue" a most efficient vaccine could easily be obtained, whereas for "horse-sickness" it was necessary to use a combined serum-virus method. When comparing medical and veterinary work, in connection with epidemic disease, it should never be forgotten that practically all veterinary work had an economic basis, and the scientifically possible was often economically unsound.

Professor T. J. MACKIE (Edinburgh) said that whatever theoretical obscurities there might be, the achievements of practical immunization constituted the indubitable facts of immunity. The obstacles to further apprehensions lay in lack of knowledge of the offensive mechanism of various micro-organisms and the underlying nature of resistance to these. In the past, analysis of immunity had been

largely the analysis of antibody effects, and, while the study of antibodies had been of unique biological interest, the problem of antibodies had tended to obscure the main question—the nature of resistance apart from antitoxin, and in certain instances bacteriolysis it was difficult to believe that antibodies constituted the mechanism of acquired immunity. Antibodies would appear to be only the manifest result of the reaction of the tissues to foreign proteins. In few instances could natural immunity be attributed to antibodies. The two states, natural and acquired immunity, might represent the same biological adaptation. The study of antibodies had revealed the most extraordinary anomalies—for example, the “natural antibodies” which seemed to occur without biological rhyme or reason. Antibody effects could be paralleled by agents which had no relationship to immunity. Haemolytic immune-bodies might be replaced by colloidal stannic acid. Pronounced complement fixation occurred as a result of the interaction between certain animal sera and such agents as dilute alcohol, peptone, amino-acids, cholesterol suspensions, watery extracts of tissue and the lipid suspensions used in the Wassermann test, substances which were not antigenic in the immunological sense. On the other hand phagocytosis constituted an undoubted mechanism of resistance but antimicrobial resistance must be a dual—or perhaps plural—mechanism not only was the parasite disposed of like other foreign bodies, but its toxic products must be inactivated. It might be supposed that bacteria, deprived of their toxins, were like inert foreign bodies, and became an easy prey to phagocytes. It was well known that serum principles rendered bacteria susceptible to phagocytosis; these so-called opsonins might be antitoxic or detoxifying principles. Thus the essential feature of immunity might be the function of tolerance—using the term in its widest sense—to the toxic products of microorganisms. In some cases this tolerance was due to a

specific serum antitoxin, in other a similar principle might remain concerned from immunological analysis as a simple product of the tissues. Until more was known of the intrinsic reactions of cells to poisonous agents the nature of tissue tolerance must remain obscure. It had always appeared remarkable that, while a serum antitoxin was developed in response to exotoxin the opposed endotoxins produced, as a rule, no such response and that, while the exotoxins reproduced experimentally the acute disease associated with the natural infection, the endotoxins produced no specific effects. This raised the question as to whether the antitoxin preparation constituted the essential offensive agency of the organisms from which they were obtained. In the case of certain organisms the true toxin might not be formed in culture and, if immunity to such organisms was antitoxic, present methods of analysis would fail to demonstrate the existence of such defensive agency. On this hypothesis it would be difficult to explain the facts of antityphoid immunity where immunization with dead cultures produced a solid immunity. It was conceivable that a specific toxin was formed in culture but owing to instability was unrecognizable in the usual preparations, and yet on the analogy of toxoid was capable of inciting antitoxin production. Immunity in such cases might in reality be antitoxic, though antitoxin was undemonstrable by present method. The researches of Besredka and his co-workers had shown that a purely tissue resistance might be acquired and that a solid immunity might occur in the absence of recognizable micro-organisms and their toxins; it is probable that antibodies. By the further study of local tissue antagonism a better understanding of immunity would be reached and the great desideratum at the present time was a more exact knowledge of the toxic mechanism of the organisms which failed to produce in culture a specific diffusible toxin.

## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL

#### DESENSITIZATION BY PEPTONE BEFORE LAPAROTOMY

A series of cases of pneumonia after operation in the hospital at Mel on Monray some few years back set one thinking about the probable cause of this condition.

The cases followed abdominal sections, especially those involving the upper abdomen as is usually observed to be the case. Is it not thought that excessive handling of the bowel will predispose to this sequel of laparotomies and if this be so what is the relation between this act and the onset of a lung condition?

Seeking among the case of ordinary medical practice for lung conditions of sudden onset not probably, due to microbial infections of the respiratory system one notices asthma, acute pulmonary oedema and massive lung collapse. Might not the pneumonia which follows these operations be initiated by a lung change brought about by an influence similar to that which occurs in these medical cases. These cases are probably anaphylactic in origin and the protein shock comes from the intestine.

It occurred to me therefore, that it would be wise to try the effect of desensitizing patients with peptone before the operation. To this end I gave 0.3 gram of peptone in 2 c.c. of normal saline fourteen hours before the anæsthetic was given. The results were so encouraging that we have now adopted this treatment in all abdominal sections in which there is time for such preparation as a routine in our practice. No case which has had peptone has developed pneumonia. There has been no other change in our methods.

I venture to make this preliminary report in case any other hospital may care to try this method.

MONTAGU DIXON, M.D. B.Sc. Lond.,  
Honorary Medical Officer, War Memorial Hospital  
Mel on Monray.

#### UNUSUAL DEVELOPMENTAL ABNORMALITIES

The combination of the two developmental abnormalities observed in the following case is uncommon.

I was called by a midwife to see an infant which was not normal. The mother was a healthy woman of 35 years. By her first husband she had three normal daughters, no miscarriages. This was her first pregnancy after her second marriage also her first male child. The abnormality proved to be epispadias. The penis was represented solely by the glans, a flat, not organ about the size of the tip of an inch across, grooved upon its upper surface. The groove led back into the urethral orifice which was of conoid shape, the from which the urethra passed backward. The glans could be pulled downward a little but normally tended to close the urethral orifice. A certain small amount of corpora cavernosa peria could be felt beneath the skin of the scrotum below the glans. The scrotum was well developed and contained two testicles, appeared normal. The anus was absent and in its place was a small depression from the urethral orifice. There was a small depression in the skin but there was no bulging then or later to suggest that the rectum was anywhere near.

During the following day the infant had several attacks of cyanosis, but no cardiac abnormality was revealed by auscultation limited for sixteen days. During the first four days a paucity of faecal matter by the urethra on two occasions. Thereafter there was no faecal discharge. Micturition appeared to be normal.

The epispadias was of the degree most frequently met with. As far as could be ascertained the urethra passed below the pubic symphysis. The rectal condition can only be guessed at. The most likely explanation of the condition was by passing into the urethra at the lower end of the verumontanum immediately below the opening of the vas deferens although it may have ended on the side along the urethra or the bladder. The prostatic invagination was definite but slight.

The mother raised the question of treatment. The immediate operative procedure would have been the production of an artificial anus by means of colostomy. I was quite certain that the bowel was too far from the perineum to be brought down without a large and tedious operation probably involving both perineal and abdominal approach. If the child survived the operation of colostomy it would be left with incontinence of urine and incontinence of faeces, the latter occurring at a stage when the urethra. This would make infection of the bladder and

so the kidneys, fairly certain, and lead to an early death from pyelitis or some such cause.

With either of the deformities alone the baby might have survived—many persons having undergone colostomy enjoy good health, and I have seen a man of 33 with epispadias, the urethral orifice being among the pubic hair, suffering with his first attack of pyelitis—but the two deformities together were incompatible with life.

The attacks of cyanosis make it probable that the heart was also maldeveloped. No treatment was attempted, and the infant died of obstruction of the bowel. During the last few days the distension of the abdomen was so great that it appeared to be about to burst, over it coiled many distended veins. After death the contents of the stomach ran from the mouth. No post-mortem examination was made.

A. K. THOMAS, M.B. Lond.,  
M.R.C.S. Eng.

Retford, Notts.

#### APPARENT INFECTIVITY OF CANCER

The following cases appear to be somewhat similar to those reported by Dr J. MacLeod (October 1st, p. 594).

A married woman, aged 52, first consulted me in February, 1924, complaining of metrorrhagia of three months' duration. She was found to be suffering from inoperable cancer of the cervix. A portion was removed and when submitted to microscopic examination was found to be of the squamous type. She died in August, 1927. Three months after she first saw me her husband (aged 53) came to me. I found him to be suffering from cancer of the glans penis of nine months' duration. He was operated upon and the penis amputated. The growth was found to be a squamous epithelioma. He is still living, and there has been no recurrence in the wound or glands. The husband informed me that sexual intercourse had been continued until about six months before his wife came to see me. At the same time, he stated that he had had the sore on his penis for over a year previous to his coming to see me.

These cases suggest that the husband may have implanted cancer on to the wife's cervix. On the other hand, the whole incident may be a coincidence.

Preston

J. BRANSTEN

### British Medical Association.

#### CLINICAL AND SCIENTIFIC PROCEEDINGS

##### CITY DIVISION

A W.F.M. attended general meeting of the City Division of the British Medical Association was held at the Metropolitan Hospital on November 1st, with Dr PHILIP HAMILL in the chair, when Dr W. LANGDON BROWN read a paper on the modern aspects of nephritis.

##### Nephritis

Dr Langdon Brown said that nephritis in general was now recognized as due to some toxic or infective cause. Chill did not cause it, but only exacerbated a chronic lesion already present. "Functional" albuminuria did not predispose to nephritis. If the kidney was overwhelmed by a toxin, as in toxicemic kidney, there was a necrosis affecting the convoluted tubules chiefly, the loops of Henle to a less extent, and the glomeruli not at all. The kidney permitted the escape of proteins, diastase, and perhaps sugar from the blood, but did not retain nitrogen. Death or complete recovery was the rule. If the toxic process was rather less severe, typical acute nephritis resulted, in which the glomeruli shrank. If it was much less severe there was a chronic nephritis in which the interstitial tissue suffered more than the tubules. Even in the most chronic form of interstitial nephritis there was some inflammatory reaction. The general conclusion was that the more intense the infection was the more the secreting epithelium suffered; the more chronic it was the more the vessels were affected. Since the glomeruli were vascular tufts they were specially involved. Generally the toxin reached the kidney by the blood stream. If in addition to the toxin the actual infecting organisms were present in the kidney, as in the multiple emboli of infective endocarditis, a number of foci of small-celled infiltration resulted, each of which started an island of nephritis, constituting focal embolic nephritis. Sometimes, especially after tonsillitis, boils, carbuncles, and staphylococcal infections generally, the perinephric tissue was first involved, a metastatic inflammation which

spread through the lymphatics into the kidney. This was the type of nephritis in which pain in the back was most common. Again, the infection might spread upwards from the lower urinary tract, though here too, as Kenneth Walker had shown, it was mainly, if not exclusively, through the lymphatics of the ureter that the infection reached the kidney. Of late the tendency had been towards a secretory rather than an anatomical classification. This was an advantage, since the anatomical basis could only be decided after death, when the opportunity for treatment had passed. Broadly speaking, apart from substances like alcohol or acetone, which merely diffused through the kidney, the organ might excrete two classes of substances: (1) those which could be of use to the body—water, salt, sugar, bile—and (2) those which were merely waste products—urea and ill-fated nitrogenous bodies. To the former the kidney presented a threshold which had to be passed before the substances began to be excreted, in this way was prevented their drainage out of the body. For the latter no such barrier was needed. In hydræmic nephritis only the excretion of the former group was affected, particularly water and salt. Urea might be normally excreted, and it would not be retained in the blood. Chlorides were retained and oedema was marked, but there was little evidence of cardio-vascular change. In azotæmic nephritis there was a gross failure of the concentrating power of the kidney, and since the great work of the kidney in concentration was seen in relation to nitrogenous waste products, and since also urea was the most abundant of these, there would be not only a fall of this substance in the urine, but a rise of it in the blood. The cardio-vascular changes tended to be very marked. As interstitial changes, which were chiefly associated with azotæmia, proceeded more slowly than the parenchymatous, which were chiefly associated with hydræmia, the development of the former gradually altered the picture, producing mixed types. If there was oedema other than cardiac oedema, together with nitrogen retention, it must be an example of a mixed type. The treatment of each type was then considered, and the causation of renal diopsys was discussed. The mode of action of diuretics, and their limitations in the treatment of nephritis, hot air baths, and decapsulation were briefly considered. The value of von Noorden's fruit juice and sugar diet in nitrogen retention was emphasized, as was the futility of attempts to lower blood pressure directly in this condition. Finally, the significance of the different symptoms of uræmia was detailed.

After a keen discussion the meeting terminated with a hearty vote of thanks to Dr Langdon Brown for his most instructive and interesting paper.

### Reports of Societies.

#### RONTGEN SOCIETY AND BRITISH INSTITUTE OF RADIOLOGY.

##### INAUGURAL MEETING

THE inaugural meeting to celebrate the amalgamation of the Röntgen Society and the British Institute of Radiology, the first part of which, in the shape of Sir Humphry Rolleston's presidential address, was reported in the last issue (p. 951), was continued on November 18th, when a physics meeting was held in the morning and a medical meeting in the afternoon.

##### X-ray and Radium Protection

At the physics meeting, over which Sir WILLIAM BRACE presided, Dr G. W. C. KAYE said that it was estimated that well over one hundred of the earlier workers in x-rays had succumbed to their injuries. Protective measures had now been adopted in many countries, in general following the lines recommended by the Protection Committee in England, which sat under Sir Humphry Rolleston's chairmanship. In at least one country, Austria, they had been given legal force. The National Physical Laboratory, which had tested hospital installations, had found a progressive improvement in the efficiency of the systems adopted and in the protective value of the materials—lead, glass, and

rubber—commonly employed. The adequate ventilation of the x-ray room had an importance second only to protection. Spaciousness was not in itself sufficient, for the high-tension discharges speedily vitiated the air to an extent which called for special ventilating arrangements. Each room should be provided with its own suction fan or fans, each with its own outlet, and with inlets near the floor. The screening and developing rooms should be open to sunlight and fresh air when not in use. Dr Kave concluded by saying that radiology under proper conditions was in fact no more dangerous than any other profession, and it was not to the honour of radiology that even minor casualties should now occur yet within the last few months instances had arisen within his own knowledge of young physicists who had been badly burned while undertaking x-ray spectroscopic investigations.

Dr A. E. BOWLER said that in the radiology department at Manchester the dose that one of the workers constantly employed had received was measured over a long period and was found to be 0.007 of the unit skin dose each working day, no damage had been suffered. Dr L. A. ROWNES, as one who had started x-ray work in 1898 and was still actively engaged in it without having received any injury was of opinion that the damage done to workers was through direct exposure to the beam by the opening of the diaphragm. He believed that he was the first to enclose the x-ray tube completely in a lead box.

Another discussion took place on x-ray measurement. Sir WILLIAM BRIDGE said that the comparison of work from different parts of the world was rendered difficult by the want of a proper standard, he looked forward to the establishment of a definite standard as the result of the forthcoming International Congress of Radiology in Stockholm.

#### *Opaque Substances as an Aid to Diagnosis*

At the medical meeting under the chairmanship of Sir HUMPHRY ROLLSTON, four contributions were made on this subject. Sir JAMES PENNY-SMART referred to the use of opaque injections in the investigation of the central nervous system. He spoke first of the type of lipiodol known as light or ascending lipiodol which contained 11 per cent of iodine in olive oil. He did not regard this as of any great advantage. The oil injection even when it got through was blotchy and irregular. Moreover, iodized oil was semi-permanent and its effects good or bad were so far unknown. One important exception in which the use of ascending lipiodol was justified was in determining the lower level of compression due to a spinal cord tumour but such uses were rare because surgeons regarded determination of the upper level as the more important. Turning to the use of heavier lipiodol he said that the most generally employed method was that of injection through the sacro-coccygeal ligament. The use of lipiodol was of course only an accessary method not a short cut to the diagnosis of spinal compression, nor did it replace ordinary clinical examination.

Sir JOHN THOMSON-WALKER dealt with the radiology of diseases of the urinary system, especially of cases necessitating examination of the renal pelvis and ureter. Pnelography he said, had many applications in the diagnosis of renal disease which he summarized as follows: dilatation of renal pelvis and ureter; demonstration of congenital malformations, localization of renal calices of the kidney; diagnosis of renal growths, investigation of the contractile power of renal pelvis; localization of obscure radiological shadows; and investigation of abdominal tumours. He selected for discussion pnelography as an aid to diagnosis of renal growths in 90 per cent of which haematuria was an early symptom. Although a normal pnelogram was not absolutely conclusive it was strong evidence that no growth was present. Changes in the pnelogram indicative of renal growth were flattening and obliteration of one or more of the renal calices, exaggeration of the cupping and elongation of the neck of the calices, obliteration of a portion of the pelvis, and elongation, attenuation, irregularity and displacement of the pelvis, the renal calices and the ureter. Further the axis of the pelvis might be so altered

as to be transverse or obliquely, and though it might be displaced upwards, downwards, inward or outwards lateral displacement was more significant. The normal pelvis and calices frequently showed variations in structure which might be taken to be growths but which were really normal kidney. Dilatation of one or more calices was not unknown, and the shadow of a dilated calix might be separate from that of a distorted pelvis. In the case of growth on the pelvic outlet causing dilatation of the pelvis the pnelogram would show a hydronephrosis indistinguishable from one in other quarters. The speaker discussed objections to the method developed in Paris under the name of 'pneloscopy' in investigating the renal pelvis, and said that he had evolved a method of *sero* pnelography in which after the first pnelogram, the catheter was withdrawn and a fresh radiogram taken at intervals until the renal pelvis was completely emptied. The first point to decide was the time taken by a normal pelvis to rid itself of its contents after being fully distended. In some cases the pelvis emptied itself rapidly, no shadow being found at the end of two minutes. In other cases without any appearance of abnormality, evacuation was only completed after three to five minutes. The longest time taken by a normal pelvis to empty itself was five minutes or a little over. He discussed various factors apart from pathological conditions which might influence the contractile effort of the pelvis and concluded by saying that *sero*-pnelography was easily applied and resulted in a permanent record but as the method was new it was advisable to study normal as well as abnormal condition.

Dr L. S. T. BUTTELL dealt with chest conditions. In the diagnosis of intrapulmonary disease he injected the lipiodol through the crico-thyroid membrane, after anaesthetizing the skin with 2 per cent novocain and injecting into the trachea 0.5 c.c. or 5 per cent cocaine. He used a somewhat larger needle than that for ordinary hypodermic injections, and in order to prevent the needle breaking as a result of the tenderness of the patient to cough when he was certain that the needle was in the trachea he quickly plunged the piston and at once withdrew the needle. The lipiodol could be injected with an orinary laryngeal syringe. By the old method it was not easy to get it into the trachea without making the patient choke or vomit and generally feel uncomfortable. By his method the time occupied was less than two minutes and the operation was painless. He did not advocate giving more than 14 or 15 c.c. of lipiodol because it tended to get into the smallest tubes so that under the x-rays the appearance was that of an amorphous mass which obscured the picture. The use of lipiodol led to the detection of obstruction, and made it possible to determine whether a tumour was connected with the lung or outside it. The method was particularly useful in the diagnosis of bronchiectasis.

Dr R. A. GIBBONS spoke on the use of opaque substances in gynaecological conditions and also touched on the subject of sterilization by x-rays. What he desired to know was whether, working under standard conditions, a dose could be estimated, taking into consideration the age and any natural idiosyncrasy of the patient which would ensure temporary sterilization. If further, it could be proved that permanent sterilization by x-rays was to be regarded as practicable, efficient and harmless it would go far to deprive opponents of sterilization of one strong argument. He said that in cases of sterility in women it was obvious that no examination of the uterus or tubes was called for until all conditions likely to cause interference with conception had been eliminated. It had been estimated that in about 50 per cent of women who were sterile in spite of curettage the cause would be found in the tubes. His method of examination was to prepare the patient exactly as for enneting, antiseptic douches being given beforehand and the vagina and cervix painted with iodine. He used an opaque solution a mixture of sulphate of barium with a mucilage. The bore of the syringe should be as large as possible relative to the size of the canal and very little pressure should be used in injection. He usually gave the injection in the evening and made the examination next morning.

*Dinner and Exhibition*

The meetings closed with a dinner at the Whitechapel Rooms, over which Sir HUMPHRY ROLLESTON presided, when the health of the amalgamated societies was proposed by Sir FRANK DIXON, the Astronomer Royal. Sir HUMPHRY ROLLESTON said that it was hoped that the united body would do much to guide and stimulate radiology in this country, branches across the Tweed and St George's Channel were a possibility, as also sections for special subjects—biology, for example. He read congratulatory letters from Sir Oliver Lodge, Sir J. J. Thomson, and others, and also announced a gift of one hundred guineas from Watson and Sons (Electro-Medical), Limited. The toast of "The Guests" was proposed by Dr C. THURSTAN HOLLAND, and acknowledged by Sir JOHN ROSE BRADFORD and by Mr E. L. RAINER of the National Physical Laboratory.

Concurrently with the meeting an exhibition was held at the Central Hall, Westminster, to which some fourteen firms contributed apparatus and tubes, and half a dozen others photographic material.

## CHRONIC ULCERATION OF THE STOMACH AND DUODENUM

A MEETING of the Manchester Medical Society was held on November 2nd, the president, Dr J. GRAY CROOK, took the chair, and a discussion on chronic gastric and duodenal ulcer was opened by Dr N. KLETZ and Mr A. H. BURGESS.

Dr Kletz said there had been no definite advance in knowledge as regards the etiology. The one factor which seemed to have been established by experience was infection—namely, septic material carried from foci of latent infection and primary emboli in end-arteries of the stomach or duodenum. It was important to continue seeking for the causes, because in the absence of such knowledge all treatment, whether medical or surgical, was liable to fail owing to the cause remaining operative and consequently tending to reproduce the lesion. The diagnosis involved recognition of the presence of an ulcer and also its size, extent, localization, relation to surrounding points and, if possible, its chronicity. Pain was the chief symptom, and its regular rhythmicity had been stated to point to the presence of ulcer and even to indicate, according to the type of rhythm, the position of the lesion, whether gastric or duodenal. Such statements were unwarranted. Gastric pain—namely, pure visceral pain—was either "delayed" or "immediate." The mechanism of production of both these types of pain was considered, and the pain was shown to arise, not in the ulcer itself, but as a result of hypertonus or abnormal tension of gastric musculature. Either pain might be associated with ulcer, but might equally well be evoked by stimuli from distant organs such as the gall bladder and appendix, and act on the stomach through reflex nervous mechanisms. Fullness might have the same significance as pain, and the absence of the pain was no contraindication to the presence of an organic gastric or duodenal lesion. Somatic signs when definitely localized and clearly cut were of great value. A complete investigation was essential, including radiological examination, fractional gastric analysis, and testing the stools for occult blood. The value of each method was considered, and emphasis was laid on the importance of regarding each as one step in the whole, to be correlated accurately with a carefully recorded clinical history and a thorough physical examination. Treatment was by no means necessarily surgical. The first step should always be to seek carefully more chronic foci of infection and deal with it. Especial mention was made of the glow attached to the radiological examination of involved General sinuses and teeth. Cases should be blood sterilized. Operative treatment should always be infecting organism when there was any organic obstruction multiple emboli of innervation, (2) where there was relapse after of small-celled infiltrations, (3) if a penetrating ulcer was an island of epithelium, here was recurrent haemorrhage or Sometimes, and staphylococcus, and induration, and (6) in unfavourable conditions. Other patients should and this applied invariably also to principles and methods of medical

treatment were outlined and the duration of the various phases of treatment indicated. Mention was made of the failure to reduce acidity which might follow gastro-enterostomy and lead to recurrence of symptoms or even to jejunal ulcer. The value of fractional gastric analysis in indicating the secretory type of the stomach was mentioned. Failure was more likely to occur in the hypertonic, rapidly emptying stomach with a rapidly rising curve of acid. Emphasis was laid upon the importance of securing adequate dietetic and medical control after operation, and a plea was put forward for greater co-operation between physician and surgeon in the treatment of the common and troublesome condition of chronic peptic ulcer.

Mr A. H. BURGESS, discussing the statistics of the relative incidence of gastric and duodenal ulcer, said that from the published figures duodenal ulcer appeared to be much commoner than gastric ulcer in the north of England, whereas in London gastric ulcer was more common than duodenal. He referred also to the frequency of coincident gastric and duodenal ulcer. WILKIE (JOURNAL, September 11th, 1926, p. 469), in an analysis of 300 operations, had found that in 16 per cent of all duodenal ulcers there was also a gastric ulcer, and that in 53 per cent, of cases with gastric ulcer one or more duodenal ulcers were present. The work of ROSENOW on the special selective affinity of certain strains of streptococci for certain tissues was mentioned, he had isolated streptococci from the teeth and tonsils of patients with peptic ulcers, and also from ulcers removed by operation, and by the intravenous injection of these streptococci into animals had produced ulcers in their stomachs similar to those in man. From these ulcers streptococci were again isolated, and again produced similar ulcers on intravenous reinjection. These researches emphasized the importance of a careful search for any focus of infection in the teeth, tonsils, nasal sinuses, or elsewhere before operation, and in the appendix and gall bladder during operation. The relation of carcinoma to gastric ulcer was mentioned, and it was considered that the superimposition of carcinoma upon gastric ulcer did not occur in more than from 5 to 10 per cent of cases. Chronic ulcers arose as an acute ulcer or erosion, most of these erosions healed under medical treatment, and only a small proportion became chronic. Medical treatment should, therefore, be adopted in the early stages, and only where it failed to relieve the symptoms, or the symptoms repeatedly recurred, should surgical treatment be considered. Complications, such as haemorrhage, obstruction, subacute or chronic perforation, were indications for surgery. Where a radiological examination showed a definite ulcer crater, or marked deformity of the stomach or of the duodenal cap, operative treatment should be seriously considered. Recalling briefly the history of the operative treatment of gastric or duodenal ulcers, Mr Burgess said that gastro-enterostomy for chronic ulcer of the stomach was first performed by Doyen in 1892, and for duodenal ulcer by Codrill in 1893, for many years afterwards it was the only operative procedure adopted in these cases. It soon became apparent that its results, both immediate and remote, were much better in duodenal than in gastric ulcer. Excision of the gastric ulcer with gastro-enterostomy was tried, but was soon abandoned, since recurring ulcer, and even perforation, occurred. It had now come to be recognized that so far as the surgical treatment of gastric ulcer was concerned there were two essentials: first, the removal of the ulcer itself, either by excision or by the crutery (Balfour), secondly, the performance of a gastro-enterostomy, or, at any rate, of some other means of allowing the bile and pancreatic juice to enter the stomach freely and so diminish the tendency to hyperacidity. The mode of action of gastro-enterostomy was considered both in its mechanical and in its physiological aspects, and it was decided that both of these factors were concerned. If hyperacidity persisted after gastro-enterostomy then a secondary (anastomotic) ulcer was more likely to follow. The two essentials referred to previously could be either separate procedures, as when excision or crutery destruction was combined with gastro-enterostomy, or they might be combined in the single operation of partial gastrectomy, which was often technically easier. The objection to partial gastrectomy was that



it involved the sacrifice of a large amount of healthy stomach often many times greater than the actual ulcer, though in many this did not appear to cause any ill effect, yet several cases of pernicious anemia had been reported as following partial gastrectomy. The most difficult cases were those of ulcers of the lesser curvature high up, near the cardiac orifice. To treat such cases by partial gastrectomy would involve the loss of almost the whole stomach, local excision combined with gastro-enterostomy, if at all possible was the better procedure. Jejunostomy had sometimes to be performed in these cases, absolute rest being given to the stomach for many months, but relapses might occur when mouth feeding is recommenced. Braithwaite had advocated in such cases the operation of cholecyst-gastrostomy ("gastric biliary fistula"), which had been previously suggested by Babcock. In duodenal ulcer gastro-enterostomy gave good results in from 85 to 90 per cent of cases and, combined with the removal of the ulcer by excision or cautery, would appear to be the procedure of choice. The objection was, however, the occasional suppurative jejunal or gastro-jejunal (anastomotic) ulcer. The estimated frequency of this unfortunate complication varied with different writers. Balfour had found that it occurred in 16 per cent of gastro-enterostomies performed at the Mayo Clinic while Leviolin of Mount Sinai Hospital New York had reported that 34 per cent of 68 cases re-examined four to nine years after gastro-enterostomy showed gastro-jejunal ulcer. To avoid this complication surgeons had worked along two lines: some confined themselves to operations on the pyloric region such as pyloroplasty and its many modifications, Finney's operation, or gastro-duodenostomy, while others performed radical excisions of a segment of the duodenum, sometimes combined with extensive resection of the pyloric portion of the stomach (Pannett von Haberer, and Finsterer). One of the main objects of these extensive resections was to produce marked lowering of the gastric acidity but secondary ulceration had been known to follow all of these procedures. Of 100 cases of gastro-jejunal ulcer operated upon at the Mayo Clinic, and analysed by Balfour (Annals of Surgery 1926 [LXXIV, p. 271]) 20 per cent were associated with anastomosis so that diminished acidity after gastro-enterostomy was not a certain protection against gastro-jejunal ulcer.

### ANTERIOR POLIOMYELITIS

At the meeting of the Harveian Society at Paddington Town Hall on November 17th, with Dr E. L. PAXTON the president in the chair, two papers were read on the etiology and treatment of anterior poliomyelitis.

Dr S. A. KENNEDY WILSON said that the practitioner confronted with a case of this disease should be particularly wary in foretelling its course. Nothing could be deduced from the type of case as to whether the attack would be mild or severe. The ordinary textbook description of poliomyelitis as an affliction of the earliest years of life while no doubt substantially true had many exceptions and it was essential that this should always be borne in mind. From the literature of the subject he had been able to discover one case in which this disease appeared in a man aged 67, the earliest age quoted in literature was 12 days and intra-uterine infection was a possibility. Poliomyelitis might be expected at any time of the year although there was a greater incidence in the autumn months. It was difficult to produce poliomyelitis in the experimental animal except in monkeys and not all genera of monkeys were susceptible. The possibility of infection from horses, chickens, and other animals could be largely discounted also from lice and insect vermin it was doubtful whether the virus could be conveyed by inanimate objects. Water and various foods had been examined from time to time with negative results but milk appeared to be incriminated in one instance, where eight cases of poliomyelitis occurred in a small town in New York State and were traced through the milk supply to a person who while in the acute stage of the disease had milked the cows. The speaker thought it highly problematical whether chronic carriers existed. Poliomyelitis did not spread widely. A patient might be infective when he was in the pre-paralytic stage, after

the actual paralysis had declared itself he was much less likely to be so. Turning to therapeutics Dr Wilson instanced the difficulties in the way of specific treatment. It was very difficult to isolate a strain which was not so strong as to kill the experimental monkey or alternatively, not so weak as to fail to produce the disease in the monkey at all, specific treatment here, therefore, had not advanced. Urotropine was in vogue for the treatment of the disease, but, in his own hands, in the large doses advocated, it had proved disappointing and in moderate dose the results were not impressive. Bordier had recorded 65 cases of poliomyelitis treated by x-rays, with appropriate screens, three applications following one another quickly, after which there was a rest interval of twenty days. The speaker had had no experience of the method, but he thought it might be tried.

Dr JAMES COLLIER stated that although poliomyelitis was not supposed to have a family incidence it did sometimes occur in families, and he instanced one case in which four children of one mother were attacked, the infection was said to be purely human in origin. He thought that Dr Wilson had not attached sufficient importance to the part played by adults as carriers. It seemed likely that the carrier was not infectious for a much longer period than the average duration of the disease though it was true that the virus had been obtained from the respiratory mucous membrane of carriers well into the third week. Careful investigation had brought out one extremely cogent fact—namely that a large proportion of patients had never been in the presence of anyone suffering from the disease and therefore could not have been infected directly from another case. As soon as the clinical manifestations of poliomyelitis appeared in the patient he was no longer infectious although he might have been infectious in the incubation period. Lethargic encephalitis also never seemed to be transmitted from a developed case. Poliomyelitis spared boarding schools, institutions and large towns. In epidemics boarding schools enjoyed almost complete immunity. The worst epidemics had almost always been in scattered country communities and there had not been a bad epidemic in a closely populated town. An epidemic appeared to clear out all the susceptibles and to confer some immunity as had been shown by recent epidemics in Kent and the present total absence of cases from those areas. The speaker thought that lumbar puncture might have therapeutic value he was quite certain that it relieved the symptoms and for that reason it should be performed early and repeatedly. He was sure also that hexamine was a prophylactic against infections of the respiratory mucous membrane and that it was wise to give small doses twice or three times a day to members of a household or pupils of a school when there was any infection.

Sir JOHN BROADBENT remarked that he had never seen a case occur in hospital as the result of infection from a patient brought in with poliomyelitis.

Sir WILLIAM WILLCOX agreed about the absence of transference of infection in hospital cases. He had been engaged in hospital practice for thirty years and had seen a number of these cases but not one contracted from an infected patient in hospital (Dr COLLIER interjected that this was not the universal opinion and that there was controversy on this subject). Sir WILLIAM WILLCOX went on to say that at present medical practitioners who were not bacteriologists were rather in a quandary. A few years ago they were satisfied that influenza for instance was caused by the influenza bacillus and typhoid fever by the typhoid bacillus but now ultra microscopical organisms were being incriminated in some diseases. With regard to poliomyelitis he thought it extremely difficult to prove whether a person was a carrier or not and the etiological conditions had not yet been elucidated. He had encountered epidemics of the disease in the small country of Rutland and in 1916 he saw cases in an epidemic in a very much isolated village several miles from a railway station. It was extraordinary how this disease cropped up in isolated places. Some method of treating carrier by disinfection of the respiratory membrane might be tried but remedial should not be advised without some proved scientific basis for their beneficial action.

## Reviews.

### THE OPIUM QUESTION, WITH SPECIAL REFERENCE TO PERSIA

THE author of *The Opium Question, with Special Reference to Persia*,<sup>1</sup> was till lately physician to the British Legation in Teheran, and has spent twenty years in Persia, he writes as a lover and well-wisher of that fascinating country and its people. He deals historically with the opium problem, as well as with the recent efforts of the League of Nations. The poppy was introduced into Persia from Asia Minor or Mesopotamia centuries before the Christian era, but the use of opium for non-medical purposes dates from the tenth century A.D. Its abuse was condemned by Krumpf in his *Amautates Easica* (1712) as "a beastly vice," but opium smoking was not practised until last century, when it was introduced from Central Asia through Khorassan. From 1859 to 1914 the use under poppy cultivation enormously increased, and in the last few years is again increasing. The revenue now amounts to 70,000, and the yield to 600 tons of raw opium per annum. As is the case in India, it is largely used as a "domestic remedy," but about one Persian in ten is an opium smoker, and some of these, especially those who smoke "shirah" or dross, are "physical and moral wrecks." Accepting the League of Nations standard of 12 lb. of opium per 10,000 of the population per annum is that which may be medically or legitimately employed, the figure for Persia is 459 lb. per 10,000. About half the total output of 600 tons is consumed in Persia, the rest is exported, either through Persia into China, or by the Persian Gulf to the Far East. The value of the opium crop amounts to £2,000,000 a year, and 9 per cent. of the Government revenue is derived from this source. It is the most profitable of all crops, and in Isfahan one-fourth of the inhabitants are directly or indirectly engaged in the industry.

As regards the attitude of Persia towards the efforts made by the Hague Opium Convention of 1912, and more recently by the League of Nations, to secure international control of the commerce in dangerous drugs, Dr. NELIGAN, while approving restriction to medical purposes of opium and its derivatives, points out sympathetically the economic, financial, and social difficulties which impeded the desired progress in a producing country such as Persia.

The September meeting of the Assembly of the League of Nations had before it a report from its Fifth Committee dealing with this problem, together with a report from an expert commission which had visited Persia and made investigations on the spot in regard to the production of and commerce in opium, as well as the financial and other considerations involved in the proposed substitution of other crops for that of the poppy. This report had been considered and criticized by the Persian Government. It contended that the amount of Persian opium used for the manufacture of morphine, heroin, and medicinal opium was less than 1 per cent. of the total so utilized, and that the curtailment of cultivation must be equally applied to all opium-producing countries, as well as to those cultivating the coca plant. Moreover, the Persian Government claims that before it can be asked to substitute cereals and other crops for the poppy it must be accorded fiscal autonomy and freedom in the matter of customs tariffs. Nevertheless, willingness was expressed to reduce, three years hence, by 10 per cent. annually, the amount of poppy cultivation, and after another three years to reconsider the position as regards the cultivators, the trade balance, and the budget, as well as the action taken by other producing countries in reducing their output of narcotics.

As Dr. Neligan points out, Persia signed, with reservations, both the Hague Opium Convention of 1912 and the Geneva Agreement of 1925, but has ratified neither. His interesting booklet serves to show how complex a problem the international control of dangerous drugs becomes when the case of a country like Persia is studied in all its bearings. There opium production and consumption have been long established as an industry highly profitable to

the cultivator, the landlord, and the Government, and one in which a large proportion of the population is involved, while its export trade, both licit and illicit, is very great, and must contribute largely to the non-medical use—that is to say, the abuse—of this potent drug in other countries.

### PLASTIC SURGERY

DR. LYONS HUNT, who was an officer of the Medical Corps of the United States Army during the war, and now resides in New York, has written a book on *Plastic Surgery of the Head, Face, and Neck*.<sup>2</sup> He claims in the preface to it that since the war plastic surgery has become a "dignified specialty." Other important volumes on the subject have been published in America and in France, but we feel justified in saying that in comprehensiveness and attention to detail this book is in advance of its fore-runners, is might in the circumstances be expected. The author quotes, with approval, the work of Mr. H. D. Gillies, Dr. Leon Dufourmontel, and others, and necessarily gives a good deal of space to the war surgery of the face. The first chapter on the skin contains a number of useful hints for the guidance of surgeons and consideration of the important question of the "grain" of the skin and of Langer's lines of tension, which must be respected in choosing the site and direction of incisions, if disfigurement is to be avoided or minimized. The author condemns the practice of injecting paraffin, which was a good deal in vogue some years ago. He cites many instances of the evil results which have followed upon it in many cases.

Local anaesthesia is recommended for many operations, including those for cleft palate, and the chapter on this subject has been contributed by Dr. Stanley R. Maxeiner, M.D., F.A.C.S. These methods have been more generally used, and for more serious proceedings, in the United States than in this country, and this chapter will repay careful study. Dr. Hunt deals at length with the important subject of grafts and transplants of all kinds, but especially of the skin. The art of plastic surgery seems to be as full of terms of Greek origin as ophthalmology, and they are offered to our notice without etymological apology. We must confess to having had recourse to the dictionary for a translation of "rhinodectomy," which any Hellenist would know to mean excision of wrinkles. This proceeding appears to be of cosmetic value only, but no doubt the postponement of the appearance of old age may be commercially valuable to men as well as to women. The case of apparent rejuvenation illustrated by the author was of male sex.

This is, as already said, a comprehensive work, for it includes chapters on fractures of the jaws, on keloids and burns, and a chapter by Dr. Sinclair Tousey on physiotherapy in superficial surgery of the face, in which electrotherapeutics come largely into question, but in which somewhat oddly the treatment of keloid by oral administration of thiosinamin is recommended. Dr. Tousey's method of treating moles by painless electro-desiccation seems to be useful.

### DIAGNOSIS OF PANCREATIC DISEASE

THE valuable Rogers Prize at the University of London for 1926 was awarded to Dr. ROBERT COOPE, assistant physician to the Royal Southern Hospital, Liverpool, whose essay has now been published under the title *The Diagnosis of Pancreatic Disease*.<sup>3</sup> It is dedicated to Sir Archibald Grimod, Regius Professor of Medicine at Oxford, in acknowledgement of the stimulus and wisdom of his Schorstein Lecture at the London Hospital in 1920. Dr. Coope's essay is all that such an one should be: it begins with an historical summary which shows how recent is any real pathological knowledge of the pancreas, some anatomical and physiological points of importance are then passed in review, the clinical features are indicated, and the methods of diagnosis discussed. Ordinary and radio-

<sup>1</sup> *The Opium Question, with Special Reference to Persia*. By A. R. Neligan. D. Phil. and M. Camb. London: J. Bale Sons and Danielsson Ltd. 1927. (4s. 6d., pp. 84. 5s. net.)

<sup>2</sup> *Plastic Surgery of the Head, Face, and Neck*. By H. Lyons Hunt, M.D., F.R.C.S. Ed. Philadelphia and New York: Lea and Febiger. 1926. (6 x 9½, pp. vii + 204. 342 figures. 10 plates. 7 dollars.)

<sup>3</sup> *The Diagnosis of Pancreatic Disease*. By Robert Coope, M.D., B.Sc., MRCP. Oxford Medical Publications. London: Oxford University Press. 1927. (Cr. 8vo, pp. viii + 112. 12 figures. 5s. net.)

logical examinations are mentioned but the chief interest lies in the account of the tests for function, and here interpolated in the clear descriptions of the methods employed to detect failure of peristaltic function there are modest references to the author's own investigations—for example into the presence of ferments in the faeces and the fecal nitrogen.

That the critical faculty is not wanting is shown in the section entitled "L'oterie" tests with dubious foundations in which a well known and much discussed test for peristaltic is quoted as 'an example of the premature application of diagnostic tests' to clinical work before any sound and reasonable basis has been found for them."

### THE FUNCTION OF THE RENAL PELVIS

Pyelocopy consists in the radioscopic examination of the pelvis and calyces of the kidney rendered visible by the injection of an opaque liquid. Whereas pyelography merely records the anatomical condition of the kidney at the moment of the taking of an x-ray plate, pyelocopy furnishes information as to the emptying of the pelvis its contractile power and the action of its sphincters. In other words whilst pyelography furnishes only anatomical details pyelocopy gives physiological information. In chapter 1 the authors of *La Pyelocope* F. LECHE, BERNARD FEX and PIERRE TRUCHOT give a detailed account of pyelocopy. The initial stages of the examination are the same as for a pyelography. After a therization of the ureter, the pelvis and calyces are filled with a substance opaque to x-rays, preferably a 50 per cent solution of sodium iodide. In order that the eye of the observer may be capable of noting changes in the shadow observed on the screen a necessary preliminary is that he should remain for a period of fifteen minutes in a darkened room. Moreover, special care must be taken not to overdistend the pelvis as this would cause it to pass into a state of spasm and prevent the study of its motile power. The opaque fluid is therefore, injected only until the complete shadow of the pelvis and calyces is obtained the catheter is then removed and the emptying of the pelvis observed. The way in which this occurs is very similar to the emptying of the stomach. The ureter corresponds roughly in its function to the duodenum—that is to say, its contents remain but a short time within it being hurried onwards by rapid peristaltic waves. To that portion of the pelvis which joins the ureter the authors have applied the term 'ureteral bulb' and have drawn a parallel between it and the output of the duodenum. This bulb is kept continuously filled and evacuates its contents at intervals into the ureter in a fashion that closely resembles the emptying of the contents of the output into the adjacent portions of the duodenum. Above and below the ureteral bulb are two sphincters which control its filling and periodic evacuation. The rhythm of its emptying differs somewhat in different cases but generally the interval is from two to five seconds. It is found that in different pathological conditions this rhythm is altered, as is also the total time required for complete emptying of the calyces and pelvis. Normally the pelvis empties at the rate of one cubic centimetre a minute so that about fifteen minutes may be required for total evacuation. In certain cases of acute pyelitis the emptying may be more rapid and in chronic pyelitis especially when this is associated with marked changes in the pelvis emptying is delayed. Sometimes in cases of chronic pyelonephritis the evacuation which at first appears to be normal, stops so that residue remains in the pelvis. This incomplete emptying is especially marked in cases of hydronephrosis in advanced hydronephrosis complete retention may occur.

The authors have illustrated their book by a series of x-ray plates taken at intervals of three or four minutes. The x-ray plates furnish an extremely interesting record of the way in which the kidney is emptied in health and in disease. Especially suggestive are the plates illustrating the early stages of hydronephrosis it is probable that the application of pyelocopy to this condition will furnish the

key to its etiology. The idea that hydronephrosis is of necessity caused by obstruction in the ureter or in the lower portions of the urinary tract has of course long been abandoned, and the theory that a dislocation of the neuromuscular mechanism of the pelvis may act as the initial cause has been put forward. Pyelocopy according to the technique of Leguen, Fex, and Pierre Truchot will enable us to test the value of this theory and will probably result in a complete elucidation of what has hitherto been a urological puzzle. The work under review is therefore a valuable contribution to urological literature and should be read by all those who are interested in this branch of medicine.

### BACTERIOLOGY FOR DENTAL STUDENTS

Mr. ARTHUR BILLELD, in writing his textbook of bacteriology for dental students, has been mindful of the desire of the dental student for a small book which will give him an insight into general bacteriology and a working knowledge of dental bacteriology in particular. We may say at once that he has succeeded to a remarkable degree in a very difficult task.

In the first fourteen chapters the student is taught the common ground of bacteriology, next the salient points in the life history of the most prevalent 'general' bacteria and finally the characters of more specially dental bacteria in a well considered progression from the general to the particular. The last four chapters are devoted to subjects of general interest—examination of the blood, susceptibility and immunity, vaccines and antisera, and special laboratory investigations.

The dental student who reads this book will probably conclude that there is no royal road to knowledge in bacteriology particularly dental bacteriology and will conceive a deep sense of respect and gratitude for those who are working at a most difficult subject. He will note that while in general bacteriology there is a very considerable body of knowledge in his own particular field agreed facts seem hard to discover even when the author states clearly (p. 156) that McIntosh, Warwick, James and Lazarus Barlow have shown conclusively that *B. acidophilus odontolyticus* Types I and II are the ones engaged in the initial decalcifying process. He contradicts this assertion (p. 139) by quoting Kihara Clarke's recent work on the pathology of caries showing that

*Streptococcus mutans* is the organism responsible for the initial decalcification of the enamel. He may wonder, also whether there is any real meaning in all the antibiotic opsonins and agglutinins which crowd the pages of bacterial therapy, and ask the author who is more than usually clear in his diction when dealing with the subject—on page 199 is it the closely allied organisms that are agglutinated to that causing the infection. Indeed, our chief adverse criticism is the author's slipshod use of English, which is a serious blemish in an otherwise admirable book.

We may suggest that a notice of Drew's work on mouth amoebae and bacteria, and a description of the gum method of section preparation are worth inclusion in a future edition and we may ask for more consistent notes on the pathogenesis of each organism described. All told however we congratulate the author on a work which must have cost many years of hard labour.

### LIFE IN THE POYAI NAVY

When an accomplished writer who has been on up and down the service sets out to write his recollections, one naturally expects some thing more worth reading than usual. In *Reminiscences of a Naval Surgeon* by Surgeon Rear Admiral T. T. JR. C.M.C. and the late Vice-Roy, the author can scarcely fail to find a subject of the greatest interest. The glamour of the sea and the life of a well kept diary recording a varied experience in all parts of the world is a staunch lure for the greatest of fighting services the Royal Navy with the

34 Text B. L. of E. J. T. D. C. M. C. and the late Vice-Roy. Billeld (Medical Press) Ltd. 15 (Dorset St. W. 1) 1927. 15s. 6d. (P. 15s. 6d.)  
 35 Text B. L. of E. J. T. D. C. M. C. and the late Vice-Roy. Billeld (Medical Press) Ltd. 15 (Dorset St. W. 1) 1927. 15s. 6d. (P. 15s. 6d.)  
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consequent advantage of a universal popularity with all ranks and ratings—what better materials could be found for the making of a real life story? Dr Jeans gives it to us on every page, and there is never a dull line throughout his absorbing book. Entering the service in the years before "Channel groping" became the routine life for the majority of officers, he was fortunate in seeing active service at Manila during the Spanish-American war and in South Africa with the Naval Brigade before Pretorius and Bloemfontein. He has the happy knack of expressing himself in a lively and humorous style which adds salt to his vivid descriptions of such scenes as Cronje's larger immediate after the surrender, or the extraordinary state of affairs at Manila after Dewey's much trumpeted "victory" over the Spaniards. About the latter he writes somewhat superstitiously. Later on Dr Jeans served in the flagship on the North American and West Indies station. Stirring relations with Venezuela gave him the opportunity for obtaining first-hand information about that country and its inhabitants. The outbreak of the great war found him in the *Swiftsure*, flagship on the East Indies station. Inevitably the ship was sent as one of the covering ships for the landing at Gallipoli—merely the author had been sent temporarily to the flagship *Lurayalus*, so he had even greater opportunities of seeing things and meeting people than he would have had in his own ship. His account of the campaign is full of interesting details. No one who saw the combined operations from a similar angle could find fault either with the relation of events as they occurred or the critical thoughts which they evoked, with the single exception that the lack of co-ordination between the naval and military authorities at and soon after the landing might have been more emphatically set out.

The author has written down many wise reflections upon the state of the navy. He does not approve the tendency towards early marriage among the younger generation of naval officers, and offers a strong criticism of the educational system which denies to the junior executive officer the exercise of independent thought and the opportunity of sharpening his wits against officers not of his own profession. The powers that be might well listen to the advice he offers for overcoming this very serious defect.

Of the disadvantages of the medical branch he speaks feelingly and with candour. The unfathomable methods of Whitehall, the absence of "command" with the growth of seniority in the civilian branches, the unsoundness of wardroom life for elderly non-executive officers, that inevitable clash between the S.O.B.'s and the B.Y.F.'s (the polite version of which may be rendered as the Silly Old Buffers and the Blooming Young Fools), are all faithfully and sympathetically discussed, though no remedy for these ancient sores is offered. Perhaps there is none: the idea of finding any solution of the problem by the entry of short-term temporary medical officers is decisively rejected by Dr Jeans. But, disadvantages or no, the author is in no doubt that if he had to live his life over again he would retrace his steps, and that should be proof enough of the attraction of the service to the right type of man. The book is full of good stories and life-like character sketches. My lords might do no more than circulate it throughout the medical schools: it could scarcely fail to attract recruits.

### NOTES ON BOOKS

A VERY useful little book entitled *Notes on Clinical Laboratory Methods* has been prepared by the Standing Committee on Laboratory Methods in the University of Glasgow, of which Professor J. R. Currie, dean of the faculty of medicine, is the convener. This committee was established to secure uniformity of the laboratory methods employed in clinical teaching in the medical school. The various pathological tests performed in the side room laboratories of hospital wards are briefly and clearly described, and an attempt is made to complete the series by adding certain additional tests, such as Maclean's methods for estimating the blood sugar and the blood urea. The book is of convenient size for the pocket, and blank pages are provided at the end for additional notes. Although intended primarily for the use of medical students

in Glasgow it will probably be found very popular in other medical schools.

In his small book on *Chronic Pulmonary Catarrh* Dr DUNCAN LEYS, the John and Temple Research Fellow in Diseases of Children at St. Thomas's Hospital, is concerned with the common but non-specific pulmonary infections which frequently recur and eventually leave behind varying degrees of fibrosis. This subject has perhaps been somewhat neglected lately, and left out of consideration owing to the attention paid to lesions of determined bacteriology, though Dr H. Batty Shaw had written definitely about these morbid lesions. Dr Leys reviews the history of pulmonary fibrosis, and then deals with the syndrome of non-specific fibrosis of the lungs, drawing attention to the family incidence and Handfield Jones's conception of a "fibroid diathesis." The question of the nature of the infection, especially that of influenzal origin, is discussed and an account is given of the complications, prognosis, and treatment. The chapter on the x-ray appearances is illustrated by four plates. In an appendix, which must have entailed much labour, are given abstracts of a hundred cases the author has observed or traced. There is ample evidence of the author's conscientious industry and literary research into the subject.

Dr LEONARD P. LOCKHART's little book on *Industrial Hygiene* is intended as a help to managers, foremen, forewomen, and the like in improving and maintaining the well-being of the workpeople under their supervision. As medical officer of Messrs Boots Pure Drug Company at Nottingham he has had opportunities of putting his views to the test of practice. He rightly urges the necessity for co-operation by all concerned, and lays stress on the danger of doing for workers what they had better be taught to do for themselves. The headings of the chapters give a good idea of the matter in the book. These are: The hygiene of the factory workshop, and office, personal hygiene, common diseases, their causation and prevention, the causation, prevention, and management of accidents, the young employee, and a concluding chapter in which such subjects as fatigue, monotony, seating, etc., are shortly touched upon. The list of references to accessible authorities will be useful to those readers who wish to pursue the subject further. This book should fulfil its purpose, and we hope that it will be in the hands of many employers and employees also. The illustrations are clear and adequate, and the lessons given are conveyed in simple language.

The autumn number of *Intiquity* contains a very interesting paper by Dr E. Cecil Curwen on prehistoric agriculture in Britain. One of his conclusions is that probably during the later part of the Bronze Age fields came to be tilled with some sort of foot plough making a furrow, and therefore assumed a rectangular shape, formerly they had been irregular. Not everyone knows that this primitive form of plough is still in use in Skye and the Hebrides. It consists of a stout curved handle some five and a half feet long, set at an angle of 120 degrees into a footpiece nearly three feet long shod with a rough iron point. The crofter drives the footpiece obliquely into the ground by means of a double jerk of his foot, and then, by depressing the handle, levers up the sod, turning it over to his left, then he takes a step backwards and repeats the process. An excellent photograph of a crofter so employed forms the frontispiece to this number. Incidentally Dr Curwen gives an explanation of the step markings still to be seen on the slopes of chalk downs in southern England. They may have puzzled some of our country readers, who have probably found it difficult to accept explanations commonly given. They are relics of early terrace cultivation, when, by ploughing, the turf is removed from an area of ground there is a tendency for the exposed soil to travel downhill and to form an accumulation at the lower edge of the plot. Even on a moderate slope this in time produces a very marked bank, called locally a "lynchet" or "balk." The process is a little difficult to understand without the diagrams provided in the paper. The use of the two ox plough, Dr Curwen thinks, spread in the early Iron Age, but the Saxon conquest caused a complete break of continuity, introducing eight ox ploughs and the long narrow strip fields. Another article in the same number, by Mr Alexander O. Curle, is on the Scottish brochs, circular towers of dry stone masonry built in the Iron Age, but still occupied during the Roman invasion of Scotland. The illustrations in this number, as in its predecessors, are excellent.

\* *Chronic Pulmonary Catarrh*. By Duncan Leys M.B. M.R.C.P. London: H. K. Lewis and Co. 1927. (Demy 8vo, pp. viii + 130, 4 plates. 7s. 6d.)

\* *A Short Manual of Industrial Hygiene*. By Leonard P. Lockhart, M.A., M.B., B.Ch. London: J. Murray. 1927. (Cr. 8vo pp. vi + 114, illustrated. 3s. 6d. net.)

\* *Notes on Clinical Laboratory Methods*. By the Standing Committee on Laboratory Methods in the University of Glasgow. Glasgow: J. Smith and Son (Glasgow) Ltd. 1927. (Cr. 8vo pp. 66, 6 figures. 2s. net.)

The annual subscription payable to Mr O. G. S. Crawford Nursing, Southampton, is £1. Separate numbers can be obtained from Mr John Bellows, Gloucester, price 5s. 6d.

## SCROTAL CANCER IN COTTON MULE-SPINNERS

THE LATE DR S R WILSON'S LATE OBSERVATIONS

The extracts appended to this note are from the essay for the Tom Jones surgical scholarship, on "Mule-spinners' cancer," by the late Dr S R Wilson, whose tragic death last September was noted in your columns at the time. The report, sent in in 1910, was never published, but its contents were well known in Manchester.

Until Wilson made his original observation this form of scrotal cancer was only known to occur with rare exceptions in chimney-sweeps and tar and paraffin workers, its occurrence in cotton workers had not been recognized. The essay contained a careful consideration of what was then known about scrotal cancer, gave references to literature on the subject, and embodied Wilson's own new observations which have had such marked effects on the Lancashire cotton trade and the compensation of workmen, and are directing research along a line which may help to an understanding of the causation of cancer. Dr Wilson was associated with Mr A H Southam in a paper on the subject published in the *BRITISH MEDICAL JOURNAL* of November 18th, 1922.

Manchester

E M BROCKBANK  
JOHN S B STOFFORD

### EXTRACTS FROM DR S R WILSON'S ESSAY

After mentioning that the common opinion of surgeons in 1867 was that expressed in the current surgical and pathological textbooks to the effect that epithelioma occurs on the scrotum and is met with in chimney sweeps and paraffin workers Dr Wilson wrote:

This was my point of view until in the later part of 1906 I was appointed house surgeon to Mr Wright at the Manchester Royal Infirmary. Whilst in charge of his wards one or two cases of the disease were admitted and to my surprise on questioning the patients I found they were not chimney sweeps but mule spinners.

My observations would seem to show that the statement as to chimney sweeps is entirely fallacious at any rate as regards South Lancashire, for although about forty cases have been collected in no single instance did the patient follow the occupation of chimney sweep on the other hand, over 80 per cent were spinners, most of them belonging to the class of mule spinners.

Epithelioma of the scrotum must still be regarded as a trades disease but so far as South Lancashire is concerned not of chimney sweeps but of cotton workers. In my own series of cases of epithelioma scroti the youngest patient was aged 32 and the eldest 76.

Ages at which the Growth first Made its Appearance	
Between 30 and 35 years	3 cases
35 and 40	5
40 and 45	5
45 and 50	7+3 cases
50 and 55	2 cases
55 and 60	9
60 and 65	2
65 and 70	1 case
70 and 75	1
75 and 80	2 cases

37+3 cases=40

The average age calculated from the whole series was between 51 and 52 years.

A study of these figures suggests that the age incidence of epithelioma of the scrotum is much the same as for other forms of surface cancer such as epithelioma of lip, tongue, oesophagus and penis.

Average Age	
Lip	59.8 years
Tongue	51.9
Oesophagus	59.6
Penis	52.1
Scrotum	51.9

The above figures all based on the record of the Manchester Royal Infirmary show conclusively the close agreement in age incidence between epithelioma of the scrotum and other forms of surface epithelioma.

At the Manchester Royal Infirmary at least 34 cases were admitted between 1902 and 1910 (nine years) an average of about 4 cases a year. During the two years 1909 and 1910 five cases were admitted each year.

The Manchester figures are thus very striking especially when it is remembered that the Registrar General's report for 1895 shows a mortality of 6 or 7 a year from cancer of the scrotum. This increased frequency of the disease in South Lancashire is I shall endeavour to show associated with cotton spinning for although the London increase can be largely explained by the frequency of the disease in chimney sweeps in the Manchester cases not even one patient was a chimney sweep.

The disease is very intimately associated with certain trade and a consideration of such trades may enable us to determine the particular nature of the irritant in each case. The occupations which appear to predispose markedly to the condition are chimney sweeps, tar and paraffin workers and spinners particularly mule spinners. The relation of the two trades of tar and paraffin workers to epithelioma scroti has long been noted. The occupation which accounts for most of the numerous cases met with in this district is that of cotton spinners.

### Occupations of Patients with Epithelioma of Scrotum

Spinners*	25 cases
Labourers†	5
Gasworks labourers	2
Chemical worker	1 case
Ice worker	1
Furniture porter	1

In most cases mule spinners.  
† Two or three cases entered in the list as labourers were subsequently traced and proved to be mule spinners.

As a rule the workman has spent his life at the particular occupation or long periods such as fourteen to twenty years. Thus we see that more than 80 per cent of the cases were spinners chiefly (when details are ascertainable) mule spinners.

It might be thought at first that as spinning is such an important industry in Lancashire the influence of occupation was accidental, that this is not the case considering that the following points will show:

- 1 If the occupation is accidental how is it that epithelioma scroti is about sixty times as common as on the Continent?
- 2 The records of the Manchester Royal Infirmary show that other forms of surface cancer are not common in spinners.
- 3 Spinners only constitute a comparatively small percentage of the total population.
- 4 Mule spinning is at present at any rate a limited branch of spinning.

The question to be considered is whether the occupation of mule spinning results in some chronic irritation of the parts which leads to cancer.

The growth is in nearly all cases situated in the most dependent part of the scrotum on the left side. In many instances itching was an early symptom and led to rubbing and scratching of the part. In one instance the growth formed over a large hernia on the left side which had existed for sixteen years. Several of the workers themselves attributed the condition to nipping or trapping of the testis whilst at work. One patient complained of profuse sweating in this region. The question next to be considered is whether the nature of the irritation in the case of the mule spinner.

The following possibilities were then considered:

- 1 *Urethral*—By this I imply actual irritation of the part by the clothing. The little urethral meatus is a very important part of the scrotum and is liable to irritation by the friction of the garment. The dirt under the garment is being continually rubbed on the mule spinner in contact with the scrotum. The patient frequently complains of profuse sweating of the part.
- 2 *Dust* might imply irritation by dust or lint which is already mentioned or by the cotton or wool which is so prevalent.
- 3 *Grease*—One cotton mill owner gave me to understand that a good deal of grease got out of the looms in the form of a radio-active.

4 *Salt Crystals of Urea*—When the cotton is wet with sweat being spun one would expect to find a large amount of urea in the cotton which the worker wears when at work.



a specific irritant, the workers in flax suffer from eczema, said to be due to oils present in it

5 *Repeated Traumatism* due to the charr or carriage over which the mule spinner works. Several of the patients gave a history of repeated nipping of the parts, but the information obtained from the owners of the mills themselves was very inconsistent

In view of the fact that some definite irritant is probably responsible for the condition it would be interesting to investigate the chief trades which lead to irritation and eczema, as much valuable information might thus be obtained

#### Clinical Course

The majority of observers state that epithelioma of the scrotum most commonly manifests itself as a wart, or a number of warts, on the scrotum

Several warts resulting from the irritation of soot may exist on the scrotum for years, the wart is not necessarily cancerous, but in course of time, as the result of further irritation, it enlarges, and commences to ulcerate, thus forming an epithelioma, but the transition is so gradual and ill defined that it is impossible to say when the innocent merges into the malignant condition. These were the earliest features observed in patients, the bulk of whom were chimney sweeps. The skin of the scrotum showed no special features outside the area involved by the growth itself

The wart in my cases was probably, from the first, an early malignant manifestation, for in most instances ulceration supervened within twelve months, the shortest period which elapsed before ulceration occurred was two months, and the longest four years

Certain other modes of commencement were also noted. Three patients, all spinners, stated that the condition followed nipping or tripping in machinery, one of them attributed it very definitely to nipping by the charr or carriage over which he walked whilst mule spinning

I cannot find any instance of the condition commencing as an inconspicuous nodule or fissure in my series, but, of course, it has to be borne in mind that such an early condition may have preceded that in which an ulcer was first observed

#### Symptoms

Unfortunately, as in other forms of surface epithelioma, no early symptoms are complained of

Pain is very variable, and in many cases it is entirely absent until the late stages of the disease. Two or three patients said that the part itched, whilst a fairly large number complained of pain on movement or walking. In a few instances pain was very severe, it was of a shooting character, and was referred to the thigh. Loss of flesh was only observed as an early manifestation in two cases. Once the stage of ulceration is reached the patient complains of a fairly profuse foul discharge which causes irritation of the surrounding parts. Two patients complained of hæmorrhage from the ulcer, one was suffering from a varicocele of the same side (left), which may have explained the phenomenon

The further progress of the wart shows at first no special features. It gradually enlarges, becomes more prominent, and more indurated at its base, and frequently cracked on the surface. After a few months, sometimes two to three years, the wart begins to ulcerate in the centre and forms a typical epitheliomatous ulcer. Extension, other than enlargement of the glands in the groin, is not common. Occasionally the growth spreads to the tunica vaginalis and thence to the peritoneum, or the testis itself may be invaded and thickening of the spermatic cord ensue. The ulcer sometimes spreads to and invades the root of the penis, and in two cases amputation of that organ had to be performed

Several points of interest occur in connexion with the enlargement of the lymphatic glands. It has been stated that one marked peculiarity about epithelioma of the scrotum is that glandular enlargement is often very long delayed. My own experience is entirely opposed to this. In most cases the glands were noticed to be enlarged within about six months from the time the growth was observed. In two instances the invasion of the glands was delayed for two years, in another for four years, and in one case for several years

The inner group of the horizontal set of superficial inguinal glands in the groin is the first to be enlarged, but involvement of the remainder of the horizontal set and later of the vertical set soon follows, and in one instance excision of the upper part of the internal sphenous vein had to be performed in order that the glands might be satisfactorily removed. As the growth is usually on the left side of the scrotum the glands in the left groin are the first to be affected, but in consequence of the continuity of the superficial lymphatics of the two sides of the scrotum the glands on both sides are ultimately affected. At the same time it must be clearly understood that

ment of the inguinal glands in this disease does not necessarily signify that malignant deposits have occurred, a few epithelial cells will often be found in the outer lymph path immediately beneath the capsule

The further course of the disease is quite typical. The glands become enlarged, hard, matted together, adherent to skin, and finally burst, giving rise to sinuses exuding a very foul discharge. The femoral vessels are frequently exposed and distinctly visible. Death is due to septic absorption or fatal hæmorrhage. Visceral deposits are very rare. In some of my series, however, the testis, colon, and peritoneum were affected

#### THE PRESENT POSITION

In a post-graduate lecture recently delivered at the Manchester Royal Infirmary Dr E M Brockbank, consulting physician to the Fins Cotton Spinners and Doublers' Association and to the British Cotton Growing Association, and a medical referee, sketched the present position

He recalled that the Home Office Departmental Committee on the subject appointed in March, 1925, in its report issued in April, 1926,<sup>1</sup> stated that the evidence it had heard was strongly in favour of scrotal cancer in mule spinners being due to the prolonged action of mineral oils. In December, 1926, Dr James Robertson (M.O.H., Duxen), in a paper read to the Manchester Pathological Society, which was reported, along with the discussion that followed, in our columns at the time (December 18th, 1926, p 1181), advanced the view that friction from the fork of the overalls worn by the mule spinner, caused by a one-sided movement of the body, was a more likely cause of scrotal cancer than oil. Such irritation, repeated several hundred times a day for ten to fifty years, is alone more than likely to cause cancer. Disease, it would appear, rarely occurs in mills on the Continent, in France belts, which will not cause one-sided pull, are worn. In the cotton waste spinning and the worsted spinning industries in which a similar mule is used, the operatives piece with both hands, and the one-sided pull on the overalls is avoided. They work in a much cooler atmosphere and wear more clothes, and are rarely affected with cancer of any part of the skin

Some other points bearing on the oil theory of the causation of epithelioma of the skin are, to my mind, Dr Brockbank continued, important. It never occurs on the feet of workers in a mule room, who are all barefooted. This is a striking fact, for the many visits which I have paid to cotton mills convince me that the feet must be more or less oily from the very first day the operative walks, as a lad, barefooted into the mule room, the floor of which is covered with oil, until the day he leaves it for the last time, perhaps fifty years later. It is exceedingly difficult to get oil out of a garment or boots, and cotton operatives certainly do not wash their feet in hot water daily. The skin of the dorsum of the foot is very much like that of the body generally, and in 1910-12 cancer of the foot caused death in the general population once for every six deaths caused by scrotal cancer. The feet of mule spinners are liable to temporary injury, but not to chronic irritation. If oil causes epithelioma of the arm and face in mule spinners, why does it not cause it on the foot?

Epithelioma of the penis very rarely occurs in mule spinners only once in 241 cases of epithelioma of the skin in the experience of the Federation of Master Cotton Spinners. As the penis lies in front of the scrotum it must come in contact with oil on the trousers before the scrotum does. Cancer in this situation in 1910-12 caused death three times as often in the adult male population as scrotal cancer did. The nature of the skin in the two situations is, of course, different. Oilers, greasers, and engineers in cotton mills, whose overalls are always very oily, do not get scrotal cancer. They wear more underclothes than mule spinners do

But in spite of all this the more frequent occurrence of cancer of the skin in mule room operatives, as compared with other cotton operatives and the general population, in my opinion justifies the conclusion, in our present state of knowledge, that mineral oil does cause, or contribute to the causation of, cancer of the skin in cotton operatives

Experienced medical opinion in Lancashire considers that cases of epithelioma of the skin in older mule spinners may be the natural development of chronic ichthyosis, which often turns cancerous without any contact with mineral oil

No cases of intrathoracic new growths have occurred in mule-room operatives in the experience of the Manchester Royal Infirmary, although such diseases are usually prevalent in this district (Diguid). This suggests that mineral oil, of which there is a considerable amount in the air of the hot mule room, cannot cause cancer by inhalation

The scientific staff of the Manchester Committee on Cancer are endeavouring to isolate the cancer-producing constituent of mineral oils, and are meeting with promising results

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## DIATHESIS

In the history of medicine fashions in ideas and treatment are as prominent as those in dress and language in the outside world. It is not without interest to note how a dominant principle gradually loses its influence, becomes dormant, and later may raise its head and again become popular, though perhaps modified by the experience of its previous eclipse. In passing it may occur to the reader that one of the lessons provided by the study of medical history—a pursuit more in favour with those whose years are mounting up and providing them with the philosophy of experience—is to consider *that each fashion whether new or ancient, though not the whole truth, yet contains some basis of importance worthy of permanent consideration.* In the 18th century, before bacteriology focused attention on the seed, importance was mainly laid on the condition of the soil. In discussing the etiology of disease, and constitution and diathesis then played a prominent part in the current explanations of morbid conditions. John Hunter was followed by Thomas Addison, Thomas Laycock, W. H. Walpole and Jonathan Hutchinson in the study of the constitutional factor of man's maladies, and diatheses or special persisting morbid propensities to particular diseases such as the strumous and the gouty were much in vogue. Although the individual's constitution is not necessarily morbid, the term constitutional diseases is now used more commonly than, and is taking the place of, 'diatheses.' With the revelations of bacteriology attention was for a time concentrated almost exclusively on the exogenous factors of disease—bacteria and protozoa—and diathesis and constitution—the endogenous elements—were cast into the shade, if not ridiculed, as being incapable of demonstration on a plate even microscopically. But the pendulum is now swinging back, and the constitutional or endogenous factors in disease have for some time been studied with the help of anthropological and biochemical methods by Kraus in Berlin, George Draper in New York and others among whom the Regius Professor of Medicine at Oxford has been pre-eminent in connexion with the inborn errors of metabolism. Recently as our readers will remember, Dr Arthur Hurst set out in our columns<sup>1</sup> the practical applications of the constitutional factor in disease in an attractive form.

Sir Archibald Garrod in his philosophical Huxley Lecture on Diathesis printed in full in the opening pages of this issue uses the term as meaning much the same, though with not quite such a wide meaning as constitution. He leaves aside the statistical and anthropological method of approach—that formerly employed by Galton and now by Draper in his Constitutional Clinic at the Presbyterian Hospital, New York—and discusses with a wealth of modern instances the experimental method of investigating diathetic disease, pointing out that the experi-

menter is Nature and not man, and that as evolution makes advances the liability to defects correspondingly increases. The hereditary deviations originating in physico-chemical modifications of the complex molecules of the cells have in the past been greatly elucidated by the Huxley lecturer, who now directs attention to the large group of diseases on the borderland between structural and functional anomalies which are characterized by changes not in any one organ or individual structure, but in special tissues such as muscle, as illustrated by myopathies and progressive myo-sitis ossificans, the nervous system, as shown in familial abiotrophies like Friedrich's ataxia, the red blood cells in congenital haemolytic jaundice, and the bones in fragility with blue sclerotics and subsequently osteosclerosis.

Though less obvious clinically than these structural deviations the chemical mutations are probably no less numerous and as plant and animal life may well be regarded as a complex of physical and chemical processes, then importance cannot be neglected. Thus absence of ferments—for example of thrombokinase in haemophilia—and of the enzyme responsible for the formation of melanin in albinism—may cause serious disability. Inborn errors of metabolism may be born less in the absence of some additional factor—thus congenital porphyrinuria in which the skin is sensitized will not produce hydroa vacciniforme if the surface of the body is protected from light. But the evil effects may be delayed, leucopururia long thought to be harmless—is now known to produce ochronosis or blackening of the cartilages at about the age of 30 years, and later osteoarthritis, cystinuria which like gout is graphically described as a tragedy of insolubility, may or may not cause symptoms, the additional factor of *B. coli* infection of the urinary tract being responsible for the formation of calculi. A caution is thrown out against the temptation to be led into adopting the attractive conception of inborn errors of metabolism as a cloak for ignorance. Much remains to be learnt and even about gout in which the lecturer's father Sir Alfred Garrod eighty years ago demonstrated uricaemia, our knowledge is still very imperfect. There can however be little doubt that the influence and importance of hereditary chemical defects as underlying factors in disease will be shown in the future to be much greater than our present data allow us to regard as proved.

In concluding his lecture Sir Archibald Garrod touches on some other points of interest. Thus it may be difficult to draw a hard and fast line between diathesis and idiosyncrasy, the latter includes those striking examples of protein hypersensitiveness which are manifested by skin eruptions such as urticaria, erythema intermitent, hydrarthrosis, and at least some forms of asthma. It might of course be urged that protein hypersensitiveness may be acquired as in anaphylaxis, whereas a diathesis is inborn, but this is a distinction for further consideration. Another point, mentioned by him rather tantalizingly but not pursued, is the condition which is the converse of diathesis—namely the benign mutations and mitigation in increasing the resistance of the individual in the struggle for existence. In the so-called psychophysical panel on which Draper is at work the instability of the nervous system responsible for functional diseases may be inborn or it is so often the case required at any rate apparently. Sir Archibald Garrod's Huxley Lecture, with its scientific and thoughtful tone, will stimulate others to follow his biochemical footsteps to similar achievements.

## ENVIRONMENT AND THE ENGLISHMAN'S FUTURE

TOWARDS the end of the war, when the population was being sifted to provide fresh battalions, the country was shocked to learn how huge a number of the inhabitants were barely fit for a C3 category. The reports of the recruiting boards were used for a long time after the war by every kind of health reformer, though it is not clear that any proper statistical examination of the figures was made. No regard was paid to the increasing longevity of the race, nor to the diminishing mortality from various causes. It is interesting, therefore, to note the results of an investigation made recently by Professor F. G. Parsons. He set himself to discover whether the physical characteristics of the Englishman are altering in an observable and measurable degree, and if so, whether the changes are due to heredity or environment. He gave a preliminary account of the results of his inquiry to the Section of Anthropology of the British Association. He made an examination of some 5,000 children in London County Council schools, and was impressed by their health and beauty, even in some of the poorest districts. He attributes this to the spread of education during the last fifty years. To test whether better conditions have produced a measurable change, Professor Parsons selected three characteristics in adults for investigation—stature, coloration, and head shape—and with the help of friends made a series of observations. It was found that the average height of labourers in the Chilterns was 5 ft 6 in., and of patients in a mixed practice in Kent 5 ft 7 in. If, in making an estimate, the stunted manufacturing population of the Midlands is included, the average height of labourers in this country may not exceed 5 ft 5 in. But in the well-nourished classes it is different. During the last twenty years the average height of students at St. Thomas's Hospital has in no single year risen to 5 ft 10 in. or fallen below 5 ft 9 in. This, Professor Parsons believes, is a higher average than the students of forty years ago would have yielded, the conclusion is that hygiene and better nutrition have done their work, so far as stature in man is concerned. In women of twenty years ago at the School of Medicine for Women the average height was 5 ft 3 in., ten years later the average was slightly over 5 ft 4 in. This year 150 nurses and massage students at St. Thomas's Hospital show an average height of 5 ft 4.9 in. Professor Parsons believes that in the future the average height for all Englishmen will be 5 ft 9 in., and that the average height of the Englishwoman will later on become stabilized at about 5 ft 7 in.

His study of the colour of the hair and eyes has led him to the opinion that the Englishman's colour is becoming lighter, and not darker, as is usually supposed. Comparing his own statistics in some thousands of cases with those of Beddoe in 1860, he is struck by the increase in fineness. As regards the hair there are many possible sources of error. The use of pomatum in the earlier period is one such source of error. But even in the eye records, which are more reliable, the decline in darkness is large enough to be significant. It would appear, therefore, that the Londoner, at all events, is growing fairer under changing conditions. At the same time there is no doubt that popular impressions are, as Professor Parsons admits, different.

In head measurements Professor Parsons pleads for the use of height measurement in addition to length and breadth. He has adopted the method of adding the length, breadth, and height of the skull,

and dividing each dimension by the sum so obtained. The indices thus yielded are, on the average, only 0.006 lower than those obtained by extracting the cube root of the product of the three dimensions and multiplying it by three. An examination of skulls by this system of measurement shows that until the eighteenth century the only skulls with a proportional cranial height of more than 0.260 are those of the Beaker folk and the Hithite people, both belonging to the Alpine race. By the beginning of the nineteenth century the proportion of the head height in English soldiers had become 0.262. In the early part of the twentieth century it had risen to 0.267 in men of the Royal Engineers, measured by Benington, while in patients at St. Thomas's Hospital at the present day it is 0.271—an index also attained by the members of the British Association. In students of St. Thomas's Hospital and undergraduates at Oxford it was found to be 0.272, British anatomists meeting in Dublin in 1898 attained to 0.275, and the staff at University College to 0.278. Professor Parsons can see no signs of heredity or harking back to any known ancestry in the change which is coming over the English head. All the evidence shows that it would be unjustifiable to claim the Beaker folk as our main ancestors. He thinks it only reasonable to suppose that the Englishman of the future will have a very differently proportioned head from that of any of his ancestors, and thus he considers will be due to the gradual effect of improved conditions of life.

Professor Parsons concludes that the tendency is towards an average height of 5 ft 9 in. for men and of 5 ft 6 in. or 5 ft 7 in. for women, that as to colour, the people are now stationary at a stage with 66 per cent. having light eyes and 34 per cent. having dark, that hair colour has not darkened in the last sixty years, and may be becoming lighter, and that the head shows unmistakable signs of increase in proportional height and decrease in proportional length. Consequently British anthropology may lose some of its sentimental attractions, and there may be greater difficulty in determining whether the modern Englishman has more Saxon, Neolithic, Alpine, or Iron Age blood in his veins. He is becoming an individual who could not be formed by any possible combination of these stocks without the aid of external influences. Heredity alone would not, in Professor Parsons's opinion, account for the Englishman of the future, presumably the increase in height is due to better nourishment, and if conditions of better nourishment continue there should be increasing health.

## ASTHMA AND BRONCHITIS

In an annotation published a short time ago (October 22nd, p. 746) the quotation made by the promoters of the Asthma Research Council from the Registrar-General's returns, to the effect that more than 2,000 men, women, and children died from asthma and its kindred diseases, and every year was said to be probably fallacious, and we ventured the opinion that perhaps not more than half a dozen people died on an average in any year from uncomplicated or nervous asthma in England and Wales. It has been suggested to us that our statement was too sweeping, and our attention has been called to a paragraph in the Registrar-General's Statistical Review for England and Wales for 1925. It is there stated that this combination of causes (bronchitis and asthma) came under some suspicion, the doubt being whether two asthmatics were implied. The paragraph continues "Information as to this was obtained for 299 deaths, of which 193 were ascribed to asthma, 100 to bronchitis without asthma, and 6 to

'cardiac asthma.' But the significance of the combination proves to vary with its order, 242 returns of bronchitis, asthma proved to imply asthma in 146 cases or 60 per cent, bronchitis alone in 90 cases, or 37 per cent, and cardiac asthma in 6 cases or 3 per cent, whereas of 57 returns of 'asthma, bronchitis,' 47 proved to be asthma, 57 per cent, and only 10 bronchitis." It need hardly be said that we did not intend to suggest that the fallacy, if there be one, was due to the way in which the statistics were handled in the Registrar General's office and we had not in mind at the time the paragraph quoted above. The special inquiry therein mentioned appears to have been undertaken in order to ascertain whether the term 'bronchitis and asthma' was meant to imply a primarily spasmodic element which would justify the deaths being classed under asthma or whether the combination in practice meant nothing more than bronchitis. The results of the special inquiry seem to lead to the conclusion that the British practitioner, in certifying bronchitis and asthma, means something more than bronchitis, in the large majority of cases the answer to the inquiry was that bronchitis occurred during the course of asthma. One restricted the term 'paroxysmal asthma' to the independent disease but went on to say that in long-standing cases chronic bronchitis and emphysema complicate the disease and later is added hypertrophy of the heart." This addition to the definition certainly suggests that Osler recommended that there is a considerable mortality resulting indirectly from spasmodic asthma, which must be attributed to it as a primary cause under the usual rules of mortality tabulation. The result of the inquiry quoted points to the conclusion that in the case of most of the deaths so certified in this country asthma was thought to be the pre-existing condition. At the same time, we are disposed to adhere to our original statement that uncomplicated spasmodic asthma very rarely causes death and to maintain that bronchitis is one of the more common of the many causes of a series of attacks of asthma, but acts as much only in an individual with the asthmatic constitution. Infection of the nasal sinuses is probably a still more common exciting cause, tonsillitis is another but less common. Both also predispose to bronchitis. Because of these two circumstances bronchitis is often associated with asthma. Bronchitis complicated with asthma has a definitely higher mortality than bronchitis without asthma as the added bronchial spasm throws an additional burden upon the heart. There does not seem to be any good evidence that asthma in itself predisposes to bronchitis but as bronchitis is very common and as both bronchitis and such predisposing causes of bronchitis as sinusitis and tonsillitis are causes of attacks in asthmatic individuals sooner or later a majority of asthmatics have attacks of bronchitis. Thus, whereas hardly any asthmatics die from a single good remedy due from asthma and bronchitis. At the same time we are free to admit that the relation of bronchitis to asthma remains most confusing and therefore hope that the new council's appeal for public subscriptions to the fund it desires to raise for the purpose of defraying the expense of systematic inquiry may be successful. We are glad to know that it has now constituted an Advisory Medical Committee consisting of Dr A. F. Hurst of Guy's Hospital, Mr V. E. Negus, F.R.C.S., of the Throat Department of King's College Hospital, Dr R. J. S. McDowell, professor of physiology at King's College, Dr Gilbert Scott, medical officer to the Radiological Department of the London Hospital, Dr H. W. Barber, physician to the Skin Department Guy's Hospital, Dr R. D. Gillespie, lecturer on psychological medicine at Guy's Hospital, Dr E. C. Dodd, professor of biochemistry at the Middlesex Hospital, and Surgeon Rear Admiral T. T. Jarr, C.M.G., R.N. (ret.) secretary. It is proposed eventually to add a bacteriologist to the committee.

# COUGH AND STOMACH COUGH

THE paper by Professor Gunn on "The action of expectorants" (p. 972) occupies rather an exceptional position amongst the many valuable contributions made at the Annual Meeting, simply because it deals with a subject in which no important advances have recently been made. It is natural that attention should be focused on what may be termed the growing points in medical science, but really it is those regions in which advance has ceased that ought perhaps to receive chief attention. The treatment of cough is one of those unlucky subjects in which progress is slow or even absent, for it has remained practically stationary for half a century, the reason for this certainly is not that it has reached such a stage of perfection that advance is impossible. Professor Gunn has performed the very useful task of summarizing our present knowledge of the subject and of pointing out the chief deficiencies in this knowledge. In the first place, information concerning the normal physiological mechanisms by means of which the bronchial tree cleared of fluid is extremely scanty. We know that the bronchial muscles can contract and relax, and we know numerous reflexes and drugs that produce this effect but we do not know for certain whether peristaltic waves of contraction can pass along the smaller bronchi and thus clear them of fluid. The most important expectorants are included in the group that produces reflex effects in the lungs due to irritation of the gastric mucous membrane. Unfortunately, in this case we have only a vague knowledge of the effects that are thus produced, for instance, we do not know whether the main effect is increase in the bronchial secretion or increase in the activity of the bronchial muscles. The condition known as stomach cough is of interest in this connexion. There is good clinical evidence for its existence, and its occurrence in gastric disorder is to be anticipated from the fact that irritation of the gastric mucous membrane is the easiest method of producing increased expectoration. Very little, however, is known about the causation and treatment of stomach cough, although as Professor Gunn mentions Blunt recognized the condition and, indeed gave a graphic account of the manner in which a patient who was apparently in a highly dangerous condition from exhaustion and partial asphyxia was cured rapidly by the administration of such a simple remedy as sodium bicarbonate. It is unnecessary to point out the seriousness of persistent cough as a complication in disease for the interference with sleep that it causes is alone sufficient to make its efficient treatment a matter of great importance. The fact that modern medicine has made no real advance in methods for the alleviation of cough is a distinct reproach to therapeutics. Unfortunately the problem is one in which animal experiments can give relatively little help and the chief hope would seem to be in the discovery of improved clinical methods for the measurement of the actual effects produced in diseased lungs by the administration of expectorants.

## UNDERFEEDING IN EARLY INFANCY

THE current issue of the *Archives of Disease in Childhood* contains a paper by Dr Donald Paterson and Dr A. Marr-Claudes in which they seek to prove that underfeeding is of frequent occurrence in early infancy. The paper is founded on observations made in the out-patient department of the Hospital for Sick Children, Great Ormond Street and the authors go so far as to say that the vast majority of infants brought to that department suffering from gastric symptoms and failure to gain in weight were really being underfed. A hundred cases were taken from the out-patients under 6 months of age unselected except that

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infants with organic disease were excluded, fifty were wholly or partially breast-fed and fifty were artificially fed, all cases were given cod-liver oil emulsion along with their corrected diets. Of the breast-fed twenty-eight were definitely underfed. In each case a test feed was carried out and additional artificial feeds (complementary feeds) given immediately after the breast. Overfeeding on the breast was observed in one case only. This bears out the impression previously formed that overfeeding on the breast very rarely produces severe disturbance. Eight cases were underfed on the breast, but were already having complementary feeds. Augmentation of these complementary feeds produced an average gain of 8 oz. in the first week. The most markedly subnormal cases were instances of rumination, where the infant, usually a female, had formed the habit of regurgitating its food. Dramatic improvement occurred on giving thickened, concentrated feeds. Congenital pyloric stenosis was diagnosed in nine out of these fifty breast-fed infants. Of the fifty infants fed artificially, twenty-seven were receiving an insufficient number of calories, being starved on all three elements—carbohydrate, fat, and protein. Here the infant was left on the food it was having, but this was increased or altered suitably, so that its balance was adjusted. Sixteen of the infants were receiving an insufficient number of calories generally, but especially in carbohydrate, in such cases carbohydrate was added to the diet. In four cases the feed was sufficient in quantity, but carbohydrate was grossly deficient; all were being fed on dried milks without the addition of sugar. In only one case was there floundering, but the infants were very young and were generally underfed. Overfeeding was met with in two cases only, one of them had fat dyspepsia, the other was being grossly overfed, all the elements in the diet being in excess. It will be seen that of the 100 cases examined nine were underfed on account of pyloric stenosis, and four had required a nervous habit of vomiting (ruminations), their starvation was therefore secondary to a functional complaint. Three were overfed, leaving 84 per cent who were definitely receiving an insufficient number of calories. A proportion of the 84 per cent were being starved because the mother had insufficient breast milk, but at least an equal proportion who were artificially fed were getting insufficient quantities. In some cases the mother explained the size of the feed by saying that she had followed the directions on the tin. With one or two exceptions the directions on the tins of dried milks run at feeding infants by age rather than by weight. Thus an infant weighing only five or six pounds was receiving the same quantity as an infant of the same age weighing ten or eleven pounds, regardless of the difference in their caloric requirements. Most full-cream dried milks have no added sugar, and when made up simply reconstitute cow's milk. Thus sugar, the most important element in causing the child to put on weight, is left out. In this series twenty can be accounted for by a lack of sugar in the diet. The authors plead for the revision of the feeding directions on the tins of dried milks, as they believe that much harm results when the present directions are closely followed. From the examination of this series of 100 cases the authors draw the conclusion that the chief cause of gastric symptoms and failure to gain in weight in infants under 6 months attending out-patient departments is that they are receiving an insufficient quantity of food.

#### IMPERIAL CANCER RESEARCH FUND

THE twenty-fifth annual report of the Imperial Cancer Research Fund has now been issued. It may be recalled that a year ago it was decided that annual meetings of the Fund should no longer be held though the publication of the annual report would be continued. Dr. J. A.

Muiry, director of the Fund's laboratory, devotes attention in the present report to the question of the multiplicity of malignant growths, which formed the subject of the *Lancet* Lecture delivered by him at Cambridge last May. He had found that attempts to induce the cancer in mice after the removal of a mammary excision, or of an experimentally produced cancer, failed completely, but adds that other workers have not observed such an inhibition, and some doubt its existence. Further experiments are in progress which, it is hoped, will throw light on these divergent results. Another subject treated in the report is nuclear degeneration following pluripolar mitosis, which the director dealt with in his presidential address to the Royal Microscopical Society in January. Dr. W. Carmichael contributed a popular account of the evolution of cancer research to the April and May issues of the *Nineteenth Century and After*, with a view to providing educated laymen with a general summary of the knowledge that has been gained. Dr. Muiry refers to the visit on behalf of the Fund of Dr. Carmichael and Carlsberg to Berlin during the summer, in order to investigate Professor Warburg's biochemical conception of the nature of cancer. Warburg finds that tumour tissues are able not only to break down carbohydrates by normal respiratory processes, but also, when deprived of oxygen, can act like the yeasts and split carbohydrate so that lactic acid appears as a final product. Tumour tissues can employ both the oxidation and splitting processes, even when the supply of oxygen is not restricted, and thus give evidence of a mode of metabolism which is characteristic, distinguishing them from all normal tissues except the retina. On this basis Warburg has erected a hypothesis of tumour origin from oxygen deficiency. During the financial year ending June 24th, 1927, the Imperial Cancer Research Fund received subscriptions amounting to £2,001, representing a decrease of £578, the sum received from legacies was £1,917, which was less by £32 than that of the previous year. The total receipts were £13,489, and the expenditure £11,996.

#### THE EARLY NOTIFICATION OF TUBERCULOSIS

SIRISACTION with the decline of tuberculosis in this country ought not to obscure the fact that the campaign against this disease is not being pressed in some respects so energetically as is desirable. One of the primary objects of the tuberculosis dispensary has always been the search for patients in the initial stages of the infective process, in order that the saving value of the stretch in time may be practically demonstrated. The first difficulties as regards the provision of sanatorium and other treatment for these patients have been more successfully surmounted than is perhaps generally realized, but much remains to be done with regard to early notification. Thus it has been calculated that only about 20 to 25 per cent of the patients who apply for treatment are in the early and eminently curable stage, and this in spite of the efforts that have been made to educate the community during the last quarter of a century. Statistics relating to London boroughs indicate that in 46 per cent of the deaths due to tuberculosis in 1926, no notification of the disease had been made until within three months of death. It is considered that there must be a very definite improvement in this respect before the eradication of tuberculosis can be accelerated. The conditions that stand in the way of early notification are well known. There is, for example, the insidious onset of the disease and the natural reluctance of many persons to submit to medical examination for symptoms which, it is fondly hoped, are only transient; thus the infection is enabled to get a firm foothold. It is realized, moreover, that the results of such an examination may necessitate the abandonment of work, with consequent



financial anxiety and every doubtful chance of full resumption later, it is only natural that the first step should be put off from month to month. In the absence of tubercle bacilli from the sputum both private practitioners and menbers of hospital staffs are faced with the temptation to ignore other factors in the diagnosis, and to wait until there can be no possible doubt of the nature of the malady. Notification in the minds of some people seems to imply subsequent interference with personal liberty, and is therefore, unpopular, while the kindly and sometimes justifiable impulse to shield the patient from alarm by putting a less grave construction on the symptoms than is strictly permissible may have unhappy sequels in the form of inadequate treatment. The problem is many-sided and difficult, but some conclusions appear possible. There is need of greater enlightenment of the community, and even of medical practitioners, including those attached to hospitals as to the facilities available for the treatment of early cases. The economic difficulty would be greatly lessened if the public could be made to realize that the patient trained in the sanatorium, even though definitely tuberculous, is a far less dangerous companion in the workshop or office than the careless undisciplined man who is shielded by a diagnosis of bronchitis because tubercle bacilli were not discovered in his sputum by a single examination. Such realization would facilitate the re-entry of many treated and instructed patients into active life, and would obviate much unnecessary and uneconomic invalidism. With such a brighter prospect, notification and sanatorium treatment would lose much of their unpopularity with the medical profession and the laity, and would help in the discovery of curable early cases. The fact remains that failure to notify the individual consumptive, however excusable it may seem, amounts practically to a crime against the community. Such notification figures as those recorded above are a danger signal, and call for definite action.

#### A SURGICAL SUPPLY DEPOT

THE work done by the amateur workers of the Kensington Surgical Supply Depot during the war was very useful, but it is perhaps less generally known that the same work has been carried on continuously since the end of the war and its scope widened in various directions. Many of the workers are unpaid for the depot is not managed on a commercial basis and no profit is made. Indeed, but for voluntary contributions its activities would soon come to an end. In order to bring the productions of the depot to the notice of a wider circle of medical men an exhibition was organized in Nottingham Street St Marylebone, on two days last week. The work there shown did great credit to the workers who produced it. Particularly notable for their excellence were the numerous types of appliances made of celluloid a material devised during the war in the experimental workshop of the Ministry of Pensions at Queen Mary's Convalescent Auxiliary Hospital at Roehampton for the construction of artificial limb sockets. In it "Certus" glue which is a remarkably strong adhesive prepared from casein takes the place of the celluloid long used in the preparation of celluloid splints and jackets. Instead of the layers of muslin being impregnated with celluloid, which needs acetone as a solvent they are steeped in a watery mixture of Certus glue. Celluloid is, however, used as a surface finish. Such appliances are light, strong and non-inflammable. An excellent and really artistic artificial hand for a case of amputation near the wrist was shown. Such hands have been largely issued by the Ministry of Pensions and are found to be much lighter and much stronger than the old wooden hand which is now nearly obsolete. All sorts of

appliances in this material, from spinal jackets to talipes splints for babies, were exhibited. The well known fibrous plasters which are of such value in the stages of convalescence after amputation, were to be seen, as well as more ambitious attempts at the production of artificial limbs, some of which at least were evidently successful. There is, indeed, no form of mutilation, defect, or disability for which the depot is unable to offer a light, strong, and practical appliance. Thomas's splints, walking instruments, and high cork boots, all were shown. The metal work in steel and duralumin shows a high degree of technical achievement. A certain number of crippled boys have been trained in the construction of surgical boots. During the last six years work has been done for 193 hospitals, besides numerous private cases. We commend this society to the notice of all practitioners who need appliances for their less well-to-do patients. The annual bazaar in aid of the funds has been fixed for Tuesday and Wednesday, November 29th and 30th at the Kensington Town Hall. The address of the depot is 23 Upper Ladbroke Place, Kensington, W 8.

#### THE REGIUS CHAIR OF MEDICINE AT OXFORD

SIR E. FAIRHUR BIZZARD has been appointed Regius Professor of Medicine in the University of Oxford in succession to Sir Archibald Garrod who is resigning but will, we hope in his retirement make other contributions to medical literature of the value of that which appears in our issue this week. Sir Fairquhar Buzzard, who was born at the end of 1871 was the eldest son of the late Dr Thomas Buzzard, one of the leading neurologists in London of his day. Sir Fairquhar Buzzard was educated at Charterhouse and Magdalen College, Oxford where he graduated M.B., Ch.B. in 1898 and M.D. in 1902. He was a student of St Thomas's Hospital to which he eventually became physician. He was also at one time attached to the staff of the National Hospital for Paralysis, Queen Square and was the joint author, with Dr J. G. Greenfield pathologist to that hospital of a work on the *Pathology of the Nervous System* he has contributed many articles on neurology to the medical press and in 1907 gave the Goulstonian Lectures to the Royal College of Physicians at London on certain acute infective and toxic conditions of the nervous system. He was president of the Section of Neurology and Psychology of the British Medical Association at the Annual Meeting at Nottingham in 1926, and was a member of the Association's Special Committee on Tests for Drunkenness, which recently concluded its labours. He is a representative of the Royal College of Physicians of London on the General Medical Council he is physician extraordinary to the King and received the honour of K.C.V.O. last June. In the nineties he was one of the famous Old Curriehian XI which carried off all the amateur Association football honours.

#### THE ROYAL SOCIETY OF MEDICINE

THE Royal Society of Medicine will hold its first social evening of the present season at 1, Wimpole Street on Wednesday December 14th. Fellows and their friends will be received in the library at 8.30 o'clock by the President and Lady Berry and at 9.30 Sir Alexander Houston, Director of water examinations Metropolitan Water Board, will give an address entitled "The romance of London's water supply." The library will be open and a number of exhibits will be on view. Guests will need invitation card unless accompanied by a Fellow Member or Associate who can obtain cards from the secretary of the society.

## ROYAL SOCIETY OF MEDICINE

## ANNUAL DINNER

THE annual dinner of the Royal Society of Medicine took place on November 14th at the Hotel Victoria, when Sir JAMES BERRY presided over a company of more than three hundred. The principal guests were the Right Hon Lord Darling of Lougham, Sir John Rose Bradford (President, Royal College of Physicians), Sir Berkeley Moynihan, Bt (President, Royal College of Surgeons), Sir Arthur Keith (President, British Association) and the Presidents of all the principal medical societies of London. Another distinguished member of the company was Dr von Puquet, Professor of Children's Diseases, Vienna.

Lord DARLING, in a light and amusing speech, proposed the health of the society, and sketched with some romantic touches the history of the profession from the earliest introduction of medicine into the world by Chiron the centaur down to the formation of the Royal Medical and Chirurgical Society in 1805, and the fusion of that body with seventeen other societies to form the Royal Society of Medicine in 1907. It was not inappropriate, said his lordship, that a lawyer should propose such a toast, seeing that lawyers, especially in the administration of the criminal law, had done much to preserve the privileges of the medical profession. His own earliest recollections were of visits paid to a solemn-looking gentleman, dressed in a frock-coat, with high "choker" round his neck, and shepherd's plaid trousers, who commonly shook his head and appeared greatly to depress his (Lord Darling's) mother. Following upon such visits there arrived at the house a little bottle filled with fluid, generally black, with the invariable instruction that it must be well shaken—an instruction which was misread by the misadvent of one patient, who, instead of shaking the bottle, shook his master. Lord Darling further stated that as a child he took regularly James's powder concealed in jam as well as other medicaments, all this he had suffered in the interests of the medical profession, and he sometimes wondered how many discoveries had been made at his expense. But he bore the profession no ill will, and now that the science of medicine had so manifestly developed, he was tempted to wish that it might be developed still further, and that some therapy might be discovered and entrusted to the profession whereby people might be cured of wrong political opinions.

Sir STCLAIR THOMSON, immediate past-president of the society, then presented the presidential badge, which was the subject of a short description and sketch in our issue of November 12th (p. 890). He said that it had struck him as curious that this great and flourishing society should not have been furnished with the insignia which was usual in kindred institutions, such as the Royal Colleges and the Royal Society. His first effort to remedy the omission was to present a claim of office, which the society accepted from him at the last annual dinner. Next he bethought himself of a badge or jewel to hang to it, and consulted some members of the profession, like Sir D'ARCY POWER, Dr CHARLES SINGER, Mr WALTER SPENCER, and Dr ARNOLD CHAPMAN, who were learned in art and heraldry. A claim of office required a badge, a badge suggested a crest, and a crest entailed a coat of arms. After giving the technical description of the coat of arms, which has already appeared in these columns, Sir Stclair Thomson recited the rather melancholy history of the two supporters, SS COSMOS and DAMIAN. These were Arabian physicians, born in the third century, at Aeger in Cilicia, where there was a temple or school of Aesculapius. As COSMOS and DAMIAN gave their services freely the Greeks christened them *ἀναγύριοι*, meaning "moneyless." They were not only medical practitioners, but became saints, and in so doing had some fearful experiences, for this was the time of the Diocletian persecution. They were thrown into prison and beaten, and, this making no impression on them, they were bound and cast into the sea, here, however, an angel loosed their bonds and the "an ashore." It was true, said the speaker amid laughter, that there was no affidavit or statutory declaration as to this, but then there was no prize—at least no earthly prize—not any advertisement. But in the gallery of ancient and modern art in Florence a beautiful picture by Fra Angelico

might be seen, showing the angel helping them ashore. These martyrs were next bound to the stake, but the fire would not hurt them, they were hung upon crosses and stoned, but the stones rebounded and smote their persecutors, and at last the pro-consul, convinced that they were enchanters, had them beheaded, which ended their career as gratuitous medical practitioners. In the twelfth century their bodies were brought to Italy, and they were canonized. Titian, in a picture commemorating the plague in Venice, depicted these two saints, and they also appeared in mosaics or in painting at Rome, Ravenna, and Siena. But it was from the portraits of them in Florence that Mr Martin Travers, the designer of the society's coat of arms and presidential badge, had, in the language of the Garter herald, "relieved" the coat of arms. The principal founder of the Medici family, born on the fate day of the two saints, was christened Cosmas, and by his command, in 1439, Fra Angelico painted a beautiful altar-piece for the convent of St Marco and nine miniatures depicting the history of the saints. In a small chapel in the Church of Santa Croce at Florence there was a stained-glass window by an unknown artist, showing the saints standing side by side, dressed in scarlet robes with green trimmings, and large red hats, and carrying, the one a pharmacy jar and the other a surgeon's knife. At their feet were the arms of the Medici family, for this great family not only showed that it had sprung from a medical stock, as indicated by the six pills on its shield, but adopted these two medical practitioners as its patron saints. As Arabian physicians skilled in the learning of Greece, as canonized saints in the Roman Church, perpetuated in mosaics, painting, and sculpture by the great artists of Italy, and as patrons of the greatest medical family that ever lived, the Medici of Florence, he trusted their inclusion in the coat of arms of the Royal Society of Medicine would be generally approved. He had great pleasure in making this small offering of the chain, badge, and coat of arms to a society whose chain had had so many distinguished occupants, whose funds had had so many generous donors, and whose welfare had enlisted the labours of so many worthy men.

The device was passed round among the company and was very greatly admired.

Sir JAMES BERRY, after suitably acknowledging Sir Stclair Thomson's gift, spoke of a number of domestic matters. During the year there had been five thousand accessions of books to the library. A recent revision of editorial procedure would allow of the more prompt publication of papers. Last year 250 Fellows were elected—fifty more than in any previous normal year. He thought the society might do more in the way of setting up special scientific committees, which it was empowered to appoint under Article 21 of its charter. One such committee, on the administration of anaesthetics—a matter referred to the society from the Ministry of Health—had done valuable work during the year. The society was still burdened with a debt of £20,000 on its building. He paid a tribute to the retiring senior honorary secretary, Mr Gilling Ball, for his admirable services. Dr Letheby Tidy was his worthy successor, and Dr Tidy's place as junior honorary secretary was filled by Mr E. K. Martin. The society was fortunate also in having an admirable permanent staff, all of whom, from the secretary, Mr Geoffrey Edwards, downwards, worked for the society with a devotion and enthusiasm beyond praise.

Mr WARREN LOW, in a very happy speech, proposed the health of the guests and the kindred societies, and had something apt to say about every one of them. Of Sir Arthur Keith, whose name he coupled with the toast, he said that there was reason for pride in the fact that the reigning President of the British Association should be a member of the medical profession, and that in such an exalted position the profession should be represented so ably.

Sir ARTHUR KEITH, in responding, confessed to a dual personality. It was the President of the British Association who had enjoyed the hospitality of the evening, but the "other gentleman" who rose to make the speech was the humble servant of a proud college. To paraphrase his president he was a poor medical practitioner doomed to

the practice of anatomy. He had always kept his foot within the door of medical practice, however, because he had never been quite sure that some day he might not have to open that door quite wide and step into his own surgery. He proceeded to make a few remarks on the rationality of medicine. The great difficulty in the way of making medicine more strictly a science was that of educating the public. Any such effort would find itself confronted for example with the immense authority which an address in Harley Street inspired, although to the rational mind the name would mean nothing at all, but it does you know. The way in which the doctor drove up to one's door, or the way in which his tailor had sent him out into the world, should be matters of absolute indifference to the rational patient, yet the doctor was apt to be assessed not according to his professional worth, but according to his outward appearance. Every young man or woman entering the medical profession was determined to be a rational practitioner with no jot or tittle of quackery, yet the young practitioner scarcely realized what he was up against, which was nothing less than human nature with its complexity and occasional perversities. Nevertheless headway was being made. In the old days it was the Church that ruled the world, now it was coming to be scientific knowledge. No longer did the village surgeon go up to the rectory and ask whether a certain thing was right to be done, but the village doctor went down the street to the surgery and said, "What do you think? Can I preach this next Sunday?"

## SOCIETY OF MEDICAL OFFICERS OF HEALTH

### ANNUAL DINNER

THE annual dinner of the Society of Medical Officers of Health was held at the Piccadilly Hotel on November 17th. In the absence through illness of the president of the society (Dr. J. M. Wheatley) the chair was taken by Dr. I. H. SELL. The guests included the Right Hon. Neville Chamberlain M.P. (Minister of Health), Lord Eustace Peier (President of the Board of Education), Sir George Newman, Dr. Andrew Balfour, Dr. H. B. Braekenhurst (Chairman of Council of the British Medical Association), and the Dean of Westminster, and a number of medical officers were present from other countries: France, Germany, Hungary, Switzerland, Holland, Sweden, Norway, Czechoslovakia, Yugoslavia, Iceland, the Irish Free State, the United States, and Brazil were all represented at the tables.

Dr. SELL, in submitting the toast of 'The Ministry of Health,' did not think it necessary in such an assembly to describe the birth and the growth of the Ministry, but every medical officer hoped that it would go on progressing and experience no regressive stages. In the eight years during which the Ministry had been in existence there had been five Ministers. Perhaps they moved without reluctance to other positions. But Mr. Chamberlain had scored a 'record' in that he had been in office for three years. All present knew Mr. Chamberlain's qualifications. He took his duties so seriously that recently he had been making excursions into various parts of the country to study local administration on the spot. There was one thing which probably Mr. Chamberlain himself did not know, that it resulted from these visits—namely, that certain local magnates had for the first time visited welfare centres, tuberculosis dispensaries, and other 'fads' of their medical officers.

Mr. NEVILLE CHAMBERLAIN, in responding, said that it gave him the greatest pleasure to be present at that gathering in company with so many fellow workers in the cause of public health. While agreeing that the visits to which the chairman had referred might have produced results of which he was proud, he was bound to confess that he did not know whether more to ponder at the extent and variety of the duties which fell to the public health officials or to admire their skill, resource and ingenuity. It was a remarkable fact that although the medical officers were concerned not so much with the treatment of disease as with its prevention, the public had so well comprehended the value of the work done that in these

days of limitation with regard to the number of rates and taxes no single voice was raised in favour of cutting down the preventive services for which medical officers were responsible. He was glad that an increasing number of local authorities were realizing the advantage of employing whole time officers whose attention was not likely to be distracted by different and perhaps conflicting considerations. It was important, if the best was to be got out of the public health service, that there should be the closest co-operation between the Ministry on the one hand and medical officers on the other, and also between medical officers themselves. It was important also that the relations between the county medical officers and district medical officers should be of the closest possible character. The synchronization of their work and the friendly relations between those two sets of officers should always be in the mind of members of the society. Again, the efforts of local authorities and their staffs could never reach full development unless the public co-operated with them, but it was not reasonable to expect such co-operation unless the public had some understanding of the dangers to be avoided and the purpose of the injunctions laid down in health matters. There was one special way in which medical officers could assist in the education of the public. The Ministry of Health every year asked for a report from medical officers, and for the most part received it—after a time! Up to last month over 130 reports for 1926 had not reached the department. Such reports were not only of great assistance to the public and to the general body of medical officers, but to the Minister himself, because they furnished a true and more vivid picture of the conditions in the various localities than could be obtained in any other way. Mr. Chamberlain thought that more use might be made of the medical officers of health in the work of research, not so much in laboratory research as in the study of the mass of facts in their possession on matters with regard to which up to the present there were no generally agreed conclusions. It seemed to him that in regard to the actual results of vaccination—not only in small pox, but in other diseases—to the diversity of practice in regard to scarlet fever and to several other matters, medical officers had before them a vast unexplored field of investigation and research. By taking these matters into their consideration he believed that medical officers would succeed in adding further laurels to those already won and would still further increase the obligation under which they had placed the whole country.

LORD EUSTACE PEIER, in submitting the health of the society, began by paying a tribute to the admirable way in which it carried out one of its functions—namely, co-operation with the Health Committee or the League of Nations in arranging for visits to this country of medical officers from abroad. No more valuable work could be done in these days than that which drew closer the bonds of international fellowship and aimed to consolidate the work of public health over the whole world. It was with a certain amount of diffidence that he spoke of the work of the Board of Education rather than of the society, but he might be permitted to deal with the main characteristics of medical work in the school. The system of medical inspection in the schools at three periods during school life had been practically completed and the service was now concerned with the development of method of treatment of the defects revealed by such inspection. The treatment of minor ailments had increased from 576,127 cases in 1924 to 665,658 in 1926, of visual defects from 162,917 to 196,672, of nose and throat operations from 34,854 to 68,250, and dental treatment—a part of the service particularly necessary to develop—from 654,365 to 852,517. Such growth in two years indicated that the medical officers of health and the school medical officers were really getting to grips with the cancer remaining to be tackled in the development of the school medical service. The most important feature of the last two years had been the development of orthopaedic work throughout the country. Starting with a few authorities who had orthopaedic sections, in 1926 there were 132, or 47 more than in 1925, while school clinics had increased from 70 to 122. Preventive treatment was capable of expansion in other directions. The number of open air schools now being

provided was noteworthy, and he hoped that preventive treatment might be increasingly extended to what those concerned had been content to call mentally defective children. By early special teaching of such children in the ordinary elementary school it might be possible to prevent the stigma involved in transference to a special school which had about it something of the atmosphere of an institution. The press sometimes spoke of the "vast horde of officials" which the development of public health and school medical work was supposed to bring into being. In the county as a whole the nurses engaged wholly or partly in school work represented one to every 1,000 children in the elementary schools, and of these over 40 per cent were district nurses, not directly employed by the educational authority, over 30 per cent were employed in public health work as well as on school medical work, and less than 20 per cent were on school medical work exclusively. Taking the senior school medical officers and assistant officers, the "horde of officials" amounted to one to every 4,000 children. Only 20 per cent of these officials also were exclusively on school work. The Board of Education was to a very great extent enlisting the services of general practitioners. The efficiency of the present organization, though Mr. Chamberlain and the speaker might take some of the credit for it, was really due to the public health officers and school medical officers of the county.

Dr. SELL responded in a very happy speech. He said that one of the subjects which had engaged the attention of the society during the past year was that of education. As a result of Section 67 of the Public Health Act, 1925, the society had had many requests from members for guidance in connexion with voluntary societies which set themselves out to give education in health matters. A Central Council for Health Education had been formed, one of the functions of which was to advise local authorities and their officers as to the value or otherwise of voluntary societies which set themselves out to educate the public. He thought the most important measure which had been put on the Statute Book in this generation was the measure resulting in systematic medical inspection of school children. Central bodies who adopted centralized methods and divided the country up sometimes gave the local men a disconcerting half-hour. For instance, a letter would be received from the Board of Education pointing out that there were fewer cripples in one's area than there ought to be, or from the Ministry of Health, that the local register of blind people had not sufficient names upon it, or from the Board of Control, that the number of mentally deficient was inadequate, and thus after he had been working to prevent and diminish all these things! In turn did he write and say that the intelligence quotient in his area was far and away above the rest of the country! Nevertheless, he thought all members of the society would agree that it was a pleasure to be met in the way they were when they sought assistance from Government departments and their officials, and they welcomed the increased opportunities for consultation over such things as draft regulations.

The remaining toast was that of "The Guests," proposed by Professor BOSTOCK HILL, and responded to by the DR. of WESTMINSTER and Dr. SIEBERSCHMIDT, director of the Institute of Hygiene, Zurich.

## AN OUTBREAK OF PARATYPHOID B FEVER IN WEST HERTS

THROUGH the courtesy of Dr. H. Hyslop Thomson, county medical officer for Hertford, we are able to give authoritative particulars of the recent outbreak of paratyphoid fever in West Herts.

On November 11th Dr. Thomson was notified that several cases of typhoid fever had occurred in the borough and rural district of Hemel Hempstead. The number of cases, including doubtful cases, which had been notified up to and including that day, was 23, of which 11 were in the borough and 12 in the rural district. The total number notified up to November 18th was 116, of which 63 were in the borough of Hemel Hempstead, 42 in the rural district, and 11 in the rural district of Watford. The first steps taken were to

provide, as far as practicable, adequate hospital accommodation for all cases requiring removal to hospital, and to ascertain and immediately to deal with the source of infection. With regard to hospital accommodation, the ground had previously been prepared by the mayor, and it had been possible to make immediate arrangements with the West Herts Hospital by which, in conjunction with the Isolation Hospital, accommodation became available on November 11th for between 40 and 50 patients. Arrangements were made later with the Watford Isolation Hospital to accommodate up to 30 cases, and the number of cases in these three institutions at the present time is as follows: Hemel Hempstead Isolation Hospital 28, West Herts Hospital 48, Watford Isolation Hospital 20—a total of 96. If further hospital accommodation should become necessary it is proposed to arrange for the admission of patients to the Poor Law institution. All the patients were reported early this week to be doing well.

### Source of Infection

The reports of the sanitary inspectors indicated that all the patients notified had a common milk supply, which pointed to milk as the probable source of infection, and this was confirmed by subsequent reports and investigation. On November 11th Dr. Thomson inspected the premises of a retail milkman who had supplied all the patients with milk. He was warned that no further milk would be allowed to be distributed by him unless it was properly sterilized by raising it to a temperature of 150° F. for thirty minutes, this he did. Further investigation showed that this milk dealer received milk from nine farms, as well as occasional accommodation milk from a company, but as the latter was pasteurized it was ruled out as a source of infection. The number of persons employed by the retail dealer in connexion with the distribution of milk was twelve.

On November 12th the investigation was directed in the following directions: (a) bacteriological examination of the water supply, (b) bacteriological examination of samples of milk from the nine farms, (c) blood tests in the case of those who were chiefly employed in handling the milk at the retailer's, and (d) steps to ascertain whether at any of the nine farms there had been any illness suggestive of paratyphoid B fever, which was the type of fever characteristic of the outbreak.

The results of these investigations were as follows:

(1) Two cases of fever occurred on the retailer's premises, one notified on November 4th and the other on November 17th. (2) The blood tests showed that the retailer himself and five of his roundsmen gave a positive or partially positive Widal reaction. (3) At one farm (X) a case of illness was discovered in a child aged 3½, who subsequently gave a positive reaction. This farm also supplied two houses in the neighbourhood with milk, and in one of these houses two cases of paratyphoid fever occurred.

These results indicate the primary source of infection as the child at farm X, who infected the milk supplied to the retail milkman, and though this induced a secondary source of infection by infecting some of the members of the retailer's family and his staff. At two other farms, at one of which was an ex-soldier who had been in Mesopotamia, samples of blood were taken, but with negative results. Further investigation showed that the outbreak was specially limited to three districts. This distribution would be accounted for by the fact that the milk was not regularly mixed and that some of the roundsmen gave positive Widal reactions.

### Action Taken

In addition to sterilization of the retailer's milk the following action has been taken. The mother and her child aged 3½, from farm X, and the two patients in the retailer's household, were removed at once to hospital. Immediately it was found that the retailer himself and four members of his staff gave positive reactions and were therefore possible carriers they were forbidden to have anything to do with the milk, and were subsequently removed to special accommodation in the West Herts Hospital. Premises have been disinfected and efforts have been made to isolate the dairy as far as possible from the house.

*Present Position and Future Action*

The present indications are that the outbreak has been checked, although Dr Thomson and his colleagues cannot be quite confident of this for a week or ten days. One or two sporadic cases not within the main group infection are likely to occur and some cases of delayed diagnosis within the group itself are being reported. The fever is a well marked paratyphoid B infection. Some cases are severe, but many are comparatively slight. All the patients are reported to be doing well and no deaths have so far occurred.

In regard to future action Dr Thomson has made a number of recommendations, more particularly as to the requisition by the milk retailer of new premises for his business away from the house and the installation by him of a pasteurization plant. As regards farm X Dr Thomson reports that some alterations are necessary if even a relatively clean milk is to be obtained. The yard requires to be cleaned drained, and lined with flints; a new and larger milk house is necessary and some arrangements for sterilizing the milk churns are required.

## Scotland.

### ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW *President's Budget.*

On the conclusion of his term of office the retiring President Mr R M Buchanan presented to the Royal Faculty of Physicians and Surgeons a budget of office to be worn by the President and at the November meeting he introduced with it his successor, Dr G H Edington.

The badge is in the form of an oval medallion in gold on the obverse of which are the armorial bearings of the Faculty.

The bearings are in enamel of the appropriate heraldic colours. They consist of a shield with in first and fourth quarters azure an Aesculapian rod in pale between a lancet on the dexter and a poppy slipped and eeded on the sinister all proper in second quarter the Royal Arms of Scotland and in the third quarter the arms of the city of Glasgow. Above the shield is placed a helmet befitting the degree of the Faculty above which is the crest an open book surmounted by an antique burning lamp and over all the motto *Conjuncti amici*. The



supporters are dexter Minerva and sinister Hygea and on a compartment below the shield this motto *Non vivere sed valere vita*. The reverse of the medallion is inscribed *Donum dedit RMB MCMLXXXVII*.

The ornaments which were adopted in 1863 in substitution for the previous armorial symbol were matriculated in 1910 following on the grant of the title 'Royal' by King Edward VII. At the time of their adoption careful search of the records of the Faculty failed to throw any light on the date or the circumstances of the adoption of the previous symbol. The old symbol was the rod and serpent in the centre or a shield and flanked by lancet and poppy and the motto was the *Conjuncti amici* of Horace, which might be considered an allusion to the dual composition of the Faculty. The badge which is worn suspended round the neck by a dark blue ribbon, was designed and manufactured by Edwards of Buchanan Street Glasgow.

### PRESENTATION TO DR HUGH MILLER

Dr Hugh Miller who was recently appointed one of the district medical officers to the Scottish Board of Health was entertained at dinner by his former professional colleagues in Hamilton on November 5th, and was presented with a tibia in recognition of his service in theburgh. Dr J Livingstone Loudon M.O.H. for Hamilton presided and the company included most of the medical practitioners in the neighbourhood. Dr Miller was educated at Ayr Academy and Glasgow University where he graduated in 1889. He afterwards held numerous medical posts in various hospitals, including that of house-physician to the late Sir William Gardner. For several years he acted as

secretary of the Hamilton Burgh Panel and Medical Committees and took a great interest in the working of the Insurance Act. Dr Miller was an active worker for the British Medical Association; he has been a member of the Central Council since 1921, has served on the Ethical, Central Emergency and Psycho-Analysis Committees, and has just vacated office as chairman of the Scottish Committee. During the war he held a commission as captain in the R.A.M.C. and served in India.

### GLASGOW UNIVERSITY COURT ASSASSORS

The appointment of assessors on the Glasgow University Court from the General Council of the University has caused considerable interest. For the first time an effort was made by the women graduates of Glasgow University to obtain the election of a woman for one of the vacant posts. The two posts were rendered vacant by the retirement of Dr David Murray and Dr George S. Middleton, of whom the latter did not desire re-election. Three candidates were proposed at the meeting of the General Council on October 26th—David Murray LL.D. J. F. Fergus M.D. and Miss Helen Rutherford M.A. The election of Miss Rutherford to one of the two posts would have meant the displacement of either the legal or the medical representative, and a poll was therefore demanded of the University members. Dr David Murray received 4165 votes, Dr J. F. Fergus 3649 and Miss Helen Rutherford 2825. The two former were therefore declared elected.

### MEASLES IN GLASGOW

An epidemic of measles prevails in Glasgow, although it is regarded as being of a mild type. The winter prevalence of both measles and pneumonia is said in a health bulletin issued by the Public Health Department of Glasgow Corporation to have begun about six weeks sooner than has been customary in past years. This it is thought probably means that the incidence of these diseases will reach considerable dimensions during the next few months. In regard to measles 227 cases were registered in September and 1,208 cases in October. The cases are fairly generally spread over the city and in this respect the epidemic differs from that of 1925-26 which extended slowly from one district to another.

## Ireland.

### CANCER RESEARCH

At the annual meeting of the Linen Guild of the Royal City of Dublin Hospital Dr Moorhead in proposing a vote of thanks to the chairman remarked that in ancient Ireland it was the custom for the chieftains in every district to assemble all the women of the district from time to time in the great halls of their houses in order that they might be taught the arts of housecraft and more especially the arts of needlework and of embroidery. The work thus done served the needs of neighbouring houses and this custom might be regarded as constituting the real origin of linen guilds. In modern hospitals linen guilds played an important part and this made an enormous difference to the comfort and welfare of the patients. Dr Moorhead then referred to the question of amalgamation of hospitals. Three years ago five of the Dublin clinical hospitals had agreed to amalgamate on condition that sufficient money could be obtained for the purpose. He regretted to say that it had been impossible to obtain the necessary financial aid either from public subscriptions or from the Rockefeller Institute and he wished to state definitely now that the question of amalgamation at any rate on a big scale must be abandoned. He was anxious that this fact should be known because many people were unaware that the scheme had been abandoned. He felt that for the present each hospital should endeavour to rally around it its own supporters and to develop on its own lines. He congratulated the board of the Royal City of Dublin Hospital on its courage and foresight in establishing new wards and a new therapeutic department for cases of malignant disease. He thought it probable that a result of close investigation and study of cancer in the new wards



combined with investigation of different methods of treatment, many new facts of importance would be brought to light. Mr. Seton Pingle, in seconding, said that the Governor-General had consented to open the new cancer and deep therapy department of the hospital, and he wished to take this opportunity of dealing with a possible misapprehension on the part of the public. He did not want them to confuse this new hospital department with another new effort in connexion with the cancer problem, of which he hoped a good deal more would be heard as time went on. He referred to the National Cancer Campaign (Ireland), it was concerned entirely with research into the cause of, and the results of treatment in, cancer. It was controlled by a council consisting of delegates from most of the scientific bodies in Ireland. This council had no connexion financially with the hospital authorities, nor was it in any way under their control. The hospitals had merely offered to the council the use of three laboratories, where the scientific work would be carried on. This offer had been accepted as the council recognized the necessity of starting research in a small way, but the National Cancer Campaign looked forward to a time when its financial position would be such as would permit of its having a Cancer Institute on the same lines as in other cities. In the meantime although the laboratories happened to be situated in a wing of the building, their work was absolutely independent of the hospital. The motion was adopted. The Governor-General of the Free State then declined open the new deep therapy and scientific research wards.

## England and Wales.

**QUEEN'S HOSPITAL, BIRMINGHAM.** NEW SURGICAL BLOCK. SIR CHARLES HIND, president of the Queen's Hospital, Birmingham, opened on November 16th a new surgical block which has been erected at a cost of nearly £100,000. The new building is placed behind the old surgical block, and is U-shaped, with wings running north and south, and a central court 50 ft wide. Three large operating theatres are provided on the top floor, connected by two sterilizing rooms. The theatres are airy and well lighted, the equipment is modern, and the walls are covered by opaque glass, coloured grey in two cases and mottled green in the third. The six new wards contain 120 beds, and in the basement is a nurses' dining room. It is hoped that the hospital will now be able to receive 1,750 more in-patients each year, that earlier admission of urgent cases will be facilitated, and that there will be an expansion of important special and auxiliary departments in the old surgical block, which is freed for them. The Queen's Hospital, which was founded in 1840, was enlarged in the years 1850, 1871, 1887, and 1908, a new medical block being provided in the last-mentioned year.

### THE ORTHOPAEDIC HOSPITAL IN LONDON

Prince Henry, KG, presided on November 22nd over a meeting of friends and subscribers to the Royal National Orthopaedic Hospital, London, in its new out-patient department, of which we gave an account last week (p. 946). In asking the Lord Mayor formally to open the new buildings and altered old premises, he probably surprised his hearers by telling them that the additions and alterations were paid for, and that he did not appeal for funds for them. But he did appeal for a sum of £40,000 to complete the payment for the new wards and accommodation for children in-patients at the country branch at Stanmore. He pointed out that an orthopaedic hospital is not made in a day, nor is an orthopaedic surgeon. We would add that the competent orthopaedic surgeon takes far longer to make than the hospital, a fact which is sometimes forgotten in these days of rapid expansion. Prince Henry reminded his hearers that this hospital was the first with which he became officially associated. He has shown in the most practical way the depth and permanence of his interest in it. Sir Charles Batho, the Lord Mayor, in declaring the new buildings open, cordially commended Prince Henry's efforts on behalf of the crippled children, and added a plea for the adult cripple, for whom increased provision is needed. He hoped that something

might be done to hasten their admission, including among them cases of fracture, which were falling more and more into the hands of orthopaedic surgeons. After the meeting the numerous company enjoyed opportunities of inspecting the wall paintings in the waiting hall, as well as the excellent arrangements made for massage and physiotherapy and light treatment of various kinds.

## Correspondence.

### AMERICAN HOSPITAL POLICY

SIR,—In connexion with your abstracts of, and comments on, the report recently presented to the Legislative Assembly in Victoria by the Hon. Dr. S. S. Argyle on the results of a tour made in the early months of this year by a Melbourne delegation in Canada and the States, it may be permitted, in view of the problems involved, to furnish some additional details.

This visit to Canada and the States was the direct outcome of an invitation to the Dean of the Faculty of Medicine of the University of Melbourne by the Rockefeller Foundation. In view of the wide interest of the problems with which the Melbourne Faculty of Medicine was confronted in the possible rebuilding of its medical school and University hospital, the Trustees of the Rockefeller Foundation kindly offered me the opportunity of a tour of inspection amongst the leading Canadian and American medical schools and hospitals, and the Dean and Faculty accepted the invitation with gratitude. In view of the importance of the principles involved the letter of invitation was submitted to the then Government of Victoria. The Government wisely decided to send two delegates of their own—namely, the Hon. the Chief Secretary of State, Dr. Argyle, and the secretary of the Charities Board of Victoria, Mr. R. J. Love.

The immediate problem before the Faculty of Medicine in Melbourne is not the "improvement of hospital accommodation" in that city, for the Melbourne hospitals are in the first rank, and will stand comparison with those of other countries. Nor are we vitally concerned with "better methods of training medical students," for the Melbourne graduate is to be found in many lands and in many responsible positions. Any properly constituted and appointed medical school has to-day the more important role of adequately advancing the national health rather than the mere technical training of students of medicine. The Melbourne problem is, then, that which now everywhere confronts medicine—the seeking of the best combination of research, teaching, hospital, and laboratory in the cause of the national health—that is, the elimination of disease by study, research, and co-operative effort.

Since 1918 a very great change has been wrought in almost every one of the best Canadian and American medical schools. They have been largely reconstituted, rebuilt, reorganized, and often boldly removed from inadequate to adequate sites, and always with the same object—the concentration on the one spot of laboratory, hospital, and clinic with the purpose of establishing great medical centres for the study of disease and the betterment of humanity.

Striking, drastic, and dramatic changes are now everywhere seen in medical and hospital circles in Canada and the United States, and American concepts of medical education and research are widely apart from British. To attribute to older methods all the virtues and to deny them to the new, or vice versa, would be mere futility.

Political necessities demanded the prompt return of Dr. Argyle to Victoria, but Mr. Love and myself have both been enabled to continue our observations in Great Britain, and our respective reports have yet to be submitted. But the problem before us in Melbourne, in Great Britain, and in the world of medicine everywhere is, given the opportunity of commencing afresh, what is the best we can do for the patient, the nation, and the future of the national health by a wisely co-ordinated system of hospital, laboratory, and united medical effort—I am, etc.,

RICHARD J. A. BERRY,  
Dean of the Faculty of Medicine, University  
of Melbourne

Bristol, Nov. 14th

### IRCOSTEROL VITAMIN D, AND RICKETS

SIR—The very valuable article on this subject in your issue of November 12th contains a slight historical inaccuracy to which I think it worth while drawing the attention of your readers, since it puts in a wrong perspective the work done by the pioneers of this subject, work which, though not yet complete has already produced such an amazing harvest in the improvement of the national health.

You say that "Mellanby, in 1919, suggested that rickets was a disease due to the absence from the diet of some accessory food factor, probably vitamin A" (Italics are mine). In fact, Professor Mellanby published the results of his experiments on dogs in January, 1918. These experiments did not suggest but demonstrated, that in experimental animals in the laboratory rickets, or at all events a form of osteopathy of the bones indistinguishable from rickets could be produced and controlled by dietetic factors alone, apart from other environmental change.

A reference to the literature will also show that it is an error to say that in 1919 the Glasgow school contended that rickets could be prevented by fresh air and sunlight. The Glasgow doctrine at that date was that rickets could be prevented by fresh air and exercise. Massage was advocated as part of the treatment. This doctrine was fully developed in *The Study of Social and Economic Factors in the Causation of Rickets*, which was compiled by Miss M. Ferguson, working under the direction of Dr Noel Paton and Leonard Lindley and published in 1918 by the Medical Research Committee with an introduction by Professor Lindley. In the whole of this valuable document I have been unable to find a single reference to light as a factor in the prevention of rickets but among the "conclusions" are the following:

16 The evidence is against a deficiency of milk of butter or of the fat-soluble substance being a determining factor.  
17 Inadequate air and exercise seem to be potent factors in determining the onset of rickets.

More recent research on the effects of ultra violet irradiation both of living tissues and of the inorganic elements of diet gives to the conclusions a quaint historical interest. Of course Mellanby has not only admitted but emphasized the importance of general hygienic conditions as a contributing factor in the production and prevention of rickets, and to provide the suitable environment must always remain the principal aim and duty of the public health service. But inasmuch as that service not dealing with individuals who must live for at least another generation in an unsatisfactory environment and since in this country we cannot command sunshine I am convinced that it is for us administrators to tie the production of rickets on the lines marked out for us by Mellanby. I do not minimize the value of artificial ultra violet lamps but I am convinced that instruction in diet and the provision of cod liver oil gives a better return for the expenditure of public funds—I am etc.

FRED E. WATSON  
30 H. Sheffield

November 11

### THE PHYSIOLOGY OF DEFAECATION

SIR—In your review of Sir Ashburnham Lines' *Secrets of Good Health* in the *BRITISH MEDICAL JOURNAL* of October 29th it is stated that the author appears to be altogether dissatisfied with one good evacuation of the bowels a day and suggests that in the natural state defaecation would follow each meal and that this habit should be cultivated. Your reviewer goes on to quote a passage in which it is said that suitable foods will facilitate such a habit—and then to dismiss the advice with generic ridicule. There may be persons—your reviewer admits to whom such a sequence of events would prove an advantage—but many he thinks will say: Let me eat unsuitable foods and leave me to my one good action a day.

I thought that it was now a commonplace of physiology that the caecum evacuates its contents into the ascending colon within some twenty minutes of a meal and that when the stomach "takes in" (a casualty clearing station) it sends a message—not along its line of communications, if we use so term the small intestine—but by some hormone nuclei or some reflex, or both—"evacuate" to its "bag," the caecum.

I thought that it was agreed that the sigmoid and descending colon move in effort simultaneous with the heave of the caecum and ascending colon and that then, and in normal conditions not till then, should the rectum be filled. And is it not agreed that when the rectum is filled and thereby stretched sensation arises, the first direct sensation connected with the alimentary process since the food was swallowed and that normally the reflex act of defaecation is released from inhibition at the first convenient moment?

If these things be so, then it is not normal for the rectum to stand filled. It is a canal only and not a dock. Mr Paterson held that the part of the rectum below the third valve of Houston is normally empty except during defaecation, and Houston himself held that his valves served to support the weight of the faeces and to prevent their premature urge into the rectal ampulla below. No doubt there is an appreciable period for accumulation above the valves preceding the final evacuation but that period is normally brief—so I think it will be agreed—and it is no more normal for the rectum to stand filled than it is for the mouth and oesophagus to stand filled. The parts of the digestive tract from which direct sensation is derived should normally be emptied as soon as, or almost as soon as, filled.

Dr Hirst of Guy's observed the sudden caecal heave on the x-ray screen about 1912. I fancy he was the first to note it, but his observation has been repeatedly confirmed. This has given a precision to our knowledge which should be reflected in the guidance we give to our patients. Many practitioners must have found that the mere insistence on two or possibly three actions a day—action to be invited by habit to follow the principal meal—has resulted in the cure and comfort of numerous patients who suffered before with reflex dyspepsia to which they had been inclined not without reason to ascribe grave and alarming habits. And diet and habit play a greater part in this cure than laxatives.

I belong Sir to the ranks who derive special benefit from your admirable reviews or books and I trust you will attribute to jealousy for the high standard of judgement the *Journal* maintains this venture to question that judgement in a particular instance—I am etc.

Home's Chapel, Chesham, Nov. 12th  
LIONEL JAS. PRYOR

### SOME EFFECTS OF LIGHT

SIR—I have read the communication published by J V Supniewski in the *Journal of Physiology* (vol. lxxv No 1, Oct. 1 1927) which was reviewed in your issue of November 18th (p. 947). The author appears to have failed to recognize the recent investigations in this country on the action of light on ensitized organs. Argyll Campbell and Leonard Hill have described the effects of light upon leucocyte and blood vessels in the mesentery of living animal (*Journal of Path.* 1924 vol. v p. 317). Auer and Leonard Hill have published results of experiments on the effect of light on the frog's stomach and large intestine the rabbit's large intestine and the guinea pig's non-pregnant uterus (*Proceeding Royal Society Series B* 99 1925 p. 221 226). The latter experiments are practically identical with those described by J V Supniewski and show similar results—I am etc.

ALBERT EDINOW

National Institute for Medical Research  
Hampton Road, London, N.W.3, Nov. 21

### COLOUR VISION

SIR—The critic of the report of the British Association on colour vision (November 12th p. 289) does not recognize its importance. It is the second great advance on the subject the first being when the wool test (which allows 50 per cent of dangerously colour blind to escape detection, and

<sup>1</sup>Proc. Physiol. Soc. Journ. Physiol. 57, 1918  
*British Medical Journal*, November 7, 1922.

<sup>2</sup>*Journal of Anat. and Physiol.* 31, 1911.

of those rejected by it 50 per cent are practically normal sighted) was recognized as defective. This report establishes the fact, which is known to all who have even a small practical acquaintance with the subject, that there are defects of light perception independent of defects of colour perception or colour discrimination, though they may be associated. A man may have shortening of the red end of the spectrum and have normal colour discrimination, just as a man may not be able to hear certain low notes and yet be a musician. The old terms are useless, and the facts do not comply with the definitions, there are not two or three definite varieties of colour blindness, but innumerable degrees of both defects. Of the very large number of cases of colour blindness I have examined, running into thousands, scarcely two are exactly alike. The classification dichromic and trichromic the two dangerous varieties of colour discrimination, is only fact, and has nothing to do with theory. The dichromic see two colours in the spectrum and a neutral division. The trichromic see three colours in the spectrum—red, green, and violet—but there are innumerable varieties of both. For instance, the dichromic have a neutral band of varying size or a varying degree of shortening of the spectrum, and the yellow region which the trichromic call red-green varies in size in different cases.

Two very able men have been added to the committee—Professors Andrieu and Hartnidge—and there is every reason to hope that next year the report will correct some more misstatements, such, for instance, as that the tortoise has only cones, and that the Purkinje phenomenon and recurrent image are not found with the fovea—I am, etc.,  
London, N W 2 Nov 19th F W LDRINGL-GRIFFIN

#### TREATMENT OF PROSTATIC ENLARGEMENT

SIR,—I think most of those engaged in general practice regard prostatectomy as a grave and often disappointing operation. The old method of leaving a ragged and infected cavity led constantly to delayed union of the suprapubic wound, with the accompanying irritation and mental depression produced by a constant leakage.

The most complete relief and rapid convalescence that I have seen followed Young's perineal operation—I am, etc.,  
Milford, Surrey Nov 20th G A CHAMBERLAIN, F.R.C.S.

SIR,—In your report of the Bradshaw Lecture, delivered on November 10th by Sir Cuthbert Wallace, the operative treatment of carcinoma of the prostate is unfavourably criticized owing to the difficulty in diagnosing the condition in its early stage. The later stages of the disease, however, demand treatment, and here surgery has not altogether failed.

The lecturer is recorded as having said that the operative treatment involves the entire removal of the gland. It involves something more than this—namely, the excision of all the tissues which form the base of the bladder and which lie between it and the anterior wall of the rectum.

The operation which I have elaborated and practised is by the suprapubic route, and its technique is described in the *Proceedings of the Royal Society of Medicine*, 1924, vol. xvii (Section of Urology), pp. 43-52—I am, etc.,  
London, W 1, Nov 21st A CLIFFORD MORSON

#### "SYMPTOM-COMPLEX" OR "SYNDROME"?

SIR,—The letter of Dr A. A. Warden (November 5th, p. 848) raises a very interesting question of definition of medical terms "Symptom-complex" and "syndrome" are used in contemporary French clinical teaching, and I think they must be obtained in medical literature because each term has a separate significance.

"Symptom-complex" indicates the series of symptoms (and signs) grouped together clinically without any consideration as to their relationship with a lesion or a functional disturbance of an organ. The particular name given to every "symptom-complex" is purely clinical. By "syndrome" is meant the grouping of symptoms and signs corresponding to a certain deviation of the function of an organ or to a lesion of an organ. There are anatomical and clinico-functional syndromes, and the name

given to each one in particular corresponds to its pathological basis. "Disease" must be considered as constituted by one or more syndromes caused by the same external etiological agent. We speak of disease in terms of that external etiology.

To take an example, pain, rigidity, skin hyperaesthesia of the right iliac fossa, constitute the right iliac fossa symptom-complex which may be met in appendicitis, salpingitis, etc. Pain in the right iliac fossa, rigidity, hyperaesthesia, and other symptoms and signs grouped so as to indicate their relation to the lesion of the appendix, constitute the anatomical-clinical syndrome of appendicitis. We speak of epigastric symptom-complex, of pyloric syndrome, of "disease" syphilis of the stomach.

This terminology corresponds to the evolution of our clinical thinking. Our first step in diagnosis consists in the detection of the various symptoms and signs—that is, of the symptom-complexes. Next, these symptoms are grouped into syndromes, and lastly, the etiology, external or constitutional, of these syndromes is considered. As I wrote in a previous publication, "from the symptom through the syndrome to the disease is the way of clinical diagnostic progression."

It is interesting to note that this ontogeny of our contemporary clinical thinking corresponds to the phylogeny of medicine. Diseases in the times of Hippocrates and of Sydenham were symptom-complexes. Later on, with the advent of the great anatomical-clinical school of Paris, of the famous English clinicians of the beginning of last century, and of physiologists such as Claude Bernard and Johann Müller, it was the syndromes which formed the basis of nosographical classification. Nowadays, after the impulsion given by Pasteur, Lister, and Koch, it is the external etiology which forms the basis of our conception of disease, conception which is in course of modification thanks to the researches on constitutional etiology.

It is interesting also to note that the distinction of these three concepts, symptom-complex, syndrome, and disease, was felt by the ancient Greek physicians, although they had scarcely any pathological or etiological notions. They called *συνδρομή*, the purely clinical grouping of symptoms, *πάθος*, or affection, the grouping of symptoms corresponding vaguely to the alteration of an organ, and *νόσος*, something more limited nosographically. These original Greek terms were used in the teaching of Laennec, but the general tendency is, I think, to call "syndrome" what the Greeks called *πάθος*, and to use the term "symptom-complex" for what the Greeks called *συνδρομή*—I am, etc.,

London W 1 Nov 4th

A. P. CHAMBERS

SIR,—From the point of view of the purist in terminology, Dr Warden's condemnation (November 5th, p. 848) of the expression "symptom-complex" is amply justified and I am with him most cordially. "Symptom" is as certainly of Greek origin as "complex" of Latin. "Syndrome" from the same point of view is decidedly to be preferred.

The chief object of a verbal expression is, however, to convey the intended idea, and nothing else, as accurately as possible. "Symptom-complex" does this quite perfectly, whereas the expression "syndrome" is not confined to symptoms, but has other general applications. "Symptom" is a well established English word and "complex" is now quite naturalized. To join them with a hyphen transgresses no rule of word construction. I am, therefore, in favour of "symptom-complex" all the time—I am, etc.,  
November 11th J. D.-G.

#### MEDICAL CONFIDENCES

SIR,—May I comment on certain statements in your "Medical Notes in Parliament" (p. 963), as they concern a bill I introduced this afternoon in the House of Commons?

The statement to which I take objection is as follows: "The Parliamentary Medical Committee has not been consulted in the preparation of the bill. A deputation of medical members of Parliament to the Minister of Health on the same subject had previously been suggested, though no arrangements had been made for it."

I submit that the implication is that I took action in a

matter which had been under the consideration of my colleagues without informing them of my intention and that I, as secretary of the Committee, had failed to make arrangements which the Committee had desired should be made. In reply I have to say that this subject has never come before the Parliamentary Medical Committee, that I am in common with a large majority of my colleagues, had no knowledge of the suggested deputisation and I do not know when or how the suggestion was made.

Upon the eve of the autumn recess in July last in conversation upon the McCauley judgement with a couple of barrister friends of mine in the House, one of them suggested to me that I should introduce a bill under the ten minutes rule which would make such a judgement impossible for the future and both promised me their support and assured me that the lawyers would make no objection. I prepared the bill during the recess in consultation with a barrister friend who is skilled in Parliamentary draftsmanship, and I presented my motion for its introduction upon the day after Parliament reassembled.

There was no opportunity of consulting the Parliamentary Medical Committee had I wished to do so for we have not yet met this session. Opposition to my bill was not to be interpreted from the medical members, in view of the overwhelming desire of the medical profession as evidenced by the medical press for a change in the law relating to medical evidence. I consequently concentrated my attention on winning the assent of legal members of the House to the principle of my bill, for opposition, if any was to be interpreted from the lawyers more particularly and the final drift of my bill is the result of consultation with several leading counsel in the House.

Two members of the Parliamentary Medical Committee are bringing my bill many more would have done so had the number permitted by the rules of the House not been so restricted. Your note I submit suggests some sense of grievance against my action which I am assured does not reflect the predominant feeling of the Committee—I am, etc.

House of Commons Nov 22nd

E CHAMBERS LITTLE

## THE ROYAL COLLEGE OF SURGEONS OF ENGLAND AND ITS MEMBERS

SIR—The impression left on my mind after the thirtieth annual meeting of the Fellows and Members of the Royal College of Surgeons of England on November 17th was one of progress having been made since last year's meeting. Previous presidents to cover a weak defence, resorted to the gullarmie method. There was none of that this time. The President gave a patient hearing, and appeared to me to be impressed by the fact that there was greater strength on our side than he had anticipated. One thing now seems impossible for the President to withhold—namely a postcard plebiscite of the Members as to their respect regarding this important question. The two excellent speeches by Mr Lawson Dick, FRCS, and Dr Stella Churchill laid the matter before the Council with a clarity hardly ever before reached moderately and reasonably expressed. The new President of the Royal College of Surgeons has now a unique chance of directing the Council to a wider aspect of the matter than has hitherto been done.

As a Member of the College I have pride in our splendid institution. The museum is one of the finest in the world and the library is invaluable. We cannot but be in admiration at the way all is managed and also at the never failing courtesy of the clerical Sir Arthur Ierth. One thing and one thing alone is lacking. It is the wish of the Members that they may be permitted in the humblest manner, to participate in the advancement of a centre of such useful and noble activity that this great institution by combined research and professional unity, may become even greater still—I am, etc.

Letter Nov 19th

T WILSON PARRY

\*\* A report of the annual meeting of Fellows and Members of the College is printed on this page.

## Universities and Colleges

### ROYAL COLLEGE OF SURGEONS OF ENGLAND

#### ANNUAL MEETING OF FELLOWS AND MEMBERS

THE annual meeting of the Royal College of Surgeons of England took place on November 17th with the President (SIR BENJAMIN MOYANIAN, Bt.) in the chair. There was an unusually large attendance of Members and for the first time ladies were seated in the body of the theatre instead of in the galleries.

THE PRESIDENT in making some remark on the annual report of Council referred to the gift by Mr Buckton Browne (Fellow) of a sum of £5,000 the interest on which is to be expended on providing an annual dinner on the College premises for Fellows and Members and such others as the President and Council may wish to invite but at least half the guests are to be Members. He also announced with regret that Mr F G Hallett was retiring from the secretarialship of the Conjoint Examining Board after fifty years of the most skilful and devoted service in one or other capacity. The number of diplomas of Membership issued during the past year had been 700 (including 117 women) of Fellowship 60 (one woman) and of Licentiatehip in Dental Surgery 169 (12 women). The number of Membership diploma continued to be very high the average before the war was between 200 and 400 a year. He next referred to the action taken by the Council on the resolution of the last annual meeting calling for a postal vote of Fellows and Members on the general principle of admitting Members to direct representation on the Council of the College. A subcommittee was appointed by the Council an historical abstract drafted by its secretary was drawn up and Fellows were asked to record their opinion whether it was desirable that Members should have such representation. 1,000 replies were received out of 1,800 Fellows who were circulated 846 voting No and 234 Yes. In view of the result the Council unanimously adopted a resolution that it was not prepared to take step at the present time for altering the constitution of the College so as to give Members direct representation.

Many questions were put to the chair including a series of interrogatories by Dr DELLEGEY designed to elicit how many members of the Council in recent years had been engaged in general practice exclusively or in combination with consultant work. The President said that there had been several members of the Council more especially resident in the province who had combined general practice with other work but very few members of the Council had been men exclusively engaged in general practice. He was able only to mention one name—Mr Sibley—though other general practitioners had been elected to the Council but had not secured election. The President was further asked how the figure of 400 given in the historical abstract as the number of practitioners entirely engaged in consulting surgical work in Great Britain and Ireland was arrived at. The President replied that at the time of the formation of the Association of Surgeons it was considered that nobody should be entitled to join that association unless he was exclusively engaged in surgical practice and a circular was sent to members of surgical staffs all over the country asking for such names. The number arrived at by this means was rather below 400. The Member who had raised the question said that an examination of the director suggested that in London alone there were at least 300 such men and he thought the number 400 was too small an estimate for the country at large.

DR ERNEST E. WARR then moved the usual resolution affirming the desirability of admitting Members to direct representation on the Council to which was added on this occasion an expression of regret that the Council in taking a postal vote of the Fellows should have issued simultaneously a statement of a biased and partisan nature and should have omitted to elicit the views of the Members at the same time as the Fellow. Dr Warr said that a similar resolution had been moved in that theatre at thirty-eight previous annual meetings a remarkable testimony to the Members long suffering. That a corporate body with 1,800 Fellows and ten times as many Members should refuse all representation to the latter although they were its financial stand by was an anomaly of the worst kind. He hoped that the Council would even yet reconsider the position. He complained of the historical abstract which was circulated to Fellow with the voting paper it was nothing less than an attempt to secure a negative vote. Although the Members had met with heart-breaking rebuff they would persevere. The Society of Members had received the services of this stout fighter Dr Sidney Lawrence who had retired after eighteen years of fine service but Dr Pinto-Lima had taken his place and the work would go forward until eventually the College discarding one precedent would grant direct Member franchise and representation the demand.

MR LAWSON DICK (Fellow) seconded the resolution and said that he had been for many years in full sympathy with the Members in their desire for direct representation. The Council

sent out by the Council contained such biased comment that no Fellow receiving it could help coming to the conclusion that the Council was entirely opposed to this change. The Society of Members in its turn naturally circumscribed the Fellows so that what was asked for at the last meeting, a simple expression of opinion as to the justice of allowing Members some form of direct representation, was converted into a keen controversy. He was convinced that John Hunter, on the ground of medical education alone, would have deeply sympathized with the wish of the Members. Could it be contended that the Fellows as such were so much better informed than the great body of the Members as to the type of education and examination which was most likely to be helpful to future generations of practitioners who were to occupy the places they at present held? To day the position of the consultant was better defined and more assured than ever it had been, but at the same time there had been an enormous levelling up of the standard of the profession as a whole, and any such rigid distinction between Fellows and Members as the present mode of election to the Council implied was an anachronism which should be ended. Should the special experience of the Members, who in a very intimate degree were in the confidence of the family life of the nation, be ignored? "Jes e Fool," said John Hunter, "accuses me of not understanding the dead languages, but I could teach him that in the dead body which he never knew in any language, dead or living." With equal truth and less respect the Members might well say, "We can teach you concerning the living body, politics of the nation things you can never know till you have listened to the united voice of your Members, who have the care of the national weal so largely in their hands and the pride of their College so largely in their hearts."

Dr STELLA CHURCHILL, the first woman Member of the College to speak in these annual discussions, thought that there was hope in the fact that the Council was not so reactionary as it thought itself, at least it had opened the doors of the College to women, now for some years past. She thought it quite possible that people who lived in the sanctified atmosphere of the Fellowship could not be in touch with the Members. One of the principles of the constitution was "No taxation without representation. What harm could possibly accrue to the Council from having Members representation?"

Dr REDMOND ROCHE asked what fair minded man would have thought it possible that the Council, in replying to the resolution of the last annual meeting would decide to poll, not the 18,000 Members as to whether they desired this representation, but the 1,800 Fellows whose vested interests, it was suggested were going to be infringed? He showed that history had repeated itself in this matter that in 1897, when the Council took a vote of its Fellows, a biased circular was issued with the polling cards. The Council, however, had power, as it had acknowledged on one occasion, to initiate action and reform apart from and in spite of the votes of the Fellows. He therefore urged that it should not be taken that the recent vote of the Fellows decided the question. In introducing electoral reform a Government did not take a referendum of the existing electorate, nor even of its party followers. It took its courage in its own hands, and did what it considered right. He hoped the Council would do the same.

Dr F. W. COLLINGWOOD, Dr HOWARD STRATFORD, Dr KINGSFORD, and others all spoke in support of the resolution, which was carried by a very large majority, two Members, one of them a woman, dissenting.

The PRESIDENT said that he would see that the resolution was submitted to the Council at its next meeting. He was sure that he would be supported by other members of the Council present in testifying that the friendly spirit shown in that debate was reciprocated in the Council itself, where the Members had some very good friends and convinced supporters of their cause. He wished that there had not been criticism of the historical abstract, for he believed that there was not a phrase in the abstract which could be controverted. It was as accurate as any human document could possibly be. (Dr SIDNEY LAWRENCE and others "We don't agree.")

#### UNIVERSITY OF CAMBRIDGE

Mr GEORGE EDWARD WHERRY M.A., M.Chir., F.R.C.S. university lecturer in surgery, consulting surgeon to Addenbrookes Hospital and for many years an examiner in surgery for the third M.B., has been elected an Honorary Fellow of Downing College.

#### UNIVERSITY OF LONDON

Dr J. A. BRANTON HICKS has been appointed as from September 1st to the University readership in pathology, tenable at the Westminster Hospital Medical School.

Sir WILMOT P. HARRINGTON KCMG CB MD, FRCP, has been appointed the representative of the University on the Organizing Committee of the International Congress of Military Medicine and Pharmacy to be held in May 1929.

Miss M. S. JEVONS M.B., B.S., has been appointed a governor of Rye Grammar School.

Sir Holburt Watney has been elected chairman of the Don and Annual Sanatorium Institution Committee for 1927-28.

Messrs J. Lyons and Co., Ltd., have made a gift of 250 guineas towards the establishment of the proposed chair of dietetics.

#### UNIVERSITY OF SHEFFIELD

The Council, at its meeting on November 11th made the following appointments: Percival J. Day, M.D. Ed. to the post of honorary lecturer in ophthalmology, J. L. Groot, F.R.C.S. Ed., D.M.R. Camb., to the post of honorary lecturer in radiology.

#### VICTORIA UNIVERSITY OF MANCHESTER

At the meeting of the Court of the Victoria University of Manchester, on November 16th, it was decided on the recommendation of the Senate and Council to confer the title of Professor *lauratus* upon Professor R. B. Wild on his retirement from the Leech chair of materia medica and therapeutics.

#### UNIVERSITY OF LEEDS

The Council of the University has appointed Dr Edwin Holmes to be surgical tutor in the School of Medicine, and Dr G. Baxter as an honorary clinical tutor in the School of Dentistry.

#### ST. ANDREWS UNIVERSITY

Dr ROBERT RICHARDS, lecturer in forensic medicine in the University of Aberdeen, has been appointed to the additional examinership in forensic medicine rendered vacant through the resignation of Professor Matthew Hay.

### Medico-Legal.

#### VENN v. TODESCO AND ELDER

##### A THIRD HEARING VERDICT FOR DEFENDANTS

THE third hearing of the action of Mrs. Mary C. Venn of Thornton Heath, suing as a poor person, against Dr. James M. Todesco, resident superintendent of the Croydon Borough Isolation Hospital, and Dr. G. W. Elder, formerly assistant medical officer at the hospital, for damages for alleged negligence resulting in the death of her husband, Mr. W. E. Venn, notary public, ended with a verdict for the defendant doctors by a special jury in the King's Bench Division of the High Court of Justice, before Hordidge, J., on November 17th.

A case has now been disposed of which has occupied nineteen days of judicial time. The first hearing, before Lord Hewart, L.C.J., in June, 1925, occupied five days, and the second hearing, before McCrindle, J., in February, 1926, occupied eight days, on each of these occasions the special jury disagreed upon the issue of negligence, which defendants denied. The last hearing occupied six days.

Reports of previous hearings appeared in the *British Medical Journal* of July 11th 1925 (pp. 92 and 93), of March 6th, 1926 (pp. 459 and 460), and of May 1st 1926 (p. 812).

Sir H. Maddocks, K.C., and Mr. B. Mark Goodman appeared for the plaintiff, Mr. A. Neilson, K.C., and Mr. T. Carthew for the defendants.

Mr. Maddocks, in his opening, said that in February 1922 Mr. Venn contracted scarlet fever and after about a fortnight he suffered great pain in his right thigh, and a swelling appeared. His doctor, Dr. E. G. D. Milson, diagnosed a deep seated inflammation which might lead to an abscess and necessitate an operation and therefore arranged for Mr. Venn to go into Croydon Borough Hospital. Soon after his reception Mrs. Venn told Dr. Todesco and Dr. Elder what Dr. Milson had diagnosed but they both "pooh poohed" the possibility of an abscess. Dr. Elder said that Mr. Venn was suffering from rheumatism, and Dr. Todesco expressing the opinion that it was a case of mind over matter and that if Mr. Venn would forget his leg it would soon be all right. In April Dr. Veitch Clark, the medical officer of health for the borough examined Mr. Venn, and ordered his removal to the Croydon General Hospital where in operation was performed and a large abscess was found which should have been previously diagnosed at the borough hospital. On June 15th Mr. Venn died from blood poisoning.

Evidence in support of counsel's statement was given. Mr. Neilson, opening for the defence said the two defendants were both qualified medical practitioners but it was suggested that by their carelessness and negligence they had failed to that by the presence of the deep seated abscess from which Mr. Venn suffered. Diagnosis of that particular thing was from its very nature and position one of the most difficult problems that a doctor had to solve. No indication had been given on behalf of the plaintiff of when the defendants should have diagnosed the abscess. No one had said that it could have been diagnosed before April, 1922 and that was the first date on which any doctor could reasonably have been expected to diagnose it.

Dr. Todesco in evidence, said that when he saw Mr. Venn on the day after his admission he did not find any abscess or any deep seated inflammation. He denied having told Mrs. Venn that her husband was worrying about his leg, and that it was a case of mind over matter.

Dr. Elder in evidence said the day after Mr. Venn's admission he asked him whether he could account for the swelling on the



thigh and Mr Venn replied that he had been a martyr to rheumatism and had buried him self in using a hot water bottle to relieve the pain. Mr Venn never told him that Dr Milom had sent him to the hospital to have the thigh treated.

Dr P Veitch Clark medical officer of health for Manchester who occupied a similar post at Cradock in 1922 and who was originally a co-defendant but was entirely exonerated by the jury on the first hearing said in evidence that when he saw Mr Venn in the first week of April 1922 there was no swelling on the right thigh but on April 25th he found a swelling and evidence of fluid and in trusted Dr Todeco to call in a surgeon. In his view the abscess could not have been discovered before that date.

Cross-examined Dr Clark was prepared to swear that Mr Venn never told him that she would like a specialist to see her husband.

After an absence of twenty five minutes the jury returned a verdict in favour of the two defendants and judgement was entered accordingly.

## Obituary

### GEORGE COWELL, F.R.C.S.,

Consulting Surgeon to Westminster Hospital and the Royal Westminster Ophthalmic Hospital

WE have to record with regret the death on November 18th of Mr George Cowell at the age of 92. He was a well known figure in the medical world of London during the last thirty years of the last century and at the beginning of this. He was the son of Mr G. K. Cowell, surgeon of Ipswich, and was born on June 1st, 1836. He received the earlier part of his medical education in Birmingham, where he was apprenticed, as was then the custom afterwards he entered the medical school of St George's Hospital, and took the diploma of M.R.C.S. Eng. in 1858. He became F.R.C.S. in 1867. Shortly afterwards he was appointed assistant surgeon to the Westminster Hospital, and soon afterwards surgeon, an office he held from 1869 to 1895. He was lecturer on surgery there from 1872 to 1893. He was surgeon to the Victoria Hospital for Children from 1865 to 1885, and was ophthalmic surgeon to the East London Hospital for Children, Shadwell. He was one of the last to combine the practice of ophthalmology with that of general surgery.

Mr W. G. Spencer, his colleague at the Westminster Hospital, says of him that 'in general surgery he had accepted Lister's methods without attempting to extend the scope of surgery which those methods facilitated. The special attention he had devoted to ophthalmology seemed to dispose him to smaller operations and finer manipulations.' 'I had watched,' Mr Spencer adds, 'as did Mr Henry Power and Mr Bowater Vernon when operating for cataract, and when subsequently I came to help Cowell I formed the opinion that his handiwork was not then to be bettered.' When Mr Spencer was elected assistant surgeon to the Westminster Hospital in 1887 Mr Cowell was the senior surgeon, and for many years remained the senior of the medical staff. He headed its efforts towards making various improvements at the hospital and in the medical school. As a chairman his efforts were always directed to facilitating business. Mr Spencer states that soon after his appointment Mr Cowell called a meeting at his house, at which he and the late Charles Stonham were invited to express their opinions. Mr Cowell took an active part in bringing about the rebuilding of the medical school, the out-patient department and the chapel of Westminster Hospital and until his final retirement in 1897 took an active interest in the hospital and its school. Afterwards he still continued regularly to attend committees as a vice-president of the hospital until age curtailed his activities, and he was able to head the medical staff at the service in Westminster Abbey commemorating the re-opening of the hospital after alterations in July 1924. With this exception he had been here seen in London for a good many years. He became a member of the British Medical Association in 1870, but resigned on his retirement in 1897.

Mr Cowell was a deeply religious man, he took a leading part in the Guild of St Luke and was associated with Dr Barnardo in founding the charitable association which has since developed into the Barnardo Homes. He was a freemason and had attained the degree of Past Grand Deacon of the United Grand Lodge. He did not write much but contributed papers from time to time to the

*Proceedings* of various medical societies, and edited the *Life and Letters of Prof. or E. B. Cowell* who held the chair of Sanskrit at Cambridge. Mr Cowell married rather late in life (1892) the widow of Dr Hamilton Poe, she died in 1895, there were no children of the marriage.

### R. H. A. WHITELOCKE, M.D., F.R.C.S.,

Consulting Surgeon to the Radcliffe Infirmary Oxford

WE regret to record the death on November 18th of Mr R. H. A. Whitelocke. He was the fourth son of the Right Hon. W. A. Whitelocke of Balstrode Park, Westmorland, and was born in January in 1861. He was educated at Owens College, Manchester and the University of Edinburgh where he took the degrees of M.B. and C.M. in 1884. He graduated M.D. in 1903, and became F.R.C.S. Eng. in 1893. He was house surgeon to Sir William Macewen in 1886 and after a period at Moorfields Ophthalmic Hospital went to Oxford in 1888 as demonstrator of human anatomy to Professor A. Thompson. He became surgeon to the Radcliffe Infirmary in 1899 a post he held until 1926. He was Lichfield lecturer on surgery in the University, had been president of the Oxford Medical Society and of the Children's Section of the Royal Society of Medicine. He was a Fellow of the Association of Surgeons of Great Britain and Ireland, and had been vice-president of the Provincial Surgical Club. Immediately after going to Oxford he joined the then recently formed Oxford and Reading Branch of the British Medical Association, and from that date down to his death was one of its most loyal supporters. He seldom missed a meeting and frequently showed cases and opened or took part in its discussion. He was chairman of the Oxford Division in 1909, and president of the Branch in 1910. He took an active part in the Annual Meeting at Oxford in 1904 when he was president of the Section of Surgery, he was afterwards vice-president of the Section of Diseases of Children at the Annual Meeting in Glasgow in 1922.

He was an equally loyal supporter of the Oxford Medical Society and in due course occupied the chair. In addition he was one of six original members of the Oxford Medical Club. It was started in 1891 and consisted of twelve members who met once a month for reading papers or discussing subjects unconnected with medicine, as he was a very regular contributor to those meetings his death will be much regretted by all members. When a few years ago a weekly contribution scheme was started to help the County Hospital Mr Whitelocke gave it his hearty support, and spoke in its favour at many evening meetings in all parts of the district, often in remote villages entailing long motor journeys at night. From the outset of his life in Oxford he strove to qualify himself for a surgical career, and took the F.R.C.S. in 1893. His opportunity came in 1899 when he was made a surgeon of the Radcliffe Infirmary and County Hospital. He very quickly built up a large and successful surgical practice, and found a host of friends and supporters both in the city and neighbouring district. For many years he was regarded as a specialist on football injuries and as consulting surgeon to the University Rugby Union Football Club had unusual opportunities of studying this branch of surgery. During his life at Oxford a very large number of undergraduates passed through his hands, and many of them must have profited by his skill and care. They will be scattered over many lands when they hear of his death they will have with his Oxford friends a very deep regret. He was fond of travelling and especially enjoyed visiting various European capitals in connexion with the meetings of the Provincial Surgical Club of which he was a member. His chief recreation was shooting and he had the reputation of being a very good shot. He was a freemason and a Past Master of the Churchill Lodge.

He was the author of books on sprains and allied injuries of joints and on football, and contributed articles on allied subjects to the *Index of Treatment*, the *Practical and Encyclopaedia of Medicine and Surgery* and the *Proceedings of the Royal Society of Medicine*. Mr Whitelocke left a wife two sons and three daughters. His second son is now one of the honorary surgeons at the Radcliffe Infirmary.

## Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

IN the House of Commons this week the Unemployment Insurance Bill was examined in Committee, and discussions arose on foreign policy and on the appointment of a Statutory Commission on the government of India. On November 22nd a joint deputation from the National Council of Social Service and the Mansion House Council on Housing met the Prime Minister and the Minister of Health to advance arguments in favour of setting up a Royal Commission on Housing. Dr. Finliffe was one of the deputation. The Prime Minister could not agree to the suggestion of a Commission. The Landlord and Tenant Bill, the discussion of which on the Report stage was noted last week, was read a third time on November 18th.

This week the Ministry of Health and the promoters of the Nursing Homes Bill were still endeavouring to secure a sufficient approach to unanimity on it to justify the Government affording facilities for its passage into law this session. The point at issue was whether county councils or borough councils should be inspecting authorities, several Labour members insisting on the claim of the latter bodies.

### Medical Confidences

On November 22nd Dr. Graham Little asked leave to introduce the Medical Practitioners' Communications Privilege Bill, which, he said, was a measure intended to remove something like a deadlock which had resulted from a conflict between the Regulations issued by a Government department in 1916 and the law as interpreted by certain recent legal decisions. In 1916 the Royal Commission on Venereal Diseases issued its report. Its personnel was admirably authoritative and representative. It included Mr. Philip Snowden, who had done him the honour to put his name on the back of the bill. Unhappily, there was a popular belief that venereal disease was a special order of disease resulting from excessive indulgence in a normal function, and that this disease deserved punishment and that in some mysterious way the disease differed from other disorders. That view had never been held by the medical profession, and he hoped that it was out of date in this country. There were two dissimilar forms of venereal disease—syphilis and gonorrhoea. The Report of the Royal Commission showed an unexpectedly high percentage of both diseases in this country. It was established by the evidence given before the Commission that syphilis ranked third as a killing disease, coming after cancer and tubercle. Perhaps it ought to come first, because in many cases it produced the two other diseases. Besides being very mortal, particularly among young children, slaying tens of thousands, it was, with its companion diseases, easily the first of all disabling diseases known to day. Syphilis, in particular, was primarily responsible for a large proportion of cases of insanity, and for a long string of diseases of the nervous system which made life a prolonged agony. Evidence was given in the Report of the Commission that at least one in every ten persons in our community was affected, and more than one half the total number of cases of blindness in young children was due to this cause. The medical position of these cases might be summed up in an epigram of a medical man: "Who knows all about venereal diseases knows all about medicine, because they affect every organ and tissue of the body." The state of affairs disclosed by the Report of the Commission was so appalling that it was felt immediate action was called for, and this was happily taken. In consequence and pursuance of the recommendations of the Commission the Local Government Board, in the same year as the Report was published, inaugurated a system of clinics for the treatment of venereal disease throughout the country, and issued regulations for their conduct. The foremost and most important among these regulations was an instruction to medical practitioners and other persons concerned that all information obtained in respect of any persons treated in these clinics should be regarded as absolutely confidential. The evidence before the Commission demonstrated that it was necessary for the success of any measure for the treatment of venereal disease that the patient should be fully assured of secrecy. The reason was surely obvious. Modern methods of treatment have completely revolutionized the prognosis of this disease, but a condition was that early treatment should be instituted. Irreparable mischief might result, and had resulted, from the disinclination of the victims of the disease to consult their family doctor. The reasons for that were obvious. It was almost impossible to have the disease treated at home and to conceal its nature, but the same patient would go to a clinic where he was identified only by a number and where he knew that he would get the very best treatment that the medical science of the time could afford.

Under the present rules patients went to the clinics and received explicit assurance that no information whatever concerning their disease should be divulged, and that assurance was fortified by the issue of a leaflet, in which the same promise was given, emanating from the Ministry of Health, and curbing with it, therefore, the authority of Parliament. The success of these clinics rested upon two factors—the enthusiastic co-operation of the medical practitioners in charge and the complete confidence of the patient treated. That co-operation and that confidence had been abundantly won by the assurance of secrecy. Doctor and patient alike had felt secured by the Ministerial regulations from any possibility of being compelled to make any disclosure of these confidential communications. But the security had been completely shattered by the decision given in Birmingham last July, by Mr. Justice McCardie, when a doctor was ordered to disclose the character of the disease from which his patient was suffering, although he had relied under the explicit protection of the regulations framed by the Ministry of Health. Medical men thus found themselves forced to betray the trust of their patients. That betrayal is really an affront to Parliament, because Parliament must be responsible in some measure for the acts of one of its most important Ministries.

The position which the bill sought to remedy was that complete privilege should be given to communications which had been erroneously supposed for the last twelve years to be privileged. It was clear that either the law must be amended in the way he suggested or that the Ministry of Health regulations must be scrapped. He was encouraged by the opinion of eminent members of the House that any legal difficulty could readily be overcome. If, however, the regulations were scrapped, the fate of a highly successful and important Ministerial and medical effort would be sealed.

The sponsors of the bill were Dr. Vernon Davies, Sir Walter Greaves Lord, Mr. E. C. Grenfell, Mr. Arthur Henderson, Mr. F. B. Meirimon, K.C., Mr. Hopkin Morris, Sir Basil Polo, Mr. Goodman Roberts, Dr. Salter, Mr. Snowden, and Mr. Storry Deans.

Leave was given to bring in the bill, which was formally read for the first time.

**The Anatomy Acts.**—In answer to a question Mr. Chamberlain said some boards of guardians have declined to exercise their powers under the Anatomy Acts to hand over the bodies of paupers who die in their institutions and who are without friends or relatives, to the medical schools for anatomical purposes, but he was not aware that any protest from a board of guardians had been received against a letter issued by his department asking boards of guardians to take this course. Any inmate of an institution could express a desire that his body should be interred without anatomical examination, and the Anatomy Act, 1832, provided that such a wish should be respected. After the examination the bodies were interred in consecrated ground.

**Calf Vaccine.**—Answering Mr. Gioes, on November 17th, Mr. Chamberlain said that the records showed that the lymph now used at the Government lymph establishment was derived from used calf lymph originally obtained from Cologno. The lymph had been carried on by repeated transference from animal to animal. The substances now added to the lymph were glycerin, distilled water and oil of cloves. The lymph complied with the standards laid down in the Regulations made under the Therapeutic Substances Act 1925, but was not completely sterilized, as otherwise its active principle would be destroyed.

**National Health Insurance.**—Sir K. Wood, replying to Mr. Horé Belsha, on November 21st, said that the Minister of Health had received the views of the Consultative Council regarding the proposals made by the Royal Commission on National Health Insurance that the scope of the benefit should be extended to include a consultant and specialist medical service and that the necessary funds for this purpose should be obtained by a partial pooling of future surpluses of approved societies. The council's views were receiving the Minister's most careful attention, but he was not yet in a position to make any statement. The claims to dental benefit sanctioned by all approved societies in the year ended June, 1927, were estimated at 1,100,000, and the cost at £2,500,000.

**Food Poisoning.**—On November 22nd Sir K. Wood said that the Minister of Health was aware that food poisoning had occurred in the Bath and Bristol districts last August. These cases, and other cases of poisoning by similar organisms, had been investigated by officers of his department and others, but the Minister was advised that in the present state of knowledge it was not always possible to safeguard against the infection of food by them. Further research was being made into the matter, and in the meantime the statutory provisions and regulations dealing with the handling of food prescribed requirements as to cleanliness and protection from contamination in general.

**Lead Poisoning.**—On November 22nd Sir William Jowett on Hicks in reply to Dr. Graham Little, said that in pursuance of Clause 2 of the Lead Paint (Protection against Poisoning) Act 1926 he had made an order on November 14th which would have the effect of allowing women and young persons to be employed in the execution of wall or ceiling paintings or in any similar work of

decorative design. He had been asked to receive a deputation to protest against the general prohibition in the Act against the employment of women in painting buildings with lead paint and to press for legislation for the removal of this prohibition. Seeing however that the prohibition was enacted by Parliament after full discussion recently as 1926 and that leave was refused in July last by the House of Commons for the introduction of a bill to remove the prohibition, he was not prepared to re-open the question and could not accede to the request.

**Indian Medical Service.**—On November 21st Earl Winterton stated in reply to questions (1) That at a test held last August in India to select candidates for permanent commissions in the Indian Medical Service only those holding an English degree were successful. It was not the case that instructions had been issued by the Secretary for India that the candidates who possessed Indian medical qualifications alone were unfit for permanent commissions in the Indian Medical Service and that an English degree was necessary. Candidates who possessed the necessary qualifications prescribed by the regulations whether obtained in India or in this country were selected strictly on their merits. He was not aware of any definite recommendation made by the committee on Indian students on this subject. Every effort was being made to improve the standard of medical teaching in India. (2) That recruitment for the Indian Medical Service was carried out strictly on the ratio of two Europeans to one Indian. This in present conditions had the effect of increasing the number of Indians in the Service. All officers drew the same rates of pay but those of non-Indian domicile received certain benefits to compensate for permanent service abroad. The additional expense in the case of the European officer was relatively small.

### Notes in Brief

No horses were used for experiments at the Porton Chemical Warfare Experimental Station during August, September and October. The Secretary for War considers that experiments with animals are essential at this station.

The area of opium poppies under cultivation in British India in 1926 was 17,657 acres.

The Home Secretary does not favour the introduction of a bill next year to do away with the waiting period of three days in workmen's compensation cases.

In the year ended July 3rd 1927 £24,970,000 was collected in health insurance contributions and the total income of the National Health Insurance scheme was £37,100,000. Expenditure in the same period is estimated at £39,500,000.

The Minister of Health does not think that further investigations into the effect on health of the noise from motor traffic would be of advantage.

## Medical News.

THE late Dr. Adrian Stokes, Sir William Dunn Professor of Pathology at Guy's Hospital, who died in September last from yellow fever contracted in the course of his researches at Lagos, Nigeria, has left estate of the gross value of £13,511. He bequeathed £10,000 to Geoffrey William Rake of Guy's Hospital, which he hoped might be of assistance to him in carrying on his research work.

THE Right Hon. Neville Chamberlain, M.P., Minister of Health, will open the Redhill Hospital, Edgware, on Monday, December 5th, at 2.30 p.m.

THE Fellowship of Medicine and Postgraduate Medical Association announces that Mr. Chapple will give a lecture entitled 'Practical hints in gynaecology and obstetrics' on November 28th, at 5 p.m. at 11, Chiswick Street. Dr. Parkinson will give a clinical demonstration at the National Hospital for Diseases of the Heart at 2 p.m. on December 2nd, both are open to all members of the medical profession without fee. From November 23rd to December 3rd there will be a postgraduate course in proctology at St. Mark's Hospital, fee £3 3s. The West End Hospital for Nervous Diseases is holding a course in neurology at 5 p.m. each afternoon until December 17th. The only other special courses this year are a fortnightly instruction from December 5th to 17th. On this will be held at the Infants' Hospital, Vincent Square, Westminster, every afternoon from 2.30 p.m. fee £3 3s. The other in dermatology will take place at the Hospital for Diseases of the Skin, Blackfriars, at 2.30 p.m. each day, fee £1 1s. After these two courses there will be a pause until the special courses for 1928 begin on January 9th. There is always however a general course of work which continues throughout the year and which may be started at any time. Tickets of admission to the forty London hospitals associated with this course may be obtained for any period from one week to one year. This is quite separate from the special courses though in certain circumstances it is an advantage to the postgraduate to take both concurrently. All information may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street.

THE bi-weekly lecture demonstrations arranged for next month by the West London Hospital Post Graduate College include two by Dr. Harold Pritchard who on December 6th will deal with diabetes mellitus and on the 15th with intravenous treatment. On December 7th and 14th Mr. Donald Armour will discuss head injuries.

THE Royal Sanitary Institute is conducting a course of lectures and demonstrations in smoke inspection. The lectures are intended primarily for inspectors who are to be engaged in carrying out the provisions of the Public Health (Smoke Abatement) Act of 1926 which came into operation on July 1st last. The lectures at the Institute's house, 50, Buckingham Palace Road, S.W.1 which are being given on Fridays and Mondays, cover much ground in connexion with fuels, furnaces, chimneys, stoking, and the prevention of smoke. Demonstrations are also available at several works and institutions, including a Metropolitan Asylums Board Hospital. The Institute holds examinations in smoke inspection in London and at various provincial centres. The course is open to anyone interested in smoke abatement.

MAJOR TRYON, the Minister of Pensions speaking at the annual dinner of the Brighton and Sussex Medical-Chirurgical Society on November 19th emphasized the value and importance of the services rendered to his Department by the medical profession. He said that much pioneer medical work had been performed by and through the Ministry including the establishment of hospitals for borderline mental cases before the recommendation of the Royal Commission on Lunacy had been published. With the discovery of insulin special wards were at once set apart in one of the Ministry's hospitals for the immediate provision of this treatment, and similarly recent developments in the use of ultra-violet light were applied for the benefit of pensioners. The Ministry had recently sent a surgeon to the Continent to investigate the treatment of varicose veins by nerve surgery. After referring to the Ministry's provision of institutions for particular kinds of treatment, with special reference to mental deficiency and wounds of the skull, brain and chest, Major Tryon alluded to the high degree of perfection reached in the manufacture of artificial limbs and appliances and added that at the present time 3,570 beds were still required in hospitals belonging to the Ministry and treatment was provided for 5,250 out-patients. In regard to the medical work generally Major Tryon said: 'The gist of the matter is that whenever and wherever medical science has produced or even hinted at a better way of treatment a more accurate test in diagnosis or a new way of regarding any aspect of disease the Ministry has at once inquired, tested and adopted it if thereby any benefit to the pensioner might accrue. In pursuance of this policy we have kept in close touch with the heads of the medical profession. In 1919 a special committee was appointed by the Presidents of the Royal College of Physicians and the Secretary of the Medical Research Council to advise the Minister on the most effective way of dealing with his medical problems. At the same time we have everywhere done our utmost to co-operate with the private practitioners and the local hospitals. In short we have endeavoured to effect what is the ideal combination for public work—a co-operation of the whole time medical officer, specialist or administrator with the independent consultant and the general practitioner.'

THE autumn dinner of the Irish Medical Schools and Graduates Association was held at the Savoy Hotel on November 17th when Sir William de Courcy Wheeler presided over a large assembly of members and guests including Major General Sir William Hickie, K.C.B. Dr. Lindsay Rice proposed the toast of The Guests and Sir William Hickie in reply referred to the deeds of Irish regiments during the war and paid a special tribute to the medical officers. Sir Bruce Brice Porter and Dr. William Hill also responded. In replying to the toast of The President and Association proposed by Dr. Frederick Spicer, Sir William Wheeler emphasized the importance of keeping Irish medical practitioners together and congratulated the responsible or the increasing popularity of the association. He referred to the satisfactory establishment of an Irish Medical Council and to the abolition of administrative procedure together with the provision of administrative procedure to protect medical appointments from undue influences. The annual meeting and festival dinner of the association will be held in London on March 17th next. Applications for membership should be sent to the honorary secretary, Dr. F. P. Holmes-Merrick, 59 Kensington Court, W.8.

THE King has appointed Dr. Percy James Kelly (Surgeon General, British Guiana) to be a member of the Executive Committee of the Colony of British Guiana for a further period.

THE centenary of the birth of the well-known chemist, Marcellin Berthelot, has recently been celebrated in Paris.

**VACANCIES**  
**NOTIFICATIONS** of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 36, 37, 38, 39, 42 and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41.  
 A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 211

## An Address

ON

## SURGICAL CONVALESCENCE

DELIVERED BEFORE THE MANCHESTER SURGICAL SOCIETY  
BY

CHARLES ROBERTS, M.B., B.S., F.R.C.S.,

SURGEON MANCHESTER ROYAL INFIRMARY PRESIDENT OF THE SOCIETY

It is especially in war time that the problems of convalescence are most clearly perceived, and it was during a period of the war in which part of my duty was to inspect medically a group of Red Cross convalescent hospitals that the importance of convalescent treatment impressed itself on my mind and I determined to devote more attention to the follow-up and after-care of surgical patients.

Since that time it has been my practice at the Manchester Royal Infirmary to devote a part of one morning each week to seeing patients who have been discharged from my wards. All patients on leaving hospital are given cards and are instructed to attend and a record is kept of their progress and of the final result of treatment. In many instances one attendance suffices, in others repeated visits are made. For example after operations for gastric and duodenal ulcers patients attend every three months during the first year and at intervals of six months during the second year. This practice has been a source of much interest and many lessons have been learnt.

There is little doubt that surgeons are tempted to concentrate too much on the operations themselves. We live in an age of speed. Operations are becoming more and less standardized and patients are discharged as soon as possible often to be lost to the surgeon for ever. But the human body is not a mere machine and the hospital is not comparable to a loud factory. Surgery is something more than the mechanical side of medicine, and the operation is but one therapeutic measure in the treatment of the patient. As one surgeon has said 'Any operator of experience can perform a gastro-jejunostomy but it takes a surgeon to know how to remove a tube from an empyema.' It may be true that the better the operating the less will be the need for after treatment, and many of our patients will do well if left alone but many will be restored to complete health more comfortably and more quickly by proper after care and some of them will prove failures from want of it. Operative technique has attained a high stage of perfection and great improvement has been made in pre-operative preparation and immediate post-operative treatment but the convalescent stage has not received the attention it deserves. The contemporary literature is extraordinarily scanty. I submit that the whole subject requires more scientific investigation. Our attitude resembles too much that of the ancients as illustrated in the writings of Plato, who said

In all well ordered states every individual has an occupation to which he must attend and has therefore no leisure to spend in continuously being ill. Thus we remark in the case of the artisan, but ludicrously enough do not apply the same rule to people of the richer sort. When a carpenter is ill he asks the physician for a rough and ready cure an emetic or a purge or a cautery or the knife—these are his remedies. And if someone prescribes for him a course of diuretics and tells him that he must sweat and saddle his head and all that sort of thing he replies at once that he has no time to be ill and that he sees no good in a life which is spent in nursing his disease to the neglect of his customary employment and therefore bidding good bye to this sort of physician he resumes his ordinary habits and either gets well and lives and does his business or if that fails he dies and has no more trouble.

I have recently undertaken an inquiry into the duration of convalescence and the symptoms that arise between the time of leaving hospital and of return to light work or full occupation. 825 letters were sent out to male patients who had been operated on in the Manchester or Royal Infirmary for gall stones, duodenal ulcer, chronic appendicitis, inguinal hernia and hemorrhoids. 630 replies were received and 130 of these were discarded as the replies were unsatisfactory. Letters were dispatched in batches until 100 satisfactory replies had been received from cases of each operation. The results are shown in the table.

TABLE I—Average Duration of Convalescence after certain Operations

Time	Gall Bladder	Duodenal Ulcer	Appendix	Hernia	Hemorrhoids
Under 25 days	1	1	2	7	25
25 to 50 days	12	10	23	4	53
50 to 100 days	37	45	41	43	0
Over 100 days	40	33	50	27	4
Still doing light work	10	6	1	4	—
Total	100	100	100	100	100

The occupational classification in Table II is based on the two groups of indoor workers and outdoor workers, light and heavy work in each section forming a separate class. Class A contains those engaged in heavy outdoor work—carters, labourers, colliers, blacksmiths, bricklayers,

TABLE II—Average Period of Convalescence in Relation to Occupation

Occupational Class	Age	Return to Normal Work	Return to Light Work	Period of Light Work	No. of Cases
<b>I Gall Bladder</b>					
Class A	45.4	19.5	28.5	51.2	12
B	45.4	110.3	31.4	33.3	9
C	50	91.5	21.4	1.5	13
D	44.7	113.3	9.2	14.3	5
Average	45.9	115.4	—	—	39
9 still doing light work. 1 unable to work. (10=10)					
<b>II Duodenal Ulcer</b>					
Class A	41.5	143.4	34.4	47.5	20
B	33.4	112	9.9	21.6	9
C	40.1	125.1	4.5	25.7	22
D	33.9	72.3	17	17.9	7
Average	39.7	115.2	—	—	91
6 still doing light work. — unable to work. (6=100)					
<b>III Appendix</b>					
Class A	34.5	119.3	49.5	91	10
B	40.9	105	21.5	15.7	23
C	32.8	105.3	4.5	21.3	30
D	30	85.5	7.8	10.8	9
Average	34.5	104	—	—	69
1 still doing light work. — unable to work. (1=100)					
<b>IV Inguinal Hernia</b>					
Class A	8.3	16.1	2.3	32.2	9
B	29.5	56.8	23.5	12.7	10
C	35.2	83.5	2.8	3.6	23
D	30.1	75.6	16.5	19.5	23
Average	34.5	8.2	—	—	65
4 still doing light work. — unable to work. (4=100)					
<b>V Hemorrhoids</b>					
Class A	43	4.7	8.5	8.7	25
B	43.3	35	3.6	2.8	18
C	38.9	4.2	4.8	1.9	33
D	38.4	47.7	9.9	5.3	27
Average	40.9	9.9	—	—	103



Class B, light outdoor work—tram guards, tram drivers, police constables, motor drivers, printers, postmen, Class C, heavy indoor work—fitters, engineers, joiners, stokers, Class D, light indoor work—shop assistants, tidemen, clerks, professional workers. In each instance the period of convalescence is reckoned from the date of operation, not from the discharge from hospital.

TABLE III—Results of Operations as Manifested by Percentage Return to Work

Disease	Average Age	Returning Direct to Full Work	Returning via Light Work	Still Doing Light Work	Complaining of Symptoms
		Per cent	Per cent	Per cent	Per cent
Gall bladder	45.9	62	28	10	21
Duodenal ulcer	39.7	61	33	6	28
Chronic appendix	34.5	73	25	1	37
Inguinal hernia	34.5	58	38	4	20
Haemorrhoids	40.9	82	18	—	13

#### Symptoms noted after certain Operations

**Gall Bladder.**—After symptoms complained of in the gall bladder cases were recurrence of original symptoms one case flatulent dyspepsia, three cases, biliousness and pain in gall bladder area, one case, cramp-like or colicky abdominal pains with occasional diarrhoea, pain and neuralgia in the seat, pain and heavy feeling in the seat on exertion, weakness and bulging of the abdominal wall in the region of the seat, and general debility.

**Gastrojejunostomy.**—The symptoms complained of after gastrojejunostomy for duodenal ulcer were dyspepsia five cases, vomiting three cases biliousness one case, flatulence, four cases, symptoms as before operation one case, abdominal distension, one case pains in region of seat, one case, pain in the back, one case.

**Chronic Appendicitis.**—After operation for chronic appendicitis patients complained of pains in abdomen, eight cases, vomiting, four cases, flatulence two cases, biliousness one case, severe constipation three cases, looseness of bowels one case, pain neuralgia or stiffness in the region of the seat, six cases, sleeplessness and nervousness one case, pains similar to those before operation, one case.

**Radical Cure.**—After radical cure of inguinal hernia the symptoms arising were pain either aching or neuralgic, in the region of the seat, a feeling of weakness or dragging in the same area, stiffness in the surrounding muscle, and backache.

**Haemorrhoids.**—After the operations for haemorrhoids symptoms included impaired control of the bowel, two cases, loose swollen skin around the anus two cases, irritation or itching at the anus, six cases, feeling of fullness in the anal region, one case, rectal discharge, one case, rectal bleeding one case, severe constipation, one case, and pain in anal area, two cases.

E. W. Bridgman has published statistics on the duration of normal convalescence based on his experience at the convalescent section of a group of base hospitals during the war. In the camp graduated exercise under military discipline was carried out, whilst relaxation, both mental and physical, was carefully provided for. A follow-up system was instituted and it was ascertained that recovery was complete in more than 97 per cent of cases. To compare the duration of hospitalization of patients passing through the camp with those discharged directly to duty a group of records was obtained from the hospital centre of the period before the opening of the convalescent camp. No follow-up system had been instituted for these patients, but Bridgman states that he had seen some of those discharged return to the hospital for relapse, weakness, painful wounds, an inability to keep up, and, after long intervals, some returned with functional mental disorders. The following table shows the average stay in hospital and camp under the two systems.

TABLE IV—I Experience of Convalescent Camps

Diagnosis	No. of Cases	Average Stay in Hospital of Patients not going to Camp	No. of Cases	Average Total Stay in Hospital and Camp
		Days		Days
Haemorrhoidectomy	21	20	25	45
Hemiotomy	31	24	41	50
Hysterectomy	6	22	7	54
Tonsillectomy	10	20	8	37

He concludes that the average hemiotomy needs several weeks of cure before the patient is normal again, instead

of the three and a half that are commonly allowed, and he emphasizes the importance of graduated exercises and military discipline under real medical supervision in favouring and hastening convalescence. He states that the doctors and ward masters soon became adept in handling the occasional malingerer.

#### CONCLUSIONS

I think my investigation shows that the transition stage between serious injury, illness or operation, and normal health is undoubtedly an episode of very great significance and economic importance. Convalescence is not an intuitive process, but a definite state of illness in which arise minor ills and complications and deviations from the normal, and some of these may become fixed and serious. I doubt if operating surgeons sufficiently appreciate the shock and the prolonged effects of extensive operations. Moreover, the illness involves a change of habits and environment, and the patients suffer from the effects of enforced rest with its accompanying lack of exercise and deficient elimination. After the more serious cases convalescence is often as much a state of mind as of body. The wounds heal, but the patients are not themselves. All the organs are below the normal and nervous energy is diminished. They react excessively to any form of mental or physical stimulus. They tend to become introspective, and with this there may arise a state of nervous instability leading at times to hysteria and neurasthenia. Patients often suffer from various slight ailments such as dyspepsia, constipation, and the neuralgias, and occasionally the most prominent feature is sleeplessness. Our aim must be to get the patient to resume his ordinary habits as quickly as is consistent with safety. Some are in danger of relapse in their desire to go too quickly, and must be restrained from doing too much. Others require constant encouragement to enable them to make the progress desired.

Few patients have a clear idea of what their conduct should be after leaving hospital or nursing home. They are very largely influenced by groundless fears and by the advice of ignorant or too solicitous friends. The family physician, when consulted, is not always a reliable guide, from lack of knowledge of the individual case or unfamiliarity with the surgical aspects of the particular condition. It would be of immense help if all medical practitioners could follow up their patients to hospital, be present at any operation performed, and visit them occasionally afterwards. Opportunities for discussion as to after-treatment would then always be possible, and, in the transfer of medical responsibility from hospital control to that of the practitioner, continuity of medical care would not be lost. Failing this, I think it is incumbent on the surgeon to communicate directly with the practitioner when a patient is discharged from hospital, and give him all necessary information. Much help can be afforded the patient by the personal advice of the surgeon. The condition found and the nature of the operation should be suitably explained, and he should be reassured whenever possible as to the future. He should be warned of the possibility of minor symptoms that may arise during convalescence, and of the dangers that ensue from morbid introspection. Particular cases require special advice—for example, enormous help may be given by instruction in the management of a colostomy. Some patients must be compelled to live within definite limits after certain operations. This is notably so in abdominal disease, especially after operations for gastric and duodenal ulcers, gall stone operations, and when a condition of visceroptosis with intestinal stasis is present. In these instances I have found it most convenient to use printed charts of general instructions with special instructions as to diet.

The charts that follow are used in cases after operations for gall stones and duodenal ulcer.

#### INSTRUCTIONS AFTER OPERATION FOR GALL STONES

Take frequent small meals rather than heavy meals.  
Take a tumblerful of hot water night and morning.  
Take a drink of hot water at the end of each meal.  
Take salts in the morning once or twice a week.  
**Diet Allowed.**—Skimmed milk, Tea, Soups made with milk, Vegetables, Tapioca, Rice, etc., Cereals, oatmeal, etc. Fats, such as white margarine, butter, lard, etc. White meat and lean meat, boiled, grilled, or broiled.

of a St Potatoes mashed or in their jacket Turnips Spinach  
Artichoke Mild cheese Fruit a few three months  
Forbidden—Fat and cream Stewed and fried foods Sweetbread  
Liver Duck Kidney Pork Thick pudding Cane High or spiced  
fishes Only fish so for Murrings Salmon Sardine Cooked  
butter Pa Cablage Raw vegetable Strong cheese Aerated  
waters Alcohol

DIET AFTER CONVALESCENCE

Guide to Diet

- 1 Easily digested food
- 2 Large meals should never be taken
- 3 Preferably there should be no drinking during meal
- 4 Food and drink should not be taken hot
- 5 Eat slowly masticate thoroughly avoid bulky meal
- 6 One glass of milk between meal and not before retiring

*Breakfast*—Carefully made porridge Cream lightly boiled White fish  
boiled or baked Cocoa or weak tea with plenty of milk Cold dry  
toast and marmalade or butter Cold boiled ham

*Other Meals*—Omelette A little roast beef well cooked mutton or  
veal Calf's head Fried beef Chicken Tripe Spinach Cauli-  
flower Mashed potatoes Macaroni Milk pudding Junket Blane  
mango Custard

*Forbidden*—Fried fish in fat Smoked fish Bacon Sauage Meat  
pie Meat pudding Steak Made-up diet P-cooked meal  
Cabbage Bruised fruit Carrots Turnips Parsnips Watercress  
Fried potatoes Peppers Mustard Vinegar Pastry Cakes Brown  
bread Jam Sweets Cheese Coffee Alcohol

My investigations have shown that success or failure in the treatment of gastric and duodenal ulcers depends far more on proper after-care than the exact type of operation chosen. I am strongly convinced that the attitude of those surgeons who affirm that they have no use for any operation which does not completely cure the patient is entirely wrong. A change of air greatly assists the convalescence. He gets away from the environment of his illness. He sees new scenes and new people and gets new interests. Routine and regularity should mark the period. Each day should be mapped out with the proper intervals of rest and

graded exercise, and the amount of mental recreation should be apportioned. While it is difficult to estimate accurately the effects of post-operative respiratory exercises and physical exercises on the Swedish principle, there is no doubt that the general circulation is improved, the bodily functions are more normally performed, muscular weakness is diminished, and the patient returns to complete health more quickly. I hold strongly that systematic exercises should be a routine measure in the convalescent period. The various measures of physiotherapy also hold a high place in conducing to rapid recovery.

For the convalescent period the hospital patient or at home does not as a rule, provide an environment conducive to rapid recovery, and though many may be sent to convalescent homes, there will always be a large proportion of patients for whom it is not possible to provide accommodation in these institutions. I strongly believe that there should be a convalescent department attached to each hospital. In this way we should eliminate the neglected period that now prevails between the completion of active surgical treatment and the time of return to full occupation. To this department there could be attached a social service for it has been estimated that 30 per cent of patients discharged from hospital require help in this direction. The medical staff in charge should be specially trained in convalescence. Here patients would be completely investigated and graded their requirements as to diet discipline and physical and mental recreation would be determined and any disabilities that arose or whose presence had been overlooked could be dealt with and the malingerer eliminated. Advantage could be taken in many instances to improve the general health.

## THE RESULTS OF INSULIN THERAPY IN DIABETES MELLITUS\*

BY

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ABOUT four years have elapsed since insulin became generally available in this country for the treatment of diabetes mellitus. This is not a very long period in which to judge the ultimate effect of insulin on diabetes, but it is sufficient to enable us to come to some definite conclusion as to its more immediate and direct influence on the disease. The theoretical considerations which govern the action of insulin in diabetes are quite clear. The oxidation of our food-stuffs requires the presence of a substance which is normally supplied by the pancreas. When for some reason the specialized pancreatic islet cells fail to supply this substance in the necessary amount, an interference with the burning up of sugar and fat results. This is the basis of diabetes mellitus. Since it is now possible to supply this essential substance in the form of insulin, it might be thought that the treatment of diabetes should no longer present any difficulties, and that all that is necessary is to supply sufficient insulin to make up for the deficiency in any particular patient.

The difficulty, however, is to supply the exact amount of insulin necessary for the varying requirements of the organism. In the body there is a mechanism which regulates the production of insulin in accordance with the tissue needs at any given time. The amount of insulin required by the body is dependent on many factors and varies under different conditions. The artificial use of insulin by injection is attended by the drawback that we cannot regulate the amount required to supply the exact demands at any given time. It is true that in some patients we can get fairly close to the theoretical needs, but this can only be accomplished by paying great attention to

various factors such as diet and exercise. Often it is impossible to regulate the artificial supply of insulin so as to simulate the normal mechanism. Though we can now supply the necessary insulin when the body can no longer secrete it, we can so far do but little to reproduce the results of the normal automatic mechanism which regulates the production of insulin according to the prevailing needs at the moment. This is one of the main difficulties in insulin therapy, but under ordinary conditions this drawback can generally be more or less overcome. It is when diabetes becomes complicated by various infections, that our troubles really assume a serious aspect. In certain of these conditions insulin seems to lose its normal activity, and in spite of greatly increased dosage the patient may sometimes succumb. The healthy individual suffering from a similar infection usually shows no disturbance of metabolism such as is seen in diabetes, and it must therefore be assumed that insulin when supplied naturally by the body tissues is more effective in these conditions than it is when given artificially by injection. Indeed, in certain cases of diabetes complicated by severe infection, insulin artificially administered proves of little or no benefit.

Before considering the effect of insulin in diabetes it will be necessary to consider the results obtained by diet in the days before insulin was available.

### Result of Dietetic Treatment of Diabetes

For some years before the isolation of insulin much attention was paid to the dietetic treatment of diabetes, and many claims were made on behalf of this method. While it was generally agreed that the only means of inflicting the disease in any way was by means of properly regulated diet, the outlook for the average patient suffering from the disease was gloomy in the extreme. Generally it was found that suitable diet had a wonderful effect to begin with, but in spite of the greatest care the patient after a time gradually began to show his old symptoms, and soon a point was reached at which the dietetic measures no longer prevented the occurrence of severe glycosuria and ketosis. From this point the patient usually went steadily downhill and soon coma or some intermitted infection terminated the scene. The duration of life under dietetic treatment depended, of course, on the

\* A paper reading a discussion in the Section of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1917.

severity of the lesion, but, unfortunately, as it is generally seen in young people, the disease is a steadily progressive one, and after a time its course cannot usually be stayed to any appreciable extent by diet.

No doubt so-called diabetes in elderly subjects often presented an entirely different picture, and frequently responded well to diet. In such patients, however, glycosuria is the main feature, and there is generally little or no ketosis. In many of them no evidence of disturbed oxidation can be obtained, and the patient may suffer little or no inconvenience. This type of case is really not a true diabetes, but a simple glycosuria which is probably dependent on an inability on the part of the liver and muscles to store sugar in the normal manner. Consequently hyperglycaemia results, and sugar is passed in the urine. The usual symptoms of diabetes are absent, or, if present at all, are of a very mild nature. These cases should not be classified as true diabetes, there is no tendency to coma, and the glycosuria can often be controlled by dietetic measures. Not infrequently the sugar is detected as the result of a routine examination of the urine. Often the glycosuria does no harm whatever to the patient, and though the condition may sometimes develop into a true diabetes, yet, in my experience, this is a comparatively rare sequel. Such cases do not come under the heading of true diabetes.

In considering the results of dietetic treatment it is essential to remember the difference between these two types, for the ultimate effects of diet depend almost entirely on the nature of the cases treated. Elderly patients suffering from glycosuria with little or no ketosis frequently do exceedingly well on diet. Patients suffering from true diabetes ultimately do very badly, though the results may be satisfactory for a short time. The success or failure of dietetic treatment, as indicated by the experience of any particular observer, depends very largely on the number of cases of ordinary glycosuria he includes under the term "diabetes." If many of the patients were suffering from nothing more serious than the well known glycosuria of the elderly individual, then dietetic treatment may appear to give excellent results. When, on the contrary, only cases of true diabetes with the usual symptoms are included, the results of diet are absolutely unsatisfactory in the great majority of patients.

When considering the effects of insulin, it is really with diabetes as it shows itself in its typical form that we have to deal. Usually diabetes is a disease of youth or of middle age, though not infrequently it may be seen in old age. On the whole, true diabetes is more common in patients under 45 years of age, while glycosuria due to lack of storage generally occurs after this age. In arriving at a definite conclusion as to the effects of insulin in diabetes it is necessary to bear in mind that it is its beneficial effect on true diabetes that is really important. In the other class of case coma does not intervene, and death is usually due, not to the effects of the glycosuria, but to some other disease.

Before the days of insulin many observers claimed excellent results from dietetic treatment. Others frankly confessed that diet, however carefully followed by the patient, was quite useless after a short time. Several years ago I carefully examined my figures for patients suffering from typical diabetes who were treated by dietetic measures. The results showed that death took place on an average in about five years or rather less after the dietetic treatment began. I have had communications with various authorities in other countries on this subject, and the information I obtained was to the effect that the average duration of life in patients on dietetic treatment was from four to six years. These cases, of course, did not include patients suffering from glycosuria without ketosis. We may, therefore, take the view that any patient suffering from diabetes in the true sense of the term is unlikely to survive for more than five or six years on an average when the treatment is restricted to dietetic measures. Indeed, in severe cases, two to three years is often all that may be reasonably expected. Consideration of these figures will enable us to appreciate the changes brought about by insulin therapy.

### The Results of Insulin Therapy

In the four years that have elapsed since insulin became generally available for the treatment of diabetes 291 patients suffering from typical diabetes have been treated in a special clinic in the Medical Unit of St Thomas's Hospital. All these patients showed definite ketosis, and the majority of them were young or middle-aged. Cases of ordinary glycosuria without ketosis are not included in this list. Each patient was first treated as an inpatient in the ward, the diet and insulin dosage being carefully worked out. After being discharged from the ward the patient attended the clinic at definite intervals. As an out-patient he was usually being looked after by his medical practitioner. When any change in diet or in insulin dosage was considered advisable, the practitioner was informed of the result of the examination, and the suggested changes indicated to him. The complete treatment of the case, however, was, as far as possible, controlled by the special clinic. The following figures show the results of insulin treatment of these cases up to date. In this connection I should like to thank Dr Crozier of the medical unit for his help in keeping records of these cases and for assisting me in compiling the results.

Year of admission of patient	No of patients admitted.	No of deaths to date.
1923-24	77	5
1924-25	76	2
1925-26	68	3
1926-27	70	2
Total	291	12

Several of these patients were admitted in coma, three of them developed coma on three different occasions and a few more were in coma on two occasions. All these patients are now doing well. Two patients with tubercle bacilli in their sputum are still alive and in fairly good health.

Of the twelve deaths, one, a girl of 19, developed coma outside, and was treated by her local doctor. Another was treated in hospital, but was admitted at a rather late stage, and though apparently a case of uncomplicated diabetic coma, she failed to respond to insulin. Three of these cases recovered from coma, but died of cardiac failure. In all the others coma developed as the result of some such complication as influenza, pneumonia, or septic lesion.

These figures show a death rate of almost exactly 4 per cent. As they were all well marked cases the figures indicate a very extraordinary improvement over the results of dietetic treatment. Judging from the death rate prior to the use of insulin, the average number of deaths in these 291 patients would have been much greater if treatment had been restricted to diet alone. While it is quite impossible to give anything like exact figures, it is nevertheless possible to arrive at some probable conclusions as to what would have happened if no insulin had been used in these cases.

If we take six years as the average duration of life on diet alone, it appears that of the 77 patients admitted in 1923-24 at least half of them would now be dead. Taking everything into consideration, it seems probable that more than one-third of the total number of these 291 cases would not be alive now. In addition to the above patients, I have seen a fair number regarding whom I have no definite statistics. The general impression conveyed, however, is that the average results of insulin treatment were somewhat similar. So far, I have only seen one diabetic patient who failed entirely to respond to insulin administration. As no post-mortem examination took place in this case it is possible that some other complication was present.

These results point to the conclusion that practically all uncomplicated cases of diabetes in young or middle-aged people can be controlled by the judicious use of insulin. It must also be remembered that the general physical condition of diabetic patients treated by insulin is altogether different from that which obtained under dietetic treatment. In many cases dietetic treatment was so severe that the patients could not be induced to continue with it. Some of them quite frankly stated that they preferred death to the physical agony which they

endured. In almost all had cases the period of a year or so preceding death was usually not distressing and hopeless. Now all is changed. The disease which was formerly so grave has been shorn of many of its terrors, and, in my opinion, it ought to be possible to control any ordinary case of uncomplicated diabetes and to restore the patient to a fair degree of health and comfort.

#### *Some Difficulties encountered in the Use of Insulin*

In uncomplicated cases of diabetes insulin has proved to be a very excellent remedy. With a well balanced diet and suitable dosage of insulin patients usually get on all right and give little trouble as long as infections of various kinds are avoided. When a diabetic patient becomes ill from some acute disease it often happens that the insulin loses its effect to some extent and a marked tendency to coma sets in. In these circumstances the insulin dose must be very materially increased, perhaps to three or four times what the patient was having previously. Sometimes even much larger doses than this are necessary for a time. The secret of successful treatment of diabetes by insulin lies largely in a recognition of this fact. It cannot be too strongly emphasized that very large doses of insulin may be required when acute infections supervene. Very often unfortunately, the medical man in attendance on the patient takes the view that some temporary complication which perhaps makes the patient unable to take his ordinary diet indicates a decrease in the dose of insulin. Such treatment is often fatal. The dose of insulin should in the great majority of these patients be increased at an early stage of the complication. When this is done in a judicious manner it is my experience that grave consequences can very often be avoided. No doubt the complication itself may sometimes kill, irrespective of the diabetes, but probably the most essential point to bear in mind in the routine treatment of diabetes by insulin is the necessity to give a sufficient amount of insulin when complications supervene.

#### *The Results of Insulin Therapy in Young Children*

It is well recognized that diabetes in the child is a very serious condition and, in the absence of insulin, is liable to prove fatal in a very short time. On the other hand the disease is usually well controlled by insulin when a sufficient dose is given. Since nearly all children contract some of the various ailments common to children at some time or other, it is obvious that in the case of very young people there are special difficulties and dangers to contend with. In my experience, however, these dangers are not nearly so formidable as they might appear to be. Undoubtedly very great care is necessary, and the dose of insulin must at once be increased when the onset of any of these ailments is accompanied by an increase in the diabetic symptoms. When this is carefully done the results on the whole are good. I cannot claim to have seen very many cases of diabetes in young children, but since 1923 I have treated over thirty children varying in age from 2½ to 10 years, and all of these are alive to-day and in quite good health. We have not had a single death from diabetic coma in a child under 10 years of age. Many of these children were first seen while in coma, and a few of them developed coma on at least two subsequent occasions. Some of them have contracted and safely weathered such infections as whooping-cough, measles and chicken-pox. While it must be admitted that the outlook from the theoretical point of view is not good in the case of children, practical experience suggests that the young diabetic can very often be safely guided through the storms which are peculiar to childhood, and that very satisfactory results can often be obtained.

An interesting question arises in connection with the possible cure of diabetes by insulin in the young. Definite evidence has been brought forward that regeneration of the islet cells of the pancreas may take place in a young diabetic when the disease is controlled by insulin. From this it might be argued that the administration of insulin in very young people might sometimes effect a cure by allowing new pancreatic cells to develop. Several of my cases, however, require much smaller doses of insulin than they did at the earlier stages of treatment, but

I have not yet seen a single patient whose recovery of tolerance was sufficiently marked to enable him to discard insulin. In some of these young patients there has been so sign of increased tolerance and the amount of insulin had sometimes to be increased as the child grew older. It seems fairly certain that all these children will find it necessary to continue the administration of insulin throughout life. It is quite certain that the lives of many children who would otherwise die of diabetic coma can be saved by insulin, and that the outlook is not necessarily as bleak as it is sometimes considered to be. Given a child otherwise healthy, there is really good ground for the view that such a child may reach adult life, and be no worse off than the average patient in whom diabetes first showed itself at a much later stage in life.

#### *Insulin in Elderly and Old Patients*

In old patients, as already indicated, true progressive diabetes with ketosis is not very common, though it is certainly met with from time to time. By far the most frequent condition in these patients is the type of glycosuria already discussed. In an uncomplicated case of diabetes in an elderly patient insulin appears to act as well as it does in the young or middle-aged but, unfortunately, it often happens that other ailments are present. In these circumstances good results could hardly be expected in general from the use of insulin in old patients, and this is in accordance with experience. Insulin, however, often gives excellent results in many old people who have glycosuria with such symptoms as weakness, neuritis and local irritation, but whose condition is otherwise good. It all depends whether the lesion is or is not complicated with degenerative diseases and other changes incident to old age. There is obviously an absence of the recuperative power of the young individual, and allowances must be made for this.

#### *The Use of Insulin in Surgical Conditions Complicating Diabetes*

Insulin has revolutionized diabetic surgery. Before insulin was available the surgeon hesitated as a rule to incur the grave risk associated with an operation on a diabetic patient. In desperate cases when an operation had to be attempted, complications often supervened and the patient died. Since insulin has become available for the treatment of these patients, it is safe to say that under good conditions, and when treated by someone who understands the use of insulin, the diabetic has about as good a chance as a normal patient who undergoes an operation. This is well borne out by the statistics of the Mayo Clinic. In 657 operations performed on diabetic patients only 20 deaths occurred. Taking into consideration the fact that many of these patients were suffering from arterial sclerosis and other degenerative lesions the results appear to be very satisfactory.

#### *Some Anomalous Statistical Results*

From the excellent results obtained by the use of insulin it might be thought that diabetes would figure no longer in official statistics as an important cause of death. At any rate, it might be considered that the number of deaths officially returned as caused by diabetes would be much reduced, and that this reduction would continue for several years. Since the majority of diabetic patients develop the disease when comparatively young, the natural inference would be that the lives of these patients would be prolonged for many years by insulin ultimately, when death took place in the usual course of events, though the patient might die of something quite different from diabetes, there would be a tendency on the part of the medical man to return the cause of death as diabetes. Theoretically, then, there should be a marked diminution in the number of deaths from diabetes for several years, while after a certain period an increase might be looked for, but the majority of the deaths should be those of elderly people.

So far as official statistics go, however, insulin has apparently not decreased the number of deaths from diabetes. According to these returns, insulin has failed to affect to any material extent the death rate from diabetes. We are therefore faced with the curious result

that apparently the number of patients dying from diabetes is as high as ever, in spite of the undisputed fact that many lives are saved by insulin. What is the explanation of this? One possible explanation might be that the incidence of diabetes has largely increased during the last few years, and that, despite the beneficial action of insulin, the increase of the disease is so marked as to keep the death rate up to the old level. This view really means that in the absence of insulin the death rate from diabetes would be very materially higher than it now is. Against this view is the fact that insulin is such a potent measure in the treatment of uncomplicated diabetes that even a marked increase in the incidence of the disease should not materially increase the death rate. There appears to be some evidence pointing to the conclusion that there is a tendency for some slight increase in the number of diabetic cases, but this does not explain the difficulty.

An examination of the age of death reveals the fact that the age incidence has shifted, and that for the last few years the majority of diabetic deaths occurred in elderly people. The number of diabetic deaths in young people has very materially decreased. Now, since true diabetes is comparatively rare in elderly people, while simple glycosuria is exceedingly common, it is but reasonable to suppose that the majority of persons returned as having died from diabetes really suffered from simple glycosuria. Since this type of glycosuria does not as a rule produce coma, it is more likely that the majority of these deaths were caused by some condition other than diabetes. The fact that glycosuria happened to be present resulted in "diabetes" being returned as the cause of death. No doubt the recent introduction of insulin has tended to focus attention on glycosuria, and so its presence is more frequently determined. Glycosuria, when present, is such a definite symptom that naturally it would nearly always be mentioned under the term "diabetes" in the official certificate of death.

Again, it is certain that insulin is often not nearly so effective in the treatment of coma in the elderly as it is in the young. Coma is exceedingly detrimental to the heart, and since the heart muscle in old people frequently suffers from some degree of degeneration, it is not unusual for the patient to recover from coma and to die of cardiac failure.

All these facts may play a part in explaining the anomalous official figures which apparently suggest that insulin has failed to reduce the diabetic death rate. These considerations indicate the marked importance of differentiating between cases of true diabetes and those of simple glycosuria.

#### *Results of Insulin Treatment in Coma*

When coma has actually developed much depends on the quickness and energy of the medical man in attendance. The patient should be treated at the earliest possible moment, for the strain on certain of the organs, such as the heart and kidneys, is very great, and, if prolonged, may result indirectly in death.

If the patient is seen at a fairly early stage and no complications are present, recovery should be the rule. I have not had a single death from coma in a young and otherwise healthy patient since insulin became available. In patients suffering from acute infections recovery is more doubtful, but if sufficient insulin is used a successful result should be frequently obtained. Generally speaking, the young diabetic patient, healthy in other respects, should not die from diabetic coma if insulin is judiciously administered at an early stage. In old people the case is very different, for reasons already discussed. Coma in a vigorous sound patient generally responds to insulin, whatever the age happens to be.

#### *Some Points in the Treatment of Coma*

It is generally agreed that the most important measure in the treatment of coma is to give insulin in sufficient amount at the earliest possible moment. Whether or not this should be combined with the administration of sodium bicarbonate is a matter on which opinion is divided. From some experiments carried out in my laboratory by Dr Goldblatt, it would appear that the use of alkali, at any

rate in large doses, is definitely contraindicated in diabetic coma. Goldblatt induced a ketosis in himself by starving for forty-eight hours. At this stage the urine contained fairly large amounts of acetone and diacetic acid, as indicated by Rothlie's reaction and the ferric chloride test. This ketosis rapidly disappeared after taking some glucose. Careful observation showed that after the ingestion of 50 grams of glucose dissolved in water the ketosis disappeared entirely in almost exactly one hour. When, in addition to the glucose, a large dose of sodium bicarbonate was also taken, the ketosis persisted for a long time, and was still present in definite amounts after eight hours. Many experiments of a similar kind were carried out, both on man and on animals, the results were always the same, and tended to show quite conclusively that sodium bicarbonate administered in the course of an acidosis markedly prolonged the condition. In the light of these experiments there can be little doubt that the ingestion of large doses of alkali during diabetic coma tends to hinder the disappearance of the coma. Sodium bicarbonate should, therefore, not be given when treating coma by insulin, since it does no good and definitely retards recovery.

#### *Insulin Treatment and the Persistence of Glycosuria*

It might be thought that the results of insulin therapy in any given patient would depend on keeping the blood sugar normal and the urine free from sugar. Experience shows quite definitely that this is not always so. While it is good practice in all cases to endeavour to render the patient aglycosuric, yet it may sometimes be impossible to do so without having recourse to very frequent injections of insulin. In my experience patients whose blood sugar was kept within normal limits at all times, and whose urines were constantly free from sugar, did no better than others whose blood sugar could not be always kept low. In the case of a small boy under my care it was quite impossible to control the blood sugar and glycosuria, for this patient had a real genius in the way of procuring all sorts of prohibited food. While in hospital it was almost impossible to regulate his diet, and after going out he was entirely beyond control. His urine nearly always contained a large amount of sugar—sometimes a very large amount—which generally depended on liberal supplies of chocolate which he bribed his young friends to procure for him. He seemed a quite hopeless case, and I must admit that I anticipated disaster, yet in spite of all he has done quite well and is now well developed, vigorous, and healthy. Indeed, the result in the case of this young patient makes one wonder whether certain of our theories connected with the treatment of diabetes are sound. Certainly it is best to keep the urine free from sugar, and the blood sugar as near the normal as possible, but the medical man need not despair if he finds this ideal difficult. Many patients do exceedingly well even when some glycosuria is more or less constantly present.

#### *The Administration of Insulin*

Insulin is usually given twice daily—in the morning before breakfast and at night before the evening meal. In some patients two doses are not sufficient to keep the blood sugar within normal limits, and the question arises whether in such cases we are justified in giving three or more injections. I am quite definitely convinced that the injection of more than two doses usually does more harm than good. Though frequent injections may control the glycosuria, the mental effect is so disturbing that many patients cannot stand it. There is a feeling that they can never get away from injections for any period of time, and they sometimes suffer from a definite nervous condition. I have seen a patient in a hopeless condition of nervous dread as the result of the administration of insulin three times a day, all the symptoms disappeared when the patient was put on two daily injections.

#### *Diet and Insulin*

There is no doubt that the effect of insulin therapy is largely dependent on the balancing of the insulin dose with the diet. Experience, however, shows that, provided sufficient insulin is taken, there are fairly wide limits of



diet between which the patient can live and thrive. Many of our accepted ideas with regard to diet are theoretical, and do not always work out well in actual practice. When sufficient insulin is given it is quite possible for a patient to get along satisfactorily without weighing his food. Patients who are feeling fit as the result of insulin treatment are usually engaged in some business or manual labour and cannot be expected to carry a balance about with them. Indeed it is seldom, if ever, necessary to weigh the food constantly if the patient is at all intelligent. All that is required is to teach the patient to observe how much food is represented by a definite weight. After a very little practice he is able to select and gauge his diet with ease. The average patient very soon learns to eat approximately the same amount of food each day without weighing it, and I am beginning to think that the added comfort induced by this method results in the patient being in better condition than is the case when his food is scrupulously weighed out for him. The simpler we make all the arrangements connected with insulin therapy the better results we obtain, provided that the main principles are always kept in view.

On the whole, insulin can, in general control the symptoms of diabetes in uncomplicated cases. There are drawbacks to its use, but when judiciously administered it usually results in restoring the patient to a satisfactory state of health. This is especially so when insulin is used at an early stage of diabetes. So far no substitute has been discovered which can be taken by the mouth. None of the pancreatic mouth preparations at present on the market appear to have the slightest effect on the disease. In spite of the claims constantly advanced on their behalf Dr. Fulkner, who recently carried out an investigation on this point in my laboratory, came to the conclusion that there was no evidence of any action on carbohydrate metabolism as the result of taking these preparations.

The latest mouth preparation is a synthetic product called "synthralin." There can be no doubt that this substance when taken by the mouth does produce a definite effect in certain cases of diabetes. The glycosuria is lessened and the ketosis is often markedly reduced. The product, however, has marked toxic properties, and tends to produce gastro-intestinal and other disturbances so that its use in the treatment of diabetes is at present not practical. It is conceivable that some preparation of a somewhat similar constitution may be found which will have a similar action without the toxic effects of synthralin. Meanwhile we must accept the view that, for the present, the only useful substance in the treatment of diabetes is insulin.

## STATISTICAL EVIDENCE OF THE VALUE OF INSULIN

BY

THE LATE PROFESSOR K. A. PETTEN,  
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When we are dealing with a chronic disease we cannot come to a true knowledge of the prognosis merely by observation in the clinic. As regards diabetes we have all seen in the old days how many patients died from coma, and in this respect we have obtained a certain knowledge of prognosis, but full knowledge can only come from following up in a systematic way a sufficient number of unselected cases. Very few investigations of that kind have been made. I know of only two—one by Horace Gray in America the other by Milmo, using the material from my clinic. Milmo dealt only with patients after at least five years had passed since they were first treated in the clinic. The results of this investigation were that 70 per cent of cases showing a fasting blood sugar value of 0.18 per cent on admission ended fatally. The interest of these investigations is the greater because the doors to the country where we could get knowledge of this kind are now closed and no human force can open them, they were closed by

the discovery of insulin, and the noble war in which our colleagues in Toronto have given the fruits of the discovery to the whole world.

It will in time be of the greatest interest to compare the corresponding figures of the insulin period but the time for this is not yet ripe. Professor Moelne has given us his statistics for four years of the insulin epoch, and we must thankfully recognize that the figures speak for a very hopeful view on the prognosis of this disease, only the future, however, can give us the definite answer.

In the figures I am giving here of my cases during the insulin epoch I am for the present dealing only with cases which were admitted to the clinic with a clear picture of coma.

### Seventy-three Attacks of Coma in 5 Cases (May 1923 to July 1927)

Year	No of Cases	Living	Fatal Issue		
			In Coma		Other Disease
			In Hospital	At Home	
1923	10	6	—	—	4 (3 tuberculo sis)
1924	15	9	1	4	1
1925	10	10	—	—	—
1926	17	14	1	—	2 (scylla)
1927	5	3	2 (11)	—	—
Total	57	42	4 (7)	4	7

Analysing the cases of death in coma in the clinic, we find that in 1924 we had not formulated our present rules for treatment, and the patient who died in that year was treated with too small doses of insulin. The 1926 case and one of the 1927 cases were patients who had refused insulin treatment in the clinic earlier in the illness, in the other 1927 case the necropsy revealed a broncho pneumonia which the pathologist considered to be antecedent to the coma.

With regard to the treatment of coma it is my rule to try to bring down the blood sugar to a normal value in a very short time—twelve hours at longest preferably in six or eight, in my opinion it is unnecessary to wait for the report on the blood sugar before giving a further dose of insulin if the respiration continues to be increased a fresh dose of insulin may be given after half an hour's interval.

As to diet I agree with Joslin and give the same diet as in other cases of grave diabetes, consequently I give no glucose. Campbell in Toronto originally spoke in favour of large intravenous injections of glucose, I am glad to see that in his later publication he has abandoned this treatment and says nothing more about it. The following table gives the dates of the latest information about my cases.

For the 42 living cases the latest information is

From June 1927	9 cases
May 1927	17
April 1927	6
March 1927	6
February 1927	7

For comparison I give the corresponding figures of Joslin's cases from his latest publication.

### Joslin's Cases Sixty-three Attacks of Coma in 5 Cases (April 1923 to February 1927)

Year	No of Cases	Living	Fatal Issue		
			In Coma		Other Diseases
			In Hospital	At Home	
1923	11	8	2	1	—
1924	13	13	—	—	5
1925	1	12	—	—	2
1926	17	15	—	—	1
1927	3	2	1	—	—
Total	55 (53)	40 (31)	3	1	8

Joslin has not made a distinction between the number of attacks and the number of cases. I have had some difficulty there over, and I hope I have made no mistake in quoting his figures.

Communicated to the Section of Medicine at the Annual Meeting of the Fifth Medical Association at Edinburgh in a discussion on the results of insulin therapy in diabetes mellitus. New of Professor Petten's recent death reaches us as we go to press with this paper.

For Joslin's 45 living cases the latest information is

From	4 cases
February, April, 1926	9 "
June July, 1926	7 "
September, October, 1926	9 "
November, 1926	9 "
December, 1926	4 "
January, 1927	6 "
February, 1927	9 "
March, 1927	3 "
	45* (51)

It will be seen that Joslin's results—I am very glad to recognize it—are a little better than mine. On the other hand, his information from his patients is in part not so recent as mine, I hope that later information will not raise the number of his fatal cases.

That so many of our coma patients are still living is very creditable to them, the great majority are under observation in the out-patient department, and we know that they follow the advice given concerning diet very carefully. If we have deserved some credit for the result it is because we have used our influence in educating them, and the patients have understood that it was best for them to follow our advice.

A short time ago Dr. de Jong of Leyden sent me the figures of the mortality from diabetes in Holland during recent years, he had recently told me that there had been a great increase in the mortality from this disease. The figures, however, show, when divided into age groups, that the curve for the mortality for all ages below 50 takes a quite horizontal course, for the age period 50 to 64 also the curve shows no very evident rise but for the years after 64 the number of deaths from diabetes has increased during the years 1911 to 1926 about 200 to 300 per cent. It is quite evident that the enormous difference shown for the years 1911 to 1926 must be due to the attention now given to diabetes and the development of a more accurate diagnosis as to the cause of death in patients dying at a late age. This is the opinion that I have defended for many years to explain all those statistical differences which appear to indicate that the disease is increasing in frequency.

### CLASSIFICATION OF GLUCOSURIA FROM THE POINT OF VIEW OF INSULIN TREATMENT

BY

P. J. CAMMIDGE, M.D.

Most observers, including Banting (Nobel Lecture, 1925), are now agreed that, as I predicted on theoretical grounds in 1922, insulin is not a cure for diabetes. It is true that many diabetic patients exhibit a considerable recovery of carbohydrate tolerance after treatment with insulin, but similar recovery occurred as a result of the "fasting" treatment, and the cause is probably the same—namely, the physiological rest provided for an exhausted function, in the one case by viciously performing its work, and in the other by reducing the demands upon it to a minimum. There is, however, the important difference that in the fasting treatment the horse is starving while the grass is growing,\* whereas with insulin the patient can be fed, but as the rest obtained by regulated fasting is not confined to the structures directly concerned in carbohydrate metabolism and has a beneficial influence in other directions, maybe helping to eliminate the cause of the disease, the full diet possible from the commencement of treatment with insulin is not always a real advantage to the patient.

In suitable cases, and used intelligently in conjunction with careful dieting and other forms of treatment, there can be no doubt that insulin is invaluable in diabetes mellitus. This is clearly evident in my own statistics, for in a series (Table I) of 250 unselected cases of which I have complete records during three years immediately preceding the discovery of insulin there were 66 deaths (26 per cent), while in the same number of cases treated in three years after the introduction of insulin there were

TABLE I

	Pre insulin Period			Insulin Period		
	Cases	Deaths	Percent deaths	Cases	Deaths	Percent deaths
Defective utilization (achimatic)	115	56	49	97	20	21
Defective storage (anapothetic)	117	10	9	138	6	4
Lowered threshold (epithymic)	18	0	0	15	0	0
Total	250	66	26	250	26	10

only 26 deaths (10 per cent). The improvement was accounted for mainly by a complete disappearance of pneumonia, influenza, and post-operative fatalities as causes of death, and by a reduction in the number of deaths attributed to coma from 19 to 6 during the insulin period.

For purposes of comparison and treatment cases of glucosuria may be divided into three main groups, irrespective of any theory as to the cause of diabetes, by relatively simple tests: (1) Those where there is defective utilization and defective storage of sugar, or, briefly, the "achimatic" variety ( $\alpha$ =absence of,  $\chi\mu\epsilon\alpha$ =nose), characterized by a high blood sugar and a low lactic acid content of the blood in a fasting condition. (2) Those where there is difficulty in storage but no obvious defect of utilization, the "anapothetic" variety ( $\alpha$ =absence of,  $\alpha\pi\theta\eta\kappa\eta$ =storehouse), in which the fasting blood sugar and lactic acid are normal, although hyperglycaemia develops on feeding. (3) Those where the utilization and storage of sugar are normally carried out and the sugar content of the blood is not high, even after a test meal of glucose, but glucosuria occurs on feeding, from unusual permeability of the kidneys for sugar, which may be termed the "epithymic" variety ( $\epsilon\pi\iota$ =upon,  $\theta\upsilon\mu\alpha$ =door). It is instructive to see how the introduction of insulin has affected the death rate of each group. As might be expected, achimatic glucosuria was a much more fatal condition than the anapothetic variety in pre-insulin days, the death rate in my cases working out at 49 per cent in the one group and 9 per cent in the other. After insulin became available the percentage of deaths in the achimatic group fell to 21, and in the anapothetic group to 4, so that, although insulin effected a noteworthy saving of life in both, the relative mortality remained practically unchanged.

It is true that all my patients since 1923 have not been treated with insulin, for I have always maintained that the inconveniences necessarily attending its use are not compensated by the advantage gained, except where a suitable diet is not otherwise obtainable, and I think my results support this view. The twofold power possessed by insulin of promoting the storage and the utilization of sugar should render it particularly useful in cases of achimatic glucosuria, where both functions are at fault, and I found it necessary to prescribe it in 64 out of 97 (66 per cent) of the cases of that type coming under my care in the period under

TABLE II—Insulin Period

	Diet			Insulin		
	Cases	Deaths	Percent deaths	Cases	Deaths	Percent deaths
Defective utilization (achimatic)	33	6	18	64	14	22
Defective storage (anapothetic)	131	6	5	7	0	0
Lowered threshold (epithymic)	15	0	0	0	0	0
Total	179	12	7	71	14	20

review (Table II). Of these 14 (22 per cent) have died, 2 of coma, which developed shortly after the injections were discontinued contrary to my advice, 2 apparently from the effects of insulin, but in the remaining 10 deaths

\* One of the papers read in opening a discussion on insulin therapy in diabetes mellitus at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

occurred from causes not directly connected with defective carbohydrate metabolism such as cancer, tuberculosis, and nephritis. There were 6 deaths in the 33 cases of diabetic glycosuria not treated with insulin (18 per cent). 3 were due to coma occurring in patients who refused the injections and the other 3 resulted from cancer, nephritis, and old age respectively, causes which could not have been prevented by insulin.

In my experience patient suffering from glycosuria arising from defective storage rarely need insulin and I have found it necessary in only 8 out of 138 cases (6 per cent). Seven of these improved rapidly and then condition has remained satisfactory, but one who refused the treatment died of coma. This patient accounts for one of the 6 deaths in the anapothectic group not treated with insulin, where there was a total death rate of 5 per cent, all the other patients died from causes not susceptible to the influence of insulin (Table III).

TABLE III—Causes of Death Insulin Period

	Achiatric		Anapothectic		Total
	Died	Inulin	Died	Inulin	
Accident	0	1	0	0	1
Age	1	0	2	0	3
Carbuncle	0	1	0	0	1
Graves disease	0	1	0	0	1
Inulin in	0	2	0	0	2
Malignant disease	1	2	2	0	5
Nephritis	1	1	0	0	2
Pancreatitis	0	3	0	0	3
Refined treatment	3	2	1	0	6
Tuberculosis	0	1	1	0	2
	6	1	6	0	2

Epithelial glycosuria is not a fatal condition, and since there is no defect of carbohydrate metabolism treatment with insulin is not called for in fact it is contraindicated as a disturbance in the balance between the internal secretions of the ductless glands which may cause serious or even fatal hypoglycaemia results.

The effects of insulin upon the activities of the ductless glands have not received the attention they deserve. The acute symptoms arising from a large overdose are well known but the results of chronic hyperinsulinism from therapeutic doses are, as yet, almost unrecognized although they are of considerable practical importance. The most common is polyuria due probably to the neutralizing effect of insulin upon the internal secretion of the pituitary. This may develop occasionally into a condition closely resembling diabetes insipidus. Conversely a partial chemical neutralization of the injected insulin by the pituitary secretion with a compensatory hyperactivity of the suprarenals, thyroid and parathyroids appears to explain to some extent the varying effect of the same dose on carbohydrate metabolism in different cases and in the same case at different times which is often so puzzling. Occasionally patients are met with in whom insulin has comparatively little effect on the hyperglycaemia unless very large doses are given and if these are continued hypoglycaemia suddenly develops probably owing to exhaustion of the pituitary and overstimulation of the suprarenals with consequent ischaemia. Two of my patients died from rapid heart failure probably brought about in this way, and in three others where death was attributed to "pancreatitis" the symptoms were of a similar character, but associated with acute abdominal pain. It is important to realize that, although injected insulin may be chemically as efficient as the internal secretion of the pancreas it is not physiologically equivalent and the larger the dose the greater is the difference between the artificial and the natural condition which results with consequently increasing risk of disturbances like those I have mentioned developing. In the keto diabetes of children and young adults there is

some justification for comparatively large doses of insulin being given, at least for some time if constant supervision is possible, but in chronic cases, and especially when the patient is over 25 or 30, they are not necessary, and, in my opinion entail needless risks. I usually aim at restricting the dose to an amount sufficient to protect the patient from ketosis and enable him to metabolize 60 or 70 grams of carbohydrate a day, irrespective of whether sugar is passed in the urine or not. This plan appears to work satisfactorily and I have cases where as much as 50 or 60 grams of sugar have been excreted daily for several years without any apparent ill effect. In some instances I give a preparation of insulin by the mouth, for, although this does not improve sugar utilization, I have experimental and clinical evidence that it may materially assist the storage of carbohydrate so that, alone in anapothectic glycosuria or in conjunction with small injections of insulin in the milder forms of diabetic glycosuria it is a useful method of treatment if its limitations are borne in mind. Dried preparations of pancreas containing the active digestive ferments given by the mouth are also useful in some cases particularly when analysis of the faeces shows that there is defective digestion owing to sclerotic changes in the gland, or when growth and development are delayed or have ceased in children.

The most spectacular results of insulin therapy are seen in connexion with the treatment of diabetic coma. The effect is often almost magical especially in young people but some elderly comatose diabetics respond very little to insulin injections, and then only temporarily. The blood analyses made in my cases have shown that as a rule, the failure of the treatment is actually more apparent than real for the hyperglycaemia and ketosis are controlled in the usual way if appropriate doses are given, but, owing to the presence in the circulation of accumulated toxic products of defective nitrogenous metabolism upon which insulin has no effect, the coma either persists apparently unchanged or is relieved only for a time, death ultimately occurring from uraemic or amino acid poisoning. It is therefore never wise to give too sanguine a prognosis as to the outcome of the insulin treatment unless it is certain that the coma is only a direct consequence of defective fat and carbohydrate metabolism and is not dependent upon, or complicated by the effects of serious renal and hepatic damage preventing the detoxication and elimination of nitrogenous waste products.

#### DISCUSSION

Dr R. D. LAWRENCE (London) agreed that the use of insulin in patients with uncomplicated diabetes could restore them to normal health and strength. In fact, it was impossible to recognize these patients as diabetics unless they were watched critically at meals or seen having injection treatment. Insulin might fail however to restore health in those who did not use it properly and in cases where other organic disease was undermining the health. In infections much larger doses than usual were necessary. Dr Lawrence had seen only one case which failed to respond to insulin and even then it kept the patient free from coma. He had lost several coma cases in spite of energetic insulin treatment and in all these the cause of death seemed to be an intensely depressed circulation. When the patient was pulseless or nearly so insulin could not be expected to act. The speaker had found it impossible to keep severe cases sugar free continuously with only two doses of insulin a day, but rarely thought it necessary or wise to give more since the patients did equally well on two doses and led a more comfortable existence. The only contraindication to insulin in severe diabetes was angina or cardiovascular degeneration. Here insulin should be given with great care and no chance of hypoglycaemia should ever be risked, as the latter was apt to precipitate an attack of angina. Dr Lawrence had tried most of the mouth preparations advertised as being useful in diabetes and had found them quite useless. He did not agree that senile diabetes was different from the juvenile type, and thought that Professor Maclean had produced no evidence that the difference was one of kind and not merely of degree. Moreover, the evidence on which Professor Maclean had based his condemnation of alkalis

in the treatment of coma did not seem sound. The speaker thought that small doses of sodium bicarbonate must tend to restore the diminished alkali reserve to its physiological normal and that any rate could do no harm. He pointed out the advantage of "double strength" insulin in the case of patients who required large doses of insulin, because most practitioners were unaware of its existence. His experience with synthalin led him to believe it was of no practical value in its present form. It might be gathered from Professor Maclean's paper that there was no need to weigh the food in diabetes, whereas Dr. Lawrence considered this essential until the patient could gauge the correct quantity of food without actual weighing.

Dr. O. F. F. LEECH (London) said that insulin did not always succeed in uncomplicated diabetes mellitus, and gave details of a few cases which had failed to react. He suggested that it was possible that the glucagon of von Noorden was absent in these cases, and that this might account for the apparent improvement referred to by Dr. Crummond following the administration of pancreas by the mouth. He did not agree that synthalin proved too toxic in all cases. Occasionally when a man's occupation made hypoglycemic attacks probable if he took insulin, then synthalin might prove useful, he had seen more than one case in which this had happened. He had circularized his patients who had been on insulin, and 325 had replied, of these, insulin had been increased in 27 per cent, remained unchanged in 35 per cent, diminished in 26 per cent, and was no longer needed in 2 per cent. The diet had not remained constant, it had been increased in 33 per cent, remained the same in 62 per cent, and been diminished in 5 per cent. Some 6 per cent of his patients had died, this was probably too low a figure, since it was difficult to trace those who did not reply. Incidental infections accounted for many patients who had to increase the insulin. Time recovery occurred most frequently among patients who were treated shortly after the onset of the disease. He did not wish to be dogmatic, but would like to record the view that if patients with early acute diabetes were well fed and given enough insulin to keep the sugar in their blood below 0.15 per cent all the time, there was a chance of true recovery.

Professor D. M. LEE (Edinburgh), as the result of examining his records, had found that of some 760 patients treated by him only about 300 had required insulin. Dieting alone had sufficed for the treatment of the remainder. There could be no doubt that careful regulation of the food intake still remained the most important factor in the treatment of diabetes. The indications for the employment of insulin were the presence of clinical acidosis or of acetonaemia threatening coma, severe emaciation, a too low limit of tolerance, and failure to respond to simple dietary restriction. When the patient was first seen the decision must be taken whether he could be safely treated by dieting only, which must be carefully and conscientiously carried out by the patient. Weighing and measuring the food substances were essential at first, but later any intelligent patient could estimate the correct values at sight. The urine must be kept sugar-free at all times, and the patient's weight be maintained at a satisfactory level. Although a continuous absence of sugar was no guarantee that the blood sugar values were normal, practical experience had proved that this method of control was adequate. Experience had shown that patients taking insulin did best when the weight was not allowed to exceed the average for age and height.

Diabetes, when properly treated, was not a continuously progressive condition. Definite improvement commonly occurred, and most cases after careful treatment were able to reduce the amount of insulin or had considerably to their dietary. Many showed a variability in pancreatic activity, the reason for which was not always obvious. Insulin therapy probably promoted complete arrest of the disease in many instances. It was not the case that once a patient had taken insulin it was dangerous to discontinue it. Some 33 patients in Professor Murray Lyon's series, after courses of insulin lasting from two to eight months, had been able to give up its use for a time. In 10 of these

the improvement had only been temporary, sugar returning for some cause such as toxæmia or careless dieting. The degree of recovery in some of the subjects had been so striking as to suggest that certain cases of diabetes were curable, the most striking examples had occurred in young adolescents where the condition had been of short duration. A few of the other subjects were admittedly borderline cases where the maximum insulin employed had been only 10 or 15 units, but seven patients had at one time required over 40 units daily. In one remarkable case a young woman for a long period received as much as 170 units a day, then improvement followed fairly rapidly, and eventually she was able to do without the drug altogether, she had not had any for fifteen months. This type of result suggested that the pancreas could not have been badly damaged, but that something was neutralizing both the patient's and the injected insulin. In cases where the disease advanced this was not uniformly continuous, but moved in definite stages, punctuated by intercurrent attacks of coma or infection, or by a period of dietary indiscretion. In Professor Murray Lyon's series only some ten cases belonged to this type, and it was very important to realize that the disease was not necessarily continuously progressive. Factors in the return of glycosuria included suspension of treatment or the use of a new batch of insulin weaker than usual, for some time past, however, the standardization seemed to have been entirely satisfactory and uniform. Other causes were improper feeding, "nervous" or emotional states, conditions characterized by toxæmia, such as tonsillitis, respiratory catarrhs, influenza, and various forms of sepsis, and lack of exercise. Some of these causes of glycosuria were easily recognized, and if discovered in time did little damage. The most harmful appeared to be the toxic conditions. The occurrence of an attack of coma often appeared to be followed by a reduction of tolerance. In the speaker's series of cases 47 patients had died, 7 apparently from cancer, and 5 from apoplexy, 3 were otherwise accounted for, and in 5 cases the cause of death had not been ascertained. This left 27 deaths due to diabetes, and in 10 of these the dieting was known to have been unsatisfactory. Death was preceded in the majority of the cases by coma, which was brought on by pneumonia in 5 instances, by various infections in 11, and by alimentary upset in 5. Most of these deaths did not occur in hospital. The patients who did were not necessarily the most severely diabetic, and their deaths could not have been predicted before the onset of the fatal illness.

Professor L. BLUM (Strasbourg) said that there were two indications for the use of insulin: (1) the absolute or vital, as in coma, severe acidosis, infectious disease, or surgical intervention with anaesthesia, and (2) the relative—the temporary use for a short time only in milder cases in order to give them new strength, or to cure complications such as furunculosis, eczema, pruritus, or neuritis. It was generally necessary to continue the insulin until the end of life in severe cases, or when coma had occurred. He had had three cases, however, where the coma was produced by intercurrent disease such as influenza and angina, in which it was possible to stop the insulin after a few weeks. The great danger for diabetic patients under chronic insulin treatment was infection, and particularly tuberculosis, it was essential to examine the lungs from time to time not only by the usual physical methods but by x-rays. In the treatment of coma three things were necessary: (1) Sufficient doses of insulin (40 to 50 units for an injection) given intravenously every half-hour under careful and permanent supervision. In order to avoid hypoglycæmia it was necessary to watch the patient carefully during the injections, if unconscious patients showed signs of reaction (opening the eyes), or conscious patients experienced any special sensations, then the insulin had already produced an effect. Glycosuria was a sure sign that more insulin was necessary, if the urine was sugar-free there was danger of hypoglycæmia if more insulin was given. As a general rule when the patient was under clinical observation glucose was not given. (2) Large quantities of food. This organ often contained a great quantity of retained food, after large the blood pressure might rise.

(3) Medium doses of sodium bicarbonate (20 to 30 grams), to restore the sodium content of the organs and fluids, which was greatly diminished in coma. Professor Blum thought that the cardiac failure in the form of coma which he had called the cardio-vascular form of coma was partly due to the low alkali content of the organs. The use of insulin was particularly difficult in some cases of diabetes where a low hyperglycaemia (0.15 to 0.24 per cent) co-existed with a severe acidosis, and where diabetes was complicated by nephritis with hypertension. In these latter cases the urine was sugar free but the blood sugar was high. He had treated over 2,000 patients with insulin but had never seen a case resistant to insulin. By increasing the dose he had always been able to reduce the hyperglycaemia though very large doses were sometimes needed.

Dr C GRAHAM (London) thought that the mortality tables referred to by Professors Maclean and Petren were rather astonishing. The tables for England and Wales showed that there had been a steady increase since 1900 and even before that year. In 1917 a big decrease occurred which was almost entirely in the deaths of persons over the age of 50. This period was coincident with the severe rationing of the war and continued until 1919. From then until 1923 the increase reappeared but since the introduction of insulin there had been a slight decrease in the males and an increase in the females. This result was rather perplexing until the figures were examined in decades. The decrease showed that a decrease took place in both males and females until the age of 50 after this age there was a slight decrease in the males but an increase in the females. The speaker's analysis also showed how few people died of diabetes in the early decades compared with the large number who died after 50. The decrease in the figures for the young people was quite satisfactory when the varying conditions of treatment were considered and it was remembered that insulin was still a new form of treatment. He disagreed with Professor Maclean in the distinction drawn between true diabetes and the glycosuria as seen in elderly people. The speaker believed that there was no essential difference between the condition of the elderly person with a high blood sugar and glycosuria and the young adult. The elderly person had a low sugar tolerance and the condition grew worse very slowly, but after five, ten or fifteen years if the patient had not died of something else meanwhile the condition might be indistinguishable from that of a young adult. The primary action of insulin was to enable the sugar to be stored in the muscles and this was the defect which was first seen in the patient with mild diabetes. The belief that the condition was not a true diabetes was partly responsible for poor and inefficient treatment. This was most regrettable, since the elderly person was very liable to suffer from the effects of boils, carbuncles and gangrene of the leg. The eye complications (retinitis and cataract) were also more liable to progress if the diabetes was untreated whereas with insulin the condition seemed to be arrested. This type of patient responded very well to treatment either by diet alone or with the assistance of insulin. A carbohydrate tolerance of 50 to 70 grams might be regained and the patient be able to give up insulin, since the condition had a tendency to improve instead of slowly getting worse. Dr Graham believed that if patients older than 50 were treated more carefully the mortality figures would show a definite fall instead of an increase. He disagreed with Professor Maclean about the harm which alkali could do to a comatose patient and added that Professor Blum had shown that the tissues of the comatose patient contain very little sodium. The experiments of Dr Goldblitt to which Professor Maclean had referred were made on a healthy man with a normal alkali reserve and the large dose of alkali would produce an alkalosis. This alkalosis was the probable cause of the persistence of the keto after the alkali had been given. The comatose patient had a low alkali reserve and the dose of alkali was usually insufficient to do more than make the alkali reserve normal. For these reasons the speaker did not think that reasonable doses of alkali could do any harm but nowadays they were rarely necessary since insulin acted so well. Professor Petren had said that the adminis-

tration of dextrose to the comatose patient did harm. If there were facilities for estimating the blood sugar it was unnecessary to give any dextrose, but if the blood sugar could not be estimated it was a wise precaution to start the active treatment with a dose of two ounces of dextrose together with 70 units of insulin.

Dr C G LAMIE (Edinburgh) said that there were many causes of glycosuria, while insulin was a specific remedy for pancreatic diabetes its value in other conditions had not been firmly established. Some controversy had ranged around the question as to the essential difference if any, between pancreatic diabetes in young persons and the common glycosuria of elderly individuals. Certain differences between the two types could be noted as regards their response to insulin. Thus many of the cases of glycosuria in elderly persons were remarkably resistant to insulin a given dose producing a relatively small decrease in the output of sugar. Moreover sudden withdrawal of even large doses of insulin might be followed by little if any acidosis whereas in pure pancreatic diabetes the development of severe acidosis under the same conditions was the rule. Administration of glucose to such patients caused the respiratory quotient to rise to levels which indicated that carbohydrate was being utilized. Further improvement in tolerance in patients under treatment took place slowly over a long period. It seemed possible that the underlying cause of the peculiar features presented by these cases was an interference with the diffusion of glucose from the blood plasma into the tissue cells without necessarily much interference with the utilization of glucose once it got into the cells. This was suggested by the fact that the renal threshold was often remarkably high owing to the impermeability of the kidneys for glucose and by the appearance of symptoms of hypoglycaemia with blood sugar concentrations sometime much above the normal level. In such cases it was impossible to keep the blood sugar at a normal level a relatively high concentration of sugar in the blood being necessary to bring about sufficient diffusion into the cells. The permeability of the kidneys to glucose gave a rough measure of the permeability of cells in other tissues and in treatment it was sufficient to abolish the glycosuria and to find the dose of insulin which would be just less than sufficient to produce symptoms. Some recent experimental work by Loewi, Hausler, and Dietrich seemed to have an important bearing upon the point at issue. These workers found that hyperglycaemia, however produced—whether by glucose administration, pancreatectomy or administration of adrenaline—caused the appearance in the blood of a dialysable substance to which they had given the rather unfortunate name of *glycogenin*. This substance, when injected into rabbits, caused hyperglycaemia, and its addition to a suspension of red blood corpuscles *in vitro* inhibited the diffusion of glucose into them from the surrounding medium. If it were to be supposed that in certain individuals there was an excessive production or defective elimination of such a substance it would seem possible to interpret many of the facts and to reconcile the conflicting views which had been expressed.

Dr T B SMITH (Hirogato) agreed with Dr Lawrence that there was a definite group of patients in whom it was impossible to restore food tolerance even with insulin, in such cases several other possibilities must be considered—namely, sepsis, disease of the thyroid or pituitary gland, malignant disease and mental instability. He wished to draw particular attention to this last factor as the association of mental instability with diabetes was more frequent and of greater importance than was recognized. In one of his patients in whom anxiety neurosis was latent acute diabetes occurred apparently as the result of financial worry. It was satisfactorily controlled with insulin and dieting. Three years later while constantly balanced without glycosuria the patient became acutely and fatally manic. In another case markedly "temperamental" it had so far been impossible even with insulin to obtain any improvement either in tolerance for food or in the general condition. Apparently such patients possessed some substance capable of neutralizing insulin.



## PULMONARY ASBESTOSIS.

BY

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(With Special Plate)

In the BRITISH MEDICAL JOURNAL of July 26th, 1924 (p 147), I published a short note on the woman who is the subject of this paper. The only similar case on record was that of a man admitted to the Charing Cross Hospital in 1899, who died in 1900. Dr E L Middleton of the Home Office kindly lent the notes of the case, and of the evidence given before the Departmental Committee on Industrial Diseases in 1906 by the late Dr H Montagu Murray, under whose care the man had been. This patient, a man aged 33 years, had worked in the carding room of an asbestos factory for ten years prior to his admission to hospital. He informed Dr Murray that he was the sole survivor of ten men who started work with him in the carding room, the others had died, presumably as the result of their occupation. A post-mortem examination was held and the diagnosis of pulmonary fibrosis was confirmed. Dr Murray in his evidence refers to "splenoid lung sections which show 'splenoid' are the salient facts of the first and, down to 1924, the only record of a death due to asbestos.

That these two cases stand alone is very surprising. The asbestos industry is more than 2,000 years old, and we know that asbestos factories, up to quite recent years, have been devoid of any appliances for the prevention and extraction of dust. The remark of Dr Murray's patient is suggestive, and medical men have long suspected asbestos dust to be the cause of lung conditions in workers in badly ventilated factories.

Asbestos is a physical paradox—a mineralogical vegetable, both fibrous and crystalline, elastic, and brittle, is capable of being carded, spun, and woven as wool, flax, or silk. A single strand can be spun to weigh less than an ounce to 100 yards, and a cloth manufactured which weighs less than 8 ounces to the square yard. It occurs in every country, but is never found in any two countries alike, nor, indeed, in any two parts of the same country.

## Historical

Asbestos is apparently indestructible, and its fire-resisting qualities were known to the ancients. The Romans mined it from the Italian Alps and the Ural Mountains. Herodotus (circa 450 B.C.) described a cretation cloth made from asbestos. Pliny (circa A.D. 50) mentions the difficulty in weaving it. Strabo (circa 30 B.C.) and Plutarch (circa A.D. 70) both speak of the wicks of the lamps of the Vestal Virgins being made from asbestos, so called because they maintained a perpetual flame without being consumed. Pausanias (circa A.D. 175) refers to a gold lamp made by Callimachus of Athens for Minerva, the wick of which was made of Cyprian linen, "the only linen which is not consumed by fire." Later (A.D. 1250) Marco Polo writes that he had seen Tibetans using cloth that withstood fire which was made of a "Celestial Mineral of Earth found in a Mountain."

Although its valuable properties have been known for thousands of years the modern adaptation of asbestos to the industrial arts dates from only a few years ago.

## Composition

Asbestos is one of the silicates, and its varieties are numerous. Wherever it occurs it is found associated with

other minerals, more especially with chromite and magnetite. The composition of the well known Italian and Canadian fibres is as follows:

	Italian Fibre	Canadian Chrysotile
Silica	40.30	40.87
Magnesia	43.37	41.50
Ferrous oxide	0.87	2.81
Alumina	2.27	0.90
Water	13.72	13.55

The purest asbestos, having fibres of extraordinary length, occurs in Northern Italy. Asbestos may contain from 0.5 to 15 per cent of iron oxide, but asbestos yarn is prepared from mineral as free as possible from iron. To get rid of the difficultly soluble iron, asbestos is soaked in orthophosphoric acid solution and washed in water before manufacture. The percentage of iron, then, is of recognized importance.

## Manufacturing Process

The process of manufacture resembles that of cotton. The crude mineral is subject to mechanical treatment in a grinding machine. The heavier rock is separated by gravity, and the remaining asbestos passed through carding, roving, and spinning machines, and from these to the weaving sheds.

During the carding process, and to a less extent in all the processes, a very considerable amount of dust is generated. In up-to-date factories all machines are fitted with extractor covers and the dust removed. In the first factory where the patient the subject of this paper was employed no method of dust removal was used, and the atmospheric conditions were occasionally so bad that workers in her particular room could not see each other.

## Asbestos Fibre and Dust

Microscopically asbestos fibre is seen to consist of two very different elements. The bulk of the fibre is translucent and glistening, with here and there black opaque angular particles (Fig 1). Minute black granules also are present. These black particles are actually part of the fibre, but their appearance suggests a different chemical composition and different physical characters from the translucent portion. The dust generated during manufacture is seen to consist of these sharp angular particles and minute granules, suggesting, of course, that they are more brittle than the translucent part of the fibre. These particles are found in very small numbers in the finished article. Mr T H Byrom, F.I.C., analysed several samples of dust, and found that the dusts containing the greater numbers of these black particles contained the largest amount of iron. The iron content of the finished article, raw material, and dust is as follows:

Finished article	Iron (as ferrous oxide)	0.1%
Crude raw material	Iron (as ferrous oxide)	2.61%
Dust from carding room	Iron (as ferrous oxide)	18.4%

From these results it appears conclusive that the blackened brittle parts of the asbestos fibre are the iron-containing portions—the bugar of the manufacturer, the cause of "dust," and a danger to the health of workers in the process of manufacture.

## Clinical History of the Case

The deceased, a woman aged 33 years, commenced work at the age of 13 years in an asbestos factory in which no provision was made for the extraction of dust. From an early age, soon after commencing work, she suffered from a cough, which did not interfere with her general health until 1917. She was then 23 years of age, and had been working thirteen years. From that time until 5 years later (1922) her attendances at work were intermittent owing to ill health. She missed occasional days and one or two periods of some weeks, until she finally ceased work in July, 1922.

Up to this she complained of cough, dyspnoea, expectoration

## DESCRIPTION OF PLATES

FIG 1—Asbestos fibre, the bulk of which is translucent and in which are black angular iron-containing fragments. These constitute a large proportion of the dust generated in manufacture. (x 150)

FIG 2—Large particles of asbestos in fibrotic area of lung. (x 150)

FIG 3—Particle of asbestos 350 microns in length in necrotic area of lung. (x 150)

FIGS 4, 8, AND 12—Curious bodies. (x 400)

FIGS 5, 6, 10, AND 11—Curious bodies showing discoid arrangement and globular ends. FIG 6 shows particles of the e bodies and granular dust in a phagocytic cell. (x 1000)

FIG 7—Fibrotic lung with clusters of the curious bodies lying free in alveoli.

FIG 8—Fibro-carcinoma area with giant cells.

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(Illustrating the papers by Drs W I COOK and STUART McDONALD)



FIG 1



FIG 2



FIG 3

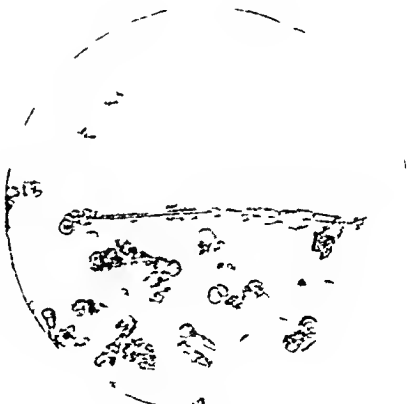


FIG 4



FIG 5



FIG 6

(Illustrating the papers by Drs W E COOK and STUART McDONALD)

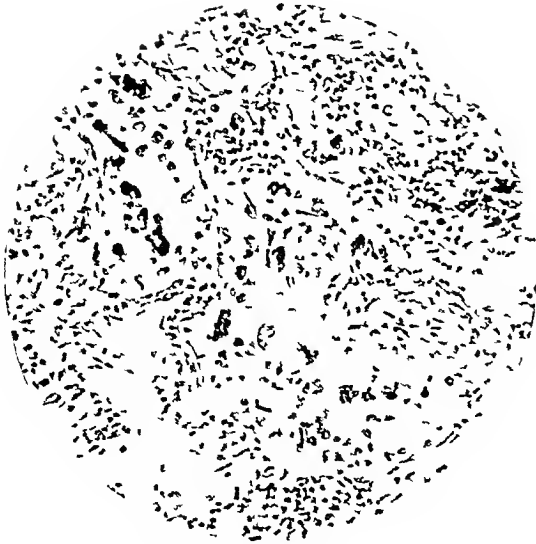


FIG 7

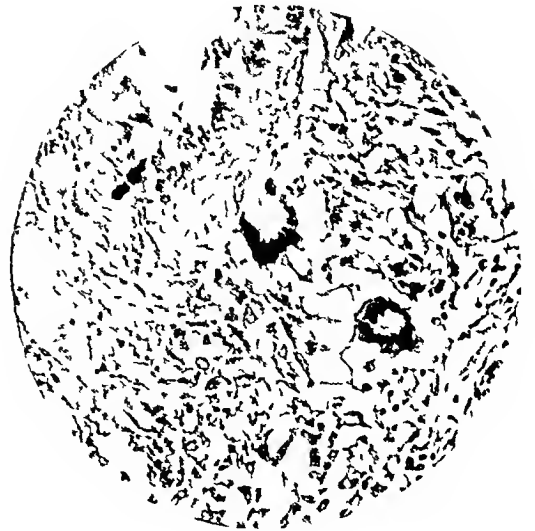


FIG 8

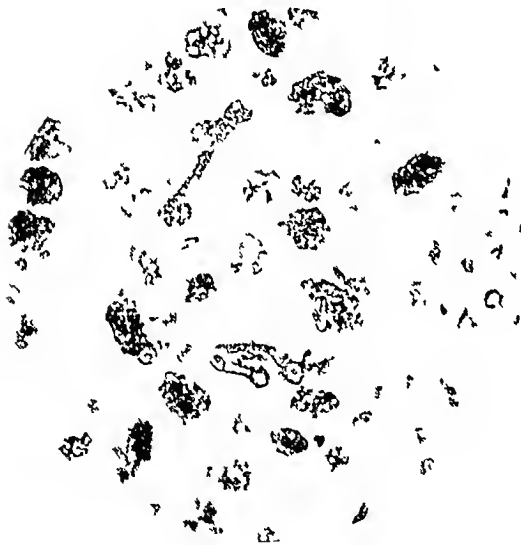


FIG 9



FIG 10



FIG 11



FIG 12

## PULMONARY ASBESTOSIS.

BY

W E COOKE, M.D., M.R.C.P.,  
Director of the Pathological Department, Wigan Infirmary  
(With Special Plate)

In the BRITISH MEDICAL JOURNAL of July 26th, 1924 (p. 147), I published a short note on the woman who is the subject of this paper. The only similar case on record was that of a man admitted to the Charing Cross Hospital in 1899, where he died in 1900. Dr. E. L. Middleton of the Home Office kindly lent the notes of the case, and of the evidence given before the Departmental Committee on Industrial Diseases in 1906 by the late Dr. H. Montague Murray, under whose care the man had been. This patient, a man aged 33 years, had worked in the ending room of an asbestos factory for ten years prior to his admission to hospital. He informed Dr. Murray that he was the sole survivor of ten men who started work with him in the ending room, the others had died, presumably as the result of their occupation. A post-mortem examination was held and the diagnosis of pulmonary fibrosis was confirmed. Dr. Murray in his evidence refers to photomicrographs of lung sections which show "spicules of asbestos." These are the silent facts of the first and, down to 1924, the only record of a death due to asbestos.

That these two cases stand alone is very surprising. The asbestos industry is more than 2,000 years old, and we know that asbestos factories, up to quite recent years, have been devoid of any appliances for the prevention and extraction of dust. The remark of Dr. Murray's patient is suggestive, and medical men have long suspected asbestos dust to be the cause of lung conditions in workers in badly ventilated factories.

Asbestos is a physical paradox—a mineralogical vegetable, both fibrous and crystalline, elastic and brittle, is capable of being carded, spun, and woven as wool, flax, or silk. A single strand can be spun to weigh less than an ounce to 100 yards, and a cloth manufactured which weighs less than 8 ounces to the square yard. It occurs in every country, but is never found in any two countries alike, nor, indeed, in any two parts of the same country.

## Historical

Asbestos is apparently indestructible, and its fire-resisting qualities were known to the ancients. The Romans mined it from the Italian Alps and the Vial Mountains. Herodotus (c. 450 B.C.) described a cremation cloth made from asbestos. Pliny (c. 50 A.D.) mentions the difficulty in weaving it. Strabo (c. 30 B.C.) and Plutarch (c. 70 A.D.) both speak of the wicks of the lamps of the Vestal Virgins being made from asbestos, so called because they maintained a perpetual flame without being consumed. Pausanias (c. 175 A.D.) refers to a gold lamp made by Callimachus of Athens for Minerva, the wick of which was made of Cyprian linen, "the only linen which is not consumed by fire." Later (c. 1250) Marco Polo writes that he had seen Tartars using cloth that withstood fire which was made of a "Certain Mineral of Earth found in a Mountain."

Although its valuable properties have been known for thousands of years the modern adaptation of asbestos to the industrial arts dates from only a few years ago.

## Composition

Asbestos is one of the silicates, and its varieties are numerous. Wherever it occurs it is found associated with

other minerals, more especially with chromite and magnetite. The composition of the well known Italian and Canadian fibres is as follows:

	Italian Fibre	Canadian Chrysotile
Silica	40.30	40.87
Magnesia	43.37	41.50
Ferrous oxide	0.87	2.81
Alumina	2.27	0.90
Water	13.72	13.55

The purest asbestos, having fibres of extraordinary length, occurs in Northern Italy. Asbestos may contain from 0.5 to 15 per cent of iron oxide, but asbestos yarn is prepared from mineral as fibre is possible from iron. To get rid of the difficultly soluble iron, asbestos is soaked in orthophosphoric acid solution and washed in water before manufacture. The percentage of iron, then, is of recognized importance.

## Manufacturing Process

The process of manufacture resembles that of cotton. The crude mineral is subject to mechanical treatment in a grinding machine. The heavier rock is separated by gravity, and the remaining asbestos passed through carding, roving, and spinning machines, and from these to the weaving sheds.

During the ending process, and to a less extent in all the processes, a very considerable amount of dust is generated. In up to date factories all machines are fitted with extractor covers and the dust removed. In the first factory where the patient the subject of this paper was employed no method of dust removal was used, and the atmospheric conditions were occasionally so bad that workers in her particular room could not see each other.

## DESCRIPTION OF PLATES

- FIG. 1—Asbestos fibre, the bulk of which is translucent and in which are black angular iron-containing fragments. These constitute a large proportion of the dust generated in manufacture ( $\times 150$ ).  
FIG. 2—Large particles of asbestos in fibrotic area of lung ( $\times 150$ ).  
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FIG. 8—Fibro-circous area with giant cells.  
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## Asbestos Fibre and Dust

Microscopically asbestos fibre is seen to consist of two very different elements. The bulk of the fibre is translucent and glistening, with here and there black opaque angular particles (Fig. 1). Minute black granules also are present. These black particles are actually part of the fibre, but their appearance suggests a different chemical composition and different physical characters from the translucent portion. The dust generated during manufacture is seen to consist of these sharp angular particles and minute granules, suggesting, of course, that they are more brittle than the translucent part of the fibre. These particles are found in very small numbers in the finished article. Mr. T. H. Byrom, F.I.C., analysed several samples of dust, and found that the dusts containing the greater numbers of these black particles contained the largest amount of iron. The iron content of the finished article, raw material, and dust is as follows:

Finished article	Iron (as ferrous oxide)	0.1%
Crude raw material	Iron (as ferrous oxide)	2.61%
Dust from ending room	Iron (as ferrous oxide)	18.4%

From these results it appears conclusive that the black ended brittle parts of the asbestos fibre are the iron-containing portions—the bugbear of the manufacturer, the cause of "dust," and a danger to the health of workers in the process of manufacture.

## Clinical History of the Case

The deceased, a woman aged 33 years, commenced work at the age of 15 years in an asbestos factory in which no provision was made for the extraction of dust. From an early age, soon after commencing work, she suffered from a cough which did not interfere with her general health until 1917. She was then 22 years of age, and had been working thirteen years. From that time until 5 years later (1922) her attendances at work were intermittent owing to ill health. She missed occasional days one or two periods of some weeks, until she finally died in July, 1922.

Up to this she complained of cough, dyspnoea, expectoration,

\*This and the two following papers on this subject were read in the Section of Preventive Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

PLIOMYXIA ASBLSTOSIS

(Illustrating the partners by Drs. W. E. Cook and Stuart McDougal)

[The Diagram

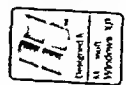


Fig 1



Fig 5



Fig 2



Fig 4



Fig 6



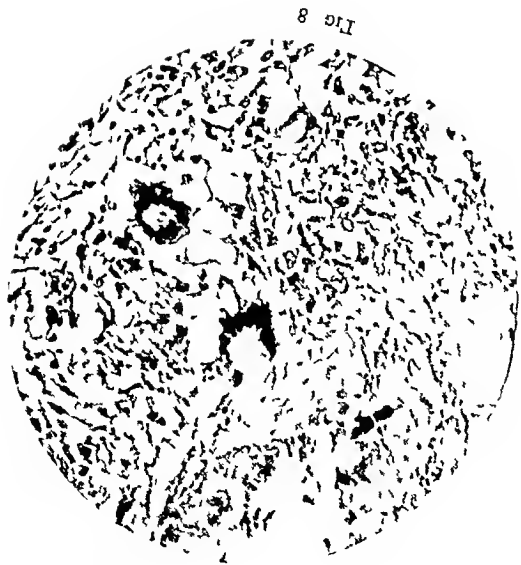


Fig 8



Fig 7

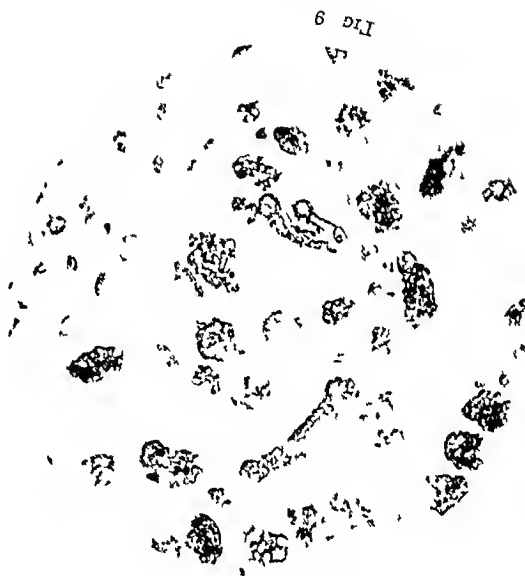


Fig 9



Fig 10

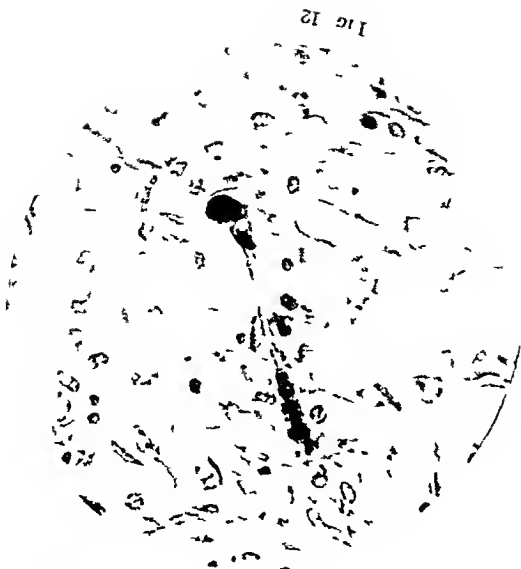


Fig 12



Fig 11

PULMONARY ASBESTOSIS  
 (Illustrating the papers by Drs. H. E. Coon and Stewart McDonald)

and inside. The physical signs in her chest were those of fibrosis of the right lung. In July 1922 signs of cavitation were noted the sputum became more profuse with sweats and irregular temperature and he died on March 14th 1924.

An x-ray plate showed extensive fibrosis, more marked in the right lung, two calcareous glands at the root of the left lung and two small calcareous particles in the base of the left lower lobe.

#### Microscopical Appearances

*Left Lung.*—The pleura is thickened over the entire surface of the lung and shows the remains of dense adhesion to the chest wall and pericardium. The lung is hard and small. The glands at the root of the lung are large and on section are black, how a thickened capsule and some calcareous particles. On section the lung is seen to be fibrotic and to a large extent the lung tissue being replaced by fibrous tissue. Dense strands of fibrous tissue from the pleura intersect the lung. In the apex there is a large cavity the size of a peeled tangerine orange. The middle and lower lobes show numerous small areas—varying in size from a hazelnut to a pin's head—of calcification some of which have preceded to cavitation. The bronchi are dilated.

*Right Lung.*—The pleura is thickened and shows the remains of adhesions to the chest wall. The thickening and adhesions are not so marked as in the right lung. The lung is firmer than normal. At the root of the lung are two large calcareous masses, one the size of a large hazelnut the other about half that size—calci tuberculous glands. The other glands are black and show pyridinosis. In the left apex there is an area of old scar tissue about the size of a Spanish piece and a cavity the size of a walnut. Scattered throughout the lung are small areas of denser calcification than the rest of the lung, some of which show definite calcareous particles, others small areas of calcification. There is a considerable increase in the fibrous tissue.

Three outstanding features are presented by sections from this case. The first is the enormous amount of fine granular pigment in the peribronchial fibrous tissue, walls of alveoli and in phagocytes scattered through the sections. The particles of this dust are similar in size and shape to the black granules seen in the asbestos fibre.

The second unusual feature is the presence of large old angular particles (Fig. 2). These are situated in areas of fibrosis and in cascading areas. They vary in size from 5 to 500 microns in length. The particles are so large—masses of them are seen in certain areas—that they must have occluded small bronchi. Fibrosis of the alveoli supplied has taken place and later necrosis as seen in Fig. 3.

We have never seen anything parallel to this in pneumoconiosis due to other dusts, nor have we been able to find such occurrence in literature. On comparing these lung particles with asbestos dust there is a striking resemblance in size, shape, and colour. In fact it is very easy to take each single particle found in the lung sections and immediately find its brother in a slide made from the dust.

We cannot think there is any reasonable doubt that the particles in the lungs are the heavy, brittle iron-containing fragments of asbestos fibre. The more extensive involvement of the right lung is thus explained. The heavy particles would pass more easily down the more vertical right bronchus than the horizontal left bronchus.

## HISTOLOGY OF PULMONARY ASBESTOSIS

BY

STUART McDONALD M.D. F.R.C.P.  
Professor of Pathology University of Durham  
(With Special Plate)

My remarks are confined to the histological appearances in the lungs in this condition with special reference to certain foreign bodies of most unusual appearance which are present both in the alveoli and interstitial substance of the lungs. The observations are based almost entirely on material supplied from the case described by Dr. Cooke. The investigation has been conducted in the pathological department of the University of Durham College of Medicine.

I may state, however, that the appearances are practically identical with those observed in a second case of this condition, sections of which I have had an opportunity of examining through the courtesy of Dr. F. M. D. Cleave of Armley, Leeds.

#### Histology

Numerous sections have been made from both lungs. The changes are more marked on the right side, but the

appearance in the two lungs only differ in degree. They may be summarized as follows:

1. There is well marked diffuse emphysema with chronic bronchitis and some emphysema.

2. There is well marked anthracosis.

3. There is an extensive tuberculous condition with chronic phthisis.

4. In the alveoli, bronchi, and bronchioles and also in the interstitial fibrotic areas are certain foreign bodies which will be described in detail later (Fig. 7).

As the communication deals specially with the nature of the foreign bodies, the general histological features will be dealt with very briefly.

The interstitial fibrosis is such as might be expected as a result of a combination of a pneumoconiotic condition and a chronic tuberculous infection. The typical whorled formations seen in a more purely silicotic condition are not present. There is marked endothelitis in the smaller branches of the pulmonary arteries, some are thrombosed and organized. Many of the smaller bronchi are obliterated, some have still a cross-looking centre. Some of the alveoli show the usual metaplasia of the lining cells into cuboidal form. The fibroblasts and thickened wall of the bronchi in many places gradually merge into the areas of diffuse fibrous overgrowth. There are numerous foci of lymphocytic cells among the fibroblasts. Some of these seem obviously derived from lymphoid tissue in the bronchial wall. The interstitial fibrosis is progressive. The tuberculous condition is obvious histologically. Tubercle bacilli were not detected, but the histology is characteristic. The lesions are chronic in character and there is no special indication of any recent exacerbation. There is well marked chronic bronchitis with lymphatic spread and numerous fibrocytes deposits with giant cell systems (see Fig. 8). The bronchi which are not specially the seat of tuberculous change show extensive peribronchial thickening. There are numerous empty cisterns in the alveoli showing the majority of cases some thickening of their wall and containing certain cells apparently derived from the lining cells, a singular cisternal change is seen in the terminal bronchioles, some of which are dilated.

#### The Foreign Bodies

The large black and irregularly fragmented bodies which have been described by Dr. Cooke were not very obvious in the material I examined, but were clearly seen in some microscopical preparations on which I had the opportunity of examining. I shall not refer to them specially, but confine my attention to certain highly characteristic and much smaller bodies which are abundant in all the sections examined. Some of these are free but many are phagocytosed by the large mononuclear cells in the alveoli (Fig. 5). Some are easily included in comparatively small phagocytic cells, but the majority are large, varying in size from 20  $\mu$  to 70  $\mu$  or even more in the case of certain elongated forms. The smaller bodies are rounded and homogeneous and all have a distinct yellowish brown colour, except the blood pigment. The longer forms have a highly characteristic appearance, strongly suggestive of an organic structure. Most have an irregular appearance which on closer examination can be resolved into a closely set series of rounded discoid bodies (Figs. 4, 5, 10 and 11). In some cases the globular forms are arranged along the more filamentous forms and occasionally are clustered at the ends or the rods simulating sporangia of a hyphomycetes (Figs. 5, 6, 10 and 11). Some have club-like extremities at one or both ends of the filament. Others again suggest the appearance of minute crustacean forms (Fig. 10) but closer examination does not support the idea of either vegetable or animal origin. These bodies do not stain with the ordinary aniline stains but preserve their original yellowish-brown colour. They give a well sustained reaction. They give a characteristic prussian blue reaction with potassium ferrocyanide and dilute hydrochloric acid. The reaction is not so obvious unless the solutions are slightly warmed. Where the bodies are too large to be phagocytosed by individual cells they tend to become surrounded by plasma-membrane masses. Many of the phagocytes contain much carbon pigment in addition. Though these bodies are mainly found in the alveoli and

in fundibular passages, they are also present in the caecum and sigmoid flexures. One in particular (see Fig. 12) measured about 75  $\mu$ . It is clear and segmented in its middle part, but the extremities are nodular and clubbed. It is difficult to imagine that a foreign body of such length could be transported by phagocytes, but they may represent obliterated The bodies have been examined with the micro-spectroscope, but so far no clue as to their nature has been obtained by this means. They are not refractile by polarized light.

Nature of the Bodies

We have shown these preparations to several pathologists, but the appearances are new to them. To confirm our own opinion we have submitted them to experts in zoology, who are unanimous that they are not of animal nature. We have also submitted them to botanical and chemical authorities, and though there has been a considerable difference of opinion, some regarding them as hyphomycetes, the general opinion has been that they are not vegetable forms.

The fact that exactly similar bodies have been found in the lungs of another asbestos worker, and, so far as I can ascertain, have not been found elsewhere, would seem to indicate that they are essentially derived from or associated in some way with the asbestos itself. It is also certain that they do not in any way resemble conchoidal, largely composed of calcium and other salts, and also containing iron derived from blood, such as have been described as asbestos-like forms in the spleen, and which may closely simulate mycelial filaments. The hypothesis advanced is that these bodies are portions of asbestos fibres in the process of absorption and absorption by hydroids, either by direct chemical action or by enzymes. The particular variety of asbestos with which this patient worked was a Canadian serpentine (chrysotile). It would probably contain silica and a magnesium salt in about equal proportions (40 per cent) with up to 2 per cent of iron oxide, 1 per cent of aluminium, and water. From its high resistance to heat we are apt to regard asbestos as indestructible, but, given time, it is possible for hydroids of such silicates to occur, even in pure water. Such hydroids would be hastened and intensified by the presence of CO in the pulmonary alveoli, and the process. Even under these conditions the process would necessarily be a slow one. The magnesium could be separated out as relatively insoluble carbonate, or more soluble bicarbonate, which in turn would be converted into any other salt for which there happened to be the appropriate acid available.

The iron existing in a ferrous condition in the presence of an oxidizing agent might be converted into the ferric state, and subsequently precipitated as hydroxide. The silicate might pass into a colloidal state, at first in sol form (orthosilicic acid), later passing into a gel (metasilicic acid). If this were so in sol form, it would tend to remain associated with the surface of the asbestos fibre by adsorption, and might be held there until it became a gel. In time the gel might absorb the solution, and so gradual conversion of the fibre into a mass of gel would occur. There might be in the tissues sufficient aluminium material to offset rapid gelatinization of the sol, particularly if, as would be the case here, the sol was being slowly produced. The fact that the gel is of high surface tension, and formed at an irregular rate, would give it a spheroidal structure and account for some of the appearances seen here. Whether this be the exact explanation or no, it is at least a hypothesis which should be capable of experimental verification. As has been held by Gyo and others, in cases of silicosis there may be a direct chemical action of silica on the tissues apart from the purely mechanical irritation of the particles with the production of fibrosis. Orthosilicic acid, as has been shown in action, but rapid conversion into metasilicic acid would minimize its action. As to the relative part played by the asbestos and the

tuberculous infection in this case, in relation to the fibrotic change, it is difficult to say, but it is a reasonable assumption that the tuberculosis was a superadded infection, and sections examined a considerable degree of fibrosis without apparent tuberculosis. The immediate cause of death in that case was a terminal broncho-pneumonia. Till some experiments work is completed the exact nature of the foreign bodies must remain in doubt, but their highly characteristic appearance may well prove to be an important diagnostic point in the recognition of the lung of a worker in asbestos.

I am much indebted to Dr. Cooke for material from his case, sections, to P. L. Robinson, D.Sc., of the Chemical Department Armstrong College, for his advice and suggestions on the chemistry of the silicates, and to Professor W. H. Lang, F.R.S., of Manchester, for a reasoned opinion as to the non-bacterial nature of the foreign bodies.

Dr. W. E. Cooke has given a short account of the history of asbestos, also of the processes of its manufacture into cloth-like structures much in the same manner as raw cotton fibre is woven. He has told us that in the cradling department a considerable quantity of dust is evolved. The dust is usually done in the countries where the mineral is quarried. Canadian rock is crushed in Great Britain. Our workers are therefore less exposed to the harmful influence of the dust—a fortunate circumstance, since the rock frequently contains as much as from 50 to 60 per cent of more of silica.

With the exception of Dr. Cooke's paper on pulmonary asbestos published in 1924, and the details of a fatal case published by Dr. Montague Murray in the *Charing Cross Hospital Gazette* in 1900, there has not been, to my knowledge, anything written in this country upon this subject. I have had, however, the opportunity of visiting asbestos factories in America, and of seeing cases of pulmonary asbestosis through the kindness of Dr. Hildow and Dr. Greave of Armley, Leeds. It may, I think, be safely said that there must have been several deaths of workers in British factories from the malady, but as no autopsy and microscopic examinations of the lungs were made the deaths were probably certified as pulmonary tuberculosis.

Asbestos manufacture is largely a familial occupation. It has been carried on in this country only for a little over thirty years. Cradling and spinning of the fibre are important processes in the manufacture of asbestos goods. In these departments many women are employed, mothers being succeeded by their daughters. Where ventilation of the cradling and spinning rooms is properly attended to the atmosphere is fairly clear of dust and floating fibre, otherwise in these operations considerable quantities of dust become suspended in the atmosphere. In a British factory the dustiest process is "hand beating" of the finished mattresses used for covering and protecting the internal machinery of automobiles. This work should only be undertaken in a room separated from the main parts of the factory, with open windows at one end and strong down-draughts at the other, but even with this precaution men working therein should wear masks.

Recently, with Dr. Greave of Armley, I examined two women who are the subjects of pulmonary asbestosis, one aged 48 and the other 39. The older patient was one of the first to commence work thirty years ago in the particular factory I visited. At that date no danger from dust was anticipated so that no effective ventilation of the workshops was attempted, such as prevails today by several firms, and is extremely commended. She has worked a year ago on account of increasing physical

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CLINICAL ASPECTS OF PULMONARY ASBESTOSIS

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debility, shortness of breath and cough. At present she has no expectoration; her respiratory capacity is one inch. Although the apices of both lungs in front are resonant, there is distinct flattening of the percussion note at the bases. The respiratory murmur at the apices and mid-lungs is coarser than usual, and the expiratory murmur is prolonged. At the right base the respiratory murmur is feeble, and small dry friction sound is heard. Towards the base of the left lung and extending into the axilla are heard small moist rattle sounds suggestive of crepitation having taken place here also small friction sounds can be heard. Similar physical signs prevail posteriorly. The apex beat of the heart is displaced upwards and outwards; it is felt as well as the nipple; a circumstance which combined with marked accentuation of the second sound of the heart heard over the pulmonary artery, suggests that valvular changes have already occurred in this lung. Although the patient states that she has no expectoration, this was present six weeks ago and when examined was found to be free of tubercle bacilli. There is no enlargement of the external glands.

The other patient, aged 39, has been an asbestos worker for eighteen years. She had no illness until four years ago when she developed cough and attacks resembling bronchial asthma. After remaining away from the factory for three months she returned to her employment and followed the occupation for three years, when she married and as in the early months of her pregnancy she lost considerable weight she retired from the factory. Although reduced considerably in weight and the subject of cough all through her pregnancy, her infant daughter, who is 14 months old, is healthy and well developed.

The patient complains of a dragging in the chest without actual pain. There is noticeable shortness of breath on slight exertion, and she complains of morning cough with expectoration. The sputum has been examined and is negative as regards tubercle bacilli. Her appetite is poor. She weighs 8 st. a drop of 3 st. having occurred within the last two years. Her heart is healthy; the apex beat is not displaced but the second sound over the pulmonary artery is distinctly accentuated. The apices of her lungs are resonant. Here the respiratory murmur is coarser than usual and the expiratory is prolonged so that the inspiratory and expiratory murmurs approach each other in equality. Moist rales are heard in mid-axilla and small friction with crepitation is heard at the base. This woman's mother, who is aged 60, is still working in the factory.

From what I have seen clinically of pulmonary tuberculosis it resembles silicosis of the lungs in the marked shortness of breath on slight exertion, deficient respiratory capacity, physical debility, and, in examination of the sputum, not too far advanced cases, absence of tubercle bacilli, but since fibrotic changes are developing in both of the patients to whom I have alluded there is almost sure to develop in such cases what has not already taken place, pulmonary tuberculosis.

The clinical picture of pulmonary asbestosis differs slightly from that presented by a patient the subject of ordinary tuberculosis of the lungs, in so far as there is a pronounced deadening of the skin varying from mild bronzing to slight blueness, a degree of shortness of breath in excess of the physical signs, a greater amount of general disability, little expectoration, and comparative absence of night sweats.

## AN ACTIVE CONSTITUENT OF THE PREPARATION CALLED "GLUKHORMENT"

BY

H. H. DALE, C.B.E., M.D., F.R.C.P., Sec. R.S.,

AND

H. W. DUDLEY, O.B.E., M.Sc., Ph.D.

(From the Department of Biochemistry and Pharmacology, National Institute for Medical Research, Hampstead, London.)

In May of this year Professor von Noorden published in the *Klinische Wochenschrift* an account of a new pancreatic preparation which had a controlling effect on carbohydrate metabolism, but unlike insulin was effective when administered by the mouth. To this preparation the name "glukhorment" had been given and the title of the paper made it clear that the substance was regarded by the author as containing a new anti-glycosuric principle naturally performed in the body. On information, evidently supplied to him by the chemist responsible for devising 'glukhorment,' Professor von Noorden stated explicitly that in spite of indications in the patent specification which might suggest some connexion of the active principle with a guanidine derivative no such derivative and in particular no synthalin,\* had been added and further that the finished preparation contained no guanidine derivative or any kind in recognizable amount. Professor von Noorden drew the cautious conclusion that, if the activity were due to a guanidine derivative, it would have to be one of extremely high activity. In July of this year one of us (H. H. D.) received a communication from the Horment Company who were manufacturing glukhorment, stating that they were sending material in the hope that clinical trials of it could be arranged. In due course this and several subsequent consignments of glukhorment were sent by the Horment Company with a request for their trial.

A consideration of preliminary reports on the mode of action of this preparation on the human being and on laboratory animals suggested a strong similarity between its effects and those with which we had become familiar, through experiments then for some time in progress on the action of synthalin. Some of the glukhorment

was immediately placed in the hands of one physician, who will presumably report his experience with it in due course. The physiological resemblance to synthalin was pronounced, however, that before the question of wider clinical trials was considered it was thought desirable to make a simple chemical examination, in order to confirm the fact that the preparation was free from synthalin and similar guanidine derivatives as stated in the paper by Professor von Noorden, of which copies had been submitted by the Horment Company in support of their request. The result of this first test showed clearly that a guanidine derivative strongly resembling synthalin was present in substantial amount in the glukhorment tablets as submitted for trial. The evidence thus early obtained was a once so clear and so surprising that it was considered desirable to use a further quantity of the material submitted in order to obtain precise information as to the nature of the substance in question. The isolation of the substance was made easy by the fact that the nitrate of synthalin is a remarkably insoluble salt.

### Chemical Isolation of Glukhorment of a Guanidine Derivative closely resembling Synthalin

Two hundred glukhorment tablets were powdered, the powder weighing 60 grams was thrown into 1 litre of boiling water and the mixture was kept gently boiling for fifteen minutes. The liquid was then filtered, while still hot from a large mass of insoluble protein.

The filtrate was evaporated *in vacuo* with the addition of 95% alcohol to prevent frothing to a volume of 120 c.c.m. On standing it set to a jelly; this was warmed to 40° when it became fluid and concentrated in nitric acid was added until the reaction of the liquid was strongly acid to Congo red. A white crystalline nitrate separated from the solution on standing, and the liquid no longer set to a jelly when cold. The crystalline material was collected by centrifuging, washed in the centrifuge with a small quantity of dilute nitric acid and dissolved in about 25 c.c.m. of hot water. This solution was boiled with charcoal and filtered. To the hot filtrate 0.5 c.c.m. of 6 per cent nitric acid was added, and the nitrate crystallized on cooling. This was filtered off and dried, it weighed 1.135 grams. It was then converted into the picrate by dissolving it in water and adding a saturated solution of sodium picrate until no further precipitate was produced. The picrate was filtered

\* Synthalin is the synthetic compound decamethylenediguanidine introduced by Franz Volkmann and Wagner as an antidiabetic remedy for oral administration and already the subject of numerous reports.

AN ACTIVE CONSTITUENT OF "GLUKHORMENT"

Rabbit (1) developed convulsions after six hours and rabbit (2) after four hours. When in convulsions they were killed, and samples of their livers taken for glycogen determinations.

Rabbit (1) had 0.05 per cent liver glycogen  
Rabbit (2) had 0.02 per cent liver glycogen

These results are closely similar to many which have been obtained in this laboratory by similar injections of synthrin into rabbits.

The glycogen contents establish beyond question the fact that synthrin is either synthrin itself, or a substance so closely related to synthrin as to be indistinguishable from it, by the chemical and physiological tests applied. The information on which Professor von Noorden had based his publication was clearly incorrect. Substantially more than 1 per cent of a guanidine derivative, indistinguishable from synthrin, was easily extracted from the tibias, and it was quite certain that the pieces would not yield, in pure form for weighing, more than a part of what was originally present. The point obviously had a practical interest, and no decision of the results of our investigation, and to place Noorden of the details of our experiments.

Professor von Noorden's reply, dated November 17th, 1927, made it clear that he had already received some-what similar information from another quarter, and that he had taken the first opportunity of making a public statement concerning the position which he had decided to assume. He informs us that this same part of his lecture on November 8th in the Berliner Fortbildungskurs fur Agero will be published in No. 23 of this year's volume of the *Zeitschrift fur praktische Fortbildung*, about December 1st.

(Extract from a lecture delivered on November 8th, 1927, by Professor C. von Noorden.)

Concerning synthrin for insulin I will only report briefly, since nothing of a final nature can be said concerning them. The insulin like nature of the guanidine derivative synthrin is not contested by anyone, provided that sufficient doses are given, but the dividing line is often indistinct, scarcely recognizable, and shows wide differences in individuals. From late The communications become constantly synthrin accumulations in comparison become constantly synthrin accumulations and stronger in comparison become constantly synthrin accumulations. The position of synthrin to day.

Concerning glukhorment you will wish to hear something more definite. I reported on it at the end of May, since already one month earlier, before the conclusion of the preliminary experiments, a communication concerning it had reached the daily press, through a deplorable indiscretion. The favorable conclusions which I then published in the *Klinische Wochenschrift* (No. 22) are based on uncontested facts. The preparations which I received at that time, and on which I remained dependent until the beginning of the scale, and, according to the assurance on word of honor, which I then demanded and received, were prepared by strong, which digestion of fresh pancreas substance for about eight days, without any kind of addition. To which part of the fermentation mixture, rich in peptides, the undoubted antihypocous action was attached, remained uncertain. I left the question open at that time, as to whether the powerful (typical) digestion a very potent active guanidine derivative might have been produced.

As happens also in other departments of chemistry, the preparations obtained by the later development of manufacture on a large scale failed by far to attain the activity of the not others. When, after a long absence I again took up the investigation a few weeks ago, I received for the first time preparations from the large scale manufacture which, indeed, were inferior in activity to the original ones, but were nevertheless usable. Now Weichowski has raised a few days ago in the Medical Union of Prague, that he found a guanidine derivative in glukhorment, which corresponds with synthrin in important reactions and in its pharmacological properties.

We are indebted to Mr. H. P. Marks for investigating the action of this substance on two rabbits (each weighing 2 kg.) fasted for twenty-four hours, then into (1) 20 mg. and into (2) 50 mg. of the substance, in aqueous solution, were injected subcutaneously.

Physiological Tests of the Substance Isolated from Glukhorment

The chloraurates were analysed and found to contain the same percentage of gold, which, moreover, is precisely dichloraurate—namely, 42.1 per cent.

H<sub>2</sub>O of crystallization 0.2146 gram, dried at 102°, gave 0.0901 gram Au = 42.0 per cent  
Chloraurate (from glukhorment) Contained no H<sub>2</sub>O of crystallization, 0.2125 gram, dried at 102°, gave 0.0894 gram Au = 42.1 per cent.

It will be seen from this fairly thorough chemical comparison that the substance isolated from glukhorment is indistinguishable, by the tests applied, from synthrin as prepared by Kahbaum. It must be either identical with synthrin, or so closely related to it that an elaborate analytical investigation with large amounts of material would be required to distinguish between them. A sample from a batch of glukhorment submitted quite recently, with the suggestion that this would prove to be better than earlier batches, contains the same synthrin-like substance in about the same proportion.

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Source	Molting Point °C	Mixed Point °C	Hydrochlorido		Perebe		Chloraurate		Metanhydrochlorido	
			Kahbaum's synthrin	From glukhorment	Kahbaum's synthrin	From glukhorment	Kahbaum's synthrin	From glukhorment	Kahbaum's synthrin	From glukhorment
	202°	202°	195-8°	156-8°	156-8°	156-8°	172-6°	172-6°	172-6°	172-6°

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Rabbit	(1)	(2)	Blood Sugar Percentage (Hours after Injection)		—	—
			0	1	2	3
	0.41	0.41	0.141	0.210	0.337	0.385
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As to whether it is a case of true identity or not Wiechowski obtained no definite evidence according to his letter to me. Assuming identity, scientific logic would present only two possibilities.

Either in spite of assurance to the contrary without my knowledge and against my will the guanine preparation known as synthalin is added to glukhormont. In that case, we should be dealing with at least a gross breach of trust in relation to myself and to the public. According to the assurance repeated to me a few days ago on the word of honour of the responsible chemist, at no time either earlier or recently has synthalin been mixed with glukhormont.

Or the remarkable fact would be presented that from the pancreas together with other products of decomposition a substance chemically and pharmacologically at least very similar to synthalin can be obtained—a fact which would be of great importance for the study of intermediary metabolism. I recall in this connexion that I indicated in advance as a possibility, the formation together with numerous other decomposition products of a guanidine derivative of great activity exceeding that of synthalin.

You will see that I speak quite openly. Given the identity of the two active chemical substances present in synthalin tablets and in glukhormont tablets the decision between these two possibilities must not be a matter of impression. These are questions for experimental investigation of which, on my part also, there shall be no lack.

We need add but little to Professor von Noorden's frank statement. This publication of our own findings is made at his explicit request, and may be regarded as a contribution to the experimental investigation which he himself indicates is imperative. The details of the work done in Professor Wiechowski's laboratory have appeared since we communicated with Professor von Noorden and learned from him of this other investigation of glukhormont.<sup>2</sup> Dr Lungeker's evidence of the chemical identity or close chemical similarity with synthalin is much less convincing

than that which we have been able to obtain. The physiological comparisons made in Prague are, on the other hand, more thorough than those which we thought it necessary to make. The conclusions are practically the same as our own.

Our evidence, of course, provides no means of discriminating between the two possibilities which Professor von Noorden mentions. If a substance, so different in structure as synthalin from any hitherto known to occur in the body, were produced by tryptic digestion of pancreatic tissue, the fact would obviously have an interest far beyond that of the immediate question concerning the nature of the active constituents of glukhormont. The point of practical importance and the one which impels upon us the necessity of publication, is that glukhormont cannot be regarded as free from synthalin, or similar guanine derivatives. On the contrary it contains either synthalin or a substance so closely allied as to be indistinguishable without prolonged investigation and it contains this substance in sufficient quantity to play an important part in whatever therapeutic or other actions the preparation may possess.

It should perhaps be added that we are not in a position here to discuss the therapeutic value of glukhormont as such, or the possibility that the action of a substance like synthalin might be modified by the presence of the known constituents of a pancreatic digest. Our concern is to ensure that the physician in charge of a patient who has shown intolerance to synthalin should not be led to administer glukhormont by the mistaken supposition that it contains no synthalin or similar substance.

## REFERENCE.

- <sup>1</sup> *Klin. Woch.* 1927 No. 22 p. 1041. <sup>2</sup> *Der wirksame Bestandteil d. Glukhormont* Hedwig Lungeker *Klin. Woch.* 1927 No. 7 pp. 22, 23.

## Memoranda.

## MEDICAL, SURGICAL, OBSTETRICAL

## GALL-STONE FORMATION

The following is rather an unusual case and worth reporting.

An unmarried woman aged 30 a cook was operated on in hospital in 1924 for gall stones. The stones were removed and the bladder was drained. During the last year she had recurrent attacks of colic. In September 1927 I was called and found her in a definite attack of colic. When this had subsided I operated and removed the gall bladder. On opening it after the operation I found two stones inside, which had formed round the purse-string suture inserted at the first operation, the suture running through the whole length of the stone.

E. A. THORNTON

E. WILSON HALL, F.R.C.S. Ed.

## PREGNANCY COMPLICATED BY MITRAL STENOSIS

The following details of a case of pregnancy associated with mitral stenosis and terminating fatally appear to be worthy of record.

A woman aged 26 who had had a normal pregnancy and labour eighteen months previously was admitted to hospital six and a half months pregnant with malaise which had lasted for some weeks. She had had rheumatic fever as a child and on admission was found to have mitral stenosis without any signs of failure of compensation. The temperature, pulse and respirations were raised; there was some abdominal tenderness especially over the gall bladder region in the left iliac fossa and in both renal angles. The spleen was doubtfully palpable; the urine negative. On the following day her condition was obviously worse; slight albuminuria had appeared and there was oedema of the

feet and back; the renal tenderness was less and repeated examination of the lungs revealed nothing pathological. On two occasions she had syncope attacks and nearly died three days after admission; therefore labour was induced by means of a prostatic catheter, no anaesthetic being employed. Delivery followed normally within six hours; a live and healthy foetus was born but died a few hours later owing to prematurity. During the twenty-four hours following delivery the patient's condition was very much better apart from an irritating cough which prevented sleep until heroin was given when she had a good night. On the following morning the temperature had dropped to 98°; the patient felt better and complained only of slight nausea. At midday she had haematemesis, quickly followed by the passage of a quantity of blood from the rectum two hours later. She died. At the necropsy all organs showed chronic venous congestion; there were large vegetations on the heart valves especially the mitral but no signs of emboli anywhere. At the junction of the middle and lower third of the oesophagus a small ruptured vein was found without evidence of varicosity. About one inch of clot was drawn out from the vein and was found to be a *plastic* clot and not thrombus.

I am indebted to Dr Statham and Dr Herapath for permission to publish this case.

L. B. PHILLIPS, M.B. Ch.B.,  
Resident Obstetric Officer, Bristol Air Force

## AN EARLY CYSTOSCOPIC SIGN OF RENAL TUBERCULOSIS

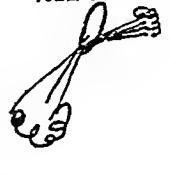
The following is a sign occasionally seen with a cystoscope before the bladder picture becomes typical.

The sign may be described as a rebound of the coloured urine on the pathological side (methylene blue or indigo-carmin being used). The accompanying diagram explains it. The rebound is caused by the stream impinging on the lower edge of the ureter opening which is slightly raised, hardened, and thickened.

NORMAL



TUBERCULAR



L. B. PHILLIPS

FRANK JEANS

**RADIOLOGICAL PITFALLS**

At the Royal Society of Medicine on November 17th a combined meeting took place of the Sections of Electro-therapeutics, Medicine, Surgery, and Orthopaedics for a discussion on radiological pitfalls.

Sir Henry Gairdner, President of the first-named Section, who was in the chair, said that Murray's English Dictionary defined a pitfall as "a trap or snare." He was sure that all radiologists or those who had to do with x-ray results had it times fallen into pitfalls, and he hoped the discussion might show how these were to be avoided.

Dr. J. E. Barclay (Manchester), opening for the Section of Psychological Diseases, insisted, in the first place, that the radiologist's function was, not to make a diagnosis, but to force a link in a chain which resulted in a diagnosis. He regarded a pitfall as nothing more than an appearance which gave rise to a blunder, self-evident as soon as the interpretation was known. To make mistakes on the way to knowledge was more honourable than to escape them by thinking the quest. It was necessary to settle down quietly to study the radiogram. Routine might cause apparently routine be carried out, it would obviate many errors. If the radiologist knew the clinical diagnosis in advance he

[illegible]

Dr. E. I. Sprague said he considered that the first and greatest pitfall was that of allowing radiological to involve other special examinations to take the place of a study of the early history and clinical symptoms of disease. The radiologist, the surgeon, and the physician must know something of the history and the physical examination of the patient before they can make a correct diagnosis. The radiologist should not be called in until after a careful physical examination has been made. The radiologist should not be called in until after a careful physical examination has been made. The radiologist should not be called in until after a careful physical examination has been made.

Mr. Mr. Fox (Section of Surgery) devoted his attention especially to mistakes in the diagnosis of fractures with clinicians who said that the radiologist was allowed to take too important a part in the diagnosis. That was especially true when it was a matter of teaching. Radiology having come to stay, however, one had to appreciate that it was a physical method which could be used as an addition to the employment of the senses, but by no means as a substitute for them. The value of stereoscopic pictures was shown by him because two views had not been taken, he strongly urged the value of stereoscopic pictures. He showed a number of slides of fractures of crura of tibia and the sesamoid bones, such as at the so termed minimum joint and the sesamoid bones, illustrating the diagnosis of loose cithige in the joint. Usually, radiology is not too indicative whether a bone is common or unusual and that is a pity.

Dr. Arthur F. Hurst referred to ten radiological pictures in connection with gastro-intestinal disease. He said this is a finding in any of peristalsis as the wave passed along the greater or lesser curvature, and this the radiogram did not show. One should be careful about diagnosing a gastric ulcer near the cardia, most lesions in that situation were not ulcers at all, but congenital gastric diverticula. One should never diagnose pyloric obstruction from the pictures alone, even at that stage when struts, unless there are also exaggerated peristalsis, 85 per cent of cases of pyloric obstruction not due to the growth wave in the stomach—ulcer, "adhesions in the right ilio-foecal" area, "functional dyspepsia" or the persistence of undigested food in the appendix, but it should not be made, even when the appendix is as wide as the stomach, carrying out the most important test of inflicting the intestinal obstruction. In this condition, one should expect the terminal ileum to be dilated, and the pictures should not be so dilated as the stomach. The same could be said about the transverse colon. He at one time resorted to a series of pictures in a patient with a hypotonia, but he was not convinced that the tone of such a stomach was not normal rather than the usual. When one detected the existence of a pyloric obstruction, it was almost impossible to know what it was, because on giving a barium meal or an enema it disappeared and one saw the obstruction. It could be concluded that it was really a gastric ulcer, which was not so uncommon as some supposed.

Dr. A. C. Joravsky showed a number of slides illustrative of pitfalls in the diagnosis of intestinal conditions.

Dr. H. Wanner (Harrowgate) spoke on radiological pitfalls in reference to the teeth. He thought it would be generally admitted that no radiogram of the teeth would show a peristalsis, if not of the waves as depicted in the picture, the tooth, if taken out and cultured, might still prove to be infected. Some people held the view that a tooth which was still vital could not

be infected but that was a fallacy. Because a person's teeth were very bad it did not follow that his systemic disease was being produced by them.

Dr F. HENNINGSON JOHN spoke of cases in which became a lump in the abdomen is not evident to the rays after in cinema it is concluded to be due to a collection of faeces, whereas it might be in early phase of carcinoma which was hanging about a functional paralysis leading to fecal accumulation. In a case of recent apparently involving a patient for it was very important to radiograph the whole spine. He quoted a very instructive case in this connection.

### PYURIA IN CHILDREN

A joint meeting of the Sections for the Study of Disease in Children Therapeutics and Pharmacology and Urology was held at the Royal Society of Medicine on November 23rd. Mr. George I. WATSON, President of the Children's Section, was in the chair. The subject under consideration was the treatment of pyuria in children.

Dr L. A. COCKAYNE, in opening the discussion, said that his objects were twofold: first to show the necessity for making certain that cases resistant to treatment were really cases of simple pyelitis and not infections gifted on to some primary disease or malformation; and secondly to point out the necessity for ascertaining what proportion of a long series of cases of pyelitis were curable by hexamine or alkalis. Only in this way could some rough standard be found by means of which the newer remedies could be compared with the older ones and with each other. He emphasized the necessity for using all available means—radiography, cystoscopy, pyelography—in order to make a correct diagnosis. He dealt chiefly with pyelitis as this was the most common cause of pyuria in children. A culture specimen was necessary to verify the diagnosis as pus in urine in quantities sufficient to simulate that seen in pyelitis might be derived from a vulva which was not the seat of any obvious purulent infection. A differential diagnosis had to be made between calculus, streptococcal infection, haemorrhagic nephritis, and lesions of the central nervous system—for example, spina bina, puerile tabes dorsalis, and general paralysis of the insane or myelitis. Malformations of the urinary tract had to be considered as possible causes—for example, congenital phimosis, hypospadias, epispadias, ectopia vesicae, diverticula of the bladder, iliacant renal arteries, congenital stenosis or dilatation of the ureter. Many of these conditions might cause a pyuria usually due to *B. coli communis* that could not be distinguished from simple chronic pyelitis without the exercise of great care. No case of chronic infection of the urinary tract should be regarded as a pyelitis unless the possibility of mistaken diagnosis had been eliminated by means of radiography, cystoscopy, and pyelography. In all cases of long continued pyuria an estimation of the urea and non-protein nitrogen in the blood was of value. Nitrogen retention indicated damage to the kidneys. In his experience a very small proportion of cases of pyelitis in which there was no underlying cause failed to recover. In regard to the etiology of pyelitis whether of the newborn, of infants, or of older children, the great majority showed *B. coli communis* to be the infecting agent.

Passing to treatment, Dr Cockayne emphasized the primary necessity of flushing the urinary passages. This could be achieved in infants by giving plenty of plain or sweetened water between feeds. As much as one to two pints in the twenty-four hours could be given. It was impossible to give fluid by the mouth because of vomiting, then it could be given by the rectum with glucose and sodium bicarbonate or subcutaneously or intraperitoneally. Sufficient potassium citrate and sodium bicarbonate should be given to keep the urine alkaline, specimens of which should be tested at frequent intervals. If such cases were secondary to a gastro-enteritis which was still active, purgation, colonic lavage, and other measures should be undertaken in addition. In older children the symptoms were very variable, some had frequency of micturition and enuresis, or haematuria; others had constitutional symptoms such as recurrent pyrexia, con-

vulsions, or rigors. Sometimes the discovery of pyuria was only made in the course of a routine examination of the urine. The treatment of these cases consisted in rest in bed, milk diet, and a large fluid intake. For febrile cases either all time treatment or urinary antiseptics could be used. For febrile cases hexamine, 5 grains three to four times a day, was found to give the best results. Treatment should be continued a week after sterile urine had been obtained and a cure should not be pronounced until a further sterile specimen had been obtained one week after the treatment ceased. For resistant cases alternate weekly course of alkalis and hexamine seemed to give better results. The possibility of other infections such as typhoid, paratyphoid, bacillary dysentery, *B. pyocyaneus*, *B. proteus*, streptococcus, and staphylococcus should be borne in mind. Dr Cockayne added that his experience of the newer remedies—methanamine and hexylresorcinol—was too small to be of any value.

Dr ELIZABETH H. LEPPER then read a paper on the reaction of the urine in relation to the treatment of coliform infections with alkalis and with hexamine. This paper was the result of joint investigations by Dr Dorothy HIRE, Dr Marjorie Maitland, and herself. Dr Lepper stated that although it was a matter of general observation that the administration of alkalis in coliform infections of the urinary tract relieved the symptoms and apparently cured the patient, the reason for this was not clear. They had found that alkalis had no lethal effect on bacteria. The urine showed a slight increase in the number of bacteria present. A disappearance of the infection was a result of all alkali medication had never been seen by them. A second possibility was that the symptoms were relieved by neutralization of an acidosis. The blood was therefore examined in six acute cases before alkaline treatment was started. The bicarbonate content of the plasma in every case fell within normal limits. Thus there was no evidence of acidosis, and yet all these cases responded quickly to alkalis and the symptoms disappeared. They then considered whether the reaction of the urine was the factor determining the alleviation of symptoms. The pH of morning and evening specimens was estimated, and it was found that as soon as the urine became really alkaline—that is when the pH had reached 7.4 to 7.6—the symptoms were relieved. Early morning specimens were most acid unless alkalis were given at four hourly intervals throughout the twenty-four hours. It was thought that possibly the benefit from alkalinizing the urine depended on the local effect of the reaction of the urine on the inflamed tissues of the urinary tract. There was some evidence that alkaline fluids were less irritating to inflamed surfaces than acid ones. The hydrogen ion concentration might be of importance in determining the rate and force of the muscular contractions by which urine was propelled from the pelvis of the kidney to the bladder. The work done hitherto on this hypothesis had given contradictory results. The dose of an alkali could only be adequately controlled by testing the reaction of the urine with certain precautions. Mr. Lending's data were inevitable when the ordinary hospital routine of testing urine in an open jar with litmus was followed. Litmus was not a good indicator. Red litmus turned blue at pH 0.6—an acid reaction—a point at which symptoms were not relieved. A specimen in an open vessel quickly lost CO<sub>2</sub> and therefore urine if neutral when passed became alkaline after standing. The method proposed by Sir Charles Martin was to collect the urine in wide-necked stoppered bottles under toluene. The toluene prevented loss of CO<sub>2</sub> when the bottle was opened and also inhibited bacterial growth which would alter the hydrogen ion concentration. In summing up, Dr Lepper said that the administration of alkalis in coliform infections of the urinary tract cured the symptoms. Alkalis had no lethal effect on the bacteria nor did they act by neutralizing an acidosis. They altered the hydrogen-ion concentration of the urine and two ways had been suggested in which this might be of importance as regards symptoms.

Dr Lepper then passed to a consideration of the action of hexamine. If properly administered it was effective in combating coliform infections. Its action depended on its dissociation into formaldehyde and ammonia. In cases of coliform infection in adults 15 of hexamine was given

three times a day. The more acid the urine the greater was the amount of formaldehyde liberated. There was no formation of formaldehyde until the pH of the urine was less than 6.0. Results of adding acid phosphato in cases in which the pH was not so low as 6.0 were irregular. The greatest concentration of formaldehyde in the urine was 1 in 20,000. Experiments with various cultures of *B. coli* showed that a dilution of 1 in 20,000 allowed only a few bacilli to grow, whereas 1 in 10,000 was lethal. Some strains were more susceptible than others. Experiments were tried adding varying amounts of N/10 HCl to 1 per cent hexamine solutions. Hexamine and HCl made an excellent buffer mixture between pH 6.0 and 4.0. Hexamine therefore behaved like a weak base, probably forming salts with the hydrochloric acid. There was no considerable liberation of formaldehyde until pH had fallen to 4.0. The liberation of formaldehyde was increased at body temperature. The conclusions reached, therefore, were that there were two factors of importance in the action of hexamine as a urinary antiseptic: first, the capacity of the patient to secrete in acid urine, and second, the susceptibility of the infecting organism to the action of formaldehyde.

Mr. JOHN EVERIDGE next briefly discussed cases of pyuria which had not cleared up with alkalis or hexamine. He had concluded that in these cases there was an underlying organic cause, either in the gastro-intestinal or urinary tracts. He dealt with the surgical treatment of such conditions, and showed some interesting slides. Those who took part in the general discussion seemed to be in agreement that, except for Dr. Lepper's recent research work, all the remarks could have been endorsed twenty years ago, and that very little real progress had occurred in the knowledge of this particular subject. Dr. H. C. CAMERON emphasized the fact that cases of pyuria were often found in the course of a routine examination of the urine, and another speaker stated that he had proved in his own experience that 60 per cent of cases in children cured themselves.

The Chairman summed up by stating that what was needed was team work. A team of four—physician, biochemist, pathologist, and surgeon—should coordinate their findings on every case. Until this was done the study of pyuria in children could not greatly advance.

### THE SCIENTIFIC BASIS OF MEDICAL HYDROLOGY

The President of the Section of Balneology of the Royal Society of Medicine, Dr. L. C. E. CAMERON of Haringate, gave his presidential address on November 23rd, and made it a plea for further investigation with regard to the scientific basis of medical hydrology. Notwithstanding the recognition of balneology twenty years ago as one of the subjects which might fittingly be made the province of a special section in the newly formed Royal Society of Medicine, there were still many members of the medical profession who were quite ignorant of the science of medical hydrology or were frankly sceptical as to its results. The root causes of such scepticism, said Dr. Cuthrop, were both immediate and remote. Until quite recently there was practically no teaching or demonstration of the subject in any British school, and even now this country was far behind France, Germany, Italy, and the United States in this respect. Again, with all due acknowledgements to previous writers, there was still great need for a first-class British textbook of medical hydrology, one which would give not only the theoretical and scientific aspects of the subject, but also a clear account of how to administer the various treatments. A further cause of scepticism arose out of the fact that, although baths had been employed ever since Hippocrates, the practice had been purely empirical, and still remained so to a very large extent. The usual means and methods of applying water treatment which were available to the old practitioners were very simple: immersion baths, shower baths, steam vapour and hot air, mud baths, shampooing and massage, and water-drinking. Whatever observations were made by the old physicians were based on these simple means of hydrological treatment. It was not until the middle of the seventeenth century that any

attempt was made at a scientific observation of the physiological facts. He cited the work of Sir John Floyer of Lichfield (1649-1734), who was a pioneer of water therapy; in his experiments were to be seen the beginnings of research into the action of cold water in the treatment of disease. The earliest account of any attempt to make accurate analyses of English waters was by Dr. Thomas Garnett (1766-1802), who published an analysis of the Haringate waters. Among foreign workers he mentioned Winternitz, who, at the university clinic at Vienna, made memorable experiments into the physiological and therapeutic action of waters. Coming to quite recent times, Dr. Cuthrop cited some of the outstanding investigations in balneology during the last few years, such as the effect of various forms of baths upon blood pressure, and the influence of intestinal lavage upon toxic conditions of the bowel. In many such investigations the members of the Section whom he was addressing had taken a prominent share. Many questions yet awaited an answer, especially as to the limitations of thermal and mineral waters.

### TREATMENT OF SKIN DISEASES

At a meeting of the Aberdeen Medico-Chirurgical Society, on October 26th, Dr. J. F. CHRISTIE delivered his presidential address on skin diseases, with special reference to treatment.

Dr. Christie first emphasized the importance of accurate diagnosis, which in dermatology could only be taught clinically. He attributed the general lack of interest taken by the medical profession in skin diseases partly to the nomenclature and to the facts that affections of the skin were considered trifling or something to be ashamed of, and that proficiency in their treatment necessitated many years of study of large numbers of cases. Rest was as important therapeutically in skin diseases as in other affections of the body. Other primary considerations were the dressing of the case, the proper application of ointments, and the careful removal of adherent dressings. Soap and water should usually be avoided. Diet required careful regulation, including the cutting out of all spicy and highly seasoned foods in the acute stages of skin affections. In acute vulgaris general tonic medication must be supplemented by very thorough local treatment, sulphur in one form or other had been found to be the best, and Dr. Christie recommended the treatment described by McKenna with 'lotio albi,' which was applied by dabbing on to the face with a pledget of lint, three or four times a day until the skin began to crack and peel. After ten days equal parts of glycerine and stibic acid ointment were applied at night, and immediately given relief to the drawn skin. The lotion was still applied twice during the day and the mitigating ointment used nightly. In Dr. Christie's opinion the best time for beginning the mitigating ointment was ten days after the commencement of the lotion treatment, and he added that it was remarkable how a coarse, greasy skin, studded with blackheads, cleared up. X-rays were mentioned as giving perhaps the best results, but accurate electrical measurement and fractional dosage were considered essential. Dealing with ultra-violet light, the speaker was of opinion that most benefit was derived from this form of treatment in the acute lesions of acne. Colloidal manganese was not recommended, apart from its great value in cases of true boils. For scabies nothing had yet, in the speaker's experience, superseded the employment of sulphur ointment. In alopecia areata ultra-violet rays had given excellent results. Patients suffering from chilblains were divided into two types: the fat type, preferably treated with thyroid extract and Lugol's solution, and the thin type, whose the best results were obtained by giving calcium in some form, mention was also made of Crumpton Low's modified Bier's congestion method. Good results had been obtained in cases of nevus by using radium "slowly," and Dr. Christie thought that a cure might be effected in cases of nevus flammeus. In the treatment of acromioclavicular recommended plaster zinc oxide with 3 per cent of eucalypti, with this he has had under 1 per cent of failure. The interesting dermatitis artefacta was next dealt with, and many of the numerous pitfalls explained. For treatment of impetigo contagiosa, although the per-





area, the causes of muscular atrophy in cortical affections, the causes of spasmodic contraction in paralysis, the localization of the motor centres and of the several species of sensibility. Other chapters are devoted to epilepsy, disturbances of speech, frontal, occipital, and cerebellar lesions, and epileptic and subjective disturbances. Thirty-two cases of head injury and their symptoms are described, and the discussions of which they form the basis give a valuable summary of present views on the problems involved.

### COURT ETIQUETTE AS A CAUSE OF MADNESS

In *Le Mal Héréditaire* (second series) the indefatigable Dr CABANES continues his pathological history of the kings of Spain. In the first chapter he describes the last years of Charles II, the miserable sufferer from scrofula and fever with whom the line of the Emperor Charles V ended in 1700. The crown then passed to the grandson of Louis XIV of France, the Duc d'Anjou, who ascended the throne of Spain as Philip V. In his former volume Dr Cabanes described the eccentricities of Charles V's descendants Philip II, who used to put himself into a coffin which formed part of the furniture of his room, and who within a few hours of death placed his crown upon a skull, Philip III, who was asphyxiated by the fumes from his breeches because the only official entitled by etiquette to open the door of the king's chamber happened to be absent, Philip IV, whose life was carried on with clock-like regularity, with duly occupations that never varied throughout the year, and with a face, so it is alleged, that never changed its expression. It might have been thought, says Dr Cabanes, that the change of dynasty on the death of Charles II would have changed the conditions from which the kings of Spain suffered. But it was not so, and the Bourbons, like their predecessors, became the victims of their surroundings. Dr Cabanes contends that these surroundings were so sombre and sinister as to affect with the same neuropathic condition even the imported line of monarchs overshadowed by all-powerful first ministers, surrounded by spies, constantly controlled by their confessors or almoners royal, with no distractions except bull fights, autos-da-fé, and occasional hunting, it was not surprising that the sovereigns of Spain became first neuropaths, then psychopaths, and finally lunatics. Thus it was that Philip V became, after a time, as mad as Charles II, that Louis I was a morose and narrow devotee, that Ferdinand VI inherited the mildty of his father, and that Charles IV, who devoted loving care to a vast collection of watches and clocks, was a ludicrous monarch, completely under the thumb of his minister Godoy, and married to a queen who was another Messalina. Charles III alone gave any sign of being a normal individual. Dr Cabanes attributes this disastrous history, of more than two centuries' duration, to the etiquette which crushed all freedom and life out of its royal victims, and made the court for them a living tomb.

### NOTES ON BOOKS

SIR SAMUEL HOARE Secretary of State for Air, has written a vivid account of his flight in the Imperial Airways passenger aeroplane from England to India. His book, *India by Air*,<sup>1</sup> is full of excellent photographs and interesting stories of his experiences, and Lady Maud Hoare, in a short and very introduction tells us her sensations in rough weather. She was, she says, 'too interested to be frightened, was more comfortable than in a first class railway carriage, and spent much of her time in the air in writing. There is a thrilling account of an attempt to fly through a terrific sandstorm near Karachi. "In a few minutes the sand blotted out from view the land below. I could not see the faces of the pilot and the navigator. By further cups the altimeter began to fall from the 2,000 feet although the 200 feet mark, and from the 200 to the 20. We the pilot saw the sea, that at one time was not more than so to a yellow sea—a nasty grey sea with ugly white horses—do was in impenetrable wall of fog." The successful old pilot's simple

termination of a flight such as this shows the great progress made in the safety of travel in the air, and suggests that convalescent patients could be comfortably and quickly transported to Egypt and urgent cases requiring treatment could be brought to a suitable centre, as regular passenger services are now running.

*The Elements of Pharmacology*,<sup>2</sup> by Professor W. A. OSBORNE, is a little textbook written for the use of the medical students of the University of Melbourne. The author has aimed at setting forth the main facts of pharmacology in a concise form, and in this aim he has certainly succeeded, for the subject has been compressed into sixty-five pages. Such drastic compression of pharmacology at the hands of a physiologist will naturally raise mixed feelings in the breasts of the teachers of the former subject. Professor Osborne has, however, made a very good summary of the salient facts, and has also managed to produce a readable account of the subject. By discussing only a limited number of drugs, and by omitting such subjects as materia medica, dosage, and pharmaceutical chemistry he has avoided condensing the material into a mere catalogue. The book is evidently intended as an introduction to pharmacology for students who have not commenced clinical work, and should answer this purpose very satisfactorily provided that the condensed information it supplies is supplemented by lectures and demonstrations.

Last year (December 4th, p. 1072) we published a rather elaborate review of the *Medical Art Calendar* issued by Mr J. Philip Kinsman of the Hague. He has now produced a calendar for 1928, it contains a series of illustrations, some taken from pictures and some from books, all very well reproduced. This number has a good many illustrations of dentists and of surgeons at work, but there is one of a 'pothee' sitting in a room teaching his apprentice how to pound drugs, and another of a female writer doctor, pictures of female quacks are said to be uncommon. The *Calendar*, which is meant to be hung upon a wall, can be obtained from Mr Kinsman, S. Gravenhage, Noordinde 91, Holland, price 6s. post free.

<sup>1</sup> *The Elements of Pharmacology* by W. A. Osborne M.B., D.Sc. Melbourne: W. R. Smith, 1927. (6 x 8½, pp. 137, 10s. 6d.)

### PREPARATIONS AND APPLIANCES

#### SYNTHALIN

"SYNTHALIN" (Kahlbaum) is a synthetic preparation recommended for use in the treatment of diabetes. It is given by the mouth. As many of our readers will be aware, this substance was produced by Frank more than a year ago, but has only just been released for general sale to the medical profession. Its constitution is given by Drs H. H. Dale and H. W. Dudley in a footnote to their paper, published at page 1027.

The vendors of the drug recommend it for 'cases of diabetes of slight and medium severity.' As a partial, or even complete, substitute for insulin in severe cases it seems generally agreed that its value is very doubtful.

The introduction of a substance which claims to be even a partial substitute for insulin, and to possess the two very important advantages that it is cheap, and can be administered by the mouth, is naturally a matter of considerable interest. Fortunately the Medical Research Council has been able to organize an investigation of the action of synthalin in several medical schools, and a preliminary report has been published (*Lancet*, 1927, ii, 517), this should be consulted by anyone intending to use the drug. The contributors to this preliminary report emphasize the fact that their experience is insufficient to permit of any final conclusion, but on the whole their reports are discouraging. Several investigators mention a disquieting number of toxic symptoms and, in particular, the drug is suspected of a direct toxic action on the liver.

Professor Maclean, in the paper with which he opened the discussion in the Section of Medicine at Edinburgh, on the results of insulin therapy in diabetes mellitus made a brief reference to the drug. As will be seen (p. 1019) he said that when given by the mouth it produced a definite effect in certain cases of diabetes, but added "The product, however, has marked toxic properties, and tends to produce gastrointestinal and other disturbances, so that its use in the treatment of diabetes is at present not practical."

Clinicians in this country admittedly have not yet had sufficient experience of the drug to permit of final judgement, but the evidence available suggests that it is one that must be used with great caution, and that, until our knowledge is more complete, it will be safest in the hands of those who have special experience of diabetes and who have special facilities for following the action of the drug.

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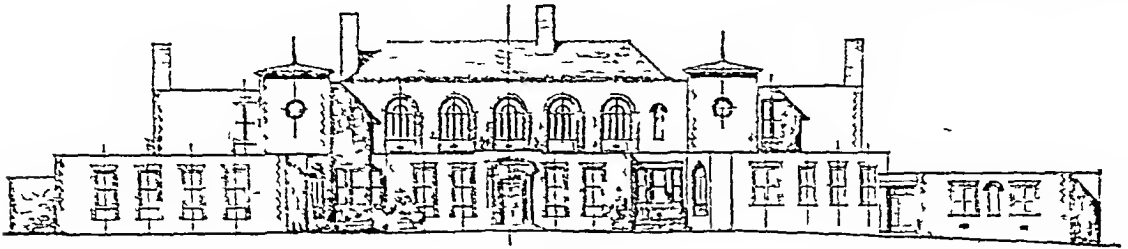


FIG. 1. ELEVATION.

## EPSOM COLLEGE SANATORIUM

Plans have now been prepared by Messrs W. A. Pite Son and Lumley, architects, for a new sanatorium at Epsom College. It is proposed to erect a two-storied building of red brick with quoins and window dressings of red brick of a richer colour. Over the central portion there will be a sloping roof, but the remainder of the building will have flat roofs covered with asphalt. All the wards will face south, and ample provision is made for heating beds into the open air. Low pressure central heating by radiators will be used throughout the building, but the wards will have open fireplaces in addition. The boiler for the central heating and domestic hot-water supply will be placed in the basement below the kitchen wing, where also there will be a disinfectant for clothing and bedding. Food for the patients in the isolation and the non-infectious wards will be supplied from the main kitchen, a lift being used to the first floor wards. Cooling will be by gas. The building will be lit throughout by electric light. The floors of the wards will be covered with battens on a cement screed flush with a coved border and skirting in cement. The corridor floor will be of asphalt laid in a similar manner. Graded plaster with a final coat of sirapite or similar preparation will be used throughout.

The building has its long axis running east and west with a centrally placed main entrance on the north side opening into a hall to the right of which is the nurses' dining room and beyond the kitchen wing with servants' hall and quarters for a married couple who will act as cook and porter. To the left of the entrance hall will be a simply equipped operating room and beyond this the out-patient wing approached either from the corridor or by a separate outside entrance through which stretchers can be wheeled direct to the wards. Rooms for the medical officer and matron, waiting casualty, x-ray and massage rooms will be provided. At each end of the main corridor a sixteen-bed ward projects south, forming with a duty room, broom, sanitary annex and nurses' bedroom a complete unit. Separating these ward units and opening direct into the main corridor will be four single-bed wards and a dining and a recreation room, thus forming three sides of a square, the fourth or south side being open. The large sixteen-bed ward at the east end of the corridor will be an isolation ward. It will be shut off from the rest of the sanatorium by double doors and the only access to it by patients will be by means of a separate external door. All the other wards on the ground floor with a total of twenty beds are reserved for non-infectious cases.

The first floor is approached by two staircases, one of these opens out of the ground floor corridor at the west end and gives access to the staff bedrooms, the other leads from the lobby of the isolation ward to the first floor wards. It will consist of one eight-bed ward, one four-bed ward, two single-bed wards, and a small dining room

making with the sixteen beds on the ground floor a total of thirty beds for infectious cases.

We have received the following appeal for financial assistance for this undertaking, the cost of which is estimated at £25,600. The appeal is followed by the subscription list.

### APPEAL FOR SUPPORT

Sir—In your issue of December 18th 1926, you published a letter from the chairman of council of Epsom College appealing for financial help from the medical profession to enable the council to build a new sanatorium and isolation block which while providing adequate accommodation for the needs of the college would at the same time be a model for all other schools to copy. It was also pointed out that the present sanatorium built many years ago is uneconomical in working and its arrangements and accommodation in many ways do not conform to modern hospital requirements but could by a very moderate outlay be adapted as a school house for from forty to forty-five boys. The existing isolation block is a temporary work in building the licence for the use of which expires shortly making imperative the erection of a permanent building in the near future. Cases of scarlet fever and diphtheria are not dealt with in the isolation block but are sent direct to the isolation hospital of the local authority.

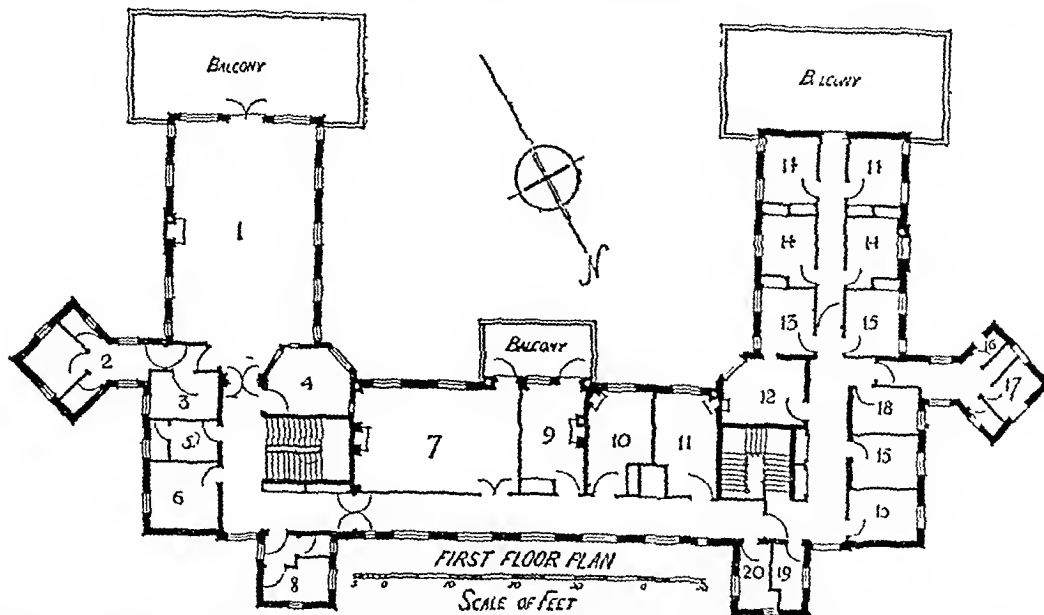
At Epsom following the practice of some other public schools no provision is made in the school houses for the treatment of cases of trivial illness but all cases however slight are treated in the sanatorium. This plan ensures every case being seen by a trained nurse at an early stage and by the medical officer who is promptly summoned whenever necessary but at the same time it also involves the provision of a large number of beds, thus is necessary in two schools which have sick rooms in the school house.

Experience shows that a well planned sanatorium with a properly apportioned number of large and small wards to accommodate 12 per cent of the boys in the school meets all reasonable requirements for both infectious and non-infectious cases provided that if a widespread epidemic of any particular disease occur one of the school houses is temporarily converted to hospital purposes.

By adopting the plan which has proved so successful and free from risk in the hands of Dr. Friend at Christ's Hospital of housing infectious and non-infectious cases under one roof but with separate means of access to each class of cases the architects Messrs William A. Pite Son and Lumley have at the request of the council designed a building which will be in every way a thoroughly up-to-date sanatorium convenient and economical to work and which it is estimated can be built for the moderate sum of £25,600.

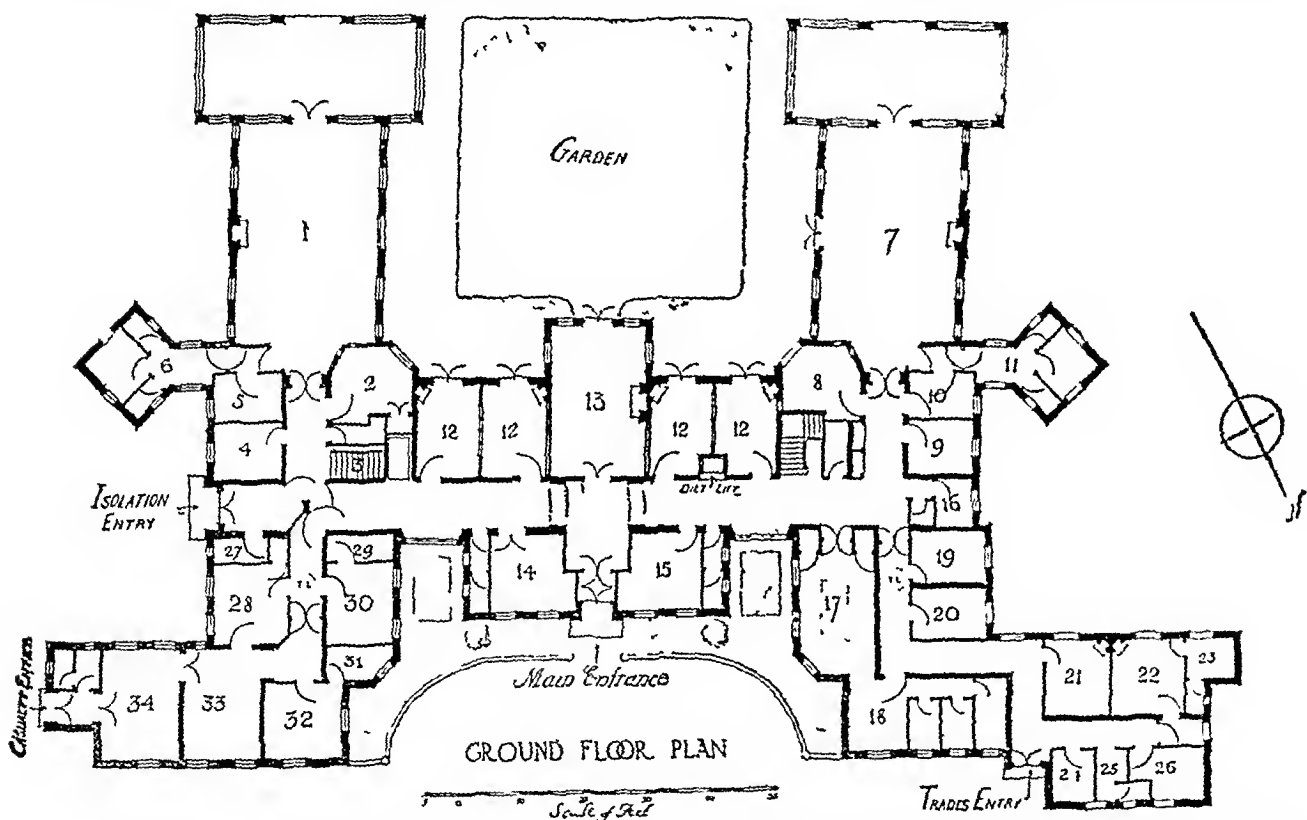
Taking 400 as the maximum number of boys in the school provision has been made for 20 beds for the non-infectious cases and 30 beds for infectious cases or 50 beds in all with ample accommodation for the nursing and domestic staff. The details of construction are shown on the plans and dealt with fully in the memorandum accompanying this letter so need not be further referred to here.

While the school fees paid cover the cost of the ordinary



Isolation Wing—1, Ward of 8 beds 2, Sanitary annexe (sink room, w.c., cleaner, lavatory, and soiled linen) 3, Bathroom 4, Duty room 5, Nurses' bathroom and w.c. 6, Nurses' room 7, Ward of 4 beds 8, Sink room (patients w.c. adjoining) 9, Single bed ward 10, Single bed ward 11, Dining room, with diet lift adjoining 12, Matron's

sitting room 13, Matron's bedroom 14, Nurses' bedrooms, 15, Domestic bedrooms, 16, Domestic w.c. and cleaner adjoining, 17, Nurses' bathroom and w.c. adjoining 18, Domestic's bathroom and lavatory 19, Box room 20, Bathroom for small wards



Isolation Wing—1, Isolation ward and solarium, 16 beds 2, Duty room 3, Staircase to first floor, isolation wing 4, Nurse 5, Bath room 6, Sanitary annexe (lavatory, sink room, w.c. and soiled linen) Sanatorium—7, Ward and solarium, 16 beds 8, Duty room 9, Nurse 10, Bath 11, Sanitary annexe (lavatory, sink room, w.c. and soiled linen) 12, Single bed wards 13, Dining and recreation room 14, Operation room, staff lavatory adjoining 15, Nurses' dining room, patients' lavatory adjoining 16, Bath for patients in single bed wards

(cleaner adjoining) 17, kitchen 18, Scullery with larders and store adjoining 19, Linen and mending room 20, Mattress store 21, Staff dining room 22, Married couple's room 23, Bathroom and w.c. adjoining 24, Soiled linen 25, Boots (w.c. adjoining) 26, Wood and coal store 27, Cleaner for isolation section 28, Medical officer 29, X-ray dark room 30, X-ray room 31, Dispensary 32, Matron's office 33, Casualty and dressing room 34, Waiting room with lavatory adjoining

#### Schedule of Staff Accommodation

First Floor	
Matron	1
West wing nurses	4
East wing nurses	1
West wing (domestic)	3
Ground Floor	
Nurses	2
Married couple	2
Total beds	13

#### Schedule of Bed Accommodation

Isolation	16
Ground floor, east wing	14
First floor	—
Total	30
Sanatorium	
Ground floor west wing	16
" " south wing	4
Total	20
Total number of beds	50



scholars, and the annual subscriptions and donations enable the Council to pay for the foundation scholars, an extraordinary expense, such as the provision of a new sanatorium, cannot be met without the aid of special contributions. It is for this reason that we venture to appeal to your readers to help the Council and make possible the provision of a sanatorium, built and equipped on the most modern lines, and worthy of a school in large proportion of whose scholars are the sons of medical men.

Donations received to date amount to £2,207 19s 6d, but until at least £15,000 is in hand it will not be possible to proceed with the actual erection of the buildings—land, etc.,

RAYMOND CHAWFURD,  
Chairman of Council of Epsom College  
WILLIAM HALL-WHITE,  
Treasurer  
ARNOLD LONDON,  
Chairman, Sanatorium Committee

## THE ROYAL SOCIETY.

### ANNIVERSARY MEETING

The anniversary meeting of the Royal Society of London was held, as usual, on St Andrew's Day (November 30th), when the Council presented its report for 1927, and the President, Sir ERNEST RHENIERS, gave an address.

#### THE REPORT OF COUNCIL

##### Research Appointments and Grants

Deep regret was expressed on the death of the first of the Royal Society research professors, Professor E. H. Starling. He was, the report recalls, appointed Foulerton Professor on April 1st, 1922, and carried on his research in a suite of laboratories in the Physiology Institute of University College, London, to whom the Society was indebted for this hospitality to its professor. "Professor Starling carried out a series of important investigations, especially on the mechanism of renal secretion, the results of which have appeared from time to time in the *Proceedings*, and his laboratories became a centre of attraction and of fruitful activity for a large number of younger physiologists from this and other countries. The Council have approved arrangements for the completion of the investigations on which Professor Starling was engaged by a group of these collaborators." The period of office for which Dr. H. W. C. Ymms was appointed Foulerton Student expired this year, and Dr. R. J. Ludford has been appointed to the vacancy for some years. Dr. Ludford has been engaged in part-time investigation in general, physiological, and pathological cytology, the award of the studentship will now enable him to devote his whole time to it.

Sums amounting to £5,617 had been allotted from the Government grants for scientific investigations, and £1,000 had been placed in the hands of the Council to meet urgent demands. Of this amount £320 had already been allotted.

#### Tropical Diseases

Researches into tropical diseases have been carried on by means of the Anonymous Bequest Fund under schemes recommended to the Council by the Tropical Diseases Committee. Notwithstanding the dangers and difficulties incident to the situation in North China, involving on some occasions serious personal risk to the Society's commissioner, Dr. Hindle, progress had been made with the investigation into kala-azar. A peculiarity of this disease in China appears to be the difficulty of infecting sand flies by feeding them on human cases. Dr. Hindle reported in November 1926, that the workers at the China Medical Board had failed to obtain flagellates in phlebotomus fed on human cases, but that he and his co-workers had had two positive results out of a considerable series of experiments. These observations are in marked contrast with those obtained with *P. argentipes* fed on cases of Indian kala-azar, but, reporting in February of this year on the results of experiments on the development of Chinese leishmania, the Royal Society's Commission concludes that there is strong presumptive evidence in support of the view that *P. major*, or *chinensis*, is concerned in the transmission

of the parasite of kala-azar in North China. Dr. Hindle is now returning to this country, and it is hoped that further reports on the progress of the investigation will soon be ready for publication.

Dr. Grace, who is investigating filariasis and nephritis, arrived in Georgetown in December, 1926. After overcoming initial difficulties with regard to assistance and supplies, he is now working on the bacterial complications of filariasis and of chronic nephritis.

#### Finance

During the year eight papers were published in the Mathematical and Physical Section, and eight in the Biological Section of the *Philosophical Transactions*, together these parts contain 831 pages of letterpress and 33 plates. Twenty-two numbers of the *Proceedings* have been issued, those in the Mathematical and Physical Section contain 2,724 pages, 92 plates, and three portraits, those in the Biological Section 780 pages, 44 plates, and sixteen portraits.

The Imperial Chemical Industries, Limited, has promised to subscribe £1,000 a year until further notice to help to meet the deficit on the publications account. In 1925 Sir Alexander Pedder bequeathed a portion of the residue of his estate to be used at the discretion of the Society for the advancement of chemical science. The amount realized yields an income of £170 a year, it will be used for the present to meet the expenses of publishing chemical and other papers by the Society. Thirteen applications had been received from societies for grants in aid of publication, eleven grants were made, the total sum allotted amounting to £1,700.

#### PRESIDENT'S ADDRESS

The President, as is customary, began his address by speaking of the Fellows who had died during the year.

#### E. H. Starling

Of Professor E. H. Starling, who was the first of the Royal Society's research professors, he said:

"For more than thirty years Starling has been recognized as an outstanding figure in physiology, and the investigations which he carried out with energy and enthusiasm have effected a clarification of knowledge and a new orientation of ideas concerning a succession of the most important functions of the body. His earliest studies, made like so many later ones in cooperation with his great friend and scientific partner, the late Sir William Bayliss, were directed to analysis of the action of the mammalian heart. Though his activities were for many years directed to other problems, his interest in the heart and the factors regulating its function remained with him always and became again effective in his later years in a series of masterly articles. These he carried out, with a succession of able colleagues and pupils on the mammalian heart, isolated by a method of his own deriving from the vessels of the major circulation and performing its function under conditions which allowed the rate at which the blood entered the heart and the resistance encountered in its ejection to be artificially controlled—the well known 'heart lung preparation'."

In the intervening years he had completed and published, largely with Bayliss a series of researches in which the physical laws governing filtration, diffusion and osmosis through membranes were applied to explain the formation and absorption of lymph. There followed further co-operative investigations with Bayliss on the movements of the intestinal walls, their co-ordination by the local nervous plexuses and their general control by the central nervous system and then—most famous probably, of all their joint researches—their work on the stimulation of pancreatic secretion following the discharge of the stomach contents into the small intestine. This led to the discovery of 'secretin' and the formation of general conceptions of the control of bodily functions by chemical messengers or 'hormones,' embodied in Bayliss and Starling's joint Croonian Lecture before the Society.

During the war and the years immediately following, Starling gave his whole energies to the service of the State, as director of investigations on defence against chemical warfare, as chemical adviser to the army at Salonica and later as chairman of the Royal Society's Food Committee, and as member of the Ministry of Food, and British scientific delegate to the International Food Commission.

When his thoughts and activities were at last free to return to their own natural channels, he began a large and exacting series of investigations in which he combined some of his earlier methods to study the formation of urine under conditions artificially controlled and varied. These researches with many others grew from them, he continued to prosecute during his later years, the Foulerton professorship. He enjoyed the assistance and collaboration of a succession of able colleagues and of many workers from many countries, eager to learn his methods and imbibe his ideas. It might have been hoped that the conditions of freedom from the responsibilities of administration and formal teaching would have enabled him to con-



physical power, but starting with energy and burning with them forbade all thought of relaxation till at length a physique was won by illness, broke and the strain.

By Sir John's death the Royal Society has lost not only a great investigator who has reared one of its chiefs illustrious by his brilliant record of research as Fekulion professor but a fellow who has been generous and efficient, rare to the society, one of its Council and its committee who has been proud of its traditions and joys for its fame and prosperity. He was awarded a Royal Medal in 1913. In and beyond this Society he was a talismanic champion of the claims of research and the interests of his scientific colleagues. Physiology above all was the central interest and enthusiasm of his life. In it faithful and energetic pursuit he had always one end in view, the to quote from his own beautiful Harvard Oration was to attain to a comprehension of the wisdom of the body and the understanding of the heart and thereby to the mastery of disease and pain which will enable us to relieve the burden of mankind.

#### William Einthoven

William Einthoven, the President and, for many two years professor of physiology in the University of Leiden, and Nobel Laureate in Medicine, was elected a Foreign Member of the Society in 1920.

His long scientific career was devoted to the invention and perfecting of physical apparatus of the greatest delicacy and precision for the record and analysis of processes occurring in the living body or having a physiological interest. His string galvanometer, originally devised for recording the fleeting electrical changes which accompany the different stages of the beat of the heart and now in world-wide use in hospitals as well as physiological laboratories, has a found application in a wide range of purely physical investigations.

#### Other Distinguished Fellows

The President also referred to the deaths of Sir Arthur Stimpney, well known for his contributions to paritology, who had been for seventeen years before his death Master of Christ's College, Cambridge, or Professor Sainte Arlhumus (foreign member) director of the Nobel Institute in Stockholm who in 1889 published his famous paper on the theory of ionic dissociation to explain the properties of electrolytes, and of A. A. Lawson, professor of botany in the University of Sydney, who was a selected candidate for the Fellowship, but died before the date of formal election.

Sir E. C. Ruthven next discussed the criterion for the sparse attendance at the ordinary meetings of the Society, it had been hoped to improve it by grouping the papers, but this had not met with much success. In the early days of the Society it had been customary to perform experiments before the Fellows, but this custom had gradually fallen into abeyance, it was proposed to revive it. Portable demonstration tables had been placed in the tea room with connections for water, gas and electric current. It was thought that in every branch of science, but particularly in the biological sciences, there must be many simple experiments and preparations which could be readily shown in such an extemporized laboratory, such demonstrations would be of interest not only to the scientific but to the Society in general.

Sir Ernest Rutherford then turned to a review of the results of investigations carried out in recent years to produce intense magnetic fields and high voltages for general scientific purposes. In concluding his address he referred to the medals awarded on this occasion.

#### The Copley Medal

Of the recipient of the Copley Medal, Sir C. S. Sherrington, Sir O. M. he said:

Sherrington early chose a the special field of his investigations the physiology of the central nervous system. To this during some thirty years he has steadily devoted his great skill in experimental bringing the immense complexities of its function within the range of objective analysis and revealing fundamental plan and orderly sequence in the reflex action by which it controls the activities of the body and continuously adjusts them to the environment. The results of his work have been embodied in a series of some two hundred original monographs, presenting a continuous record of progress in investigation. The various facts have been brought under review and treated synthetically by Sherrington in his now famous *William lectures*. On the integrative action of the nervous system. In these he deals with the coordination and guidance of the muscular rigidity which appears when the higher brain is removed with the co-ordination of muscular movement by a spread excitation and inhibition of antagonistic muscles with the rhythmic phase activity which the cord produces in the reflex arc and with the more recent and with the apparatus of a purposeful character which the integrative action impresses on many forms of reflex response. During his recent years our own *Proceedings* have been steadily with the progress made in the nerve system, the function of the central nervous system by Sherrington, Laid and by

pupils using the methods which he has created and building on the foundations which he has laid.

The influence of Sherrington's investigations has spread far beyond the limits of his own laboratory and has inaugurated a new era in neurophysiological investigation throughout the world. In this connexion we may fittingly pay a tribute to the memory of one of the most eminent among those who have drawn inspiration from Sherrington's work and from personal contact with him, Sir Rudolph Magnus of Utrecht whose early death in this year the whole world of science deplores found there the impulse to his own original and far-reaching investigation the results of which he embodied in the Croonian lecture to this Society two years ago on *Animal posture*. In every civilized country in the neurophysiological clinic as well as in the laboratory of physiology and of experimental psychology the influence of Sherrington's work is felt giving the clue to the understanding of many of the motor symptoms of nervous disorder and holding out promise that even the higher functions of the central nervous system will not remain permanently beyond the reach of man's experimental inquiry.

#### The Royal Medals

Or Sir Thomas Lewis to whom one of the Royal Medals has been awarded, he spoke as follows:

From 1911 onwards to the present day Sir Thomas Lewis has taken a leading part in the remarkable growth of our knowledge of the mammalian heart beat which has been one of the conspicuous scientific achievements of the period in question. Until he began his work nothing was known for certain as to the relation of the peripheral structures known to anatomy to the origin and propagation of the beat of the heart. Lewis's researches enabled him to locate the point of origin of the beat and to plot out the course of the wave of excitation over the ventricles and auricles of mammal. By extending these observations to the hearts of representative vertebrates he was able to compare the modes of spread of the wave with the peculiar forms of the electrocardiogram and thus to appreciate clearly the meanings of the several deflections. Further extension to diseased hearts led to the interpretation of the abnormalities of the electrocardiographic record.

In 1911 Lewis was able to show that as Cushing had previously suggested, certain cardiac irregularities are due to fibrillation of the auricle and his later clinical and experimental work on auricular fibrillation and flutter suggested that the irregularities are due to the formation of an ebb and a circulating wave of contraction in the auricles. In this peculiar field of physiology and pathology of which great importance to medicine Lewis's researches have replaced a mass of scattered suggestive observations by a coherent and established theory. His book on this subject which is necessary and based to a large extent upon his own observation is recognized as authoritative throughout the world.

Quite recently Lewis has published another book which embodies the result of investigations of the peripheral circulation upon which he has been engaged during the past two or three years. The response to other and of stimulus closely resembles that induced by injection of histamine into a puncture and Lewis produces strong evidence that even the response to pressure is due to the liberation in the tissue of a chemical compound which is not actually histamine, but which has about the same effect.

In this investigation which may be taken as a model for the application of exact method to human physiology and pathology Lewis has shown the qualitative accuracy of experiment and exact reasoning which are so conspicuous in his work up to the heart's action.

#### The Buchanan Medal

Or Professor Major Greenwood, to whom the Buchanan Medal is presented, he said:

Dr Greenwood, Medical Officer (Medical Statistics), Ministry of Health, Professor of Epidemiology and Vital Statistics, University of London (London School of Hygiene), Chairman of the Medical Research Council Statistical Committee and Statistician to the Lister Institute, is especially distinguished for the statistical study of medical subjects having applied the statistical method to the elucidation of many problems of physiology, pathology, hygiene and epidemiology. He has been pre-eminent in encouraging and developing the use of modern statistical method by medical laboratory investigators and in securing the adequate planning and execution of field investigation. He is almost unique in possession of both the medical knowledge and mathematical ability which are essential in the researches. Dr Greenwood is the author (with Professor E. L. Collis) of a book on *The Health of the Industrial Worker* and of numerous biometric studies dealing with the causation, prevention and treatment of disease.

#### The Hughes Medal

The Hughes Medal has been awarded to William David Coolidge, a distinguished member of the scientific staff of the General Electric Company of America. Or him the President said:

Dr Coolidge is a great debt to Coolidge for the invention and production of a new type of x-ray tube called by his name of great flexibility and power which has produced a great increase in the use of x-ray radiology both in numerous scientific researches. In the last few years he has applied his scientific and technical knowledge to the construction of high speed cathode ray tubes which can be used in the x-ray through a thin window as in Coolidge's pioneer experiment thirty years ago. Such researches are of great importance to science in this period to provide a new method of obtaining a more powerful source of x-rays and high speed atoms of matter for experimental investigations.

# British Medical Journal.

SATURDAY, DECEMBER 3RD, 1927.

## THE ASSOCIATION IN 1927

MEDICAL practitioners who, for reasons that may seem good to them, are not now members of the British Medical Association, and final year students who hope soon to become qualified, would do well to study the middle pages of the SUPPLEMENT to our present issue, where they will find a brief account of the aims of the Association, its work and organization, and of the privileges and responsibilities of membership. If figures speak more forcibly to them than words, they should turn to the chart showing graphically the number of members in each year since 1877. A total membership to day of 33,600, and a net increase of more than 13,500 since the war, are facts of the kind that point their own moral. Continued growth year by year, not only at home but throughout the British Empire, is a sign of vigorous life in an organization now nearing its hundredth anniversary. There are other standards of success, and the Association is very willing to be judged by them, though the work it does for the individual doctor, for the profession at large, and for the public cannot be measured by simple tests and put down in a diagram. The occasion may, however, be taken to look back over the year that is closing and recall some of the manifold ways in which the Association in 1927 has tried to fulfil its duty.

The first of the three main objects of the British Medical Association is to promote the medical and allied sciences, the second is to uphold the honour and interests of the profession, and the third is to encourage good feeling among its members. These sides of its work—scientific, political, and social—are organized on distinct lines, but are not sharply cut off, and at the Annual Meeting they overlap a good deal, both in space and time, with benefit to all. The Annual Meeting is the central event in the Association's year, and by general consent the great professional gathering in Edinburgh last July, under the presidency of Sir Robert Philip, was one of the most interesting and most enjoyable ever held. The Scottish capital, with its historic associations, its natural and architectural charm, and its world-renowned medical school, is an ideal place for a medical congress, and the celebration of Lister's centenary there during the same week added to the interest of the occasion. Full reports of the proceedings in the scientific sections at Edinburgh have appeared in our columns during the past four months, and we hope soon to complete their publication. These important papers and debates, however, are only part of a great volume of work on behalf of medical science carried out during the year through the machinery of the Association. Clinical meetings have been held periodically by many Divisions and Branches at home and abroad, lectures on medicine, surgery, and obstetrics have been given for the Association in various parts of the country by leaders of the profession, the Library has responded to the growing demand upon it from members up and down the country, prizes, scholarships, and grants in aid of research have been awarded by the Council on the advice of the Science Committee, and encouragement has been

given to post-graduate education and to collective inquiries into everyday problems of practice. Since all these phases of the Association's work for science have been reflected in our columns month by month, it may be worth noting that in 1927 this Journal completed its seventieth year of publication under the title *British Medical Journal*, and the eighty seventh year of its life as the weekly organ of the Association.

In support of the honour and interests of the profession the Association has been no less active than in the promotion of science. To secure in every field of medical practice the conditions essential to the provision of an increasingly effective service to the community, to improve old and find out new methods of co-operation between the profession and the numerous statutory and voluntary bodies which minister to the common health, and to preserve through every fluctuation of the changing social order and in all schemes for extended health services the economic basis of medical efficiency—this is a task which could be undertaken successfully by no smaller or less representative body than ours. Hence the importance of ensuring that the voice of every section of the medical profession has its due weight in the counsels of the Association, and the significance of the new scheme allowing for a special form of group organization where this seems to be called for. Nor must it be forgotten that through the Overseas Branches the experience of the parent body is made available for our colleagues in the Dominions and Colonies. The Australian Federal Committee, in tackling the problem of health insurance, profits by the hard-won wisdom of insurance practitioners in Great Britain, and lends that wisdom to the Federal Government. The Medical Association of South Africa finds the path to professional solidarity in the Union within the British Medical Association, under a constitution adjusted to modern needs by a long process of evolution. The medical services in the Crown Colonies profit by the Association's experience of hospital problems, as well as by the existence of a body able to take up service difficulties with the Colonial Office.

In the field of health insurance at home, where the Insurance Acts Committee's scheme for a revised disciplinary machinery marks a definite stage in the development of the national system, in the struggle to free English lunacy law from the bonds of the ignorant suspicion which hinders adequate treatment of the sick in mind, and exposes the doctor to harassing persecution in the discharge of his duties towards the patient, in schemes for the reform of the Poor Law, and in many other directions, the Association has met increasing calls upon its resources, and will continue to find an ample field of service to the public and the profession. A scheme for making more effective its contribution to public education in health matters was approved at Edinburgh, the formulation of a middle class hospital policy has been undertaken, and a comprehensive review of the relations between private practice and the health services offered to the public by statutory and voluntary bodies has been begun. The increasing proportion of public health appointments advertised at the Association's scale rates of salary is the justification of a policy endorsed in 1925 not without doubt and anxiety.

As in the arena of public policy, so in the promotion of individual interests the work of the Association has gone forward. The sweetening of professional relationships through friendly advice and arbitration in

cises or dispute is part of the daily routine or the Association's headquarters, so, too, is intervention to protect holders of salaried medical posts from arbitrary action on the part of employing bodies, and advice in all the perplexities of professional life. Through the Medical Insurance Agency, which has its offices in the Association's House and receives much other assistance from the Association, and now through the British Medical Bureau and an increasing volume of medical agency work undertaken by local bureaux under the auspices of Divisions and Branches the more material interests of members are cared for, whilst through the efforts of the Charities Committee a step at least has been taken towards the removal of a standing reproach to the profession.

The work of the British Medical Association is not to be defined or evaluated within the compass of a brief review. If we have conveyed any impression of its nature and scope it will be clear that the social activities of the Association are the natural outcome of fellowship in such service as it renders to the profession and to the public. This fellowship is in itself the best guarantee of the healthy professional spirit which for ninety five years the Association has sought to maintain.

### THE MEDALS OF THE ROYAL SOCIETY

THE award this year of three of the chief medals in the gift of the Royal Society to members of our profession makes this an *annus mirabilis* for British medicine. The names were mentioned here three weeks ago and the President Sir Ernest Rutherford in his address at the anniversary meeting of the Society on St Andrew's Day (p. 1038) stated the reason for the selections in terms which must give the greatest pleasure not only to the recipients but to all of us. The work of both Sir Charles Sherrington and Sir Thomas Lewis, though physiological has been so precise and conclusive—so clean-cut—that it has at once found application to clinical medicine, while Professor Major Greenwood has with mathematical acumen helped perhaps more than anyone to induce a cool and calm study of vital statistics.

Although no medal is given with it it may be permitted to mention here that a Conway Evans Prize has been awarded this year. Dr Conway Evans who was a Member of the Royal College of Physicians and medical officer of the Strand District died in 1892 bequeathing the residue of his estate in trust to the President of the Royal Society and the President of the Royal College of Physicians directing that the proceeds should be given from time to time to some person who in their opinion has made some valuable contribution or addition to science. The fund was transferred into the trust of the Presidents in February, 1925. The testator gave to the Presidents full discretion as to the date and amount of any award and they have now agreed that the first award amounting to 500 guineas shall be made to Sir Charles Sherrington; this decision was announced at the anniversary dinner on November 30th.

The awards this year recall to us once again the great services the Royal Society, holding the balance with stern impartiality, has rendered and continues to render to mankind in general and our race in particular. In its early days the Society notwithstanding the patronage of King Charles II was the object of much ridicule by the would-be wits of the day and even so great a writer as Jonathan Swift condescended in his *Laputa* to satirize and scoff at its early investigations. More than a century later the inimitable

Boz seems to have thought the British Association too glib for his broad humour when he cast ridicule upon the doings of the Mudfog Association. But neither Swift nor Dickens could harm the subjects of their misplaced humour, they have since flourished exceedingly.

The Royal Society of London—to give it its full title—does not now concern itself directly with the arts of medicine or surgery. Its honours are given for good and original work in any science but on work of this order all progress in the healing art ultimately depends. As physiology and anatomy are closely associated with medicine and constitute, indeed, what used to be called the institutes of medicine, it is not surprising that among the recipients of the medals awarded by the Society a number of members of our profession should be found. This year indeed we have our full share. Sir Thomas Lewis receives a Royal Medal for his researches upon the vascular system following upon his earlier work on the mammalian heart beat. Sir Charles Sherrington the Copley Medal, the greatest honour that the Society has in its gift for his distinguished work on neurology and Professor Major Greenwood the Buchanan Medal for his statistical researches and other work in relation to public health. All of these honours have been thoroughly well earned and worthily bestowed and then recipients have our warmest congratulations. Yet another medal has been awarded for work in a department of science which has of late years come so closely to concern medical and surgical practice, and although its recipient Mr William D Coolidge, is not a medical man his name has become a household word among radiologists and all those who are concerned in any way with x-rays. It is for his work on the x-rays and the development of highly efficient apparatus for their production that the award of the Hughes Medal is made.

The history of the medals of the Royal Society is of some interest. For the first forty seven years of its existence the Society like Kipling's Fuzzy-Wuzzy hadn't got no medals nor rewards for it was not till the year 1709 that one of its Fellows Sir Godfrey Copley of Sprotborough Yorkshire, baronet dying bequeathed to Sir Hans Sloane Bt and Abraham Hill Esq the sum of one hundred pounds in trust for the Royal Society of London for improving natural knowledge to be laid out in experiments or otherwise for the benefit thereof as they shall direct and appoint. We do not suppose that Sir Godfrey Copley had any motive in this bequest less worthy than a love of science and of the Society to which he had for many years belonged but if he had intended to make his name illustrious for centuries he could hardly have chosen a better or surer way or doing so, even had he instead adopted Hamlet's advice to build churches. For twenty six years the interest of the bequest was given to the curator of the Society Dr (or laws) Desaguliers for various experiments made before the Fellows a practice now to be revived in a modified form. In 1736 however it was applied to purchase a gold medal to be awarded to the author of the most important scientific discovery or contribution to science by experiment or otherwise not confining the benediction within the narrow limits of any particular country much less of the Society itself. With few exceptions a Copley Medal has been awarded every year since 1736. Compared with the Royal Medal the Copley has not been bestowed upon many medical men. In 1787 John Hunter received it for his papers on the ovary and on the identity of the

dog, wolf, and jackal species, and on the anatomy of whales. It was awarded to Astley Paston Cooper in 1801 for a research into the effects of the destruction of the membrana tympani of the ear. Everard Home and Benjamin Brodie both received the honour, as did Richard Owen. Joseph Lister had it in 1880, Sir Joseph Hooker in 1887, and T. H. Huxley in 1888. Sir E. Sharpey-Schaefer was given this medal in 1924, and Sir F. Gowland Hopkins received it last year. It may be noted that in 1864 it was awarded to Charles Darwin, whose doctrine has so profoundly influenced the progress of medicine.

The reputation of King George IV has of late years somewhat improved under the treatment of annalists, but it is still not such as to be able to dispense with any credit that can be attached to his name. Therefore it seems well to recall attention to his good deed of instituting the Royal Medals of the Society. It is probably but a coincidence that the two most heterodox kings since the Tudors should have sought to benefit science. Charles II seems to have been easy going and good natured when his own pleasures were not interfered with, and to have been stung at times by curiosity as regards natural phenomena. What good influence induced George IV to found the Royal Medals we know not, for there is no evidence that he took any interest in experiments or inquiries in natural philosophy. Be that as it may, in the year 1825 Sir Humphry Davy, then President of the Royal Society, received a letter from Sir Robert Peel announcing His Majesty's intention "to found two gold medals of fifty guineas each, to be awarded as honorary premiums under the direction of the President and Council." Resolutions were shortly afterwards carried by the Council in accordance with the King's wishes, but when in 1830 he died no medals had yet been forthcoming, nor their equivalent in money. The foundation lapsed on the demise of the Crown but King William IV restored it, and at length in 1833 the ten Royal Medals in aureum were distributed, the first having been awarded in 1826 to John Dalton for his work on the atomic theory. There were neither awards nor medals for the years 1831 and 1832, during which the original foundation had lapsed and King William had not yet restored it. His foundation was not retrospective, and the series of awards began afresh in 1833 with A. P. De Candolle, the botanist, and J. F. W. Herschel the astronomer. Since that date two Royal Medals have been awarded every year, the foundation having been restored by each successive sovereign on his accession. Awards of these medals are submitted by the President and Council to the King for his approval before they are announced.

A number of members of the medical profession have been honoured with these medals, generally speaking for researches in physiology or (less often) pathology. In 1829 Charles Bell received a Royal Medal for his work on the nervous system, in 1839 Dr. Martin Barry received it for his demonstration of spermatozoa in the ovum, and in 1842 William Bowman for his work on the kidney. Among many subsequent awards were those to Richard Owen, Benjamin Brodie, T. H. Huxley, Joseph Hooker, W. B. Carpenter, Loekhart Clarke, G. J. Alcock, Joseph Lister, W. H. Flower, Bardon Sanderson, David Ferriar—<sup>1</sup>a veterinarian who is still spared to us—and Victor Horsley. Professor Sharpey-Schaefer received the medal in 1902 and Sir C. S. Sherrington, who now is awarded the Copley, was given the Royal Medal in 1905. Henry Hurd, Ronald Ross, W. M. Bayliss, G. Elliot Smith, E. H. Starling, J. S. Haldane, and H. H. Dale were worthy predecessors

of Sir Thomas Lewis, the latest medical Royal Medalist.

The Buchanan Medal, which is well earned by Professor Major Greenwood, has a much shorter history than those above named. It is a gold medal of the value of £20 provided by a fund of £276 10s. raised in 1894 in honour of Sir George Buchanan, principal medical officer of the Local Government Board, who died in 1895. It is awarded every five years for distinguished service in hygienic science and practice. The first medal was given by the subscribers of the fund to Lady Buchanan. Subsequent medalists have been Sir John Simon, M.D., Dr. Monckton Copeman and William Henry Power, Surgeon General Gorgis, Sir Almoth Wright, and Sir David Bruce.

The Hughes Medal commemorates David Edward Hughes, who died in 1900 and left between £300,000 and £400,000 to London hospitals. He was the inventor of a type printing telegraph, of the microphone, and of the telephone induction balance. The medal bearing his bust is awarded annually, together with the balance of the income of the fund, which is a substantial amount, as the reward of original discovery in the physical sciences, particularly electricity and magnetism. The Royal Society has also in its gift the Rumford, Dawson Davis, and Sylvester Medals. The first named was founded in 1796 for research into heat and light by Sir Benjamin Thompson of Rumford, New Hampshire, an American loyalist who was driven out of New England and became a count of the Holy Roman Empire after long serving the Elector of Bavaria. He is perhaps best known as the founder of the Royal Institution. The Dawson Medal, which is accompanied by a grant of £100, is given every alternate year "in reward of work of acknowledged distinction (especially in biology) in the field in which Mr. Dawson himself laboured." A. R. Wallace, Sir Joseph Hooker, and Prof. Sir T. H. Huxley, Dawson's lifelong friends, were awarded the first three medals. Later recipients have been physiologists and comparative anatomists, but not medical practitioners. The Davis Medal is given for chemical, and the Sylvester for mathematical, research.

#### HYPOGLYCAEMIA

The intensive study of blood sugar that was initiated by the discovery of insulin has revealed a bewildering number of substances that can produce hypoglycaemia. In 1923 Collip<sup>1</sup> showed that a substance which he named glucokinin could be obtained from a great variety of plant tissues. This substance reduced the blood sugar in normal and in depancreatized animals. Collip suggested that it was a plant hormone that played an essential part in the carbohydrate metabolism of plants. Peptides have recently been shown to contain a substance which can produce hypoglycaemia, but the activities of peptides from different sources vary enormously. These results are of interest in view of the recent claims made on behalf of bilberry leaf extract. This was shown by Mark and Wagner<sup>2</sup> to reduce alimentary glycosuria and hyperglycaemia in dogs, and also to reduce glycosuria in diabetic patients. The substance was named myrtillin. Allen<sup>3</sup> has studied the properties of this substance and has found it to produce striking and uniform benefit in diabetic dogs and was also found that its use in human diabetes permits great reductions of the dose of insulin. Myrtillin is equally efficacious if given by mouth or subcutaneously and even the largest dose no

<sup>1</sup> Collip *Journ. of Biol. Chem.* 56: 51, 57, 65, 53, 163, 172.  
<sup>2</sup> Mark and Wagner *Journ. of Biol. Chem.* 92: 253, 1927.  
<sup>3</sup> Allen *Journ. Amer. Med. Assoc.* 83: 577, 1927.

stated to be non-toxic. Allen states, however, that a considerable proportion of failures must be expected, especially in the severest cases and in young patients. The Council of Pharmacy of the American Medical Association has published a preliminary report.<sup>1</sup> This report is very guarded in its statement, but points out that no satisfactory method of standardization has been evolved. This is important, because the chemical nature of mytilin is unknown, and it has not yet been obtained in a pure state. General interest in the possibility of reducing the blood sugar in diabetes by oral administration of drugs has been increased during the last year by the introduction of the substances 'synthilin' (Frank) and 'glukhormant' (von Noorden). About this last-named substance Dr. Dale and Professor von Noorden have a curious story to tell this week (p. 1027). A considerable literature has already arisen about synthilin and mytilin, and there seems to be a general agreement that they will frequently reduce glycosuria and hyperglycaemia in mild cases of diabetes. On the other hand many observers have reported a rather alarming frequency of toxic symptoms, particularly in the case of synthilin. There appear, therefore, to be a wide range of substances obtainable from vegetable and animal tissues that can reduce the blood sugar both in normal and diabetic subjects. Several of these substances appear to produce benefit when given by the mouth in mild cases of diabetes. In no case, however, has any substance been found which can rival insulin either as regards potency or certainty of action.

#### EPSOM COLLEGE SANATORIUM

RATHER less than a year ago we referred in a leading article (December 18th 1926, p. 1187) to the need of providing a modern sanatorium for Epsom College and more adequate isolation and accommodation. Attention was called to the regrettable fact that the only public school which has as a primary aim the provision of special facilities for the sons of medical practitioners is demonstrably behind the times as regards its equipment for dealing with epidemic outbreaks. Moreover the building at present in use is ill adapted for the purpose of treating illness on modern lines in an economical way. The successful efforts made during recent years to raise the standard of the school teaching to the highest level have resulted in an increased entry of boys, which has, however, accentuated the need of better sanatorium facilities and might have led to serious consequences had not the school preserved its excellent record as regards health. We publish at page 1035 of this issue an illustrated description of the new sanatorium which will contain twenty beds for non-infectious cases and thirty beds for infectious cases with ample accommodation for the nursing and domestic staff. Those familiar with the college will realize that in designing the building care has been taken to choose the best available site in order to secure economical administration and the full employment of such natural therapeutic agencies as sunlight and fresh air. A combination in one block of sanatorium and isolation departments is a commendable feature and the danger of infection is met by providing separate entrances and exits for the two divisions. The cost of the building is expected to be £25,600, a little higher than was previously estimated. Towards this sum of over £4,000 has already been received, and a list of donations appears at page 1037. At least £15,000 is required before the actual work of building is begun, and in this connexion we hope that the letter published at page 1035 over the names of Dr. Raymond Crawford, chairman of the council of Epsom College, Sir William Hale-White, the treasurer, and Dr. Arnold London, chairman of the Sanatorium Committee, will be read with sympathy and kindle a generous and speedy

response. Donations to the 'Sanatorium Fund' should be sent to the secretary at the Epsom College office, 49, Bedford Square, W.C.1.

#### PHARYNGEAL AND LARYNGEAL POUCHES

At a meeting of the Royal Physical Society of Edinburgh on November 21st Dr. Douglas Guthrie read a paper on 'Pharyngeal and laryngeal pouches in man and animals.' Pockets ('granules') were, he said, sometimes artificially produced by criminals in India, by means of a lead disc attached to a string, it was retained in position continuously, and served to deepen the normal hollow (sinus pyriformis) at the entrance to the larynx, and the pouch which was thus gradually formed became a safe hiding place for coins or precious stones. This pouch differed in site and origin from the pharyngeal pouch, or diverticulum, which occasionally developed behind the larynx, the latter was of the nature of a hernia and sometimes demanded surgical attention. It was interesting to note that in the pig a pouch was normally present at this point in the posterior pharyngeal wall but no such structure was found in other domestic animals. Other pouches such as those found within the larynx were of interest to the comparative anatomist. In man there was a depression the laryngeal ventricle just above each vocal cord and from this a little pouch or sacculus extended upwards for a variable distance. In the gorilla and chimpanzee this extension, uniting with its neighbour of the opposite side, reached as far as the root of the neck. In other monkeys the two united sacculi occupied a large cavity in the larynx. Absent in the sheep and ox, the ventricle and sacculus were found in the dog and pig while in the horse the sacculus part was relatively large. Advantage was taken of this fact in the operation of ventricle-stripping to cure 'roaring' in horses. The function of laryngeal pouches was uncertain. They might serve to lubricate the vocal cords or might act as resonating chambers, or might simply be the degenerate remains of the accessory air reservoirs, such as exist in the frog and in birds. The communication was illustrated by specimens and lantern slides, and by a series of casts showing the shape of the sacculus in various species.

#### THE AUTOBIOGRAPHY OF AN ACROMEGALIC

Books descriptive of their own maladies by medical authors are not numerous. Some years ago Dr. Edward Liveing, who suffered from migraine, wrote a book which is a classic on that subject, and in 1912 Dr. Leonard Mark produced a notable work entitled *Acromegaly: A Personal Experience*,<sup>1</sup> and to it he has recently added a sequel under the title of *The Apologia of an Acromegalic*. Taken together these two publications give a pretty full account of the life of a man of ability who has now passed the proverbial three score and ten years and has suffered from symptoms of acromegaly at that time unrecognized, since the age of 24. Apart from its medical interest, Dr. Mark's book will always be valuable as the record of the career of a member of the professional class, who was brought up till the age of 20 in the South of France and has since lived in London and shared in its medical life. It is of interest to note that, despite many distressing symptoms, Dr. Mark did not himself recognize the nature of his trouble until years after it was obvious to his medical friends, and after Dr. Pierre Marie who first described the disease had picked him out from a crowd of bystanders as a typical acromegalic. Dr. Mark tells us in his last paper that when in 1912 his book was published he looked upon it as his swan-song and anticipated an early death. Now, fifteen years later, he accepts the opinion, given by

<sup>1</sup> London: Baillière Tindall and Cox.

<sup>2</sup> *Medical Press and Circular*, October 5th and 12th, 1927.

<sup>1</sup> (Report) *Journ. Amer. Med. Assoc.* 89, 1607, 1927.



Sir William Osler in 1919, to the effect that the disease had then ceased to progress, and that he was suffering only from the effects of the permanent changes produced by it. But Dr. Mark has not been content with the study of his own case alone. He gives much interesting information on the disease as he has observed it in others, and on cases in the London Poor Law infirmaries, he has written an account of the "Governor" of Scarborough Spa 200 years ago, whom he has satisfied himself, from pictures and descriptions, was an anomegale. Dr. Mark does not, it seems, regret that he was born rather too late to profit by the operation devised and carried out by Professor Harvey Cushing, for, as he asks, "Who can tell whether to-day I am better off?" We congratulate Dr. Mark upon his unconquerable soul, and on the pluck with which, through half a century, he has fought his disabilities and made his disease a subject for interesting investigation and study. Long may he survive to take those omnibus rides into the suburbs which he has found so refreshing, and may his closing aspiration, in the form of the following quotation from Montaigne, find fulfilment in the end: "I would have a man to be doing, and to prolong his life's offices, as much as lieth in him, and let death seize upon me, whilst I am setting my cabiges, cruclesso of her dart, but more of my imperfect garden."

#### BRILL'S DISEASE AT MARSEILLES

For the last three or four years the Mediterranean coast of France, especially in the neighbourhood of Marseilles, has experienced an infectious exanthematous epidemic of an unusual kind. Reports on this disease have been made to the Académie de Médecine in Paris by physicians of Marseilles—me by Dr. Olmer, presented to the Académie on July 12th, and another by Drs. Boinet and Jean Prier, which is published in the *Bulletin de l'Académie de Médecine* for October 4th. There appears to be a common opinion that the disease is a benign form of typhus, similar to the outbreak in New York in 1898, to which the name Brill's disease has been given. In Marseilles it has attacked persons in all classes of life and in many different neighbourhoods, but it has been rare to find several patients in one house. Some of the patients had been in contact with foreigners, especially with Orientals. The infection could not be traced to parasites, the sick persons were quite free from lice. The results of bacteriological investigations were negative, agglutination to *proteus* X<sup>19</sup> of Weil-Felix never occurred. The onset is sudden, with headache and rapid rise of temperature. Sometimes there are abdominal pains and foetid diarrhoea. The throat becomes reddened as in scarlet fever, and small ulcers may form on the pillars of the fauces. The rash appears about the third day, it begins on the lower extremities, and extends upwards until it reaches the face. It consists of numerous spots, pink at first but becoming violet-coloured, though hardly ever ecchymotic. After about a week the spots begin to get pale, those on the lower extremities being the last to disappear. As the spots pale the temperature gradually falls. In nearly all cases a little black scab is found at some spot on the body, and the observers think that this may mark the site of inoculation with the disease. Constitutional symptoms are not severe, and albuminuria is absent, but the liver is enlarged, and occasionally there is some congestion at the bases of the lungs. Nerve symptoms are common, and resemble those seen in meningitis. So far the only fatal case has been in a patient, aged 15 years, who had some previous myocarditis. Drs. Boinet and Prier seem to be doubtful whether the epidemic is really one of Brill's disease, but Dr. Vetter in the discussion following the communication regarded the diseases as identical though he admitted that the fever and eruption formed part of the usual symptoms of dengue fever.

#### THE DECLINE IN LEAD POISONING

That lead poisoning has been declining in this country during the last thirty years is common knowledge among the medical profession. This statement, however, rests rather upon individual than collective experience. Dr. Frederick L. Hoffmann, consulting statistician Prudential Assurance Company, America, who has unusual opportunities of obtaining data upon a large scale, confirms the statement as regards his own country and ours. The information comes opportunely, and ought to be helpful to all who are interested in the social and economic problems of industrial plumbism. The decline in lead poisoning is the result of regulations introduced over thirty years ago. Within recent times an appeal for reforms has been made and a widespread call for prohibition heard, but in these countries wherein prohibition has been adopted there have been, we are informed, serious economic consequences, alike to the industry and the workers. The British Government, before resorting to prohibition, took the wiser course of insisting upon fresh regulations being tried, involving, particularly in the case of house painters, wet instead of dry methods of cleaning old painted surfaces. In the United States the deaths from lead poisoning declined during the period 1910-24 from 2.5 per million to 1.4, and this in every section of the country investigated. In the U.S. navy the case rate declined from 0.5 per 1,000 in 1913 to 0.05 in 1924, in New York City it fell from 4.5 per million in 1904 to 1.1 per million in 1924. Hoffmann reminds us that death from plumbism occurs among many of the population who are not industrially brought into contact with the metal—for example, children who have sucked lead-painted toys, and women engaged in home work. In painters there were 407 deaths in the five years ending 1913, as against 360 during the five years ending 1923, the average age at death of painters meanwhile had risen from 50.6 years to 51.9 years during the same period. Taking the cases reported to the authorities, the average age at which illness developed was 30.3 years—a circumstance which shows that lead poisoning is a non-fatal form occurs comparatively early in a painter's life. In the United States the largest number of cases of plumbism occur among workers in electric storage battery plants. Of 920 cases in all trades, 50.1 per cent were in men engaged in this industry, as against 29.3 per cent in painters. The malady appears in electric storage battery workers early (33.2 years). In Germany the rate of chronic lead poisoning in these workers is 1 per cent, in Great Britain 3 per cent, and in the United States 18 per cent. The general decline of industrial plumbism in the United States is attributed by Hoffmann to the higher standard of living among the wage-earners, improved nutrition increasing their resistance and causing them to be less liable to fatigue. Possibly the difficulty of obtaining intoxicants may have a helpful influence, also the better ventilation of factories, periodical medical examination of the workers, and rational factory legislation. In the Utah mines lead poisoning occurred with considerable frequency when the men were working in the carbonate ores. Of 2,762 patients admitted into the Miners' Hospital for all causes, 8.3 per cent were suffering from plumbism, but, taking the calculated rates per 1,000 men in the chief lead producing regions of Utah, the numbers of cases were 62.7 for 1919, 34.7 for 1920, 21.7 for 1921, 17.7 for 1922 and 10.0 for 1923. As regards lead poisoning in potteries, Hoffmann remarks that in the light of his knowledge, extending over thirty years, of conditions in American potteries, the incidence of the disease has been reduced to such negligible proportions as to be, practically speaking, a thing of the past. The mortality rates of the United States and those of England and Wales are contrasted. In 1925 the chief inspector of factories reported 13 deaths in Great Britain from lead

personnel, not including painters, is against 32 for 1924. The total number of cases of plumbism notified declined from 486 in 1924 to 326 in 1925. In the pottery, while the number of cases notified remained the same (47) for the two years mentioned, the deaths fell from 18 to 5. British statistics thus confirm American experience as to the marked decline of the hazard in industries in which lead is used. Hoffmann drew attention to the subject of 'lead absorption' and 'lead poisoning.' The two are not one and the same. Dr Kelso examined 65 apparently healthy American workmen taken at random, and found lead in the urine or the feces, or in both, but not one of the men was suffering from plumbism. At present there is no known quantitative expression of lead excretion in man which is significant of impending or present plumbism.

#### THE GENERAL MEDICAL COUNCIL

THE winter session of the General Medical Council lasted only four days. It seemed likely that the business would extend into a fifth day or even longer but the postponement of a penal case enabled the Council to complete its business in its unusually short session. Sir Norman Walker, at the close of the proceedings said that the saving of a day would be very gratifying to the trustees for it meant that the Council would be in pocket by some £250. This figure gives some substance to the common assertion that for the time it is sitting, the Council is an expensive judicial body. A little calculation shows that its proceedings cost one pound a minute, this is much in fees and allowances to members and does not take account of its continuing expenses nor of the expenses of the clerk who appears before it. The disciplinary cases on this occasion, apart from those postponed for judgement from previous sessions numbered only seven, and none of them raised any fresh points of professional interest. Five out of the seven were consequent upon court convictions for drunkenness or offences arising out of alleged drunkenness, and the other two cases were charges of adultery during private moral delinquency. The names of both the practitioners who had figured in Divorce Court proceedings were erased. The Council of course takes no cognizance of adultery as such but only of professional relationship precedent to or contemporaneous with such adultery. Both the cases emphasized the fact that the Council does not regard itself as bound to proceed strictly along the lines followed in court or law with regard to the admission of evidence. The legal representatives of the practitioners in both instances protested against being called upon to meet documents, such as letters, diaries and prescriptions put in at the last moment after the sworn declarations regarding the complaint had been made. They contended that in a court of law such a proceeding would not be allowed, and that a defendant and his representing him should know beforehand exactly what he had to meet. The objections were however overruled. It is well, therefore for all who may come before the General Medical Council to be aware that it does not regard itself as bound to observe the rules and precedents which obtain in ordinary courts of law. In none of the cases in which drunkenness was a feature did the Council proceed to the extremity of erasure but in three or them judgement was postponed to a later date when the practitioners in question will have to bring forward to the tribunal from their professional brethren as to their conduct in the interval. The non-disciplinary business of the Council occupied only a brief morning. It included the presentation of a final report by the Education Committee on the progress throughout the country towards the readjustment of the medical curriculum in accordance with the resolutions of the Council adopted in 1922. This report is a volume of nearly 200

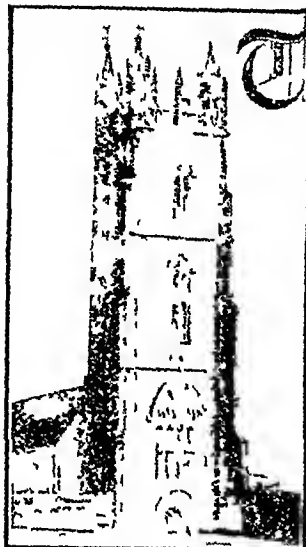
pages, but its presentation led only to a short discussion, mostly mundanely in the press gallery. The acoustics of the Council chamber have lately been improved, but the press is unfortunately situated in a gallery, beneath which many of the speakers address the Council, in view of the press, and often unheard. That this press may be useful to the General Medical Council was proved by the chairman of one of the committees, who, in presenting a report, begged the new paper reporters to take special note of what he had to say. This is probably the first case on file that the "stringers in the gallery" have ever been addressed other than in the words, "You are requested to withdraw."

#### THE HUMAN FACTOR IN INDUSTRY

THE EARL OF BILBOUR presided over an interesting meeting of the National Institute of Industrial Psychology on November 25th, when a number of the Institute's investigators described how psychology entered into the experience of the factory. Lord Bilbour said that the industrialist who is the material element in his organization with the greatest care, and with every regard to their adaptability to the end in view, but the machine so designed was put in charge of human beings with regard to whom no particular selection or study had been made. Even if the best-intentioned person were put in a position unsuited to his tastes and abilities he would be not only unhappy and inefficient. In a subject such as industrial psychology the interests of employers and employed were obviously identical. He was inclined to believe that such interests were always in the long run identical but there could be no doubt at all that in the field of psychology what was good for one was good for the other. The Industrial Fatigue Research Board, a branch of a much larger body the Medical Research Council was carrying on valuable work, but a Government department could not be expected to deal with the special details of a particular industry, and this was where the National Institute of Industrial Psychology became so useful. The Fatigue Research Board dealt with fundamental problems while the Institute endeavoured to apply psychological science to the actual detailed necessities of particular firms or industries and he noted that the present staff of the Institute had made special studies for forty-two firms covering twenty-six industries. Following Lord Bilbour's speech a number of inquiries who had been advising on factory plant gave brief accounts of their experiences and observations. One of them said that while an electric motor would work almost as well in an arctic as in a tropical environment and had limits of output which could be defined with mathematical accuracy and movements that preceded with geometrical precision, human beings were of infinite variety, and the reactions of the same individual to different circumstances covered an almost unbelievable wide range. Another investigator said that his investigations had shown that individuals differed considerably in the extent to which they found a given task tiresome or account of its monotony. Some preferred the monotonous tasks because these gave them the opportunity for day-dreaming. Generally, the higher the intelligence of the worker the more repugnant was the repetition task. The advice which the Institute had given in order to avoid monotony was to introduce rest pauses, to use music and singing where possible to improve drab surroundings by attractive pictures and the like, and most important of all to adopt periodical changes of work.

DR L. S. T. BURRELL, physician to the Brompton Hospital for Diseases of the Chest has joined the Medical Advisory Committee of the Asthma Research Council.

# NINETY-SIXTH ANNUAL MEETING of the British Medical Association, CARDIFF, 1928.



TOWER OF ST. JOHN'S CHURCH  
CARDIFF

THE ninety-sixth Annual Meeting of the British Medical Association will be held in Cardiff next summer under the presidency of Sir Ewen Maclean, M.D., F.R.C.P., Professor of Obstetrics and Gynaecology in the Welsh National School of Medicine, who will deliver his address to the Association on the evening of Tuesday, July 24th. The sectional meetings for scientific and clinical work will be held, as usual, on the three following days, the morning sessions being given up to discussions and the reading of papers, and the afternoons to demonstrations. The Annual Representative Meeting, for the transaction of medico-political business, will begin on the previous Friday, July 20th. The provisional programme for the work of the Scientific Sections is being drawn up by an Arrangements Committee, consisting partly of Cardiff representatives and partly of members appointed by the Council of the Association. The names of the Presidents of Sections are given in a Current Note published in this week's SUPPLEMENT, the full list of officers, together with other details of the arrangements for the Annual Meeting, will appear in later issues. On the last day of the meeting (Saturday, July 28th) there will be excursions to places of interest in the neighbourhood. The Association last met at Cardiff in 1885. We publish below the first of a series of historical and descriptive articles on the city and its medical institutions, written for the occasion by Dr. Donald R. Paterson.

## CARDIFF AN INTRODUCTORY NOTE.

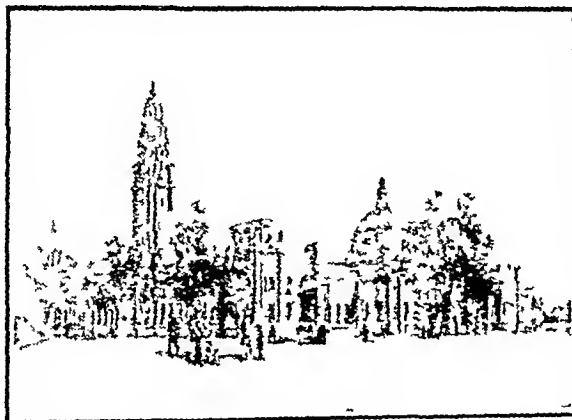
CARDIFF suffers in the mind of strangers from two misconceptions. They generally seem to think, first, that it is an entirely modern and even mushroom town, and, secondly, that it is black with coal dust and coal smoke. As a matter of fact, Cardiff is among the oldest towns in the country, and, at all events for a business town, among the cleanest. The coal measures come to an end about five miles north of the city, and with them the disfigurement of town and country that seem inseparable from industrialism. Cardiff, situated on an alluvial plain, ringed with hills, on the shore of the Bristol Channel under the lee of Penarth headland, is singularly free from coal smoke and coal dust. The coal tips, and with them the coal dust, are away at the docks, which are separated (like Athens from the Piræus) from the shopping and residential part of the town by a long and, it must be confessed, an unlovely street, only made interesting by its extremely polyglot shop names and signs. Further, Cardiff does not consume much coal for industrial purposes, and the clean atmosphere which it enjoys permits the Portland stone of its public buildings to weather to a silveriness not often seen.

There are few prettier approaches to the centre of a big town than the approach to Cardiff from the west over the river Taff flowing between public gardens on one bank and Lord Bute's castle and grounds on the other, from its hills to the north and to the south flowing past the recreation ground, with Penarth headland to close the view.

### OLD AND NEW

The town has profited both by its antiquity and by its growth in the last century. (A hundred years ago it numbered some twenty thousand souls who now are between two and three hundred thousand.) By the modernness of its growth it escaped the evils so dangerously aggravated by the industrial revolution, and profited by the sanitary and other reforms thereby forced on the community, and the Minister of Health was able to say only the other day that Cardiff has no real slum.

It has plenty of open spaces, and has planted its thoroughfares with trees. It has Roath Park with its lake to the east, and to the west Victoria Park and the Llandaff Fields leading to the Cathedral. More fortunate still, perhaps, it was able to purchase from Lord Bute Cathays Park, right in the centre of the town, and there to group its public buildings. It is the possession of these buildings, surrounded by parks and gardens that is now perhaps the chief glory of Cardiff. They merit only to attract the attention of all



THE CITY HALL, CARDIFF

interested in the application of architecture to civic need. In its rapid modern rise the city had several times outgrown its buildings, and when the time came to build on a further venture it was fortunate in being able to acquire a park with a fine avenue of trees near the Castle, to be devoted solely to public needs, and in having an enlightened civic authority who not only commended first-rate architects to design the principal buildings, but laid down conditions which established the uniformity, harmony, and proportion of the buildings on the site.

formed such a striking feature of the whole. The buildings already erected in Cathays Park are the City Hall and the Law Courts, the National Museum of Wales, the Glamorgan County Hall, the Technical College, and the University Offices and University College with "in effect," in the words of a high authority, "the most incredibly successful." The frontage to the south with the City Hall occupying the middle, its tall clock tower a magnificent landmark, flanked on the west by the Law Courts on more severe lines, and on the east by the National Museum, justly termed a masterpiece, is an achievement unique in modern municipal architectural design.

But besides the advantages of its modern growth it has the interest and evidence of antiquity. Here the Roman established a fort and kept in communication open with the hinterland and in mediaeval times the Norman made the town the capital and head of his marcher lordship and fostered its trade. The centuries have bequeathed to Cardiff its Castle right in the centre of the town, now the residence of the Marquis of Bute. The

Castle presents in stone an epitome of the history of the town. Retaining the rectangular form which stamps its Roman origin, the reconstructed massive walls combine to show parts of the Roman wall *in situ* as well as Norman work. Within the enceinte may be seen the north gate of the Roman period, and the great Norman castle mound crowned by a ruined stone keep of the thirteenth century. The Castle Lodging or present residence on the west side embodies the fifteenth century and later work enriched with notable additions by the late Marquis and his architect Burgess.

Hard by standing in the heart of the old town is the one survival of Cardiff's old churches the Church of St John the Baptist. Its beautiful tower with a rich coronal of the Somerset Perpendicular style erected in the fifteenth century is a notable landmark. The mother church of Cardiff—old St Mary's—a cruciform structure of the twelfth century which stood on the bank of the Taff was undermined by the river and destroyed. Foundations of churches of the Grey Friars and of the Black Friars have been preserved on the site of the former near Cathays Park, a fragment of a sixteenth century house built out of its remains is still to be seen.

By enlargement of its boundaries Cardiff has recently included the picturesque village of Llandaff and its ancient Cathedral the reputed shrine of St Dyfrig and St Tilio. A stately embodying work of various periods from the twelfth century down the Cathedral with its fine early English west front had long remained roofless, till its skilful restoration half a century ago. The interior decoration is of interest from its association with pre-Raphaelite artists. There are four glass windows by William Morris and the paintings of the panels of the reredos are by Dante Gabriel Rossetti. On the high ground above the Cathedral there is the recently uncovered ruin of a bell tower—an example of the detached campanile—and the ruins of the old Bishop's Palace now form-

ing a gateway to the Palace grounds. Amongst the modern churches there is interesting work of Bodley in the churches of St Gwynn's and St Saviour's, and in addition to the modern secular buildings in Cathays Park should be mentioned the new buildings of the Welsh National School of Medicine—the munificent gift of Sir W. J. Thomas, Bt.

#### EDUCATION, GENERAL AND MEDICAL

In the matter of education Cardiff has made notable progress. Its primary and secondary schools are

almost all modern buildings airy commodious, and equipped with school libraries. A recent addition is an open air school for ailing children. The University College, founded in 1883, after living for a time in wooden sheds is now nobly housed. Most faculties are represented in it. Its medical side has lately been developed into a complete school though the form of its administration has not been finally settled. Technical education has made great strides and the work of its college has undergone rapid extension.

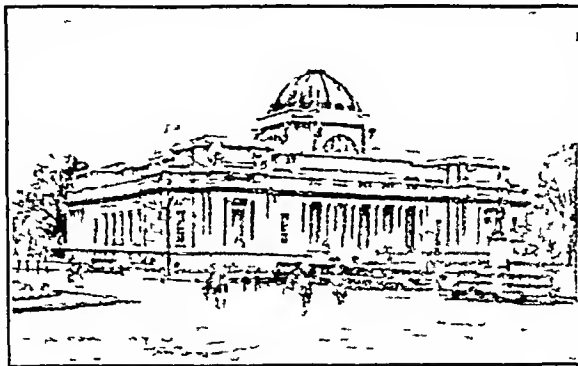
The development of the educational side of the National Museum is a movement in which Cardiff may justly claim to be in the van. The admirably arranged collections in buildings at once elevating and refined are increasingly taken advantage of by children of school age, with the best results. The Cardiff Public Library with its fine collection of Welsh manuscripts and printed books and documents and prints of specially Welsh and Celtic interest is more like a national than a municipal institution.

The medical activities of the city are mainly centred in the

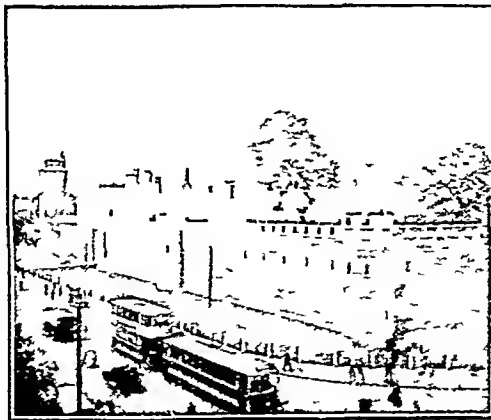
Royal Infirmary. It comprises, on what is now a somewhat crowded site all departments. It is the clinical side of the Welsh National Medical School, and a notable recent addition to it are the fine clinical laboratories of the medical unit erected by the Rockefeller Foundation. At the docks the Royal Hamadryad Seamen's Hospital a modern building which replaced the *Hamadryad* ship looks after the needs of the shipping population. There is a large Poor Law hospital with special departments. The City Mental Hospital is a well equipped institution which has established a wide reputation by its scientific work in psychiatry.

#### COMMERCE AND SPORT

To turn to the commercial life of the city there can be no need to say anything more of the coal industry. Cardiff is the acknowledged coal capital of the world, and its system of docks and industrial appliances is in keeping with its position. Its shipping and ship-repairing industry, with its dry docks are on a comparable scale. The port is probably first in ownership of vessels engaged in the open carrying trade or the world and none suffered more heavily through losses by enemy action in the great war. Cardiff has on its great milling industry and timber trade. In Cardiff the exchanges, Government offices and headquarters of the firms engaged in these industries are at the docks, away from, and



NATIONAL MUSEUM OF WALES, CARDIFF



CARDIFF CASTLE

not in the centre of the town, as in places where big trade developed earlier. Cardiff has always been keen on sport. Its Rugby football club in the palm days was one of the foremost teams in the country. It was the pioneer of the four three-quarters line, and did much to develop the passing game. Its centrally situated ground, in the Cardiff Arms Park on the left bank of the Taff, has been the scene of many memorable contests. Part of the ground is reserved for cricket, where many of the county matches—Glamorgan is a first-class county—we played. The Association football team, though of recent formation, has rapidly come to the front, and is at present holder of the English Cup. Golf clubs around and in the neighbourhood of the city are increasing, and include some links of quite front rank further down the coast.

## CARDIFF'S SETTING

Cardiff is fortunate in its situation. The city is spread out within an amphitheatre open to the Bristol Channel, with scenery of no little variety. On the east, along the estuary of the Severn, the shoreline from the mouth of the Wye to Cardiff is low-lying, and the adjoining district, exposed in places to flooding by the tides, is protected by a sea wall whose history goes back to Roman times. From the Penarth headland to the west the coastline changes to vertical cliffs of lias limestone, which are ever undergoing change. About five miles from Cardiff, where the older carboniferous limestone has resisted the action of the sea, it forms an island at high tide, and between it and the mainland the large and important docks of Barry have been constructed. From there to the mouth of the Ogmore is the shore line of the Vale of Glamorgan, an undulating plateau scored by pleasant little valleys, well wooded, with sheltered villages, many of which contain picturesque remains of a mediaeval castle.

This district, devoted to agriculture, and having in former days "much corn and grass," abounds in evidence of early settlement, and has not a few interesting old churches. North of Cardiff the ground rises gradually to the foothills which form the southern edge of the great coal-field. Five miles from Cardiff the ridge is breached by the gorge of the Taff, the only natural outlet of the coal-field behind it. It was this natural outlet that gave Cardiff its importance as a hundred years ago, when the demand for steam coal led to the development of the mineral wealth of South Wales. Through this outlet the Taff, flowing through the well wooded slopes of the gorge, with the reconstructed fortress of Castell Coch sentinel-like on its eastern shoulder, forms a picture of great charm, and, while it boasts the late Lord Bute's vineyard, suggested a miniature Rhine.

Beyond, the scene is more sombre. The district drained by the upper reaches of the Taff and by its tributaries is the famous steam coal area, upon which depend the existence and prosperity of the city. Its deeply entrenched valleys, at the bottom of which pits have been sunk and a dense urban population has settled, give to the Welsh coal-field a character all its own and explain many of its problems. Above the valleys, bleak and bare hills clothed with rough grass lend interest and variety to the scenery. Then lower fringes, once thickly wooded, still reveal here and there traces of a sylvan beauty that vanished before the needs of an industrial age.

Moreover, Cardiff is particularly well situated for excursions in beautiful neighbourhoods. A glance at the map will show that, with London and Birmingham, the neighbourhood of Cardiff is one of the districts most thickly threaded with railway lines. By these and other means the valley of the Wye and Usk and the beautiful scenery of Monmouthshire and Brecon are easily accessible, and an active service of cross-channel steamers brings North Somerset and Devon and the Exmoor country within the scope of a day's excursion.

One final word. In spite of its modern industrialism, Cardiff has its link not only with antiquity but with romance. Few even of its own citizens seem to remember that it was from Cardiff according to the *Moite d'Arthur*, that Lancelot took ship when he fled from the Arthur whose honour he had betrayed, and from Cardiff also that

Arthur took ship to follow him. It was in what represented Cardiff Castle in Arthur's day that Tennyson's girl But, of course, it was to the citizens of an entirely legendary Cardiff that Tennyson's Geraint said "Ye think the rustic cackle of your bourg The murmur of the world."

## THE BRAIN OF ANATOLE FRANCE

BY  
SIR ARTHUR KEITH, M.D., F.R.S.

ON November 12th, 1924, Anatole France died when half-way through his 81st year. For half a century he had attracted, charmed, irritated, and instructed a vast army of readers recruited from the more intelligent classes of all civilized countries.

Two days after his death his brain, the source of so many deathless pictures, was on its way to the Medical College of Tours, there to undergo detailed examination by anatomists, in the hope that modern skill might detect in its structure some definite basis which would explain the genius of the novelist. The search was conducted by the professor of anatomy, Professor Guillaume-Louis, and his chief assistant, Dr Dubrenil-Chambaudel. After an interval of three years the anatomists have at last drawn up their report, it was read at a meeting of the Academy of Medicine held in Paris last month. From this report we learn that the brain of Anatole France, when stripped of its membranes, weighed only 1,017 grams, some 340 grams—about 25 per cent—less than we expect to find in a man of mediocre ability, that the two cerebral hemispheres, of exactly similar weight, turned the scales at 854 grams—28 per cent below mediocrity. We are told that the fissures and sulci which separated the relatively simple lobes and convolutions of the brain were deep, that the ventricles of the brain were small, and that therefore, in relation to mass, there was an extensive development of cortical grey matter.

No drawing, photograph, or illustration is reproduced to assist the reader in following the dry, descriptive details of the anatomical narrative, but from what we are told and from what can be inferred we must come to the conclusion that there was nothing in the external configuration of the brain of Anatole France which would lead an expert anatomist to infer that it had been the seat of genius. The reporters sum up the results of their examination thus:

"The brain of Anatole France is of an admirable form. It represents a piece of real goldsmith's work, the convolutions being long and sharply delimited, well folded, pressed tightly together, showing a very unusual degree of complexity."

To do them justice one must reproduce their final paragraph in their own tongue:

Pièce d'orfèvrerie, avons-nous dit ce cerveau etait compréhensible pour la qualité à ces déliées petites pendules sorties, sous Louis XV des ateliers de Julien Le Roy l'horloger tournois, et qui, élégantes et légères, sous l'ornement d'un travail de cis l'ure inégalable, portaient un mécanisme d'une précision parfaite.

The reporters may be justified in comparing Anatole France's brain to one of Julien Le Roy's wonderful little clocks, but, before we accept their simile as a possible explanation of the special faculties of Anatole France's brain, let us think for a moment of what we have a right to expect from them. Suppose it was not a brain, but one of these precious little clocks we had asked them to report on. What should we think when, having read their account of its external dimensions, the lettering on the dial, and the exquisite chasing of the frame we find that they have nothing to say of its internal works—that they have not even glanced at them? That is exactly how they have treated Anatole France's brain, they have not sought to determine the extent of any one of the scores or more of its cortical areas, they have not examined the detailed structure of any one of these areas, the vast masses of matter in the basal region of the brain, which must have so much to do with the emotional side of a man's mentality,



are altogether overlooked. My French colleagues may well ask me if I know what an examination of this kind entails—that it means a mastery of the finest neurological technique, a collection of all that is not known concerning the microscopic architecture of the human brain, and three years of hard labour. And I know all these conditions are requisite, and unless they are complied with such a precious opportunity as this has been wasted and their perfunctory labours thrown away.

It is true that there are now many metaphysicians and not a few psychologists who regard the brain as merely a living sponge in which the mind or soul resides and who will be prepared to receive the published account of Anatole France's brain as ample sufficient for all practical purposes. Medical men—anatomists, physiologists, and clinicians—have reason to think differently. Experiments made by design by disease, or by accident have assured them that the brain is a highly organized complex functional structure, and that we yet can hope to discover the exact role played by every collection of its nerve cells and every tract of its nerve fibres and that ultimately the anatomist will be able to assess the potential value of any given brain. It is true that this time has not come, but we have every reason to believe it will come.

Although we know nothing of the finer structural organization of Anatole France's brain, we do know that with it he was performing feats of genius while millions of his fellow countrymen, with brains 25 per cent or even 50 per cent larger, were manifesting the average abilities of daily labourers.

Such an instance may well make our critics sceptical of any direct relationship between mass of brain and manifestations of mental ability. And yet all our speculations regarding man's evolution are based on a close relationship between mass of brain and its capacity to serve man's needs. As we trace the rise of the brain, from the lowest to the highest of living primates, we see that the nearer that any given brain approaches to that of man in mass and in conformation, the nearer does its owner approach to the mentality of man. With the evolution of vertebrate animals we see that mass of brain and complexity of mental reaction have gone hand in hand, but there are notable exceptions. Whales and elephants have the most massive brains and manifest no corresponding increase of ability which can be called mental in any sense. To this old problem I added my little quota thirty three years ago. If we weigh the brains of dogs of graded sizes we find that with each increase in body mass there is an increment in weight of brain this increment decreasing, the heavier the dog. Somehow each additional area or skin and mass of muscle entails an addition to the make-up of the cerebrum, and such additions are not concerned in the manifestation of intelligence. But as Anatole France was a man of average size we cannot ascribe the smallness of his brain to a lack of the 'corporeal concomitant' element though the existence of such an element whatever its fundamental and structural nature may prove to be does explain the massive brain of the whale and of the elephant.

This lack of correspondence between brain mass and mental ability as measured by accepted standards has been a lifelong puzzle to me. I have known in my student days men with the most massive heads and sagacious appearances who proved failures in all the trials to which the world submitted them, and I have known small-headed men succeed brilliantly, just as Anatole France did. What is the solution? Do the conditions of life bring out in a measurable form all the inherent qualities of man's brain? Can we measure them by any system of psychological tests yet devised? Is there not such a quality as depth of feeling which need have no value in any kind of market in the world of commerce, science, art, or literature? What part of the brain is it that makes a man or woman so intensely affected by music by art by suffering or any emotional disturbance whatsoever?

The human brain, one may well believe is an organ that has come to us not only to give the power to understand to judge to remember, to regulate conduct, but also as a purely sensory organ to make us enjoy life

and cling to it. The tests we apply for genius are not those which measure all the powers of which the brain is capable. Many of them are inarticulate or silent. Anatole France, above all, was an intuitionist or human nature who sought, as is the habit of primitive minds for clear and concrete expression. To be an artistic exponent of the wiles of human nature may mean a peculiar ability, but this exceptional power is one we need not be surprised to find associated with a small brain. Such a brain may have limited powers in other directions.

A detailed study of Anatole France's life, so far as it is known, shows us that he was in many senses a primitive man. In the long run I expect it will be found that there is a close correspondence between brain mass and the degree of function subserved by that organ.

## France.

[FROM OUR SPECIAL CORRESPONDENT.]

### SOCIAL ASSURANCE

THE great question of the day which is occupying the thoughts of all members of the medical profession is the law of medical assurance. It has been passed by the Senate, and there is no sort of doubt that it will be passed by the second chamber also. It is fairly certain that it will modify profoundly the conditions of medical practice in France. The matter, serious enough in itself, turns to tragedy when it is realized that the practitioners of medicine have failed to recognize the need for presenting a united front to defend the interests of the French sick. In the last resort there was the only interest at stake. Many of us think that the law will turn the doctors of France into 'functionaries' and are distrustful of anything like a State organization. It may, indeed, be said that the general body of the medical profession as represented by its syndicates is distinctly opposed to the way in which the social assurance law is to be worked. Unfortunately the syndicates have not found a common ground for action, and the ditch dugged between the Union Nationale and the Federation Nationale still yawns. The great efforts that are being made by the wiser heads render it possible to hope that unity may yet be achieved. If they succeed it will be possible to launch this much-talked-of law in a floatable condition, if they fail we seem to be in for a great disillusionment.

### CONGRESSES

The session has begun as is customary, with a series of congresses which have been particularly well attended by our foreign confreres. We have had the two national congresses of medicine and of surgery in Paris and each has had its satellite congresses of the several specialties. Reference must be made in particular to the International Congress of Hydrology at Lyons. British medicine was very well represented at it, and it seems to have marked a turning point in the story of this department of practice which has been called natural therapeutics, and is as greatly admired by some as it is despised by others. Never before have its problems been attacked with so much scientific precision, the clinicians refused to be outdone by the chemists the geologists or the physicists, who attended in large numbers. Doctors of the old school seemed, indeed to be a little perturbed to see the field of simple observation invaded from every direction by the laboratory. The members of the International Society of Medical Hydrology, which was cradled in London, invited the 'hydrologues' to meet them in Rome, and the occasion afforded opportunity for one more fine international manifestation. This friendship, which overpasses frontiers will help to console our war generation, and gives us good hope for the future.

### LE FOYER MEDICAL

Thanks to a very happy initiative, we shall be able henceforth to offer the foreign medical man staying in Paris a welcome he will particularly appreciate because it will afford him the privileges and comforts of a professional club. What we have established is not a scientific institution, but a social centre where information of all sorts is

internal secretion which in some respects was the counterpart of pituitary secretion. The lecturer explained in detail the work which had been done by Harrington and himself in the synthesis of thyroxine, and, in particular, referred to the difficulty which had been experienced in the introduction of the four important iodine atoms in the molecule of thyroxine. An important key to the successful production of this substance had been obtained from the knowledge of a simpler iodine substance which apparently discharged in sponges, corals, and other lowly organized animals similar functions to those effected by thyroxine in the higher animals. Reference was also made to other important hormones, such as insulin, which, it had been stated, had been obtained by Abel in a crystalline form. It was not yet, however, certain whether the crystals obtained by Abel were insulin itself or an inert substance on which the hormone was adsorbed. The physiological action of various hormones and their chemical constitution were illustrated by lantern slides.

#### VITAL STATISTICS

The more outstanding features of the vital statistics of Scotland during the third quarter of the year 1927 are a birth rate of 19.0 per 1,000, a marriage rate of 7.4, and a death rate of 11.1. The infantile mortality rate for the quarter was 67 per 1,000 registered deaths. The death rates from all forms of tuberculosis and from tuberculosis of the respiratory system were 91 and 64 per 100,000 respectively, both slightly higher than in the third quarter of last year. The total deaths registered during the quarter numbered 13,639. In the larger burghs, taken individually, the quarterly death rate ranged from 14.7 in Dundee, 11.9 in Glasgow and in Edinburgh, 11.6 in Perth, and 11.4 in Aberdeen, to 8.7 in Dunfermline, 9.5 in Clydebank, and 9.7 in Motherwell and Wishaw and in Kilmarnock, and the infantile mortality rate varied from 107 in Dundee, 87 in Ayr, 86 in Aberdeen, 83 in Greenock, and 82 in Glasgow, to 38 in Dunfermline and in Perth, 42 in Falkirk, and 45 in Motherwell and Wishaw. 652, or 4.8 per cent, of the total deaths were attributed to the principal epidemic diseases, this number representing 17 from enteric fever, 128 from measles, 41 from scarlet fever, 178 from whooping-cough, 86 from diphtheria, and 202 from diarrhoeal diseases among children under 2 years of age. Deaths from diseases and accidents of pregnancy and childbirth numbered 141, which is 6 fewer than in the previous quarter.

#### ABERDEEN UNIVERSITY RECTORIAL ELECTION

The Earl of Butehead, the Unionist candidate, was elected rector of Aberdeen University on November 12th by the narrow majority of nine votes over his Liberal opponent, Sir Archibald Sinclair. Mr. John Masefield, who stood as an independent candidate, was more than a hundred votes behind either of the others.

#### HOSPITAL FOR CRIPPLED CHILDREN

An appeal has just been issued in connexion with a scheme for a hospital for crippled children, with attached clinics, for the south-eastern area of Scotland. The scheme began with the appointment, at a conference in Edinburgh on March 16th, 1926, of a committee of investigation, which collected evidence from members of the medical profession and others possessing special knowledge. A second conference was held on February 25th, 1927, at which this committee recommended that a central hospital for the cure and care of crippled children should be built on the outskirts of Edinburgh, with major clinics to be formed in the more populous cities of the south-eastern counties of Scotland, that minor clinics should be established in the remoter parts of these counties, and that co-operation between the existing hospitals and the new central hospital was essential. The area to be covered by this scheme includes the counties of the Lothians, Peebles, Selkirk, Roxburgh, Berwick and the west in hill of Fife, Kinross, and Clackmannan. The general idea of the scheme is that the central hospital to be built in Edinburgh should contain 75 beds, for which a sum of £75,000 would be required. It is pointed out that after this capital fund has been provided the cost of maintaining necessitous children up to the age of 16 would be completely provided by parliamentary grants and local authorities.

#### CHINESE MEDICINE

Dr. Clayton Grosvenor, in a lecture recently delivered in Edinburgh on medical work in China, said that the scientific pursuit of knowledge had practically stood still in China except where it was influenced by Western teaching. The whole of medicine was thus in the hands of the ignorant, the unscrupulous, and the quack, and medical practice was riddled with charms. Eight out of every ten children died before they were 2 years old. There was less than one mission hospital to every million people, and Western influence could therefore touch only the fringe of the suffering in China. It had long been seen that the proper way of dealing with the problem was to establish medical schools and to train the Chinese themselves in Western medicine. Recent events had necessitated the withdrawal of missionaries, and even of doctors from the hospitals, but this had allowed the Chinese to carry on by themselves in many places. He believed, however, that, communism having now spent itself, the Chinese for the first time had really come to find their own life and destiny.

## Ireland.

#### MEDICAL SERVICES IN THE FREE STATE

THE report read at the annual meeting of the Approved Societies Association of Ireland referred to the final report published by the Committee on Health Insurance and Medical Services. The report, signed by a majority, expressed the view that a comprehensive State medical service would be the ideal solution of the problems submitted for the consideration of the committee, but they were unable to recommend this on account of its cost (estimated at one and a half million pounds a year) and for various other reasons, the nature of which was not stated, but which Dr. Ronlette described as the lack of co-ordination between the administrative departments dealing respectively with local government and with national health insurance. Failing to carry a recommendation for the immediate establishment of a State medical service embracing insured persons and all "poor persons," and also failing to secure the inclusion of dependents in a medical benefit scheme, the majority of the committee finally recommended a limited scheme of medical benefit, applicable to insured persons only, with an increase of 2d in the weekly contribution, to be borne equally by the employer and the employee. The Approved Societies Association had never any doubt as to the probable outcome of the inquiry. The failure to reach an agreement was anticipated when the constitution of the Committee of Inquiry was announced and it was found that approved societies were denied representation. If the Insurance Commission had supported the societies' demand, that it should be representative of all interests affected instead of setting up an interdepartmental scheme, it is probable that an agreed scheme would have emerged of a nature beneficial to the Irish working classes. This association claims to speak for 80 per cent of the insured population, and felt that the time had arrived for a comprehensive reform of the Poor Law medical services. If that could not be achieved it favoured a scheme of medical benefit for insured persons and their dependents, and expressed its willingness, if necessary, to agree to an increase not exceeding 3d in the weekly contribution. It even thought some immediate improvement of the existing conditions of affairs it was prepared to advocate a scheme of medical benefit for insured persons only, at an additional contribution not exceeding 2d a week. The Departmental Committee on Workmen's Compensation has expressed an opinion in favour of the establishment of a contributory scheme of medical benefit under the National Health Insurance Acts in the interests of disabled workmen. The final report favoured the discontinuance of the provisions of the Insurance Act of 1921. This proposal was acceptable to the approved societies. It was anticipated that the effective membership would be reduced by about 20 per cent as a result of the proposal. There was an almost 100 per cent increase in benefit payments in 1926 and 1927, as compared

with 1925, and there was reason to think that many cases were not referring then doubtful cases to the National Health Insurance Commission for examination by the medical referee which was provided free of cost. The report also dealt with the inadequacy of the sanatorium benefit fund, in consequence of which insured persons affected were called upon to pay for treatment according to their means, notwithstanding that they had already contributed under the health scheme for sanatorium benefit.

## Correspondence.

### THE PHYSIOLOGY OF DEFECATION

AND THE RELATIVE FIGURES OF GASTRIC, DUODENAL, AND JEJUNAL ULCER

SIR,—Dr L. J. Picton, in his interesting letter on the physiology of defecation which appeared in the *JOURNAL* of November 26th (p. 1005), erroneously gives me the credit of being the first to observe "mass peristalsis" in the colon. As a matter of fact the movement was discovered by Holzknecht of Vienna, his work was confirmed by Dr A. F. Barclay of Manchester a few months before my earlier observations were made.

The gastro-colic reflex, which Alan Newton of Melbourne and I described in 1913 results in a deep peristaltic wave passing from any point in the colon for several inches towards the pelvic rectal flexure; it rarely, it ever, starts in the caecum, as suggested by Dr Picton, and the simultaneous movements he describes in the proximal and distal colon have, so far as I know, never been observed. Mass peristalsis after each meal results in the greater part of the contents of the intestines accumulating in the pelvic colon by the early morning. Getting up, having a bath, and eating breakfast together result in a wave of contraction passing down the pelvic colon, so that faeces enter the previously empty rectum, the desire to defaecate is now felt, and the defaecation reflex results in the evacuation of all the accumulated faeces. Consequently, under normal conditions, no further accumulation collects in the pelvic colon until the following morning, so that defaecation after every meal, as recommended by the New Health Society, is unphysiological, and its encouragement by irritating food is one of the chief causes of the recent increase in intestinal disorders.

O'Burne in 1833 was the first to point out that the rectum is normally empty except immediately before defaecation, and that the faeces accumulate in the pelvic colon just above the pelvic rectal flexure, which is marked on the inside of the rectum by the first of the folds described three years earlier by Houston who started the erroneous idea that the lower two rectal folds also have the function of supporting the weight of the faeces.

In your account of the discussion of gastric and duodenal ulcer at the Manchester Medical Society (p. 988) Mr A. H. Burgess is reported to have stated that "duodenal ulcer appeared to be much commoner than gastric ulcer in the North of England, whereas in London gastric ulcer was more common than duodenal." I do not know the source of his information but my experience in hospital and in private practice does not agree with it. Dr L. J. Bartford and Dr T. E. Jones have recently analysed the records at New Lodge Clinic this round that since 1921 we have had 125 cases of duodenal ulcer compared with only 33 cases of gastric ulcer, a proportion of nearly 4 to 1. Jejunal ulcers, which are almost always complications of gastro-duodenal perforated for duodenal ulcer account for no more than 22 additional cases or only one short of the gastric ulcers, the hydrochloric acid was present in every instance, generally in excess so that our investigations do not agree with the statement by Mr Burgess from the Mayo Clinic according to which acidity was present in 20 per cent of 103 cases of jejunal ulcer.—I am, etc.,

ARTHUR F. HURST

New Lodge Clinic Windsor Forest Nov. 28th.

### GROWTH IN ITS PATHOLOGICAL RELATIONS

SIR,—Very many years ago, when a final year student, I wrote a thesis, which I never attempted to publish, in which I argued that the problem of cancer should be approached by endeavouring to ascertain why the cells of a multicellular organism, presumably descended from a unicellular organism, should have lost the power of unlimited multiplication possessed by the latter. I suggested that this power was delegated to the sex glands and controlled by an inhibitory secretion of these glands. I had neither time, means, nor opportunity to pursue the idea. A perusal of Dr Archibald Leitch's paper on growth in its pathological relations (November 19th, p. 929) emboldens me to make these additional suggestions.

That cell multiplication is controlled by a hormone system, including the sex glands and others—for example, the thymus.

That cancer may be due to a failure of this inhibitory hormone system, or

That it may be due to a new hormone produced by a senescent sex gland, or

That it is an attempt to produce another sex gland to replace a failing sex gland, or

That it is a hopeless attempt to produce another individual by a variety of parthenogenesis.—I am, etc.,

GORDON WILSON, M.B.

Thurlstone St. Sheffield Nov. 24th.

### RADIUM AND THE "SURGERY OF ACCESS"

SIR.—In your leading article on radium in the treatment of malignant disease (*BRITISH MEDICAL JOURNAL*, November 19th, p. 945) reference is made to the "surgery of access" and its relation to present day results.

A briefer survey of the evolution of radium surgery readily supplies the explanation of the excellence of the results now obtainable as compared with those of earlier days and shows further that the "surgery of access" is a culminating point of a very definite series of steps or periods of progress in the treatment of cancer. In the first period treatment was essentially accomplished from the surface by means of plaques and large containers. This was followed by the second, the period of radium puncture in which was the attempt to procure a homogeneous radiation of the malignant mass. This represented a considerable advance, but still there remained a large number of growths, particularly those deep-seated in which needling or homogeneous radiation was impossible. This led to the "surgery of access," the present period of radium surgery.

The three distinct principles of radium surgery thus evolved are: (1) The opening up of a way to the tumour. (2) The treatment of the tumour itself by radiation. (3) The application of radium to the lymphatic areas draining the tumour. To those of us engaged on this work and who have for some time been endeavouring to awaken interest in the possibilities of these new methods in the treatment of cancer, the note of recognition in your leading article is specially welcome. We would commend to those who have not yet had the opportunity of studying first-hand the radium work of the schools of Paris, Stockholm, and Brussels a visit to the forthcoming International Congress of Radiology at Stockholm next summer where opportunity will be afforded of seeing some of the work, not only of Heyman but of the other pioneers in radium and radium surgery of the great Continental schools to whom no one informed on the history of radium surgery can do other than pay humble homage.—We are, etc.,

ARTHUR B. SMITH,

M.B. FRCSE

SYDNEY M. SMITH,

M.B. Ch. R. Ed.

London W.1 Nov. 21

### TREATMENT OF PROSTATIC ENLARGEMENT

SIR.—After careful perusal of the very able Bradshaw Lecture by Sir Cuthbert Wallace on prostatic enlargement in your issue of November 19th (p. 937) one is left with a feeling of regret that no mention is made of treating the adenomatous prostate or radiotherapy. Reference is made to radiation in carcinoma of the prostate, but not to the simple enlargement in elderly men.

My own experience of this form of treatment has been exclusively in private practice, but the results have been so generally satisfactory that I have no hesitation in recommending it in cases where the amount of residual urine is small, and where examination justifies the opinion that there is a large excess of adenomatous over fibrous tissue. Personally I always use a deep-therapy apparatus, and treat one field through the perineum, giving 90 per cent U.S.D., and two or three suprapubic fields, carefully focusing the central ray on the prostate by Chaul's method. For the perineal application I have devised a high stool with an opening in the seat, so that the patient can be treated in a sitting posture, and so avoid the lithotomy position.

It has been said that x-ray treatment, by causing fibrous adhesions, renders difficult a subsequent operation. One of my patients was an elderly man, who wanted to do everything possible to avoid operation. I gave him two series of treatments, but failed to benefit him, and he had to undergo prostatectomy. The surgeon informed me that the operation was no more difficult than usual, and that there were no adhesions. This is the only one of these patients I have treated who has, as far as I know, been operated upon, and, though I am aware one cannot draw conclusions from a single case, I think I am justified in recommending so simple a treatment being tried before subjecting an elderly man to the shock and discomfort of a severe operation.

It would be most interesting and instructive if a series of suitable cases of prostatic enlargement could be treated by irradiation at some large hospital, and the results noted, and I feel sure that all radiologists will echo Sir Cuthbert Wallace's wish "that someone who has the means would, by his generosity, render possible a more intensive study of the subject"—I am, etc.,

Cheltenham, Nov. 23rd.

J CURTIS WEBB

#### TREATMENT OF CANCER BY RADIUM

SIR,—In your leader "Treatment of rectal cancer by radium" in the *Journal* of November 19th (p. 945) you infer that the reason for the want of complete unanimity upon the value of radium in cancer of the cervix is that some surgeons have not had or not taken the opportunity of seeing what is being done in London, Manchester, Stockholm, Paris, Brussels, and many other centres.

One of my cases of carcinoma of the cervix was, I believe, the first one to be treated at the Radium Institute in Manchester in 1914, and since that date I have taken the greatest possible interest in the results obtained by radium, but unfortunately have to form my judgement upon the results obtained in this country upon which a judgement can be made. To state that a number of cases are well at the end of one or two years, or that a few are alive after longer periods, without a statement of the number of cases treated, is useless. When statistics are published in this country showing that cases of carcinoma of the cervix treated by radium have a high percentage of non-recurrence after five or ten years as have those treated by Wertheim's hysterectomy, I will most gladly abandon this operation, which until then I feel compelled to advise and perform.—I am, etc.,

Manchester Nov. 23rd

WM FLETCHER SHAW

#### UNIFICATION OF LOCAL HEALTH SERVICES

SIR,—I read with interest the account in the *Journal* (November 19th, p. 924) of the paper read by Dr Macgregor at Edinburgh on the unification of local health services. It is satisfactory to note that in the discussion which followed most of those taking part emphasized the importance of pressing forward with unification. This is a matter which does not concern only, or even chiefly, those members of the medical profession engaged in whole-time or part-time public health work. The activities of the Ministry of Health and local authorities affect all doctors in various ways, a fact which will be more and more realized as time goes on.

My own experience in these matters is based on membership of the Cambridgeshire county council, and various com-

mittees of that authority concerned with health matters—namely, public health and housing, tuberculosis, milk and dairies, Midwives Acts, and maternity and child welfare. In addition I happen to be chairman of the Local Medical and Panel Committee and vice-chairman of the County Insurance Committee.

In taking part in the proceedings of these committees I have often been impressed with the manner in which the work of them all is linked up, they are, in fact, not independent but interdependent bodies, and therefore should not be each a separate statutory committee, but a subcommittee whose duty it should be to report its proceedings to the local health committee of the area.

The policy of the British Medical Association to endeavour to promote the establishment of such local health committees, analogous to the local education authorities, is sound. It is, however, unfortunate, I think, that the term "abolish" has been used in connexion with insurance committees. These could be retained on much the same lines as the present ones, and in each case under a subcommittee of the main health committee. It is agreed that the administrative work of insurance committees generally can compare favourably with that of most local authorities.

With regard to medical representation on the local health committee, there is no doubt that co-optation of some medical men would be permitted, in the same way as persons of special experience are now co-opted on to local education committees. It must be remembered, however, that co-optation on a large scale is not popular with elected members of local authorities, who object to persons who are not responsible to the ratepayers for their actions having too much influence upon their deliberations.

Medical men should not be content to leave the administration of their affairs in the hands of tradesmen, lawyers, farmers, and persons of independent means, but should themselves become members of local authorities as the chosen representatives of the people. Some object on the ground that they are thereby liable to become involved in political issues, but politics play a very small part in the work of local authorities after election, and, in any case, a strong personality and honesty of purpose will frequently triumph over political prejudices. On association should, moreover, as far as possible, see that medical men are not penalized by membership of local authorities.

It will be remembered that the Association played no inconsiderable part in the establishment of the Ministry of Health. It is unfortunate that so many of the functions of the old Local Government Board, not immediately connected with health matters, were taken over by the Ministry of Health, instead of being transferred to other departments of the State. We should continue to press for rectification of this as well as for unification of health services locally, in any scheme of reform of local government that is proposed.

Administratively a county council would possibly be the most convenient in most cases for the scope of a local health committee, but where an important borough is situated within the area it might administer its own health matters, as it does its education affairs.—I am, etc.,

Cottingham Cambs Nov. 21st

ROBERT LILLIS

#### MEDICAL CONFIDENCES

SIR,—My appreciation and gratefulness for the attitude taken by Dr E. Graham Little, M.P., on behalf of the ethical rights of our profession was mingled with amazement because of the advice of the distinguished lawyers of the House to restrict the privilege "to a special case of venereal diseases."

Is it not evident that, if the privilege from disclosure of evidence is thus restricted, in each case that a medical person should lay claim to such a privilege, the fact that the person concerned is suffering from a venereal disease *eo facto* disclosed and the privilege frustrated? In the discretion of the medical man there is no real guarding of the patient's confidences.

The High Court of the Netherlands has decided—

April 1st 1913, "because only thus it can be prevented that the patient or his family should restrain themselves from seeking medical aid for fear of disclosure of their secrets" (that is to say all that the medical man hears, sees or observes in the exercise of his profession, and that by its nature is to be regarded as secret).

This verdict has been provoked by a medical man, who had returned evidence before the judge, was therefore condemned to prison, and had applied to the courts. This a attitude might be recon-venued everywhere—I am, etc.,

Amsterlam Nov 26th

H PINKHOFF, M.D.

Sir—I am not only expressing my own opinion, but also that of many medical men with whom I have discussed the matter, when I say that far too much is being made of what is called "medical privilege." The cases where medical men have to reveal in court confidences reposed in them, or knowledge acquired by them in the course of their professional work, are few and far between.

Honour alone would compel one to keep any confidence sacred, but a great deal too much importance is laid upon one's subscription to the Hippocratic oath. There is little doubt but that this was intended to be a short guide to medical conduct and included a warning against the only too common fault of gossiping, not only about one's own patients but about folks generally whatever in connexion with my professional practice or not in connexion with it. I hear of so in the life of men which ought not to be *spoken of abroad*. I will not divulge, as reckoning that all such should be kept secret." In the *Sponsio Academicæ* of some universities one affirms that "not without grave consideration shall one divulge anything seen or heard regarding one's patients." Many medical men subscribe under the Piousness Oaths Act of 1868 that they will keep silence as to anything which they have seen or heard while visiting the sick which it would be improper to divulge.

Such instruments merely counsel the keeping of confidence, but make no absolute prohibition as to the divulging of information when it is deemed necessary as for example in the furtherance of justice. It is not for the medical witness to determine whether a question is unnecessary or even harmful to others, and to refuse to answer is surely to put oneself on a higher level than the accredited representative of the King, who one is confident will not allow such questions to be put without a sufficient cause.

In many cases however, it is unnecessary that there should be any publicity as the answer can be made in writing and handed to the judge or as has been suggested the case can be heard *in camera* at the discretion of the judge. Doubtless in a few cases hardship might result from a public disclosure but might not far greater injury arise if medical privilege were allowed and no information were forthcoming? In criminal cases the medical evidence may be the sole guide which would lead to a conviction and in cases of divorce, legitimacy etc the suppression of evidence which the medical attendant could alone give might very easily lead to miscarriages of justice.

It is a trite remark that medical men are not expected to act as detectives but it is surely their bounden duty as mere members of the community to inform the public prosecutor of any crime which may come under their cognizance. If this were borne in mind it would not be necessary for enclosures to be sent or notices to appear in the public press calling on medical practitioners to help the police in certain cases. A very eminent judge once said "I am not for professional etiquette or professional rule. There is a rule of life and a consideration that is far higher than these and that is the duty of every citizen of this country—that my right-minded man owes to his neighbour—to prevent the destruction of human life in this world."

It is mainly in connexion with the Venereal Diseases Regulations that the question of medical privilege has lately arisen but when the judge accepts written statements (for example the card of life) or information obtained by conversation with the medical witness in private, then

in my opinion we ought to accept the law as it stands, and not make a demand for privileges which are not extended to others—I am, etc.,

W G MITCHELL ROBERTSON

Bosc. mbe. Hant. Nov. 26th

Sir,—At a meeting of the Bournemouth Division of the British Medical Association, held last evening, in conjunction with the Bournemouth Legal Society, the subject for discussion was, 'Should communications to a medical man be privileged in legal procedure, both civil and criminal?'

The two chief speakers for the Legal Society were Mr E W Marshall Harvey and Mr W F D'Angibau while for the Division Dr E K Le Fleming and Dr G H Morse were chosen. Unfortunately Dr Morse was unable to attend, and at almost the last moment I was asked to take his place. I was not at the Annual Meeting at Edinburgh, but a couple of hours before I had to speak I had sent me the Association's *Handbook* for 1927-28 in which I saw a short synopsis of the attitude of the B.M.A. on this subject.

Dr Le Fleming opened the discussion in a most able and concise manner, but it is far exceeded the time allowed I had to limit my observations to some five minutes, and I therefore feel justified in asking your kind indulgence to put briefly my very definite views on this burning subject.

There can be no question that forty years ago judges and counsel were far more inclined to respect medical secrecy than they are to-day, and I mentioned two cases to prove my contention: one in the Civil Court and one in the Criminal Court, between 1882 and 1887.

The first case was in the Divorce Court, before Mr Justice Hannen. Mr Underwick leading for the petitioner had in good social position. She pleaded as grounds for divorce, adultery and cruelty the latter being syphilis given her by her husband. The doctor who had to give evidence on her behalf was also the medical man of the husband. Before the case came on for trial the husband defied the medical man to state that he had attended him for syphilis and Mr Underwick at the last conference contended he could not ask the doctor any questions as to respondent's health without his permission. With great difficulty and at the last moment the respondent withdrew his objection and the lady obtained her divorce.

In the other case, before Baron Field, a young man was on trial for murder. A week before the date of trial the solicitor for the defence discovered by chance that the mother of the prisoner had been an inmate of a private asylum in a condition of acute mania during her pregnancy and her son (the murderer) was born soon after her discharge. Nothing would induce the father to allow this evidence to be given but the solicitor decided to have the medical superintendent of the private asylum present with the books to prove the admission of this lady and her condition while there in case the father should reverse his decision. At the final conference between the alienists who were giving evidence and the two counsel engaged for the defence, Mr T Bucknill (afterwards Sir Thomas Bucknill Judge of the High Court) and Mr Charles Mathews (afterwards Sir Charles Mathews Public Prosecutor) both decided that the evidence of residence in the asylum of the murderer's mother could not be given unless the father gave his consent. At the very last moment this consent was given and the evidence in court had we all knew much to do with the jury's verdict. Guilty but insane in spite of a strong summation up by the judge against such a verdict.

The attitude of Bench and Bar has greatly changed since those days and Mr Justice McCauley's judgement as to medical privilege has never been appealed against and still holds good. Hence the strong feeling of the medical profession and the urging by them of some alteration in the law regarding medical privilege.

Personally I from my many years' experience cannot see eye-to-eye with the attitude taken up by the British Medical Association on this question. No general law can be laid down. Each case must be decided on its merits and above all medical men must look upon themselves not only as medical men but as citizens with a duty to help justice in our courts of law and to protect society.

Lord Riddell, in a paper read last June before the Medical Society on "Medical secrets," very clearly put it





defendants' advisers have submitted to the plaintiffs a statement which they are prepared to have read in court and which they have undertaken to publish in its issue of the 8th newspaper. In these circumstances my clients, who have never desired to obtain damages in this matter but were solely concerned—and deeply concerned—with the establishment of their integrity and the vindication of their policy, accept the statement which is made in satisfaction of their action. They make, as I am glad to diminish, and they accept the statement. The statement which it is agreed I shall read with your lordship's permission is in these terms:

#### *The Star Disclaimers*

It is a point I pointed out to us that in article published in the *Star* of September 2nd 1926 on the subject of the New Health Society and the retirement of Sir William Arbuthnot Lane (the President of that Society) from membership of the British Medical Association has been construed as imputing improper motives and behaviour to the British Medical Association—particularly that the Association was oppressive upon medical practitioners, and that I as well as myself red that its hostility to the educative methods of the New Health Society arose from a desire to prevent any improvement in the public health because this would involve loss of fees to medical men and that the Association was reticent solely by the desire to benefit the medical profession without any regard whatever to public health or public interest.

We disclaim the intention of making any such imputations and we are fully satisfied that such a conception of the work and outlook of the British Medical Association would be wrong in fact and unjust and we regret any wrong impression which the publication of the article may have created.

As a matter of fact (Mr. Stuart Bryan continued) the British Medical Association has itself been much concerned—and has caused research work to be undertaken—in the prevention of disease. We are glad of course to have this statement and subject to your lordship's approval the action will be discontinued. As to the cost which are a small matter having regard to the gravity of the case each party is content to bear its own.

Mr. Norman Birkett said I appear with my friend Mr. Caven for the defendants. It only remains for me to say that I agree with the statement of the terms of settlement as outlined by Mr. Bryan and that we are glad that the proceedings have terminated in this manner.

His lordship indicated his assent to the discontinuance of the action.

#### PARTICULARS OF DOCTORS' ACCOUNTS

A Divisional Court of the King's Bench Division (consisting of Salter and Talbot JJ.) on November 22nd held that it was sufficient for a general medical practitioner in rendering his account to a patient simply to specify the date and fee charged per visit and not to be compelled to render particulars of the treatment or advice given to the patient at each visit.

The point arose out of an application made *ex parte* by counsel on behalf of Mrs. Dorothy Anstey, the wife of a solicitor living at Maidenhead for leave to appeal from an order of the judge of the Windsor County Court reversing the Registrar's order which required the plaintiffs, Messrs. Moore Moore and Foote, general medical practitioners of Maidenhead to deliver particulars of their accounts showing the treatment or advice given to the plaintiffs at each visit. The defendants had given the date and fee charged per visit.

Counsel said Mrs. Anstey was suffering from a bad mouth caused by a decayed tooth and Dr. Foote, one of the defendant partners, attended her to a dentist where gas was administered. Dr. Foote, however, further advised Mrs. Anstey to undergo a private examination. Counsel had applied for the matter to be tried in the High Court.

Mr. Justice Salter thought that the doctors would agree to that charges of medical misconduct were made.

Counsel said he wished the doctor to say whether he was attending Mrs. Anstey for anything besides a bad mouth for if that was all there would be no need for him to go to her six times.

The Court during the application said that if doctors were called on when sending in their bills to explain the particulars of each visit, they could not carry on business.

## Obituary

### JOHN CARYLE JOHNSTONE, M.D.

Late Medical Superintendent, Roxburgh District Asylum.

Many of the older practitioners in the Border districts of Scotland and his colleagues in his specialty, will have heard with great regret of the sudden death of Dr. J. Caryle Johnstone, for many years the medical superintendent of the Roxburgh District Asylum. He had been paying his annual visit to several of his old friends to whom he appeared to be in particularly good health and spirits but while staying with a medical friend in Edinburgh he succumbed to a sudden and unexpected heart attack. His life is likely to be known by many of those brought professionally into contact with him and by his colleagues and former assistants who were attracted by his kindly disposition and good qualities of head and heart and became firm friends for life. Cultured and widely read, and more than in clinical work he was always ready to place his experience and knowledge at the disposal of anyone who sought his advice and guidance and his memorial is the institution which he lived so long and so well, and which under his able management became a model of what such an institution should be.

He was born at Wolfscroft House, Hoxburgh, Roxburghshire on May 27th 1855 and was educated at private schools in Leith and Dumfries Academy and Glasgow University where he graduated M.B. and Ch.M. with honours in 1877 having gained distinction in most of his medical classes and winning a medal. In 1882 he obtained the degree of M.D. In the same year he was appointed assistant medical officer at the Leith and Kinnaird Asylum and in 1880 he became assistant physician at the Royal Edinburgh Asylum under the late Sir Thomas Clouston to whom he gave some assistance in the preparation of his *Clinical Lectures* for publication. In 1885 he was appointed medical superintendent of the Roxburgh District Asylum at Melrose. During his term of office it was found necessary to add largely to the accommodation. Fresh land was purchased, a new and satisfactory water supply was obtained and electricity installed. Dr. Johnstone was particularly interested in the question of the nursing of the insane and devoted much of his energies to the training of his nursing staff. His partly instrumental in securing the passage of the Act under which service in the Scottish District Asylums became a prisonable. He contributed several papers to the *Journal of Mental Science* and drew up a scheme of practical training for those engaged in mental nursing which was found useful in other institutions. He also took an active part in the doings of the local Division of the British Medical Association representing his Division on the Edinburgh Branch Council was a strenuous advocate of the interests of the profession at the time of the passing of the National Health Insurance Act and was elected by the county council as a medical member of the Roxburgh County Insurance Committee.

Being crippled by rheumatic troubles to render his resignation in March 1917 after a period of treatment at Bournemouth and Droitwich he took up work again in July of the same year as junior assistant physician at Craig House Mental Hospital under Dr. G. M. Robertson and remained there until some months after the armistice. The last few years he spent mostly at Droitwich.

His private interests were chiefly literary and artistic. He is survived by his wife, a daughter or Deputy Surgeon-General Andrew Fleming Bengal Army and a son and daughter the former a member of the Kenya Colonial Medical Service and at present medical officer of health at Nairobi the capital town.

Dr. FRANCIS WILLIAM UNDERHILL, who died at Maidenhead on October 31st aged 83 years, was a student of St. George's Hospital, and obtained the diploma of M.R.C.S. Eng. in 1865 and L.S.A. in 1866. He took the Fellowship of the Royal College of Surgeons, Edinburgh,

in 1884. At St George's he was senior prizeman in anatomy, medicine, surgery, and midwifery, and won other distinctions. He had held the post of demonstrator of anatomy at St George's Hospital School of Medicine, and was for some time prosecutor in the museum of the Royal College of Surgeons. He served for many years as honorary secretary of the St George's Hospital Medical Society. On leaving London he went to practise in Birmingham, and became honorary consulting surgeon to the Mosely Hall Convalescent Home for Children. Dr Underhill retired from active work about twenty years ago, and settled in Maidenhead, where he kept a private home for feeble-minded adults. His quaintly attired figure and old-world courtly manner made him a well known figure in Maidenhead. He took an active interest in the social life of the town, and was for some years connected with the working boys' club as secretary and treasurer. He was a member of the Windsor Division of the Oxford and Reading Branch of the British Medical Association, and a regular attendee at its meetings. On the formation of the new Windsor Division Dr Underhill entered into its activities with enthusiasm, and although over eighty years of age drove long distances to attend committee meetings. His long experience of administration and his encouragement did much to help the newly appointed officers. During his years of active practice in the Midlands he had served for some time as treasurer of the Birmingham Branch. He was a respected senior sidesman in St Luke's Church, Maidenhead, and had been one of the managers of the Church of England schools. His wife died a few months ago, and he is survived by a son and daughter.

Widespread regret has been expressed at the news of the sudden death of Dr JAMES MELVIN, late of Rochdale, on November 3rd, at the age of 66. Dr Melvin received his medical education at Aberdeen, where he graduated M.B., Ch.B. in 1887. After holding an assistantship at Ramsbottom, near Bury, he began practice in 1890 in Rochdale. On his retirement in 1920 the practice was taken over by his nephew, Dr James Melvin, jun. Dr Melvin devoted himself wholeheartedly to work on behalf of the British Medical Association, and was honorary secretary of the Rochdale Division for twenty years, until his death. He was deputy representative for the Division from 1919 to 1924, and a representative from 1925 to 1927. He was also a member of the Lancashire and Cheshire Branch Council from 1925 to 1927, and vice-president of the Branch in 1925. Dr Melvin was a representative of the Rochdale Medical and Panel Committee, and attended the annual panel conference in London shortly before his death. He took a keen interest in the St John Ambulance Brigade, and was one of the leading members of the Trinity Presbyterian Church in Rochdale, and treasurer of the Rochdale Town Mission. He leaves a widow, with whom deep sympathy is felt.

The following well known foreign medical men have recently died: Dr HERRGOTT, formerly professor of obstetrics and gynaecology at the Nancy Faculty of Medicine; Dr FRANZ PENZOLDT, formerly professor of internal medicine at Erlangen, aged 78; and Professor E. ZIMMOW, formerly head of the department of microphotography at the Robert Koch Institute, Berlin, aged 85.

## Universities and Colleges.

### UNIVERSITY OF OXFORD

At a congregation held on November 26th the degree of Doctor of Medicine (M.D.) was conferred on B. C. Scholefield.

### George Herbert Hunt Travelling Fellowship

An examination for a three months fellowship of the annual value of £300, and tenable for two years, will be held during Hilary term 1928 commencing on February 11th at 10 a.m. Candidates who must not have exceeded five years from the time of passing the last examination required for the degree of Bachelor of Medicine, should send their names and qualifications, etc., to the University Museum, on or before February 13th.

### George Herbert Hunt Travelling Scholarship, 1928

This scholarship is awarded without examination every second year to a graduate in medicine of the university (of either sex) who has not exceeded five years from the date of passing the final examination for the degree of Bachelor of Medicine. The next election will be made in April, 1928. Candidates must send their applications to the Dean of the School of Medicine, University Museum, Oxford, from whom full particulars can be obtained, on or before February 14th, 1928.

### UNIVERSITY OF EDINBURGH

THE chair of forensic medicine, vacant by the death of Professor Harvey Littlejohn, has been filled by the appointment of Dr Sydney A. Smith, at present principal medico-legal expert to the Egyptian Government Service and professor of forensic medicine in the Cairo School of Medicine. Dr Sydney Smith is a former Vans Dunlop scholar and Gunning prizeman in the University of Edinburgh, he graduated M.B., Ch.B. with first class honours in 1912, and proceeded M.D., winning the gold medal in 1914. He is the author of a textbook on forensic medicine and in January, 1926, contributed an article to the BRITISH MEDICAL JOURNAL entitled "The identification of firearms and projectiles as illustrated by the case of the murder of Sir Lee Black Pasha." According to a Reuters telegram he will leave Egypt to take up his new duties at the end of March.

### SOCIETY OF APOTHECARIES OF LONDON

THE following candidates have passed in the subjects indicated

SURGERY—D. E. Bowon W. B. Hallums H. T. Ince M. H. Rishwan H. T. Rylands M. L. Tschouschner T. de L. Walker R. W. Wood  
MEDICINE—A. F. J. D. Arey P. F. Fanaken T. M. Joseph I. O. B. Shirley M. E. Tschouschner  
FORENSIC MEDICINE—A. F. J. D. Arey P. F. Fanaken L. W. Sanders M. L. Tschouschner J. L. M. Wood  
MIDWIFERY—J. S. Bury G. N. Fox A. Hamid T. M. Joseph A. K. Rama Chandra M. F. Tschouschner

The diploma of the Society has been granted to Messrs A. I. J. D. Arey, P. F. Fanaken, T. M. Joseph, M. L. Tschouschner, and T. de L. Walker.

## The Services.

### ROYAL AIR FORCE MEDICAL SERVICE

THE annual dinner of the Royal Air Force Medical Service was held at the Connaught Rooms, London, on November 25th, with the Director, Air Vice Marshal David MUNRO, C.B., C.I.E., in the chair. In proposing the health of "The Guests"—for whom Lieut. General Sir MATTHEW LILL, Director General, Army Medical Service, responded—Air Vice Marshal MUNRO made a few prefatory remarks about the present position of the service of which he is the head.

The chief difficulty of the moment, he said, was shortage of personnel, but the causes of this were general to all the medical services and not peculiar to the Royal Air Force. Indeed, so far as the R.A.F.M.S. was concerned, he saw distinct signs of improvement in recruiting. Apart from that, two things had happened which would make any shortage less acutely felt. The first was a change in the proportion of officers serving overseas to those at home due to reduction in Iraq and expansion at home. The second was an increase in the authorized proportion of permanent officers. Both the factors would operate in diminishing the number of moves increasing time spent at home, and giving more opportunities for study leave. In regard to study leave one of the ways in which the R.A.F.M.S. had felt the shortage and frequent changes of personnel had been the difficulty of selecting for training the young permanent officer to replace later on the one engaged in various branches of professional work requiring expert knowledge and experience. Good surgeons, pathologists and physicians were essential in the hospitals and experts were needed in various special branches of medicine. All this in the medical and physiological problems peculiar to aviation. The service already possessed such experts but to maintain the flow of them men must be chosen at an early stage of their career. At the top end of the flow so to speak the war potentials of the higher ranks reserved for promotion for purely professional purposes were opposed to administrative attainments. As for the medical officer stationed on aerodromes often well handled and furnished, the majority of the service although they got practical experience, what might be called the normal practitioner and medical officer of health standards, though he concerned in the day-to-day work among the wives and families of the station and in fact in medicine, their service duties were apt to be monotonous. An endearment as being made to give a more professional opportunity by removing them from the aerodrome but the lighter tasks in such quarters and encouraging them to use these more as cottage hospitals to the aerodrome.

of the year with regard to the medical profession and to the various ways they were trying to help the medical profession.

In the Director's report on the other hand of the last year, it was the opinion of the committee that at Halton which would undoubtedly be the chief centre of the R.A.M.C. The other was the starting at Halton of the medical training department for medical officers and medical staff.

#### THE R.A.M.C. ASSOCIATION

The Royal Army Medical Corps Association was formed in 1925 with the following objects in view: (1) To foster esprit de corps (2) To develop and maintain friendly relations between present and past members (3) To assist in obtaining employment for its members (4) To assist or bring to the notice of the R.A.M.C. Fund Committee or other organization any case of members widows or orphan children or members who may be in necessitous circumstances and deserving of assistance (5) To organize periodical reunions and social functions for the mutual benefit of members in the various districts where branches of the Association are established.

The president is the Director General M.S. and the honorary treasurer is Colonel H. Kraggs C.B. C.M.G. The Association is a whole unit controlled by a central committee with offices at Claverton Street S.W.1 and each branch is managed by a local committee. All ranks of the R.A.M.C. and of the Army Dental Corps including officers, are eligible for membership. An important part of the Association's work consists in helping its members to obtain civil employment and medical practitioners and hospital secretaries requiring men trained in all branches of hospital work—dispenser, clerk, laboratory assistant, porters, caretaker, etc.—are invited to apply to the secretary at the head office.

### Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE *Home or Commerce* Bill is making slow progress with the Unemployment Insurance Bill. There is scarcely any hope of sufficient agreement between friends of county council and those of lesser local bodies to justify the Government's attempt to pass the Nursing Homes Bill this year but the opposition to the Mental Deficiency Bill is so numerous and that measure has a better chance of becoming law.

At a meeting of the Parliamentary Medical Committee on November 24th Dr. Graham Little resigned the office of secretary to the committee and Dr. Vernon Davies accepted an invitation to carry on the duties provisionally till the end of the session. The committee discussed the position of the Mental Deficiency Bill and of the Nursing Homes Bill.

#### Smallpox

The number of cases of smallpox notified in England and Wales during recent months was considerably smaller than the number notified in the early months of this year. When the report of the Committee on Vaccination appointed last year was likely to be issued could not yet be stated. The case of a child slaughtered after the production of lymph and a child as healthy as the child of the person who supplied the calf. Those would for good and subject to further examination by officers of local sanitary authorities.

Sir Kingsley Wood has said in reply to a question that the Minister of Health had considered the suggestion that he should discontinue the practice of printing a form of declaration objecting to vaccination on the vaccination form handed to the parent when the birth of a child is registered and should revert to the former practice of simply printing a notification on the vaccination form that if the parent had a conscientious objection to vaccination he could obtain a form of declaration to that effect from the vaccination officer. The Minister of Health however had come to the conclusion that it was not advisable to make any further changes in law or practice until he had had an opportunity of considering the report of the committee presided over by Sir Humphry Rolleston which it was expected would shortly be issued.

Mr. Chamberlain informed Captain MacVean on November 23rd that he had no official information on the cost of the recent outbreak of smallpox in the Easing or Union of the County of Durham. The returns made to his department showed that no person under 15 years of age who had been vaccinated prior to infection contracted smallpox.

*Nursing Homes and Mental Deficiency Bills*—On November 25th Mr. Baldwin replying to Mr. Vernon Davies who asked if he would grant facilities for the end of the session for the Nursing Homes (Regulation) Bill said that he could make no promise in regard to time being given for private bill. The final decision in regard to course depended on the state of business. In a previous reply to Sir Herbert Cuyser Mr. Baldwin said the Government might be able to find time for the Mental Deficiency Bill subject to the state of business.

#### Notes in Brief

One firm in his country has commenced blending tetraethyl lead with petrol for a commercial sale. The Factory Department of the Home Office is satisfied that adequate precautions are being taken for protecting workers concerned in the process.

The total cost of administration of National Health Insurance including the cost of central administration was £2,660,000 or 13½ per cent. of the total expenditure.

Grants collected in England and Wales during the year ended March last amounted to £259,000,000.

Since April 1924 the Exchequer has paid £103,000 towards slum clearances.

On November 5th last 238 per 1,000 of the estimated population of England and Wales were receiving Poor Law relief. This does not include lunatics, criminals and persons in receipt of domiciliary medical relief only.

Forty-two authorities in England and Wales maintain open air schools for delinquent children.

### ROYAL MEDICAL BENEVOLENT FUND

It has been the practice of the Royal Medical Benevolent Fund for many years to present to the annuitants and some of the most necessitous grantees a Christmas gift of 25s. The treasurer now makes an appeal for £370 to keep up this practice. The committee has not in hand any special fund to draw upon to meet this Christmas gift to which the recipients in former years are no doubt looking forward. It is a gracious and kindly act, and we have no doubt that many readers will wish to make the continuance possible. Subscriptions may be sent to the honorary treasurer, Sir Charters Symonds, at the offices of the Fund, 11, Chandos Street, Cavendish Square, London W.1.

At the last meeting of the committee forty-nine cases were considered and £576 voted to forty applicants. The following are notes on some of the cases relieved.

Widow aged 55 of M.R.C.S. who died suddenly this year. Left with two sons and one daughter all of whom are raising. Applicant hopes to have about £100 a year when her husband's estate is settled. Her private income is £40 and she has a residence near £1.30 a year as for help to meet the ordinary expenses up to Christmas.

Widow aged 55 of M.B. who was recently removed to a mental hospital as a free patient. She has two girls and a boy the eldest girl is a boarding school and the youngest is with applicant. They are now living on the amount received from the sale of the practice and the money is nearly exhausted. The Fund was asked to help with the boy's school fees and the applicant hopes to meet her other expenses by receiving interest on redemptors. Voted £10.

Widow aged 55 of M.D. who died in 1913. She has maintained herself by teaching but owing to age and ill health finds it difficult to continue. Her expenses are about £12 a week and her income from the Freeman's £10 per annum and from a mercenary guild £3 per week and £9 in 1927 is monthly his ailments.

Daughter aged 50 of M.D. who died in 1900 was brought up by a stepmother and is leaving school has maintained herself. Now able to get a temporary position. Voted £10 and asked to let the Fund in which it is getting on.

Daughter aged 55 of L.R.C.P. who died in 1878. She is without private means and supported herself since 1907. A relative will be very likely a week or two but she has been living on her savings which are rapidly becoming exhausted. Some friends have given her help temporarily. Voted £5 in four quarters to alleviate.

Widow aged 82 of L.R.C.P. and S.I. who died in 1911. She has maintained herself and daughter since the death of her husband by owing to indigent health is unable to do heavy work and is now only earning 10s a week. The Royal Medical Benevolent Fund has asked her £10.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing especially for coats and skirts for ladies and girls holding secretarial positions and suits for working boys. The Guild appeals for second hand clothes and household articles. The gifts should be sent to the Secretary of the Guild 23 Great Marlborough Street W.1.

### Medical News.

SIR HUMPHRY POLLOCK, Bt. regius professor of physics in the University of Cambridge, will open the Bernard Pion Institute of Pathology at the London Hospital on Tuesday next December 6th at 3 o'clock.

A DISCUSSION on alcohol and alcoholism in relation to problems of nutrition and health will be opened by Professor Hugh Macleod, director of the Medical Clinic St. Thomas's Hospital at a meeting of the Society for the Study of Inebriety at 4 p.m. on January 10th.

A SERIES of six debates in aid of King Edward's Hospital Fund for London will be held at the Central Hall Westminster (small hall). The subject of the first on Wednesday, December 7th at 8 p.m. is 'Why are Shakespeare?' and the speakers are Miss Rebecca West and Mr. Ben Greet. Subsequent debates will take place on January 6th and 20th, February 27th, March 26th and April 12th.

DR. TRAVERS SMITH will lecture for the Fellowship of Medicine on practical hints in medicine at 11 Chandos Street on December 5th at 5 o'clock. This lecture is free to medical practitioners. From December 5th to 17th there will be a

special afternoon course at the Infants Hospital, primarily for medical officers of welfare centres and others interested, visits will be paid to some centres outside the Infants Hospital. Lecture demonstrations are being given daily at the West End Hospital for Nervous Diseases, and will continue until December 17th. Beginning on December 5th and continuing for two weeks, a course will be held at the Blackfriars Skin Hospital, two special clinical demonstrations will be given on December 6th and 13th. The following courses will be held in January: medicine, surgery, and the specialties at the Prince of Wales's General Hospital, diseases of children at the Children's Clinic, cardiology at the National Hospital for Diseases of the Heart (limited to 20), and psychological medicine at the Bethlem Royal Hospital. Further information may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W 1.

At the meeting of the Royal Anthropological Institute on December 20th, at 8.30 p.m., Dr A. A. Munnford will give a lantern lecture on body measurements, respiratory tests, and school progress.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held at the Trocadero on November 26th. Among the guests were Sir John Rose Bradford, P.R.C.P., the Hon. Sir William Goschen (chairman of the hospital), Mr L. G. Block, C.B. (Ministry of Health), and Professor Gilmore (president, British Dental Association). The chairman, Mr J. S. Amore of Hastings, recalled that he had spoken at the annual dinner as far back as 1880, when he responded for the students. What struck him most, looking back over nearly half a century of practice, was the different way in which diseases of the teeth were now regarded as compared with former times, and the manner in which the dental hospitals and schools had risen to the occasion. The dean, Mr H. Stobie, said that at the moment there were 104 students as compared with 135 last year, but the drop was only to be expected, it was consequent upon the abnormal increase of students following the war. On the other hand, the entries for the new term were 23, compared with 14 last year. Negotiations were in progress for amalgamation for teaching purposes with Charing Cross Hospital, to have access to a great general hospital would be obviously an advantage to the students. Sir John Rose Bradford, comparing dentistry with general medicine, said that dental practitioners had one inestimable advantage. Although, like medical men, they had to deal with problems set them by nature, they had a conveniently limited field in which to work. Like medicine, again, dental science was a branch of biology, it afforded opportunities for work in comparative anatomy, physiology, nutrition, and pathology. In another respect dental practitioners had the advantage, for the only part of the human body which received legal protection from unqualified practice was the teeth.

ON November 18th, at the Lyceum Club, London, Dr Bertha Mules gave a lunch party to forty medical women and a few non medical friends, all interested in psychological medicine. In the afternoon a discussion on occupation in the treatment of patients was opened by Dr Elizabeth Casson, chairman of the Committee in Psychological Medicine of the Medical Women's Federation. She described the occupation therapy of America, and spoke of the relationship of the crafts to the ordinary domestic duties of a mental hospital. Dr Jane Walker spoke of lace making, gardening, leatherwork, and many other occupations from the practical point of view. Many interesting and divergent lines were taken by the speakers who followed. After tea Dr Shearer, Parishurst, opened a discussion on the treatment of the uncivilized patient. She was of the opinion that the care of the minds of children, particularly schoolchildren, by doctors with specialized knowledge was as important as the cure of their teeth and tonsils. Again many speakers contributed points from widely differing types of experience.

DR JAMES G. MACASKIE, on his retirement from practice in Birmingham after forty eight years, has been presented by his patients and friends with a combined attache and writing case, together with a cheque and a list of subscribers on vellum, and Mrs. Macaskie with a fitted handbag.

THE seventh conference of the National Medical Association of China will be held in the Peking Union Medical College from January 27th to February 2nd. Further information may be obtained from the secretary, Dr C. E. Lim, at the Peking Union Medical College.

THE Alvarenga Prize for 1927 has been awarded by the College of Physicians of Philadelphia to Dr Emil Bogen of Cincinnati, Ohio for his essay entitled "Drunkennes." The next award of the prize, a monetary sum of \$500, will be made on July 14th, 1928. Essays intended for competition may be upon any subject in medicine and should represent in addition to the knowledge and understanding of the subject

based upon original or library research. Essays must be received by the secretary of the College of Physicians of Philadelphia, 19, South 22nd Street, Philadelphia, Pa., U.S.A., on or before May 1st, 1928.

THE Langley Memorial Prize, which was founded by a friend of the late Dr W. H. Langley, C.M.G., principal medical officer of Southern Nigeria, has been awarded to Dr A. S. Bungess of Accra, Gold Coast, West Africa, for his paper, "The selection of a strain of *Bacillus pastis* for the preparation of vaccine, with special reference to the effect of animal passage on virulence."

DR ALICE BLOOMFIELD has been granted an extension of the William Gibson Research Scholarship of the Royal Society of Medicine for a third year. The next award of the scholarship will therefore be made in June, 1929.

THE awards in connection with the Buckston Browne Prize of the Harveian Society of London for the best essay on "The pathology, diagnosis, and treatment of new growths originating in the walls of the urinary bladder" are as follows: Mr Lionel R. Field, F.R.C.S., £100 and medal, proximo. Accessit Mr M. F. Nicholls, F.R.C.S. £10. The president, Dr E. Le Fevre Payne, assisted by Sir John Thomson Walker and Mr Gilling Ball, acted as assessors. An epitome of the prize essay will be read by Mr L. Field at the meeting of the society on Thursday, December 8th, at 8.30 p.m., at the Town Hall, Paddington. The presentation of the medal and cheques will take place at the annual general meeting, to be held on January 12th at 11, Chandos Street, W 1, at 8.30 p.m.

THE Queen Alexandra Sanatorium Fund, which provides grants to enable tuberculous patients with limited means to receive sanatorium treatment at Davos, has expended approximately £1,475 during the year 1926-27, and the maximum number of grants was made. The new scheme, whereby patients reside in approved houses of their own choice and receive a block grant of 50 francs each week, continued to work satisfactorily during the second winter since its adoption. No grants were made for the summer of 1926 or for later than May, 1927. The honorary secretary of the fund is Mr D. Vesey, 97, Warwick Road, S.W. 5.

PLANS have been approved for the new casualty department of the Royal Sussex County Hospital, Brighton, for which Mr Reinhard Baron has presented a donation of £10,000. The accommodation will include a surgery, a minor operating theatre, a sterilizing room, and waiting rooms.

THE medical congress at Cairo known as the Journées Médicales d'Egypte has been postponed until December 15th, 1928, in view of the fact that the Egyptian Government proposes to commemorate then the foundation of the School of Medicine in Cairo.

THE fourth International Congress of Military Medicine and Pharmaceutics, which was held at Warsaw in 1927, decided that an international bulletin of those subjects should be published monthly in the *Archives Médicales Belges*, commencing next January.

MR JOHN D. ROCKFELLER has offered to the Memorial Hospital of New York five annual donations of 60,000 dollars for the investigation of cancer.

THE International Labour Office has published thirteen more leaflets (Nos. 69-81) dealing with nitrous fumes, hot and humid atmospheres, liquid air, air testing in workrooms, occupational diseases of agricultural labourers, nitrocellulose, slaughter houses, celluloid, the jewellery industry, the manufacture of buttons, poisoning by arsenic, pitch and electric lamps. They may be obtained from the London Correspondent of the International Labour Office, 12, Victoria Street S.W. 1.

THE Food Education Society, 24, Finsbury Street, Westminster, has published in pamphlet form the paper on "The reform of institutional housekeeping: a new career for women," read by the honorary secretary of its Joint Hospital Matrons and Schools Committee at the Hospitals and Institutions Conference in May. Copies post free, 7d. on application.

A FUND for cancer research has been presented to the Yorkshire Council of the British Empire Cancer Campaign by Messrs. Hird and Norman Sutcliffe. The value of the gift is estimated at £3,000, and it is hoped that important results in research will follow the experiments rendered possible in the case of larger animals, such as pigs.

THE Ministry of Health has issued a revised list of approved sanatoriums and other residential institutions for the treatment of tuberculosis in England and Wales. It is published by H. M. Stationery Office, price 2d. net.

PROFESSOR H. LEO has been nominated professor of pharmacology at Bonn and Dr Gösta Forssell professor of medical roentgenology at Stockholm.

PROFESSOR MARCEL LABBE has succeeded the late Professor Gilbert as president of the International Association of Physiotherapy.



An association was formed in Hungary in 1833 by the professors of the medical faculty to promote post graduate study by general practitioners. The instruction was free and during the first fifteen years 1,000 doctors took part in 14 courses. In 1910 the Minister for Public Education appointed a committee of management and from 1911 to 1926 it organized 141 courses for 3,360 practitioners, and published under the title of *Orvosok* a periodical containing post graduate articles up to the present time of fifteen volumes have been published. The courses, which are still free include in annual one lasting a fortnight and dealing with internal medicine, surgery, and other departments courses each of a month in various clinics special courses lasting one week, for tuberculosis, venereal diseases, infant diseases, injuries, and social hygiene and weekly demonstrations. The president is Professor L. de Grósz and the secretary is Professor B. Jahn. The address of the Hungarian Medical Post graduate Committee is Maria utca 39, Budapest VIII.

We have received the second issue of *Archivos de Hygiene*, the official publication of the Brazilian Department of Public Health. It contains seven original articles with summaries in French and English on tuberculosis, yellow fever, alimentary hygiene, leprosy, the hospital problem in Rio de Janeiro, and mortality statistics of cancer in Rio de Janeiro abstracts from current literature and public health intelligence.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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## QUERIES AND ANSWERS

### WHOLEMEAL BREAD

**DR W. H. MARSHALL** (East Grinstead) writes: With reference to the present attention for wholemeal bread can anyone tell the area in the street how to recognize the genuine article? A label of wholemeal in the loaf or on the packing paper appears to afford no guarantee as to the amount of Vitamin B in the flour before or after baking.

### COLD HANDS

**DR JAMES HOLMES** (Bury) writes: I W. G. (BRITISH MEDICAL JOURNAL November 12th p. 900) will first put on a pair of loosely fitting, kid or other leather gloves and draw on over them a pair of ordinary woollen gloves he will find and a remedy for his trouble. I have followed this plan in cold weather for over forty years and find it much more satisfactory than heated gloves. With a little care he can draw both gloves either on or off as though they were one.

### PAIN IN DISSIMINATED SCLEROSIS

**DR G. A. FLEMING** (Nottingham) writes: I have described by G. P. (October 22nd p. 75) is due as seem possible to muscular cramp. I would suggest the trial of small doses of copper sulphate three times a day for a few days. This often gives prolonged immunity from cramp. Copper sulphate 5 grains dilute sulphuric acid 5 minims and chloroform water to 6 ounces given in tea (possibly do as satisfactory but lately I have used 1/10 grain in each made by Mr. Southall's of Birmingham). The remedy was mentioned in this JOURNAL over thirty years ago and since then I have frequently used it as a rule with satisfactory results.

### ANGIO-NEUROTIC OLDEMA

**DR G. E. M. SCOTT** (Larne, Victoria, Australia) writes in answer to *ANX* (JOURNAL August 20th p. 331) I recently had a case of angio-neurotic oedema under my care and found that 10-grain doses of calcium chloride given three daily produced the best result. This patient in addition to swelling on the limbs suffered enlargement of the soft palate and uvula. He found that a glass of saline (iced water) was the best he had also used glycerine of tumeric and a pint. So far the swelling has not returned but he down the throat. The patient was tested for sensitivity to various food proteins but without result.

## LETTERS, NOTES, ETC.

### ETIOLOGY OF THE COMMON COLD

**DR V. S. CHERRY**, medical director in a large pharmaceutical firm in Washington has informed the American Public Health Association that investigations have led him to conclude that the organisms usually considered as the causative factors in the common cold are only secondary invaders which appear in the later stages. He thinks the primary cause is a factor in the metabolism of too much protein food of excess and pre-existing infectious elsewhere in the body. He believes that colds can be prevented or delayed by retaining an alkaline balance in the body by means of diet and carefully regulated doses of sodium bicarbonate or alkali waters together with small quantities of calcium iodide and iodine. He mentions climatic variations only in so far as they inhibit normal activities, thus too much is eaten and too little exercise is taken in cold weather. He finds that colds occur in his particular industry most often on Mondays and the days following holidays and banquets. He calls this about 25 per cent of all enteric in the factor is due to colds or the other effects. More confirmatory evidence will be required, however, before we can dismiss the prevalent view that colds are primarily the result of exogenous infection rather than of defective metabolism.

### A DISCLAIMER AND AN UNDERTAKING

**DR C. LYON WILKINSON** (S. I. County) writes: Referring to paragraphs which appeared in the lay press a little time ago I wish to say that I regret the appearance of such paragraphs in the lay press to the effect that I had acted as an anaesthetist for an unqualified person. I recognize that it is a public interest and contrary to the ethics of the profession for a registered medical practitioner to act in such a manner. I have not now any connexion of the kind with any unqualified practitioner and I will not in the future in any circumstances act in a similar capacity to any unqualified person or persons.

### CATARACT AND ULTRA VIOLET LIGHT

**DR PERCY HALL** (London W.) writes: The communication upon this subject by Mr. Bishop Harman which appears on page 905 of the JOURNAL of November 19th is in my opinion mistaken, and incorrect, and I feel I should not be permitted to pass unchallenged. Mr. Bishop Harman makes in his remarks several cardinal errors. To begin with the fact: Ultra violet light is injurious to the eye. The naked eye if it is focused on the macula will cause a scotoma or blind spot which may leave permanent damage. The naked eye means nothing, naked qualified. I think that Mr. Harman means that arc light which contains a small proportion of ultra violet light and a very large proportion of intensely luminous rays. I suggest to him that it is these luminous rays which cause the ill effects to which he refers. This confusion which exists so commonly in the mind of medical men when referring to ultra violet light provokes an immense amount of misunderstanding and leads them to form hasty opinions often far from correct.

In practice ultra violet light is rarely if ever used alone but in combination with luminous light. Luminous heat and infra-red rays the proportionous difference, profoundly according to the source. The effects upon a patient of exposure to a given source depend upon the spectrum of emission afforded by the source and by the proportionate amounts of various wave lengths in that emission as well as the total intensity of the source in its different constituents and all upon other factors such as age, skin distance, exposure time and idiosyncrasy of patient. In drug therapy the mode of administration whether oral intravenous or by other means profoundly affects the action of the medicine. The effects upon the action of the action of the drug are given alone in a case of pneumonia or in combination with other remedies. The action of the various alkaloids of opium given separately is vastly different from that of opium itself and has physiological effects of opium differ enormously according to whether the dose is minute or large. Similarly veratrine as a poison and in correct dose would produce fatal results. It is commonly admitted in therapeutic doses with good results. I can safely say that the remedy applied with the greatest significance when it is given in the form of light is the heretofore mentioned.

Exposure of patients to sunlight is no comparable to the exposure of patients to any of the commonest sources of artificial produced ultra violet light. There is no possibility to compare the alpine sunlight with the artificial light. In the case there is a relative absence of heat rays which in the other there

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Abdomen, the pain eventually was more pronounced on the left side and was only relieved by morphine. When the acute symptoms passed off his condition was almost that of collapse, and there was frequent micturition with pain at the neck of the bladder after the act of micturition. He was treated in the left lateral position. This examination followed by a later cystoscopic examination. This examination was performed without general anaesthesia, and for about thirty-six hours the injection of beta eucaine, and for about thirty-six hours subsequently the act of micturition was accompanied by severe pain and passing of blood. All bladder symptoms disappeared within about forty-eight hours, and there was freedom from pain and discomfort for nine days when severe pain in the lower abdomen began again. Great irritability of the bladder followed, with constant desire to micturate, only small quantities of urine were passed, and each act was followed by severe pain lasting only a short time, round the neck of the bladder. This condition continued for two days, when a stone was passed through the urethra. Pain and irritability of the bladder gradually passed off, and there have been no symptoms since.

A SOUTH AFRICAN WINTER TYPHOID

Capetown, which is a small town of about 10,000 inhabitants.

HERMANUS is a small town of 1,000 inhabitants, eighty miles from Cape Town, which is now being developed as a seaside resort. Together with two little villages, Poole's Bay and Mossel River it forms the coast of Hermanus. The attractions of this coast consist in the beauty of the scenery, an extensive beach for sunbathing, twelve square miles of water for boating at the Helder River Lake and above all the fishing, which has earned for Hermanus the name of "The Paradise of the Rook Angler." A pamphlet issued by the South African Publicity (Proprietors), Limited gives pictures of anglers standing beside the 100 lb Kabeljauws they have caught, or the 583 lb of fish landed in one afternoon. There are also descriptions of the monuments of the Marine and Riviera Hotels. Dr Looze who has spent his pamphlet, regards Hermanus as an excellent refuge from the English winter its climate is equable and colds and bronchitis or almost unknown. Amongst the other attractions the pamphlet states that at the Old Yeu's Looze fancy dress ball some of South Africa's most austere citizens can be seen in most wend costumes."

DR E BURKE (Darling Assam) writes In reply to "Major R A M C" (October 1st, p 619) I have used iodine intravenously in many diseases with good results employing the following formula suggested in the *Indian Medical Gazette*, April, 1926 p 206 Iodine (pure) 24 grains potassium iodide 36 grains distilled water 1 oz Dose 1 to 2 cc diluted with 8 cc of distilled water 1 inch cubic continuous of the above solution contains 1 gram of iodine. Injections should be given once or twice weekly. Once a week is usually sufficient. In cases showing marked idiosyncrasy to iodine (which very seldom occurs) the dose is halved. I have had striking results in the treatment of pneumonia, erysipelas, cellulitis, rheumatism, septicaemia, and skin diseases, and also in bad cases of tropical chagadanic ulcers. Iodine given intravenously is said to produce marked leucocytosis, and to act also as a blood disinfectant.

Dr. HILWOOD SMITH (Clchester) writes: It seems a pity that many of our professional brethren fail to express adequately the meaning they intend to convey. There is a glaring instance on page 935 in your issue of November 19th where I find "Laparotomy was performed on July 25th by Mr C E Isaac who, on opening the abdomen" etc. This is a manifest contradiction in terms. Laparotomy, a word imported from America means an incision in the flank. It should be laparotomy, as a flank is  $\alpha\pi\alpha$  not  $\lambda\alpha\pi\alpha\sigma\iota$ . The proper word as used by Pland Sutton and others, should be coeliotomy from  $\kappa\omicron\lambda\iota\alpha$  the belly.

**VACANCIES**  
 Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments in hospitals will be found at pages 74 75 76 77 80 and 81 of our advertisement column, and also is mentioned in our advertisement column, and also is mentioned in our advertisement column.  
 A short summary of vacant posts notified in the advertisement column appears in the Supplement at page 219

"G F" a medical practitioner who has recently suffered from renal calculus sent in account of the course of his case until its termination by pyelotomy of the stone through the urethra. I only symptoms suggested stricture and later appendicitis the stricture symptoms were relieved after operation only some discomfort and tenderness in the lower abdomen which pyelotomy relieved by lithotomy in the lower abdomen which pyelotomy relieved. After a month he had repeated attacks of pain in the lower

## DISCUSSION ON CHRONIC APPENDICITIS

### I—SYMPTOMATOLOGY AND DIAGNOSIS \*

BY

WILFRED TROTTER, M.S. LOND. F.R.C.S.,  
Surgeon, University College Hospital

#### THE HISTORICAL POSITION OF APPENDICITIS

IN this year and in this place it is hardly possible to begin the general consideration of any surgical subject without thinking first of its relation to that universal point of reference the Listerian revolution in surgery. Of all the branches of surgery then practised perhaps that of the abdomen responded less quickly than any to the stimulus of the anti-septic method. Of the new procedures that now became possible and that were so boldly put in practice by Lister few concerned abdominal surgery, and we even find him himself actually discouraging Keith from the application of the anti-septic system to ovariotomy. The last quarter of the nineteenth century was by far the most fruitful period that the art of surgery has ever experienced and it was a period throughout of expansion that was as rapid as it was continuous and oh! During that time surgery had become, to an extent it had never before promised to do, an applied science, the successful practice of which was no longer wholly dependent on the exceptional special aptitude of its practitioners. Nevertheless it is only towards the end of this remarkable period that we find abdominal surgery beginning to take on something of its present form and to show the growth that it has made. The largest branch of the art—abdominal surgery—appeared thus in the aftermath rather than in the primary harvest of Lister's work. In many branches of surgery the saving of wounds from external infection was the only step necessary to allow of immediate and rapid progress in abdominal surgery; this step while equally indispensable was rather in the nature of a beginning than of actual achievement. It brought the surgeon not to a summit but to the foot of the final climb and brought him there strong, well equipped, and confident. As soon as the danger of external infection had been disposed of it was possible for there to begin the accumulation of special physiological and pathological knowledge which is the very substance of abdominal surgery.

It might have been expected that such knowledge would be found through an extension of the small incisions of the abdominal field that had already been made in pre-Listerian days, and that had produced the three classical operations of colotomy, herniotomy, and ovariotomy. These were always risky, and to be used only in times of extreme need; their successes were as little open to rational explanation as their failures, but they did represent a definite though a small and precarious conquest from the chaos of abdominal disease. Yet it was not at all chiefly through the exploitation of them that the great modern province of abdominal surgery has been made. They have been incorporated in it, and have had a great and historic importance, but neither of them proved to be of critical value in surgical evolution.

It was in the middle eighties of the last century that Lister's work began to yield that second and secondary harvest which was in some ways even more valuable than its first. Those years for example saw the beginning of surgical neurology, and they saw what is especially relevant to our purpose here, the emergence of the conception of appendicitis from the study of the mysterious and deadly infections of the right iliac region. Here at last was an idea which could fertilize where Lister had sowed, here was a disease ideally suited for the construction of an abdominal pathology. It illustrated every aspect of an infection of internal origin, it illuminated the mysterious natural immunity of the peritoneum and disclosed its limitations; and it showed in its simplest form the essentials of an intraperitoneal operation on the in time. Its historical position thus gives to the surgery of appendicitis

a peculiar significance and prestige, which it retains in spite of having in the due course of nature ceased in many of its aspects to occupy a leading place in controversy and progress.

#### EVOLUTION OF THE CONCEPTION OF APPENDICITIS

In the early years, appendicitis was known almost exclusively as an acute disease capable of producing the most serious abdominal emergencies, and demanding from the surgeon early and exact diagnosis and prompt and resolute treatment. In the evolution of knowledge in abdominal diseases it gradually became evident, however, that appendicitis has another aspect—that in addition to its power of causing acute and sometimes highly formidable attacks, it is capable of producing slow disabling illnesses, with perhaps even greater frequency. These more chronic manifestations are our exclusive concern here, and I shall try to set out a general statement of what seems to me to be their surgical meaning.

It is interesting to recall the well marked stages in which the surgery of the appendix has been built up. At first appendicitis came into the province of the surgeon in the form of abscesses in the right iliac region, which it was found could be satisfactorily treated by drainage. From these cases there gradually evolved the conception of the acutely inflamed appendix as the primary lesion and the regularization of operations to deal with it. A third phase was the recognition of incomplete spontaneous resolution, of the liability to recurrent attacks and the appearance of the "interval" operation. A fourth phase may be marked off by the conception that the acute attack is no essential part of the disease which may be chronic throughout and with but slight fluctuations in intensity. When it was recognized that the intensity of the local manifestations was not necessarily the sole measure of the significance of the disease it became possible to observe the action of appendicitis in leading to distant symptoms and setting up disease in other organs. We may regard this as a fifth, and so far final phase in the general conception of appendicitis. It is this phase which we have to discuss.

#### The Clinical Method

Research in medicine has gained so much by laboratory experiment and methods of exact measurement that I find it hardly possible to use without apology that most characteristic medical instrument—*inquiry* or a merely clinical kind. This the classical method of medicine has many disadvantages, which are perhaps even too much insisted on at the present day. It is for example, in its very nature inexact and it is sadly dependent on the weaknesses of the human mind. For effective use it demands alert yet patient consideration of large bodies of heterogeneous facts and it demands in the observer a familiarity with the material considered closer than that which would be regarded as adequate in any other branch of natural history.

In dealing with our present problem a return to the old-fashioned clinical method is especially appropriate. It is a subject in which we can confidently assume that every one of us has a very large experience. This body of material is made up to a great extent of elusive symptoms and fine shades of ill health in the estimation or which judgment and intuition are less likely to mislead than methods supposedly more exact and finally all the facts are matters of daily familiarity at the bedside and operating table. In these circumstances we shall do well to look only for broad and general conclusions and to attach to them no undue dogmatic weight.

When we come to close quarters with the problem of chronic appendicitis the first question that presents itself is whether such a disease exists as a primary condition. To answer that question we must consult our experience of the morbid anatomy of the appendix region as found at "interval" operations. The conditions we find seem to me to fall naturally into three groups which are practically distinguishable though not sharply separated from one another.

1. The appendix and its neighbourhood show obvious relics of an acute attack. The residue of the attack may be and usually is, a merely *quiescent*, as I shall here

\* In a preceding paper of a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association at Edinburgh, 1927.

appendix is distended throughout or in part, or when there is encysted pus outside of it, or (b) *obscure*, as shown by obliteration of the appendicular lumen more or less complete, with or without old inflammatory adhesions.

2 The appendix appears to be normal. This is, of course, a state very difficult to define. By it I mean to indicate an appendix not unduly long, not abnormally fixed, of uniform calibre, of normal vascularity, and empty.

3 The appendix and the region of it show no clear residue of an acute attack, but are abnormal in certain definite ways so that a fairly constant picture is seen: (a) The appendix is long, (b) it is abnormally fixed either by its mesentery in its proximal half, or by being tied down to the posterior wall of the cecum so as to leave only the tip free, (c) its calibre is not uniform, but shows a moderate dilatation usually towards the free end, (d) it contains elongated, separate, more or less firm faecal masses and its mucous membrane looks swollen and spongy, (e) the lymphatic glands at the root of the appendix and in the ileo-caecal angle have the subglobular shape and glassy look of a chronic inflammatory enlargement, (f) the cecum is rather large and inert and contains solid faecal material.

This third group of appearances—not always, of course, equally developed in all its features—is one frequently met with, it is commonly associated with symptoms that disappear after the appendix is removed, and as it does not appear to have any very direct relation to acute attacks, it perhaps deserves to be regarded as a primary chronic appendicitis.

#### SYMPTOMATOLOGY

We see, then, that there are two broadly distinguishable pathological states which are met with in the course of the "interim" operation for appendicitis, first, the one we referred to as a primary chronic appendicitis, and secondly, the residuary condition left by an acute attack. Both are undoubtedly capable of producing a large range of symptoms, but since we are concerned only with very general considerations we shall not discuss the question of whether there is any difference between the symptoms caused by the two types. In the following remarks it is assumed that one pathological type is as capable of causing the whole range of chronic symptoms as is the other.

#### The Mechanism of Symptoms

The clinical manifestations that experience shows to be associated with chronic appendicitis are many and complex. We may get a clue to the orderly presentation of them by noting two features in the pathological state that indicate the principal mechanisms at work in the production of symptoms. These features are, first, the evidence of septic absorption shown by enlarged lymphatic glands, and secondly, the evidence of disturbed motor and perhaps secretory function shown by the inability of the appendix to empty itself. As we see them in an operation these very familiar phenomena are, of course, purely local, they probably have, however, a much wider significance in making up the clinical picture of chronic appendicitis.

#### Septic Absorption in Chronic Appendicitis

Clinical observation suggests very definitely that chronic appendicitis can produce a series of effects very much like those that may be produced by a chronically infected tonsil. The likeness between the two series is close, and the most cautious observer can scarcely fail to notice in both the special tendency to lymphatic infections, the occurrence of general toxicemic states, the possibility of distant infective lesions, and the incidence of symptoms in inverse proportion to the patient's age.

It is in childhood and youth that the effects of chronic appendix infections are most seriously shown and it is then that is stated the sequence of events which so often results in chronic ill health, dyspepsia, cholecystitis, and peptic ulceration in the adult.

For some reason or other the frequency and importance of the primary effect of absorption in appendicitis—affection of the lymphatic glands—have not received a great deal of attention. Lymphatic enlargement is common at all

ages, but is especially so in young subjects. It is, in fact, unusual not to find it if it is looked for. Probably it is as common in appendicitis as in tonsillitis. The same series of states is met with—chronic enlargement, acute inflammation, tuberculosis. The last-named is doubtless a good deal less common than in the neck and usually runs a more favourable course. If the occurrence of calcification is to be taken as evidence of tubercle, the latter in a mild, easily recoverable form must be regarded as not uncommon.

There can be little doubt, moreover, that acute lymphadenitis is a frequent event in the chronic appendicitis of children and an important cause of local symptoms.

Of more distant absorption effects two groups are to be recognized—the abdominal and the general. The abdominal effects, as is now well recognized, are conspicuously shown in the upper abdominal organs—a fact which suggests a definite relation to infection by the lymphatic path. They are, of course, peptic ulceration and cholecystitis. I shall say little about this extremely important subject, which is so familiar as one of the recent and most distinguished successes of purely clinical observation. I cannot leave it, however, without making some reference to the closeness of the pathological relation between the appendix and the gall bladder. The frequency of cholecystitis in sequence to appendicitis, especially in young women and even girls, cannot fail to impress the clinician whose attention has once been called to it. Indeed, every case of apparently simple appendicitis must be scrutinized with the most anxious care for evidence as to the state of the gall bladder, for one of the common causes of failure of an appendix operation is the coexistence of chronic cholecystitis, with or without gall stones.

Another effect of the chronically infected appendix that may conveniently be mentioned here is its action as the point of entry to the urinary tract (and probably also to the blood stream) of infections of the colon bacillus type. There can be little doubt of the frequent coexistence of appendicitis and urinary infection, and the suggestion of a causal relation is often strong enough to justify removal of the appendix.

The general absorption effects of a chronic appendicitis are much less definitely established, and we shall do little service to knowledge by setting down a long and unimmaculate series of ill to them. With every effort to keep up a properly sceptical and realistic attitude of mind, I find that my experience leads me to suspect a relation between chronic appendicitis and certain defects of nutrition and growth in children, and in a less definite degree between it and certain so-called toxic infections of the heart, osteo arthritis, and some chronic pustular infections of the skin. It does not seem that these can be regarded as more than matters of strong suspicion which must be left to exact inquiry or larger experience to confirm or explode.

#### Disturbed Function in Chronic Appendicitis

It is evident that the chronically infected appendix has difficulty in emptying itself, and that this—probably combined with some defect in its secretory function—leads to the formation in its lumen of faecal masses of various degrees of consistency up to that of actual concretions. This condition no doubt causes the appendix to become the seat of irregular and excessive muscular spasm. There is much clinical evidence that any such focus of abnormal contractions, and especially the appendix, tends to produce disturbances of muscular function throughout the gastrointestinal tract. It is a familiar fact that in appendicitis either of the two opposite kinds of disturbance of motility of the bowel may be met with, result in constipation, but, on the other hand, not very frequently leading to an undue hurrying of the intestinal contents.

It may perhaps be useful at this point to give a moment's consideration to the normal movements of the colon. It is manifest that the faecal masses and the contents of the bowel are passed along at definite rates, the former in a relatively rapid and continuous stream, the latter in a decidedly slower and probably continuous one. The steadiness of the gastric

probably the best stimulus to the contractions which maintain the fecal stream. Now the smooth and symmetrical passage of gas along the colon must demand a very exactly adjusted succession of contractions and is very easily disturbed by a minor degree of mis-coordination. Thus we see why the complaint of flatulence comes to be the constant of all abdominal symptom and how it we regard the infected appendix as a focus of disturbed motility capable of spreading to the colon we can explain the great frequency in chronic appendicitis of abnormal colonic function and especially of constipation.

The other reason of the gastro-intestinal tract that is especially sensitive to secondary functional disturbance is the stomach. Gastric movements and gastric secretion are notoriously apt to be upset by a reflex mechanism and there can be little doubt that such processes are responsible for the well known gastric complications of appendicitis—gastric pain, nausea, capricious appetite and flaccid dyspepsia.

In actual cases the secondary functional disturbances that accompany chronic appendicitis contribute largely to the symptoms of the disease. Their incidence on the stomach or on the intestine varies a good deal but as a rule in any given case both factors are to be observed to a greater or less degree.

It is probable that the frequency and importance of the secondary consequences of chronic appendicitis are still often ignored. This applies especially to the disease as it occurs in childhood. I am fully convinced by clinical experience that in children a large number of the chronic dyspepsias, the recurrent types of vomiting the conditions that may be called general abdominal delicacy are due to simple chronic appendicitis and can be cured by removing the appendix.

#### DIAGNOSIS

The diagnosis in a case of chronic appendicitis is concerned, on the one hand with determining the existence of the disease itself and on the other hand with deciding the presence or absence of complications, and consequently the scope of the necessary operation.

##### 1. Diagnosis of the Disease Itself

Such comments as I have to make on this aspect of the subject may be grouped in relation to the local symptoms and to the general abdominal symptoms.

(a) *Local symptoms and signs* include right iliac pain, tenderness and increased resistance, and increased tension of the right rectus. In observing the three physical signs in this group care and delicacy are necessary because on the one hand the phenomena are often slight and easily overlooked and on the other because the right iliac fossa is probably a little more sensitive in the normal than is the left. A definite difference in the tension of the two recti is probably the most trustworthy sign. With regard to the palpable resistance in the right iliac fossa, it is to be remembered that this is usually contributed chiefly by an overloaded and possibly thickened caecum—in itself a not insignificant evidence of appendicitis. At the same time resistance there may be due to local enlargement of glands—an important and direct piece of evidence. Such glands if deliberately felt for can frequently be made out, especially in children. There is one small local symptom I should like especially to call attention to and that is a special and not very conspicuous kind of pain. It is a sudden momentary stab in the appendix region in itself very sharp but gone at once. It is of occasional occurrence usually when the patient is walking. This 'needle pain' as it might be called is in my experience extremely characteristic when it has been complained of the appendix has invariably been found to show definite pathological changes.

(b) *General abdominal symptoms* are of almost constant occurrence in chronic appendicitis and should take a definite part in the diagnosis. Indeed it is quite commonly the general abdominal symptoms that make the salient feature of the case and may well distract attention from its true nature. The groups of symptoms of this kind which should arouse interest in the state of the appendix can be fairly well defined. In adults there is the well known flatulent dyspepsia there is the group of symptoms

rather suggestive of peptic ulceration but lacking its most characteristic features and there are the symptoms of irregular motility and secretion in the colon that are apt to be called "colitis." In children we meet with similar forms of flatulent dyspepsia, with recurrent attacks of vomiting or of diarrhoea, with 'bilious attacks,' with an intolerance of certain foods, and either alone or in combination with some of these, persistent or recurrent slight degrees of fever.

##### 2. The Complete Diagnosis

The decision that in a given case there is reasonable cause to suspect a chronic appendicitis can usually be made with a fair degree of confidence. This, however is by no means the end of the diagnostic problem for there remains to decide the possibility of some complication or the primary disease.

Three possibilities in this regard have to be kept in mind. First and perhaps most frequent and important, is that of chronic cholecystitis, secondly, that of peptic ulceration of the stomach or duodenum, and thirdly, in women especially those who have had acute attacks, is that of secondary infection of the Fallopian tube and ovary. It is admittedly a difficult matter to make sure that either of these complications is or is not present in a given case.

One obvious and not illogical solution of this problem is to make a full abdominal exploration in every case where it is decided to remove the appendix. In a certain number of cases this is undoubtedly the proper course and the use of it is imperative. I do not however share the diagnostic pessimism which leads to its being regarded as generally necessary. The operation of exploratory laparotomy is a procedure of the greatest value and importance but there are three aspects of it which we shall do well always to keep in mind. When carried out thoroughly it must be regarded as a considerable operation it is in itself by no means without possible complications and sequelae, and though its powers in the clearing up of diagnostic difficulties are great they are not wholly unlimited. In view of these facts the carrying out in a given case of a full exploratory laparotomy should always be a matter for very sober consideration.

If the easy solution of an exploration in every case is not accepted it is obvious that the need for full and exact diagnosis is greater than ever. When however all such precautions are taken there is reason to suppose that the necessities of the situation are to be met by grouping cases from the point of view of treatment into the three following classes.

1. Cases for removal of the appendix by the most straightforward method. This is a numerous class, largely made up of children and other patients in whom there is no clinical evidence whatever of a complication.

2. Cases in which there is reason to suspect some definite complication, so that, in designing the operation it is necessary to provide for access not only to the appendix but also to the upper abdomen or to the pelvis. This group will include a large number of adults and especially such as have had symptoms for long periods.

3. Cases in which a full exploratory operation is necessary on account of some special ambiguity in the symptoms or of a suspicion of malignant disease. It is plain that a great many of the middle-aged and elderly will necessarily come into this class.

If some such grouping of cases as this is carefully carried out we may entertain a reasonable confidence that while the extent of our interventions is not unduly great, we shall not incur serious risk or leaving important conditions unremedied.

It is to be feared that the foregoing remarks have failed to do play appendicitis as an inspiring subject for serious discussion. It is a subject nevertheless which however defectively set forth, must always possess two high kinds of distinction. The biologic nature of appendicitis in the evolution of abdominal surgery is one of these. The other is the fact that the diseased appendix is the first stage in a long series of pathological events and thus affords the surgeon an opportunity for that ideal treatment in which there is a beneficent proportion between the good he does and the trivial intervention by which he brings it about.



## II—DIAGNOSTIC DIFFICULTIES IN CHRONIC APPENDICITIS

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WHEN there is evidence of acute inflammation of the appendix or the patient says there has been an attack of appendicitis a careful history of that attack should be prepared, avoiding all leading questions, and with the endeavour to disclose the following symptoms in order of occurrence: first, colicky pains across the abdomen, or pain about the umbilicus, secondly, the sequel of nausea or vomiting, and thirdly, pain settling in the right iliac fossa with tenderness.

In such cases the diagnosis is very much easier, and I shall confine myself, therefore, to those who have symptoms of abdominal trouble of a chronic character.

In children and the young a chronic appendix lesion should always be suspected when there is a history of listlessness, capricious appetite, colicky pains at times, with perhaps nausea or vomiting. There is sometimes a dread of playing rough games on account of injury to the abdomen, and occasionally it is found that the child cannot bear anything firm round the abdomen, such as a belt. If there is tenderness on palpation over Munro's point the diagnosis is practically complete. There is present at times a small area of tenderness a little below and to the left of the umbilicus, and occasionally also over the pylorus. If pressure is kept up over Munro's point and at the same time applied over each of these other two tender points it is often found that the tenderness at these two points is abolished or greatly lessened.

Tuberculous glands are not uncommon in the right iliac fossa, and may produce local pain and discomfort. There is not the same digestive disorder, and the tenderness is nearer the middle line and more diffuse. It is always well to examine the tonsillar lymphatic glands, which, when they show enlargement, at once suggest the probability of tubercle.

It is necessary to beware of the cyclic vomiting of acidosis. A medical practitioner may see the child several hours after the onset of vomiting and find a tender area in the right iliac fossa due to overaction of the muscles in the course of frequent vomiting. The history of excessive vomiting and the onset without previous abdominal pain should arouse suspicion.

In adults there is a method of examination which sometimes is of value and might be called flat palpation. A flat disc of metal or a small book about four inches in diameter is laid over the area of the abdomen where pain and tenderness are felt. This is pressed firmly down and the patient is asked to put a finger on the disc at the spot where the pain is greatest.

In the adult there are certain conditions of the abdominal wall which may give rise to difficulty. First neuralgic spots may occur, similar to those in intercostal neuralgia. These spots are nearer the middle line; they are often bilateral, and on palpation of the terminal ends of the intercostal nerves there may be found there as well. Secondly, there is occasionally found a condition of incipient inguinal hernia which gives rise to pain and tenderness, but this pain and tenderness is situated over the internal abdominal ring. A good test for this possibility is to apply a small turkey sponge and a speculum of crepe bandage before getting out of bed, if the day passes in comfort the diagnosis is clear. I mention this because I have operated several times on such patients and found a size only about one inch long, though cure resulted from the operation. One patient had had his appendix removed and three subsequent operations for adhesions. Thirdly, there is a rare condition which might possibly give rise to difficulty and that is strain or slight rupture of fibres of the rectus muscle with resultant pain and tenderness. In this case there is, however, a sudden onset during some act of straining. The pain is superficial and over the outer border of the rectus.

Visceritis which usually occurs in women, is as-oc-

cured very frequently with pain in the right iliac fossa. The history will include a gradual onset, constipation and signs such as the narrow intercostal angle and general configuration. On palpation there is often gurgling in the cecum, a more diffuse tenderness, and, if the right kidney is palpable, the diagnosis is facilitated. When, in addition, it is stated that benefit always results from lying down and relief is obtained from a low abdominal support, visceritis is certainly the first thing to be treated.

When there is any suspicion of gynaecological trouble I obtain the assistance of a gynaecologist.

In men, and more rarely in women, duodenal ulcer may be very closely simulated by chronic appendix trouble. There is a history of pain at the pylorus commencing an hour or so after a meal and relieved by taking food, potatoes are often mentioned as an article of diet that is shunned. The patients will add that they are quite well for a day or two or longer, and then suffer pain for a few days, which is markedly irregular compared with the periodic long duration of ulcer pain.

Occasionally there is a reference to pain which radiates at times to the right iliac fossa. On examination pain is present on pressure over the pylorus and also over the appendix. If pressure over the appendix is continued while the pyloric region is palpated, it will be found that in a short time even the pyloric pain disappears or is greatly alleviated. This is a most helpful sign in the diagnosis of chronic appendix trouble.

That chronic gastric disturbance is common with chronic appendicitis is proved by those patients who terminate in a severe attack, and, having had their appendix removed, report that their gastric trouble has disappeared also.

Tuberculous glands in the ileo cecal angle, either sub acute or calcified, may cause local pain, but the tenderness is never the middle line and is more diffuse, there may be other evidence of tuberculous disease. Early tuberculosis of the cecum may closely simulate the chronic appendix, but the frequency of colicky pains without nausea is suggestive of obstruction rather than local inflammation.

Renal and metrical affections may also simulate the chronic appendix, be there haematuria or stone. The frequency of micturition, the pain over the metra or kidney, and the examination of the urine will generally prove the diagnosis.

Symptoms of gall-bladder trouble may be most closely simulated when there is an undescended cecum or a long appendix running upwards with the tip lying close to the gall bladder.

Pneumococcal infection of the appendix, and at times of the cecum, must also be mentioned, one of my patients had the whole colon involved. The appendix is thickened and buff coloured, and when the cecum and colon are involved they also show the same characteristics, which are very marked. One patient, an active young man, had undergone a long course of treatment for duodenal ulcer, but at operation his appendix was found to be typical of pneumococcal trouble, and a culture showed the pneumococcus and Friedländer's bacillus.

## III—GYNAECOLOGICAL CONSIDERATIONS IN CHRONIC APPENDICITIS

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THE subject of chronic appendicitis is of the greatest interest to gynaecological surgeons because of the anatomical relationship that exists between the appendix and certain of the female pelvic organs. The right ovary and tube lie close to, and in many cases in contact with, the appendix. The right ovarian pelvic ligament, the broad ligament, and the broad ligament of the pelvis are by passing under the appendix. The appendix is intimately related to, and often less blended with the mesentery of the appendix and

attachments of the caecum and ascending colon to the posterior abdominal wall. The result is that it is often difficult to distinguish pain due to chronic appendicitis from that due to some morbid state of the right appendage or to some condition which gives rise to a dragging of the right ovario-pelvic ligament. Appendicular pain may be attributed wrongly to its origin in the plexus ovaricus and conversely pain originating in the pelvic ovaricus may be misinterpreted as arising from the appendix. Of the two mistakes I should say the second was far the commoner. During the years 1923 to 1926 inclusive 5,613 men and 5,577 women were admitted to the medical ward of the Middlesex Hospital—a practically equal number. During that time 216 operations for acute appendicitis were performed on men and 233 on women—a proportion of 10 to 13. In the same period 172 operations for chronic appendicitis were performed on men and 369 on women—a proportion of 10 to 13. The figures are instructive.

Of the gross morbid states of the right appendix which may give pain simulating chronic appendicitis I would specially cite chronic salpingitis and ovarian blood cysts otherwise known as endometrial cysts or chocolate cysts. Many cases of right-sided pain are diagnosed as due to chronic salpingitis. In this connection we may divide cases of chronic salpingitis into two classes: (1) those where the definite swelling is produced owing to distension of the tube with pus or watery fluid or to gross thickening of the wall of the tube or to associated tubal infection and perforation of the ovary; (2) those in which the tube is merely closed and adherent but without any material thickening or distension. My experience is that it is only the first of these two classes which is commonly accompanied by pain; tubes merely adherent and closed do then enter and do not give rise to pain and are often found accidentally in the course of operations for other disease without there having been any previous indication of their presence. This kind of right-sided pain not associated with a definite swelling or thickening in the region of the appendix is almost surely not due to chronic salpingitis.

A diseased appendix may be adherent to the right tube or the right ovary or to both; in some cases these organs are also diseased either by secondary infection from the appendix or an inflammation chronic in them before the appendix itself became inflamed. Accurate diagnosis in such cases is impossible nor does it matter, so long as the right treatment is recognized—namely to operate on the patient.

The other condition to which I would specially draw attention—namely ovarian blood cysts—is very important first, because it seems to be one of the morbid states the frequency of which is apparently increasing, and secondly because these cysts give rise to pain which in certain respects is very like that due to appendicitis. I may remind you that these cysts are nowadays held to be due to the ovary containing within its substance islands of tissue histologically similar to endometrium. These islands are formed of a cellular stroma with glands embedded in it, like those seen in a section of corpus endometrium; moreover they exhibit the haemorrhages, interstices and interglandular, such as are found in menstruating endometrium. How these endometrial islands come to be embedded in the ovary is too controversial a subject to enter into now nor does it concern the subject in hand, but this intra-ovarian menstruation produces collections of blood in the substance of the ovary having the same appearance and constitution as the chocolate-coloured fluid which fills the vagina in a case of menorrhagia. Ovarian blood cysts are very palpable by the time they attain any size, for not only is the ovary enlarged and densely adherent but a curious and very typical thickening affects the anterior wall of Douglas's pouch, due to implantation in islands of tissue identical with that found in islands in the ovary. The back of the cervix and the upper part of the vaginal wall with the peritonaeum covering them are in short the subjects of an endometriomatosis. In this phase of the disease no confusion with chronic appendicitis could occur, provided the patient was examined vaginally but it is otherwise in its early stages for then the enlargement of the ovary may be too slight to detect, especially

in stout women with the result that the pain, which comes in at intervals corresponding to successive haemorrhages into the ovarian substance, is very easily mistaken for that due to recurring attacks of appendicitis. In making a diagnosis it should be remembered that the attacks of pain due to this intra-ovarian menstruation nearly always bear a definite relation to the woman's periods either occurring at the actual time or a few days before, whereas in appendicitis no such relationship is observable. Such increment to the cysts is accompanied by a local peritoneal irritation but fever is absent and the patient does not exhibit those signs which suggest a lesion of the bowel to the experienced clinician—namely a dirty tongue, foul breath and nausea.

Of all the gynaecological conditions capable of simulating chronic appendicitis the most important are those which give rise to a dragging of the right ovario-pelvic ligament and of the retroversion of the uterus is far the commonest. It might be thought that once a retroverted uterus must drag on the ligament at both sides, therefore the pain should always be felt on both sides and no doubt it is often thus reported but in a large number of cases it is only or chiefly felt on the right side. This is undoubtedly due to the different anatomical relationships of the two sides and this seems to indicate that pain does not originate so much in the ligament themselves as in the structures that they secondarily pull upon. On the right side it is the crown of the appendix or both which are thus affected. There is a further mechanism which obtains in cases of retroversion to which I would draw attention—namely that when the uterus no longer occupies its normal position an empty area so to speak is created into which the intestine prolapses. Thus on the right side the head of the caecum may come to lie upon the posterior walls of the bladder while on the left side a loop of the pelvic colon may occupy the area position.

I am in complete agreement with Mr. Wilfred Trotter that it is very difficult to define a normal appendix but I am of opinion that in many of the cases in which a woman is operated upon for alleged chronic appendicitis the pain is really due to strain on the attachments of the caecum and appendix either because the prolapsed caecum is hanging on them or the ovario-pelvic ligament is pulling on them. I am led to this conclusion because I see so many cases of right-sided pain in which the appendix has been fruitlessly removed before the patient came to me and in which operative cure of a retroversion or prolapse immediately cured the pain. It may be submitted that, given an unhealthy appendix, traction or drag on the appendix or appendicular adhesions must accentuate the symptoms due to the appendix and this is undoubtedly true but it does not account for the large number of cases in which I have operated for alleged appendicitis and have cured the patient not because the appendix I removed was macroscopically or microscopically unhealthy but because I found and relieved at the same time one or other of the displacements to which I have referred.

It is most important in all cases of suspected chronic appendicitis in women to examine very carefully before the operation the condition and position of the uterus and the parts adjacent to it in order to exclude the possibility of the pain being due to haemorrhous drag. It should be remembered that the pain due to this cause is always markedly accentuated or only occurs when the patient is up and about. Remembering causes it to disappear, or to be much less marked. To estimate properly uterine or vaginal displacement patients should always be examined in the standing posture.

I would emphasize most strongly the necessity of making a middle-line incision for all operations for alleged or suspected chronic appendicitis in women for it is only in this way that the presence or absence of the other causes of right-sided pain to which I have referred can be absolutely ascertained. If this was made the rule we should cease to see this very common class of case where the appendix has been removed through a beautiful little two-inch lateral incision for a pain which was due to gross disease or lesion of the woman's generative organs.

IV.—ETIOLOGY AND SEQUELS OF CHRONIC  
APPENDICITISA J WALTON, MS, FRCS,  
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It is difficult to visualize and understand the pathological changes responsible for the clinical condition so often described as "chronic appendicitis." That an acute inflammatory attack may be cut short, and the changes abate with resulting deformity, thus making the appendix more prone to a future attack, is a condition which can be clearly envisaged, but that inflammatory changes may persist for years, being chronic throughout the whole of their course and never progressing to an acute condition, yet having profound effects upon the body as a whole, and especially upon certain other viscera, is a condition almost impossible to accept, and our credulity has to be considerably strained to believe that inflammatory changes of this sort could lead to so much alteration in the lining membrane that considerable absorption could take place and could lead locally to advanced fibrosis, and yet never progress to an abscess formation. Doubt as to the presence of such a condition is increased by the clinical observation that so many such cases have been operated upon, with the removal of a fibrous and distorted appendix, and no improvement of the clinical symptoms has followed. Many, therefore, have come to believe that there is no such condition as a chronic primary appendicitis, and Willys Andrews has formulated the dictum, with which many will agree, that a chronic appendicitis should never be diagnosed unless there has been at least one acute attack.

The two important questions to which considerable attention has been directed, and which I shall alone consider to-day, are (1) Is there a primary chronic appendicitis, and, if so, what are its symptoms? (2) What is the relationship of chronic changes in the appendix to lesions in the upper abdomen?

*Primary Chronic Appendicitis a Doubtful Entity*

In the large number of cases which have been operated upon for chronic pain in the right iliac fossa the chief pathological changes found are a diffuse fibrosis of the appendix with obliteration of the lumen, usually commencing at the tip and steadily progressing downwards, and the presence of peritendicular bands binding the appendix to the caecum or under-surface of the mesentery. It is very doubtful indeed whether these two changes are dependent upon primary inflammatory changes or are not rather evolutionary or degenerative. It has been found by many observers that a large number of appendices removed from patients over middle age are fibrous, although there have been no clinical symptoms indicative of appendicitis. There is also no question but that the greater number of patients who complain of persistent iliac pain are women who are subjects of visceroptosis. It is in just such cases that the caecum is found to be mobile, and there is the presence of membranous bands—the so-called Jackson's membrane, which varies considerably in its extent. In nearly all cases it runs in part over the appendix and binds it down, and may easily be mistaken for inflammatory adhesions. In the past a very large number of such cases were operated upon in the belief that the right-sided pain was due to the presence of such a change, but it has since been widely appreciated that the appendix is not the viscus at fault. Very many young women who are generally the subjects of mild vaginal ptosis complain of pain which is localized in the right iliac fossa, and which persists or recurs for years. Skene<sup>11</sup> has drawn special attention to this condition, although earlier stated that pain commencing in the right iliac fossa had his usual due to chronic

found that only 64 patients had been cured of their symptoms, 36 being uncured. The errors in diagnosis were chiefly dependent upon the presence of a mobile caecum. Williams and Slater<sup>12</sup> produced evidence from another angle, for they found that one-third of all women operated upon for pelvic conditions showed undiagnosed lesions of the appendix, and they therefore express doubt as to whether such a condition as "chronic appendicitis" existed. The chief pathological changes were adhesions, pericaecal folds, and chronic fibrosis, which were considered to be of no clinical significance. Unfortunately the belief in the presence of such a condition has persisted owing to the fact that a large number of patients who have been suffering from vaginal ptosis have been operated upon in the expectation that a gastric ulcer would be found, and the only pathological change discovered within the abdomen was one of these lesions of the appendix. This viscus was removed, and owing to the patient having been insufficiently kept under observation after operation it is believed that the operation had led to a cure. Moreover, there are certain cases of vaginal ptosis, especially those seen in girls or young women, where the symptoms somewhat closely resemble those of true appendicitis. It is the inclusion of these cases of ptosis which has led to the belief that chronic appendicitis is a common condition.

On the other hand, there are cases with symptoms referable to the right iliac fossa or simulating those of a gastric ulcer—the so-called "appendix dyspepsia," due to very definite changes within the appendix, such as pus within the lumen, dense adhesions, or strictures with concretion formation behind them. In my experience, however, all such patients have had at least one acute attack. If there has been more than one attack the symptoms are steadily progressive, so that there is never a history of more than two or three attacks at most.

Careful investigation of these cases will, I believe, always lead to an easy differential diagnosis. Not infrequently a change within the appendix may be diagnosed, when there is in reality a lesion of the renal organs or of the pelvic viscera. In the diagnosis of true inflammation from other intra-abdominal lesions the first importance must be placed upon a past history of at least one acute attack. In such an attack the pain will have been severe at first, generalized over the abdomen, and only later referred to the right iliac fossa. It will have persisted for at least one or two days and generally have had the patient up in bed. The diagnosis will have been strengthened if there has been one attack of vomiting at the commencement of the attack, and if the temperature has been slightly raised. If there has been more than one attack they will not have been very frequent. At most there will have been three or four, and they will have been getting progressively worse. In vaginal ptosis, on the other hand, there will often have been a history of thirty or forty attacks persisting over several years. Some of these may have been momentary and the others have lasted only for an hour or so, but rarely are they sufficiently severe to make the patient lie up.

The pain will generally have been intense at first, diffused over the abdomen, and only later localized to the right iliac fossa. It will not have been increased by exercise, nor will it be relieved by lying down, being in those points very clearly distinguished from the pain of caecal dilatation.

In my experience the nature of the hyperaesthesia is one of the most important of physical signs, and its nature being so often misunderstood it has led to more errors of diagnosis than any other point in the history or the physical signs. The area of hyperaesthesia which is found with distension of the appendix is a relatively narrow band running along the groin from the anterior superior spine to the spine of the pubes, being 1½ in. wide and being bisected by Poupart's ligament. This band is clearly seen in cases of acute appendicitis within the first twelve hours. The hyperaesthesia is a dilated caecum found with a vaginal ptosis and lies at the right of and below the umbilicus and lies at the position of the appendix. It is very variable, and even forms a band running half-way round the abdomen but never extends below Poupart's ligament. I

<sup>11</sup> Skene, *op. cit.* p. 100. <sup>12</sup> Williams and Slater, *op. cit.* p. 100. <sup>13</sup> Skene, *op. cit.* p. 100. <sup>14</sup> Skene, *op. cit.* p. 100. <sup>15</sup> Skene, *op. cit.* p. 100. <sup>16</sup> Skene, *op. cit.* p. 100. <sup>17</sup> Skene, *op. cit.* p. 100. <sup>18</sup> Skene, *op. cit.* p. 100. <sup>19</sup> Skene, *op. cit.* p. 100. <sup>20</sup> Skene, *op. cit.* p. 100. <sup>21</sup> Skene, *op. cit.* p. 100. <sup>22</sup> Skene, *op. cit.* p. 100. <sup>23</sup> Skene, *op. cit.* p. 100. <sup>24</sup> Skene, *op. cit.* p. 100. <sup>25</sup> Skene, *op. cit.* p. 100. <sup>26</sup> Skene, *op. cit.* p. 100. <sup>27</sup> Skene, *op. cit.* p. 100. <sup>28</sup> Skene, *op. cit.* p. 100. <sup>29</sup> Skene, *op. cit.* p. 100. <sup>30</sup> Skene, *op. cit.* p. 100. <sup>31</sup> Skene, *op. cit.* p. 100. <sup>32</sup> Skene, *op. cit.* p. 100. <sup>33</sup> Skene, *op. cit.* p. 100. <sup>34</sup> Skene, *op. cit.* p. 100. <sup>35</sup> Skene, *op. cit.* p. 100. <sup>36</sup> Skene, *op. cit.* p. 100. <sup>37</sup> Skene, *op. cit.* p. 100. <sup>38</sup> Skene, *op. cit.* p. 100. <sup>39</sup> Skene, *op. cit.* p. 100. <sup>40</sup> Skene, *op. cit.* p. 100. <sup>41</sup> Skene, *op. cit.* p. 100. <sup>42</sup> Skene, *op. cit.* p. 100. <sup>43</sup> Skene, *op. cit.* p. 100. <sup>44</sup> Skene, *op. cit.* p. 100. <sup>45</sup> Skene, *op. cit.* p. 100. <sup>46</sup> Skene, *op. cit.* p. 100. <sup>47</sup> Skene, *op. cit.* p. 100. <sup>48</sup> Skene, *op. cit.* p. 100. <sup>49</sup> Skene, *op. cit.* p. 100. <sup>50</sup> Skene, *op. cit.* p. 100. <sup>51</sup> Skene, *op. cit.* p. 100. <sup>52</sup> Skene, *op. cit.* p. 100. <sup>53</sup> Skene, *op. cit.* p. 100. <sup>54</sup> Skene, *op. cit.* p. 100. <sup>55</sup> Skene, *op. cit.* p. 100. <sup>56</sup> Skene, *op. cit.* p. 100. <sup>57</sup> Skene, *op. cit.* p. 100. <sup>58</sup> Skene, *op. cit.* p. 100. <sup>59</sup> Skene, *op. cit.* p. 100. <sup>60</sup> Skene, *op. cit.* p. 100. <sup>61</sup> Skene, *op. cit.* p. 100. <sup>62</sup> Skene, *op. cit.* p. 100. <sup>63</sup> Skene, *op. cit.* p. 100. <sup>64</sup> Skene, *op. cit.* p. 100. <sup>65</sup> Skene, *op. cit.* p. 100. <sup>66</sup> Skene, *op. cit.* p. 100. <sup>67</sup> Skene, *op. cit.* p. 100. <sup>68</sup> Skene, *op. cit.* p. 100. <sup>69</sup> Skene, *op. cit.* p. 100. <sup>70</sup> Skene, *op. cit.* p. 100. <sup>71</sup> Skene, *op. cit.* p. 100. <sup>72</sup> Skene, *op. cit.* p. 100. <sup>73</sup> Skene, *op. cit.* p. 100. <sup>74</sup> Skene, *op. cit.* p. 100. <sup>75</sup> Skene, *op. cit.* p. 100. <sup>76</sup> Skene, *op. cit.* p. 100. <sup>77</sup> Skene, *op. cit.* p. 100. <sup>78</sup> Skene, *op. cit.* p. 100. <sup>79</sup> Skene, *op. cit.* p. 100. <sup>80</sup> Skene, *op. cit.* p. 100. <sup>81</sup> Skene, *op. cit.* p. 100. <sup>82</sup> Skene, *op. cit.* p. 100. <sup>83</sup> Skene, *op. cit.* p. 100. <sup>84</sup> Skene, *op. cit.* p. 100. <sup>85</sup> Skene, *op. cit.* p. 100. <sup>86</sup> Skene, *op. cit.* p. 100. <sup>87</sup> Skene, *op. cit.* p. 100. <sup>88</sup> Skene, *op. cit.* p. 100. <sup>89</sup> Skene, *op. cit.* p. 100. <sup>90</sup> Skene, *op. cit.* p. 100. <sup>91</sup> Skene, *op. cit.* p. 100. <sup>92</sup> Skene, *op. cit.* p. 100. <sup>93</sup> Skene, *op. cit.* p. 100. <sup>94</sup> Skene, *op. cit.* p. 100. <sup>95</sup> Skene, *op. cit.* p. 100. <sup>96</sup> Skene, *op. cit.* p. 100. <sup>97</sup> Skene, *op. cit.* p. 100. <sup>98</sup> Skene, *op. cit.* p. 100. <sup>99</sup> Skene, *op. cit.* p. 100. <sup>100</sup> Skene, *op. cit.* p. 100.

denied that if a patient with pain in the right iliac fossa has an area of hyperæsthesia extending higher than the level of the anterior superior spine, it is most certainly not due to distension of the appendix.

Another very important point is the relation of the physical signs to the time of the onset of the symptoms. In some cases of dilatation of the cæcum the pain may persist for four or five days but there is no progression in the physical signs. If a patient has had an attack of acute appendicitis for this length of time there is certain to be either a perforation or a tumour due to a localized abscess or to dense inflammatory adhesions. Hence if at the end of five or six days the symptoms persist but there is no lump to be felt or no definite rigidity, it is unlikely that the appendix is the fault.

We may say therefore that there is no doubt as to the presence of such a condition as chronic appendicitis but it is much rarer than is usually supposed and is always the end result of an acute attack. I have personally operated upon 932 cases of appendicitis. Of these acute lesions were present in 622 the appendix either continuing pus or showing acute inflammatory changes passing on to perforation or gangrene. The remainder 360 in number had in practically every case a past history of at least one typical acute attack. Only 11 of them have been classified as appendix dyspepsia, a condition which in my experience has been characterized by an acute attack which has then been followed by symptoms somewhat closely resembling those of gastric ulcer or gall stones. In my opinion these figures strongly support the view that chronic appendicitis does not exist as a primary disease but only occurs after an acute attack.

#### *Relation of Chronic Appendicitis to Changes in the Upper Abdomen*

That lesions in the upper abdomen and especially those in the stomach and duodenum can occur in association with infection of the appendix is well known. When I was working as registrar at the London Hospital in 1910 there occurred in our wards one or two cases of severe hæmatemesis after operations for acute suppurative appendicitis. I therefore worked out a case of this occurring in the hospital in the three years 1907 to 1909 inclusive. In this series there were 24 patients who died from severe hæmatemesis after operation and of these 13 had acute appendicitis. A similar proportion was found in a series of acute ulcers found accidentally after death but the patients had not had severe hæmatemesis. It is of interest to note, however, that hæmatemesis and acute ulceration may occur in association with sepsis in any part of the body. It is well to lay stress upon this fact lest it be justifiably assumed that the appendix itself is a direct factor in the causation of lesions in the upper abdomen, for it is quite possible that in gastric and appendicular lesions are found together they are due to a similar infection passing down the intestinal tract or it is even more probable that the infection is blood-borne from any septic focus within the body to the mucosa of the stomach.

Evidence of a close relationship between chronic lesions of the appendix and those of the stomach and duodenum has also been produced. Fenwick, investigating the nature and cause of gastric hypersecretion found that of 112 cases of hyperchlorhydria 22 had chronic changes in the appendix. The next step was the work of Laidlaw, Paterson, and Sir Berkeley Moynihan, who pointed out that a chronic lesion of the appendix might sometimes give rise to a group of symptoms closely resembling those of a gastric lesion, and Paterson in a later paper showed that chronic appendicitis could not only simulate a lesion of this sort but might actually coexist with such a condition. He found that in his series of duodenal ulcers there was definite appendicular disease in 66 per cent.

As a result of this work it has become clearly established that there is a condition which can best be described as "appendix dyspepsia," but my own experience has very definitely shown that it is relatively rare. In my own series of 932 cases of appendicitis there were only 11 in which undoubted disease of the appendix sufficiently closely simulated a lesion of the stomach to give rise to a diagnosis of a chronic ulcer. Moreover, in all these cases there had been at

one time or another a definite history of an acute attack such as is found with true cases of chronic appendicitis. The diagnosis was only accepted if there was a distinct inflammatory change within the appendix, such as a localized abscess or infiltration of the mucosa and submucosa. In all of them there was simply a clinical resemblance between the two conditions, and at operation no organic lesion was found in the stomach or duodenum.

The actual relation between chronic inflammatory changes in the appendix and those in the stomach is not so clearly defined and many surgeons would not admit that it is found in so high a proportion of cases as Paterson found. Sir Berkeley Moynihan in 1921 and J. Schoemaker in 1925 have laid stress upon a condition of valvular congestion of the pyloric antrum with pyloric spasm which is sometimes found with inflammatory changes elsewhere. Schoemaker had 45 such cases in 17 of which a partial gastrectomy was performed so that he was able to study the pathological changes. In none of these cases was there any gastric ulceration. In 16 of them the appendix had been removed, but a chronic obliterative appendicitis was found in only 4 of them it being quite normal in the others. In the cases where the appendix was alone removed the symptoms continued and there was, in addition, one case which occurred some years after the appendix had been removed. On the other hand Deaver and Ravden examined the appendices removed from 76 cases of gall-bladder disease and 18 cases of gastric and duodenal ulcer. They found that the appendix was definitely diseased in 90 per cent of the gall-bladder cases and in 61 per cent of the ulcer cases. Brintwaine believed that a diseased appendix might be shown in a stomach by three conditions: (1) pyloric spasm, (2) pyloric congestion and (3) enlargement of glands in the great omentum. By injection methods he was able to show that there was a direct lymphatic path between the appendix and its neighbours up the lymphatic along the mesenteric artery and so to the glands around the pylorus. The few contributory illustrations of many others that have been written claiming to show that there is a very close relationship between these two conditions and as a result many have come to believe that a primary disease in the appendix is an important factor in the causation of gastric and duodenal ulceration and advocated its removal in all cases. Others have even claimed that the failure to perform such a step in an operation for gastric and duodenal ulceration is a very potent factor in the later formation of gastro-jejunal ulceration. The pendulum has to-day swung much too far and it not infrequently happens that patients have been operated upon in the belief that an ulcer was present and no such lesion being found the appendix has been removed, the surgeon stating that the operation had been performed at so early a stage that the ulcer had not yet developed. I have met with a considerable number of such cases where an operation of this sort has been performed and no relief has been gained. The presence of chronic fibrosis or of membrane formation has been accepted as evidence of a chronic lesion in the appendix when the patient has really been suffering from viscerosplenic or some allied condition.

The other fault upon which Sherren so often laid stress is also not uncommon—that an appendix has been operated upon when the patient was really suffering from a duodenal or gastric lesion but these viscera have presumably not been examined and no relief has followed. In these cases the taking of a careful history and the conscientious investigation of the clinical condition should prevent mistakes of this sort for although the symptoms or lesions of the appendix may somewhat resemble those of a gastric ulcer careful inquiry will nearly always lead to a correct diagnosis.

It is, however, of great importance to estimate as far as possible what is the actual relationship between these two conditions and I think that the figures of my own case throw considerable light on this subject. To the date of my last analysis I had performed 1733 operations for lesions of the upper abdomen. Of these 1603 were for chronic ulcers of the stomach and duodenum, 46 for other non-ulcerous gastric diseases of the stomach and duodenum, 204 for cases of carcinoma of the stomach, 401 for lesions of the gall bladder and ducts and 24 for lesions of the pancreas. In all these cases it is my custom to make a sufficiently large

incision to explore the abdomen thoroughly. The appendix is in every case carefully examined, but it is removed only if there is definite evidence of disease. If it is injected, inflamed, markedly thickened, distended, or even contains many concretions, it is taken out, but a mild degree of fibrosis or the presence of membranes and filamentous bands is not regarded as sufficient evidence of disease to warrant removal. The appendix was excised in 73 cases, approximately 4 per cent, if it had been definitely inflamed or had been the primary cause of the upper abdominal lesion, there should have been further trouble in a considerable number of cases, yet in my total number of gastric and duodenal ulcers the incidence of gastro-jejunal ulceration was considerably under 2 per cent, or, taking only the cases of pyloric and duodenal ulcer, which may be regarded as the only group likely to be followed by this complication, the incidence was between 2 and 3 per cent. This rate compares favourably with many of the published statistics, and I think, therefore, it can be accepted that the omission to perform routine appendicectomy does not in any way increase the possibility of the after-formation of gastro-jejunal ulceration. Of the total of over 1,700 cases only 5 have afterwards developed acute appendicitis. This is an incidence of 0.28 per cent, and is probably but very little, if indeed at all, higher than the incidence in the general population. All these cases have been most carefully watched in a follow-up department, and I feel confident that few, if any, of such complications have been overlooked. These figures show clearly that the relationship between chronic appendicitis and lesions of the upper abdomen is much less intimate than has been believed. The appendix should certainly be examined in every case of such a lesion, but it is only necessary to remove it if there is very definite evidence of disease, and it is never justifiable to inform a patient that the removal of a slightly fibrous or adherent appendix will relieve her of severe abdominal pain.

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## DISCUSSION

Mr H N FRETCHER (Brighton) said that if the surgeon followed up his patients who had been operated upon for chronic appendicitis he would find many failures. In 82 cases he had investigated about one-third were failures. In 11 the diagnosis made at the operation was obviously wrong—in 4 cases glands in the mesentery or chocolate cysts in the ovary had been discovered, of the remaining failures the majority were cases of visceroptosis. A history of previous attacks was very important. The symptoms of appendicular dyspepsia were indistinguishable from those due to ulcer of the stomach, and 10 cases of the 82 had been cured by removal of the appendix. These were useful in diagnosis. If the appendix filled well appendicitis was not present, even though there was much delay in emptying. If the appendix did not fill, or filled irregularly, chronic appendicitis was present.

Mr A H BIRCHES (Manchester) thought that tenderness over the right iliac fossa was a good sign of the disease, but there should be comparison of the opposite side by symmetrical pressure. It was very important to have a history of acute attacks. The gridiron incision was only used when the diagnosis of appendicitis was practically certain and only then when the patient was a child. In all other cases he advised thorough abdominal exploration. By following this routine he had discovered an early carcinoma of the colon on six occasions, and early carcinoma of the lower ileum associated with a well marked duodenal ulcer. If the patient was in such a condition that he could not stand this prolonged operation, it was

better, unless the case was urgent, to improve the general health medically and wait until the exploration could justifiably be undertaken. The speaker removed the appendix during the course of this examination, even if it appeared healthy.

Mr ANDREW FULLERTON (Belfast) pleaded for the thorough examination of patients with chronic pain in the right side of the abdomen in whom chronic appendicitis was suspected. He declared that cases of hydronephrosis, cysts of the kidney, even calculus and tumours, might not give rise to any changes in the urine. In doubtful cases specimens of the urine from the two sides should be compared. In cases of calculus, cysts, or tumours the urine secreted from the affected kidney showed a diminished specific gravity. In this way a renal origin for the pain might be discovered.

Mr G H COIT (Aberdeen) referred to the palpation test for chronic appendicitis demonstrated by the late Mr Lockwood. Pressure over McBurney's point elicited a flatulent eripitation which was quite distinct from the large gurgle made by a distended caecum, and was recurrent from minute to minute. He found this test of the greatest possible use, and had only known it wrong three times in a series of 500 cases. When the sign was negative it almost certainly indicated that the appendix was not inflamed, nor were there bands of adhesions. The area of hyperaesthesia described by a previous speaker did not agree with the area he found to indicate that of appendicitis, which was, he stated, triangular in shape, higher, and more to the middle line.

Mr TRYPLE MURFEL (Johannesburg) called attention to Rovsing's sign of pressure in the left iliac fossa, which caused pain in the appendix area, he had found it extremely reliable. In South African natives acute appendicitis was very rare, but chronic appendicitis was not. He did not believe a history of an acute attack was necessary to diagnose chronic appendicitis.

Professor D P D WILKIE (Edinburgh) said that in the past there had been too much operating for chronic appendicitis. Removal of the appendix often failed to cure. The public would submit to operation much more easily than they could be induced to have a complete investigation in order to reach a correct diagnosis. He thought that one of the problems facing the practitioner was to educate the public to seek a thorough investigation. He pleaded for more care before operation. He thought that there were of value for showing an associated lesion in the stomach or duodenum, but for the diagnosis of chronic appendicitis they were useless. However, tenderness in the situation of the appendix under the screen was of some value.

Mr TROTTER, in his reply, agreed with Professor Wilkie, and said that he regarded chronic appendicitis as important because it was frequently the beginning of a train of abdominal disease. Believing this, he thought it was often desirable to perform appendicectomy in children. Tenderness in the right iliac fossa was in 99 per cent of cases of no importance in diagnosis, while visceroptosis might not really be a pathological entity.

## THE ACTION AND USES OF OVARIAN EXTRACTS.

BY

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The endocrine function of the ovary may now be regarded as established. Knauer showed in 1900 that this organ was intimately connected with oestrus and that ovariectomy could at least partly antagonize the effects of spraying.<sup>1,2</sup> This ovarian action is evident in both sexes. If a portion of an ovary is grafted into a castrated male, the mammary glands and testis hypertrophy, the animal

<sup>1</sup> The opening paper of a discussion in the Section of Therapeutics and Pharmacology at the Annual Meeting of the British Medical Association in Edinburgh, 1927.



secrete, and the animal resembles a pregnant female, a condition obtains which Sturmach calls hyperfeminization. In the male the development of the mammary glands is uninterrupted, the Crithm follicles mature but do not rupture, but the implanted ovaries soon pass into cystic degeneration. In the female the development is slower and shows a rhythm which is apparently associated with the development of the Crithm follicle, and in the regressive phase with its rupture and the formation of the corpus luteum.<sup>2</sup> Loeb has advanced evidence for believing that follicular development is governed by the corpus luteum.<sup>4</sup>

It is also well recognized that the ovary does not function till puberty and that the essential features of puberty are caused by some internal stimulus. A young ovary engrafted into an adult male or female will begin its secretion sooner than its age warrants whilst an adult ovary engrafted into a young animal will not function until the animal reaches maturity. The stimulus to ovarian function can only be obtained through the mature tissues, whether male or female.<sup>5</sup> This fact is of great practical importance since in cases of infantilism it is not necessarily the ovaries which are primarily at fault and ovarian transplantation will not necessarily improve the patient although, as no doubt will be shown in this discussion even in these cases ovarian hormones can produce a sexual cycle.

The literature contains plenty of examples of the beneficial effect of ovarian transplantation both in men and animals. Thus a bitch aged 17 years after an endopertoneal transplantation showed rejuvenation, sexual activity and gave birth to five normal puppies.<sup>6</sup> Bell analyses 118 cases of ovarian grafting and states that menstruation was possible in 107 of these and occurred in 71.<sup>7</sup> Sedukoff<sup>8</sup> transplanted an ovary into a horn of the uterus in two sterile women and obtained normal menstruation.

The present discussion has as its object the determination of how far it is possible to substitute normal ovarian function by ovarian hormones. It should be mentioned here that menstruation is not the same as oestrus, and experiments on lower animals cannot necessarily be referred to man without qualification. Another point to which reference is necessary is the quality of the various extracts at present on the market. Different manufacturing firms make their preparations often by very different methods. The ovary differs from other organs from which extracts are made in that it functions in a cyclic manner. I propose to show that its extract may exhibit different properties according to the stage of the cycle. Manufacturers however so far as I know, take little account of this fact. Again the medical practitioner who uses extracts of ovary administers them in various ways—intravenously, subcutaneously or orally. These two variables must be held responsible for some of the failures and general lack of uniformity in clinical results.

From the ovary at least three different substances can be obtained.

#### Oestrin

Oestrin is the hormone which is most definite and most readily prepared when it is injected subcutaneously into spayed rats and mice it produces typical oestrus with normal sex instincts and when injected into immature animals it induces puberty.<sup>9</sup> Like other hormone, such as adrenaline and thyroxine oestrin is of the same nature in all animals.

The hormone is probably produced by the Graafian follicles at one stage of the ovarian cycle, the concentration in the ovary being least in the post-menstrual period and greatest just before menstruation. It is present in the wall and fluid of the ripe follicles.<sup>10</sup> In pregnancy it is also present in large amounts in the placenta and the blood.<sup>11</sup> In pregnant women it can be detected with certainty in the blood from the eighth to the tenth month. In other women it may also be detected in the blood about fifteen days before the onset of menstruation it increases in amount till menstruation appears when it may be detected in the menstrual blood though not in the circulation.<sup>12</sup>

Oestrin is a thermo-stable liquid soluble in all lipid solvents and also in water under certain conditions, and can be obtained free from cholesterol. The aqueous extracts

lose their power in a few days. It is recognized by physiological tests. Three of the oestrogens have been used: (a) the vaginal smear test, (b) the action in virgin or spayed rabbits causing the uterus, vagina, and mammary glands to hypertrophy, (c) the action on the type of contraction of the isolated uterus. None of these tests is absolutely specific. Thus it is stated that oestritic extracts give a positive result to the vaginal smear test<sup>13</sup> and that the female willow catkins suitably extracted exert a like action on castrated rodents though the effect is said to be more gradual in onset.<sup>14</sup>

An indication of the amount of follicular hormone in a tissue can be made by injections into spayed rodents since this subject is being dealt with fully by Miss Coward it is only necessary to say that the unit is the least amount of lipid extract required to produce a definite effect in the spayed adult rat and that the figure is by no means constant. For clinical purposes the extract should be put up in ampoules each containing 10 rat units per cubic centimetre. By such methods it has been demonstrated that a woman's ripe follicle contains from 5 to 5 units.

Injections of oestrin into spayed animals produce all the characteristics of a heat period. When the concentration of hormone is maintained continually and in sufficient amount a continuous oestrous results.<sup>15</sup> The uterus enlarges and the increase in weight of the virgin rabbit's uterus within a few days of the administration of the hormone forms a qualitative test of activity. This hormone also promotes the building of endometrium. Menstruation is due to the cessation of the influence of this hormone and, therefore to obtain an emmenagogue effect in women the injections should be interrupted at suitable intervals.<sup>16</sup> On the other hand, animals can be kept sterile by continuous injections.<sup>17</sup>

As oestrin exerts this remarkable action it might well be that injections into pregnant animals by bringing on oestrus would cause abortion. Margaret Smith<sup>18</sup> found it was possible to interrupt pregnancy in rats during the first five days by injecting oestrin but that it was not possible after the fifth day. Parkes and Bellerby,<sup>19</sup> in mice, found that even in the later stages injections in sufficient amounts will nearly always terminate pregnancy.

Some observations have also been made on women and monkeys after ovariectomy. Oestrin promoted the growth of the uterus. In monkeys menstruation occurred when the injections ceased in women the subjective symptoms<sup>20</sup> or menstruation only occurred, but no bleeding approximating to that in normal menstruation.<sup>21</sup>

Before leaving this hormone it should be noted that evidence exists for supposing that the production of oestrin is influenced by the anterior lobe of the pituitary gland.

#### Corpus Luteum Hormone

A large mass of experimental observations shows that the corpus luteum is concerned with the rhythm of the oestrous cycle and with the prevention of ovulation. Also it is known that a persistent corpus luteum, both in animals and women, will produce sterility, a condition which is cured by its removal. The presence of fully formed corpora lutea inhibits ovarian secretion and this condition obtains in animals for a time between the heat periods and more particularly during pregnancy. In women there is plenty of pathological evidence to show that functional corpora lutea are not present during menstruation.

If the corpora exert this controlling action on ovarian function, then their removal should release the normal ovarian function. Removal of the corpora in animals, rabbits (Fraenkel) goats (Drummond Robinson) etc., during pregnancy is invariably followed by abortion. On the other hand injections of properly prepared corpus luteum prevent ovulation. Pearl and Surrae<sup>22</sup> found this for the hen. Kennedy for the rabbit. Papanicolaou<sup>23</sup> also finds that corpus luteum inhibits and delays ovulation and oestrus in the guinea pig. One other effect can be induced by these injections—namely hypertrophy of the breasts, and during pregnancy growth of the normal portion of the placenta. Shaw<sup>24</sup> has shown that the corpus luteum is mature in women on the nineteenth day and persists till the twenty-seventh, during menstruation it degenerates. He also thinks that it is responsible for the

production of the premenstrual changes and of the decidua if pregnancy occurs.

Clinically treatment with extracts of corpus luteum has been disappointing, and it is easy to understand the reason. These glands are only functional at one period in their cycle, the degenerated corpus is inactive. Few manufacturers are likely to have assistants sufficiently skilled to make this distinction. Nevertheless remarkable clinical results have been claimed for this form of therapy, and many cases are on record of women who habitually aborted going to full term when treated with corpus luteum extracts.

#### Interstitial Hormone

The third substance which can be prepared from ovarian extract was described by Marshall and myself. This substance is water-soluble and thermo-stable, and can be prepared from the ovary, at one stage of its cycle only, by maceration with warm saline followed by boiling and filtering. The injection of this substance into animals causes a secretion of the posterior lobe of the pituitary gland, and this in turn renders the uterus supersensitive and highly responsive to other forms of stimulation.

The pituitary secretion passes either entirely or mainly into the cerebro-spinal fluid. Histological examination has shown that the gland is suspended in a bath of the fluid and has an opening in communication with the ventricles. Since the experiments of Marshall and myself this secretion of pituitary into the cerebro-spinal fluid has been confirmed many times, more particularly by Trendelenburg,<sup>26</sup> Janisz and Horvith,<sup>27</sup> and Minn.<sup>28</sup> and there can now be little reasonable doubt of this fact. It has been suggested that the secretion of oxytocic substance is not really pituitary, but some other substance, and to this it can only be replied that it exerts every known chemical and physiological action of posterior lobe extracts. In my *Dobson* lectures I gave the last piece of evidence in this respect by showing that it also exerts the melanophore dilator action on the frog, in effect which, so far as I know, is quite specific. Trendelenburg has also described this action.

The pituitary gland must be intimately connected with the phenomenon of pregnancy, because statistics show that the size and weight of the gland in men and nulliparae are about the same. In primiparae the weight has increased by about 50 per cent, and in multiparae by about 90 per cent, though most of this increased weight is due to the anterior lobe.

The posterior pituitary substance has at least three actions of importance in medicine. It inhibits the secretion of urine, it has an antagonistic action to the insulin effect, and it sensitizes and, in large doses, contracts plain muscle on the uterus. This latter action is so profound that it overshadows all the other muscular effects, and pituitary may be said to have a true specific action on uterine muscle in rendering it supersensitive to every form of external stimulus.

Our experiments showed that in only one stage of the ovarian cycle was this hormone elaborated—namely, at the stage of degeneration of the corpora lutea. So long as these corpora are functioning they govern the metabolism of the ovary, and neither the oestrogen nor pituitary hormones are free to act, but when the corpora degenerate both are liberated and exert their effects—that is to say, extracts of the ovary made between the heat periods or during pregnancy are without effect on the pituitary gland, but extracts made just before the heat period or just before parturition induce secretion of the gland. As the significant action of pituitary extract is to sensitize the uterus it is difficult, if not impossible, to avoid the conclusion that these two phenomena are closely associated. It is true that insulin also causes the pituitary to secrete,<sup>29</sup> but this cannot be of importance in these experiments since the blood sugar in anesthetized animals into which ovarian extracts are injected is invariably increased as a result of the anesthetic.

The facts are then that the ovary just before parturition and just before the heat periods contains a hormone which causes the pituitary gland to secrete. It is well known that substances introduced into the cerebro-spinal fluid and then pass almost immediately into the blood, and

hence it should be expected that extracts of blood of pregnant rabbits at the time of delivery should contract the uterus, which has been found to occur. Similarly the blood of women collected at the time of delivery contracts the guinea-pig's uterus to a considerably greater degree than normal blood.<sup>30</sup> The same effect was shown by Meyer in a different way.<sup>31</sup> He collected the cerebro-spinal fluid from women during Cæsarian section. This fluid he injected subsequently into ten women with deficient labour pains. In eight of the women pains were induced, which in four were followed by the birth of the child. In mother also an intradural injection was made, which was followed by labour pains within twenty-four hours. Meyer states that the cerebro-spinal fluid in labour contains the active principle of the pituitary responsible for the production of uterine contraction.

All these experiments consistently support the view that in the presence of fully formed corpora lutea the normal ovarian secretion is held in abeyance, and this is the condition for a short part of the time between the heat periods, but more particularly during pregnancy. In other words, the corpus luteum may be supposed so to dominate ovarian metabolism at these periods that the ovarian secretion, which at other times activates the pituitary, is inhibited or else is neutralized by the secretion coming from the corpus luteum. At the close of pregnancy, when the corpora lutea are in an advanced stage of involution, the normal secretory activity is once more produced, and the pituitary gland is excited to secrete in greater quantity. When the threshold stimulus of the pituitary secretion upon the uterus is reached the pains of labour set in and parturition results. The well known phenomenon of the growing irritability of the uterus in the later stages of pregnancy, which is the typical effect of the pituitary action, is explained as being functionally correlated with the involution of the corpus luteum. In our experiments ovarian extract gave positive results at all times excepting when the organs contained well developed corpora lutea, but the effects produced were undoubtedly more marked in the case of the ovaries obtained at or about the time of labour. The hormone which stimulates the pituitary gland is produced in greatest abundance at these periods.

Rogers also thinks that such a hormone exists, it is stated to be of approved value in such conditions as hypothyroidism and dysmenorrhoea, and is, he thinks, effective if administered by the mouth.

It is not suggested that the ovarian pituitary endocrine mechanism is the sole factor in producing labour pains. No doubt the foetus itself acts as a direct stimulus, and without the foetus the intense muscular contractions would not occur, but it seems equally clear that the onset of labour cannot easily be accounted for without postulating some further exciting cause apart from the foetus and uterus.

Oestrogen, which I have examined from several sources, has not this action on the pituitary secretion. Oestrogen is especially effective in bringing on abortion in the early stages of labour, and Dr. Addison will explain what the effect of ovarian extract in the later stages of pregnancy may be.

In conclusion, no romance can be more remarkable than the fact that doctors, by using pituitary extract to stimulate the uterus in pregnancy, even to the exclusion of ergot, should have adopted the method which Nature has herself employed from times immemorial.

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## DISCUSSION

Dr. KATHARINE A. COWARD (London) said that the standardization of ovarian extracts was based on their power to induce oestrus in ovariectomized animals but the dose of any extract required to produce this condition in a rat varied so much that a large number of animals had to be used for the assay. A "curve of response" had been drawn up on the results of subcutaneous injections of different doses of a particular sample of ovarian extract to ovariectomized rats. It took the form of a somewhat flat S shaped curve. It was significant that while some rats responded to a dose of 25 mg. of this extract some did not respond even to a dose of 175 mg. The doses of 25, 75, 125, 175 mg. respectively were given at fortnightly intervals then a dose of 10 mg. was given and the number of animals responding fell exactly on the curve which had been drawn through the first four points, which indicated that the extract had not deteriorated in value nor had the rats become less sensitive. Half the rats were then given another dose of 10 mg. subcutaneously, and half were given the same dose intraperitoneally. There was no significant difference between the results of the two methods of injection. Injecting the dose in three small parts at intervals of four hours did not make the response any better than injecting the whole dose at one time. The unit of oestrus was defined as that amount which would produce oestrus in 50 per cent of the animals tested, twenty animals being used for each test. When the response to a given dose had been found reference to the curve would give the dose required for a 50 per cent response and the assay of the material could be given as 1 unit per mg. or as x units per ccm. A salivary test was performed at the same time on 70 ovariectomized mice, using exactly the same doses of the extract as those employed in the rat experiment. It was surprising to find from the identity of the curves that the response in the mouse was equal to the mouse unit and was, therefore, quite independent of the weight of the two species or animal. In the rat experiment it was also noted that the response to a given dose bore no relation to the weight of the animal.

Dr. A. S. PARKES (London) discussed the interaction of the oestrus-producing stimulus with the corpus luteum and the function of the corpus luteum in maintaining pregnancy. There was much definite evidence that one function of the persistent corpus luteum was the inhibition of oestrus and ovulation during pregnancy and in the last few years it had been found possible to simulate this action by inhibiting oestrus and ovulation in the normal animal by the injection of extracts of corpus luteum. Since it was possible to override the oestrus-inhibiting power of the persistent corpus luteum by the injection of the oestrus-producing hormone the conception was suggested of an alternating dominance of oestrus producer and oestrus inhibitor, it being possible to override each in its normally dominant phase by the artificial augmentation of the other. As regards the function of the corpus luteum in maintaining pregnancy, many experiments on the elimination of the corpora lutea had shown that the corpora were necessary during at least the greater part of gestation. These experiments had, however, not been entirely conclusive. To eliminate the corpora lutea double ovariectomy or manipulation of the ovary during the operation had always been employed. The latter operation was of necessity attended by a considerable operation shock while the former abolished all ovarian activity. To overcome these difficulties the following technique had been devised. Young mice were sterilized unilaterally by x-rays and the animals which adult thus possessed one normal ovary containing both Graafian follicles and corpora lutea while the other ovary had neither but was expirable as already shown, of performing all ovarian endocrine functions except these associated with the corpora lutea. The animals were then allowed to become pregnant, and at various stages of pregnancy one or other ovary was removed. Animals in which the ovary removed was that containing the corpora lutea invariably aborted or reabsorbed the foetus, while those in which the sterile ovary was removed had in every instance an uninterrupted gestation. With any possible

operation shock thus controlled, these experiments had seemed to show definitely that in the mouse at any rate the presence of corpora lutea was essential for the normal progress of pregnancy. As regards the light thrown by these experiments on the mechanism of parturition it was very doubtful whether the normal atrophy of the corpus luteum towards the end of pregnancy could be compared with its experimental elimination earlier. There was much evidence which seemed to show that in ovarian pituitary parturition mechanism was set in motion by this normal atrophy of the corpus luteum, but in view of the relative insensitivity of the uterus to pituitary during early pregnancy, it was probable that the abortion which followed early removal of the corpora was not dependent upon such a mechanism.

Dr. W. R. ADAMS (Manchester) described the use of ovarian extract without the corpus luteum in the induction of labour and in dysmenorrhoea due to inadequate uterine contractions. In the first case five intramuscular injections each of 1 ccm. of ovarian extracts were given at three hourly intervals. If these failed the injections were repeated after an interval of twenty-four hours. The uterine contractions being kept under continual observation. In 50 cases so treated there were 4 failures. 31 patients were primiparae. The average duration of labour was first stage, twenty-three hours; second stage, two and a half hours; and third stage, fifteen minutes. All the children were born alive and well. The patient hardly felt the uterine contractions during the first stage—a point of considerable interest, and comparable with intestinal and rectal muscular contractions as well as with the freedom from pain during labour which occurred in some less civilized peoples. It appeared, therefore, that the ovary produced a hormone which acted specifically on the uterus, originating a bipolar action directly through the autonomic system.

Dr. W. F. T. HARTMAN (Edinburgh) said that it had been his practice for at least five years in cases where both ovaries had been removed either with or without the uterus, to give such patients a course of ovarian extract beginning on the fifth day following operation by giving 5 grains three times a day and continuing it for two months. For the next two months 5 grains were taken twice a day, and for the fifth and six months following operation 5 grains were given once a day—the idea being to minimize the menopausal symptoms by decreasing doses of ovarian extract. If the symptoms became more severe the dose was increased. Out of 31 patients so treated 24 took ovarian extract for one month or more, and there were 7 who did not. The latter including principally hysterectomy and salpingo-oophorectomy cases. The general health was improved in 19, 12 patients became content and of these 6 were cases of salpingo-oophorectomy and under 40 years of age. 9 had periods of depression. In 14 cases flushing were cured, in 7 slight, while three had practically no flushings at all. After a period of twelve months flushings were only present in 8, or these 6 were cases of salpingo-oophorectomy under the age of 40 in whom the uterus had been left. This result compared very favourably with the patients who had not taken ovarian extract for in 6 of the 7 who had not received it flushings were still present at the end of twelve months. Headaches occurred in 8 while nervous symptoms were manifested in 5. Flushings were very much improved by the treatment. The ovarian extract seemed to have helped the patients with regard to adipose headaches and nervous symptoms but not so all in regard to flushings. Dr. Hartman thought that when both ovaries had to be removed then the uterus should be taken out also especially in cases of chronic or purulent salpingitis. The ovarian extract had been administered orally and Dr. Hartman concluded that it was given hypodermically once or twice a week following operation the results would be even better.

Dr. W. KENNEDY (Edinburgh) believed that the disappointing nature of ovarian medication was due to the very diverse and sometimes unscientific methods adopted. The

species and oestrous period of the animal from which the gland was derived, the methods of extraction and of exhibition, and the diseases for which the substances had been used were all of prime importance. Dr J C Hirst had shown that the intravenous administration of corpus luteum in the pernicious vomiting of pregnancy was effective. The speaker had also found that the corpus luteum would inhibit ovulation, and indeed in continued dosage would produce extreme degeneration of the follicular apparatus. The evidence was not plentiful, but it was very probable that there was a direct relationship between ovarian function and the blood sugar level. The speaker was surprised that Miss Coward had found mouse and rat units identical in oestrum standardization, as this was contrary to the usual finding. Further, it was undoubted that the luteal cells arose from the theca interna in some animals, the membrana granulosa in others, and possibly from both in some others. It was, therefore, necessary to specify the species in any assertion as to the endocrine function of these cells.

Dr DAVID CAMPBELL (Glasgow) raised the question whether the injection of ovarian extract into animals had any inhibiting effect on the activity of insulin. With Dr Scott he was investigating this point, and up to that time then results were as follows: (1) Subcutaneous injection of oestrum or the lipo-soluble ovarian hormone and of watery extracts of the ovary had no effect on the blood sugar of a normal animal. (2) Subcutaneous injection of oestrum twenty-four hours before, and again simultaneously with, insulin injection had no inhibiting effect on the action of insulin when compared with control experiments. (3) Subcutaneous injection of watery extracts of ovary given at the same time as insulin had no inhibiting effect on the action of insulin when compared with control experiments. Dr Dixon, however, in his experiments, had used the intravenous route, and had showed that the apparent effect on the pituitary gland was transitory, lasting only ten to twelve minutes. Dr Campbell had tried to determine whether the intravenous injection of watery extracts would have any effect on the blood sugar of an animal in the state of insulin hypoglycaemia. These experiments had not progressed very far, but up to the present there was no evidence to suggest that it did inhibit insulin activity; occasionally the reverse effect had been observed. It might be that they had used extracts of ovaries taken at a time when there was no hormone present, and it was necessary to investigate this point further before they could say definitely that ovarian extracts had no inhibiting effect on insulin activity through the medium of the pituitary gland.

Professor C W GREENE (United States of America) called attention to work by Professor Edgwin Allen of the University of Missouri, who was a pioneer in the discovery and scientific testing of oestrum. Professor Allen had recently been testing the reactions of ovariectomized monkeys. His publications on this new work had not yet crossed the Atlantic. Allen first established the sexual cycle of individual monkeys and then removed the ovaries. Follicular extracts were then given in repeated doses. The animals reacted with all the phenomena of the normal oestrus—reddening and swelling of the skin of the vulva, reddening of the ischia and adjacent skin, and growth of the mammary glands. The uterine-vaginal growth changes occurred as in the normal, and menstrual bleeding actually occurred in these test monkeys.

Dr DIXON, in reply, briefly referred to the work of Dr Addis, and had stress on the fact that the action of pituitary extract was essentially to render the uterus sensitive to any form of stimulus. Dr Addis and he were in entire agreement regarding facts, but Dr Addis thought that the ovary acted directly. All previous investigators were agreed that it exerted no such action. In reply to Dr Campbell he referred to a paper written by Dr Waddell and himself and published in the *BRITISH MEDICAL JOURNAL*, showing that insulin also excited the pituitary gland to secrete as it did other endocrine glands. He referred

finally to the primary work of Allen and Davis and explained to Professor Greene that it the names of the two investigators had not been mentioned in the discussion, it was not that their pioneer efforts had not been appreciated, but rather because their conclusions were generally known and accepted.

## THE CLINICAL FEATURES OF ECTOPIC PREGNANCY

BY

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THERE is an extensive and very complete literature on the subject of ectopic pregnancy, and I cannot hope to add anything new to what has already been written. In the early part of this year, however, I reviewed a hundred cases operated upon by myself, and it may be of interest to refer to some of the main clinical features in the light of the results obtained from analysis of that series.

Pregnancy in one of the Fallopian tube is by far the most common variety, and is all my cases come under that heading I propose to leave out of account the other and rarer forms. I will also say very little about the pathological anatomy of ectopic pregnancy, except to mention the frequency of the various terminations found at the time of operation in my own cases.

Tubal abortion occurred in 52 per cent, tubal rupture in 37 per cent, and the tubes were unruptured and unaborting in 12 per cent. A tubal mole was present in nearly 80 per cent of the cases.

### ETIOLOGY

Most authorities agree that the chief predisposing cause of ectopic pregnancy is a preceding pelvic infection which so damages the Fallopian tubes as to obstruct or delay the passage of the fertilized ovum to the uterine cavity. The results of pelvic infection may be visible to the naked eye at the time of operation in the form of adhesions, especially about the non-gravid tube, and the frequency of this factor can therefore be determined with some accuracy. It has to be remembered, however, that gonococcal infection may be limited in its results to the tubal mucosa, and be incapable of demonstration except by careful histological examination.

In my own series old-standing adhesions about the non-gravid tube were observed in 50 per cent of the cases, but as this leaves out of account those in which the gravid tube only was affected or the mucous membrane alone damaged, it will be realized that the percentage is probably much higher.

Gonorrhoea and puerperal septic infections are undoubtedly mainly responsible for the pelvic inflammatory lesions, but appendicitis and abdominal tuberculosis are also important. There were four patients who had had previous operations for appendicitis, and in the course of my own operations I found the appendix adherent in twelve cases, in ten of which it was found necessary to remove it. The appendix was not always examined, however, so the incidence of this source of infection is probably greater than I have indicated. In this connexion it is interesting to note that tubal pregnancy is somewhat more common on the right side—59 per cent as against 41 per cent in my own series.

Developmental abnormalities such as tubal diverticula and distortion of the tubes by tumours, also play a part, though I think it must be a very subsidiary one. I found only one example of developmental abnormality, a double uterus, and the malformation was probably in no way responsible for the ectopic pregnancy. I believe that tumours were observed in two cases (about 2 per cent), but in both instances the tumours were small and situated near the uterine cornua.

There are certain other factors which have been suggested

the question of etiology. Age in itself is of little importance: the youngest patient was 21 years of age, the most elderly 43 years, and the majority were between the ages of 20 and 35 years. In 40 per cent the condition occurred during the first five years of married life and 35 per cent during the second five years. In about 10 per cent the patient had been married one year or less (the shortest period was seven weeks) and in every one of these the ectopic was the first pregnancy. Evidence of previous pelvic infection was present in only one case, so there must obviously be some other cause to seek in the case of recently married and apparently healthy young women who start their child bearing career with an extruterine pregnancy.

Nearly one-third of the cases had never had a previous uterine pregnancy, of these 2 were single, 8 had been married one year or less (shortest period seven weeks), 5 one to two years, 5 two to three years, 3 four to five years, and 9 more than five years (longest period ten years).

The proportion of uterine abortions to full term pregnancies was not abnormally large, but it was noticed that the last pregnancy terminated in abortion in 20 per cent of the cases, and in 10 per cent this abortion was the only previous pregnancy.

The interval between the last uterine pregnancy and the operation for ectopic gestation exceeded three years in 55 per cent and five years in 31 per cent of cases, this lends some support to the view frequently put forward that ectopic pregnancy commonly follows a period of sterility. The shortest interval in the series was seven months but I know of one case operated upon by a colleague within four months of a full term labour.

#### DIAGNOSIS

The diagnosis of ectopic pregnancy is based upon a symptom-complex which includes one or more of the three cardinal symptoms—amenorrhoea, irregular uterine haemorrhage and abdominal pain. Pain on defaecation is also important but is not encountered with the same frequency.

John Morley has pointed out that shoulder tip pain is not infrequently met with in the graver forms of tubal rupture where the peritoneal cavity is suddenly flooded with blood. In the general run of cases dealt with by the gynaecologist this symptom will not be met with very often but in those very acute cases often diagnosed merely as acute abdomens and sent into a general hospital it will no doubt be found much more frequently.

Amenorrhoea I found present in 72 per cent of my cases. I include of course those cases where the patient merely goes a few days or perhaps a week or two over her period and then commences with uterine haemorrhage. The latter constitute the vast majority in any series as it is unusual to find a longer period of amenorrhoea than two months. Amongst my own cases there were only two in which the foetus was of more than two months development.

Abdominal pain is practically always present as I found it in 97 per cent of cases. It varies in character and degree according to the lesion, but it is generally sufficiently prominent to indicate to the patient that something is wrong. The colicky pain associated with a pregnancy still in the tube or in process of abortion is almost invariably situated on the same side as the gestation although I have seen the contrary stated. The acute lancinating pain met with in cases of diffuse intraperitoneal haemorrhage is definite striking and requires no further elaboration. There is also a more diffuse pain associated with gradual leakage of blood or repeated small haemorrhages into the abdomen and the formation of protective adhesions.

Irregular uterine haemorrhage was found in 82 per cent. The blood was almost invariably moderate in amount and dark in colour with an appearance which has been likened to prune juice or black-current jam. Very occasionally the blood was brighter in colour and more profuse and in these I think that the uterine decidua was actually in process of separation.

The old explanation that the uterine haemorrhage is the result of decidual separation or a dislodgement is obviously

not complete since it is well known that it may persist after the decidua has been completely expelled and even after the uterine cavity has been curetted. On the other hand the haemorrhage ceases almost immediately when the gravid tube has been removed, the only exceptions being those cases where the decidua is incompletely separated and is still in the uterus at the time of operation. Simpson believes that the haemorrhage is due to subinvolution the process of involution being delayed by an incomplete termination of the tubal pregnancy. In other words, some of the chorionic villi are still alive in the tube and are able to exert their stimulus upon the uterus.

The importance of the three main symptoms depends upon their presence in combination and not individually, and an examination of the histories of my own cases shows to what extent they can be depended upon in this respect. Amenorrhoea, uterine haemorrhage and abdominal pain were present in 64 per cent. Bleeding and abdominal pain occurred in 24 per cent. Amenorrhoea and abdominal pain were found in 4 per cent, amenorrhoea and bleeding in 3 per cent, and abdominal pain only in 3 per cent. From these figures it would appear that all three cardinal symptoms may be expected in six out of every ten cases and when characteristically present a correct diagnosis of ectopic pregnancy should be made without difficulty. The order of their occurrence was usually found to be amenorrhoea, abdominal pain and then uterine haemorrhage.

The complete clinical picture varies according to the lesion present and it is convenient to divide the cases into the following three groups or clinical types.

1 Cases in which the ovum remains in the tube and there has been little or no haemorrhage into the abdomen. There were 14 of my cases in this group, or 13 per cent.

2 Cases in which rupture or abortion has occurred with diffuse intraperitoneal haemorrhage—29 cases or 27.6 per cent.

3 Cases in which rupture or abortion has taken place with gradual or repeated haemorrhage into the abdomen—62 cases, or 60 per cent.

In Group 1 are included those cases in which the pregnancy is intact and also those in which a blood mole has formed. In the latter a definite group of symptoms and physical signs can usually be obtained but in the former it is doubtful if a definite diagnosis will be possible.

The patient complains of colicky pain in one or other iliac fossa and frequently of irregular uterine haemorrhage dark in colour and moderate in amount. The bleeding can in no sense be described as a flooding. She will generally have gone a week or so over her period and other signs and symptoms suggestive of early pregnancy may be present. She is not acutely ill, but may look quite definitely out of sorts.

Abdominal examination will yield little information except perhaps some tenderness on pressure over one iliac fossa. On vaginal examination the uterus may feel somewhat enlarged and it will usually be possible to make out through one or other lateral fornix a tender elastic sausage-shaped swelling. In many cases, however, the physical signs will be inconclusive and in these the advisability of careful examination under anaesthesia should be seriously considered.

In the differential diagnosis appendicitis, threatened uterine abort or inflammatory tubal swellings and small ovarian or broad ligament cysts possibly associated with a uterine pregnancy will present the greatest difficulties.

When the gestation is in the right tube the condition is apt to be mistaken for appendicitis, the patient being sent into the surgical wards of a general hospital. Appendicitis, however, presents a very definite symptom sequence—namely pain usually epigastric or umbilical nausea or vomiting local iliac tenderness fever and leucocytosis—and this will not be observed in cases of ectopic gestation. Nor will there be found in appendicitis a combination of any symptom or signs suggesting a pelvic origin—for example amenorrhoea, uterine haemorrhage and tender extracervical swelling.



threatened uterine abortion should present little difficulty. There will be definite enlargement of the uterus, with, perhaps, some dilatation of the cervix, pain, if present, will be in the back or hypogastrium, the bleeding will be more profuse, bright in colour, and possibly associated with the passage of some clots, and there will be no extrauterine swellings to be palpated.

Inflammatory tubal swellings, when mistaken for ectopic pregnancies belonging to this group, will generally be of the subacute or chronic variety, and will often be bilateral. There will usually be a longer history, vaginal discharge will have been complained of, amenorrhoea will be absent, and menstruation, if affected at all, will usually be too frequent and the loss excessive.

Where a small ovarian or broad ligament cyst is associated with an early pregnancy the diagnosis is apt to be more difficult, but here again the character of the haemorrhage, if present, will afford a clue. If no haemorrhage be present the uterus will be found definitely enlarged and soft, and the extrauterine swelling not usually tender. The swelling will also have thinner walls, and feel more cystic than a gravid tube, points easily made out and of great value in clearing up the diagnosis.

In Group 2 there are also two varieties. In one the haemorrhage is sufficient to prostrate the patient, who either dies or is operated upon immediately. In the other she reacts, and if not operated upon during the acute attack manages to weather the storm, and when dealt with surgically at a later period will present the characteristics of a case belonging to Group 3. To these Schumann has applied the terms asthenic and sthenic respectively.

In the asthenic variety the patient is suddenly seized with an agonizing and lincinating pain in the lower abdomen, accompanied by extreme nausea and vomiting, syncope, collapse, and shock rapidly follow. The pulse becomes thin and rapid, the temperature is subnormal, the features are pallid, the skin is cold, clammy, and blinched, the respirations become shallow and rapid with frequent sighing, the pupils are contracted, and the expression is anxious. There is intense restlessness and thirst. On examination the abdomen is found somewhat distended and resistant to pressure, and it may be possible to demonstrate the presence of free fluid. Tenderness and rigidity will be noted in some cases, but not in all, depending, no doubt, on the time which has elapsed since the actual rupture or abortion took place. On vaginal examination it will usually be possible to detect a fullness in the posterior fornix, or even a doughy feeling if clots be present. The affected tube may or may not be palpated. The sudden onset of symptoms and the general appearance of the patient will frequently be the chief points on which a diagnosis is made, but they are sufficiently characteristic to warrant this in nearly every case.

In the sthenic type the onset is very much the same, but the patient rallies in a short time and the pain becomes less acute. The temperature rises to  $101^{\circ}$  or higher, and the pulse remains full and strong and is not unduly rapid. The expression is anxious, the skin is not usually pallid, and the mucous membranes are not blanched. The abdomen is distended, and extremely tender to pressure. Rectus rigidity is the rule, and is usually more intense on the affected side. Shoulder-tip pain may sometimes be elicited. There is tenderness on vaginal examination and a sensation of fullness or a doughy feeling through the posterior fornix is before.

The descriptions I have given of the two types of cases are taken largely from Schumann's excellent monograph on extrauterine pregnancy, and agree with my own observations in cases belonging to this group. In the differential diagnosis various acute abdominal conditions, such as perforation of the stomach, gall bladder, or appendix, have to be excluded, but the history of the case, the sudden onset, and the persistence of extreme pallor and subnormal temperature without rigidity of the abdominal wall, in a patient previously well except for some menstrual irregularity, seldom or never leave room for doubt. (Zachary Cope.)

The sthenic type of case may be mistaken for an acute salpingitis and treated expectantly for a time. Amenorrhoea followed by bleeding is occasionally found in these

cases, so a correct diagnosis will have to be based on the short and characteristic ectopic history and the presence or otherwise of a purulent vaginal discharge or other symptoms pointing to a recent pelvic infection.

Group 3 will always comprise the majority of cases in any series, and the clinical picture will vary from that of an acute and dangerous illness to what may fairly be described as a chronic disability. The most serious cases will include those from Group 2 already referred to, and also a certain number (ten in my series) in which the amount of encysted blood is sufficiently large to form a definite tumour capable of displacing neighbouring structures and possibly reaching above the pelvic brim.

The patient complains of abdominal pain of moderate severity and usually situated in one or other iliac fossa, though later it may be diffused over the lower abdomen. There will nearly always be irregular uterine haemorrhage of the characteristic ectopic type. Careful investigation of the history will usually discover a short period of amenorrhoea followed by uterine bleeding of varying duration. A severe attack of pain followed by collapse may have occurred, or there may have been several less severe attacks accompanied by momentary faintness.

Pain on defecation is commonly met with, and sometimes dyspnoea. If the amount of blood in the pelvis be large there may be constipation amounting to obstruction, or painful or frequent micturition, or even retention of urine. The patient looks ill, though usually not acutely so, and there is generally some degree of anaemia. The temperature is slightly higher than normal, and may occasionally be over  $100^{\circ}$ . The abdomen is tender on pressure, especially over the affected side, but there is no rigidity. There may be a sensation of resistance over the pelvic brim or a definite tumour may be palpated. In the latter case the percussion note is partly dull and partly tympanic, the mass consists of both blood clot and adherent intestine.

Vaginal examination will reveal a tender mass in one or other lateral fornix, and if the blood in the pouch of Douglas be clotted a tumour will be felt through the posterior fornix also. When a large haematocoele is present the uterus will usually be displaced forwards and upwards, but if there has been bleeding into the broad ligament with the formation of a haematoma, the uterus will be pushed over to the opposite side.

Cases belonging to this group have to be distinguished from pelvic appendicitis, pyosalpinx, and retention of the gravid uterus. Pelvic appendicitis is particularly difficult to exclude, as it may give rise to nearly all the signs and symptoms of a small pelvic haematocoele. Hypogastric pain, vomiting, local tenderness, slight fever, and tenderness on rectal and vaginal examination are frequently present in both conditions, and in neither case will one expect abdominal wall rigidity. (Zachary Cope.)

In ectopic pregnancy, however, there is nearly always some amenorrhoea or menstrual irregularity, characteristic uterine haemorrhage, the appearance of anaemia, and the initial attack of pain and faintness suggestive of intraperitoneal haemorrhage. In pyosalpinx the characteristic ectopic history will be absent, there will be a longer history of ill health, and some evidence of previous pelvic inflammation. There may be some menstrual irregularity, but rarely amenorrhoea. On vaginal examination the doughy mass in the posterior fornix will be absent.

A retroverted gravid uterus should present no difficulty in diagnosis unless the tubal pregnancy has gone on to the third or fourth month. There will be a history of three third or four months' amenorrhoea, with the characteristic appearance of bladder symptoms during the fourth month, and the other signs and symptoms of uterine pregnancy will be well marked. If a catheter be passed and the bladder emptied, the absence of the uterine fundus from its proper position will be noted.

#### TREATMENT

The treatment of ectopic pregnancy is surgical, and in my opinion the sooner operation is performed the better for the patient. Expectant treatment is dangerous, as it is impossible to forecast when another and possibly fatal haemorrhage may occur. In a few of my series of cases, where shock is profound and the patient practically

patients it may be advisable to improve the general condition before submitting her to the additional strain of a lipostomy, but if this line of treatment is to be followed the patient must be in hospital or nursing home, and under constant observation as she may have to be taken to the operating theatre immediately should there be any indication of further haemorrhage.

The particular operation performed will depend on the type of case and the condition of the patient. In serious cases nothing more should be done than is actually required to save the patient's life, and this generally means excision of the affected tube with or without the corresponding ovary. No time need be lost in attempting to clear the peritoneal cavity of all blood clot. When the case is subacute and the pelvic organs are disorganized or the seat of an old infective lesion it is quite justifiable to remove both appendages or even the uterus.

Some advocates of conservative surgery have urged that the gravid tube should be saved whenever possible, but this view has not received general support. The danger of another pregnancy occurring in the same tube is probably not a remote one so most operators prefer to err on the safe side and remove it. A second ectopic gestation not uncommonly occurs in the remaining tube and there are those who would guard against this accident by always removing both tubes when operating for tubal pregnancy. This is going too far in the other direction since many of the patients have normal pregnancies subsequently if the non-gravid tube be left intact.

The operations are carried out abdominally, the only exceptions being those rare cases in which a pelvic haematocoele has become infected. In such an event the correct line of treatment is to open the posterior fornix and evacuate the infected clot. One of my own patients in whom this operation was performed subsequently became pregnant and was delivered of a healthy child.

The operations performed in my series of cases were as follows:

Unilateral salpingectomy	10 cases
Unilateral salpingo-oophorectomy	55
Double salpingo-oophorectomy	8
Subtotal hysterectomy with removal of both appendages	30
Posterior colpotomy (for infected haematocoele)	2

#### RESULTS

The prognosis in cases submitted to operation is good, and the earlier operation is performed the better the results. I know of no disease or parallel severity where the response to prompt surgical treatment is so rapid or so satisfactory. There are no doubt many patients who die before surgical treatment is available but the number of these cases will become smaller as the symptoms and signs antecedent to rupture become more generally recognized. There were no deaths in my series and this I must attribute to good fortune though it bears out what I have said about the remarkable powers of recovery which these patients display after operation.

In conclusion I will add a few words about the question of subsequent pregnancies.

Excluding those operated upon less than six months before the date of my investigation there were 53 cases where subsequent pregnancy was possible. 14 could not be traced, which reduces the number to 39. Of these 46 per cent had a subsequent uterine pregnancy and 13 per cent a second ectopic pregnancy. In 41 per cent there was no further pregnancy.

The figures show that the prognosis as regards subsequent pregnancies is fairly good but that there is a very definite risk of the patient getting a second ectopic pregnancy. As a matter of fact 7 of the 100 patients in my series had two ectopic gestations and in 5 of them I performed both operations myself. In these 5 cases the non-gravid tube was apparently healthy at the time of the first operation.

#### DISCUSSION

Miss MABEL I. RIMMAY (Plymouth) related her experience of a case of undoubtedly ectopic pregnancy for which no operation was performed. At the necropsy fifteen years later there was no sign of pelvic disease.

Dr JOHN MURRAY (Liverpool) questioned the high incidence of tubal rupture in Dr Douglas's series. In his own series of 110 cases he had only found 7 cases of undoubtedly pathological rupture of the tube. He agreed that the great majority of cases were associated with pelvic disease in one form or another but in quite a number of cases trouble could be traced to the appendix, hence on every occasion when operating for this condition he removed the appendix when reasonably accessible.

Dr BRIAN L. SOMMONS (Dublin) referred to the biochemical tests which had been introduced to aid in the differential diagnosis. Cases of ectopic pregnancy had very frequently to be judged by their general appearance only. In undoubted cases of tubal rupture he was strongly against moving the patient, preferring to operate, if need be, on a cottage table.

Dr FRANKLIN MURRAY (Newcastle) said that in many cases all the signs were referred to the upper abdomen, so that a diagnosis of ruptured ulcer or biliary trouble might be made. In the early acute stages no blood could be detected in Douglas's pouch by vaginal examination alone, but only by combined rectal and vaginal examination. He thought that many patients were operated upon too late, a wonderful improvement often resulted if a short period was given to allow recovery from the shock or being moved.

Mr GORDON (Edinburgh) said that there was one type of case which was apt to be overlooked—namely rupture into the broad ligament. He had seen this several times and it was frequently mistaken for the retroflected gravid uterus since the symptoms might be the same. He emphasized the need for the very greatest care in examining a case of suspected ectopic pregnancy, rough handling might produce disastrous consequences.

Professor R. J. JOHNSTONE (Belfast) laid stress on the extreme tenderness felt on examination in the posterior fornix, and regarded this as a valuable aid in diagnosis.

Dr HAIG LERGTON (Edinburgh) commented on the importance of obtaining an early diagnosis. In his experience the mistake was not infrequently made of diagnosing these cases as ordinary abortions.

Dr DOUGLAS, in reply, said that he might have overestimated the number of tubal ruptures but he did not think he had. He had had no experience with biochemical tests in distinguishing these cases from those of pelvic infection. He had seen a number of cases where pain had been referred to the upper abdomen. He agreed as to the dangers of rough examination.

### COMPOUND COMMINUTED FRACTURE OF TIBIA AND FIBULA INVOLVING THE ANKLE—JOINT TREATED BY THE "BIPP METHOD"

A CASE REPORTED BY MONICA BELL, M.B. B.S. DUBLIN, HUNSMATCH-ON-TYNE

With Remarks by

RUTHERFORD MORISON, F.R.C.S.,

EXCERPTUS PROFESSOR OF SURGERY, DURHAM UNIVERSITY SCHOOL OF MEDICINE, NEWCASTLE-ON-TYNE

A GROOM, aged 30, was admitted to Hexham War Memorial Hospital on June 24th, 1927. Three hours before while cycling on the road, he was crushed against a wall by a motor car, and the near wheel of the car went over his right leg. He could see that his right foot was wired completely round and that the bones of the leg were sticking out through his torn clothing, and that there was a large wound. He took hold of his foot by the heel and toes and replaced the bones as well as he could.

CLINICAL NOTE BY DR. MONICA BELL

Condition on Admission

He was a thin middle-aged man and was suffering from severe shock. After a raw examination he was taken to the operating theatre and treated with open tibia by Dr. H. L. J., and operated upon by Dr. F. L. J.

## GAS IN THE PERITONEAL CAVITY

[THE BRITISH  
MEDICAL JOURNAL]

Two large wounds smeared with dirt and motor oil were seen on the inner and outer sides of the lower end of the leg and ankle joint. After enlarging these wounds several fragments of the tibia lying completely detached, were removed and a considerable tag of soiled, hopelessly lacerated muscle, hanging out of the inner wound was excised. The upper cartilaginous surface of the astragalus was visible through the widely opened ankle joint. A few small bleeding vessels were ligatured the wounds, treated by the hipp method, were sutured by silkworm gut sutures and the leg was fixed between two lateral Gooch splints extending from the tubercle of the tibia above to the sole of the foot below.

## After Progress

The symptoms of shock soon disappeared after he was put to bed and his leg felt comfortably free from pain. After the second night pulse and temperature remained normal. After the no discharge appeared through the dressings and they were left unchanged for ten days. Then the wounds were found to be healed except where a small tag of muscle had been left projecting from the inner wound, uncovered by skin. The sutures were all removed. The small granulating wound over exposed muscle dried up without showing any sign of infection and the scrub separated in three weeks. From this time his recovery was uninterrupted.

## REMARKS BY PROFESSOR RUTHERFORD MORISON

I saw this patient at the request of Dr. Monica Bell, to whom I am indebted for notes of the case, three months after the accident described. She wished to be advised when it would be safe to allow her patient to begin to walk. He had been getting about on crutches and undergoing massage treatment. There was still some swelling of his ankle, but the fracture result was excellent and the movements of the ankle-joint were limited to about half of the normal, but were steadily improving. He is now doing his work with the help of a crutch, to be used for about three months.

During the war I proved that with the aid of suitable antiseptics infected wounds could be safely closed, and that it was possible to obtain "healing by first intention" in many of them. This was to me a new and surprising discovery, as it was to many of the visitors who came to see our work in the Northumberland War Hospital. It also confirms my belief that the greatest advance in surgery depends upon the discovery of new and more efficient germicides, just as the treatment of syphilis did. The general practitioner is in danger of losing acquaintance with Lister's principles of wound treatment and their application by the use of antiseptics, because aseptic methods are now used to the exclusion of everything else in all hospitals. With a trained staff and fully equipped service such ideal aims are justified by results, but they never will be in ordinary everyday surgical work, and patients have to pay the penalty for lack of this knowledge of the use of antiseptics.

The *Hipp Method of Treatment of War Wounds*, published by the Oxford Press (price 2s. 6d.), describes fully our practice. Numerous papers from others, as well as by myself have described the remarkable results achieved, of which the case recorded is a good example. The only explanation I can offer is to why this method has not been adopted universally is that cases of poisoning, occasionally fatal have followed it. From the first I pointed out the risk of poisoning by absorption of the measurements and a few of our early cases developed these symptoms of which I fully described. Or my later colleagues we had learned a better technique, none were all but in exceptional cases showed the blue line characteristic of bismuth absorption. Or the hundreds of cases treated in the Northumberland War Hospital by my colleagues and myself none died of hipp poisoning. The only critic in possible is that our directions had not been followed with the necessary care in fatal cases. Few alterations have been made in our method, and the latest directions are:

1. Under an aethetic usually open ether, cover the wound with gauze wing out of 1 in 20 carbolic acid, and thoroughly clean the skin and the surrounding area with

the same lotion. (Preliminary washing, by cleansing, swelling of the epidermic cells, prevents penetration of the carbolic solution, and so does harm.) Drape the surrounding area with towels wing out of 1 in 20 carbolic acid, and with gloves and instruments in the same.

2. Open the wound freely, and if possible sufficiently to permit of inspection of its cavity. A guide—finger is the best if the size of the opening permits of it, and, if not, a thick probe—should be introduced to the bottom of the wound, and held there until fully exposed. In doing this special regard must be paid to nerve trunks and muscular branches of nerves, since the division of blood vessels, excepting the ligament, and of muscles themselves does little harm as compared with that of the disability following nerve damage. Cleanse the cavity with dry sterile gauze mops, Volkmann's spoon, etc., and remove all dead tissue.

3. Mop the surrounding skin and the wound cavity with methylated spirit, and dry it.  
4. Fill up the wound with hipp, and rub it well in with dry gauze (clean hands and rubber gloves, of course, understood). Then remove all excess, leaving only a thin smear covering over the wounded surface. (In bone fractures) Dress the wound with a tip of gauze wing, bone acid powder, and cover all with an absorbent pad. This dressing requires no change for days or weeks if the patient is free from pain or constitutional disturbance. If bloody discharge comes through, the stained pad may be soaked in spirit, and a gauze dressing wing out of the same applied as a further covering, or re-dressing is very easily done. After removal of the old dressing, the wound is covered with a dossil of wool soaked in spirit, and my dressing is wiped off the surrounding skin till it is clean. A dressing like the first is then applied when necessary. Hipp should never be used as a "slive." Rubbed on cracks, squeezed into sinuses, spread over septic ulcers, it may cause a severe septic "flu up"—a dangerous and disconcerting result of treatment.

## GAS IN THE PERITONEAL CAVITY

BY  
W. MCADAM FORTIS, M.S., F.R.C.S.,  
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

The peritoneal cavity in the male is a closed sac. Into this cavity there is secreted or excreted normally a small quantity of serous fluid which serves mainly as a lubricant. Gas in the space is an alien. The peritoneal cavity in the female is not closed to the atmosphere for an canal theoretically pass through the vulval outlet into the vaginal passage, up through the cervical canal, the cavity of the body of the uterus, along a Fallopian tube, and so it is fibrillated end into the cavity of the peritoneum. That it may actually do so may be surmised by the fact that an ill enter, by suction, the vaginal space when the female is in the genu-pectoral position and the labia are parted. Further "inspiration" may carry it to the level of the rest of the female genital tract, and a chthonic peritoneal cavity. If it does it will act as a toxic substance, and may even cause some collapse by its sucking action. It is possibly the reason why some patients felt abdominal or the uterus is perforated by a sharp instrument. To put it briefly the tract along which spermatozoa travel is also open to liquid and gas.

## Gastric Gas in the Peritoneal Cavity

Gastric gas is the type of gas which is secreted by the wall of the peritoneal cavity. Perforation of the wall, or the wall of the duodenum by the contents of the stomach, is the usual cause of its entry into the peritoneum. As the nature of the gas is not known by analysis, the patient is not told what it is, and hold the abdominal muscle tight. It is

pus between the liver and the diaphragm so that the normal area of liver dullness may be diminished or even lost. It is, however, unjustifiable to wait for this sign before undertaking laparotomy in perforation.

### Intestinal Gas in the Peritoneal Cavity

It is not so common for gas from the intestines to pass into the peritoneal cavity. Occasionally in ulcer usually a typhoid one perforates the ileum near the caecum and again intense agony follows. But little gas escapes and a recurrent appendix perforates probably owing to the fact that the inflammation has blocked the connection with the caecal cavity. Here the very irritating fluid contents of the appendicular cavity produce the pain. Perforation of the colon by carcinoma or of the rectum in a blow septic and irritating gas to pass into the peritoneal cavity.

The question whether intestinal gas can pass through the unperforated and non-inflamed wall of the small or large intestine is one of great interest. Intense distension of the large intestine may occur usually in some form of very chronic intestinal obstruction and the wall of the bowel becomes so thin that it would seem as if it must give way and yet it very rarely does so. In the extreme cases gas by a fine trocar and cannula and in some cases with temporary success. When this has been done by a deliberate puncture through the abdominal wall and into the intestine the door would appear to be opened for intestinal gas to pass out. Possibly in such cases the intestinal gas is not very septic and but little of it reaches the actual peritoneal cavity—no passing out through the cannula.

Cases have been recorded in which gas has passed from the unbroken wall of the intestine into the general peritoneal cavity. The exact manner in which this occurred it is difficult to say. The gas itself appears in the circumstances to be aseptic and therefore innocuous. The following is a deeply interesting case of this nature.

A lady now aged 61 had the following history. In 1911 from the first she had pain at the menstrual periods. At the age of 21 she had a carriage accident. At 25 she was said to have a tumour in the abdomen (intestinal distension). She saw a physician in Harley Street who advised her not to have any operation but further advised her not to walk. But she did continue to walk and did not appear to be the worse for it. It is possible that the exercise helped to expel flatulence. From 20 years of age the abdomen had gradually become more distended and at times remarkably so. While there was no pain it was never really severe up to 44 years and vomiting only occurred now and again. About the age of 45 she began to have attacks of great distension with acute pain. She became utterly unnerved thereby and at times had neurotic paralysis of limbs.

### First Operation—Laparotomy

In June 1913 the abdomen was explored by a very competent provincial surgeon who found much distension of the large intestine but nothing radical was done. For a while she was distinctly better and distension being less but a year later she was as bad as ever. Examination by x-rays at this juncture merely revealed great colon stasis and left her with a troublesome burr. It was then (in 1916) that I saw her for the first time.

### First Ileosigmoidotomy

On June 7th of that year I explored the abdomen and determined to try the effect of a large ileosigmoidotomy. The result of this was perfect for three years as distension and pain vanished. Then gradually all her old symptoms reappeared.

### Second Ileosigmoidotomy

In October 1920 I saw her again. From examination I came to the conclusion that the ileo-colic anastomosis was faulty in its functioning. She would not hear of another x-ray examination so confirmation by a barium enema was faulty. As the previous operative measures had relieved her so greatly I was very desirous I should attempt one thing further and that by invagination of bowel wall the anastomosis itself admit the tips of the fingers easily. There was how ever considerable distension of small intestine and of large intestine proximal to the junction between them. After consultation I decided to make another ileosigmoidotomy close to the previous one in the hope that a very free intercommunication would relieve symptoms once more, and perhaps permanently.

Again she was pleased with the immediate result and left London rejoicing. But on April 20th 1924 three and a half years after the second anastomosis I received a letter from Dr F. M. Knott of Sutton Coldfield to say he had been called in to see her and she was distressed in pain and vomited occasionally. Feeling that further operation was not called I advised temporarily with enemas, pituitrin etc., and this treatment certainly gave some relief.

### Third Laparotomy—Large Catheter Tied In

She continued with bouts of distension and pain until the beginning of 1927 when her distress became very great chiefly because the pressure upon the diaphragm caused respiratory and cardiac embarrassment. I was asked by Dr W. Leslie of Penzance to go down to see her prepared to operate. Accordingly on February 26th I reopened the abdomen. There was no free gas in the peritoneal cavity but the small and large intestines were greatly distended leaving as it ready to burst. In order to make quite sure that one or other of the anastomoses was working I deliberately incised the sigmoid opposite the second junction. This caused a considerable quantity of odourless gas to escape from the lumen of the bowel. The stoma was perit. I then decided to pass a No. 12 oesophageal catheter (stomach tube) through the anus up the rectum into the colon and through the anastomosis. Considerable difficulty was experienced in manoeuvring the tube through the upper part of the rectum there being apparently at this spot a definite narrowing of the lumen. Eventually the catheter was manipulated to the whole distance and eventually it should not slip out it was tethered by a silk worm gut suture to the side of the anus. The incisions in the colon and in the abdominal wall were closed. The wound healed well. Dr Leslie reported that for four days whilst the tube was in it the distension remained in abeyance and the patient was much more comfortable. At my suggestion he removed the tube at the end of this time but she immediately began to distend once more and experienced considerable pain. In spite of enemata, pituitrin and strychnine only partial relief could be obtained. The reintroduction of the tube again brought about a reduction of the distension.

### Fourth Laparotomy—Gas in Peritoneal Cavity

On March 24th she passed a tubular cast or intestinal mucous membrane by the rectum after having had several loose motions but distension recurred and on March 25th it was so great that Dr Leslie determined to perform laparotomy. He opened the abdomen on the left side above my last incision. He wrote—

Imagine me a tomahawk of the abdomen on opening the peritoneal cavity there was a rush of gas and the abdomen went down by pushing my finger into the abdominal cavity would draw a loop of small and also of large intestine which appeared perfectly normal. There was no faecal colour about the escaping gas and the peritoneal cavity was as far as I was concerned perfectly aseptic. I left a small rubber drainage tube passing into the peritoneal cavity and did not make a colostomy.

Dr Leslie rightly remarks that the case is an extraordinary one. The gas must have come from the bowel from the lung or else have been formed in the peritoneal cavity itself. It was odourless and there was no peritonitis but this does not negative it being intestinal flatus. There had been no signs or symptoms indicating air from the lung, through the diaphragm into the peritoneal cavity. The spontaneous formation of gas in the cavity of the peritoneum is not unknown but it is only produced by gas forming organisms and peritonitis is invariably present. And the extreme distension of the intestines forced gas through their wall filtered it on its way and so allowed the collection of mucous gas in such considerable quantities as to cause great distension. The distension has been held in check ever since to date (September 1927)—that is for more than five months—by allowing the tube to remain in exit for the gas from the peritoneal cavity. I have detailed this case fully so that others who may have had similar cases may put them on record. For sure, I consider it to be probably one of congenital megacolon with osmosis or intestinal gas.

### Oxygen in the Peritoneal Cavity

Warmed septic oxygen gas has been introduced into the peritoneal cavity by means of a cannula passed obliquely through the abdominal wall. Introduced slowly and carefully it does not seem to cause discomfort or to be fraught with danger. A skingram taken after the inflation gases





## British Medical Association

## CLINICAL AND SCIENTIFIC PROCEEDINGS

## SOUTH WALES AND MONMOUTHSHIRE BRANCH

At a meeting of the South Wales and Monmouthshire Branch at the Swansea General Hospital, on November 17th Dr DAVID E. EVANS described two cases of renal infantilism.

*Renal Infantilism*

The clinical conditions were as follows:

The first patient was a girl aged 12 who on account of failing health had attended her school irregularly during the past six months. She now suffered from attacks of vomiting and periodic headaches. She was mentally of the average intelligence but physically stunted growth and thin. Her height was 50½ in (the average being 57 in) and her weight was 70 lb (average 81 lb). The striking feature of the condition was a marked bending of the long bones of the lower extremity producing a decided genu valgum. It was ascertained that she had attended much from unusual thirst and frequency of micturition for several years. The urine was pale, its specific gravity was 1022 and there was a faint trace of albumin present but no sugar, acetone or porphyrins were detected. The analysis of the urine generally indicated a polyuria due to renal diabetes rather than diabetes mellitus. The child steadily lost ground and died from uraemia in a few months after examination.

The second patient was a boy aged 13 who had been noticed by his parent not to be thriving. Although his appetite was good he was gradually losing weight, suffering from lassitude and on account of weakness he could not walk about. His spirit was always good. He was stated to be very thirsty and passed large quantities of urine would drink a pint to a pint and a half of water during the night and this polyuria and thirst had been noticed in his early childhood. At one period the condition was considered to be tubercular peritonitis and he remained under treatment at the St. Bride's Sanatorium for some time. Other children in the family had been strong and healthy and both parents were normal. The boy was small and thin, his weight was 62 lb (average 83 lb) and his height 49 in (average 53 in). There was general muscular wasting and he walked about with difficulty on account of a pronounced condition of knock-knee which had within the last few months become more marked. The head was rather enlarged but the heart and lungs were normal. The urine specific gravity was 1000, a dense haze of albumin was present and this showed the renal function to be very deficient.

Some six months after the examination Dr Evans had been asked to see a boy in the hospital who had recently had an operation for mastoiditis and who presented symptoms which could not be considered as arising from the disease or a post-operative condition. He recognized the patient as the boy previously described and did not doubt that the symptoms were those of uraemia from which the boy died in a few days. At the necropsy of the brain was found to be lightly oedematous with some exudate in the ventricle but there was no evidence of meningitis. The thymus and thyroid glands were not enlarged and the heart was found to be normal. An old peritonitis was observed. Both kidneys were very small firm and fibrotic with multiple small cysts in the cortical zone. Microscopic sections showed that the capsule was thickened and there was marked interstitial fibrosis with an area of active inflammation of interstitial tissue. The glomeruli were in varying stages of fibrosis and the tubules were very dilated in the non-fibrotic areas and lined with cubical epithelium throughout. The small arteries showed an endarteritis. The right suprarenal was normal but the left was not found.

Dr Evans stated that the condition was regarded by some as being due to fibrosis of the suprarenal glands. Renal infantilism was characterized by deformities of long bones of the rachitic type, a general rarefaction characteristic changes along the epiphyseal lines, liability to a deposit of poorly calcified bone under the periosteum and frequent split fracture running at right angles to the bone. There was marked retarded physical development and stunting of growth. These changes were associated with a chronic renal disease, especially in the form of interstitial fibrosis of the kidney which was possibly the result of some intra-uterine nephritis. These cases did not come under observation in the guise of a nephritis of any sort as a rule but as bone deformity in association with a remarkable stunting of growth the child appeared to be only half its true age. Both sexes were equally affected. There was no previous history of rickets or of parathyroid nephritis, and no evidence of syphilis as a factor. The kidneys were very small. The capsule was thickened and the surface was only slightly granular. The interstitial tissue was markedly increased and there were but slight changes in the parenchyma. The small vessels were

thickened, but there did not appear to be any other changes in the cardiovascular system or endocrine organs. The condition probably commenced in infancy. The patient was usually small from birth, but the special symptoms and deficient growth were not noticed until about the age of 6 or later. Thirst and polyuria might be early and marked. The joints were swollen, the knees and wrists being both affected. There was usually no bowing of the skull and genu valgum developed rapidly in the later stage of the disease. The quantity of urine varied, it may be very large with a low specific gravity. Albumin was present in a small amount and occasionally a few hyaline casts were seen. The physical development was markedly interfered with, growth was retarded and the patient was thin. Sexual infantilism occurred in some cases but not all. The intelligence was normal. Life had been prolonged in some cases almost to puberty but there was risk at any time of uraemia, as could be understood when the extremely small shrunk fibrosed kidneys were seen.

*Ophthalmic Cases*

Mr L. K. ROY THOMAS showed a man aged 24, who had been struck in the left eye by a rivet two days previously and had sustained a perforating wound, about 4 millimetres long at the upper and outer corneal scleral margin. Such an accident was very common especially in industrial districts. No foreign body was discovered within the globe. The patient was admitted to hospital, atropine was instilled and a padded bandage was applied. There was no ocular vision beyond perception of light. A traumatic cataract was present, with a swelling, lens and an anterior synechia. The eye was painful and tender and Mr Thomas said that it would require careful watching. It did not settle down soon, enucleation would be necessary in order to obviate sympathetic irritation of the right eye. Search would be made for keratitis punctata and blood counts be taken if these showed an excess of mononuclears the eye would be enucleated at once.

Mr Thomas also showed a case of embolism of a retinal artery in which an operation had been followed by recovery of sight. A man aged 53 while bending down to tie his bootlace suddenly lost the sight of his right eye. Two days later he showed the typical signs of embolism of a temporal branch of the retinal artery and an operation was immediately undertaken. Paracentesis of the corner with massage, was performed and an inhalation of amyl nitrite was given. The vision gradually improved from 0/36 to 6/9 partly with glasses and then to 6/6 fully with correction. The only defect which had persisted was scotoma corresponding to the small branch which was blocked. This did not interfere to any extent with the vision. Mr Thomas added that this case emphasized the necessity for immediate attention being given whenever sudden loss of vision occurred.

*Orthopaedic Cases*

Mr W. H. O. WOODS showed three orthopaedic cases.

The first patient was an achondroplastic dwarf aged 2½. The pathology of the disease was described and the point was emphasized that only bone laid down in cartilage was affected. A demonstration was given how this fact accounted for the deformities.

The second patient was a girl aged 12 who even years previously had suffered from attacks of swelling in the right arm which were accompanied by severe constitutional symptoms including prostration of 10½ to 16½ vomiting and great prostration. During the six years the attacks recurred but with decreasing severity. When Mr Thomas had first seen the child 3 years ago the arm was slightly swollen red and tender but there was no constitutional disturbance. The attack passing off in the course of a day. An interesting feature was that the arm from the shoulder downwards was of greater size than the other one the bones being ¼ in less long and proportionately larger than in left. The hand also shared in the hypertrophy. The whole limb resembling that of a girl aged 20. Mr Woods was unable to give a diagnosis but suggested that the condition had resulted from a local vascular or endocrine disturbance.

A series of plaster casts was exhibited to demonstrate the results of manipulation in a very rare case of congenital talipes equinovarus. The last cast showed that the foot was now in the normal position. The nature of the deformity was discussed and the attention was directed to its methodical correction. Importance was attached to the fact that the reduction of the deformity was only the first step towards cure, re-education was inevitable unless the treatment was continued until the child was able to walk, and complete muscular balance had been established.

very clearly the outlines of the solid abdominal viscera or of an intra-abdominal tumour. It is a method which may be given more trial in expert hands for cases of difficulty in diagnosis—as, for example, in the differentiation of a distended gall bladder from a right-sided mesenteric cyst. The oxygen gas is absorbed within twenty-four hours. It is well known that laparotomy, with or without subsequent drainage, has been of considerable therapeutic service in the serious variety of tuberculous peritonitis. What is the exact reason for the benefit which follows is still a matter of doubt, but some consider that the introduction of atmospheric oxygen may play a part. If this be so, might not the over-ventilation of a large proportion of fluid in tuberculous ascites and its replacement by pure warm aseptic oxygen have a similar remedial action?

#### Nitrogen in the Peritoneal Cavity

The formation of adhesions in the peritoneal cavity, either spontaneously or after laparotomy, is a very real matter, and may have serious consequences. Undoubtedly prophylaxis is of the utmost importance. The introduction of a harmless and not quickly absorbed gas into the peritoneal cavity might have a value in lessening the formation of adhesions. After a prolonged operation in which there has been considerable handling or stripping of peritoneum the whole of the incision might be closed except for a small space through which a fine catheter might be passed into the peritoneal cavity. Nitrogen, purified and warmed, may then be slowly introduced until a moderate distension of the cavity has been obtained, when the catheter should be withdrawn and a suture tied to close the abdomen. Very little if any discomfort results therefrom, even when the patient comes out from the effects of the anæsthetic.

## Memoranda:

### MEDICAL, SURGICAL, OBSTETRICAL.

#### ACUTE PHOSPHORUS POISONING

Acute phosphorus poisoning is rather rare nowadays, and the following details of a case which came under my care this year may, therefore, merit recording.

A married woman, aged 37, was admitted to hospital on September 7th with a history of having swallowed a teaspoonful of phosphorus mice paste two days previously. Within a quarter of an hour of taking the paste her stomach had been washed out and sulphur administered. The patient was said to have vomited several times after the washing out of the stomach. On admission to hospital she appeared rather nervous but answered questions quite sensibly. She said she had no pain anywhere but had belched wind several times. She asked for food but was only allowed water to drink since it was thought that milk might aid absorption of the phosphorus. There was no ulceration of the lips, tongue, buccal mucous membrane, or throat. The pulse was 60 and of good volume and tension; there was no hepatic enlargement, jaundice, or abdominal tenderness. Next day her physical and mental condition was apparently better and she was allowed tea and sugar and a piece of dry toast. There was no sign of enlargement of the liver and no jaundice. The pulse remained the same, and she had no pain or sickness. The food was returned. On September 10th she was drowsy, but not comatose. She resisted strongly attempts at palpation and percussion over the lower right costal margin. Slight jaundice of the skin and conjunctiva now appeared, and the liver could be felt by deep palpation under the right costal margin. Albumin and bile were found in the urine, but no leucine or tyrosine. A few granular and cellular casts with occasional polymorphonuclear leucocytes were seen and the urea percentage was 2. On the next day the patient was troubled with retching but did not vomit. The jaundice was more pronounced, especially in the conjunctivæ, and the lower edge of the liver was felt easily about an inch below the right costal margin. The patient appeared to be tender over this area, became restless on palpation though she lay quietly and did, except when being examined. The tongue was dry and was sore of the mouth but no petechial hæmorrhages of the tongue were observed. She became comatose and died on the morning of September 12th.

The autopsy report included the following details. There was

• The moderate seen on the surfaces of both lungs and their bronchovascular (10 oz. and 8½ oz.) into both pleural cavities. The pericardial in size, but showed some fatty degeneration. The pericardium was normal, but the cellular tissue in small quantities of the diaphragm, particularly over the right lobe extended to the level of the third

rib above, and below to about an inch below the right costal margin, and 2½ inches below the costal cartilage. The abdominal viscera small, very strongly of gelatinous. The spleen, which weighed 6½ oz., was deeply congested but there was no peritonitis. The left kidney weighed 6½ oz. and there were well marked hæmorrhages beneath the capsule and into the lower half of each pyramid, the capsule stripped readily. The right kidney weighed 5½ oz. and both organs showed fatty degeneration. There was no inflammation of the outer coats of the stomach. This vice contained a bluish brown glairy fluid resembling altered blood, which did not smell of phosphorus. Black specks, looking like altered blood, were studded over the inner coat, but these were not firmly adherent to the stomach wall. Hæmorrhages were seen on the surface of the pancreas. The uterus was non-gravid and appeared to have undergone some fatty degeneration. Hæmorrhages, each about the size of a split pea, studded the mesenteric surface. The bladder was distended, but the urine was not luminous in the dark, no naked eye pathological changes were found in the brain.

I am greatly obliged to Dr. Charles Gordon Lewis, resident medical officer, London Road Hospital, Newcastle, Staffs, for permission to publish particulars of this case.

C. F. SWINTON, M.B., Ch.B.

Newcastle-under-Lyme, Staffs.

#### ARTHRITIS DUE TO PARATYPHOID B BACILLUS WITHOUT GENERAL SYMPTOMS

A female child, aged 14 months, was brought to the outpatient department of the Belfast Hospital for Sick Children, with the following history.

About two weeks earlier the child's mother had noticed a disinclination to move the left leg, and that the knee joint was swollen. The child had previously been quite healthy, and there was no history of any infectious disease.

On admission the left knee joint was found to be swollen, and evidently contained a considerable quantity of fluid. It was not much inflamed. There were no other abnormal signs on general examination and the temperature was 98.8° F.

On the following day Mr. Hull explored the joint, and a thick, glairy exudate was withdrawn. From this fluid, which contained many pus cells, I was able to grow, in pure culture, a Gram-negative actively motile bacillus. On testing the sugar reactions of this organism I found it to agree exactly with the *Bacillus paratyphosus B*. I then made an agglutinable culture by Dreyer's method and obtained strong agglutination (up to 1 in 500) with standard *B. paratyphosus B* serum, and no agglutination with *B. paratyphosus A* nor *B. typhosus* serums. The serum of the patient also gave a strongly positive agglutination with standard *B. paratyphosus B* cultures (1 in 500), and no reaction with *B. typhosus* nor *B. paratyphosus A*. There were no general signs of paratyphoid infection. A rash did not appear nor was the spleen ever palpable, and the stools and urine both failed to show typhoid or paratyphoid organisms on culture.

The girl remained in hospital for eleven days. The temperature was normal throughout her stay, except on two evenings when it rose to 99.6° F.

The patient was taken home, but is now attending the outpatient department, and receiving an autogenous vaccine. There has been a gradual improvement, and at the end of one month's treatment the swelling has subsided and the joint is apparently normal.

I could obtain no history of infection in the family, but several cases of paratyphoid B fever have occurred in the district in which the patient lives.

J. T. LAWS, B.Sc., M.D., M.R.C.P. Lond.,  
Bacteriologist, Belfast Hospital for Sick Children.

#### SEVERE HÆMORRHAGE FOLLOWING VAGINAL TEAR

The following case is sufficiently unusual to merit record. A married woman, aged 28, ceased menstruating about 4 p.m. At midnight, immediately following coitus (the first attempt), she had a severe vaginal hæmorrhage, losing about three pints of blood. On my arrival the hæmorrhage had ceased, but she was suffering from very severe shock. I found it necessary to give her a subcutaneous infusion of saline, to which she responded well. The following day she was removed to hospital, where a more complete examination was made. A dense central adhesion was found between the anterior and posterior vaginal walls, leaving two small lateral apertures. This was situated about midway between the hymen and the vault of the vagina. A deep tear in the vaginal wall about 1½ inches long extended from the lateral aperture on the right side towards the hymen. The adhesion was broken down and the tear sutured. The patient made a good recovery.

Shantam IW

J. ALFRED GAYOR, F.R.C.S.I.

## British Medical Association

## CLINICAL AND SCIENTIFIC PROCEEDINGS

## SOUTH WALLS AND MONMOUTHSHIRE BRANCH

At a meeting of the South Walls and Monmouthshire Branch at the Swansea General Hospital, on November 17th Dr DANIEL L. EVANS described two cases of renal infantilism.

*Renal Infantilism*

The clinical conditions were as follows:

The first patient was a girl aged 12 who on account of failing health had attended her school irregularly during the past six months. She now suffered from attacks of vomiting and periodic headache. She was mentally of the average intelligence but physically of stunted growth and thin. Her height was 50½ in (the average being 57 in) and her weight was 70 lb (average 81 lb). The striking feature of the condition was a marked bending of the long bone of the lower extremity producing a decided genu valgum. It was ascertained that she had suffered much from unusual thirst and frequency of micturition for several years. The urine was pale, its specific gravity was 1002 and there was a faint trace of albumin present but no sugar acetone or norals were detected. The analysis of the urine generally indicated a polyuria due to renal diabetes rather than diabetes in itself. The child steadily lost ground and died from uraemia in a few weeks after examination.

The second patient was a boy aged 13 who had been noticed by his parents not to be thriving. Although his appetite was good he was gradually losing weight suffering from lassitude and on account of weakness of the legs could not walk about. His spirits were always good. He was noted to be very thirsty, passed large quantities of urine, would drink a pint to a pint and a half of water during the night and thus polyuria and he had been noticed since early childhood. At one period the condition was considered to be tuberculous peritonitis and he remained under treatment at the St. Bride's Sanatorium for some time. Other children in the family had been strong and healthy and both parents were normal. The boy was small and thin, his weight was 62 lb (average 83 lb) and his height 49 in (average 53 in). There was general muscular wasting and he walked about with difficulty on account of a pronounced condition of knock-knee which had within the last few months become more marked. The head was rather enlarged but the heart and lungs were normal. The urine specific gravity was 1000, a decided haze of albumin was present and tests showed the renal function to be very deficient.

Some six months after this examination Dr Evans had been asked to see a boy in the hospital who had recently had an operation for malodour and who presented symptoms which could not be considered as arising from the disease or a post-operative condition. He recognized the patient as the boy previously described and did not doubt that the symptoms were those of uraemia from which the boy died in a few days. At the necropsy of the brain was found to be lightly oedematous with some exudate in the ventricles but there was no evidence of meningitis. The thymus and thyroid glands were not enlarged and the heart was found to be normal. An old pericentesis was observed. Both kidneys were very small, firm and fibrotic with multiple small cysts in the cortical zone. Microscopic sections showed that the capsule was thickened and there was marked interstitial fibrosis with an area of active inflammation of interstitial tissue. The glomeruli were in varying stages of fibrosis and the tubules were very dilated in the non-fibrotic area and lined with cubical epithelium throughout. The small arteries showed an endarteritis. The right suprarenal was normal but the left was not found.

Dr Evans stated that the condition was regarded by some as being due to fibrosis of the suprarenal glands. Renal infantilism was characterized by deformities of long bones of the rachitic type, a general rarefaction characteristic changes along the epiphyseal lines liability to a deposit or poorly calcified bone under the periosteum and frequent split fractures running at right angles to the bone. There was marked retarded physical development and stunting of growth. The changes were associated with a chronic renal disease especially in the form of interstitial fibrosis of the kidney which was possibly the result of some intrauterine nephritis. These cases did not come under observation in the guise of a nephritis or any sort as a rule but as a bone deformity in association with a remarkable stunting of growth in the child appeared to be only half its true age. Both sexes were equally affected. There was no previous history of rickets or of parathyroidous nephritis and no evidence of sepsis is a factor. The kidneys were very small. The capsule was thickened and the surface was only slightly granular. The interstitial tissue was markedly increased and there were but slight changes in the parenchyma. The small vessels were

thickened, but there did not appear to be any other changes in the cardiovascular system or endocrine organs. The condition probably commenced in infancy. The patient was usually small from birth, but the special symptoms and deficient growth were not noticed until about the age of 6 or later. Thirst and polyuria might be early and marked. The joints were swollen, the knee and wrists being both affected. There was usually no bowing of the skull and genu valgum developed rapidly in the later stage of the disease. The quantity of urine varied, it may be very large, with a low specific gravity. Albumin was present in a small amount and occasionally a few hyaline casts were seen. The physical development was markedly retarded with growth was retarded and the patient was thin. Sexual infantilism occurred in some cases but not all. The intelligence was normal. Life had been prolonged in some cases almost to puberty but there was risk at any time of uraemia, as could be understood when the extremely small, shrunk fibrotic kidneys were seen.

*Ophthalmic Cases*

Mr E. K. ROX THOMAS showed a man aged 24, who had been struck in the left eye by a rivet two days previously and had sustained a perforating wound, about 4 millimetres long, at the upper and outer corneoscleral margin. Such an accident was very common especially in industrial districts. No foreign body was discovered within the globe. The patient was admitted to hospital atropine was instilled and a padded bandage was applied. There was no ocular vision beyond perception of light. A traumatic cataract was present, with a swelling lens and an anterior synechia. The eye was painful and tender and Mr Thomas said that it would require careful watching. It did not settle down soon enucleation would be necessary in order to obviate sympathetic infection of the right eye. Search would be made for keratitis punctata and blood counts be taken if these showed an excess of mononuclears the eye would be enucleated at once.

Mr Thomas also showed a case of embolism of a retinal artery in which an operation had been followed by recovery of sight. A man aged 58 while bending down to tie his bootlace suddenly lost the sight of his right eye. Two days later he showed the typical signs of embolism of a temporal branch of the retinal artery and an operation was immediately undertaken. Paracentesis of the cornea with massage was performed and an inhalation of amyl nitrite was given. The vision gradually improved from 6/36 to 6/9, partly with glasses and then to 6/6 with correction. The only defect which had persisted was scotoma corresponding to the small branch which was blocked. This did not interfere to any extent with the vision. Mr Thomas added that this case emphasized the necessity for immediate attention being given whenever sudden loss of vision occurred.

*Orthopaedic Cases*

Mr W. H. O. WOODS showed three orthopaedic cases.

The first patient was an achondroplastic dwarf aged 2½. The pathology of the disease was described and the point was emphasized that only bone laid down in cartilage was affected. A demonstration was given how this fact accounted for the deformities.

The second patient was a girl aged 12 who even years previous had suffered from attacks of swelling in the right arm which were accompanied by severe constitutional symptoms including pyrexia of 101° to 104° vomiting and great prostration. During the preceding six years the attacks recurred but with decreasing severity. When Mr Thomas had first seen the child a year ago the arm was slightly swollen and tender but there was no constitutional disturbance. The attack passing off in the course of a day. An interesting feature was that the arm from the shoulder downwards was of greater size than the other, the bones being ¼ inch longer and proportionately larger. The child let the hand also hang in the hypertrophy. The whole limb resembling that of a girl aged 20. Mr Woods was unable to give a diagnosis but suggested that the condition had resulted from a local vasomotor disturbance.

A series of plaster casts was exhibited to demonstrate the results of manipulation in a very rare case of congenital talipes equinovarus. The last cast showed that the foot was now in the normal position. The nature of the deformity was demonstrated and the value emphasized in its methodical correction. Importance was attached to the fact that the reduction of the deformity was only the first step towards cure relapse was inevitable unless the treatment was continued until the child was able to walk and complete muscular balance had been established.

## Clinical Cases

Mr C L Isaac showed two patients

The first was a thin and pale man, aged 57, who had had a history of stomach trouble for the previous eighteen months, with pain which came on in hour after food. It was situated in the epigastrium, radiating round to the left side between the shoulders, and was relieved by food. There was occasional vomiting, but no haematemesis. The appetite was poor and the bowels regular. A mobile mass was palpable just above the umbilicus, and in x-ray examination showed a deformity of the pylorus in this region, with only slight delay in emptying. A fractional test meal indicated the presence of active secretion and normal neutralization which was compatible with an ulcer within the stomach. A partial gastrectomy was performed and a large mass was removed from the interior surface of the lesser curvature of the stomach, one and a half inches from the pylorus.

The second patient was a boy, aged 17, who had haematuria, with no other symptoms, and no previous illness. The patient was undeveloped, but there were no physical signs of disease in any organ. The urine contained a large number of blood cells, leucocytes, and tubercle bacilli. A culture was sterile. A renal efficiency test showed blood urea 37 mg per cent, uric acid, 185 mgms and the haemoglobin index 1.50. No x-ray evidence of calculi in the urinary tract was obtained and the bladder was normal, apart from a red patch round the left ureteric orifice. Methylene blue came through the right, but not the left, ureter. Nephrectomy of the left kidney was performed and the specimen was exhibited.

A woman, aged 47, had had stomach trouble for four years, x-ray examination showed hour glass contraction to be present, with a penetrating ulcer at the lesser curvature in the cardiac portion. A fractional test meal showed that the gastric secretion was hyperactive neutralization was delayed there was hyperacidity, and evidence of pyloric delay probably due to spasm. The analysis was characteristic of duodenal ulcer but in operation brought to light a gastric ulcer together with hour glass contraction. Partial gastrectomy was performed and the jejunum was anastomosed to the stomach. The ulcer was found to be of the benign type, with much fibrosis in the muscle layers and an inflammatory reaction in a small adjacent lymphatic gland, no evidence of malignancy was obtained.

The fourth patient was a man, aged 50, with a history of absolute obstruction of four days duration with vomiting, distension, pain shortly after food and constipation for four months. He had lost weight during the last few months, but there was no blood in the stools. Laparotomy was performed and the small intestine was found to be distended with fecal fluid in the abdomen. An irreducible ilio-colic intussusception was discovered and a thickened caecum. The tumour was excised the opening in the ascending colon was closed and the end of the ileum was united with the transverse colon. Section of the tumour showed it to be an adenocarcinoma with a mixed inflammatory reaction and congestion. After six years the patient was still alive, well, and at work.

Dr Iwan Davies exhibited skiagrams illustrating bilateral renal calculi, in organic hour-glass stomach, with a penetrating ulcer on the lesser curvature in ulcer of the posterior wall of the body of the stomach, a seven months' foetus in utero, with extended breech presentation, two cases of tuberculosis of the spine, involving respectively the first, second, and third lumbar vertebrae, fracture of pelvic ring showing union in good position, fracture of the neck of the femur, and loose bodies in the knee-joint.

## STAFFORDSHIRE BRANCH

A GENERAL meeting of the Staffordshire Branch was held at the North Staffordshire Royal Infirmary, Stoke-on-Trent, on November 24th.

## Injuries to the Eye

Mr R H DICKSON read a paper entitled "Injuries to the eye in their medico-legal aspects." He specified the occupations in which injury to the eye was liable to occur, and dealt with the types of trauma most commonly met with. He discussed the pathology and the appropriate treatment of the particular types of case coming within the category of the paper, and considered in detail important points relating to sympathetic ophthalmia. The bearing of medical evidence on claims relating to compensation was fully explained, and the present state of court procedure in such cases was described and illustrated by examples. Mr Dickson put in a plea for the modification of the present procedure by the transference of judicial function, so far as the hearing of medical evidence was concerned, to a board of medical assessors, who would be much better able to sift medical evidence than a judge no matter how clear minded and erudite he might be.

## Suppurative Tenosynovitis

Mr ERIC YOUNG in a communication on "Suppurative tenosynovitis of the palm," described in detail the anatomy of the flexor tendon sheaths and of the various cellular and fatty tissue of the hand.

hand which were liable to suppuration. He next considered the diagnosis of the presence of pus in different situations, and indicated the best lines for operative intervention. He showed the exact sites which should be selected in making incisions, and particularly emphasized the point that in involvement of the common flexor tendon sheath proximal to the transverse carpal ligament the main mass of pus was invariably behind the tendons, lying between them and the pronator quadratus. He added that a collection of pus in this situation should not be incised from the front through the tendons, the approach should be made from the side in the plane of the potential space between the tendons and the pronator quadratus.

## Endoscopy

Mr G A CARTER described some uses of endoscopy, and showed a large number of instruments for the examination of the passages and oesophagus. He discussed the symptoms, aetiology and pathology of conditions causing difficulty in swallowing, and accounted a variety of cases which had come within his personal experience. He mentioned foreign bodies impacted at different points in the antrum and gullet, and demonstrated methods for their removal, together with a large number of specimens which he had extracted from different sites.

## Heart block

Dr A WILSON GILL read a paper entitled "Auriculo-ventricular bundle branch block and its diagnosis by the electrocardiogram." Dr Gill explained the anatomy and physiology of the nodal and auriculo-ventricular bundle system of the heart, and described the waves seen in cardiographic tracings of the normal heart. He then discussed the pathology and symptomatology of bundle branch block, and demonstrated cardiograms of the condition. He showed that in this disease there was a definite and pathognomonic derangement of the QRS complex, the QS time interval was increased, there were secondary oscillations on the upstroke and downstroke of the wave, and the point of the wave frequently exhibited a notch or bifurcation.

## Reports of Societies.

## LATE RESULTS OF OPERATION FOR CARCINOMA OF THE BREAST

REPORT BY A COMMITTEE OF THE MEDICAL SOCIETY OF LONDON

At the meeting of the Medical Society of London on November 28th, Mr HERBERT W CURSON in the chair, the report of a committee appointed to investigate the late-results of operations for cancer of the breast was presented and discussed. The committee, which was appointed in July, 1923, consisted of Sir James Berry, Mr Warren Low, Mr Percy Sugent, Mr Herbert Curson, and Mr T P Legg. The discussion of the report is printed at page 1085.

## A STUDY OF 265 PATIENTS ALIVE AT LEAST TEN YEARS AFTER OPERATION

The scope of the inquiry was limited to the tracing and investigation of patients for whom the primary operation was performed not less than ten years previously, and an inquiry form, sent to Fellows of the Medical Society and to surgeons attached to various hospitals in the British Isles, elicited 320 replies, 265 of these were accepted as coming within the scope of the inquiry, and form the basis of the report. The reasons for selecting patients who survived more than ten years after operation were (1) To establish a time period after which recurrence was likely to be infrequent, (2) to give a broader survey to the question of permanent freedom from recurrence, (3) to adopt a more satisfactory time period than the three- and five-year periods hitherto adopted in statistical investigations. The committee considered the three-year period too short, while the five-year period appeared to be that in which recurrences were most likely to occur. On the other hand, fifteen years appeared to be too long, because most patients "drop out" at the end of that period, would have long extended to the end of the period, and its metastasis towards the hymen. The committee sought to determine any common the tear sutured. The account for long survival should be taken into account for long survival.

The data collected have been analysed and tabulated by Mr W. I. Turner.

**SEX**—All the patients were females with the exception of three; the incidence of cancer of the breast in males being about 1 per cent. The evidence does not support the theory that the prognosis is worse in males; the three were alive and free from recurrence after eleven, fifteen, and eighteen years respectively.

**MARRIED OR SINGLE AT DATE OF OPERATION**—The percentage of single women is slightly higher than that given in the literature and the evidence shows that the prognosis is slightly better in the single than the married. The figures are: married (2 male) 60.4 per cent; single 23.3 per cent; widows 71.1 per cent; not stated (1 male) 4.1 per cent.

**AGE AT TIME OF OPERATION**—The prognosis in young patients is shown to be not so bad as is generally supposed while the decennium 40 to 50 years has the best prognosis. A considerable drop in the percentage of survivals occurs after 50 years of age but allowing for the normal expectancy of life after 60 the prognosis of cancer of the breast would appear to be good. The percentages of survivals for different ages at the time of operation are as follows: 21-30 years 1.5 per cent; 31-40 14.7 per cent; 41-50 44.1 per cent; 51-60 23.8 per cent; 61-70 9.4 per cent; 71-80 2.3 per cent; not stated 4.1 per cent.

**CHILDREN BEFORE OPERATION AND BREAST-FED CHILDREN**—There were 143 married women and 19 widows making a total of 177. Of these 22 were childless; none of the single women had born children. The number of children and the method of feeding were not stated in 45 cases. Of the remaining parous women in all the children were breast-fed in 25 it is not known whether the children were or were not suckled in 14 the children were not breast-fed. In 3 women it is definitely stated that the affected breast was not used for suckling. In 4 cases carcinoma abscess developed in the breast subsequent to affected by carcinoma. There were 7 cases of septic mastitis in breast which were affected later with carcinoma. In one of these it was noted that the carcinoma developed twenty years later in the indurated area around an incision scar. No instance of carcinoma arising in an actively lactating breast occurs in the series.

**BREAST AFFECTED AND POSITION OF GROWTH IN BREAST**—In 43.3 per cent the growth was in the right breast; in 49.1 in the left and in 2.6 the side is not stated. There is thus no evidence that the side affected has any influence on the prognosis. With regard to the position of the growth in the breast the report gives tables showing the number of cases in which respectively the whole breast, all four quadrants, the individual quadrants, the nipple and the axilla were primarily affected and the right and left breasts are separately considered. A separate table shows the results when the two breasts are considered together. The upper half of the breast was involved in 32.6 per cent; the lower half in 16.5 per cent; the outer half in 32.3 per cent; the inner half in 10.5 per cent; and the central part in 8.1 per cent. In four cases the greater part of the breast was affected and in two no tumour was found in the breast but secondary deposits were present in the axillary glands.

#### OPERATIONS AFTER MERELY NAKED-EYE DIAGNOSIS

Of 23 patients on whom the radical operation was performed 19 were alive and well for periods varying from ten to twenty-three years after the primary operation. One was alive with intrathoracic growth eighteen years after operation but without local recurrence. Two died from local recurrence fifteen and twelve years respectively after the primary operation; one died with recurrence in the supraclavicular glands secondary to a recurrence in the pleura ten years after the primary operation. Among the patients in this group two had enlarged axillary glands and both were alive and well seventeen and thirteen years respectively after the radical operation. In one patient radium was applied to a recurrent nodule one year after operation; the nodule disappeared and the patient was well twelve years after the primary operation. In one case a recurrent nodule in the skin over the lumbar spine was excised three years after the primary operation and the patient was well thirteen years after the primary operation. Of two patients whose axillary glands were infected at the time of the primary operation one was alive and well thirteen years later; the other had a portion of the fourth costal cartilage and part of the pericardium excised seven years after the primary operation and the patient died from local recurrence twelve years after the primary operation. In one patient the supraclavicular

glands were excised one year after the primary operation, and the patient was alive and well sixteen years after the original operation.

In a second group of nine cases in which the diagnosis was made on naked-eye appearances alone the primary operation was "incomplete." In two cases of local excision of the tumour there was in one case a massive recurrence in the breast and the axillary and supraclavicular glands were enlarged. A radical operation with excision of the supraclavicular glands was performed and the patient was well, with no signs of recurrence sixteen years after the primary operation. In the other case a radical operation was done one year after the primary operation; the patient was alive twelve years after the first operation with recurrence in the car and secondary deposits in the spine. In a patient in whom the axillary glands were enlarged the breast, pectoral and axillary fasciae and axillary glands were excised and she was well with no signs of recurrence sixteen years later and in a similar case but without enlargement of the glands the patient was well twenty-three years afterwards. In three patients the breast and axillary glands were excised; one was alive with recurrence in the scar fourteen years after the operation; in the second recurrent nodules in the scar were treated with x-rays three years later; the nodules disappeared and the patient was well with no signs of recurrence ten years after the primary operation; in the third a nodule in the scar was excised two years after the primary operation and the patient was alive and well fourteen years after. In three patients the breast only was excised, and subsequently each had operations for local recurrent nodules. In one the axilla was cleared two years after the primary operation and two other operations were done for local recurrences in the scar four and seven years later—he was well and without recurrence eleven years after the primary operation; in the second case three operations for local removal of recurrent nodules were performed and the patient died with recurrence eleven years after the primary operation; the third patient had two or three operations for local recurrences in the first two years after the primary operation and one for recurrence in the pectorals major fifteen years later when a ray treatment was instituted; the patient dying thirty-two years after the primary operation from peritonitis.

#### OPERATIONS AFTER ALLEGED MICROSCOPICAL DIAGNOSIS

In 19 cases the diagnosis is stated to have been made by the microscopical appearance but these were not described in detail and no macroscopical appearance of the tumours were given. A radical operation was done in 8 cases; in one the supraclavicular glands were excised for recurrence ten years after the operation and the patient died twelve months later from recurrence; in another the opposite breast was removed for carcinoma six months later. Seven patients were well with no signs of recurrence ten to eighteen years after the primary operation. In 5 cases the operation was performed in stages; in one the radical operation was done soon after the excision of the axillary glands, the patient being well, with no signs of recurrence ten years after the primary operation; in four others a local excision of the tumour was followed by a radical operation at intervals varying from five days to two months, 2 of the patients being well with no signs of recurrence ten years after the primary operation and 2 twelve years after. In one case a supposed adenoma and a year later local nodules of carcinoma were excised, followed by a radical operation; the patient being well with no signs of recurrence nineteen years after the primary operation. In 3 patients the breast only was excised; in one there were operations for local recurrence—eight and fifteen years after the primary operation; the patient dying from cancer shortly after the last operation; in another a local recurrence was excised and the supraclavicular glands removed six years after the primary operation; the patient being well and free from recurrence twenty-one years after the primary operation; in the third a dissection of the glands at the neck on the same side, with removal of a cancerous gland under the mastoid, was made nine months after the primary operation; removed



by excision of the axillary glands eleven years after the operation, the patient being alive, with local recurrences, twelve years after the primary operation

#### OPERATIONS AFTER DEFINITE MICROSCOPICAL AND MICROSCOPICAL DIAGNOSIS

##### *Histological Types*

In 212 patients the diagnosis was confirmed both microscopically and metacoscopically. In 45 of these the tumour is described as a spheroidal-cell carcinoma with much fibrous tissue (*scirrhous carcinoma*). A radical operation was performed in 40 of these, and 31 were alive and well, and free from recurrence, ten to twenty years after the primary operation, 4 died from causes other than recurrence, with no sign of cancer, one was alive, with recurrence in the supraclavicular region, ten years after the primary operation, 4 died from recurrence. In one patient the breast, fascia, and superficial fibres of the pectoralis major were removed and the axilla was not touched, this patient died of recurrence in the chest wall eighteen years after the primary operation. In another the breast, fascia, superficial fibres of the pectoralis major, and the axillary glands were removed, and the patient was alive and free from recurrence twenty-seven years after the primary operation. In two patients the breast, pectoral, and axillary fascia and glands were excised, they were alive and free from recurrence ten and twenty years respectively after the primary operation. An incomplete primary operation in two cases was followed by death with recurrence in eleven and fourteen years respectively.

In 26 patients the tumour is described as a *spheroidal-cell carcinoma*. A radical operation was done in 21 of these, of whom 19 were well and free from recurrence for ten to sixteen years after the primary operation. One died from heart disease at the age of 64, sixteen years after the primary operation, another was alive with supraclavicular recurrence ten years after the primary operation. In 5 patients the breast, fascia, and axillary glands were excised at the primary operation, all of these were alive and free from recurrence from eleven to nineteen years after the operation.

In 4 cases the growth is described as an *adenocarcinoma* (a variety of spheroidal-cell carcinoma). A radical operation was done in all, and they were alive and free from recurrence eleven, fourteen, fourteen, and fifteen years after operation.

In 11 cases the growth is described as *encephaloid*. In all a radical operation was performed, and all were alive and free from recurrence ten to twenty-three years after the primary operation.

There were 12 cases of *duct carcinoma*. A radical operation was done in 11 of these, all of whom were alive from eleven to sixteen years after operation, and free from recurrence. In one case local excision with a little of the surrounding breast tissue was done, and the patient was alive and free from recurrence fifteen years later.

In 4 cases the growth exhibited *mucoid change*. A radical operation was performed in all, 3 were alive and free from recurrence eleven, fourteen, and seventeen years respectively after the primary operation, one was alive twelve years after operation, with local recurrence.

One patient had an *atypical growth*, with preneoplastic changes in the ducts and malignant secondary glands. A radical operation was performed and, six years later, Wertheim's operation for carcinoma of the cervix, the patient was alive, with no signs of cancer, ten years after the primary operation.

#### SCORE OF OPERATION AS REGARDS BREAST, MUSCLES, AND GLANDS

*Local Excision of Tumour at Primary Operation*—Of the 15 cases in which this operation was performed 14 had a radical operation within a few days or months of the local excision. The patient in whom no second operation was performed (a case of duct carcinoma) was well and free from recurrence fifteen years after operation. Of the remaining cases, 13 were well for periods of ten to thirty-four years after the primary operation, two of these were operated on for carcinoma of the other breast. One case was alive with recurrence in the scar and secondary

deposits in the spine twelve years after the primary operation.

*Breast only Excised at Primary Operation*—This operation was done in 12 cases. In two nothing further was done, one of these was alive and free from recurrence twenty-four years later, and had had a colostomy for carcinoma of the rectum performed twenty years after the breast operation, the other died twenty-five years after operation with extensive local and glandular recurrence. The remaining ten patients had secondary operations, varying in scope. 5 of these were well, with no signs of recurrence, 3 eleven years, one twenty-one years, and one twenty-six years after the primary operation, one was alive, with recurrence in the axillary glands, fourteen years after the primary operation, 3 died from recurrence eleven, twelve, and thirteen years after the primary operation, one died of peritonitis, with no sign of recurrence, thirty-two years after the primary operation.

*Axillary Glands Excised at Primary Operation*—In two patients no growth was found in the breast. The axillary glands were culled, removed, and found to contain carcinoma. A radical operation was done a few days later, and the patients were alive and well eleven and ten years later.

*Breast and Axillary Glands Removed*—In 7 of the 14 patients there was no subsequent operation, 3 of them were well and free from recurrence twenty-one, eleven, and twenty years later, 2 were alive, with local recurrence, twelve and fourteen years later, 2 died from recurrence eleven and fourteen years later. Seven other patients had subsequent operations—two for carcinoma of the other breast, 5 for local recurrent nodules, and one for recurrence in the supraclavicular glands. Three were well twelve, ten, and fourteen years after the primary operation, one was alive with recurrence in the supraclavicular glands fourteen years after, and 3 died of recurrence fourteen, twenty-four, and fourteen years after the primary operation.

*Breast, Pectoral and Axillary Glands and Fascia Excised*—There were 21 patients. In 15 no subsequent operations were performed, 14 of these were well, with no signs of recurrence, ten to twenty-three years after operation, one died, free from recurrence, of old age (80), one had keloid scars removed and was well after eighteen years, one had an operation for carcinoma of the other breast, and was well ten years after the primary operation. Four patients had secondary operations for recurrence, one was well sixteen years after the primary operation, two were alive, with recurrence, twenty-four and twelve years after, one died from bronchitis twenty years after the primary operation.

*Breast, Fascia, Part of Pectoralis Major, but no Glands, Excised*—One patient, two operations for recurrence, death from recurrence in chest wall eighteen years after the primary operation.

*Breast, Fascia, Pectoralis Major, and Axillary Glands Removed*—There were 44 cases. Of these 34 were alive and well ten to twenty-three years after operation, 3 were alive, with recurrence, ten, eighteen, and eleven years after operation, 2 died ten and nineteen years after operation, with no signs of recurrence, 5 died, with recurrence, ten to eighteen years after operation. There was a secondary operation for recurrence in 7 patients, and in one the other breast was removed for carcinoma.

*Breast, Fascia, Pectoralis Major, Pectoralis Minor (Divided or Removed), and Axillary Glands Excised*—There were 135 cases, of whom 121 were alive and well ten to twenty-two years after operation, 4 were alive, with recurrence, ten to twelve years after operation, 5 died of recurrence ten to eighteen years after operation, and 5 died from causes other than cancer, and with no signs of recurrence, eleven to sixteen years after operation.

*Pectoralis Major, Fascia, Axillary, and Supraclavicular Glands Removed*—There were 11 cases, in none of which were the supraclavicular glands infiltrated with cancer. In none were there secondary operations for recurrence, but one patient had colostomy performed for carcinoma of the pelvic colon. Ten were alive with no signs of recurrence eleven to fourteen years after the primary operation. One was alive with metastases in the liver and peritoneum thirteen years after operation.

The report next deals with the method of doing the operation, and the subsequent operations which became necessary. In nearly 25 per cent of the total number of patients one or more operations were necessary in addition to the primary operation. Details of these are tabulated, under the headings of (1) Recurrence in skin or parts adjacent to operation area, (2) Recurrence in glands of the same side as the breast operated on, (3) Recurrence in the pleura, (4) Recurrence in the skin over the lumbar spine, and (5) Supposed recurrences proved not to be malignant on microscopic examination.

#### CARCINOMA IN THE OPPOSITE BREAST

In 13 patients carcinoma developed in the opposite breast. The growths do not appear to have been recurrences except possibly in 3 patients in each of whom operations had been done for local recurrences on the side of the primary operation. In most cases a number of years elapsed between the operations on the two breasts. Of the 13 patients 3 died—one from bronchitis twenty years after the primary operation and six years after removal of a malignant ovarian tumor. The other 2 died from recurrence twelve and thirteen years respectively after the primary operation, the other breast having been removed two years before death. Nine patients were alive with no signs of recurrence one to five years after the operation on the second breast and one patient lived for thirteen years.

Very little information was gained with regard to treatment by x rays and radium. X rays were employed in 44 cases and radium in 8 full details of which are given in the table. Several tables deal with the subject of glandular infiltration and its effect on prognosis after operation.

#### SUMMARY OF LATE RESULTS OF OPERATION

Of the 265 patients 73.6 per cent were alive and well with no signs of recurrence at intervals of ten to thirty-four years after the primary operation. 3.8 per cent were alive and well at intervals of ten to twenty-six years after the primary operation but had undergone an operation for carcinoma of the other breast—in one of these more than ten years had elapsed since the second operation in the other 9 the interval was less. 1.5 per cent had operations for carcinoma in other parts of the body. 3.8 per cent were alive and well at periods of ten to twenty-one years after the primary operation but had had one or more operations for recurrence. 7.9 per cent died with recurrence more than ten years after the primary operation at intervals of ten to twenty-five years. 3.8 per cent died more than ten years after operation at intervals of ten to thirty-two years without signs of recurrence.

Of the patients who were alive more than ten years after the primary operation recurrence appeared in 46 (17.35 per cent). These cases fall into two groups: (1) Ten were alive with no signs of cancer but had had an operation for recurrences which were with one exception all local to the primary operation. (2) Fifteen were alive with signs of recurrence and 21 died of recurrence more than ten years after the primary operation. Taking the two groups together the recurrences were local in 25 patients in 17 of these they appeared within ten years in 6 between ten and fifteen years and in 2 between twenty and twenty-five years. The critical times after operation would appear to be the first three years (13 patients—28 per cent—had recurrences in these years) between nine and ten years (when there were 10 cases of recurrence—22 per cent) and again between ten and fourteen years when recurrence occurred in 11 patients—24 per cent.

#### PRESENT POSITION

Of the 265 cases dealt with in the report 195 patients are alive and well with no sign of recurrence (after ten years 21 patients, after eleven 23, after twelve 22, after thirteen 26, after fourteen 22, after fifteen 18, after sixteen 9, after seventeen 11, after eighteen 8).

after nineteen 1, after twenty 7, after twenty-one 2, after twenty-two 2, after twenty-three 3, after twenty-four 1, and after twenty-five 1. Ten patients are alive and well but within the last ten years have had an operation on the other breast for carcinoma. Four patients are alive but have had an operation for carcinoma in some other organ. Ten patients are alive and well, but have had an operation for local recurrence. Fifteen patients are alive but with local recurrence. Twenty-one patients died with recurrence more than ten years after the primary operation. Ten patients died more than ten years after the primary operation from causes other than carcinoma and with no signs of recurrence.

#### DISCUSSION

Mr. J. P. IEGG, a member of the committee, after summarizing the conclusions of the report dealt with two general criticisms. One was that it was not known of how many patients the 265 accepted cases, which formed the basis of the report were the survivors. On the criterion of some figures supplied from their own practices by Mr. Grey Turner and Mr. Hey Groves it would appear that the 265 might be said to be the survivors of between 1,900 and 2,500 individuals. The second criticism was that the information being supplied by a large number of surgeons there was great diversity in terminology and in other more important respects this was certainly a weakness of the statistical method. Very little information was to be gained from the report as to the use or value of radiation methods, awaited an answer. In one respect the report was disappointing. It had been hoped that some common factor might be found which would account for long survival. That hope had not been realized.

Mr. HERBERT CAPSON said that it was a matter of great regret to the committee that no common factor which made it impossible to give a term to the chance of recurrence in cases of cancer of the breast success had attended the treatment of local recurrences.

Mr. W. E. MILES speaking from an experience of treatment of cancer of the breast extending back for twenty-eight years emphasized the need of keeping in view not merely extrathoracic but also intrathoracic spread and the possibility after extensive operation of the breast of metastases in the supraclavicular glands. For the purpose of more complete removal of the affected supraclavicular glands he had removed the clavicle thereby obtaining an excellent exposure. He regarded the surgical treatment of cancer of the breast as largely fortuitous. If the operation had included the whole of the tissues which had been invaded by the extension of cancer cells from the primary focus then it was a success but if the cancer cells had passed beyond the scope of the operation into the thorax it was a different matter. He had never seen at the Cancer Hospital a case of cancer of the breast cured by x rays. For a time, after breast excision he had sent cases for exposure to x rays with the idea that any isolated cancer cells might thereby be destroyed but he had never seen such early rapid and widespread recurrences as in the cases he dealt with the whole area exposed to x rays seemed afterwards full of minute metastases.

Mr. W. SAMUEL HANDLEY said that an unreasoning pessimism on the part of the public was one of the difficulties of the surgeon. Patients with a lump in the breast had an idea that if it was not cancer there was no hope and if it was cancer there was no hope. Among his own private patients the average time which elapsed between the patient first noticing something wrong and coming for medical advice was nearly six months. The uncertainty or a tentative inquiry in such a complex matter as breast cancer was limited. His own view was that a detailed study of a series of individual cases was likely to be more fruitful than a study of a large number. There was a general tendency to despair of a case if recurrence followed the operation and the present report would serve as a corrective. The discrepancy between the descriptions quoted in the

report seemed to point to the necessity of obtaining a standard collection of histological specimens, and also of encouraging a supply of competent histologists by providing appointments which would permit able men to devote their whole career to histology.

Mr T P WATSON said that since 1919 he had had at his disposal a very satisfactory follow-up department, and on dividing his cases into two groups, those before and those after the institution of this department, some interesting comparisons were made possible. The number of lost cases, which figured largely in the earlier returns, was greatly diminished as a consequence of the follow-up system. In a group of 93 cases operated on, it appeared that 17 had had recurrences within less than one year, 12 in from one to two years, 9 in from two to three years, and 2 in from three to four years, the greatest number of recurrences were found before the end of the second year. Of the other patients, 40 were well, one had died from another cause, and three were untraced, a-ray treatment had proved of great value in cases of recurrences.

Mr JOSEPH SWAN gave figures obtained from an inquiry at the Cancer Hospital in 1924 as to the cases which had been treated during the period 1904-14. Of 562 operated on, 433 were known to be dead, 45 were alive and well at the time of the inquiry, and 84 were untraceable. The analysis of the figures bore out the point that the earlier a case was obtained the better were the chances of a good result. He agreed with Mr Miles as to the ineffectiveness of x-rays. He had never seen a case of cancer of the breast cured by x-rays, though he had seen several cases of simple subcutaneous recurrence clear up.

Dr S WARD took exception to one statement in the report, because, although it expressed what was literally true, it left an inference which he believed to be negated by the facts. It was stated that "Looking at this table [a table giving the number and date of recurrences in 46 patients] a striking feature is the small number—4 patients (8.6 per cent)—with recurrence after fourteen years." The inference was that the longer the patient lived after operation the less was the likelihood of recurrence. Thus, he believed, could not be sustained.

Mr DUNCAN BIRZEWILLIAMS said that a considerable number of patients mentioned in the report had a local operation, and then, at a later stage, perhaps two years afterwards, a radical operation, if the condition was not generalized then a local operation would cure it. He was thinking of those breasts in which an operation was performed for some suspicious symptom, and enormous was found afterwards, not the cases of manifest malignancy. There were such cases in which a local operation was sufficient. He had not found x-rays very effective, but he had a great respect for radium, which rendered inoperable cases not only operable, but so nearly normal that he had sometimes refused to operate. Radium, however, had the most deleterious effect when associated with the operation, for it delayed healing and sometimes caused a burn.

Mr WALTER LOW said that the committee, of which he was a member, chose the period of ten years, because it was felt that there would be little use in taking a shorter period. One of the impressive things brought out in the report was the large number of survivors, many of them free from recurrence, ten years after operation. It was evident that if surgery could not cure these cases it could delay the ultimate end for a number of years.

Mr ZICHARY COPE raised the question as to what was the natural history of cancer. How many patients survived without operation at all? It seemed that cancer might be either long-lived or short-lived, some cases lasted for years, in others the spread was so quick that the patients died in a year or less. Cancer lay dormant over such extraordinarily long periods that it seemed doubtful whether it could ever be said to be cured.

Mr DONALD ARMOUR, speaking with regard to x-ray treatment, said that the West London Hospital was the first to apply the bilugene treatment to carcinoma of the breast, but no cases could be written off as either cured or improved by that method. With regard to the mode of spread there was no doubt in his mind that in many cases in which the supraclavicular glands had become

infected, the infection was not from the axillary glands but from the intrathoracic glands.

Mr W E TAYLOR, who had analysed and tabulated the results, replied briefly to appreciative remarks by Mr LIGA and Mr CARSON.

## DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEY

At a meeting of the Royal Medical-Chirurgical Society of Glasgow, on November 18th, the president, Dr JOHN COWAN, in the chair, Mr ROY YOUNG opened a discussion on modern views regarding the diagnosis of surgical diseases of the kidney.

Mr Young described the routine examination of a patient with suspected urinary trouble. This comprised a complete report of the history of the illness, thorough examination of the patient, including the blood pressure, chemical, microscopic, and bacteriological tests of the urine, and a record of the amount passed in twenty-four hours, radiological examination of the urinary tract, and an estimation of the total renal efficiency, which in some cases could be omitted. At the first cystoscopy the whole bladder was examined with special reference to the appearance of the ureter orifices and the rate and character of the efflux from them, the colour test was also performed. A second examination might be necessary, with catheterization of the ureters, in order to collect the separate urines, for location of stone, or for pyelography. The obvious drawback to such an examination was that it involved expenditure of time and money. Mr Young thought that the examination should stop at the point where it was concluded that an accurate diagnosis had been made. This might occur early in the examination or not until the final pyelograph. He illustrated the necessity of a complete examination of the whole urinary tract by the case of a man who had been under treatment for a considerable time for nephritis, since albumin had been found in his urine. No benefit followed, and then a bacteriological examination of the urine revealed the presence of coliform bacilli. He was treated with vaccine and, after a time, seemed to be cured. He went away for a holiday, but on the second day he had to be admitted to hospital, where a large phosphatic calculus was removed from the bladder. On his return to Glasgow, since he appeared to be no better, he came into the Western Infirmary, where Mr Young removed a very large calculus, together with a functionless pyonephrotic right kidney.

Mr ARTHUR H JACOBS confined his remarks to the diagnosis of renal infection—the commonest of all surgical diseases of the kidney. In pyelitis this was confined to the renal pelvis and calyces, in pyelonephritis the perinephrium, or kidney proper, was also involved while in a pyonephrosis there was gross distention of the kidney substance, which might result in the organ being converted into a mere bag of pus. The symptoms of renal infections might be exhibited in a fulminating, acute, or chronic form, but in all types the urine contained organisms and pus, the latter varying in quantity from a few cells to a thick deposit easily recognized by the naked eye. Frequent and sometimes painful micturition, occasionally accompanied by a dull ache or pain in the loins, were the usual urological symptoms. In the majority of cases the pyuria was chronic, and an attempt was made to find out the source of the infection, whether one kidney or both were involved, to what extent the renal function had been impaired and the kidney substance destroyed, whether any complication such as ptosis, calculus, or hydronephrosis was present which would tend to keep the infection persisting or predispose to its recurrence. Only after these questions had been answered could a rational line of treatment be adopted. In about 80 per cent of cases the causative organism was *B. coli* communis, in the less common staphylococcal and streptococcal infections evidence of recent or old septic foci might be found on the cutaneous or mucous surfaces. After a preliminary x-ray examination of the complete urinary tract to exclude calculus all areas of the bladder were examined cystoscopically to exclude the presence of any vesical papilloma or diverticulum.

Mr J SCOTLER BUCHANAN thought that since the diagnosis and localization of stone was possible in most cases by the ordinary physical and radiographic means patients

being inserted towards the lower pole of the kidney. This so-called abnormal vessel often tended to constrict the uretero-pelvic junction and was thus a fruitful cause of hydronephrosis. The symptoms arising from this condition were those of hydronephrosis, and in ache in the back, generally without minor disturbance, was the outstanding feature. These, taken in conjunction with a negative finding on x-ray examination, suggested the advisability of pyelography, which would at once give a perfect demonstration of the cause, the picture generally showed kinking and constriction at the pelvic outlet. It had been questioned whether mobile kidney ever caused kinking of the ureter and obstruction to the free outflow of urine, but the symptoms in many of these cases were identical with those caused by stone or any other condition which might obstruct the outflow of urine from the kidney. A negative result from x-ray examination indicated the necessity of making a full urinary investigation. Pyelography in such cases would not only determine the cause of the pain, but the nature of the treatment required to relieve it. Ectopic kidney, though comparatively rare, had been mistaken for tuberculous disease of the caecum, and in operation showed only a non-inflammatory retroperitoneal tumour suggestive of kidney. Pyelography proved the truth of the supposition, and further showed that the mass consisted not of one but of two kidneys, fused, and of the horseshoe type. The ureters in this case proceeded to the mass from normally situated bladder openings. It had been estimated that one in about every two thousand four hundred persons had only one kidney, a fact which should be remembered by the surgeon performing a nephrectomy, and more especially where sepsis was present and the loin incision was used. It should be a rule never to remove a kidney without previously having made certain of the presence of a second, and put it from opening the abdominal cavity—a proceeding not without danger in the presence of sepsis—the only method was pyelography. Cystoscopy showing the normal excretion of indigo carmine from a normally placed ureter might be fallacious. Horseshoe kidney, the presence of double ureters, double kidney, and various other developmental defects were all conditions which in most instances should be recognized before and not at operation.

Mr. JAMES R. LEWIS considered that employment of the modern diagnostic methods required is given attention to surgical ritual is did any other operation. In uninfected cases freedom from chills and fever after the examination might be taken as in index of the attainment of surgical cleanliness, it was practically certain that these resulted from temporary bacteriemia. That the number of such reactions could be reduced to a very low figure was shown in a recent series of five hundred pyelographies, in which only seven patients had pyrexia above 100° F. Given that the surgical technique could be made impeccable the cystoscope was definitely contraindicated (1) when the patient was aged and infirm, (2) when he was greatly weakened, (3) when bilateral renal impairment of an extreme degree was present as detected by clinical data, studies of the blood chemistry, and renal efficiency tests, (4) when it was apparent that no surgical procedure could be of any benefit. Under the first three conditions even the mild ordeal of cystoscopy might turn the scale against the patient, and suppression of urine might occur. As an example of the fourth contraindication might be cited the hypothetical case of a patient who had haematuria, a mass in the loin, and a pathological fracture of a long bone. In introducing the cystoscope various anatomical difficulties might be encountered, thus phimosis, an unusually narrow meatus, or a urethral stricture might require correction. If dilatation of a stricture was necessary the cystoscope could be passed it was probably such a defer cystoscopy for a few days. In prostatic whether or not marked intraventricular projection might offer

Mr. DON, the passage of the instrument. Inspection treatment, stone might solve the urinary problem, and first to apply to our passage of ureteral catheters was briefest, but no case had circumstances in which it was or improved by these the ureters were the presence spread, there was no time not accounted for by the cases in which the urethra, the need of detection of each kidney the necessity

of making a pyelogram, and the necessity for identifying a ureteral stone. Certain precautions might be taken to guard against the possibility of conveying infection to a non-infected kidney by the passage of a ureteral catheter through an infected or tuberculous bladder. The previous exhibition of urinary antiseptics helped to reduce the infection, the bladder must be well washed out before the cystoscope was introduced, and in certain types of instrument the ureteral catheter might be introduced and passed while continuous irrigation was provided through the cystoscope. When these precautions were taken the risk of infecting the kidney was very slight. There might be considerable mitomical difficulty in finding the ureteric orifices and introducing the catheters. Thus the ureters might enter the bladder at abnormal positions, the presence of a cystocele might distort the vesical picture, and in infected bladders, especially when the infection was tuberculous, seeping from cystitis and metritis might impede the passage of the catheter, or might even prevent the identification of the ureteral orifice. In the latter case it might be necessary to expose one or both ureters in the loin, as described by Fullerton, in order to discover the state of the kidneys. Pyelography should not be attempted when a diagnosis could be reached without it, as, for example, in hydronephrosis, by obtaining a large amount of residual urine from the kidney pelvis, in the aged, infirm, or emaciated, and in acute infection of the kidney. Pyelograms might be made on both sides at the same time, should it seem desirable. The solution employed for pyelography was non-irritating, non-toxic, easily sterilized, almost neutral in reaction, and flowed in and out of the pelvis as easily as water. Its only disadvantage was that it was not germicidal. Too much solution must not be introduced. The patient was conscious, and was thus able to complain of the pain to which over-distension gave rise, although if the catheter had been pushed so far in that its eye rested in a calyx he might complain of pain after the introduction of enough fluid to distend the calyx alone. In practice this error was easily recognized and rectified by withdrawing the catheter an inch or so. Then, again, the calibre of the ureteral catheter should be such that any excess of fluid could escape down the ureter. Fluid introduced at too high a pressure was apt to find its way into the intrarenal venous system, such a possibility ruled out pyelography in acute kidney infections. After the radiogram had been taken the fluid was removed from the renal pelvis with a syringe before the catheter was withdrawn. The interpretation of the pyelogram was often beset with difficulties. There were so many variations in the shape of the normal pelvis and calyces that a considerable amount of experience was required before it could be definitely said that the pyelogram was abnormal, and the appearance must always be considered in the light of the clinical data.

## DEEP X-RAY AND RADIUM THERAPY IN RELATION TO THE UPPER RESPIRATORY TRACT

At a meeting of the Section of Laryngology of the Royal Society of Medicine on December 2nd, Mr. HAROLD BIRWELL presiding, a discussion took place on deep x-ray and radium therapy in growths of the mouth and upper respiratory tract. It was preceded by the exhibition of a number of specimens and cases, and members of the Section had an opportunity earlier in the day of visiting the throat and the radiotherapeutic departments at St. Bartholomew's.

Dr. W. L. WATT described the applications of x-rays of extreme hardness, filtered through copper or zinc, in the treatment of growths, and pointed out the differences between deep therapy of the upper respiratory tract and that of the uterus. The uterus he compared to an island, it was completely surrounded by fluids, and gave opportunity for that wide action of the rays which was particularly desirable in order to inhibit and destroy the disease. But should the same principles of application be employed in the irradiation of the larynx, where one had, not an island at all, but a surface covered on part all covered with an, general overdosage would be extremely likely to



Mr. Stevenson Case thought that lesions of the roof and  
back of the mouth responded better to radiation than  
those of the floor. Tumours of the palate could be made  
to disappear in nearly every case by means of radium. For  
treatment the mouth must be clean and nearly all the

The President result had been thoroughness. The President said that he had been greatly impressed with what he had seen at St. Bartholomew's that morning—the work of Mr. F. A. Roe, Mr. Douglas Harmer and Dr. Finzi. He might quote one remark made by Mr. Harmer—namely that if he saw a case of malignant disease too far advanced for laryngeal surgery but suitable for laryngotomy he considered it should have radiotherapy first but if it was suitable for laryngeal surgery he was rather in doubt as to what operation he would take up. That the President thought would be the general view.

Mr Dunhill declared that the administration of an-  
thetis to patients suffering from the various forms of  
goitre called for great ability on the part of the sur-  
geon. Mechanical difficulties were encountered in ca-  
ses of bilateral colloid goitre and in intrathoracic goitres in  
addition to which there were complications such as tachy-  
cardia. These patients had often unclean mouths and  
enlarged tonsils. A quiet urethra was essential since  
otherwise a second operation might be necessary to re-  
move the chloroform from the gland. Mr Dunhill had at first  
hesitated to use adrenaline until it had been exophthalmic  
but it was positively contraindicated. On rare occasions

it was the anæsthetic of choice, and was best administered by the single drop method. In most cases requiring a general anæsthetic ether had replaced chloroform. The method of choice was the intratracheal, since it enabled a sterile field of operation to be maintained and ensured a smooth anæsthesia. The rectal method of administration was useful at times, since the head of the table was freed from apparatus. A light degree of narcosis was required and not full surgical anæsthesia; the dose should be calculated on the side of under dosage. It could be supplemented if necessary by inhalation of ether, or gas and oxygen. Nitrous oxide with oxygen was valuable and might be combined with local anæsthesia. The latter was unsuitable for young or frightened patients, but it had the advantage of securing a bloodless field, for its proper exhibition there must be mutual co-operation between patient and surgeon. For adenoma endotrachealis and oxygen with possibly a little ether was indicated in most cases. In a dry examination it is essential to determine the position and shape of the trachea; no anæsthetist should be expected to pass an intratracheal catheter until this had been done. For colloid goitres general anæsthesia with ether was advisable, preferably by endotracheal methods. Gas and oxygen could be used except in patients suffering from great mental stress. In exophthalmic cases chloroform was contraindicated, and probably ether was the most satisfactory anæsthetic. Out of 700 operation cases he had used local anæsthesia in 403, and general anæsthesia in 292, in 5 cases he had been unable to trace the anæsthetic used.

Dr JAMES BLAIR said that he preferred open ether by the drop method with a very light depth of anæsthesia. In cases with dyspnoea, cyanosis, and defective cardiac condition local anæsthesia was the most satisfactory form, and this was also the case with exophthalmic goitres. Dr Z. MARRAS used the question of the value of preliminary medication in goitre cases. Dr J. BLOMFIELD thought that an undesirable depth of anæsthesia might be required in order to pass the intratracheal catheter. Dr G. I. MONTAGNA believed that the anæsthetic was more dangerous than the operation. Lady BENN preferred the open ether method with the minimum of anæsthesia, so that patients were in a state bordering on consciousness and talking. She denied that ether was an unpleasant drug for induction when given slowly, dyspnoeic cases often improved under this anæsthetic, the action of the heart being regularized where it had been disordered before induction. Dr L. HILTON condemned the practice of anæsthetizing nervous patients in bed and then moving them on a trolley to the theatre, such a proceeding was dangerous in goitre cases. In toxic cases with fibrillation local anæsthesia alone should be used. In his experience hot vapours were more irritating than cold, and so should be avoided in goitre cases. Dr C. F. HADFIELD agreed as to the irritating qualities of warmed anæsthetic vapours, but Dr F. T. EVANS disagreed, he believed that by warming the vapour it was possible to ensure an even flow of properly vaporized anæsthetic. Moreover, the temperature of such a vapour, when it reached the patient's mouth, was very little above room temperature, if the warming chamber was not placed too close to the mouth.

Mr. DUNN, in reply, said that he certainly believed in the efficacy of preliminary medication, which was especially beneficial in operations under local anæsthesia. He advocated scopolamine and morphine in these cases, and he preferred morphine to amorphine or piriton. For injection he used novocain of a strength of one quarter of 1 per cent. He did not think that a great depth of anæsthesia was essential for the passage of an intratracheal catheter. He had not observed much hæmorrhage follow the use of local injections in goitre cases.

### TECHNIQUE IN TROPICAL DISEASES

At a meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine on December 1st, the President of the Section, Professor R. T. LEWIS, F.R.S., in the chair, a number of papers on recent advances in technique were read.

Dr H. H. SCOTT described his method of estimating the

amount of ionic calcium in the blood serum for the diagnosis of spina, and for determining the progress of the patient. In the blood plasma, calcium was present in the ionic form, free or diffusible (6 to 6.5 mg per 100 c.c.), and in the combined or non-diffusible form (4 to 4.5 mg). On clotting of the blood all the calcium became ionic, and so in the serum the amount of ionic calcium represented the total calcium. In spina serum, however, although the total calcium was about normal, the ionic was much diminished, being sometimes as low as 6.3 mg in a severe case, the remainder being combined. With convalescence this figure gradually rose until, when the patient had recovered, the figure was again normal. From an experience of many hundred cases Dr Scott had found that this remained true for spina only. The test had three stages. To graded quantities of ammonium oxalate were added in series fixed amounts of fresh blood, the tubes were incubated for ten minutes at 37°C, and the highest dilution with absence of clotting was noted. A series of tubes were put up with this dilution, fresh blood was added together with fixed amounts of graded calcium chloride, in this way the smallest amount of calcium causing complete clotting was determined. The first series was repeated, using the patient's serum instead of the calcium, and by a simple calculation the calcium content could be found. In normal serum there was 10 to 11 mg of ionic calcium, in severe spina only 6.3, in a mild case 7.8 to 8.2, while in a cured case the figures of 10 to 11 were again found.

Dr P. MINSON-BURN discussed technique as applied to clinical diagnosis, referring among other methods to serum tests for trypanosomes, agglutination methods on microscopic slides, the intradermal test for undulant fever, and the use of the sigmoidoscope in diagnosis of the various forms of dysentery. By this last test scrapings of the mucosa could be made, and cultures might often enable a diagnosis between the amoebic and the bacillary forms.

Dr J. GORDON THOMSON discussed protozoological technique, and drew attention to the necessity for an accurate knowledge of the use of the microscope. All the intestinal protozoa could be readily diagnosed in a faecal film preparation if the illumination was properly arranged. He also referred to methods of culture of these forms, all of which, except *Giardia*, could now be successfully cultivated in artificial media.

Dr W. NICOLL considered the methods by which helminth infections could be diagnosed by means of faecal preparations and blood smears, the various clinical methods of diagnosis in use, including the intradermal tests for hydatid and similar conditions, the methods of collecting helminth parasites, and their preservation.

Dr V. B. WIGGLESWORTH, who dealt with entomological technique, described methods of rearing in the laboratory blood sucking bugs, such as those which transmitted South American trypanosomes.

Dr J. BROUGHTON ALCOCK, in discussing bacteriological technique, gave details of the "slide agglutination" tests for various bacteria—especially those of the typhoid group. Drops of emulsions of the organisms to be tested were laid along one edge of a slide and opposite each was placed a drop of the suspected serum. By tilting the slide each drop of organism was made to mingle with the corresponding drop of serum. Dr Alcock had found that the mixture which first showed agglutination was the cause of the infection. He also drew attention to cytological methods of distinguishing between amoebic and bacillary dysentery. In the first condition degeneration was purely from without, in the latter it was from within. In the tropics, chicken-pox could be distinguished from small-pox by means of Jennerian vaccination, if the suspected condition was small-pox the vaccination would not "take."

Mr. RANSBROUGH dealt with mycology from the medical point of view, and said that morphology was the first stage in the diagnosis of the microfungi. All groups could not be cultured on an artificial medium, and cultures were best examined in distilled water or in lactophenol. In many cases morphology alone was insufficient, and certain physical, biochemical, and pathological tests were necessary also in addition to normal sporulation and life history.

Many fungi such as ringworm were phormorphic but this was often not seen in the standard media in which pathological fungi were generally known. A large number of different media should be used in order to obtain the perfect form. As a rule only the imperfect form had been seen in the pathological types. A thorough knowledge of general and plant mycology was essential before the study of the more difficult forms could be successfully undertaken.

Dr J. F. C. HASTAM, in discussing the technique of hygiene, said that this subject ranged over the entire field of human life, the most difficult part of it perhaps was to deal successfully with colleagues, more especially in the tropics. He drew attention to the many kinds of problems in this sphere—drainage, housing, water, latrines, and general sanitation. He illustrated his remarks by lantern slides of tropical conditions.

Dr ANNA BALFOUR reviewed the whole subject and proposed a vote of thanks to the speakers.

In closing the meeting the PRESIDENT announced that a laboratory meeting would be held at the London School of Hygiene and Tropical Medicine on January 5th, 1928 at 8.15 p.m. at which the various speakers would demonstrate the several forms of technique to which they had referred in their evening.

### SPLENIC ENLARGEMENT

At a meeting of the Devon and Exeter Medico-Chirurgical Society held at the Royal Devon and Exeter Hospital on November 27th Mr A. L. CANDLER (in the chair) showed two patients with splenic enlargement.

Mr Candler said that the first patient, a woman aged 31 had been confined on October 9th 1927 and was admitted to hospital on October 21st with a ruptured perineum and puerperal fever. She was in a condition of protracted anaemia. The temperature was 101° on admission and the pulse 136. Owing to foul smelling lochia the uterus was cleared out and colloidal iodine given. On November 5th there was further rise of temperature and a large tumour was found to project from the left costal margin and extend to the midline. A blood count showed haemoglobin 5 per cent, colour index 0.75, red blood cells 3,020,000 per cmm, leucocytes 2,600, differential count—polymorphonuclear 6 per cent, lymphocytes 33 per cent, large mononuclear 6 per cent and eosinophils nil.

The second patient was a woman aged 49 with Banti's disease. Frequent haematemesis had been the only complaint and had occurred on five occasions during twelve years. He had brought up five pints of blood in October 1927. The liver and spleen were enlarged and the blood count was: red blood cells 4,600,000 per cmm, haemoglobin 70 per cent, colour index 0.8, and white cells 5,000, polymorphonuclear 62 per cent, small lymphocytes 32 per cent, large lymphocytes 5 per cent, and eosinophils 1 per cent. No abnormal cells were seen. Since 1925 she had been given iron and arsenic internally and had had three treatments with x-rays. It had been decided to perform splenectomy.

Dr W. GORDON, discussing the two cases alluded to Banti's disease as splenic anaemia which had set up hepatic cirrhosis and ascites. The operation mortality for splenic anaemia was 12.5 per cent, and for Banti's disease (which had progressed to ascites) 50 per cent. In the case of Banti's disease splenectomy had been indicated before the meeting, in view of the severe haemorrhages. Dr Gordon considered that splenectomy was the only treatment for splenic anaemia and in his opinion the earlier it was performed the better it was for the patient. As regards relief of the symptoms in Banti's disease splenectomy was usually successful in patients who survived the actual operation. Other treatment could only be regarded as palliative.

### Carcinomatous Metastases in Bones

Dr Gordon read notes on the x-ray appearances of secondary cancer in bones in a case of carcinoma of the prostate. He said that the photographs shown illustrated admirably the features of secondary cancer in bones. The history of the case practically indicated the diagnosis which had been established by rectal examination and the skinograms. It was regrettable that there had been no x-rays. The patient, aged 62, was in his usual health until October, 1926, when he began to have pain in his right thigh. In the following January he had to take to bed where the pain became less severe but about a month later pain commenced in the left thigh and the lower part of his back became stiff. He could not move his pelvis in

bed without great suffering, he lost flesh and grew weak. A fortnight before admission while making some ordinary movement against moderate resistance with his right arm he fractured the humerus near the shoulder. Such a history indicated the need of a rectal examination, and the prostate was found to be hard, small and irregular, there was no growth of the bowel wall, and no bladder symptoms. In May cancer with bone metastases was diagnosed and the patient was sent into hospital for a radiological examination. He had no spinal disease. The x-ray pictures showed fracture of the neck of the humerus with surrounding bone changes. There were similar metastases throughout the right side of the pelvis and some in the left pubic region. The patient was kept comfortable with morphine till his death in September. Dr Gordon said that there were four primary cancers specially prone to metastasize in bone, these were carcinoma of breast, prostate, and thyroid, and in children certain medullary hypernephromata. The last named affected the skull the others involved the skeletal bones selecting the proximal long bones in the limbs. In the prostate cases the first symptoms calling attention to the disease were often those due to the bone deposits.

### Clinical Cases

Dr HUGO showed a man aged 56 with diaphragmatic hernia which had been accidentally discovered during a routine examination for an ulcer of the nose. It was found that the heart was displaced to the right and x-ray examination revealed that the stomach and splenic flexure of the colon were in the thorax. It was thought probable that there was a large congenital defect in the left lat of the diaphragm. The man had worked hard as a farmer and beyond light shortness of breath made no complaints which could be referred to the malposition.

Mr NORMAN LOCK showed an infant aged 6 weeks, on whom he had operated at the age of 3 weeks for meningomyelocele. The protrusion was dissected and completely removed. Paralysis of the rectum now existed but the bladder functioned normally. Mr Lock remarked that hydrocephalus was liable to follow at a later age—3 to 5 years. Mr LOCK also showed a boy aged 4½ with rheumatoid arthritis, who had been admitted to hospital last February with limitation of movement in the left hip and knee joints, effusion into the left knee-joint and some apparent thickening of the tissues round the right hip joint. The boy was put up in a plaster cast so as to include the pelvis, the left knee and the right thigh and leg. In June it was noted that there was spontaneous contraction of the muscles round both elbow joints on active or passive movement. No information was derived from x-ray examination in June and no improvement had seemed to follow the wearing of the appliance. In September a long-chain streptococcus was cultivated from the throat and vaccines so derived were given. In November a further x-ray in extension revealed an enlargement rather knobby in character in the region of both elbow joints. Ultra-violet rays had been tried but attention was now being devoted chiefly to the prevention of deformities. Massage had been considered harmful as being likely to set up irritation of muscles. Dr W. GORBOY said that these cases came under the classification of Still's disease and tended to improve in time.

Dr DYBALL, in association with Dr CARROLL, showed a woman aged 60 with lumps in the skin of the breast resembling blind boils which were indurated round the bases and exuded a purulent-like fluid on squeezing. No glands had been noted in the axilla. The case had improved slightly with timentations. Mr DYBALL considered that this might be an unusual variety of Paget's disease, the nodules being away from and not involving the nipple. He had referred the case for x-ray treatment since in his opinion there was too extensive involvement of skin or justify excision. Dr R. V. SOLLY, who had cut sections of the growth and carcinoma was not quite reconciled to the description of the disease since the classical carcinoma growing from the ducts.

Mr A. L. CANDLER showed a man with a lump in the groin. There was a history of the excision of a similar lump on the same side in 1916 and also about eighteen months ago. Mr Candler asked for the opinion of the meeting on the diagnosis. Mr DYBALL said he had seen a similar case where the diagnosis proved to be spindle-celled sarcoma.

### Pathological Exhibits

Dr R. V. SOLLY showed four specimens. The first came from a case of alcoholic cirrhosis of the liver in a man aged 53 who was an old drinker and a consistently excessive fat drinker. There was severe haematemesis on admission to hospital. The necropsy disclosed very marked cirrhosis of liver (typical lobular) and slight ascites. The veins of the stomach were much dilated. The second was a case of syphilitic cirrhosis of liver in a man aged 42, with two months' history of ascites. The patient gradually became comatose and died from hepatic coma. There was a positive Wassermann reaction. The necropsy revealed an irregular cirrhosis, mainly of the lobular type with areas of excessive fibrosis. The spleen was also enlarged. The third was a case of diverticulitis with perforation in a man aged 63 who gave a history of three to four months' constipation and intestinal colic. He was subsequently treated with sudden severe

abdominal pain and rigidity, and died during transport to the hospital. At the necropsy free gas was found in the abdomen, and the intestines were suddenly inflamed, and covered with flakes of lymph. There were several inflamed and indurated diverticula of the pelvic colon, on opening the bowel one of these showed ulceration with perforation into the general peritoneal cavity. The fourth specimen was the heart of a pig, showing endocarditis, obtained from a case of infection with swine erysipelas, there were large vegetations in the region of the tricuspid ventricular valves.

Mr B. DYALL showed a case of chronic intussusception of the jejunum, where, during operation, it was found that the duodenum was larger than the colon. The whole mass was resected, and recovery had been uneventful. Dr. Gordon stated that he had seen the patient two months prior to the operation with symptoms of gastric ulcer, although suggesting the possibility of the possibility of gastric ulcer. No tumour could then be detected in the abdomen.

Mr A. L. CAYLER showed a "strawberry gall bladder" removed from a woman in whom colotomy had previously been performed for obstructive symptoms relative to diverticulitis of the lower sigmoid. During the past year there had been abdominal pain, frequent vomiting and loss of weight. Although she was tender over the gall bladder, there had been no attacks of biliary colic. Adhesions were found at the operation.

### TREATMENT OF LUPUS

At the meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, held on October 28th, Dr. E. T. FRANKLIN showed a cured case of lupus vulgaris, and another of lupus erythematosus. In the first patient, a woman aged 35, the duration of the lupus vulgaris was not definitely known, but it had been present for at least twenty-one years. It occupied the left parotid region, and extended forward from the angle of the jaw to nearly the mid line of the neck. It was crusted and verrucous over the parotid, and of the dry non-ulcerative type on the neck. The treatment had consisted of light baths three times a week with carbon arc lamps, and galvanocautery every three weeks, to pick out individual nodules. The patient was now practically cured. The scar was fine, supple, and very slightly noticeable. The patient had been under treatment since June, 1926. The second patient was a woman, aged 34, who had had lupus erythematosus for many years. In the February issue of the *Lancet* of *Dermatology* Jay F. Achmberg, who had had considerable experience with other gold compounds, had reported 25 cases, mostly still under treatment, with smoothism. These were the first cases in which this drug had been used in lupus erythematosus. In April last Dr. Freeman had started treating two patients, one of whom had failed to continue attendance, and the patient now shown was the other. She had received seven intravenous injections of 0.10 gram each, at weekly intervals. There had been an immediate and steady improvement with entire disappearance of the lesion in seven weeks. The white atrophic scar always left by lupus erythematosus could be well seen. Dr. Freeman believed that this was the first case of this condition treated by this drug in Great Britain or Ireland, and the result had been perfect. There had been no reactions from the injection, and no local treatment had been used. He did not wish to over-emphasize the deductions from a single case, but the other patient had been doing equally well, and no other treatment, external or internal, had ever given him a comparable result. The President said that in neither case was the scar noticeable. He thought that the doses of smoothism in the second case had been very small, to be so efficient, and it was interesting to notice that the patient had had no reaction or discomfort after treatment. Dr. MURDER DRUMMOND thought that the result in the first case had been very good, considering the extremely delicate work which the galvanocautery required. The reason that such cure was essential in its use was the danger of leaving scars. The disadvantage of treatment by the carbon arc lamp was the length of time required. He suggested the possibility of the use of x rays, galvanocautery, and ultra-violet rays in treating these cases, the x rays being applied locally, and the ultra-violet rays generally. Dr. W. G. HARVEY, referring to the effect of x rays on cases of lupus, said that elsewhere he thought then use was regarded as almost criminal. If applied badly, they could do much harm, but, if properly treated, cases of lupus improved wonderfully

after their application. Lupus erythematosus was exceedingly hard to cure. He did not agree with the belief sometimes expressed that lupus erythematosus was a tuberculous disease, and he hoped that the result of treatment by smoothism would not be quoted in support of that belief.

### CHANGES IN OBSTETRICAL PROCEDURES

At a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland on November 4th the President, Dr. GIBSON FITZGIBBON, took the chair and delivered an address on some points in obstetrics calling for reconsideration and possibly revision.

Dr. FitzGibbon first referred to the increased frequency with which Caesarian section was performed for contracted pelvis without there being a corresponding reduction in the number of craniotomies and difficult forceps deliveries, or any considerable improvement in the mortality of the mothers and infants. He advocated antenatal clinics strongly, and he looked forward to such a development as holding out the only hope of improvement in the future. He considered in detail the various conditions of expectant mothers which could be dealt with by antenatal supervision, early treatment in such cases would lessen the need for operative midwifery.

Dr. L. CASSIDY did not agree that diet had such an important bearing on the presence of albuminuria, which occurred in 85 per cent of the cases. He thought that 2 grams protein showed a really severe condition of kidney disease, and that the strain thrown on the kidneys in even a perfectly normal pregnancy was fairly great. In the treatment of contracted pelvis Caesarian section must be regarded as a failure of obstetrics, the number of women who required it at term was comparatively small. If every woman was carefully examined at the thirty-sixth week of pregnancy he thought the mortality from Caesarian section would be reduced almost to vanishing point. The operation should be attended with very little risk to the patient, 30 per cent of all women had the head unfixed at the onset of labour, and yet a fairly large percentage of the women would have a perfectly normal labour. Every woman at the thirty-sixth week in whom the foetal head could not be forced into the pelvis should be examined under anaesthesia in order to find out why the head could not get into the pelvis.

Dr. BRUNN SOLOMONS, the Master of the Rotunda, said that he had increased the scope of antenatal supervision in the Rotunda very largely. He thought that private practitioners should charge a composite fee for attendance, in order to encourage patients to attend regularly, and where patients were attended on the panel system antenatal supervision should be paid for and should be compulsory. The incidence of Caesarian section had become greater and the operation had been abused. In spite of every effort to avoid it, the number of cases at the Rotunda had increased, but the operation was performed nearly always after a trial of labour, and the lower segment was the site of choice, the operation in this neighbourhood could not be regarded as a failure in obstetrics, and in cases which, after careful antenatal supervision, a thorough trial of labour combined with pelvicmetry, terminated in a live mother and child, the end result might be regarded as good obstetrics.

Dr. WILLIAM SMITH agreed that toxemia was provoked by superabundance of feeding. He did not think that enough Caesarian section operations were performed in cases of placenta previa, and in Germany the operation was now frequently used in cases of eclampsia. Regarding the question, "How long should labour be tried?" he thought that this resolved itself into a matter of experience. The head would remain above the brim till the cervix was retracted. If the cervix was not drawn up within three or four days he did not believe that many obstetricians would wait much longer.

Dr. J. S. QUINN said that Caesarian section was a way of getting out of a difficult case, but he believed that all obstetricians wished to avoid performing the operation unnecessarily. He thought that the operation had not

been used enough in the peculiar cases which occurred occasionally. The results obtained from it were poor, and not on a par with the results of any other major operation in surgery for a non-malignant condition. The maternal mortality was large and there was at least 50 per cent. sterility after the operation. He thought that diet had some bearing on albuminuria, for he had noticed while at the Rotunda Hospital that the patients who had the worst albuminuria were of the well-to-do artisan class, who would get plenty of food.

Dr A. H. Davidson considered ante-natal work the most important advance in obstetrics within recent years. It brought a large number of women with abnormal pregnancies into hospital. He quoted statistics of a maternity welfare association in Detroit which indicated that the mortality of cases delivered in that city was 6.75 per 1,000, and the mortality of those delivered in the clinic was 3.5 per 1,000. The deaths from puerperal sepsis in the city were also much higher than in the clinics. The maternal mortality had been reduced by over one-half but the mortality from eclampsia had only been reduced by 25 per cent. 30 per cent of the women who attended the ante-natal clinics were found to have some intercurrent disease or abnormality which in the majority of cases could be set right. Only 6 per cent of the women of Detroit, however, came to the clinics. Ante-natal care should be continued as post-natal care.

Dr A. P. Burns had found that the urine of almost every pregnant woman contained albumin, and he thought that the only way to arrive at a conclusion about albuminuria was to obtain a satisfactory specimen.

Dr R. H. Conder, returning to ante-natal care, said that the chief difficulty now was the inertia of the people, it thus could be overcome he felt that a great advance would be made. The increase in Caesarean section and eclampsia was due in some measure to the increased transport facilities; many cases were sent up to town which some years ago would have been treated in the country.

The President in his reply stated that he did not condemn operative midwifery in the hospitals but he thought that the cases ought to diminish. Any patient who showed abnormality at ante-natal clinics should then be put under special care. Regarding trial of labour, he said that in some cases seven or eight hours was long enough but in others it was not. After trial of labour he at once favoured lower segment section, though at one time he had performed the classical segment section. The important thing in the management of obstetrical cases was to watch them all through. The question of diet and its relation to albuminuria should be investigated by the aid of ante-natal supervision as it was well worth while going into. In England the maternity hospitals did not practice internal pelvimetry. The picking out at ante-natal clinics of patients who were going to have abnormal labours and persuading them to go into hospital, would reduce the maternal mortality.

### ABERDEEN MEDICO CHIRURGICAL SOCIETY

A clinical meeting of the Aberdeen Medico-Chirurgical Society was held on November 3rd. The President, Dr J. I. Cammiste, in the chair. Dr L. Stewart Sandeman showed a case of aneurysm of the ascending aorta in a woman aged 50. There was definite bulging of the chest wall to the right of the sternum about the level of the second rib. The left vocal cord was abducted and the left radial pulse was hardly perceptible. The Wassermann reaction was positive. A skiagram showed the aneurysm very clearly. Under treatment with weak tincture of iodine three times a day there had been marked diminution of the dyspnoea and the patient felt better. Dr J. C. Macle showed a girl aged 7 years with calcinosis and widespread calcareous deposits in the subcutaneous tissues. She was given iodides for three months with no improvement and it was only after treatment with doses of sodium phosphate that the deposits began to disappear rapidly. Mr I. K. Smith brought a patient for diagnosis. A woman aged 55 had complained of tingling and altered sensation in the left forearm and hand for six

weeks. She had noticed a swelling in the left side of the neck for four weeks. Before the tingling came on she had had several attacks of bronchitis. On examination a hard irregular mass was felt at the root of the neck; it was immovable and definitely fixed to the deeper structures. It was not tender on pressure and there was no difficulty in swallowing the mass remaining stationary during the act. There was a well-defined semicircular area of dullness over the left apical region, with diminished breath sounds and vocal resonance, but no signs of fluid. An x-ray examination revealed a tumour mass occupying the upper part of the left lung and extending into the neck. The Wassermann reaction was negative. Dr A. G. Anderson showed a man, aged 49, who had been sent to him one and a half years previously, on account of a thrombosis of one of the left retinal veins. He weighed 17 st and had a blood pressure of 210 mm Hg. Under diet limiting the carbohydrate element and small doses of thyroid extract each day the blood pressure came to 145 mm of mercury and the patient lost 4 st in weight. He was now able to resume his work as a police sergeant. The point of interest in this case was the presence of a very high blood pressure and a retinal thrombosis both of which seemed to indicate a bad prognosis but under the treatment described a remarkable improvement had taken place. Mr G. H. Coit showed a man, aged 62, who had had an extensive epithelioma removed from the region of the right anterior pillar of the larynx five months before the neck glands had also been removed. A recurrence of the disease was evident and the advisability of further treatment either by diathermy or radium was contraindicated. Dr Robert Richards showed a specimen of urine from a patient who had had a small burn dressed with 1 per cent picric acid solution. The urine had been in his consulting room for several months without decomposing; it smelt strongly of phenol and the patient was at the time acutely ill with the signs of picric acid poisoning. The question of idiosyncrasy was fully discussed; the interesting feature was the relatively mild picric acid poisoning in a burn of a very small extent.

### JAMES MACKENZIE INSTITUTE

#### Gall-bladder Disease

At the James Mackenzie Institute for Clinical Research St Andrews on November 1st Professor David P. D. Wilkie (Edinburgh) read a paper on gall bladder disease and gall stones. After tracing the history or the development of gall bladder surgery he described the types of gall stones at present believed to be of metabolic origin. Single radiate cholesterol stones found as a rule in stout females associated with afebrile attacks of colic but with little disturbance of health and the multiple pigment calculi found most typically in acholic jaundice. In regard to cholecystitis he expressed the view that this disease was almost invariably an intramural streptococcal infection. It was quite the exception to be able to grow organisms from the bile in any but acute cases. The failure of most observers, in this and other countries, to confirm Rosenow's observations was shown to be due to faulty technique and not to any error in the latter observer's conclusions. Dr A. L. Wilkie, working in the Surgical Research Department at Edinburgh had shown that in 85 per cent of cases of chronic cholecystitis a streptococcus could be grown from the cystic gland and this organism on experimental inoculation had shown a selective affinity for the gall bladder. The mode of origin of the multiple cholesterol lithium calcium stones following an attack of acute cholecystitis was described and the origin of the multiple mulberry cholesterol calculi following cholesterolemia with lipoid papillomatosis was illustrated. In discussing the symptomatology of gall tone Dr Professor Wilkie laid stress on obstruction or the narrowing of the gall bladder as the most frequent cause of gall colic on the absence of a muscular coat to the common bile duct, which allowed of the silent residence of a stone in this duct and on the definite muscular contraction of the gall bladder which might be produced by the irritation of the stone. To the duodenal tube there was a certain very limited field of contraction and this was for the bile to leave



uses with infected ducts it gave most useful evidence, in the earlier stages of gall bladder disease when the infection was intermittent it failed to give positive evidence. Of all accessory methods in clinical diagnosis of gall-bladder disease first place was given to cholecystography. The accuracy with which radiolucencies of containing cholecystography with a minimum of examination, were demonstrated. In regard to treatment it was contended that drugs, which merely had a disinfectant action in the lumen of the biliary passages, could not be expected to achieve much. Regarding surgical treatment, the removal of the gall bladder, in the wall of which the infection was located, was advocated for every case in which it could be done without undue risk.

DR CHRISTINA BARNOWMAN (Newcastle-on-Tyne) recently gave a lecture at the Glasgow Eye Infirmary on traumatic and acute and chronic inflammatory conditions of the eye treated with ultra-violet rays. The meeting was organized by Dr John A. Mortimer, and Dr Barnowman was in the chair. Members of the staff of the Eye Infirmary and the Ophthalmic Hospital and others to the number of forty attended. Dr Barnowman claims that her method is unique in that she administers it through the closed eyelids, and remarkable in its success in that scientists hold that there is little penetration of tissue by the ultra-violet rays. The lecture was illustrated by lantern slides of cases, and was followed by much discussion.

## Reviews.

### RECENT ADVANCES IN OPHTHALMOLOGY

The progress of physical science is no better exemplified, so far as medicine is concerned, than in recent advances in ophthalmology. It is true that these advances have been in the main elaborations in the technique of methods of clinical examination rather than in treatment. Ophthalmology has for many years been noted for the exactness of investigation and diagnosis which attends it, and the now recent years have been admirably served and explained under the title *Recent Advances in Ophthalmology*. His aim has been to fill the gap between the standard textbook and a bulky and cumbersome periodic literature, and the success of his effort is not in doubt. There are chapters on light, physiological optics, emulsiology, methods of diagnosis, general physiology, pathology, phototherapy, and neurology. The senior student of ophthalmology, according to his bent, will find the physical side or the pathological and morphological of the greater interest.

Recent correspondence in our columns on the claim of treatment of cataract by ultra-violet rays makes certain passages of special interest. The collected evidence shows that both ends of the spectrum, the ultra-violet and the infra-red, exert a profound effect upon the eye tissues, and that these are not antagonistic, and may be destructive.

Whenever the cornea is exposed to short waved radiation within these limits an *abiotic reaction* occurs after a latent period the length of which varies with the intensity of exposure, but averages six to eight hours. The histological appearances of the fully developed reaction are characteristic. The surface epithelium shows a swelling and irregularity of its cells, the cells are killed and this layer is desquamated. In extreme lesions the cell proteins are coagulated and an opacity is formed. This later becomes highly vascularized and tends to disappear, leaving a soft, transparent scar.

Heat rays on the other hand produce a lesion which is entirely different. The epithelium remains normal, the stroma is uniformly hazy and swollen. In extreme conditions complete destruction of the endothelium and results in permanent protein coagulation occurs and opacities develop which tend to be

Of effects associated with the lens it is said  
'Here part of the light gives rise to fluorescence the region of the greatest effectiveness being in the long ultra violet from

*Recent Advances in Ophthalmology* By W. Stewart Duke Elder  
M.D. D.Sc. F.R.C.S. London J and A Churchill 1927 (Demy 8vo  
pp vi + 343 73 figures, 4 plates 12s 6d)

3,500 to 4,000 Å. When light passes through a fluorescing substance the particles of the substance become light sources themselves, emitting light of a wave length differing from the incident light, preponderatingly longer, but sometimes shorter. The effect of this phenomenon is regarded differently. Considering that its production implied absorption Schanz (1915 22) looked upon it as delicious. On the other hand, from the work of Buige (1915), who correlated a decrease of fluorescence with an increase in the coagulability of the lens proteins, it may be looked upon as a protective mechanism, whereby the active short waves which might induce coagulation, are changed largely into long (visible) waves, by which means their energy being in a more transmissible form, is disposed of more safely.

In the section dealing with morphological and neurological matters we find an admirable summary of recent investigations on the representation of the field of vision in the cerebral cortex, which has been especially associated with the work of Dr Gordon Holmes and Sir W. T. Lister. It gives in a very brief space a highly instructive account of the observations and of their bearings.

Mr Duke Elder is to be congratulated upon the excellent work that has been under investigation for so many years and with changes that are so small that their bearing is apt to be overlooked.

### HEALTH, ANCIENT AND MODERN

The science of public health—or preventive medicine, as it is becoming more fashionable to call it—has within recent years made notable advances in immunology and other fields. Historically considered, it has, as a rule, progressed in a fitful manner, yet a unity of purpose appears to run through it even from ancient days. This essentially unity has been well brought out by Sir Arthur Newsholme, in his work *Evolution of Preventive Medicine*, in which he traces the development of public health from early to recent times. He begins by noting the value of the Greek gymnasium with its wrestling, games, and baths. He refers to the rules of personal and communal health set forth in the Book of Leviticus. He admits that the low standards of church were in part a revulsion from pagan luxury. He speaks of the stimulus given to experimental science by Paeleus and Roger Bacon, and says that Vesalius and William Harvey struck the death-knell of dogma. He commends Sydenham and his services to medicine, though he does not explain why that robust iconoclast and former ironside fled from the plague of London. His notice of Sn George Baker's essay on the Devonshire colic is of much interest, and Baker's impressive concluding words are quoted.

The author perhaps attributes the decline of leprosy in Europe too certainly to the enforcement of segregation. The treatment of lepers in the Middle Ages was often merciless enough, but, side by side with those stern measures, there went on the practice of begging by lepers, which brought them about the habits of men, and another practice, that of begging in lepers' gowns, by poor citizens authorized by city councils to lure the gowns for this purpose. Such freedom could not be strongly conducive to the repression of the disease. It seems quite probable that the prevalence of leprosy was checked simply by the general improvement in standards of living which marked the passing of the Middle Ages. The disappearance of plague from Western Europe at a later date is traced by the author to this kind of improvement, which in this case meant the growth of conditions that "would keep its out of houses." The replacement of the black rat by the brown, while it may have accelerated the decline of plague, could scarcely have been the primary cause, for the disappearance of plague from Western Europe was well advanced before the brown rat came. Heiden, whom the author thinks eulogistic, is not the truth when he says

Our exemption from the plague is not so much to be attributed to any accidental absence of its exciting causes as to our change of manners: our love of cleanliness and ventilation, which have produced among us I do not say an incapability, but a great unaptness any longer to receive it.

In the section on sanitation and social improvement the  
*Evolution of Preventive Medicine* By Sir Arthur Newsholme M.C.B.  
M.D. F.R.C.P. London Baillière Tindall and Co. 1927 (Cr 8vo  
pp vi + 226 6 plates 11s 6d net)

point is effectively made that the rising standards of conduct in recent years with respect to destitution, cruelty, intemperance and vice have been a potent aid to hygienic progress. The housing conditions of early modern England are briefly but vividly described and the degradation of life in the London slums of last century is illustrated from Charles Kingsley. Pitt's window tax is referred to as we look back on it now with wonder. What public health in Britain owes to the Navy and Army is cordially acknowledged, as it should be. The Irish outbreaks of typhus fever are referred to as historically important. Proper Poor Law relief reduced their prevalence by immobilizing ambulatory cases, it here who would otherwise have wandered across the country in search of food or shelter. An account is given of the disappearance of cholera, of Pettenkofer's ground water theory and of vaccination against small pox. The work of Charles White of Manchester on the management of pregnancy receives merited commendation. Scoury is well discussed and also infantile hygiene and the book closes with a review of the modern public health era with its specific immunizations against disease.

Where so much is admirable criticism is reluctant. But Robert Boyle was a relative of the Earl of Cork and the account of the plague of the 1600s or Old Testament story is not in 2 Samuel 13 but in 1 Samuel 1 and 16.

The author alike by his wide information and administrative experience and by his sympathetic appreciation of the work of the pioneers is specially qualified to recount the progress of preventive medicine. It emerges from his narrative that the social and other factors which operated for the control of disease long before the new scientific era dawned may still be promoting good standards of living work in the cause of health. This message should fall on attentive ears. The principle which inspires it must guide the policy of all enlightened administrators.

The author refers in his preface to his two winters' work at Baltimore. Another distinguished Englishman who in 1842 visited the United States for a shorter period came home and wrote his *American Notes*. In dedicating his book to his gracefully does to Dr W H Welch director of the school of hygiene and public health at Johns Hopkins University Baltimore. Sir Arthur Newsholme is the monumental city will recognize his made a better return than Charles Dickens.

### THE HISTORY OF HEART DISEASE

Dr R O Moon, the assistant registrar of the Royal College of Physicians in London who by his works on the 'Relation of medicine to philosophy' (1909) and the FitzPatrick Lectures (1921-22) on 'Hippocrates and his successors in relation to the philosophy of his time' has shown that he is a worthy follower of Linnaeus the scholar physician and founder of the College has now brought out an eminently readable sketch of the *Growth of our Knowledge of Heart Disease*. It begins with Hippocrates and ends with Sir James Mackenzie and Sir Thomas Lewis. As is only meet and right with the approaching celebration next year of the tricentenary of the publication of the *Exercitatio de Motu Cordis et Sanguinis in Animalibus* there is a clear account of Harvey's discovery based on deduction and proved by experiment as laying the foundation stone of physiology though many years elapsed before any important addition was made to the knowledge of cardiac disease. In fact up to the time of Raymond Vieussens (1695) who wrote much on the morbid anatomy of cardiac disease and paid minute attention to the clinical picture the notion that the heart could not be diseased still persisted.

Science may be regarded as the first physician to write a treatise solely devoted to cardiac disease in the middle of the eighteenth century. The history of digitalis and digitalis preparations both so closely associated with English names is outlined and the influence of the study of physical signs due to Auenbrugger, Lennie, and Corvisart, is shown. The list named who was the advocate and popularizer of percussion and the teacher of Laennec used the word 'anemism' to mean dilatation of the heart.

but insisted on the frequency of cardiac disease which he regarded as second in frequency only to tuberculosis. Dr Moon points out that, while in the later part of the last century the detection of organic cardiac disease was much elaborated, the functional efficiency of the heart is now demanding similar attention and elucidation.

### TREATMENT OF THE FEEBLE-MINDED

Our tenth volume of the Harvard Studies in Education is entitled *What shall the Public School do for the Feeble-minded?* It is, of course, an American book, and therefore the 'public schools' referred to in the title are what would be called in this country the public elementary schools conducted by the local education authorities. In this volume Dr GRAY PRATT DAVIS professor of education in the State Teachers College, Indiana, Pennsylvania makes a valuable contribution to the subject or the special training and classification of mentally defective children. It is based upon the work of Dr W E Fernald of the Massachusetts School for the Feeble-minded at Waverley. It is truly said that the death of Dr Fernald in 1920 'robbed the medical and the educational world of one of its greatest benefactors'. For just as Binet worked out a systematic plan for testing the degree of intelligence, so Fernald worked out a systematic plan of scientific procedure for the training of those whose intelligence is found to be below the normal.

Dr Davis has had two advantages of close association with Dr Fernald and his successor, Dr Ransom A Greene and his book consists mainly in the detailed exposition of a practical and scientific course of instruction to be followed with the various grades of feeble-minded children. It is thus of prime interest to teachers engaged in such instruction but it should appeal also to the medical profession as well as to many others who are interested in the social problems associated with mental deficiency. In accordance with modern conclusions mental deficiency is not regarded as a matter of intelligence merely emotional and other defects and instabilities are essential factors in the problem. Nor is it now held that every feeble-minded person is a social danger who ought therefore to be subject to permanent institutional control and segregation. A relatively large proportion of those who are defective in intelligence are socially well behaved if they have had suitable training and have even a light amount of supervision. Nor is it by any means impossible given such training and supervision to make feeble-minded persons economically self-supporting or even profit earning though this must always be in the lower ranks of industry and in tasks of a simple and routine character.

A very valuable chapter on 'The results of the salvaging process' gives the best sets of statistics on the matters that we have seen. The figures and conclusions of this chapter deserve the most careful attention and consideration. The tables and charts throughout the book are, indeed, all illuminating. As a compendium of present knowledge of the problem of feeble-mindedness especially in its pedagogical and social aspects, Dr Davis's book is a most important piece of work.

### HEALTHY GROWTH

SIR ARTHUR KEITH in his preface to *Healthy Growth* by Dr ALFRED MEADON medical officer to the Manchester Grammar School says that the author, by advancing the height weight chest girth and vital capacity has constructed standard ladders each rung representing the stage which the average boy reached with each additional year. Having obtained such ladders it was easy to say how many rungs any particular boy was ahead of or was short of the average boy in particular directions the average boy became the benchmark for all the other members of his year.

There is much the author has to be added to the use of almost any height-weight index as a standard of nutrition for

What shall the Public School do for the Feeble-minded? B-Gu Pratt Davis Harvard Studies in Education Vol. X (Cambridge) Ma Harvard University Press London Milford Oxford University Press 1927 Demy 8vo pp xxiv + 252 1s. 6d.  
Healthy Growth by Alfred Meadon M.D. With foreword by Sir Arthur Keith M.D. Dse F.R.C.S. F.R.S. Oxford Medical Publications London Milford Oxford University Press 1927 (Demy 8vo) pp xxiii + 343 3s. 6d. (3s. 6d.)

very early childhood, and of the ponderal index as a standard of nutrition for very early adolescence, but when we are considering the physique of adolescent schoolboys we ought to study the dynamic as well as the static factors of healthy life, and indices which test robustness and stamina must include the factor of chest girth."

Dr. Mumford claims that excess or defect in all forms of activity—whether the emotional activity that underlies high moral character, the mental activity that underlies high intellectual attainment, or the physical activity of sports and games—is associated with specialized forms of respiratory activity. "No attempts to inculcate or remedy defects, or to provide the fullest scope for the proper development and display of excess, will prove fundamentally successful which are not based upon a very thorough knowledge of the respiratory powers."

A research was carried out on the buoyancy of boys in the swimming bath, and then what is termed "the crude buoyancy index" was founded on height, weight, and chest girth, and used for comparing different boys, or groups of boys, one with another. 2,500 cases were tested to establish a mean normal. The athletes were well above the normal, particularly in chest girth and vital capacity. "It was interesting to note that those who obtained high places in long distance swimming rarely obtained high places in running." The test introduced for flying officers by Flack, of sustaining a column of mercury 40 mm high by the breath, can only, in Dr. Mumford's opinion, be regarded as a test of nerve stability—of the sustained co-ordination of the circulatory and respiratory mechanisms during prolonged effort. A fortnight's holiday raised the average five seconds in each of three classes of thirty boys. Dr. Mumford is now investigating what he terms the respiratory index—the relation of unit of exchangeable air to unit of body volume. There is, he says, "sufficient evidence of a positive correlation between physical growth and intellectual progress for making very ample provision for all the circumstances favourable to body development, especially for more fresh in physical exercises, recreation, and adequate rest."

While the group of boys who entered for the school leaving certificate examination taken as a whole showed an acceleration in bodily growth above the normal at all ages in all categories, absorption in study for this examination retarded the development of the chest.

"To boys, as well as to masters, these often colossal organized mass examinations are a hindrance to individuality and readily become a nightmare to overwrought boys. The judgement which selects for commendation the few boys at the top and virtually ignores the others is not only incomplete, but an untimely summary of the work of the school."

Dr. Mumford is of opinion that of all the different bodily impulses which affect the unconscious mind—raising or depressing the feeling of confidence and well-being—the most important "are those related to muscular tone and balance and external pressure."

"Given good stamina a boy will profit by his educational opportunities and will gradually dominate his circumstances. Given poor stamina circumstances will too often dominate him. It is then of even more importance to possess standards of stamina than standards of growth, especially when we are dealing with children in attendance at public secondary day schools where any limitations of bodily activity will exert a particularly injurious influence. The commonest form in which lack of stamina reveals itself in the very young child is the tendency to disturbances of temperature balance—states of feverishness such as are associated with colds and sore throats—or with such disturbances of food transformation as lead to recurrent headaches, bilious attacks, etc."

Dr. Mumford describes three types of boys. The boy who is capable of putting forth marked muscular strength appears to be broad throughout, not necessarily tall, coarse muscled, slow in starting, powerful in execution. The well developed agile boy who is capable of rapid movement, is broad in shoulder with wrist clearly marked. The third type of boy is capable of marked output of energy, but is not usually associated with high physical power and fitness, since he rarely excels in games. Yet after adolescence this type is associated with great persistence. Such a boy is usually tall and spare with muscles of the arms often specialized for some handicraft. His vital capacity generally is high. He is often childish in some directions as advanced in others. He loses heart easily and needs much food, is easily exhausted and requires plenty

of sleep, he totters for a longer time the infantile susceptibility to bacterial invasions, and in his case greater care is necessary to avoid tuberculosis and rheumatic fever than is required for his more robust fellows.

An inquiry into the types of skin of the boys led to the following classification:

*The chilblain type*, with hands cold and of blue tint mentally slow, will not make an athlete, and stands exposure to cold badly, best treated by graduated exercises and tanning the skin to respond to temperature changes.

*The pink skinned warm blooded type*, of spare build and quick heart. Physical and mental activity marked, sexual development slow, easily overruled, but capable of a great temporary output of energy.

*The oily skinned type* has thick skin, and the hair may be in excess and curly or coarse. He is short in trunk, broad chested, and often fat. His sexual development is early. He has great mental and physical striving power, resists exposure well, is muscular rather than agile, and is slow in response.

One of the author's conclusions is that under the conditions of a modern day school damage rarely, if ever, occurs to a completely healthy heart as the result of overtraining and exercise. It generally follows incomplete recovery from some minor febrile condition.

"It is painful to see the number of boys who, having at one time been debilitated from all physical activity on account of real or sometimes even of imagined heart weakness continue to be held back from all games, and the proper exercise, which is the real means of anchorage or cure."

In stature, weight, and circumference of chest the present-day average boy of 15 compares favourably with his predecessor of forty years ago.

Of great interest is the account given of an open air school. At the Greengate open-air school at Salford an attempt is made to stir up the normal process of physical and mental growth of the "inert toddler of pre-school age suffering from under-development and malformation due to rickets, often complicated by serious tubercularization." The young child kept in bed may gain in height and to some extent fatten, but the muscles, heart, and respiratory organs need development by exposure to cooling air and exercise, while the rickets require to be met by the action of unfiltered sunlight. At Greengate the children live and sleep in the open air, or in a shed entirely open to the south and with louvers open to the north. There is no artificial heating other than that required to dry clothes and blankets. Warmly clad and well fed, the children do splendidly, and soon come to discard extra clothing.

"Then breathing became deeper the blood in their skins became richer, and consequently their complexions improved, the catarrhs of the nose and throat, and the febrile attacks lessened and disappeared. Then nerve energy increased and their muscles gained so much in tone and in co-ordination that their distorted bones of arms and legs, now receiving their appropriate strain, were reformed and took on their proper shape."

A teacher was appointed trained in the new educational methods of spontaneous choice, but three restrictions were imposed: the children must not interfere with others, waste time, or destroy. Self-control gradually took the place of control by others. They learned to work as members of a keen happy order family. They were able to pay closer attention and to concentrate for longer periods owing to lessening of fatigue. The open air school must come to be the one for all, and be used as a preventive of illness rather than as a cure.

It is a good thing that the masters of the Manchester Grammar School have been wise enough to buck up the services of so excellent a school medical officer and the evidence he has collected will be widely appreciated.

## NOTES ON BOOKS

A HANDBOOK\* compiled in the German language by Dr. H. GRAFSPACH might from its title be supposed to be a dictionary of medical terms but it is more than that. The first section (815 pages) might almost be described as a brief explanatory synopsis of terms used in medicine and pathology and for various diseases. The names and dates of the authors prominently identified with advances in knowledge of the several diseases, and a note of what they did, are included. This section is well up to date and includes much chemical and biochemical information bearing on medical problems. The second section (313 pages) gives brief biographical notes and

*Medizinische Worte und Vorschlägebuch* von H. Grafspach. 1927. (44 x 64 pp. xvi + 1128. M 70) (See also Alfred Topfmann 1927 (44 x 64 pp. xvi + 1128. M 70))

dates of all the authors who are referred to in the first. It makes no pretence to be a complete list of all the names well known in medicine past and present but brief biographies are given of many of the great men of science who are dead. In the case of living authors, their names, addresses, present appointments and work for which they are best known are referred to. The bulk of the names are frankly those of well known German authors, but there is a sprinkling of British, American, and French names. This last part of the book is, however, far from representative and many well known names are missing. The first section of the book is excellently done and filled with useful information. The second part might be valuable to English speaking people in providing the full names and present postal addresses of the bulk of living German workers on medical problems.

In his *Fundamentals of Dermatology* Dr ALFRED SCHULEK, professor of dermatology and syphilology at the University of Nebraska School of Medicine has provided students and general practitioners with a clear and concise account of diseases of the skin. The work consists of two main parts. In the first, which is introductory, an account is given of the anatomy and physiology of the skin and this is followed by a description of the general symptomatology, diagnosis and treatment of diseases of the skin to which some dermatological maxims and a classification are appended. The second part, which forms the bulk of the book, contains in alphabetical order a brief exposition of the etiology, pathology, symptoms, diagnosis, prognosis and treatment of each disease. The text is freely interspersed with illustrations, most of which are original.

The second edition of Dr HENRY C. SCHOLEK's work on *Diphtheria, Measles, Scarlatina*, of which the first was published in 1920 and reviewed in our issue for April 24th of this year has been rewritten and enlarged. The book now contains an account of the Schick and Dick tests of the Schultze-Charlton reaction of active immunization against diphtheria by toxin antitoxin or inactivated, and the prophylaxis of measles by convalescent serum. The work is of value as representing the experience of one who has had a very wide acquaintance with these diseases, but is by no means exhaustive as it contains no historical or epidemiological notes. Few references are made to the work of other writers and there is no bibliography.

The cowkeeper and dairyman will find much up-to-date information in *The Production and Distribution of Clean Milk*, by Mr A. T. R. MATTHEW. The reader is first told that clean milk cannot be produced without light water and steam and is then led through the whole process from the sanitation of cowbeds and the clipping and cleaning of cows to the distribution of milk in bottles. The systems of bonuses to producers and workers based on the bacterial content of the milk are explained and tables are given to show the extraordinary improvement obtained by individual farmers. The increasing use of milking machines is noticed but the producer is warned that any saving in the labour of milking is counterbalanced by the time necessary for cleaning and sterilizing the plant. Mr Matthew is convinced that with well organized routine it need not take much longer to produce clean milk than dirty milk. Unfortunately the power to organize is not universal and the shortage of agricultural labour increases the difficulties of the producer. However the bonus system of the milk distributing firms is no doubt helping to improve matters and their pasteurization of the commodity keeps contamination within reasonable limits.

*Fundamentals of Dermatology* By Alfred Schulek M.D. Philadelphia and New York: Lea and Febiger 1925 (24 x 3 pp vi + 239 34 figures, 3 dollar)

V. G. Schol M.D.  
rewritten and enlarged  
ed. 21. P. 1.  
A. T. R. Matthew  
8 10 6 34 figures

(cont.)

## PREPARATIONS AND APPLIANCES

### AN ELECTRICALLY WARMED BLANKET

We have recently had an opportunity of examining what is known as a Thermega blanket and of testing its action. It is designed to supply hot water bottles and warming pins and certain electric heated warmers which are not without their drawbacks or actual dangers. Thermega is a blanket the standard size of which is 44 by 32 inches. The material is washed and when the folds are placed a flexible conductor which traverses the space between the surfaces many times, before it ends in the attachment where it entered the blanket. It is arranged in parallel lines between 2½ and 3 inches apart and the length of warmed wire in each blanket is very considerable. The temperature reached is only about 104° F. so

that all danger of burns is obviated and as the conductor is already, as it were, short-circuited there is no risk from any damage to the conductor which is practically unbreakable. These blankets should be of use for prolonged operations, and in all conditions where it is desirable to use artificial heat in the sick bed. For domestic use as a bed warmer it is only necessary to turn on the current for one hour before going to bed. The cost of current used per hour at 6d a unit is said to be only one farthing.

The Thermega patent of patents for the British Empire are held by Thermega Limited, an organization which we understand to be financed and controlled by the Ex-Services Welfare Society of which Sir Frederick Milner is president. The experiment which is thus being carried out is interesting for it embodies probably for the first time an attempt to find regular work and wages for ex-service men on a strictly economic basis. It was recognized according to Mr Kniv who has directed the social industrial side of the business that these men could not compete in the open market but that they might be profitably employed under the protection of a patent. Apart from the psychotherapeutic side of the undertaking its primary object is to pay a living wage to the disabled workers employed, and to produce a balance sheet showing a profit which must by statute be utilized for the much needed extension of the scheme.

For the last four and a half months twenty-four men have been employed in this work at the Frederick Milner Industrial Colony at Leatherhead. Among them are cases of anxiety neurosis, hysteria and minor degrees of dementia praecox, and Dr Mappother of the Maudsley Hospital has recently reported very favourably on the effects of their occupation in his work. We understand that the Society hopes to acquire other patents, and to extend the scope of its industrial activities in similar directions to this.

Thermega blanket can be obtained at most large stores and surgical appliance firms or direct from Thermega Limited, 94 Pettit France Westminster SW 1.

### CORSET BELTS

Visceropeliosis is the cause of so much discomfort and ill health in a considerable proportion of cases that any effective measure for giving relief is welcome. The mechanical problem of affording support to the dropped viscera is not as easy as it might appear on theoretical grounds, and an ill-fitting or wrongly applied belt or corset may aggravate rather than diminish the subjective effects of this condition. On the other hand the comfort afforded by properly applied support is in some instances almost dramatic and the resulting improvement in general health is frequently very striking.

Madame Rose of 80 Mortimer Street W.1 has for many years devoted special attention to this problem and we have good reason to believe that she has given help and comfort to a considerable number of sufferers. We have received assurances from medical men who have sent patients to her that she gives personal attention to each patient that she takes great care in adapting and adjusting the support to the particular needs of the case and that she shows herself desirous of complying with the recommendations of the practitioner in charge of the patient.

### PEPTIZYME

Peptizyme is a product of Messrs Reed and Carnrick recommended for the purpose of disguising distasteful drugs and also for the relief of disorders of the digestive system. It contains 15 per cent of alcohol and has a pleasant taste that suggests the presence of some volatile oil. It also contains a mixture of the digestive enzymes. The preparation has a pleasant carminative action and appears well adapted for covering drugs which have a nasty taste.

### A PORTABLE BOOK REST

Readeasy is a light and simple form of book rest made with an adjustable trap to sit over the shoulders so that when in use it resembles the tray carried by the itinerant vendor of matches and toys. It is intended to enable invalids to read or write without the exertion of supporting the books in the hands but it is equally serviceable for those who are well. The apparatus can be folded up so that it does not take up much room. It could probably be improved by clips for keeping the pages of the book open rather than leaving the hands free to relieve any slight discomfort caused by pressure of the instrument on the abdomen when a heavy book is being read. The invention of Mr H. H. Arnold of 61 St. George's Road London SW 1.

### PEP PENICIL AND THERMOMETER

We have received from Messrs L. G. Sloan (Pen Corner Kingsway W.C.2) a sample of what they call a 'penicil' produced by Messrs Waterman consisting of a fountain pen, a penicil and a thermometer which they suggest would be a suitable Christmas present or a doctor. The three implements are finished in white lacquer and enclosed in a white case, a white potery and to hold all three can also be supplied. We agree that the set is more suitable for a personal present than for hospital use and a very handsome present it would be. The set can be obtained from dealers in such things the price is 70/- or with the pen and 72/- 6d.

# British Medical Journal.

SATURDAY, DECEMBER 10TH, 1927.

## THE TOXAEMIAS OF PREGNANCY

NOTWITHSTANDING the enormous amount of research and investigation which has been undertaken on eclampsia and the other toxæmias of pregnancy, uniformity of opinion regarding the essential nature of these conditions is still lacking, and so many theories and speculations have been brought forward that eclampsia has been dubbed somewhat derisively "the disease of theories." Much further study and research are needed before this truant can become obsolete and the etiology of these conditions established on a firm basis. Such research should be based both on a clinical and on a biochemical basis, with the careful correlation of the results obtained in both fields.

The report of Cruickshank, Hewitt, and Couper to the Medical Research Council proceeds on these lines, for it is a clinical and biochemical study of 200 cases of toxæmia of pregnancy and of a series of 42 normal gravidæ. The work emanates from the research department of the Glasgow Royal Maternity and Women's Hospital, and the incidence of the toxæmias of pregnancy in Glasgow is shown by an analysis of the figures for the decade 1913 to 1922. The annual percentage of cases of eclampsia among the 23,630 patients admitted during the decade varied from 6.1 to 2.8 of all admissions, this is a higher incidence than is shown by the series of cases collected by Whitridge Williams in America.

Eclampsia is well recognized as a source of maternal deaths, and in Glasgow it was found that the death rate varied from 15.6 to 31.6 per cent, with an average of 22.4 per cent, though it is apt to be overlooked as a factor in the loss of foetal and neo-natal life, the death rate among the infants of eclamptic mothers was more than three times the general infantile death rate in the hospital. Moreover, in comparison with the figures for unselected cases admitted to the hospital, stillbirth was found to be about three times as frequent in eclamptic cases as in general admissions, while premature birth was also distinctly more common than in an unselected series of control cases. Again, among the infants born alive of eclamptic mothers the death rate was also more than three times the general infantile death rate. Taken together, these figures emphasize in a remarkable way the importance of eclampsia as a cause of loss of foetal and infantile life.

This investigation was approached primarily from the clinical side, and a clinical classification of the cases into four groups was adopted. In the first group the patients had albuminuria of renal origin during the second half of pregnancy, most of them having no other signs of toxæmia. Patients of the second group had symptoms of toxæmia in addition to albuminuria, but had no convulsions, the condition being commonly known as pre-eclamptic toxæmia. The third group comprised the cases of nephritic toxæmia, having albuminuria as the main symptom,

accompanied in some cases by cardiac involvement. Although this group is not so homogeneous as the others, the authors consider that its retention is justified, seeing that it includes a well recognized variety of toxæmia of pregnancy. Group four comprised cases of eclampsia with definite convulsions of the usual eclamptic type, together with other signs of severe toxæmia.

The results of blood analysis showed such great individual variations that it was often impossible to diagnose the type of toxæmia from these findings alone, and the analysis of the urine had only a limited value on account of the difficulty of obtaining the complete daily output. Nevertheless the general conclusions which the authors have drawn from their observations seem to be that the peculiarities of the blood and urine which characterize the later months of pregnancy are maintained, and may be exaggerated, in all the forms of the toxæmias of the later months of pregnancy, that though there is no definite azotæmia in ordinary cases in any of the varieties studied, moderate nitrogen retention is not uncommon in fully developed eclampsia, and that the hydraemic state of the blood which is characteristic of late pregnancy and the oedema which develops in certain toxæmic cases do not show any demonstrable relation to the chloride content of the blood or to the output of chlorides in the urine.

Tests of the hepatic function have roused much attention of late, and those here investigated include van den Bergh's reaction, Fouchet's test for bilirubin, Ehrlich's aldehyde test and Schlesinger's test for excess of urobilin and urobilinogen, Gmelin's test and the iodine test for excess of bilirubin, Oliver's and Hay's tests for excess of bile salts in the urine, the laevulose tolerance test, the nitrogen partition in the blood and urine, the coagulation time of the blood, the fibrinogen content of the blood, lipase in the blood, Widal's hæmolytic crisis, and glycerone acid synthesis. The authors' results indicate that none of these tests is of real service in the diagnosis or prognosis of the various forms of toxæmia of pregnancy. Normal gravidæ with no clinical evidence of hepatic insufficiency gave a certain proportion of positive results, and in the abnormal cases no correspondence was found between the results of the liver tests and the severity of the clinical manifestations. These results are at variance with those of other recent workers. Thus Berkeley, Dodds, and Walker obtained positive results with some of these tests only in eclamptic patients or in cases so critically ill as to require the induction of premature labour, they suggested that the results of these tests might be taken as a reliable indication as to the necessity of terminating pregnancy in cases of albuminuria. For this suggestion Cruickshank, Hewitt, and Couper can find no justification, and their general conclusion from the study of these hepatic tests is that there exists as yet no sufficiently sensitive and reliable method of examining hepatic function.

Turning to the results of the present investigation in relation to current views on the etiology of the toxæmias, it is pointed out that before entering upon such a discussion it must be kept in mind that true eclampsia does not occur spontaneously in animals, that it has not been produced in its entirety experimentally in animals, although certain features can be produced by the experimental injection of various substances, including more particularly placental tissue extracts. Eclampsia and the allied forms of toxæmia are essentially associated with pregnancy, and do not



can put them it, and an experimental conclusion can be regarded as identical with them unless it is produced in pregnant animals and does not appear when non-pregnant animals are similarly treated.

The authors have found no clinical, bacteriological, histological or experimental evidence that the condition is due to any animal or vegetable parasite or to disturbance of endocrine glands; they think that the cause is to be found in some substances elaborated in the foetal or placental tissues or produced by some disturbance in maternal metabolism resulting from the pregnant state. After these various factors have been thoroughly discussed the conclusion is reached that if the toxemias of pregnancy have a common cause it is some form of auto-intoxication by the breakdown products of placental tissue, probably some of the higher products of protein metabolism which like the breakdown products of leucine have a powerful action even when present in small amount. Although they do not mention histamine among these products it would appear to fulfil these requirements and it has recently been credited especially among American workers with being a possible etiological factor in the causation of eczema.

A critical consideration of this report along with other recent work on this subject shows that we are still far from having reached any really satisfactory explanation of the causation of eczema and the remaining toxemias of pregnancy and many and intensive researches will still be needed before such a result can be reached.

## LEONARDO BIANCHI PSYCHIATRIST AND STATESMAN

Neurology and psychiatry suffered a great loss by the sudden death last April of Senator Leonardo Bianchi. Emeritus Professor of Nervous and Mental Diseases in the Royal University of Naples, at the age of 80. In a newell address when relinquishing his chair he said that discipline, obedience and devotion to the welfare of the community should guide the lives of men. "Duci!" Erect in stature and let it be your law. In these words Bianchi epitomized his own career. He became assistant physician to the Neapolitan Provincial Asylum in 1882 and director of Palermo Asylum in 1887. His teaching career began in the following year when he was made professor of extraordinary of psychiatry in the University of Palermo. His neurological research work and already considerable contributions to clinical psychiatry led to his return to Naples, where in 1890 he was appointed professor of the psychiatric clinic and superintendent of the provincial asylum and professor of nervous and mental diseases in the Royal University. He established histological, bacteriological and physiological laboratories and before long became the great master of Italian neuro-pathology and psychiatry in eminence he remained until his death.

For over a quarter of a century, Bianchi's genius and commanding personality thus dominated Italian psychiatry. He was an exceptionally good teacher, a clear writer, a brilliant public speaker and a fascinating conversationalist. His wide sympathies, broad outlook and close study of the many social problems affecting the welfare of his country, together with his high sense of public duty, brought him into politics where he reached the highest positions. From a deputy he rose in 1905 to Secretary of State for Public Instruction and finally was elevated to the Italian Senate. It must have been a unique occur-

rence for a man to be university professor, an asylum superintendent and a Minister of State all at the same time. Bianchi's resignation of his chair at the University in 1923 did not mean a lessening of his activities; on the contrary, he was now able to interest himself more deeply than ever in the problems of eugenics and mental hygiene and to complete the revision of his famous textbook of psychiatry, the third edition of which appeared in 1924. He also took a keen interest in the legal and administrative aspects of psychiatry and in 1922 reported to the Italian Legislature on the crying need for reform of the Italian law relating to asylums and the insane. He deplored as we do in England the fact that the lunacy laws of his country were inspired by a desire more for the public safety than for early treatment of the mentally afflicted and the administration of asylums on hospital lines. He drove his point home in a great oration before the Senate in 1922 in which he said that the shortcomings of Italian legislation had greatly tended to increase insanity rather than diminish it. He urged the free admission on purely medical grounds and not as a result of legal investigations of early and acute cases into psychiatric clinics and special departments of the asylums and a revision of the cumbersome method of discharge of patients which remained far too long in the mental institutions convalescent patients and others fit to be at home.

Bianchi's researches into the anatomy and physiology of the nervous system, his work on aphasia and his discovery of the presence of bacteria in the blood of some cases of acute delirium were well known in this country but the appearance in 1906 of the English edition of his textbook on psychiatry was a refreshing experience to English psychiatrists then rapidly becoming Germanized. Nothing so comprehensive had ever been available in our language. The great advances made in this subject in recent years by the anatomist, histologist, pathologist, bacteriologist, neurologist, psychologist, sociologist and clinical psychiatrist were all built up into a great biological edifice on the solid foundation of research and clinical experience. No one person has contributed more to this synthesis than Bianchi himself. It was in 1868 that he began his famous experimental researches and clinical observations in regard to the physiology of the frontal lobes which satisfied him that these were associated with the highest and latest evolved psychic functions, especially the social sentiments. His completed teachings in this relation were published in 1922 in a volume entitled "The mechanism of the brain and the functions of the frontal lobes."

Bianchi's conceptions of life and the relationship of mind and matter are naturalistic throughout. He avoids metaphysical or *a priori* entanglements and is content to assume the transformation of cosmic into neural energy and its psychic equivalent. What is found in the development of the somatic organism is present also and without substantial difference in the evolution of the psychic organism or mind. Life from the monad to man is a dynamism and intelligence its subjective side. Thus intelligence is the consciousness of life and is manifested through the wonderful mechanism of the nervous system. Psychic life commences with very simple and uncertain manifestations and step by step through progressive assimilation of the forces of Nature it rises to the most potent realization of Nature itself in the forms of thought and consciousness. Like Maudsley and Huxley he is a worshipper of Nature. He speaks of the infinite

resources of a beautiful and generous Nature which endowed matter with life and mind. The cosmic forces of Nature continue to dominate its highest product, man. The mind is absolutely dependent upon matter, and only reached through matter. Man is therefore merely an instrument of the cosmic forces from which he has evolved. The nervous system changes the cosmic energies into psychic equivalents. The psychic function is engrafted upon the great trunk of organic function and is affected by all its modifications in health and disease. Binet thus teaches materialistic monism pure and simple. Neither psycho-neural or psycho-physical parallelism nor interaction has a place in his psychological conceptions. He excludes psychogenic factors in his etiology of mental disorders, except as predisposing to the real causes, which are physiogenic. In the third edition of his textbook he condemns the Freudian doctrines, especially that in regard to the part played by the infantile libido. He regards psycho-analytical methods of treatment as dangerous. Nevertheless, the unconscious mind of Binet's psychology is the largest psychic field—it is the great storehouse and laboratory of the mind, and capable also of instantaneous synthesis and new reactions. In this respect, and in many others, his thought is Mandley thought.

His contributions to physiological psychology and psychopathology are a greater memorial to Binet's genius and work than his clinical psychiatry, though his clinical descriptions are unrivalled. He never attained to so high a position in the world of psychiatry as Kraepelin did, but his net was more widely cast and the catch of greater variety. Like Kraepelin, Binet was remarkable for his inspired devotion to scientific ideals in his lifelong endeavour to solve the many problems which psychiatry presents, and he is worthy of a lasting place in our memory.

### LATE RECURRENCES OF CANCER

THOUGH it is obvious that recurrence of a cancer after an operation planned to eradicate it must be due to an incomplete removal of the malignant cells, either because a nest of them is left untouched or because during manipulations some few are dispersed amongst the normal tissues, it is difficult to account for the extraordinary length of time that sometimes elapses before these isolated cells exhibit their inherent proliferative powers. It is generally recognized, in judging the effectiveness of an operation for cancer of the breast for example, that a period of three years is totally inadequate, even a five year period is not to be relied on. It is true that, if an individual who has been operated upon survives so long without recurrence, the surgical procedure adopted must be regarded as successful, especially in view of the fact that useful years are added to a life at a time when expectations of living to old age are relatively low, and it may also be true that in an individual who has survived the five year period the chances of a recurrence manifesting itself grow steadily more remote, but that there may exist a contingency towards recurrences, apparently for the rest of the individual's existence, is not generally appreciated.

The report presented by a committee of the Medical Society of London—published in abstract at page 1082—based on replies by surgeons to a questionnaire regarding the subsequent history of patients who had survived a ten year period is exceedingly valuable, and to some it may be surprising. At one and the same time it demonstrates that freedom from recurrence is

the rule after that length of time, while it shows that in quite an appreciable percentage very late recurrences are possible. Hitherto such very late recurrences have been regarded both by clinicians and by pathologists as somewhat rare curiosities, but the report provides us now with information in a more exact form. No one will deny that even the most admirably planned radical operation, according to our present knowledge, depends for its success on a certain amount of luck, with the obvious corollary that the more scientific the operation the more is chance eliminated. From a primary tumour the modes and paths of spread of malignant cells are by no means uniform or entirely known. The lymphatic vessels which may carry the cells are legion, and their distribution is only ascertained as regards the main channels, and then only by composite pictures, the cells may spread in them by isolated and discontinuous emboli with the direction of the lymph flow, or by continuous processes against the stream, and it may be that the stream is not always in the same direction, the cells may reach different sets of lymphatic glands in different cases, and the relays are so numerous that groups are not always invaded in their direct order, some cells may go by way of axillary glands, some through intercostal channels, some down nodes along the superficial tissue, some to the other breast, and so on. No one can foretell the particular liability in an individual case, at the best the operator can only form what experience has shown to be an average picture. Further, the cells may be conveyed by way of the blood stream, and then subsequent course cannot be forecast. The chances, then, of some cancer cells escaping the control of the surgeon are very considerable.

In view of the great diversity of paths of dissemination, and the knowledge that isolated groups of cancer cells may lie quiescent for many years without exhibiting their characteristic properties, it may be asked whether at any time a surgical excision of a cancerous breast really succeeds in removing from the economy all the malignant cells. The processes at work that keep the activity of the cell groups under rigid control for so long are only manifest when that control fails. In how many cases is that control maintained? This may be, and probably is, a question without practical value for the moment, but, nevertheless, the definite observation of so many very late recurrences points to the fact that the body has its own defensive mechanisms against malignant cells, and the elucidation of such mechanisms is of absorbing interest to research. Much investigation has been done, but little accurate information has been forthcoming, and, as always when observation has been fruitless, speculations and statements of personal belief hold the field. No purpose is to be served by recounting them. The Medical Society's report fails to correlate the freedom from or liteness of, recurrence with any observed characteristic. The histological characters of the primary growth do not throw any light on the matter, nor do the microscopic appearances of the late recurrences often reveal any plausible reason for their tardy outbreak. Sometimes, indeed, a small and slow recurrent nodule may show a relatively immense amount of dense fibrous tissue imprisoning a few lines of cancer cells, and it is tempting to regard this fibrous tissue as a bulwark set up by the body against the cell proliferation. The undoubtedly good effects of radium or x-rays on certain malignant tumours seem to be due in the main to the stimulation of fibrous tissue with its indirect action rather than to selective lethal action on the cancer cells. It is the custom of

some surgeons to subject their cases after breast excision to rithidions, in the hope that any few cancer cells left behind may be destroyed thereby. It the rays have no selective action on malignant epithelium the proceeding would seem to be of little value but it is hoped that the fibrous tissue may be stimulated to defensive action, then it may not be wholly illusory though controlled observations on the effects do not tend to confirm the utility of the method. The explanation of the phenomena of late recurrences is bound up with the mysteries of the inherent proliferative properties of tissue cells properties that all cells possess. Until we know more about the growth property of cells how proliferation can be stimulated and how it can be checked, no explanation can be satisfying.

### HEALTH OF THE SCHOOL CHILD

THE Chief Medical Officer of the Board of Education, in his annual report, the review of which is begun in this issue, claims and we think truly, that year by year the school medical service and all that it stands for is winning a larger degree of the public confidence. It is of interest to note what a fruitful vine has sprung from the sowing of some few energetic and inquiring doctors of a previous generation. Sir George Newman claims that his report serves the interests of the local authorities and, to might add, of medical practitioners also. Members of local authorities cannot always get a view of the whole as distinct from their own part for often they cannot see the wood for the trees. The report invites them "to behold the extensive vista which lies before them, and to enter the promised land, one where the children of a great race may become their best, a land of perpetual youth." Their aim should be "to prepare the child for education and for citizenship." What a great war they have to play in the life of the nation is realized by few. It can be brought home best by the recognition that of all the children in the country between the ages of 7 and 14 years, no less than 80 per cent are turned in the elementary schools. Between the ages of 9 and 10 the total is as high as 95.3 per cent. In this year's report stress is laid upon the importance of the earliest years of the child's life and particularly upon what are called "pre-school" years. This is the time when the ground is being prepared and the susceptible soil of the child's body, within the limits set by heredity made wholesome or unwholesome a suitable nidus for the beneficial agents of health and life or for the destructive agents of deterioration and death. When the school medical officers are called upon to begin their oversight of the school child—the entrant of 5 years of age—it is found that "one quarter to one-third need medical attention." As the quotation from the report of the school medical officer for London puts it, "The school medical service is a receiver of damaged goods and spends most of its time and energies in patching them up. But there are hopeful signs that the school medical work done for and upon a previous generation is bearing fruit and that there is less ignorance and carelessness amongst the parents. There is certain evidence that the children are to-day stronger taller and heavier than the children of 1907. And since we have been told on high authority that feeding was more horse races than tanning, the correlation of the two is obvious."

### THE LEAGUE OF NATIONS AND DANGEROUS DRUGS

In an annotation in the JOURNAL of October 22nd (p. 746) reference was made to an extraordinary session of the Advisory Committee of the League of Nations on the Traffic in Opium and other Dangerous Drugs. This session was held to consider the situation in regard to illicit traffic,

the proposed 'international syndicate of drug manufacturers,' and other cognate questions. The report of the committee is now before the Council of the League. It is a somewhat verbose document. It deplores the slow progress with the ratification of the Geneva Convention, and laments that only three of the nations now represented on the Council of the League have yet ratified, while the effectuation of the treaty requires four more ratifications by such States. It had before it reports of eighty-three seizures of illicit traffic "amounting in the aggregate to tons of morphine and direct morphine in all parts of the world," a disclosure which the American delegate called "infinitely serious." It was stated that there were six, forty factories in the world controlled by eight nations and that if the drug were effectively controlled and each country discharged its international obligations "the drug problem would be solved." The committee accordingly urges upon the Council or the League the adoption of the principle "that all factories manufacturing dangerous drugs should be owned or adequately controlled by their Governments." This raises a political question or of the first magnitude, it recalls the contentions which have arisen in connexion with proposals to nationalize the liquor traffic and it opens the problem of the identification of the State with a trade admittedly dangerous. The committee appears to have been engrossed with questions relative to the traffic in manufactured drugs, while the more fundamental considerations of the control of the production of opium and the coca plant seem to have been thereby obscured. Signor Cavazzoni, the Italian delegate who at a previous meeting of the committee had unsuccessfully urged a rationing of the production of dangerous drugs in accordance with what were held to be the principles of the Hague Convention, again urged that the disappointing results were due to the fact that the methods adopted were wrong. He submitted a detailed scheme which he held would "enable all Governments to apply with uniformity and certainty the principles underlying the Conventions of the Hague and Geneva." The scheme however appears to have been side-tracked, and, along with the German delegate's suggestion of a private syndicate of drug manufacturers, was referred to a subcommittee for further consideration.

### ROUTINE EXAMINATION OF THE HEALTHY

In his Alexander Black Memorial Lecture the first on that foundation, of which an abstract appeared in these columns, Dr C. E. Douglas gave an appreciation of the present position of the man in general practice, the family doctor showing that surrounding him were certain agencies all undeniably good in themselves but tending towards his gradual elimination as an important factor in the conduct of medicine. As a corrective of this undesirable tendency some suggestions were made as to lines of activity some remedial some preventive on which he might do sound work that none but he could approach. Of these a somewhat new idea is that indicated by the title of this note. At present no routine examination of the supposedly healthy is generally carried out. This statement requires some qualification for the school medical officer and the child welfare workers have been for years at work with excellent results. But these do not touch the sources of information at present contemplated. They show however the importance of such work and may be proposed to discuss briefly here its extension to the domain of family practice and the doing of it by the family doctor. It is a commonplace of vital statistics that illness is relatively a great deal too a small part of life and the routine examination of the apparently healthy the price of

life, say, beyond 45 years, is also of value. The sensible mother in the educated classes has for many years hitherto taken the family to the dentist whether they have toothache or not, and everyone of any long experience will agree that good has thus been effected. It is only a step from the dentist to the doctor, and she will soon be encouraged to take it. Thus, at the other end of life, interesting and important work has been carried out in the United States of America. Dr. Irving Fisher<sup>2</sup> shows that, beginning with Horace Debell of London,<sup>3</sup> who appears to have been in the sixties a voice crying in the wilderness, the idea of periodical medical examination as a preventive measure has been advocated from time to time, and now, particularly in the service of the Metropolitan Life Insurance Company of New York, results have been gained which will repay consideration. These results, he says, "were so astonishing that the actuarial department and the medical department refused to believe them until forced to do so by going over the records for themselves. The three departments then united in a report showing that, as a consequence of expending 60,000 dollars on medically examining 6,000 people within six years, the Metropolitan had gained, through premiums of people whose lives were extended, 120,000 dollars. In other words, this life insurance company had made 100 per cent on its investments." In this country the same idea is being worked out as a business proposition in two directions. There is a company which now undertakes the business of insurance against "doctors' bills"—the wording is perhaps unfortunate, though the principle of insurance against the risk of having to pay for medical attendance is a perfectly sound one to which little exception could be taken. But what concerns us more directly in this connexion is the scheme combined therewith in which it is proposed to carry out regular medical examinations under theegis of a commercial company. Reference to these projects has been made on several occasions in our columns, and we are not now greatly concerned with the precise terms under which such examinations are to be conducted, though these may in time require investigation. The point we would seek to make is that there appears to be no need for the intermediation of a business company at all. Suitable fees and something in the nature of a standardized examination if necessary, could be organized by the medical profession itself. It may be said that the Metropolitan Insurance Company of New York is an outside body, but the cases are not comparable, the company already has its policy-holders, and it is doing a mutual benefit in this work. But there is no need to restrict such examinations to the holders of life insurance policies. The ordinary man can get his own doctor to examine him at intervals without the formalities of applying to the companies. A word may be said about the possibilities opened up to the less scrupulous members either of the public or of the profession. Cases were not unknown years ago of elderly men making a proposal for life insurance solely in order to hear how they stood in point of health getting a thorough medical examination for nothing, and then declining to go on with the proposal. Moreover, anyone who has seen that amusing play *Dr. Arnold* will be aware of the opportunities placed in the hands of a commercialist who goes in for medicine. But when these possibilities have been discounted there remains the fact that the regular examination of the apparently healthy is coming upon us, that it had been adumbrated many years ago by some of our far-sighted predecessors, that it has been recognized by business men as a business proposition, and that, if the medical profession does not take the matter up and organize it, it will be worked by outside bodies to the exploitation of the great mass of the medical profession—the family doctors.

## LONDON'S MILK SUPPLY

The London citizen, as he sits at home enjoying his meals, knows little about the tremendous organization that is required to provide him with his food. Something of the romance of big business, together with the ease and comfort of modern travelling, was demonstrated on December 1st to a party of people who were the guests of the United Dairies Limited and the Great Western Railway Company. The occasion was a visit to the United Dairies depot at Wootton Bassett for the purpose of inspecting the company's new glass-lined tanks for conveying milk by rail. To this depot the milk is brought from farms in the surrounding area in ordinary ten-gallon churns. After samples have been taken for analysis the milk is poured into a trough and conducted to large coolers, where its temperature is reduced to 38° before passing into the tanks. These tanks are huge steel cylinders, to the interior of which a lining of glass enamel has been fused by heat. The cylinder is insulated with two inches of cork, which is protected by an outer covering of thin steel sheeting. The tank is mounted on a special truck made at the railway company's works. One truck conveys 3,000 gallons of milk—a quantity which used to require 300 churns and three milk vans—with a dead weight haulage of 22 tons instead of 80. The tank, when filled, is dispatched to the United Dairies distributing depot at Willesden, where the milk is unloaded at the rate of 150 gallons a minute, pasteurized, and bottled. From the railway point of view there is enormous saving, through the tank system, in sidings, vans, docks with appliances for loading and unloading, and staff. The advantages to the consumer are that the number of handlings of the milk is reduced from six or more to two. The cork-insulated cylinders maintain the temperature of the milk below 40° F during transit. The distributing centre is reached more quickly. When the tanks are empty they are rinsed with cold water, and the glass surface is thoroughly scrubbed. The interior of the cylinder is then sterilized by steam at a pressure of 50 lb to the square inch. The tank system of transport seems to mark a distinct advance in the milk supply of London, and is, of course, applicable to other large towns. A depot similar to that at Wootton Bassett has been opened at Cilybeby on the London, Midland, and Scottish Railway, and other centres are contemplated. The British railways carry 280,000,000 gallons of milk a year. Two-thirds of this is earned by the Great Western and the London, Midland, and Scottish lines and the United Dairies Willesden depot sends out 46,000 gallons of milk in bottles every day.

## THE HOSPITAL SAVING ASSOCIATION

The annual general meeting of the Hospital Saving Association, followed by a meeting of group representatives, was held at the Kingsway Hall on November 28th. The meeting of representatives was impressive, as there must have been at least 1,200 or 1,500 people present. In the absence of Viscount Hambledon through illness Sir Alan Anderson was in the chair. The annual report of the association showed that there were now 4,085 groups, consisting of 351,865 contributors, as compared with 3,182 groups, with 267,071 contributors, in 1926. The rate of annual income had increased from £150,000 to £216,000. During the year nearly 100,000 contributors and dependants, of whom 16,000 were in-patients, had been treated at voluntary hospitals on the list of the association. Direct payments to voluntary hospitals amounted to £103,000. Over £9,000 had been paid to rate-aided institutions, and £14,000 had been refunded to contributors treated in hospitals and rate-aided institutions which were non-co-operating. The magnitude of the work of the association was shown by the fact that last year's

<sup>2</sup> *Amer. Journ. of Public Health*, January, 1927.<sup>3</sup> *Lectures: Prevention by Medical Examination* 1861.

payments to the London Hospital alone amounted to £13,655. Sir Alan Anderson pointed out that the work of the association meant the collection of fourteen and a half million threepences, and that the circulation of the association's newspaper, the *Contributor*, now amounted to 75,000. The Lord Chancellor, Viscount Cave, recently elected vice-president of the association, who presided over the Commission on Voluntary Hospitals from which the idea of the association was derived, spoke of the improvement in the financial condition of the voluntary hospitals. He advocated closer co-operation between voluntary, special, and State-aided hospitals and convalescent homes and gained the applause of the meeting by asserting that the voluntary system must not be impaired, lest the welfare of the sick, the training of medical men and nurses, and the progress of study and research should be impeded. He considered that deductions from private employers was the easiest method of collecting the weekly threepences from the contributors. Professor Winifred Cillis enhanced the meeting by telling the stories of "the movable kidney and the loose liver" and of the "labour-saving device twilight sleep." She also impressed upon her audience the necessity for remembering that people should not be sent to hospital for illnesses which could quite well be treated by their general practitioners and that, even under the system of contributors' payments, the services of the medical staffs of voluntary hospitals were given free so that members of these staffs often put in the equivalent of two days' work a week without remuneration.

#### THE GENERAL MEDICAL COUNCIL'S INCOME TAX CASE

IN 1926 two cases of some importance to the medical profession were before the High Court. The Society for the Relief of Widows and Orphans of Medical Men and the Medical Charity for the Society for the West Riding of Yorkshire successfully defended an appeal brought by the Commissioners of Inland Revenue. In the two cases the main contentions of the Revenue were based on the fact that medical men were invited to qualify by subscription, and if Mr. Justice Rowlatt had accepted the view that that fact invalidated the claim to exemption on charitable grounds from income tax the decision would have seriously affected the valuable work being done by many similar societies. Recently the same judge has been called upon to decide another case in which the same statutory provisions were involved—we refer to the appeals taken by the General Medical Council and its English Branch Council. On this occasion Mr. Justice Rowlatt's decision is adverse to the professional interests; fortunately it seems less likely to have serious reactions on other cases. A detailed statement as to the constitution and activities of the Councils was, or came placed before the court but a very brief reminder of the main facts will suffice here. The Council was established under the Medical Act, 1858, and incorporated under Section (1) of the Medical Council Act of 1862 for the purpose of (a) keeping and publishing a register or qualified medical practitioners (b) of exercising oversight on medical studies and examinations, and (c) of publishing the *British Pharmacopoeia*. The exercise of these duties, together with the imposition of certain disabilities on unregistered persons were represented as operating—as clearly they do—for the public benefit and it was argued that the purposes of the Council were charitable and that the income received by the Council and devoted to the carrying out of those purposes was therefore exempt from income tax. One of the contentions of the Revenue authorities was in effect a transfer of emphasis to the other aspect of the Council's activities and it is concluded that the Councils were professional institutions whose activities were directed in the main to the interests of the medical profession, and therefore that

the claim to exemption as charitable bodies failed. Mr. Justice Rowlatt evidently attached some weight to the consideration that the Medical Act of 1858 did not seem to contemplate the holding of invested funds, but rather that all moneys received would be applied in meeting the expenses incurred in carrying out the provisions of that Act. He held that proof that the objects which the General Medical Council had been established by Parliament to achieve were for the good of the public was not of itself enough to bring the Council's income within the exemption. On the other hand, while no point out that it had been established in recorded decisions that societies for the benefit of professions were not societies with charitable objects, he agreed that this case was different in that the protection of the public was the main and not the secondary object of the General Medical Council. He laid, however, to keep in view the principle that "a body to be a charitable body must come within the analogy of the statute of 43 Elizabeth, cap. 4 which supplied the test." There was no authority for holding that a body such as the General Medical Council fell within that Act and the appeal therefore failed. We cannot but regret the decision. On the facts the Council appears to us as clearly entitled to exemption on grounds of equity and common sense as, for instance, an educational institution or a religious body, but in such matters the law, judicially interpreted, has the last word—even though it be taken from the dusty pages of an Elizabethan statute. One point may, however, be emphasized. It was admitted that in this case there was no trust for the improvement or the practice of medicine. In that respect, as, indeed, in some others, the position of the General Medical Council was vulnerable at a point in which many professional or semi-professional bodies are particularly strong. As we have said we regret the decision, we should regret it still more if through a failure to attach due importance to the special features of this case, the decision were to react unfairly on other deserving cases.

#### MENTAL HYGIENE.

THE National Council for Mental Hygiene, whose fourth annual report has just been issued, seeks to prosecute an extensive study of the causes of mental defect and disorder, to investigate the sociological background of these disabilities and to promote their prevention. The improvement of the mental health of the community involves a study of the social habits, of industrial life and of environment, and the enlightenment of the public in all matters which promote or militate against good mental health. The council aims at securing a more important position for the study of psychiatry in the medical curriculum, the closer association of psychiatry with general medicine, and the establishment of special clinics and out-patient departments for the early treatment of mental disorders. It seeks to raise the standard of care and treatment in the public mental hospitals, and to remove legal formalities which tend to postpone the effective treatment or cases of mental disorder in their early stages. By combating the prevailing ignorance and superstition regarding the true nature of mental disorder it hopes to aid in removing the stigma which handicaps the future welfare of those who have been thus afflicted. Though the measure of financial support received by the council has fallen considerably short of its expectations it can claim to have carried out a highly creditable amount of work both in the prevention and alleviation of mental illness since its inception four years ago. Among the urgent needs of the council are the appointment of a paid medical director, the publication of a monthly bulletin, the wide distribution of suitable literature, the giving of popular lectures on mental hygiene and the organization of research work. On the two short articles of very real interest appended to this



report, the first deals with the probable causes of mental disorder—a matter which was the subject of investigation by a special committee under the chairmanship of Dr W A Potts, which collected facts from a number of authorities with long experience. The committee insists on the recognition of the interrelationship of body and mind to such a degree that physical causes may be responsible for mental and bodily disorder of many kinds, whilst a psychological cause may be the most important factor in serious disturbance either of body or mind. The importance hitherto ascribed to heredity in the causation of mental disease is considered to have been exaggerated. As knowledge of causation increases, the share of heredity tends, in the committee's opinion, to become more and more restricted. "It is clear," it says, "that heredity is not the basic factor in the cause of all forms of mental abnormality, whether manifested as mental defect, delinquency, or mental disorder." Considerable stress is laid on the necessity of the study of mental hygiene in child life. Special dispositions and characteristics must be guided along healthy channels, the change of feelings and consequent change of behaviour at puberty must be realized and understood, and if necessary explained by the parents. The committee emphasizes the fact that it is the *fact*, and not the conduct, of life that is the dangerous factor. The committee "advocates no particular psychological creed, but would make available for the developing individual in the nursery, in the schoolroom, at the university, and in the responsibilities of adult life all that modern psychology can offer to help him in his difficulties."

#### THE GOLD-HEADED CANE AND WILLIAM MACMICHAEL

*The Gold-Headed Cane*, a gossipy record of certain prominent physicians of the seventeenth and eighteenth centuries, such as Radcliffe, Mord, Askew, the two Pitcairns, and Matthew Baillie, was first published anonymously on February 24th, 1827, and so deserves some centenary celebration such as Mr Herbert Spencer Robinson has provided in his bio-bibliographical article containing in account of its modest author, William Macmichael (1783-1839). Macmichael was an Oxford man, of Christ Church, a Radcliffe travelling Fellow, body physician for a year to the Marquess of Londonderry when British Ambassador at Vienna, and was a protégé of Sir Henry Hallford. Through Hallford's influence he became physician to the Middlesex Hospital, registrar of the Royal College of Physicians, physician extraordinary to George IV, and physician in ordinary to William IV, probably Macmichael obtained much private practice as his patron's substitute in those spacious times, when Hallford was President of the College for the "record" period of twenty-four years, from 1820 to 1844. The published works of Macmichael, who was also an anonymous contributor to *The Lives of British Physicians* (1830), which passed into a third edition, have been carefully collated by Mr Spencer Robinson, who has also been contributing to the same periodical interesting biographical sketches of the Harveian Orators. He has failed to discover a portrait or engraving of Macmichael, even in the collection of the College Anatomists. The first edition of *The Gold-Headed Cane* found in 1827, nine days after Macmichael was married when there'd a new and enlarged edition in the following year. The first edition is generally regarded as better healthy is commingled out by William Munk in 1884 many years ago by 1915, the first in America and the that it has been recognized by me on the title-page, was proposition, and that, if the method had in introduction take the matter up and organize by Dr F R Prebhard, outside bodies to the exploitation of edition. There had medical profession—the family doctor—the Johns Hopkins

Historical Club in 1906, in which Sir William Osler, Dr T McCrae, Cushing, and Fletcher took part (*Bull Johns Hopkins Hosp*, Baltimore, 1906, viii, 162-169). Mr Spencer Robinson's article is so fully documented that it will serve as a useful bibliographical source of reference to those interested in medical history, who, if they cannot pick up the earlier editions, would be well advised to secure the fifth edition, brought out in 1923 by Dr G C Perchev, before it, too, is obtainable only from second hand book-sellers.

#### MEDALS OF THE ROYAL SOCIETY

In compiling our list of medical recipients of the Royal Medal of the Royal Society the name of Professor William Kitchen Parker, F.R.S., was inadvertently omitted. Notwithstanding his enormous output of work in comparative anatomy, he was for the greater part of his life engaged in general practice, and is therefore an outstanding example of the possibility of combining most distinguished scientific observations with the quite different daily work of medical practice. Having held the qualification of L.S.A. since 1849, he was in 1873 admitted to the Membership of the Royal College of Surgeons after a mere formal examination, when he was appointed Hunterian lecturer on comparative anatomy. His work on the skull and on birds earned the warm praise of Huxley, and put the latter's conclusions beyond dispute, dealing the final death-blow to Owen's vertebral theory of the skull. In the notice in the *Dictionary of National Biography* Professor G B Howes writes "Such were his stores of anatomical knowledge that he was once known to speak for four hours continuously on the lower jawbone of the raven without saying anything that was other than valuable." It was a certain want of control and arrangement of this extraordinary store of facts which prevented his lectures being as successful as his knowledge should have made them. His contributions, often beautifully illustrated, to the *Philosophical Transactions* and to the proceedings of various scientific societies were well nigh innumerable.

#### TREATMENT OF DIFFICULT CHILDREN

UNDER the presidency of Sir Humphry Rolleston a council including physicians, magistrates, psychologists, social workers, and representatives of education authorities, universities, and Government departments, has been formed to promote the treatment of maladjusted, difficult, and delinquent children. The immediate aims of this body—to be known as the Child Guidance Council—may be summarized as the promotion of the establishment of child guidance clinics, the provision at universities of psychological instruction for social workers, demonstration of the need for such trained workers in existing clinics, and investigation of the various social and psychological problems involved. The children concerned are those whose conduct or progress at home or at school reveals abnormalities requiring special treatment, it is admitted that trouble often arises because such children react to unsatisfactory environments. It is hoped that a new child guidance clinic will be established in connexion with some university. Similar work has been in progress in the United States, where, in 1918, the late Mrs Harriman instituted a Commonwealth Fund, which has since been applied to various causes, irrespective of nationality. This fund will finance the Child Guidance Council until the autumn of 1928, and is contemplating the support of a child guidance clinic for three years. The fund has offered to pay the expenses of certain selected persons visiting similar institutions in the United States, and of five social workers willing to undertake a year's training there. It has also arranged for the secretary of the council to



## HEALTH OF THE SCHOOL CHILD

## HEALTH OF THE SCHOOL CHILD

[THE BRITISH  
MEDICAL JOURNAL]

**Sir George Newman's Report**  
THE annual report of the Chief Medical Officer to the Board of Education for the year 1926 appears in the form of a letter addressed to the Right Hon Lord Eustace Percy, the President of the Board of Education, by Sir George Newman, the Chief Medical Officer. This year the letter is shorter than usual, for much of the statistical matter commonly incorporated is now relegated to appendices. Some of the more general aspects of this report are dealt with in an annotation on page 1101. In this review the particular aspects of the year's work will be noted.

**Staff**  
There are now 1,223 doctors in the service of the various local education authorities, of these, 574 combine such duties with public health work, whilst 263 give their whole time to school work, and 386 are part-time officers. The equivalent in whole-time service is calculated as 611 officers, or one to 8,100 children. In addition there are 865 specialists employed in clinic work, of whom only 14 are whole-time, but of the school doctors some 548 do some form of specialist work. There are 591 school dentists, of whom 263 are whole-time. This works out at about one dentist to 13,500 children, which seems a small proportion considering the work that has to be done. The school nurses, part- or whole-time, number 4,779, which is estimated to be equivalent to 1,821 whole-time.

**Medical Inspection**  
The work of medical inspection, which is the basis of remedial work, is now judged to have reached a fairly complete stage. Children are examined periodically, at the ages of 5, 8, and 12 years, and at shorter intervals when defects are noted by teachers and others. It is doubted whether advantage would be gained by routine examinations at more frequent intervals, the great majority of serious defects, dental disease excepted, are believed to arise during the earlier years of life, and a large proportion are discovered at the first examination of the "entrants." More exact determination of physical efficiency will develop slowly as more satisfactory and reliable tests are devised, and as careful clinical study is applied to the physical condition of children of school age.

**The Results of Medical Inspection**  
There is again this year, as last, evidence that the physical condition of the entrants is better than in 1913. There is general improvement of the children at all ages in cleanliness, and the incidence of malnutrition at all ages is substantially less. No indication of general physical deterioration as a result of the coal strike of 1926 has been observed. The school medical officer for London is quoted:

"The survey of the statistics of medical inspections shows that while there is still much leeway to be made up, while still many children leave school with defects unremedied, there is year by year a notable improvement. This is especially marked in the case of personal hygiene, dental conditions and visual defect. It also shows that much of the defect is due to causes over which the schools can have no direct control, and that these causes operate most profoundly upon the infant in the pre-school years. The school medical service is a receiver of damaged goods and spends most of its time and energies in patching them up. What is now required is an intensification of social effort directed to the care of the infant in arms and the toddler before school age."

Summing up his evidence, Sir George concludes:  
"I do not think there can be much doubt that the physical condition and capacity of elementary school children throughout the country shows definite improvement (and not the reverse) during the last twenty years. From the data available it seems the child of today is stronger, taller and heavier than the child of 1907. He is a better nourished child. To what is this due? The medical care and supervision of the child before and during school life is producing its effect. Better nurture, the remedy of infective conditions which gravely impair physique, school meals, physical training more fresh air and improved school sanitation, can scarcely fail in the long run. The direct treatment of ailments and defects removes causes of weakness."

*The Health of the School Child. The Annual Report of the Chief Medical Officer of the Board of Education for the year 1926. His Majesty's Stationery Office 1927 (Pp 182, 1s 6d. net)*

less dental decay, less mouth breathing, fewer inflamed tonsils and glands, less tuberculosis and anaemia, a decline in severe rickets. There has also been great reform in the social life of the people, better housing conditions, better feeding, more cleanliness, better clothing and more fresh air. Heredity is a mighty factor in the building of physique, but the influence of heredity that runs it very close, and it has this advantage over heredity that we can control it directly. On the whole the best children physically are the best children mentally and a sound educational system is not dependent in childhood on improved methods of education only, but on a body nurture, on better feeding, on nervous control and regulation, on a steady growth of bone, muscle, and brain. We have been told on high authority that feeding wins more horse races than training. Feeding is equally important for the child."

**Nutrition**  
Little regard need be paid, in Sir George Newman's opinion, to the fashionable "stunts" of the present time, or of any time. Some advisers are all for wholemeal bread, others all against sugar, a third group concentrates on vitamins, and a fourth condemns oatmeal. The child needs all of these foods in a varied diet and in reasonable balance. The problem is not the relief of poverty, but the prevention of under-nourishment. The malnourished child is not necessarily the hungry child, nor yet one in a condition of starvation. Sometimes poverty is a direct cause, more often it is ignorance, unsatisfactory home conditions, lack of parental control, and absence of influences favourable to nutrition.

"It is careless mothering, ignorance of upbringing, and lack of nurture, rather than actual shortage of food, which results in the malnourished child. Insufficient sleep, chronic fatigue, absence of fresh air, and lack of exercise are exerting a very good influence day by day on the well-being of multitudes of children. Magnificent schemes and expensive staffs are of no avail if mothers and teachers neglect these simple matters. Disease is a cause of malnutrition, enlarged tonsils and adenoids, decayed teeth, congenital syphilis, tuberculosis and the like. Hence to provide more food or even better food is by no means the only answer to nutrition."

**Remedial Measures**  
Progress in school treatment schemes is noted during the year, but there is still room for improvement. Of 317 education authorities, 2 have no special provision for dealing with defects of vision, 14 all show some treatment for minor ailments, 23 have no special scheme, and 59 are without arrangements for the treatment of enlarged tonsils and adenoids. Orthopaedic treatment is undertaken in less than half the cases. In London there is, it is stated, a steady drift year by year of children from the voluntary hospitals to the treatment centres. This movement is accounted for partly by the popularity of the treatment centres, but still more by the policy of some of the hospitals which seek to relieve the pressure on their out-patient departments by diverting children who apply to them for treatment to the Council's centres.

An essential part of any treatment scheme is the establishment of measures for educating parents as to the need for treatment and to the still greater need for after care. Such measures include a service for the following up of cases at their homes by school nurses and Care Committees, and for educating the mothers by lectures, talks, leaflets, and personal guidance and counsel. There is evidence of this unceasing work. It is found that it is much harder to persuade parents to obtain dental treatment than any thing else. The treatment of squint is engaging the attention of education authorities to an increasing extent. Operative treatment, where necessary, is now provided by 37 authorities. Emphasis is laid on the fact that the earliest possible detection of the condition is essential if serious loss of vision is to be prevented, and satisfactory results are found to accrue from the notification and treatment of cases from infant welfare centres. Enlarged tonsils and adenoids are found in about 10 per cent of all school children, and in 5 per cent it is sufficiently severe to require operation. There is little doubt that in the majority of cases the condition arises before school age. In London, of 10,168 children referred for treatment, 5,724 were entrant infants "amongst whom the greatest proportion of diseased throat conditions is always found." Hospitals are becoming more used for operative treatment than clinics, probably owing to the

increasing recognition of the importance of inpatient reception and after-treatment. Mr. Latham records the results obtained by operation. Dermal was cured in 51 cases out of 74 (68 per cent); otitis in 23 out of 33 (70 per cent), and empyema in 27 out of 46 (59 per cent).

(To be continued.)

## Union of South Africa.

[FROM OUR CORRESPONDENT IN PRETORIA.]

MOQUITO SURVEY OF SOUTH AFRICA. Information regarding the distribution of mosquitos in South Africa is still remarkably scant. A few investigators have at various times done isolated and purely localized work but until recently nothing in the nature of a general survey has been attempted. This deficiency in our knowledge of the mosquito fauna is regrettable in view of the carrying by these insects of malaria and dengue to man in certain parts of the country. From the veterinary point of view too definite knowledge is necessary, as culicines are suspected of conveying horse sickness which annually causes tremendous loss to the country and has rendered horse breeding in otherwise very suitable districts economically impracticable. Knowledge of the habits of these carriers of disease is necessary so that destruction may be carried out at their most vulnerable periods. In most parts of this country there is a periodical seasonal diminution in the numbers of mosquitos. Destruction of early broods would therefore yield beneficial results later in the season. The natural tendency however is to introduce anti-mosquito measures only when the insects are most prevalent. The desirability of having accurate information has long been realized by the health authorities of the Union, but it has only recently become practicable to commence a systematic survey. Early last year the South African Institute for Medical Research began field work in the Northern Transvaal. While this survey was in progress, agrarian plinters in Zululand became disturbed at the prevalence of malaria on their plantations and the Union health department decided that an anopheline survey of this part of the country should be undertaken without delay in view of the recent railway extensions and the development of cotton growing and other agricultural progress. A conference attended by representatives of the health department, South African Institute for Medical Research and the Veterinary Research Division discussed the practicability of co-operation in a general survey of all blood-sucking flies throughout the country. The survey has however had to be limited to anophelines and culicines—the latter mainly for the purposes of the agricultural department. It is being carried out by the entomological department of the South African Institute for Medical Research. A report of the survey of parts of the Northern Transvaal and of the coastal belt of Zululand by A. Ingram M.D. medical entomologist to the institute and his assistant B. de Meillon B.Sc. appears in the latest publication of the institute (No. 100, vol. iv). It is a valuable contribution to the problem of dealing with the insect carriers of human and animal diseases in this country.

### Northern Transvaal

The preliminary survey of parts of the Northern Transvaal commenced in January 1926 was concerned with the determination of the chief malaria vectors and the location of the haunts of these larvae. A few culicine mosquitos were also collected. The survey was carried out in the districts of Rustenburg, Waterberg and Zoutpansberg. The parts visited are all situated at an altitude of about 4000 feet above sea level with an average annual rainfall varying between 25 inches in Waterberg and 52 inches in parts of Zoutpansberg. Approximately 90 per cent of this rainfall during the summer months, October to March. These records are such that it would seem that malaria in these parts assumes epidemic form at fairly regular intervals resembling the outbreaks in the Punjab described by Carter. In these intervals it would appear that the resistance established by the previous epidemic is sufficiently

reduced to allow of the disease assuming epidemic form in a season in which an excessive rainfall has occurred in the pre-malarial period. Here, as in the Punjab, excessive rainfall will apparently not result in an epidemic in a population which has had its resistance raised by an epidemic occurring the previous year. The investigators suggest that given an accumulation of cases of enlarged spleen in the malarious districts and a record of the rainfall during the pre-epidemic period (that is October to January) it ought to be possible to forecast the occurrence of malaria in epidemic form as is done for the Punjab in India. The anophelines collected during the Northern Transvaal survey were *A. mauritanicus*, *A. squamosus*, *A. gambiae* (costalis), *A. pretoriensis*, *A. ruppesi*, *A. funestus*, *A. natalensis* (aucto. quamvis), *A. transvaalensis*, *A. maculipalpis*, *A. rhodesiensis* and *A. theileri*, *A. cinereus*, and *A. longipalpis*. Adult specimens were collected where seen, but the majority of the anophelines obtained were reared from larvae found in bodies of water in the different districts. The recognized carriers of malaria in South Africa are *A. funestus* and *A. gambiae* (costalis). No larvae of either of these were however found in the Waterberg during September and the first fortnight of October. It would appear therefore that active breeding of these two anophelines does not occur in the winter and spring. Further, no adults were found in any of the houses inspected. If these two mosquitos are the carriers of malaria in the Waterberg—as they certainly are in other parts of Africa—it is probable that hibernation of the adult takes place out of doors amongst the grasses, reeds and shrubs in the vicinity of the watercourses. The investigators strongly recommend the burning of the vegetation in the marshes and along the banks of the rivers in winter.

### Zululand

The Zululand survey was commenced at the end of January of this year. Most of the time was spent in collecting larvae and in examining the conditions and surroundings of the various waters in which they were found. Zululand is situated between latitudes 27° and 28° south. The coastal belt is flat but inland the rise is rapid to heights of from 2000 to 5000 feet above the sea. The belt is intersected by numerous rivers rising in the highlands and heavy floods are liable to occur in the rainy season owing to the water being impeded in its course to the sea by sandlocked lagoons. At all times there are considerable stretches of marshy ground adjacent to the rivers as they traverse the coastal belt. The average annual rainfall is about 38 inches of which some 80 per cent falls in the summer months between October and May—January and February being the wettest months. During the recent outbreak of dengue fever in Durban some unusual breeding places were ascribed to its vector *Aedes (Stegomyia) argenteus*. The present investigators found no reason to differ from Carter who states that this mosquito in its larval stage is not found in marshes, sluggish streams or in any collection of water where at the water's edge there is nothing but mud. Larvae of this mosquito were found in house tanks. Here as elsewhere in South Africa the two principal mosquito carriers of malaria were found to be *Anopheles gambiae* (costalis) and *Anopheles funestus*. The former was however found in this survey to be much more numerous than the latter and it is probably the chief carrier of malaria in Zululand. It appears to show a seasonal variation in numbers. A record of its prevalence during each month of the year in the malarial districts of Zululand is therefore desirable. Much might be done to reduce the output of anophelines by the periodical removal of floating water plants which afford shade and protection to the larvae. This and clearing of grass and reeds in and about pools, and the draining of the banks or streams in the neighbourhood of houses and native villages is advocated by the surveyors. Financial reasons will of necessity limit the extent of such measures but they should be carried out within a radius of half a mile or slightly less. Segregation of natives is enforced in Zululand as in other parts of the Union. Zululand where the agent as well as the material suffers from malaria and is a potential carrier of malaria collected at M'rubatubi appear to indicate that the

indigenous race of Zululand has established a certain degree of immunity is compared with the imported races—a fact which may be made use of by the Public Health Department in the future recruiting of labour for the industries of Zululand.

#### THE SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH, JOHANNESBURG

The annual report of the director of the South African Institute for Medical Research for the year ended December 31st, 1926, was published on November 3rd. During the year Dr W. Watkins-Pitchford, who had held the appointment of director of the institute since its inception in 1912, retired because of ill health, and was succeeded by Sir Spencer Lister. The institute is divided into a research and a routine division. Much of the work of the research division reviewed in this report has already been described in these letters. The work included investigations into plague, tuberculosis, heart-stroke in deep-level mines, effects of inhalation of asbestos and other dusts, bionomics of the ectoparasites of rodents, bilharziasis, and such biochemical research as the steady growth of the routine work in the department of biochemistry has permitted.

#### Plague Infection

To ascertain how plague infection is kept alive among gerbilles during off seasons between epizootics a series of experiments was carried out in fenced-off runs on the veld. It was found that plague-infected skins could live without any hosts for periods up to three and possibly even four months, and still retain the power of infecting fresh hosts. Such longevity, taken in conjunction with the known habit of the gerbille of visiting every burrow in its neighbourhood, may explain how plague infection can be kept going in a scanty rodent population until conditions become favourable for the occurrence of an epizootic. "Tiger River disease," which was found occurring naturally among veld rodents in 1925, was not again met with in the field. Experiments, however, were made with cultures of the causative organism to ascertain its possible use as a virus for the destruction of gerbilles. Food containing the bacilli was found to be very fatal to such rodents; as actually to it, the virus being at least as efficacious as any ordinary poison which had been employed, and some evidence was obtained that the disease had established itself as an enzootic infection. The virus would probably be useful in a gerbille-infested area in which a plague wave was due. A Tiger River disease wave might be made to anticipate and even prevent a plague epizootic. The causative organism of this disease was independently and previously discovered at Cambridge, England, by Dr E. G. Murray, as the cause of an epizootic amongst rabbits, and named by him *Bacterium monocytogenes*, from its unique character of eliciting a large mononuclear response in the circulating blood of infected animals.

#### Heat-stroke in Deep-level Mines

As a result of a series of deaths from heat-stroke in the deep levels of certain gold mines, Dr A. Mavrogordato, Industrial Hygiene Research Fellow, and Dr H. Prior, Government mining engineer, engaged on an inquiry into deep-level mining in relation to high wet-bulb temperatures. The results of their work were communicated to the South African Institute of Engineers, in whose journal it was published (vol. xvi, February, 1927). It was found that many of the working places in the mines had a wet-bulb temperature of 86° F., the level above which temperature control tends to break down in European engaged in physical labour. Cooling of working places presents considerable difficulties. As they are constantly shifting, in which has been cooled at a fixed point would warm up too rapidly on its way to the more distant working places for a useful fall in temperature to be secured. It was urged that attempts should be made to increase the difference between the wet- and the dry-bulb readings, which was found rarely to exceed 2° F. It was suggested that this might be done by delivering air in by pipes to the working places, and by attempting to reduce the amount of water used in dust laying.

#### The Routine Division

In this division 65,980 investigations were made during the year—an increase of 13,136 over 1925. This increase was largely in investigations of a bacteriological and serological nature, associated with the diagnosis of specified diseases, particularly tuberculosis, syphilis, typhoid fever, and gonorrhoea. In the biochemical department there was a fall of 627 in the number of examinations as compared with 1925, due chiefly to a decrease in the requests for blood sugar estimations. As the number of patients in the two years was almost identical, the decrease in sugar estimations would appear to indicate a growing facility in the use of insulin, and the consequent reduction in the need for laboratory control once the patient's equilibrium has been established.

Hookworm infection with *Ancylostoma duodenale* was found in miners whose blood also showed a marked eosinophilia. Hydatid infection was confirmed microscopically in eight subjects. In four cases the application of the Cason or hydatid skin test gave a positive reaction which was confirmed on operation, but on two occasions operation following a positive skin reaction revealed the presence of an amoebic abscess in the liver. The reaction is being further tested.

The number of rodents sent in for plague examination was 2,234. Of these the largest number (2,138) were received from the Johannesburg municipality, all of which proved negative on examination for the presence of *B. pestis*. Of the remainder, 9 veld rodents were found harbouring the bacillus.

Evidence of schistosome infection was found in 122 of the specimens, chiefly urinary, of the 432 submitted for examination. *S. haematobium* is the trematode whose ova were most frequently derived from the urinary tract, *S. spindalis* having been found in the urine of only one patient. On six occasions the intestinal form of the disease was confirmed by the finding of ova of *S. mansoni* in the faeces. The wider application in general practice of the Wassermann test is indicated by the marked increase of specimens examined. During the year 10,367 examinations, mostly serological, were made, positive results being obtained in 29 per cent of the specimens received. To ascertain the incidence of specific infection among native mine workers an extensive investigation in co-operation with the Witwatersrand Native Labour Association has been begun. The blood from over 1,000 unselected natives is being subjected to the Wassermann test. Interesting and reliable data are expected from the results of this investigation. The increased activity in the investigation of tuberculosis is partly reflected in a large increase of specimens, chiefly sputums, received for examination, 18,780 specimens were received. The Weil-Felix test for typhus was applied with 1,120 serums—a decrease of 233 compared with the previous year. During the year 1,260 autogenous vaccines were prepared, and numerous stock vaccines and serums were issued.

## India.

#### MEDICAL TREATMENT IN THE NORTH-WEST FRONTIER PROVINCE

The number of patients treated in all classes of hospitals and dispensaries in the North-West Frontier Province has increased considerably, the figures being 1,127,268 in 1926 and 1,078,443 in 1925. The number of surgical operations was also much larger, and there was a fall in the death rate in these patients in comparison with the two previous years. There was no such epidemic of cholera as that of 1925, and an outbreak of plague in Mardan was practically confined to that division. The number of malarial patients increased from 43,967 in 1925 to 46,441 in 1926, but the number of deaths fell. The largest number of major operations was performed in the Lzerton Hospital, Peshawar, the Binnu Mission Hospital coming second. The health of the South Waziristan Scouts and the Tachi Scouts continues to improve. The total number of hospitals and dispensaries working during 1926 was eighty.



six-one more than in the previous year. The establishment of two civil dispensaries has been sanctioned and the Provincial Dns Training Centre in Dera Ismail Khan has been completed.

#### CHOLERA IN MADRAS

During 1926 the field work in Madras in connexion with the control of cholera by preventive inoculation and treatment of early cases was continued, with the help of a further grant from the Indian Research Fund Association. In his annual report Lieut Colonel A. J. H. Russell, I.M.S., director of public health for Madras states that some parts of the Presidency continue to be heavily infected with cholera, but this made it possible to carry on immunization experiments, both with anti-cholera vaccine and with the Besredka cholera bio-vaccine which is given by the mouth. In order to test the comparative value of these vaccines different groups of individuals in infected villages, and in particular in the contacts of cholera cases, were treated, members of the population who refused protection by either vaccine served as controls. Up to September, 1926, the number of cases analysed was 20,000 and the results indicated that anti-cholera vaccine conferred a very considerable degree of protection, the case rate and mortality rate being, respectively, 3.3 and 1.1 per cent as compared with 18.1 and 6.2 per cent in unprotected group. Although too few patients were treated by Besredka's bio-vaccine to permit definite conclusions to be drawn, the figures indicated that this vaccine also conferred a high degree of immunity, the treatment or control was continued during the winter and it is hoped that the statistics now becoming available may make it possible to form a definite opinion. This work was undertaken by the Indian Research Fund Association at the suggestion of the health section of the League of Nations. It is stated that the villagers are much more willing to submit to inoculation than to swallow the bio-vaccine tablets. Colonel Russell thinks that whenever the purity of rural water supplies is at all doubtful the widest use of a preventive vaccine would seem to be indicated. It is hoped that it may be possible to provide free supplies of anti-cholera vaccine to all local bodies. Acknowledgement is made of the assistance rendered by the Indian Research Fund Association, which has again sanctioned a grant for the employment of a statistical assistant to continue the epidemiological studies on cholera. Papers on this subject have been published in the *Indian Journal of Medical Research*. The hope is also expressed that it may be possible to forecast cholera epidemics two or three months before they occur, the method employed has been tested in other provinces of India as well as in Madras, and has not so far failed in any case. A full report is promised before long on the geographical survey of cholera in the Presidency.

#### PROGRESS OF VACCINATION IN BENGAL

In a triennial report on vaccination in Bengal for the years 1923-26 Dr M. L. Sufi, assistant director of public health commends the adoption of free vaccination by house to house visitation by paid vaccinators in place of the old method of licensing such practitioners. This together with the increased activities of local bodies and the financial help afforded by the Government, enabled the district boards to oppose successfully the quinquennial onslaught of small pox, which, in consequence, exacted a smaller toll of lives than in the previous quinquennium. Evidence of the arousing of the sanitary conscience of the people generally is afforded by the gradual increase in the number of vaccinations. Dr Sufi suggests that if the district boards and other local authorities could maintain a large enough staff of qualified vaccinators and supervisors, small pox epidemics would be abolished. In cases where persuasion has failed, strict legal enforcement of the Vaccination Acts to almost the whole of Bengal with the preparation of lists of unprotected persons and early notification of the first cases of small pox, would be valuable as subsidiary factors in the reduction of this disease. In Calcutta a smaller number of vaccinations is recorded owing to the fact that a very large number of people were treated during the previous year in anticipation of the quinquennial epidemic. There has been a

great improvement in the number of vaccinations of persons employed in the tea gardens during the year. Lanolin lymph is now being replaced by the more popular glycerin lymph. The quinquennial outbreak of small pox which started in December, 1924, and continued during the following year, exacted a heavy death toll owing to the prevalence of the disease during the months of April and May, 1925. The outbreak, being of a very severe form, was mostly confined to Calcutta and the neighbouring districts, at least in its early stage. During the previous quinquennium it extended over the Presidency. The spread of the disease in one district was due largely to a constant influx of people from Bhutan, Sikkim, and Tibet. In other areas the outbreak was started by infected persons in Calcutta and Howrah. A timely intensive campaign of vaccination and revaccination cut short the spread of the epidemic to outlying areas. Dr Sufi praises the activities in this connexion of several local authorities, and urges the appointment in each division of a medical graduate possessing the diploma in public health, and a special knowledge of bacteriological work. He regrets that during last year only about 270 per 1,000 of the estimated number of infants were successfully vaccinated, he attributes this to laxity in the enforcement of the provisions of the compulsory Act. Vaccination or contact has been neglected, and the failure of the law to help the local sanitary authorities in undertaking such duties measures has been the subject of adverse comment by some of the district health officers.

## England and Wales.

#### SIR DAVID DRUMMOND

In celebration of fifty years' service given by him to the University of Durham College of Medicine, Sir David Drummond, C.B.T., M.D., Past President of the British Medical Association, was presented at Newcastle on December 1st with his portrait in oils. The painting is by Mr R. G. Eves and shows Sir David in the robes of vice-chancellor of the University. The presentation was made by Mr P. G. C. Mortimer, chairman of the governor who recalled briefly Sir David Drummond's distinguished career since his appointment as lecturer on therapeutics in 1876. Warm tributes were paid also by Professor Thomas Beattie who said that as a teacher of medicine and pathology he had earned the lifelong gratitude of a host of practitioners and by Sir Robert Bolam who recalled his original work in connexion with empyema, neuritis and general paresis. In returning thanks for the honour conferred upon him Sir David Drummond said that it had been his good fortune to be appointed lecturer in the college just at a time when there was a revival in the teaching of clinical medicine when Byrom Bramwell and Rutherford Morrison were putting life into bedside teaching at Newcastle. Since those days the college had advanced and developed enormously, and now stood among the foremost medical schools in the country. He then invited the College of Medicine to accept the painting if a place could be found for it among the portraits of those who had given of their best and devoted their lives to it and Sir Thomas Oliver as president of the college gratefully accepted.

#### NEW GENERAL HOSPITAL FOR MIDDLESEX

A new hospital at Edgware, Middlesex built by the Hendon board of guardians was opened by the Minister of Health on December 5th. The Edgware Hospital (as it is called, after the name of the old infirmary) has been constructed on most modern hospital lines in grounds of twenty acres. It contains 175 beds, but can be extended to provide three times that number. It includes medical, surgical and maternity wards, an isolation annex, administration, receiving, operating and pathological blocks and a separate building to serve as a home for the matron and forty sisters and nurses. On the south side of each ward is a paved terrace for beds. The hospital is intended only for the treatment of acute cases, chronic cases will continue to be treated at the old infirmary. Mr Neville

Chamberlain, opening the building, said that he greatly appreciated the long and carefully directed efforts of the guardians of the Hendon Union in making this noteworthy contribution to the hospital accommodation of the district. Although the prevention of disease was the objective of much effort, treatment—especially of the institutional kind—would remain necessary, it was constantly changing, developing, and branching out in new directions. In a former time medical treatment, while formidable enough for the patient, was a very simple affair, the result of strictly limited resources and ideas. Henry VIII was crippled for years, and ultimately died, on account of an ulcer of the leg for which the medical science of his time could do nothing. Edward VI suffered from what was apparently consumption, but the attendance of the royal physician and of an Oxford professor was unavailing, and finally a female quack was called in, who administered such drastic remedies that the hair and nails of the poor youth were destroyed. Charles II was tortured on his death-bed by fourteen doctors, who dosed him morning and night with concoctions, the last harmful of which was forty drops of the spirit of the human skull. All that belonged to a distant past, but it was only within quite recent years—in only the Listerian epoch—that the great advances in medicine and surgery had been made. With these had come specialization and the need for special equipment, in order to get the best modern treatment in increasing number of patients had to enter an institution where medical skill and trained nursing could have sufficient scope in suitable surroundings. Another question of importance from the point of view of hospital provision was that the population was not only increasing but becoming more mobile. He was told that in the neighbourhood of the hospital the Witting estate of the London County Council was extending by a thousand new houses a year, and during the last few years there had been an influx of population into the area of the Hendon Union of many thousand people. New houses introduced complications, such as the need for fresh means of transit, additional schools, and extended hospital accommodation. In Middlesex the voluntary hospital accommodation in proportion to the population was considerably below the average for the whole of London, or even for the country, a debt of gratitude was due therefore to the Hendon guardians, who had provided this first-rate general hospital, which, perhaps, would not always be confined to the treatment of the sick poor. The old idea that the rich could be treated in their own homes, the poor in voluntary hospitals, that those who were neither rich nor poor must never be ill because there was no hospital provision for them, and that for the proper, sane or insane, curable or incurable, there was reserved the workhouse infirmary, was passing away, it was felt to-day that there was no class in the community who should be excluded from hospital treatment. The fact that this new institution was called a hospital and not an infirmary was significant of the tendency for these old distinctions to disappear. A time was coming when every hospital, whether voluntary, municipal, or Poor Law, would play its part in the general scheme of institutional treatment which should be sufficient to provide for the needs of the population in the area, when that time came this new hospital would be ready to make an important contribution to national health. Sir PHILIP CUNLIFFE-LISTER, President of the Board of Trade who is M.P. for Hendon, paid a special tribute to the honorary physician of the hospital, Dr Alexander Fiddler, to whose persevering effort, extending over many years, as the promoter of the board of guardians in this matter, the success of the scheme was very largely due.

#### LONDON SCHOOL OF MEDICINE FOR WOMEN

The annual dinner of the London (Royal Free Hospital) School of Medicine for Women took place at the Savoy Hotel on December 1st under the chairmanship of Dr A. G. Phear, C.B., senior physician to the hospital. Among the company of nearly four hundred were the Dean (Lady Bissett), Sir James and Lady Bell, Sir William Beveridge, K.C.B. (Vice-Chancellor of the University of London), Sir Hiram Greenwood, Sir Milson Ross, Lord Riddell, Dame Mary Schreber, and Sir StClair Thomson.

Sir William Beveridge, in proposing the health of the school and hospital, said that there was no medical school in the University of London to whose dinner he more gladly came, for by ties of locality and interest this school was more completely and intimately a part of the University than almost any other. It was also the pioneer school in the training of women for the noblest of all professions. Speaking of the Bloomsbury site, the Vice-Chancellor said that he looked forward to the portion of Bloomsbury acquired by the University of London as the future academic centre of London, as definitely as Whitehall was the centre of government or the City the centre of commerce. The chairman, in responding to the toast, gave an outline of the more important events which had taken place during the year. He made a special allusion to the late chairman of the hospital, Mr. Lengton, in whose death the hospital had sustained a severe loss, for the work of that institution and everything connected with it had been the absorbing interest of his life. The hospital and school had suffered grievously in this way, for the removal of the personality of the late Dean (Dame Louisa Aldrich-Blake) was still fresh in all their minds. Among the stiff changes was the appointment of Miss M. Wade, F.R.C.S., a past student of the school, to fill the vacancy caused by the retirement of Dr. Giansou. The newest acquisitions on the staff were Mr. Paul Jenner Verrall and Dr. Neill Hobhouse. Since Her Majesty opened the new children's ward during the past summer, Dr. Hazel Chodak Gregory had become the chief of that department. The school was growing from strength to strength, both in learning and athletics, and without attempting to enumerate its successes he owed to some bewilderment at the almost tedious brilliancy of its examination results. Miss Dearmley proposed the health of the guests, to which responses were forthcoming from Sir StClair Thomson, with his unfailing budget of humorous stories, and from Lady Greenwood. A former student, Miss Janet K. Aitken, proposed the health of the chairman, remarking that Dr. Phear had first and foremost taught his students medicine. After the speeches the company broke up for dancing.

#### AN INDUSTRIAL MUSEUM

Before the war the Home Office had in view the formation of an industrial museum as a permanent exhibition of methods, arrangements, and appliances for securing the safety, health, and welfare of workers in factories and industrial processes. The museum has now materialized, and, after a private view by the King and Queen, was opened to the public on December 5th. It is a two-storied building in Horseferry Road, Westminster. On the ground floor machinery for drilling, printing, cotton carding, laundering, and calendering is shown, in which are many devices for protecting dangerous portions of the machinery, and for instantaneous stopping if a worker is caught in the machine. In the basement there are exhibits showing the principles of efficient lighting in industrial work, and systems of ventilation illustrating the difference between good and bad methods. The portion of the exhibition of most interest to the medical profession is in the gallery on the first floor. Here are shown the results and methods of prevention of such industrial diseases as anthrax, lead poisoning, silicosis, and dermatitis caused by paraffin, benzol, mercury, chrome, sugar, and other substances. This section is illustrated by a series of excellent wax models of skin eruptions, for the preparation of which the authorities were compelled to seek the assistance of craftsmen in Budapest. There are photographs showing such protective measures as washing arrangements and respiratory masks now used in lead and other industries under Home Office regulations. The unbreakable crockery was an attractive and artistic exhibit, but the price of the ware might raise doubts as to its economy in use. The exhibition is interesting in its display of ingenuity in invention, and useful in showing the extent to which the worker is now protected by regulation—very often from his own failure to appreciate the existence of danger. But we hope the object in view was not merely, as we heard suggested, that the worker might learn about the conditions which he has a right to expect in the factory he works in. After

all, there is something in the motto which the late Canon Barnett put in the Towns' institution: "Duties, not rights."

#### CENTRAL MIDWIVES BOARD

The Central Midwives Board for England and Wales met on December 1st when it considered two resolutions it had received as to the form of ante-natal record issued for the use of midwife. The first was from the County Council Association, which expressed its concurrence with the view of the Wilts Public Health Committee that, while ante-natal examination is valuable, more harm than good would be done by an attempt to carry out the work in all cases in the manner suggested in the form of record. The Board agreed to consider the point. The other resolution was from the Maternity and Child Welfare Subcommittee of the British Medical Association, which was as follows:

1. That it is undesirable that there should be assigned to midwife any duties which can only be properly carried out by a duly qualified medical practitioner.
2. That if the ante-natal record form issued by the Central Midwives Board is filled in by a midwife the implication is that the cases referred to is classified as being all with regard to any conditions not noted or even a condition which may be imperfectly noted and therefore does not require the attention of a medical practitioner and that such a position is unsatisfactory from the point of view of the patient.
3. That all pregnant women should be examined during pregnancy by a fully qualified medical practitioner.

The Board agreed with Clause 1. As to Clause 2, the meaning of which the Board considered obscure, it referred the British Medical Association to Rule L 20. As regarded Clause 3 the suggestion was agreed to be desirable if practicable.

#### CHILD DEFECTIVE

At the end of November a conference was held in London to consider the development of special schools for physically and mentally defective children. It was held under the auspices of the National Special Schools Union, a body founded about a quarter of a century ago to advance the education of such children and to enlist the sympathy of the public on their behalf. Only from 2 to 5 per cent—in London 2 per cent—of the school population come within the fold of the special school, but as the president of the union Mr. Albert H. Hill pointed out the importance of the questions involved in the care and management of these children is out of all proportion to the total number of them. Lord Birmaham presided at the opening session and the London County Council, which daily employs a fleet of seventy special ambulances to carry 10,000 such children to and from school gave it a special blessing. The Hon. Lady Lawrence, chairman of the Special Services Subcommittee of the Council, received the delegates at the Council's Hall where an exhibition of the educational apparatus used at special schools was arranged, and the handwork of some of the children was on view. The conference lasted three days and discussions were held on the after-care of the physically defective, the function and the future of day special schools, the bearing of mental deficiency on crime and the treatment of the rheumatic child. Miss Martineau, J.P., chairman of the Special Schools Committee of Birmingham expressed the opinion that some children were admitted to special schools whose place ought to be in the dull and backward classes in elementary schools and that some of too low a grade were sent to special schools for which they were not suited. Dr. Acton-Davis, on the other hand, argued that milder cases ought to be admitted to special schools and admitted earlier. The subject of crime and mental deficiency was broached by Dr. J. J. Linds, governor of H.M. Prison for Boys, Wandsworth, who said that 5 per cent of the remands sent to that institution were certifiable under the Mental Deficiency Act. Every child in a special school should be considered separately, and his educational treatment modified in accordance with his special need. The first signs of delinquency should be recognized in order that they might be suitably treated, and special care should be given to delinquents during the adolescent period which is a transition to the normal child, as the period of greatest crime and emotional instability. Dr. Dimmock Fordyce, certifying officer to the Liverpool

education authority, spoke in favour of special residential schools for the rheumatic child. He thought that six months might be taken as about the desirable limit for rheumatic children to remain in hospital even in the excellent country hospitals with schools attached and that afterwards—or in the case of children who had never received hospital treatment for active rheumatism, when they were discovered to be sufferers—they should be sent to a residential institution primarily a school and only incidentally a place of treatment, for eighteen months or longer. Only by such means could rheumatic children, particularly when coming from a slum environment, be reasonably dealt with educationally and medically. He reminded the conference that rheumatic children could be reared to take their place amongst the world's best workers—that they were potentially energetic and capable citizens—and that indeed in many respects the rheumatic diathesis appeared to be the sign of civilization.

#### THE COMBATING OF DIPHTHERIA IN LONDON

At the meeting of the London County Council on November 29th a long report was submitted by the Public Health Committee on the question of the Schick test and active immunization against diphtheria. The committee quoted extensively from Dr. Graham Forbes's report issued under the auspices of the Medical Research Council in the early part of the year (*British Medical Journal*, May 21st, page 925) but added that as regards actual experience of active immunization in this country where it had been adopted in a particular area the number of children immunized in proportion to the number of susceptibles was so small and the period during which this preventive measure had been employed so short that no marked variation in incidence was to be expected although there was evidence that where the population or institutions, such as staffs of fever hospitals had been immunized there was a marked diminution in incidence. That there was need for caution in relying on the rather diminution in the prevalence of the disease in New York in 1924-26 to active immunization alone was clear from the fact that during the first six months of 1927 there had been a notable rise both in incidence and mortality in New York City. The committee felt that north as yet had active immunization been carried out with such complications as to render it impossible to draw any conclusions and certain conclusions as to the incidence of diphtheria upon any given community. Having regard to all the evidence so far available however, there can be no reasonable doubt that active immunization is now regarded by many prominent members of the medical profession as a valuable preventive measure.

London (the L.C.C. report continued) held an unequivalently position both in Great Britain and the whole of Europe in respect to the incidence of and the mortality from diphtheria. From 1911 to 1925 the average annual rate was higher than in any other large city in Great Britain though it was possible that these figures were exaggerated by the fact that many doubtful cases were notified on bacteriological evidence alone. Bacteriological facilities for such diagnoses being more readily available in London than elsewhere, and that in clinical diphtheria London did not compare as badly with other places as might be supposed. The average death rate during the period just mentioned placed London fourth amongst the large towns of Great Britain but in 1924—the year for which figures were available—the death rate in London from diphtheria was preceded only by that of Manchester and Portsmouth amongst the capital towns. Further, it was pointed out that the problem of immunization in London is a serious one. The Metropolitan Council has established a number of centres with the Schick test. The evidence to which the committee referred was that the death rate in the six boroughs of the City of London was 1.1 per 100,000 of the population, and that in the other five boroughs it was 0.8 per 100,000. The parents of the children who had been immunized in the City of London were 1.1 per 100,000, and in the other five boroughs it was 0.8 per 100,000. The committee suggested that the Schick test should be extended to all parents of children under 15 years of age, and that the opportunity of obtaining the Schick test should be given to all parents of children under 15 years of age.

and been considered that as an experiment, in connexion with selected schools at which diphtheria incidence was high, facilities should be provided for the contacts of diphtheria cases to be inoculated as a preventive measure, but the committee considered that if isolated schools were selected it would be doubtful whether any sound conclusion could be drawn as regards incidence, owing to the fluidity of the school population, moreover, in the present state of public knowledge, the proportion of parental consents would not be high. In Holborn, Deptford, and Camberwell the school organization had already been used for the distribution of leaflets on the Schick test. The conclusion of the committee was that measures for the prevention of the spread of diphtheria were primarily the duty of the borough councils, and that so far as the county council was concerned, it would be premature to introduce any measure of active immunization among school children, even on a limited scale, until further experience had been gained. A further report is to be made in a year's time.

It is evident that the two main considerations which have led the Public Health Committee to this decision are (1) the magnitude of the Council's responsibilities, with the fact that the greater the proposed sphere of action for a relatively new procedure the more needful it is that its efficacy shall not only be proved to the expert but demonstrable beyond all civil to the laity, and (2) the fact that the metropolitan borough councils are really the responsible authorities in this matter concerned as they are with the prevention of infectious disease. The six councils named which have already started centres for immunization are the Westminster City Council and the borough councils of Bittern, Camberwell, Deptford, Hackney, and Holborn.

#### EXTENSION OF THE NORFOLK AND NORWICH HOSPITAL

Sir Kingsley Wood, M.P., Parliamentary Secretary to the Ministry of Health, opened, on November 25th, the new out-patient department of the Norfolk and Norwich Hospital, which has been erected on the site of the old department. The main entrance is provided with a large glazed shelter allowing patients to be removed from an ambulance under cover. Out of the well lighted waiting hall open five consulting rooms, each with an attached examination room. Special arrangements are made for the examination and treatment of ear, nose, and throat cases, there is a complete operating block, and a recovery room for patients after minor operations. Accident cases will be treated in a special casualty room. On the first floor accommodation is provided for ophthalmic and dental out-patients, including perimeter, operating, dental, and dark rooms. Sir Kingsley Wood in his speech referred to the foundation of the Norfolk and Norwich Hospital 156 years ago, and said that the Government would do all they could to encourage voluntary hospitals. He did not think that an attitude of pessimism with regard to the health or physique of the nation was justified, in view of the increasing enlightenment of the people generally, the decrease in the mortality of infants and children, and the progress made in medical science.

## Scotland.

#### ROYAL INFIRMARY, EDINBURGH

The report presented to the ninth annual meeting of the League of Subscribers of the Royal Infirmary of Edinburgh by Mr George Mackay stated that the amount received from various groups of small subscribers was £21,420, a slight increase on the previous year. Edinburgh had subscribed £15,931 and the balance had been collected in country districts, especially in Fife, the Lothians, and the Border counties. Owing to trade depression, a much smaller number of subscriptions had been received in some districts, but this had been more than counterbalanced by the general rise in the number of subscribers. During the year 85 new groups of subscribers had been added, and the league now had a total of 1,418 groups. Since the commencement of the league in 1919 the total sum gathered for the Infirmary had reached approximately £159,000. The report in regard to the working of the

Infirmary showed that the number of patients in the wards during the year had been 17,843, as against 17,024 during the previous year. As regarded the occupations of those admitted to the hospital, or the occupations of those whose dependants were admitted, the greatest number were workers in mines and oil works (2,644), trades and crafts furnished 1,536 and general labourers 1,416, domestic servants 980, persons employed in offices 797, and shop employees 758, railway employees numbered 569, motor mechanics 445, building trades 311, and engineering works 339. The number of out-patients continued to increase, the past year's figure being 61,582. Unfortunately there continued to be an extensive list of persons waiting admission, which on November 1st had numbered 1,923 cases. Nothing except an extension of accommodation would relieve this difficulty, which, however, was common to other hospitals in the country. Contrasted with the previous year, almost every item of voluntary revenue showed an increase. The expenditure for the year had been not less than £140,000, an increase of fully £10,000 over the previous year. Referring to the cost of food, it was mentioned that 80,300 gallons of milk had been used, costing £5,300, while the meat and poultry required had cost £4,676. There had been an increasing tendency to substitute fruit as part of the diet.

#### THE MILK SUPPLY OF CITIES

At a recent meeting of the Glasgow University Society of Agricultural Science the question of the milk supply for cities was discussed. Principal W. G. R. Paterson presided. Mr Alexander Batchelor (Dundee) spoke in favour of pasteurization of milk, and said that he believed no outbreak of infectious disease had ever been traced to milk which had been pasteurized. This process saved life and prevented disease, for in the case of some epidemics the proper pasteurization of a suspicious supply had resulted in the disappearance of the epidemic. General scientific opinion now held that such milk was unimpaired in its nutritive qualities. Various authorities in America were quoted to the effect that pasteurization would make unsafe milk safe, and that municipalities should safeguard their milk supply by this means. It was now generally agreed that even the lowest grade of milk should be at least safe. He pointed out that in the city of Edinburgh in 1926 the consumption of the highest grades of milk was 348 gallons daily of certified milk, 253 gallons of Grade A tuberculin-tested milk, and 52 gallons of Grade A milk, but that the total of these amounted only to 2.75 per cent of the whole daily consumption of milk in Edinburgh, which was 24,000 gallons.

#### REPORTS OF ASYLUMS

##### Rosslynlee Asylum

The report by the medical superintendent, Dr J. H. C. Orr, on Rosslynlee Asylum of the Midlothian and Peebles District Board of Control for the period to May 15th, 1927, states that the number of patients on the register at the end of the year was 337, including 12 private patients and 16 service patients. The ages on admission varied from 5 to 85 years. Sixty-six per cent of the patients admitted were in a weak state of health, and in fully one-third of the cases hereditary predisposition to mental derangement could be traced. Of 43 patients admitted, 17 suffered from melancholia, 10 from mania, 7 from senile insanity, 5 from adolescent insanity, 2 from delusional insanity, and 1 each from idiocy and general paralysis of the insane. The congenital idiot was the child of a mentally defective mother. There were 33 deaths during the year, and in two of these cases the patients had been resident in the institution for forty-two years.

##### Inverness District Asylum

The annual report for Inverness District Asylum by Dr T. C. Mackenzie, medical superintendent, dealing with the year to May 15th, 1927, shows that on that day there were 723 persons on the roll, with an average number throughout the year of 711, the total number of cases treated was 865. The admissions had numbered 148, as compared with 162 in the previous year, and the discharges 74, as compared with 93. Of the patients admitted 32 had been previously

under asylum treatment and the rate of admission varied from 10 to 61 per cent. Sixty-one cases had suffered from melancholia, 28 from mania, 41 from dementia, of whom 20 were associated with senile decay, 4 had been cases of congenital mental deficiency and 3 of general paralysis. Dementia praecox accounted for 13 of the 61 cases returned as melancholia and for 9 of the 41 cases of mania. It thus appears that even one-fourth of all the admissions were for dementia praecox. It is pointed out that this disease does not mean early death, the patient's tendency to recover, so that cases of this type form one of the chief reasons for the periodical necessity of enlarging mental hospitals. With regard to causation, hereditary predisposition to insanity was found to exist in 65 of the 148 admissions, while senility was the assigned cause in 34 cases and alcoholism in 4. Out of the 63 deaths during the year, 9 were due to pulmonary phthisis and 23 to senile decay, the two causes therefore were responsible for 47 per cent of all the deaths. The report includes some valuable remarks upon the observations of the Royal Commission on Lunacy and Mental Disorder in which the relative supplies of lunatics in Scotland is compared with that in England is pointed out.

## Ireland.

### TRIBUTE TO THE LATE PROFESSOR OF ADRIAN STOKES.

At a meeting of the Section of Pathology at the Royal Academy of Medicine in Ireland held in Dublin at the Royal College of Physicians the President Professor T. T. O'Leary in the chair the following resolution was proposed and passed in silence, the present standing.

At this sad meeting of the Section of Pathology in the year 1917-18 the Section of Pathology is deeply affected by the death of Adrian Stokes, who took place in Africa on September 15th from yellow fever contracted in the course of his investigation into the cause of that disease. Although he had been for five years, Sir William Dunn professor of pathology at Guy's Hospital his career as a student in Trinity College as a student in the school of pathology and later as professor of bacteriology and preventive medicine in and in Flanders during the war years will be remembered by the Fellows of the Academy to which he made many contributions. Not a one was he chief of the most distinguished of the younger generation of our country members of the medical profession giving promise of a brilliant future. Of it is true but he was a great personal friend of many among the profession in Dublin. Professor Stokes in his all too short career led from literature on Irish medicine and well as the tradition of a family for many generations in the forefront of medical and surgical progress. The Secretary is instructed to convey to his brother Henry Stokes our condolences with the number of his family our own of the great to which we turn in general and pathology in particular has increased and our gratitude for the stimulating example of one whom it was an honour to have known.

### REPORT OF POOR LAW COMMISSION (NORTHERN IRELAND).

An important meeting of the Tyrone Division of the British Medical Association was held recently in the Tyrone County Hospital. Dr F. C. Thompson, D.L., chairman of the Division presided. The first business was the election of a chairman and other officers for the ensuing year. Dr T. Lyle, Newtown Stewart, was unanimously appointed chairman. Dr F. Bradley, vice-chairman. Dr W. P. Lynch, Orlogh, honorary secretary, and Dr Thompson representative of the Division on the Central Council. The next business on the agenda was the consideration of the medical relief system which consists in the examination of insured persons by doctors in general practice who may be in competition with their confreres. This has been objected to by the medical profession in Northern Ireland generally, and six months ago a deputation waited on the Minister of Labour and expressed their dissatisfaction. It was then determined that if dissatisfaction still continued the deputation should have the opportunity of again discussing the question with the Minister. Several of the members expressed their continued dislike of the system which was unfair to the medical profession and injurious to the interests of the poor. Finally it was determined to direct the attention of the Branch Council of the Association in Belfast to the question and to request a further

inter-visit with the Labour Minister. A circular from the Medical Secretary of the British Medical Association was read urging the necessity of local medical health lectures to arouse the interest of the public in matters so closely concerning their own health and interest. The object was approved but it was considered that there would be great difficulty in organizing such lectures in the absence of public interest. At the request of the Executive Committee of the Division Dr L. Kidd, Linnishillen, was present and explained at length the proposals contained in the Poor Law Commission report. The Commission was composed of thirty-seven persons, eight of whom were doctors. It spent three and a half years in taking evidence and, as far as the medical profession and public were concerned, produced almost word for word the recommendations of the Viceregal Commission which were pigeon-holed twenty-one years ago. The same fate was likely to attend the present report since there seemed little enthusiasm for it on the part either of the general public or of the Government. Its chief friends were undoubtedly to be found amongst the doctors and even they though they had made many most valuable suggestions seemed lukewarm. The report recommended the abolition of boards of guardian chiefly because their duties were divided in matters of public health with the district councils. The county council was to be the chief administrative authority aided by the dispensary and public health committees. County houses were to replace the present workhouses and fever hospitals were to be centralized where possible. District hospitals were to be retained and improved. The county hospitals would be enlarged and fitted with necessary modern surgical and medical appliances and more closely associated with the district hospitals. Dispensary and public health committee would be formed and a medical officer of health appointed with assistants who would look after the sanitation of the schools and children. Sanatoriums should be enlarged and properly equipped. Small sanatoriums were unnecessarily expensive. Provision should also be made for the treatment of surgical tuberculosis at present it was very deficient and unsatisfactory. Dr Kidd strongly denounced the absence in the report of any mention of a Minister of Health without whom any attempt at health reform was impossible. If such an official were elected by a department of the Government and skilled doctors was considered essential in England and Scotland why not in Ireland. Unless the answer was in the affirmative in the six Counties the Government might whistle for effective health control. As a matter of fact there was no trained and experienced medical department at present in connexion with the Ulster Government. The question of medical benefits was closely argued and debated by the Commission. It was at first affirmed and then finally withdrawn. Undoubtedly there was considerable support for the idea in the Ulster counties. Dr Kidd finally suggested that this report should receive the closest attention of the medical profession and that its considerations should be of force underlain by the central body in Belfast. Dr Kidd also drew attention to the form of medical certificates now required by sick jurors. He pointed out that this certificate required for the judge's information the name of the disease and particulars of the origin and symptoms of the affection on account of which the juror was absent. The general opinion was that the requirements of this certificate were iniquitous and should be resisted. Attention was also drawn to the small fees now paid doctors a visit. Dr Abernethy stated he was offered 1s. for giving evidence before a magistrate in Omagh and others present gave examples of inadequate payments. Dr Kidd said that doctors had only themselves to blame for these examples of injustice and until the profession aroused itself the members might be prepared for further exactions. Dr Thompson in conveying the thanks of the meeting to Dr Kidd dwelt on the importance of the discussions, and impressed upon the members the necessity of adopting Dr Kidd's advice to show a greater concern in local affairs so as to be able to protect not only their own profession against injustice, but also the wider interests of those who relied upon them in everything relating to public health or the community.



## Correspondence.

## DIATHESIS AN APPRECIATION AND A PROTEST

SIR,—Whilst yielding to none in the sense of admiration for the brilliant contributions of Sir Archibald Garrod to abnormal metabolism, a word of warning is necessary with regard to the anthropological and statistical approach to diathesis. Anthropology is still "a lucid madness engaged in fabricating its own hallucinations."

The ancient theory of the "humours" has undergone many a subtle paraphrase in the hands of Sigurd, Kitchener, and others. The classification of Mills in terms of "hyposthenia," "sthenia," "hyposthenia," and "isthenia" had this advantage—it was based on direct radiological observation of a large number of human beings in relation to bodily habitus, and allowed a non-rigid grouping, which yielded in each group 5, 48.35, and 12 per cent respectively. Hurst goes much further and states that the hypertonic and atonic stomach are associated with differences in length and secretion. Are we to infer that this applies to the 5 per cent and 12 per cent of Mills, and that the two overwhelmingly intermediate groups are guaranteed against alimentary disease? Hurst stresses the non-pathological range of normal variation, but his followers do not. Moody has shown that enteroptosis, gastroptosis, and coloptosis are non-pathological, and that the powers of emptying the viscera are independent of their position.

Both Bräuna and Liebzelter, and Neuner and Feldweg, have recently illustrated the pitfalls of anthropological classification in an index of diathesis, and Bräuna gives a concise history of the various methods. Dravenport, in *Body Build and Its Inheritance*, concludes that slenderness of build is associated with tuberculosis, pneumonia, nervousness, and melancholia, fleshiness with diabetes, nephritis, arterio-sclerosis, and numerous diseases of the alimentary tract. Draper, in his study of the fashionable "constitutional medicine" based on less than 300 patients, suggests that there is a typical facies and a typical build for groups of patients suffering from particular diseases. The indiscriminate acceptance of these views lands clinical medicine in the realms of horoscopes and the like.

Jackson has recently published an excellent survey of 1,633 male university students from the point of view of stature, sitting height, weight, chest expansion, vital capacity, pulse rate, systolic blood pressure, and exercise tolerance. It is in apt display of the unimodal curve in relation to bodily habitus, there is no evidence of Mendelian factors is suggested by Dravenport, and there is but small correlation between body build and cardiovascular or respiratory functions. This is a matter of first magnitude in relation to diathesis.

The problem of diathesis can only be solved by studying large numbers. The Ministry of Health and the Board of Education, with twenty years of medical inspection of schools, have the necessary numbers for a comprehensive survey of the norm of physical efficiency, body build, and diathesis in large numbers of different age groups. This would be of prime importance to workers in many fields, for little of real importance has appeared in this country since the report of the Anthropometric Committee of the British Association in 1883—I am, etc.,

H. A. HARRIS,

(Institute of Anatomy and University  
College Hospital)

December 1st

## CATARACT AND ULTRA-VIOLET LIGHT

SIR—The letter of Dr Percy Hall in your issue of December 3rd (p. 1061) on cataract and ultra-violet light calls for comment. Mr Bishop Haiman suggests that this agent probably causes cataract while Dr Hall apparently uses it as a method of treating this condition. Such a question can most reasonably be answered by a direct appeal to experiment. I have produced cataract experimentally in animals by radiation, both with infra-red and

with ultra-violet rays, nor am I the only one who has done so. These results, and the literature of the subject, will be found in my paper on the pathological action of light upon the eye, published in the *Lancet* (1926, vol. 1, pp. 1137, 1188, 1250, and vol. 2, p. 16) where, incidentally, all the matters under controversy are dealt with in detail.

From the theoretical point of view this is merely what one would expect. Cataract is a coagulation of the proteins of the lens, and proteins are coagulated by ultra-violet radiation. The coagulation of proteins is an irreversible chemical change, to talk of this process being reversible (unless the whole of our ideas of the chemistry of proteins are to be revolutionized) is frankly illogical. From the clinical point of view, although ultra-violet light has a very definite and useful place in the treatment of diseases of the eye, my claim to "cure" cataract by radiation of any kind can only be ascribed to inaccurate observation, or to a failure to assess the complicated systemic influences which from time to time may alter the refractive properties of an unstable lens.

It would indeed be well if, in the hands of many, both medically qualified and otherwise, ultra-violet light were employed with more discrimination based on ascertainment of experimental data, and with less enthusiasm—I am, etc.,

W. S. DUFF-ELDER, D.Sc., Ph.D.,

London, W. 1, Dec. 3rd

M.D., F.R.C.S.

## TREATMENT OF PROSTATIC ENLARGEMENT

SIR—While great progress has been made in the general operative technique of suprapubic prostatectomy, since the late Sir Peter Freyer popularized this method in England, the mortality rate has not diminished *pari passu*. The various methods of testing the renal efficiency previous to operation should eliminate cases in which the kidney function is seriously impaired and the chances of recovery thereby correspondingly diminished. Yet, nevertheless, the mortality still remains serious, and the general practitioner has some excuse for pessimism when he hands over his patient to the surgeon, the death rate of 40 per cent which Mr Hey Groves calculated from the available statistics of large hospitals in Great Britain is alarming. The test of progress should be the mortality rate. I have always looked upon suprapubic prostatectomy as a special operation requiring in its performance a particular knack or gift which is only acquired by, or bestowed upon, individual surgeons, who eventually specialize in this particular branch of surgery, so long as it is claimed that this operation is part of general surgery the mortality rate will remain where it is. Freyer limited his practice almost entirely to this organ, and his record is still enviable, but those surgeons who specialize to-day in this particular branch will be found to be doing even better. Freyer's mannerisms in the operating theatre were thought by many unduly dramatic, but he had one great characteristic which always impressed me, and that was his attention to the time factor in all his operations upon elderly men, he kept his eye on the clock as well as on his mortality rate.

Elderly men, whether their kidney functions are ideal or otherwise, will not stand prolonged operations, and, however perfect the prostatic cavity may be after operation, the sooner the operation is over and the patient is back in bed the better are the chances of recovery. I have seriously considered this time factor in all cases, and, though I have adopted the open method with its more perfect technique, there can be no doubt that the operation is thereby prolonged. To obviate this disadvantage I have recently used a low surgical diathermy current to treat the haemorrhage after trimming the neck of the bladder, the current used being merely strong enough to coagulate the blood. This procedure is much more expeditious than ligaturing or stitching the neck of the bladder. It has only been tried in three instances so far, but the results were very satisfactory in that there was no primary or secondary haemorrhage in any of the cases. It is too early to express any definite opinion as to the future of surgical diathermy in prostatectomy, but the benefit so far obtained is sufficiently good to indicate its possibilities, and any method which will shorten the duration of the operation will be of value.

I disagree with Sir Cuthbert Wallace (JOURNAL, November 19th, p. 907) as regards his after-treatment. I consider it essential to irrigate the bladder thoroughly, but gently, twice daily, since this is the only way the prostatic cavity can be maintained clean in the suprapubic operation, unless a catheter is kept in, which is disliked by the majority of patients. I irrigate by Junc's method, though the method is soon as the patient can tolerate it. A clean prostatic cavity after operation lessens the chance of orchitis and epididymitis later.

With regard to sexual function after the suprapubic operation I would refer Sir Cuthbert Wallace to Mr B J Ward's article "The immediate and remote results in 109 cases of suprapubic prostatectomy by Junc's method," in the Birmingham Medical Review of March 1908, where it is claimed that in a certain number of cases this function is retained.

Sir Cuthbert's interesting lecture and figures afford clear evidence of the necessity for establishing genito urinary departments in all our large general hospital and for encouraging specialization in this important branch of surgery—I am, etc.,

LONDON W1 Nov 2, 1927

T CAREY EVANS

### THE TEMPERATURE IN TUBERCULOSIS

SIR—My attention has been called to Dr Varrier-Jones's little book on *The Significance of Temperature Variations in Tuberculous Disease*, reviewed in your issue of November 19th (p. 9-10). I do not find it easy to understand why a complicated and expensive mechanism should be suggested for recording the temperature variations in tuberculosis when a clinical thermometer supplies all the information required without any serious inconvenience to the patient. In tuberculosis it is of the highest importance to obtain a continuous record of the variations of temperature, not merely for twenty-four hours but rather for weeks and months and years, day by day, so that one can watch the activity of the disease closely and carefully in its wearisome progress during the whole period of treatment.

The cumbersome methods advocated by Dr Varrier-Jones could not be applied to a dozen cases even for a few months, and the information would not be as valuable as the information I have been collecting for thirty-five years with the simple clinical thermometer. But the clinical thermometer must be used in the right way.

I am surprised also that Dr Varrier-Jones should dogmatize upon the nature of the tuberculin reaction without having made as far as the letterpress shows any attempt at observations. Such accuracy demands that for diagnostic purposes the exact amount and variety of the tuberculin used should be definitely stated.

There are numerous varieties of tuberculin which I have used in literally thousands of cases of tuberculosis, and I have kept temperatures in all my cases not only for years but for decades. Long ago I recognized and taught that great care was needed in the measurement or graduation of the dose, and that anyone experimenting with tuberculin must prepare his own doses. Then only does he know what the dose is when it was prepared in the form of tuberculin and even when manufactured it. Many tuberculins on the market are untrustworthy, and chemists are not the best persons for measuring the doses.

Let me cite one illustration. The dose used by Dr Varrier-Jones in human beings was T.R. (0.0001 mg.) [i.e.] pag. 77 "T.P." a fluid preparation and cannot be measured in milligrams. What is the dose weight? On page 63 we read "the effect of a dose of tuberculin (0.001 mg. of Koch's bacillus emulsion) [i.e.] This small amount can be measured only by fluid measure. On page 7 we read "After the injection of 0.001 mg. tuberculin a curve was obtained (Fig. 29) [i.e.] and on referring to Fig. 29 we find the dose recorded is 0.0001. On pag. 77 we read "resulting from the following in of a much comparatively large dose of tuberculin (Fig. 29). Neither in the letterpress nor on the chart is the amount of the dose stated. Worse still on pag. 110 we learn that a dose of 0.0001 mg. of B.E. was given and on the next page that there being no plateau formation tuberculosis was diagnosed.

Such records can only bring tuberculin as a diagnostic agent into discredit.

I venture to say that such a use of tuberculin for diagnostic purposes is ridiculous, and owe it to the Tuberculin Dispensary would prove this. Struggle to win no

controls by simultaneous readings of the ordinary thermometer are reported, and no observations of the pulse and weight, not any mention of trick reactions or intravenous reactions. These isolated observations by Dr Varrier-Jones cannot help in the diagnosis of early tuberculosis. Why has he not tried the methods proved to be trustworthy by hosts of authorities or at least controlled his own procedure by observations according to established methods?

On the other hand in describing experiments upon bovines which were being tested with tuberculin Dr Varrier-Jones states, page 86 line 4 "after a twenty-four-hour record had been obtained 6 c.c. [sic] of tuberculin was injected subcutaneously." Why is tuberculin, used for bovines properly measured in cubic centimetres, and that used for human beings measured in milligrams? Further on whose advice was 6 c.c. injected into a calf for test purposes? Moreover surely the term or tuberculin used should be stated. In such a system or dosage were practised tuberculin had better be left severely alone.

Dr Varrier-Jones advocates the rectal temperature, and that only is reliable. Thirty-five years' constant use of mouth temperatures taken by patients with special directions every two or four hours leaves very little to be desired in judging the differences of temperature upon which without or with tuberculin success in diagnosis, prognosis and treatment essentially depends. I can furnish studies or evidence of the truth of this apparently bold statement and I believe that anyone who has worked with me at the Tuberculin Dispensary for a sufficient length of time will support me on this crucial question—I am, etc.

W. CARL WILKINSON, M.D.  
Director, Tuberculin Dispensary  
2 Fitzroy Street W1

Nov 26/27

### RISKS OF LIGHT THERAPY

SIR—The lack of sunshine during our winter months has led to an increasing demand for irradiation of the skin with artificial sources of ultra violet rays. It is necessary to realize that many of the lamps employed for this purpose emit ultra violet rays which differ in quality and quantity from the sun's rays. Professor Leonard Hill has shown that the biological action of the sun's rays are due to the ultra violet rays 3360-3600 Å. The long flame arc and the quartz mercury vapour lamp have their maximum biological action from ultra violet rays shorter than 2970 Å, which are absent in the sun's spectrum. The result of my experiments have led me to adopt a specialized technique of treatment which I have called "short ray therapy" in contrast to the "Finsen technique" which is adopted in the Copenhagen Light Institute. Further research may well determine the relative value of each form of therapy and will decide when an Finsen or ultra violet therapy is indicated. But at the present moment it is imperative to realize that when short ray lamps are employed emitting ultra violet rays shorter than 2970 Å, the principle of short ray therapy should be adopted.

The danger of over exposure has resulted from the confusion of principles and the misapplication of technique. In this country the normal white skin is very sensitive to short ultra violet rays from 2970-2500 Å, and the reactions of the skin resemble those of the irritant and endothelial reaction. From this point of view I would suggest that short ray therapy should be controlled and entrusted to the chemist who is fully trained to understand the correct application of light rays. For home use and general treatment lamps emitting ultra violet rays 4000-3600 Å, which are similar to the effect of the ultra violet rays of the sun should only be employed. This can be obtained by the use of carbon arc lamps containing a glass screen, quartz mercury vapour lamps with frosted vitreous arc or a mercury vapour lamp made of vitreous. The abuse of light therapy by unskilled and badly trained workers and campaigner's violent propaganda have led to a considerable number of cases of skin cancer and other conditions. I am, etc.

W. L. E. EMBROW

ULTRA-VIOLET RADIATION AND VARICOSE  
ULCERS

SIR,—I entirely agree with Dr Weimien regarding the value of ultra-violet irradiation for varicose ulcers. Even with small recent ulcers it is the quickest way to heal these, to tone up the flabby tissues, to increase nutrition, and thus to prevent recurrence. In large chronic ulcers that have resisted all measures it is still the best way. Technique here, however, is all important, and results will never be achieved if the treatment is left to nurses and missesses, it needs constant medical supervision.

Fulmo is due, I think, to a want of discrimination between the effects of different sources of light. I have had uniformly good results in the light department at St Mary's Hospital. As these ulcers are all septic the first thing is to use the bactericidal power of light on the ulcer itself by a few short, sharp, stimulating irradiations with a source of light rich in the shortest ultra-violet rays—a fairly new mercury vapour lamp at a distance of 40 cm for three minutes, or a Kromayer at 20 cm for two minutes. This causes an outpouring of serum, which cleanses the wound and removes fragments of dead tissue. Two or three applications are enough completely to alter the appearance of the ulcer. To continue strong radiation after this is wrong, as the delicate new granulation tissue is seriously damaged by powerful actinic rays. We now need the germicidal and keratotic power of light for the ulcer, so use of a longer wave-length is indicated for this and to increase the nutrition of the surrounding tissues. If another source of light is available, such as an iron or a carbon arc with metal core, containing the longer ultra-violet and the more penetrating yellow, blue, and infra-red rays, ten to fifteen minutes' treatment can be given with these, at a distance of about 60 cm. If not, the same mercury vapour lamp can be used in combination with the solar or other source of infra-red rays at a distance of 100 cm. Under this treatment chronic serious infiltration of the surrounding parts disappears, also the pain and nutrition. The ulcer loses its torpid character, and vigorous granulations replace the dirty sloughing base. The indurated edges flatten, and epithelization takes place more quickly than by any other method.

The third stage is treatment of the whole leg until good pigmentation is achieved. Excessive stimulation must be avoided if there is any sign of thrombo-phlebitis. Later on the dress can be used until hyperemia appears as a faint red-bronze tint showing through the pigment. It is, of course, essential to support the tissues by an elastic bandage from too to knee, over the dry gauze dressing and soft bandage. Parathyroid in small doses is helpful.

The same technique can be adopted for the deep perforating ulcers of tibiae, on the sole or toes.—I am, etc.,  
JUSTINA WILSON, M R C P Ed,  
D M R C Camb

London W 1 Nov 15th

SIR,—Dr Weimien (November 12th, p 900) draws attention to the wide divergence of opinion among dermatologists as to the value of actinotherapy for varicose ulcers. Evidence in favour from another country is useful, so I will mention how Dr Suidman of the Institut d'Actinologie, Paris, demonstrated to me a case of varicose ulcer of twenty years' duration, in the final stages of healing with ultra-violet therapy. That case alone fully justified an optimistic prognosis even in apparently hopeless cases of chronic varicose ulceration.

Besides its general tonic effect, now generally accepted, the local application of ultra-violet light stimulates diapedesis, as can be demonstrated easily by its dissipation of the swelling, pain, and discoloration of a burn, therefore ultra-violet therapy appears to be the treatment of choice to apply on and around the ulcerated varicose ulcer, as it will antagonize the condition of venous stasis.

That it will stimulate the growth of epithelium is proved by its use successfully in the treatment of a burn with molten lead containing arsenic—a burn wide all the more severe because the molten metal ran inside the upper of a boot and was thus some time in contact with the skin, the destruction of tissue was more extensive in area and in depth than in a varicose condition, yet healing took place without grafting.

In the treatment of varicose ulcer with ultra-violet light the patient will be grateful for the relief of pain and irritation, which is a feature of the process of healing under these rays, but more remarkable still, in my opinion, than its success in the treatment of superficial varicose ulcers or burns is the results obtained in gastro-intestinal conditions which present the classical signs and symptoms of chronic ulceration, with eight to twelve treatments the patients lose pain, discard their milk or light diet, and eat "what is on the table"—that is, pork, oven pie, blattens, tinned salmon, and pickled onions—with relish and benefit, as is evidenced by improved colour and increase in weight.

Scientists tell us there is little penetration by the ultra-violet rays, and I attempt no explanation here of how this beneficial action takes place, but to me varicose ulcers present an easy problem compared with those other ulcerative conditions mentioned—I am, etc.,

Newcastle on Tyne, Nov 13th

CHRISTINA BARROWMAN

SIR,—In a letter in your issue of November 12th (p 900) commenting on the discussion on ultra-violet light treatment of skin conditions at the Annual Meeting of the British Medical Association in Edinburgh, and the divergence of opinion among dermatologists as to its value, the writer quotes, amongst others

*Prurigo (Adults)*—Dr Gardiner Aggravated Dr W J O'Donovan Improved

As one who was present at the meeting in Edinburgh, the question which at once presented itself was, to what form of prurigo did those who took part in the discussion refer when they spoke of "prurigo (adults)"? Discrepancies in results are readily explicable on the assumption that different types of "prurigo" in adults had been treated, apart from my consideration of the method employed.

The importance of a standard technique in comparing results is recognized, but at the same time when large numbers of patients are treated by an adopted "standard technique" it is a matter of common observation that there is marked variability in the individual response to ultra-violet irradiation. The true value of actinotherapy will only be assessed when numerous, detailed clinical records are available, and when every other contributory factor has been carefully considered.—I am, etc.,

Liverpool, Nov 22nd.

ELIZABETH HUNT, M D

## BRILL'S DISEASE

SIR,—I am sorry to see the term "Brill's disease" used in the note (December 3rd, p 1044) respecting the epidemic fever which has been prevalent in Muscilles and its neighbourhood. I am sorry for two reasons. The first is that "Brill's disease" is typhus fever and nothing else. The second is that the Muscilles disease has, apparently, not been quite certainly shown to be typhus. Judging by the very brief account given in the note, the disease seems to me to be different from typhus.

Brill's first account of the disease which has been called after him was based on his experience of a number of sporadic cases admitted to a hospital in New York over a series of years. Brill admitted that so far as the symptoms were concerned the disease differed in no way from typhus fever as described by British writers. But he concluded that his disease was not typhus, because (1) it was sporadic and apparently not infectious, and (2) it was not fatal—none of his patients had died. Subsequently, however, instances presented themselves in New York in which more than one case occurred at the same time in the same house, and there were fatal cases. Further, the bacteriologists brought forward evidence that from their point of view Brill's disease was typhus.

After the disappearance from London of epidemics of typhus the disease persisted for many years sporadically. So far as I know, no one ever made the suggestion that the sporadic disease was not typhus. I have had personal experience of typhus as it occurred sporadically in London for over thirty years, and epidemically in Poland in the

autumn of 1919, and I have no hesitation whatever in saying that the clinical symptoms were the same in each set of cases. Similar attempts to differentiate a mild form of typhus as a new disease have recently been made in various parts of the world (India, Australia, the Malay peninsula) and another reason has been urged for the distinction—namely, that the incubation of the believed-to-be-new disease is not conveyed by lice. But if the mode of spread is to be used as a criterion of distinction then we had better call milk-borne scurlet fever "Powers disease" and so on. Brill's disease" and "tropical typhus" are typhus fever pure and simple and it will lead only to confusion to continue the use of the newly applied names.

Permit me a word or two respecting the value of the Weil-Felix reaction in the diagnosis of typhus. As I have stated above there appears to be some doubt whether the Marcellus disease is or is not typhus. But I should not be surprised to learn that even if the disease were shown to be indistinguishable from typhus clinically there had been a negative Weil-Felix reaction in every case provided that only two or three strains of *B. proteus* X had been employed. According to a very instructive paper by Fletcher and Lesslar (*Bull Inst Med Res Fed Malay States* 1926, No 1) several strains of the bacillus must be used before the reaction can be stated to be positive or negative. They were able to divide nine different strains into two main groups, of which the one was distinguishable from the other by differences in certain fermentation and agglutination reactions—I am etc.,

Hemingford Abbots Hunt Dec 11

E W GOODALL

#### WATER SUPPLY AND IODINE IN RELATION TO GOITRE

SIR,—During the last seven years I have had considerable experience of three rural or semi-rural medical practices in places so far apart as Lincolnshire, Somerset and Sussex and in each I have been particularly struck by the prevalence of cases of disordered thyroid metabolism more especially of the type that is indicated by parenchymatous enlargement of the thyroid gland in young girls at and for a few years following the age of puberty indeed this has been one of the commonest non epidemic conditions with regard to which my advice has been sought.

Cystic and adenomatous enlargements of the thyroid have also been common amongst older people. Cases of exophthalmic goitre, of carcinoma of the thyroid and of myxoedema have been relatively rare. A few cases of cretinism have been found.

Just as in the deficiency diseases like scurvy and beriberi there are early and intermediate stages between complete freedom and the fully developed disease which are often exceedingly difficult to diagnose so in disorders of the thyroid, whether showing hypertrophy or atrophy of the gland, there must be a variety of intermediate conditions leading to physical and mental weaknesses which may escape the observation of the most careful diagnostician. For example, it is not improbable that the slow wit of the agricultural labourer may be due more to the condition of his thyroid than to his somewhat dull surroundings.

Without having any definite figures on which to rely I should say that goitre and thyroid atrophy are more common in rural than in urban areas whilst it is I believe a fact that they are much more prevalent in some rural districts than in others. In the only other district with which I am well acquainted—the county of Antrim—parenchymatous goitre at least is uncommon but there are doubtless similar free areas in England and in Scotland.

Various theories have been advanced to account for the occurrence of simple goitre: those that hold the field at the present time being (a) deficient iodine content in food or in drink (b) malnutrition on the part of the thyroid for some unspecified reason, to make use of the term though present in the food or drink in normal quantity (c) bacterial infection (d) vitamin deficiency. With regard to (a) it has been suggested that distance from the sea is the prime factor in determining the amount of iodine present in vegetables or in water, but none of my practices in any

of the above countries were at an considerable distance from the sea whereas in Central India a far longer distance, in my experience is common.

It is true as I imagine it is that goitre is more prevalent in certain rural areas than in towns within the same area, it ought to be possible to discover in what conditions differ in the rural as compared with the urban area and the first thing to which one's mind naturally turns is the water supply. Towns are supplied usually (in this country at least) with a pure and filtered water, kept under chemical and bacteriological observation. In rural areas water is got from the nearest well which is often open to suspicion even to press contamination and receives little expert attention. The food supply of these urban and rural areas must necessarily be identical so that the cases of iodine and vitamin content are concerned.

Similarly with regard to two rural areas in one of which goitre is common in the other about it ought to be possible to discover how conditions differ in the two areas. For the present and until light on the subject is forthcoming, my advice to all householders with whom I have to deal is: boil your drinking water—I am etc.

T S ROSS

Lieut-Colonel R.M.S. (ret.)

Newick Sussex Nov 17th

#### CHRONIC APPENDICITIS

SIR—I was disappointed that there was no mention of the value of X-rays in the diagnosis of chronic appendicitis when this subject was discussed at the Annual Meeting of the British Medical Association at Edinburgh. Admittedly it is difficult even when the appendix is visible—which is not often—but when this organ does fill several points can he made out.

- 1 There may be fixed lumps and strictures
- 2 Tenderness localized to the appendix and conclusive evidence of disease
- 3 Abrupt interruption of the column of barium is indicative of prism due to ulceration
- 4 Interference with the muscular tone and contractility shown by delayed emptying up to several days and the presence of large concretions or the failure of movement after several days

Dr E I Spence has contributed several examples to the literature. Surely in a disease whose symptoms are so vague as chronic appendicitis we must seize on every possible means of diagnosis and radiology can play a useful part—I am etc.

A P BERTWISTLE, M.B. ChB. F.R.C.S. Ed.

Harrow Aug 16th

#### THE PREVENTION OF MATERNAL MORTALITY

SIR—In the *BRITISH MEDICAL JOURNAL* of November 5th (p. 833) Sir George Newman speaks of three needs. First, the pregnant woman should consult her doctor at the earliest opportunity. Second, maternity homes. Third, skilled and competent assistance at childbirth.

This is the whole subject in a nutshell. He then proceeds to crack the nut and under the third heading he speaks of nothing but the skilled midwife. Surely skilled assistance at childbirth needs more than a midwife's allowance to do. Look on and allow nature to take its course. The medical man is the one who should have charge of the case, whether a midwife employed or not. I thoroughly endorse the letter of Dr A Campbell Sars on page 848 of the same issue.

Coming to the practical side of the question I consider that prevention is better than cure and it deals with such as I give below were carried out we should hear less of maternal mortality.

I Strict asepsis as regards patient, doctor, nurse and surroundings. At present the patient is never prepared to a surgical degree and as the anaesthetic is so close to the neck of operation it should have special attention. An anaesthetic should be a matter of routine and the patient should be prepared with a germicide such as a germicide iodine compound. This is the proper work of the midwife. Incidentally I

(1) *Bull. Med. Soc.* pp. 1-2 (2) *Lancet* 1923 vol. 1 p. 71  
(3) *Lancet* Dec 10, 1927 p. 1117 (4) *Lancet* Feb. 12, 1927 p. 1117

consider all pregnant women should be taught to wash these parts duly all through the carrying.

II Next in importance is the avoidance of real delay. Recent teaching tends to leaving the case to nature, which is all very well so long as nature is running a normal course, which is very seldom, under present circumstances. The position of the child is not everything. We have to consider the strength of the patient in body and mind. Stress of circumstances often causes irritability, impatience, and apprehension, the effect of the pains being utterly spoilt. And there is also the woman who means to be helped, whether you like it or not.

III In the present day too many doctors fail to study the different phases set before them, and have too few methods thought out of how to help, this is partly the result of present day teaching. What is wanted is the early diagnosis of these causes of delay. Such is

#### A rigid cervix

Slight divergence of the uterus from its proper axis

Premature rupture of membranes (a small Champetier de Ribes bag would alter the whole case in half an hour)

Non-rupture of membranes with little or no water behind the membrane tight on the head early rupture of these would expedite matters

Oedema of anterior lip of cervix not reduced

Most occipito-posterior positions would be better for version. Rotating the head is easier on paper than in reality. The use of forceps in this position is usually contraindicated.

Long-standing pendulous abdomen occasionally allows of turning, but, if extreme, calls for Caesarian section as replacement is more than likely to injure the bowel with fatal results.

A primipara at 38 to 40 years if there is much rigidity of the soft parts with narrowing of the vaginal canal, ought to be offered Caesarian section, so that the most unpleasant and unavoidable complications, such as rectocele, cystocele and vesico-vaginal and recto-vaginal fistula may be eliminated.

IV In forceps delivery the instruments should be removed as soon as the perineum is on the stretch, and delivery completed by the aid of the thumb in the ischio-rectal fossa, pressing forward. Axis traction forceps should be the rule. When the head is born it is injurious to the infant to wait for a pain, gentle traction on the head expedites delivery without any risk to the mother if a hand is kept on the fundus. The placenta should be expressed in due course during an interval of the pains.

These are a few of the aids to a woman which a medical man should always be on the look out for, to offer as necessity arises.

I would propose that the local medical specialist appointed by the Ministry of Health should be available to be called by any medical man in trouble, in the same way as any midwife is allowed to call in a medical man to her aid. The fee for such help should be paid by the local health authorities.—I am, etc.,

Wallington, Surrey, Nov. 10th

A. Z. C. CRESSY

#### A MISHAP WITH RADIANT HEAT

SIR,—The following unpleasant personal experience may be of interest, especially in view of the number of unqualified persons who are at present exploiting the little understood effects of ultra-violet rays.

On September 30th, in order to relieve some lumbar pain, which had resulted from a too vigorous use of a lawn-mower two days before, I was persuaded to try a "radiant heat" lamp. The lamp used was a 32 candle-power carbon filament lamp, British made, and stamped "Pope 10 amps for 230 volt current." Before using the lamp I had a hot bath with a handful of soda in it, which relieved the pain considerably. After rubbing a little ointment over the seat of the pain, which was chiefly around the left posterior superior iliac spine, the lamp was applied for twenty minutes at a distance of about 12 inches.

During the last five minutes of the twenty I felt some itching in the left leg, but half an hour later this itching had developed into the most intense, agonizing pain it has ever been my misfortune to suffer. During the hour that the pain was most intense I was bathed in cold sweat, my pulse became very rapid and could scarcely be felt, and I was on the verge of complete syncope. I certainly felt, and I believe looked, desperately ill. After about an hour the pain lessened, and with the aid of 1/4 grain morphine became bearable. But the whole limb felt num-

and useless, with the sensation of gross "pins and needles," which might perhaps be better described as "nails and tin-tacks."

Next day, when I first attempted to stand, my left leg gave way and dropped me on my knees. For some days walking produced intense fatigue in the extensor muscles of my left thigh, and I could not go up stairs except by keeping my right leg always in front.

This weakness has gradually got less, but still, nearly two months later, has not entirely gone. There still remains also loss of sensation, both tactile and to heat and cold, in a considerable area over the middle third of the left shin. I also feel undue fatigue in the left thigh muscles after a short walk or on going up steps.

I should be glad to know if a similar result has been noticed after using one of these lamps for the relief of pain.—I am, etc.,

Winton, Nov. 22nd

E. N. NISON

#### UNDERFEEDING IN EARLY INFANCY

SIR,—In your issue of November 26th (p. 997) is a note on a paper in the current number of the *Archives of Disease in Childhood* on "Underfeeding in early infancy." The authors claimed that the chief cause of gastric symptoms and failure to gain weight in infants under six months attending out-patient departments is that they are receiving an insufficient quantity of food. On these findings they put forward the plea for a revision of the feeding instructions on the tins of dried milks and other preparations.

There can be no doubt that the observers are correct in their deductions as to the cause of failure to gain weight amongst infants attending out-patient departments at children's hospitals, but to argue that all feeding directions are fallacious and to advocate feeding by weight and not age is a dangerous tenet that calls for careful thought and investigation.

Fifteen years' experience of children in out-patient departments has taught me that one seldom sees the normal, by that I mean the chief causes of malnutrition there seen are usually due to some extrinsic factor, either constitutional or infective—in fact, the cause lies in the reason of the infants' attendance at the hospital.

To be dogmatic about any dietetic factor as a result of hospital statistics is to court disaster. Especially is this true since the various centres, municipal and others, have added their valuable assistance in safeguarding the health of the infants. Rather is it to these centres, with their keen and efficient medical officers, that we should look for statistics with regard to, not only normality in infant feeding, but also the more simple diseases of nutrition.

Many of your readers may, on the strength of the article, be inclined to adjust, more or less empirically, the feeding directions on the tins of the various infant foods, with the result that they will risk overfeeding, which is a greater menace than underfeeding. My own experience is that these directions are in the main correct, and this, I think, will be borne out by medical officers at centres. Departures from the normal must be met as the clinical needs demand, but to alter the average for the sake of the few is a dangerous doctrine.—I am, etc.,

LEO MINDEL, M.D., M.R.C.P.

London, W. 1, Nov. 30th

#### CONVULSIONS DURING GENERAL AND LOCAL ANAESTHESIA

SIR,—From the experimental work detailed in *The Nature of Disease*, volume II, it would appear that anæsthetic substances act by subjecting the protein particles of the plasma to sudden dehydration and then to an equally sudden hydration. In the first process the protein particles go into solution and in the second process they migrate in size, lose their Brownian movements and tend to become precipitated in the pericapillary lymphatics and capillaries of the brain. It is to the protein particles becoming arrested in the cerebral vessels that the loss of consciousness is due. Should the hydration persist, or increase to a point where the surrounding nerve cells are damaged, the convulsions, coma, and death are liable to occur. The drug



action of dehydration and hydration is due to all anesthetic substances having negatively charged active groups and a positively charged vehicle. It is to the positively charged vehicle that excessive hydration of the toxic symptoms are due. It thus comes to pass that there is no fundamental difference between the convulsions occurring during anaesthesia and the convulsions caused by such drugs as insulin, eudazal, histamine etc. and to the convulsions that are met with in clinical conditions such as shock, eclampsia, status epilepticus, tetanus, etc. Status epilepticus is not a disease nor a condition due to an enlarged or persistent thymus. The thymus persists because the patient is intoxicated (chronic intestinal intoxication) and being intoxicated the protein particles are already hydrated before the anaesthetic which so intensifies the hydration is to cause death is used. As the toxic symptoms caused by anaesthetics are due to the natural action of producing hydration, the actual state in which the patient's protein particles happen to be before the anaesthetic is administered must play a greater part in the production of toxic symptoms than either the choice of anaesthetic used or whether it contains impurities or not. In considering impurities as the primary cause observers have missed the hyvistic in circling for the pins. As hydration can be prevented by subjecting the protein particles to conduction, and overcome when in being by causing them to become dispersed toxic symptoms can be avoided by the previous administration of such drugs as Sup 463 and parathionone and overcome by injecting glucose intravenously and oxygen subcutaneously—I am, etc.,

London W 1 Oct 23 b

J E R McDONOUGH

### CONTRIBUTORY SCHEMES HOSPITAL CLUB PRACTICE

SIR—In your issue for November 12th last you were good enough to allow me to refer to certain considerations you had elaborated in your issue of October 22nd (p. 751) with regard to these numerous clubs.

Since then I have completed a restricted inquiry made with the assistance of Division secretaries and the honorary secretaries of visiting staffs of hospitals in various directions with regard to thirty-five clubs selected at random. Reports from thirty have been received. All, one feels sure, must appreciate and feel grateful to those who have assisted in this inquiry giving a return of over 90 per cent a result which has made headquarters envious. Possibly the result may interest many of your readers who are now considering this problem of hospital provision. (In cases where the total of figures does not make 30 it is because no reply was given to question asked.)

(a) Seventeen of these clubs are conducted by hospital 13 by independent bodies.

(b) One club (only) pays anything to the visiting staff.

(c) No club makes any arrangements for consultant or special services to be given either at the homes of the members or at the houses of these practitioners (whether members of the visiting staff or not). All members are attracted to the hospital.

(d) Nine visiting staff object to being paid for treatment given at a hospital 3 desire it 5 are divided in opinion 3 have not as yet considered it.

(e) Nine visiting staffs approve payment under (c) above one object, one is divided in opinion 6 have not as yet considered it.

(f) In 17 areas there are practitioners (consultant and special) available who are not on the hospital staff and who are of the British Medical Association standard of competency.

(g) In 13 areas treatment is provided for at the hospital which in the opinion of the local profession after considering the best interests of the patients could be equally well given at the patients' homes or the houses of the consultant and specialist (that is by the visiting staff and others in their private capacity). In 6 areas no such treatment is provided for at hospital.

(h) In 8 areas the surrounding cottage hospital are involved in the club in 6 of which the staffs are debarred consequently from accepting fees.

(i) In 12 areas there are sufficient funds in the club to assist convalescent home-nursing a vacation dental treatment and treatment of school children.

(j) The premiums for insurance in the club range from 2s a week to 21s a year collected by money boxes and visitors, or private houses and on the premises of shop and farm.

In our medical opinion with regard to the clubs, stated quite shortly, is as follows in thirteen areas.

(1) We are being exploited. (2) Considerable feeling against it. (3) A gigantic cheap club staff being elected every five years without opposition to board. (4) Consultants anxious all the time to have it. (5) Local profession against it. (6) Great abuse. (7) There is a strong feeling against the scheme. (8) They are we pay. I have also many complaints from general practitioners that the contributory scheme is hitting them. (9) Suspicion that the hospital is made into an insurance dispensary. (10) Protection too apathetic for words interests of local practitioners seriously affected. (11) Consulting work much diminished private operations much diminished shortage of beds prevents much more widespread inroads into both consulting and general practice. (12) Considerable local professional feeling against the scheme especially amongst the junior staff who are being deprived of a large amount of fees chiefly for minor operations and consultations. (13) The medical profession strongly averse from the scheme.

The public (lay) press is of opinion as recently expressed, that—

(1) The improved financial position of voluntary hospitals is due to contributory schemes. (2) Working men prefer dependence to charity. (3) They enjoy the status of independent persons who have insured themselves against emergencies and are under obligation to nobody. (Times November 29th 1927)

The deductions from the reports would seem to be

(1) That the premiums of insurance paid are totally inadequate to pay for the benefit contracted for by the club and that as a consequence charitable funds are used to make up the deficit in accommodation and maintenance charge the question of treatment being paid for is not thought of.

(2) Income limit is largely nonexistent.

(3) The very nature of insurance has created an increased demand for treatment and consequently the larger the membership of the club the larger the debt to be met by charity. In London the club has 400,000 members with 83,000 attendances as out-patient.

(4) The voluntary hospitals concerned have ceased largely to be charitable in nature for the poor having become an accessory of insurance club.

(5) Consequently it is a question of some interest whether these voluntary hospitals can claim any longer to be a body established to charitable purposes only. (Elizabeth C 4) and consequently can avoid being taxed and rated.

(6) These hospitals contract to provide many consultant and specialist services which—allowing for the best interests of the members of the club—could be given equally well and certainly more expensively at the homes of the members or the houses of the practitioners.

(7) Consequently the hospitals subsidized by charity, are under-elling private practitioners who are not on the visiting staff and who depend on their private practice for experience and remuneration.

(8) The boards of management—in many cases formed of a majority of the club officials—are the masters of the visiting staff.

(9) The visiting staffs in a few cases and the senior members (only) in the larger number do not appreciate (6) and (7) above or they would hardly continue indifferent.

(10) All the objections the profession had in 1903 to the dominion clubs conducted by friendly societies seem to be present in these hospital clubs.

Is not the whole position becoming derogatory to the dignity of medicine and can the visiting staffs much longer resist content to be on the position of errand boys into which they are being manoeuvred? As a suggested line for action which is in accordance with the hope of the British Medical Association would the visiting staff in cordial co-operation with the local Division and supported by its disciplinary powers (1) refuse to give any treatment at a hospital (whether for a club or for a private patient) a hospital (whether for a club or for a private patient) which can be provided—allowing for the best interests of the members—as well for the visiting staffs and others in their private capacity as in the hospital and some form of payment through the hospital for treatment at a hospital for the club members in all other instances.

It has been the case that the opinions of the public press would be more likely to be correct and medicine would be relieved of its late incubus—I am, etc.,

E RO LAND FOTHERGILL

A CLINIC FOR PHYSICAL TREATMENT IN  
LONDON

SIR,—In view of the prominence given in your issue of November 12th (p. 893) to a proposed clinic for physical treatment in London, may I draw attention to the fact that at the Physical Treatment Centre, Kensington, an attempt has already been made to meet the deficiency referred to in the article.

In a footnote three typical cases from the clinic at Amsterdam are quoted to indicate the need for physical treatment centres. Our case sheets could provide similar cases by the score, if not by the hundred.

All the ordinary forms of physical treatment are carried out here with the solitary exception of hydrotherapy. In the article mentioned it is said, "Such clinics have proved their value in other countries." I think we may justly claim that this clinic has proved its value in London, and at the present moment we have well over two hundred cases attending regularly for treatment—this without any official recognition from any approved society.

The clinic was founded to meet the necessity of providing physical treatment for those who are ineligible, or socially unsuitable, for a hospital clinic, and who are yet not in a position to secure the treatment privately. We also provide evening treatment so as to enable patients to come to us without interfering with their work. The numbers who avail themselves of this opportunity are ample proof of the need. The rules of this clinic are:

1. No patient is accepted for treatment unless recommended by a qualified medical practitioner.

2. No patient receives treatment until after examination by one of the medical officers of the clinic, who sees the patient with the manager, and prescribes treatment, and communicates with the patient's practitioner.

3. All treatment is carried out by a fully qualified staff who all possess the three certificates of the Chartered Society of Massage and Medical Gymnastics.

4. All patients must report for periodical examination by the medical officers of the clinic.

5. Before treatment commences all patients must satisfy the fully trained almoner that they are not in a position to pay full consultation fees, or for the carrying out of the full treatment prescribed over an adequate length of time by a qualified manager in private practice. The maximum fee payable for treatment is five shillings, but each patient is suitably assessed by the almoner. Some applicants are referred back to their doctor as unsuitable for institutional treatment, others are sent to hospital, but a very large field is covered between the two classes.

6. All patients are treated by appointment, and are therefore charged for treatment, unless adequate notice is given of absence.

It is very much to be hoped that, at the proposed clinic, the first five of these regulations will be strictly enforced, and that a fully trained almoner may be employed to prevent abuse.—I am, etc.,

JAMES MENEVILL

Physical Treatment Centre, Kensington  
Division B.R.C.S., Dec. 2nd

## THE PHYSIOLOGY OF DEFAECATION

SIR,—Dr. A. F. Hurst (BRITISH MEDICAL JOURNAL, December 3rd, p. 1053) explains that each meal gives rise to peristalsis in the large intestine. True, but he goes on to state that the greater part of the contents of the intestines accumulates in the cæcæ colon till the early morning. This may be true of most "normal" people living on the devitalized diet that has become customary, but it is not the natural physiological sequence, this is proved by the habits of those native races whose diet is a natural one, and also by those of our own race who have adopted a natural diet (including wholemeal, fresh fruits, and solids at every meal). With them a call to stool occurs after each meal, and, if responded to, leads to a soft solid evacuation.

It is most fallacious to regard natural foods as irritating, they are nothing of the kind, they are merely mild mechanical stimulants of intestinal activity, and they achieve this mainly by their bulk. Fine intestinal irritants are soluble substances and the most potent are the products of putrefactive bacteria. These give rise to the chronic catarrhal state of the mucosa revealed with appalling frequency on making x-ray examinations of the

colons of persons living on the customary diet of starch, sugar, and overcooked protein. Bacterial toxins inhibit peristalsis in the colon and lead to the use of purgative drugs, which aggravate the intestinal catarrh, and thus create a vicious circle—I am, etc.,

London, W.1, Dec. 3rd.

ALFRED C. JORDAN

SIR,—Dr. Hurst is very complimentary to the scope of the influence of the New Health Society, even though its teaching, in his opinion, is having so disastrous an effect. Having been associated somewhat closely with the educative literature on diet issued by that society, I would like to point out that our teaching is based, primarily, on the necessity for obtaining a correct "balance" in the diet.

For this reason the more liberal use of green leaves, whole cereals, and fresh fruit has been advocated, and this teaching is based on the best knowledge that we possess of the essentials of good nutrition.

Clinical and laboratory experience show that the higher vitamin content (and possibly also the higher content of indigestible cellulose in these foods) plays an important part in securing healthy activity of the intestines. If this, as Dr. Hurst maintains, is unphysiological we are in somewhat of a dilemma. It must also not be forgotten that these particular articles of food have been freely used by humanity through countless generations, and that our present dietetic habits have existed during only a very small part of man's existence. It is very doubtful whether there has taken place any real adaptation to this change of habit. What has followed, however, is so great a prevalence of gastro-intestinal disorder that special clinics and a galaxy of surgical talent are called for to deal with it.—I am, etc.,

London W.1, Dec. 5th.

S. HENNING BLERICE

## DEVELOPMENTAL ANOMALIES

SIR,—In a memorandum in the issue of the JOURNAL of November 12th (p. 876) Dr. Richard H. Hunter describes in instance of a rare developmental anomaly in a newborn infant, and states that he has been unable to trace a record of any similar case. May I draw attention to a case of persistence of the cloaca which I observed and which was described in your columns on December 10th, 1921. Since that time I have had the opportunity of examining two additional cases of this condition. In one of these (1924), as in my original case, the abnormalities were almost identical with those described by Dr. Hunter, while in the other case (1922) there was an associated exomphalos and the anterior wall of the cloaca was incomplete. In all my three cases the large gut had a small but patent opening at its lower end, leading into the cloaca as above, but in none of them was there any anal opening. Dr. Hunter's case had a left-sided hydronephrosis. None of my cases had this, but one of them had slightly dilated ureters. In all of them, as in Dr. Hunter's case, the urethra was quite impervious. Dr. Hunter raises the question as to the period at which the kidneys begin to secrete. He will find some evidence on this point in papers published in 1923 and 1924 by E. E. Hewer and by Lucas Keene and E. E. Hewer.—I am, etc.,

Glasgow, Nov. 15th.

J. NORMAN CRUICKSHANK

## MOBILE LABORATORIES IN THE WAR

SIR,—I would like to say that I yield to no man in my admiration for the work of the late Adrian Stokes, but I cannot help thinking that it is a pity that his death should be made the occasion for a wrangle as to which of the two directorates of the Medical Department of the War Office—pathology or hygiene—was responsible for the first mobile laboratory to appear in the field in France in 1914. Colonel Lyle Cummins's letter (November 19th, p. 956) substantially agrees with mine in that Stokes was not associated with either of them (JOURNAL, October 8th, p. 660). It must be very plain to the onlooker that the two laboratories must have run a neck-and-neck race as to priority, and that the date of their appearance at St. Omer

is scarcely an adequate criterion. Coplins's hygiene laboratory crossed over to France on November 17th, and Rowland's bacteriological laboratory on October 14th. I respectfully say that this evidence hardly permits the validity of the suggestion put forward by Colonel Cummins—namely, that so great was the need at this laboratory [that is Rowland's] that the director of hygiene determined to have mobile laboratories on somewhat similar lines fitted up for the hygiene department. The time is all too short to warrant this assumption.

As Dr Coplins was also engaged at the Inter Institute as a voluntary worker on the outbreak of war and therefore a fellow worker of Rowland I have asked his opinion on the matter. He tells me that during the months of June and July, 1914, he was engaged in making a sanitary survey of the area which was afterwards the area of hostilities, and that on August 5th or 6th he was present at the War Office when the sanitary situation was discussed. During September he had 150 men of the 1st London Division under training for special service in connection with field water supply, and that the director of the Institute kindly gave facilities for instruction by placing the Institute's laboratories at his disposal. The matter of a special mobile laboratory had also come under consideration and the work of construction was given by the War Office to the Napier works at Acton. Owing to pressure there was considerable delay in delivery, and during this period the Inter Institute managed to obtain a ready-built motor caravan, which was fitted up and immediately dispatched under Lieutenant Rowland. The hygiene laboratory followed as soon as it could be completed. It will be seen therefore that the hygiene department of the War Office had not been in backward in the matter.

With regard to the epidemic of typhoid fever this took place amongst Belgian civilians living in Belgium. Colonel Cummins who is usually a accurate is in error in referring to the D.A.D.M.S. (Sanitation) Second Army in this connection, as this appointment was not created until some eighteen months later. Captain Coplins who was in charge of the hygiene laboratory was also appointed to act as my sanitary officer. He confirms my statement that Adrian Stokes took no part in the measure taken under my direction for dealing with this epidemic and state that neither before nor during the epidemic had he any communication with Stokes either directly or otherwise upon this or any other matter. This statement is sufficiently categorical and should dispose of the whole matter. I would emphasize however, that this outbreak occurred in Belgium and that the Second Army was at that time the only British force in that country. The measures for dealing with the outbreaks were undertaken solely by the authority of the Belgian Ministry of the Interior and I was named sanitary authority in this connection by the Governor of West Flanders.

The hospital mentioned at Malaisie (which is in France) the bacteriological work of which was carried out by Stokes and Cecil Clarke, first began to receive patients in February 1915—some time after the beginning of the outbreak. It so happens that by Belgian law only such patients could be transferred from Belgium to France as consented and therefore the class of patient transported was mainly convalescent. The Second Army dealt with about 2,500 cases of whom rather less than one-third were transferred to Malaisie for a time many being retransferred later to a Belgian hospital situated on the Canche in the neighbourhood of Montreuil. This was also a Belgian hospital situated at La Panne which received entire patients from the northern area including the left flank of the Second Army. There were also three hospitals receiving cases within the army area.

I am glad that Colonel Cummins is in agreement that the history of this epidemic should be fully recorded—I am, etc.,

ROBERT PORTER  
Lieut. Col. (Ret.)

Beckenham Nov. 20/20

\*\* Although ready to publish a correction of my matter of fact, we cannot find it time to continue this correspondence. The tone of the epidemic might we think, more properly be the had out of evidence.

## Medico Legal

LYNDALL & ALCOCK

ACTION FOR NEGLIGENCE AGAINST A SURGEON

*Heavy Damage in Case of Volkmann's Contracture*

At the adjourned Bristol Assizes last week before Mr Justice Sharrin and a special jury an action for damages was brought by Phyllis Evelyn Tyndall a minor suing through her next friend Joseph Williams and her mother against Dr Arnold Alcock of Gloucester for alleged negligence and unskilled treatment. The defence was a denial of negligence and an killed treatment and a counterclaim for twelve guineas for services rendered was made. Mr H. A. Hawke K.C. and Mr Odgers instructed by Messrs Le Brasseur and Oakley London and acting for the London and Counties Medical Protection Society appeared for the defendant.

Mr Holman Gregory for the plaintiff stated that on July 6th 1920 the child Phyllis aged 8 fell from a donkey at Newent and fractured her left arm. She was taken in a motor car to Gloucester and was treated by Dr Alcock first at a nursing home and later in the Gloucester Infirmary. The arm became fixed at the elbow and Volkmann's contracture developed resulting in permanent impairment of movement. The child was said to be very intelligent and a brilliant musician, he had already passed three musical examinations and had performed in public. She would now be unable to play effectively any musical instrument. The mother had had to spend upwards of £80 on treatment and compensation was claimed on this count also.

In cross-examination Mrs Tyndall stated that she did not recognize that there was any greater danger in taking the child for a ten mile motor ride after the accident than in bringing her home. The arm was held very carefully during the journey. She denied that Dr Alcock had emphasized the serious nature of the case from the first.

Dr H. Chittly gave evidence that he had examined the child on October 14th 1926 and that there was then no voluntary movement of the wrist finger and thumb. She was suffering from fixation and contracture which usually arose from tight bandaging or splint pressure. He agreed that the fracture, though of the simple type was a comminuted fracture. By Mr Hawke he admitted that x-ray might be misleading and that more than one should be taken in various positions.

Dr F. J. A. Mayes radiographer at the Bristol Infirmary said that x-ray photograph of the child's arm showed that the fracture had not been reduced. Mr N. Duggan orthopaedic surgeon at Worcester Infirmary said that without a radiological examination at the time it was possible for a competent surgeon to overlook the condition of non reduction shown in the x-ray.

*Case for the Defence*

Mr Hawke K.C. opening for the defence claimed that the question was not whether there had been an error of judgement but whether Dr Alcock had done something which a person of ordinary standard in his profession would not have done.

Dr Alcock examined by Mr Odgers said that he was honorary surgeon to the Gloucester Infirmary and had been president of the Gloucestershire Branch of the British Medical Association. He had practised in Gloucester for eighteen years. When he examined the child after the accident he had found a fracture of the lower end of the humerus the fragments were in bad position the elbow slightly swollen and the ends of the bone were injuring the tissues. He manipulated the bones into position after which a green examination showed that the fragments were in alignment he was satisfied that the fracture had been properly reduced. The arm was then suspended from the shoulder and an x-ray photograph was taken. He had viewed the case seriously from the first and had explained this to Mrs Tyndall as tactfully as he could. The pulse and colour of the hand were normal at that time but the upper bony fragment almost protruded through the skin and threatened severe damage to other structures. Instructions were given that the circulation should be carefully watched. The next day the band was a little swollen and the bandages were loosened. On the fourth or fifth day there was more discoloration and Dr Alcock realized that the circulation was obstructed. The bandages were loosened and the strapping removed. Blisters were present but these were kept sterile and while the child was under his care no gangrene supervened. He suspected the possibility of Volkmann's contracture about July 14th or 15th and was certain of it by the third week of treatment. He told the mother that the child would be hopelessly paralysed. He knew that the fracture was lightly over reduced but he thought this advisable measure involved less interference with the blood vessel.

Professor Hey Groves of Bristol said that the diagram showed a severe fracture of the lower end of the humerus with satisfactory reduction or over reduction complete alignment was obtained and it was much more important to restore the circulation than to maintain alignment. He thought that Dr Alcock had adopted the proper course in his treatment. Other evidence in support of the defendant was given by Dr C. W. Knight orthopaedic surgeon at Gloucester Infirmary the main on the nursing home and a medical officer.

Mr Hawke addressing the jury on the defendant said that Dr Alcock could not be said to have erred in any necessary step and he had made radiological examinations in consultation with a skilled radiologist. It was admitted that as portions in diagrams

were not infrequent, and gave rise to errors of judgement. Mr. Holman Giggory, for the plaintiff, maintained that it ought to have been realized from the skidgram that something was wrong, and further attempts should have been made to reduce the fracture more perfectly.

**Verdict and Judgment**  
After the judge had summed up, the jury retired for one and a half hours, and returned a verdict that Dr. Alcock had not properly set the bone, and had failed to treat the case properly afterwards. The judge then explained that the verdict was incorrect, and that the jury had to return a verdict that the defendant was guilty of negligence, if he had shown in their opinion, an improper lack of skill. After a few minutes' absence the jury returned, and the foreman stated that a unanimous verdict had been found for the plaintiff, the damages being assessed at £2,000 for the daughter, and £150 for the mother. Mr. Odgers applied for a stay of execution, which was granted on condition that the costs of the action and £500 were paid into court by the defendant.

## Universities and Colleges.

**UNIVERSITY OF LONDON**  
Dr NEVILL'S FENZ has been recognized as a teacher of radiology at St Bartholomew's Hospital Medical College.  
The examination for the academic diploma in Bacteriology will commence on the first Thursday in July instead of the first Monday the regulations (Red Book, 1927-28, p. 513) are to be amended accordingly.

Sir Wilmot Herringham, KCMG, MD, has been elected chairman of the Library Committee.  
The following are constituted the Boards of Examiners for the first examination for medical degrees, together with the External Examiners of the respective boards being indicated by an asterisk.  
*Organic Chemistry*—H. J. Evans (University College) and \*C. S. Gibson (Guy's Hospital Medical School).  
*General Biology*—\*G. P. Mudgo (East London College) and London School of Medicine for Women) and W. A. Cunningham (St. Bartholomew's Hospital Medical College) or failing him, F. E. Fitch (East London College).  
*Physics*—W. H. White (St. Mary's Hospital Medical School) and J. L. Cuthbert (East London College).

**UNIVERSITY OF DURHAM**  
Sir THOMAS ORRILL, MD, LL.D., FRCP, president of the College of Medicine, Newcastle upon Tyne, has been appointed Vice-Chancellor of the University of Durham, in succession to Professor P. J. Heawood.

**UNIVERSITY OF LIVERPOOL**  
At a meeting of the University Council held on November 29th, a bequest was reported under the will of the late Eminent Professor W. Thielwall Thomas, FRCS, of £5,000, to endow a Fellowship in surgical pathology.

**UNIVERSITY OF ABERDEEN**  
At a special graduation held on November 29th the following diplomas were conferred:  
D.P.H.—Catherine H. Baxter, Ethel R. Dmshe, Winifred M. Foster, Grace M. Robinson and Emd. O. Olive.

**UNIVERSITY OF DUBLIN**  
SCHOOL OF PHYSIC, TRINITY COLLEGE  
The following candidates have been approved at the examination indicated:

**FINAL MEDICAL EXAMINATION Part II Medicine (MB)—A. R. Ewart, J. L. Wells, K. Watson, E. M. Gamble, J. R. Hanna, G. H. Henry, J. H. Stephens, L. R. Brumby, Wilfreda D. C. T. Piggott, H. S. North, Christina M. Donald, Surgery (B.Ch.)—R. R. Woods, J. K. Harper, G. M. Donald, Smith, Ethel M. Wen, J. H. Stephens, G. H. Hony, A. R. Ewart, I. Isaacs, R. M. Moore, \*A. G. Morgan, \*I. R. F. Twoody, R. I. G. Reid, Marie V. E. Lon, Wilson, H. J. Robinson, J. K. Harper, H. E. Knott, F. G. Stewart, C. R. Harris, J. Horwich, R. F. W. K. Allen, W. Crawford, G. W. F. Pratt, D. K. Walsh, A. C. G. Ffolliott, F. O. W. A. Mahon, D. J. Wells, E. C. Hicks, G. Q. Chance.**

**DIPLOMA IN GYNAECOLOGY AND OBSTETRICS**—Ann Macleod.  
\* Passed on high marks.

**ROYAL COLLEGE OF PHYSICIANS OF IRELAND**  
At the monthly meeting of the Presidents and Fellows, held on December 2nd, the President duly admitted to the Licences in Medicine and Midwifery of the College the following candidates who had passed the Winter Final Examination under the Conjoint Scheme of the Irish Royal Colleges of Physicians and Surgeons:  
W. Bannan, J. J. Bouison, J. Chambers, J. Clom, L. S. Clifford, J. P. Egan, F. N. Eleod, J. J. Golding, J. L. Miller, May, F. M. Carthy, P. L. O'Neill, Sarah M. O'Neill, J. C. Richardson, A. Stein, F. W. Warren.  
Dr. R. L. Micks was elected as Deputy for the King's Professor of Veterinary Medicine and Pharmacy to act as Clinical Physician to St. Patrick's Hospital.  
A letter was read from the President of the Royal College of Physicians of London asking the College to appoint a delegate to the Harvey Tercentenary Celebrations in 1923. In accordance with the unanimous wish of the College, the President (Dr. William Arthur Winter) consented to act.

## Obituary.

Dr. WALTER CHARLES ORRILL, who died on November 28th, at the age of 52, received his medical education at Trinity College, Dublin, where he graduated MB, B.Ch., B.A.O., in 1900, and proceeded M.D. five years later. He was a senior moderator and gold medalist of his year. A colleague at the Northern Hospital, Liverpool, writes: "Orriam came to Liverpool in 1904 after a distinguished career at Trinity College, Dublin. He had the same natural bent himself, and at Trinity College he graduated B.A. in physics and chemistry. He devoted his talents to this study from the first and came to Liverpool to take charge of the electrical department of the Skid Hospital. His work for which he was naturally fitted. At first he combined this work with general practice, but after a few years he obtained important hospital appointments and confined his attention entirely to radiology. From this time he did a phenomenal amount of work in the voluntary hospitals to which he was attached, the Northern Hospital and the Stanley Hospital in Liverpool, and the Infirmary in Southport owe him a very deep debt of gratitude for years of devoted service. With this hospital work he combined a busy private practice, and there is no doubt in the minds of those who knew him well that he persistently overtaxed a physique which was not naturally very robust. He gave himself few holidays, and those few he often cut short because of some duty which he fancied he was neglecting or not completely fulfilling. I have known him to plan a fortnight away, and then, after a week, to think of some batch of reports or other work waiting to be completed, and to return because of this before the seventy-fourteen days were over. This was characteristic of the man, a devotion to his work which did not allow him to spare any pains or energy. At the time of his death his hospital appointments were physician-in-charge of the radiological department of the Northern Hospital, honorary radiologist to the Stanley Hospital, honorary radiologist to St. Paul's Eye Hospital, and radiologist to the Southport Infirmary. This catalogue is an indication of the amount of voluntary work which he continued to do. In 1912 he was secretary of the Section of Electro-Therapeutics at the Annual Meeting of the British Medical Association in Liverpool. During the war he was on the staff of the 1st Western General Hospital, and for six months was with the 57th General Hospital in France as radiologist. His death at the early age of 52 was due to the overtaxing of his physical powers. His many friends will remember him as a man whose modesty and devotion were the outstanding features of his life, that he would never have been able to put on record the fact of work which he gave to the public service without the expert assistance of an able and devoted wife.

Dr. JOHN PRIOR PURVIS, who died on November 18th, was born in 1841. In 1859 he entered as a student the Dicednought hospital ship, and in the following year joined St. Thomas's Hospital. In 1863 he obtained the diplomas MRCS Eng. and L.S.A., and was then appointed house-surgeon to the West Herts Infirmary, Hemel Hempstead. In 1867 he joined his father in practice at Greenwich, and two years later was appointed medical officer to the Royal West Kent Dispensary, which subsequently became the Miller General Hospital, on his retirement from this institution in 1925 he was elected an honorary governor. In 1885, in conjunction with Miss Christabel Orrill, he established the Greenwich Provident Dispensary, and remained one of its medical officers until his retirement in 1925. In 1870 he had been appointed public vaccinator, and he held this post until his death. He

took great interest in the 2nd Volunteer Battalion (Queen's Own) Royal West Kent Regiment, and was awarded the Volunteer Decoration. He lectured for the St John Ambulance Brigade for many years and was an honorary associate of the Order of St John of Jerusalem. He succeeded his father as treasurer of the West Kent Medico-Chirurgical Society, and held the post for thirty years. He similarly followed his father as chairman of the Greenwich Industrial Permanent Building Society. He was a member of the executive committee of the Greenwich Division of the British Medical Association in 1911, and from 1914 to 1921, he was chairman in 1913. Dr Purvis leaves four children, twelve grandchildren, and two great-grandchildren.

Dr LEO NORTON KNIGHT O'NEILL, who died on November 22nd in the Norfolk and Norwich Hospital, after a short illness, was born in 1880 and was educated at King's School, Canterbury, and Exeter College, Oxford, where he graduated B.A. in 1913. Prevented by a cycle accident from serving as a combatant in the war, he entered Durham University College of Medicine in 1915 and was appointed surgeon probationer in the navy in 1918, serving until the end of the war in H.M.S. *Blower*, which was the first allied ship to pass the Dardanelles after the armistice. After demobilization he resumed medical study, and graduated M.B., B.S. Durh., in 1922. He held hono appointments in the Royal Victoria Infirmary, Newcastle-on-Tyne, and was resident medical officer of the Kent and Canterbury Hospital. In 1925 he began practice in partnership at Great Yarmouth. Dr O'Neill was an enthusiastic yachtsman and knew the south coast of England very well.

Dr HENRY ERNEST KNIGHT of Rotherham died on December 2nd. The son of a doctor, he was born at Rotherham in 1866 and from the local grammar school went on to Epom College and St Bartholomew's Hospital. In 1889 he took the diplomas of the English Conjoint Board and also graduated M.B. Lond., and five years later proceeded M.D. Before returning to practice in his native town he had served as house physician and assistant electrician at St Bartholomew's Hospital and house-surgeon to the Stockton and Thornaby Hospital. He was president of the Sheffield Medico-Chirurgical Society in 1911-12 and was a member of the Rotherham Division of the British Medical Association. In 1915 he was appointed a justice of the peace and in the same year was elected a feeoffee of the common lands of Rotherham. He had also held the office of greive. Dr Knight was formerly honorary surgeon to the Rotherham Hospital but when extensions were opened he accepted the position of honorary physician.

Dr CHARLES CORMACK GREIG died recently in his eightieth year at his native town of Fyvie. He was educated at Aberdeen University where he graduated M.B. C.M. in 1875 after which he continued to carry on his father's practice up to the time of his death. He was parochial medical officer and public vaccinator for Fyvie and Anechures, medical officer to the Fyvie Cottage Hospital and a member of the Aberdeen Division of the British Medical Association. Dr Greig was for many years an enthusiastic volunteer; he joined as a private of the Fyvie Company of the 2nd Volunteer Battalion, Gordon Highlanders in 1874, became acting surgeon of the same company in 1875, was promoted surgeon-major in 1880 and surgeon lieutenant-colonel in 1895 in which year he received the Volunteer Decoration. He was appointed lieutenant-colonel R.A.M.C.F. in 1908. Two daughters survive him.

Dr ROBERT DUNSTON died in London on November 27th following an operation; he was 79 years of age. He received his medical education at Queen's Hospital Medical School and took the diploma of L.S.M. in 1871 and M.R.C.S. in 1872. He served as surgeon to the Pughton Cottage Hospital and medical officer in charge of troops at Pughton. He was an enthusiastic chess player and repudiated over 100 times his last match being for Sussex only a short time before his death.

## Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons has been chiefly occupied this week with the Unemployment Insurance Bill.

In the House of Lords, on December 6th, the Marquess of Salisbury made a statement about the business which the Government hoped to get through before Christmas. In addition to the principal Government measures there were some others which it would be in the interests of the country to get through it possible. Among these were the Mental Deficiency Bill and the Nursing Homes Bill. These bills were not yet through the House of Commons but if they were quite non contentions in the House of Lords perhaps the Government might ask them to agree to them.

In the House of Lords on December 6th the Royal Edinburgh Hospital for Mental and Nervous Diseases Order Confirmation Bill was read a third time and passed.

### The Future of Voluntary Hospitals.

Mr. Poy Wilson asked the Minister of Health on December 1st whether in his proposals for the reform of the Poor Law and reorganization of the health services of the country he contemplated that the voluntary hospitals should come under the control of the State or the local authorities. Mr. Chamberlain answered that on the contrary he regarded the preservation of the voluntary hospital system as a matter of essential importance in the health interests of the country. What had been impressed on his mind was the absence at present as a general rule, of any systematic arrangements for co-operation between the voluntary hospitals and the hospital and institutions carried on by the local authorities. He had therefore suggested that it was advisable that there should be consultation in the various areas with a view to arriving at an agreed plan for institutional provision which would enable each kind of hospital to play its proper part in meeting the ever increasing need of the people for hospital accommodation. He anticipated that under such a plan the position of the voluntary hospitals would be strengthened and not weakened but he had never contemplated putting any compulsion upon them to come into an arrangement their participation in which would be a matter for their own determination. During the past twelve months the voluntary hospitals had responded in an astonishing manner to the requirements of the country and while at one time it had appeared to be impossible for them to meet the need for extension they were now largely overcoming that difficulty. Not only had they been able to find in most cases sufficient money for the maintenance of existing beds but they had been able to make very considerable additions.

### The Frils of Slums.

In the House of Lords on December 5th the Bishop of Southwark asked when the Government proposed to introduce legislation to facilitate the clearance of slums in London. The London County Council had schemes relating to about 91 acres which would affect 25,000 people out of it was estimated that 11,000 houses containing a population of over 300,000 were in slums. The extent of the slums meant that a very large portion of the population had to grow up under conditions in which health was almost impossible and where character as well as physique was almost bound to deteriorate. Many reformers believed that a great deal could be done to rectify on many houses in the slums were purchased by the local authority. Slum clearance was of course the ideal solution but some temporary measure as he suggested might be necessary. The Bishop of London said that overcrowding was the parent of disease. People could not be expected to live healthily in such conditions.

Viscount Gage replying for the Government said that the creation of some 100,000 new houses since the armistice must have relieved the evil of overcrowding and the progress made in slum clearance having regard to the difficult circumstances could be described as encouraging. His slum schemes had been confirmed by the Minister of Health and others were under consideration. Apart from the wholesale clearance of large slum areas local authorities were paying constant attention to the condition of individual houses in their district. The reports of the medical officers of health for 1925 showed that 111,000 houses had been inspected by officers of the local authorities. Of these 105,000 were rendered fit by the owners after notice of statutory notices were made up by the local authorities in 1925 and of the owner and defects were remedied in the case of 279,000 houses without the need of formal action. Thus the local authorities were able to get repairs in 82,000 cases during the last year. The Minister of Health however considered that the slum problem was not being dealt with in a sufficiently comprehensive manner and that considerable improvement would be effected within a reasonable time. There was no doubt that the slum problem was a national one and was being dealt with in a comprehensive manner and was being dealt with in a comprehensive manner and was being dealt with in a comprehensive manner.



authorities would be in a position to turn their attention in a greater degree to the slums. Although the powers of local authorities for dealing with slums were wide, it might be possible to introduce a further measure whereby houses in an unsatisfactory area, which might be saved by the expenditure of a little money, would be reconditioned, and only houses which were past redemption would be demolished. Another matter on which the Minister had promised to legislate was in regard to the basis of compensation for immovable property acquired in connection with slum schemes, but the time or nature of the legislation could not at present be stated.

**National Health Insurance**—In an answer given on December 1st to Sir Richard Luce, Mr. Chamberlain said that the recommendations of the Royal Commission on National Health Insurance had been exhaustively discussed with the consultative council or approved societies, and the Government intended to take the first convenient opportunity of introducing an amending Health Insurance Bill embodying most of the recommendations of the Commission. It did not, however, propose to provide in this bill for the abolition of Insurance Committees or for the extension of medical benefit to include a specialist and consultant service by means of a partial pooling of societies' surpluses.

**Small pox**—The Minister of Health stated, on December 6th, that the number of cases of small pox notified in the city of Lincoln during the three months ended November 26th was 33. He was informed that with a view to preventing overcrowding of the small pox hospital a ward block at the isolation hospital, separated from the remainder of the hospital by a fence, was being used for the treatment of small pox patients.

**Inspection of Offices**—Dr. Lumsden asked Mr. Chamberlain on December 1st whether his suggestion that metropolitan borough councils should carry out a systematic inspection of offices had been adopted, and if so whether any assistance to such inspection had been offered on which a test case could be prepared on the power of local authorities over office sanitation. Mr. Chamberlain said he had not issued any communication to the metropolitan borough councils on the subject. He was informed that systematic inspection was made in a few of the boroughs, and he had not heard of any case of resistance.

**Notification of Tuberculosis**—In a reply to Dr. Vernon Davies, Sir Kingsley Wood said the Minister of Health was not yet satisfied that the early notification of tuberculosis had been secured in all parts of the country. The Ministry had issued circulars to medical practitioners and to local authorities on the subject which would be again considered on receipt of the notification returns for the present year.

**Rinderpest and Foot-and-Mouth Disease**—On November 30th Dr. Vernon Davies called the attention of the Minister of Agriculture to the fact that the United States of America had restricted the import of South American meat from some areas infected with foot and mouth disease. Dr. Davies asked whether the Minister of Agriculture would discuss the matter with the Minister of Health to ensure that the health of the people of this country was safeguarded. Mr. Guinness replied that the United States Department of Agriculture Order of September 17th 1926, to which Dr. Davies referred prohibited the import of fresh or frozen meat from countries where rinderpest or foot and mouth disease existed. It appeared to be designed to protect animals as human beings did not suffer from rinderpest. Practically all meat imported into Great Britain from South America was inspected in the country of origin and was subject to further inspection on arrival. Dr. Davies asked whether the Ministry of Agriculture thought there was no danger to human beings in admitting to this country meat which might be contaminated with foot and mouth disease. Mr. Guinness said that it is the practice was to cook meat before eating it he did not think there was much danger. Recorded human cases of foot and mouth disease had been traced to milk or to contact with diseased animals. He thought there was no evidence against cooked meat. The Government was negotiating with the South American Governments to induce them to undertake special regulations for preventing the introduction of disease into this country.

**Tuberculosis Officers and Private Fees**—Sir K. Wood, on December 6th, said that the public health committee of the Devon county council had passed a resolution which in effect stated that they wished to make it clear that the services of tuberculosis officers were absolutely free to all classes of the community, and that in no case could remuneration be made to them in any form. A copy of the resolution had been sent to the officers concerned but no other steps had been taken to make it public. The Minister was informed that the resolution was passed because it was reported to the committee that one or more of the tuberculosis officers of the county council had received fees or presents from individuals visited by them in their capacity of tuberculosis officers.

#### Votes in Brief

On December 5th Earl Winterton replying to a question said that all cocaine used in India was imported. Its importation was subject to the closest control but the illicit traffic could not be successfully stopped except with the co-operation of manufacturing countries.

The Geneva Opium Convention of 1925 has been ratified by France and Poland and for all parts of the British Empire excepting Canada and the Irish Free State.

The Ministry of Health does not feel justified in contemplating the treatment of rheumatism by a general scheme on the lines of that adopted for tuberculosis.

The Minister of Health offers to arrange for any Member of Parliament who wishes to do so to visit the Government lymph establishment.

A report on the provision made in Lambeth Infirmary for isolation and observation purposes is being prepared by a medical officer of the Ministry of Health.

Asked about the statement alleged to have been made at an inquest in Sheffield by a medical practitioner, to the effect that the best thing he could do was to let a man die as if he had lived his life would only have been a misery, Sir Thomas Inskip, the Solicitor General, said the inquest had been adjourned for a post mortem examination, and it was impossible for him to answer questions on the case.

Mr. Omsby Gore states that there is little prospect of an effective reduction in the amount of opium smoked in Malaya so long as unlimited supplies are available in China and continue to be smuggled into the Colony.

The Home Office knows of no case of poisoning due to the use of petrol containing tetra ethyl lead.

Mr. Chamberlain sees no reason for instituting an inquiry into the administration of mental hospitals.

The Minister of Health has ordered the publication of reports of the inquiries into the conditions of the production and manufacture of condensed milk in Holland and Denmark, so far as they affect public health.

## Medical News.

IN commemoration of his jubilee as a general practitioner Dr. James Murray of Inverness has been entertained at a complimentary dinner by his colleagues from various parts of Ross shire and Inverness shire, who presented him with a silver salver. The chairman, Dr. J. W. Mackenzie (Inverness) said that Dr. Murray belonged to the credit of being the first to introduce antiseptic surgical treatment in the Northern Infirmary, for which he was well qualified by his training under Lister. Dr. Murray, in acknowledging, referred to the fact that he graduated at a time when the immortal discoveries of Pasteur and Lister completely revolutionized the practice of medicine and surgery. It was his good fortune to be closely associated with Lister as a prize man and as a student.

THE Master and Wardens of the Society of Apothecaries have issued invitations to a dinner at Apothecaries' Hall, Blackfriars, on Tuesday, January 31st, to meet the Lord Mayor and Sheriff.

THE Australian and New Zealand Medical Association in England will hold its winter dinner on December 16th, at 8 p.m., at the Trocadero Restaurant, Piccadilly. The High Commissioners of Australia and New Zealand will be the official guests. All medical visitors are invited. Further particulars can be obtained from the honorary secretaries, Drs. D. T. C. Milligan or H. Bedford Russell (85, Mark Lane Street).

MR. ERNEST CLAPKE will give the last of the present series of lectures arranged by the Fellowship of Medicine, at the Medical Society of London, 11, Chandos Street, on December 12th, at 5 p.m. His lecture, which is entitled "Practical hints in the correction of errors of accommodation and refraction of the eye," is free to medical practitioners. The special courses arranged by the Fellowship of Medicine for January are medicine, surgery, and the specialties at the Prince of Wales's General Hospital, cardiology at the National Hospital for Diseases of the Heart (limited to 20, so early application is desirable), diseases of children at the Children's Clinic, and psychological medicine at the Bethlem Royal Hospital. Syllabuses, tickets, and specimen copies of the *Post Graduate Medical Journal* may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, London, W.1.

A SERIES of lectures and practical courses of instruction for a diploma in psychological medicine will commence at the Maudsley Hospital, Denmark Hill, S.E.5, on January 4th, 1928. Part I of the course will consist of twelve lectures by Dr. F. Golla on the physiology of the nervous system, with demonstrations on the physiological psychology, six lectures and demonstrations on the biochemical aspects of mental disorders and laboratory methods, by Mr. S. A. Mann, B.Sc., F.I.C., eight lectures by Professor G. Elliott Smith, M.D., on the anatomy of the nervous system, practical instruction and demonstrations by Mr. Charles Geary, and eight lectures and demonstrations by Dr. Henry Devue. Part II, commencing in March, will include lectures and demonstrations on psychoneuroses, morbid psychology, the pathology of mental diseases, pathological anatomy, the legal relationship of insanity and treatment, mental deficiency, crime and insanity, therapeutics, clinical psychiatry, neurology, and the abnormalities of the fundus oculi. The fee for the whole course

is £15 15s, and for Part I and II separately £10 10s each. Inquiries should be addressed to the Director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E. 8.

A THREE months course of lectures and demonstrations on clinical practice and hospital administration for the diploma in public health will be given at the North Eastern Hospital, St. Ann's Road, Tottenham, by Dr. F. H. Thomson, medical superintendent, on Mondays and Wednesdays, at 4.45 p.m., and alternate Saturdays, at 11 a.m., commencing on January 4th, 1928.

INTERNATIONAL medical courses will be held in Berlin during March and April, the subjects including new aspects and methods of clinical pathology and therapeutics, recent discoveries in connection with metabolic disorders, obstetrics and gynaecology, and radiology. In addition to this there will be several series of lectures and demonstrations in different medical subjects throughout the winter. The courses are held in German, but some of the professors lecture also in English, French, and Spanish. Further information may be obtained from the secretary, International Medical Continuation Courses, Kaiserin Friedrich Haus, Luisenplatz 2-4, Berlin, N.W. 6.

THE out-patient department of the Princess Louise Kensington Hospital for Children was opened on December 6th. It contains accommodation for orthopaedic, ophthalmic and oto-rhino-laryngological diagnosis and treatment, and there are also electrical and x-ray rooms. It is hoped that thirty six beds will be available for in-patients early in 1928, some of these will be reserved for school children requiring tonal operations. A good operating theatre with all the modern surgical appliances, is to be provided. The hospital represents the re-establishment of a small institution in Church Street Kensington on which was founded in 1840. It is situated in a very congested area in North Kensington. The funds for its establishment have been collected during the last three years by a committee under the presidency of Princess Louise and the King and Queen have promised to open the hospital formally next May if the cost of £12,000 for the out-patient department and the two first ward blocks has been met by that date. A list of the honorary medical staff appears in the SUPPLEMENT under the heading 'Appointments'.

A NEW women's hospital, which has been erected by the Warial Board of Guardians at a cost of £30,000 was opened at Clatterbridge on November 24th. It provides accommodation for 112 beds. The lower floor is occupied by the surgical section and the upper is devoted to medical cases, with special wards for fevers. Provision has been made for private patients.

THE council of Ipswich College is about to award a St. Anne's Home Scholarship of £52 a year to the orphan daughter of a medical man who was in independent practice in England or Wales for not less than five years. Candidates must be not less than 7 and not over 12 years of age on May 1st next. Forms of application can be obtained from the secretary at the office of the College, 49, Bedford Square, W.C.1.

MR P. C. RAINMENT M.A. Oxon, M.R.C.S., L.R.C.P., has been appointed to the vacant chair of physiology in the State University of Egypt at Cairo. Mr. Rainment who took first class honours in the Natural Science School at Oxford has been for the last six years university demonstrator in biochemistry at Oxford. He leaves England at the end of this year.

THE Scottish Board of Health have appointed Dr. James L. M. Symms to be a District Medical Officer (Medical Referee) in their department.

THE annual report for the year 1926-27 of Livingston College, Leyton, shows that nearly 1,000 missionaries have received instruction there since its foundation in 1900. During the year under review 100 students, attended representing twenty-eight missionary societies and seven countries. The instruction given included a full session from October to June comprising, elementary physiology, anatomy, practical medicine, surgery, tropical medicine and hygiene, a vacation course in July and three short intensive courses in March, September and December on the care of health in the tropics. We referred to the Commemoration Day celebrations on June 18th (p. 1133).

THE health conditions at Port of Spain, the capital of Trinidad, are summarized for June last by Dr. George H. Vasson, medical officer, in his report to the City Council. Of 114 deaths which occurred nearly one half were in public institutions. Tuberculosis, bronchitis, and enteritis were each responsible for 8 deaths and deaths were recorded also from pneumonia, malaria, dysentery, and syphilis. Four cases of typhoid fever were notified, and 990 cases of pits were oiled and disinfected as a preventive measure. Three railway cars were disinfected for leprosy. The rats destroyed numbered 555,

all were free from plague. Of 2,717 premises inspected for mosquitoes most were satisfactory, but in 194 larvae were found. The sanitary administration of Port of Spain presents a varied interest.

PROFESSOR CALMETTE, sub-director of the Institut Pasteur, has been elected a member of the Académie des Sciences.

PROFESSOR GOSSET of Paris has been elected president, and Professor Tixier of Lyons vice president of the French Congress of Surgery to be held in 1928 when the following subjects will be discussed: (1) spinal anaesthesia introduced by MM. Forgue of Montpellier and Basset of Paris; (2) remote results of the surgical treatment of nodular ulcer, introduced by MM. Delore of Lyons and Okunev of Paris; (3) remote results of trephining for traumatic lesions, introduced by MM. Milsonnet and Petit Dubaille of Paris.

THE *Gazette des Hôpitaux*, otherwise known as *La Lancette Française* has recently celebrated its centenary.

THE first International Oto-Rhino-Laryngological Congress will be held in Copenhagen under the presidency of Professor E. Schminckel on July 29th to August 1st, 1928, the official languages being English, French and German. The subjects to be dealt with include the conservative radical operation in chronic middle ear suppuration, epistaxis of pharyngeal origin, surgical diathermy in malignant growths of the upper air passages, and the anatomical structure of the middle ear and its influence on suppurations. Further information may be obtained from the general secretary, Dr. V. H. Biegrad, 3, Nytorv Copenhagen K.

IN 1926 there were 383 women medical practitioners in Vienna as compared with 326 in 1925, which represents an increase of 20 per cent as compared with an increase of only 2 per cent in the number of medical men. The total number of medical practitioners in Vienna is 3,688 so that the proportion of women among them is 10 per cent. Last winter session the number of women medical students had risen to 351, or 15 per cent of the total.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to THE EDITOR *British Medical Journal*, British Medical Association House, Tavistock Square, W.C.1.

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THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are: MUSLIM 57 5 9 3 9 3 and 9 6, (internal exchange four lines).

THE TELEGRAPH C. ADDRESS is as follows.

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Artology* Westcent, London.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisement, etc.) *Articulate* Westcent London.

MEDICAL SECRETARY *Meducra* Westcent London.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegram: *Bacillus Dublin*) telephone 4337 (Dublin) and of the Scottish Office 6 Drumhugh Gardens, Edinburgh (telegram: *Associate Edinburgh*) telephone 24351 (Edinburgh).

## QUERIES AND ANSWERS

"T. W. P. inquires whether tea without the alkaloids is as safe as coffee without caffeine."

### UPPER STAIR

R. H. W. writes in answer to a question about removal of urine stains from clothes (September 24th p. 573). I can recommend prolonged oiling of the cloth in cold water. The water should be changed from time to time and if the stain is old three or four days oiling may be necessary, but your correspondent will find that the stain can be very much reduced if not entirely removed.

### WORDS

Dr. ALEX. E. POCHI (London) writes, Dr. Herbert Smith in the *British Medical Journal* (December 3rd p. 1062) says that laparotomy should be lapara mysis comes from *lapara* (no *my*) On his quiet and reasonable reasoning the *al* *tra* *re* *coelothomy*, which he prefers should be *coelomy*, since it

## LETTERS, NOTES, AND ANSWERS

[THE BRITISH  
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*sonico* is *κοιλια*, a word vainly meaning belly, stomach, or intestines and therefore probably less suitable for surgical terminology than *λαπαρη*, which denotes the superficial soft parts between ribs and hips—a favourite target of the Homeric heroes, whose guts prolapsed through wounds of it. In any case, *laparo* is sanctioned by usage.

## SINU-ITIS

Dr A B KIRK WILKINS (Nowcastle, N.S.W.) writes with reference to a letter by Dr Sydney Perry of Melbourne (JOURNAL, September 14th, p 518) to say that he has given colloidal man- ganose an extensive trial using different preparations in various doses with the disappointing result that no cases of definite frontal or sphenoidal sinusitis were cured or more than temporarily improved except in children, where a few examples of low grade nasal infection with a discharge, chiefly mucoid, completely cleared up. Dr Keith Watkins asks for information on the following points: (1) Which particular preparation of colloidal manganese does Dr Perry use? (2) How he determines the dose frequency, etc. in each case? (3) What accessories treatment he gives? (4) How long he keeps his cases under observation before a cure is pronounced? Dr Keith Watkins adds that he has found the greatest help, apart from operation, from the use of autogenous vaccine.

## A PERSONAL EXPERIENCE OF SPINAL ANAESTHESIA

"H B P" writes: After reading (November 12th, p 878) the report of the discussion at the meeting of the Section of Anaesthetics of the Royal Society of Medicine it occurred to me that my experiences as a medical man, after an operation in the course of which spinal anaesthesia was procured may not be without interest. I am a medical man, 1926 when 66½ years of age, I underwent complete removal of the rectum for carcinoma. I had general anaesthetic given and towards the close of the operation the thick was injected. Immediately following the operation I had complete retention of urine lasting for three weeks, at the end of which period this gave place to incontinence. After ten months I had complete control of the bladder by day, but the nocturnal incontinence still persists (twenty one months). In the first week in May 1926, I had a suprapubic cystostomy performed to relieve renal back pressure and for two months was normal in size. At present I have a urinary infection due to *B. proteus*. On recovering from the general anaesthetic I had no feeling in my legs neither could I move them for some hours after a few days when my legs and thighs commenced to atrophy. In May 1926 shortly after the cystostomy I found it difficult to extend my legs, which were flexed on the thigh at an angle of about 45 degrees. The question of forcible extension was then discussed but postponed as I was regarded as too weak for an anaesthetic. From this date on my legs gradually improved until in June 1926 I was able to stand and walk a little with assistance. In the spring of 1927 I walked slowly as much as six miles on end but since then I have slowly become more and more helpless until now I am completely confined to bed. At intervals since the operation I have had an irregular temperature. From a neurological standpoint the present condition of the limbs is: *Motion*. All movements of lower limbs absent. No muscle or tendon tenderness. *Reflexes*. Knee jerks absent, slight contraction palpable in quadriceps on extension; ankle jerks very slight. Plantars are flexor, and cremasteric reflexes absent. *Trophic*. No bedsores. Muscular tone very poor. Muscles extremely flabby. Thighs and legs wasted. The patient states that the right leg has always been the weaker but no difference was found on examination.

## PREVENTION OF EYE INJURIES

Dr J B PIER (Loughborough) writes: I have repeatedly striven at the Board of Trade and in the press to direct attention to the properly laws of injury to the eye by foreign bodies. The remedy, though obvious, is frequently overlooked. What seems to be required is that all engineering firms shall supply tinker glass protectors for the eyes, and that in case of accident due to the want of this simple precaution no compensation shall be awarded.

## INCOME TAX

"B H" deducted subscriptions to some professional societies which issue journals dealing with his particular subject, but the inspector of taxes has refused to allow the deductions, relying on Mr Justice Rowlatt's dicta in *Simpson v Tate*. Subscriptions to societies such as the British Medical Association, have, of course, been allowed. The case quoted dealt with an assessment under Schedule E, the governing section being Rules which allow the deduction of money expended "wholly exclusively and necessarily in the performance of the duties of the office or employment." "B H" is assessed under Schedule D and the relevant section, Rule 3 of (Cases I and II) is somewhat differently worded—"no sum shall be deducted in respect of any expenses not being wholly and exclusively expended for the purposes of the profession." It will be seen that under Schedule D the incurring of the expenses is not required to be "necessary." We suggest that our correspondent might remind the inspector

that Mr Justice Rowlatt was dealing with the stringent Schedule E rule and not with expenses allowable for Schedule D purposes, but we must admit that little, if any, emphasis was laid on the "necessary" stipulation, and the principle of Mr Justice Rowlatt's decision seems to have considerable application to Schedule D. At the same time it may well be that it is less rigorously applied in practice to Schedule D.

## CASH BASIS

"J J" explains that he is being pressed to supply particulars of his "earnings" as distinct from the excess of his cash receipts over payments made for professional expenses. The partnership deed requires the books to be kept on a cash basis. \* \* \* We have always understood the attitude of the Revenue authorities to be that while they regard the earnings basis to be technically correct—as we must admit it is—they are prepared to accept the cash basis as being equitable in the long run, and to consider that "J J" would be justified in pressing his point by requesting the hearing of his appeal by the district or the special commissioners. Two points should not be overlooked, one, that the cash basis is indefensible if the income of a particular year, as a single unit, is the important factor, as in the case of a new practice, the other, that on the basis of "earnings" a deduction should be made for specific debts believed to be wholly or partially irrecoverable.

## LETTERS NOTES ETC

Dr D OWEN WILLIAMS (Glandorf, Cardiganshire) writes: The memorandum about a cleft sternum (JOURNAL, October 15th, p 687) reminds me of two malformations of the sternum which I have seen during recent years. In one case the ensiform cartilage is considerably enlarged and thickened and feels hard, as if ossified, but of this I am doubtful, a doctor who saw it along with me some time ago thought that this was so, and that it was an exceptionally rare condition. In the other case the lower two thirds of the sternum are depressed being indented for at least 1 in in depth almost displacing the interior mediastinum and it is probably due to a rickety condition, although this is the only sign present in the chest.

## CROSSED LEGS AND DEFORMITY

Dr R TURNER (London, W.C.) writes: Having attended a very large number of newborn infants I have observed that the habit of crossing the legs in the lower third is very common among them and that the habit tends to persist. As a result the legs become bowed, and this condition is I think often mistakenly thought to be due to rickets as the child gets older. If the habit is counteracted at an early stage by the simple device of putting a small soft cushion between the infant's legs and feet the legs straighten early and easily.

## TREATMENT OF TONSILLITIS

Dr SYDNEY PERRY (Melbourne, Victoria) writes: Having for the last ten years been impressed by the enormous amount of sickness produced by infection in tonsils which in the past have been and still are, looked upon as normal I tried to find some method of cleaning up these infections, as, failing this, it meant that 75 per cent of the people would have to lose their tonsils. Being somewhat impressed by the work done by Drs Murphy, Witherbee, Craig, Hussey, and Stern at the Rockefeller Institute for Medical Research in 1919 I gave their treatment by doses of rays a trial, with varying results, to this I added exposures to ultra violet light to the tonsils and the high frequency current, the former to bring about local reaction the latter to help sterilize the surface of them. Vicines cultured from stabling the tonsils with a fine capillary tube helped, but of late I find that splitting down obvious crypts, keeping them open, and employing a solution containing iodine, 120, zinc iodine gr 160 cleaned up and remained healthy. As there are no nerves in the tonsils these crypts can be split without even cocainizing them, care being taken not to cut the anterior pillars of the fauces. I ray treatment is done once a fortnight on each side the rays being directed behind the angles of the jaws. The high frequency and ultra violet light treatment is employed thirteen weeks for the first few weeks then twice a week for eight or ten weeks. This is usually sufficient to complete the cure. Having done many hundreds now I am satisfied there are very few tonsils which cannot be freed from infection by these methods. The full details are published in the *Medical Journal and Record of New York*, August 17th 1927.

## VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges, and of vacant resident and other appointments at hospitals, columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43. A short summary of vacant posts notified in the advertisements columns appears in the Supplement at page 231.

## Observations

ON

## SOME POINTS IN CONNECTION WITH DETACHMENT OF THE RETINA

BY

SIR W. T. LISTER, K.C.M.G., F.R.C.S.

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Surgeon to the Royal London Ophthalmic Hospital

THE short time at my disposal I propose to devote to the important subject of the selection of those cases of so-called simple detachment of retina which are suitable for treatment, and to try to indicate which cases of this desperate condition give some reasonable chance of success.

I suppose we shall all agree that when both eyes are affected, or when the only seeing eye has developed a detachment, we may be driven to treatment which we know has little reasonable chance of success. We do this partly on the bare chance that our past experience may be upset and partly to make time so that our patient may have the satisfaction of feeling that something is being tried instead of suffering the double depression caused by the loss of sight and by a policy of hopeless inactivity.

But it is the question of treatment of a case of detachment of one eye only that I wish to discuss, for it is here that our colleagues appear to hold such divergent views. In spite of the articles which appear in the general press from time to time of the successful treatment which has been devised in this or that country, or even in the medical papers which publish reports of 100 per cent. of successes obtained in a modest series of a few units, we are all painfully aware that our chance of restoring sight with our present knowledge is very slight. When we consider the mental strain which our methods entail together with the considerable expense incurred in nursing, home and professional fees, only those cases where a reasonable chance of success exists should be subjected to treatment. Unsuccessful treatment is regrettable both from the disappointment and loss of money involved and also from the discredit to the reputation of the profession as a whole, as well as to the individual member who has advised it.

Some say the condition is hopeless whatever the cause and advise no treatment, some never advise anything beyond rest and the rest advised may be lying down for twenty minutes twice a day (as I know was advised in a well-known German clinic), or it may be complete rest in bed with the head raised from the pillow. Such treatment may be combined with constitutional measures and counter-irritation but no operation. Others again advise operative intervention at once. The majority I imagine advise rest, constitutional treatment and counter-irritation first and it is this, the unsuccessful resort to operation.

I have reason to think that quite a large number of cases of detachment are treated on a purely routine plan without sufficient endeavour being made to find the cause it is against such a course I chiefly wish to direct my remarks.

Though in many cases we know little or nothing of the actual mechanism of the detachment, in others we understand or can make a reasonable guess at it. Now it is surely on the particular mechanism of the detachment in any individual case that the reasonableness of our intervention mainly depends. I think it is correct to state that the retina is either "pushed in" from without or "dragged in" from within or "floated in" when there is a hole.

When the retina is dragged in by cicatricial bands, in the retina itself, as in retinitis striata, it seems to me that treatment can be of no avail and it should not be advised.

When the retina is being dragged in by visible bands in the vitreous we must distinguish two sets of cases: (1) those in which traction is being exerted by one or more definite bands; (2) those in which the whole vitreous is diffusely fibrous and by its shrinkage is dragging the retina in. In the former group successful results have been

obtained by the division of the band, and such a procedure is certainly well worth trying. In the latter group it would seem that no treatment ever could be successful or should be attempted.

When the retina is floated in by fluid vitreous passing through a hole in the retina to the inter-retinal space, there is considerable variation in professional views as to the treatment to be adopted.

Holes in the retina are of course often seen but they can be found much more frequently than many believe who are not in the habit of searching for them, and they probably occur a good deal more often than they are found even by those who do look for them. That they are present in every case of detachment as some assert, is a view which I think is untenable on many grounds, but chiefly on the study of the variation in the nature of the fluid or semi-solid exudate in the inter-retinal space.

There are many varieties of holes and they may be caused in several different ways. The macular holes due to trauma or degenerative changes are seldom associated with detachment or, if this does occur, it is slight and as a rule non-progressive. The peripheral holes—large rents, or heretofore shaped slits—are generally associated with extensive detachment, either globular billowy or shelving. Holes in the retina are of considerable importance in their bearing both on diagnosis and also on treatment. As regards diagnosis, it may be parenthetically noted that the presence of a hole excludes I believe the presence of a growth, so far as I have been able to learn or observe, a growth and a hole never have been found to exist together.

As regards treatment, the committee appointed by the Ophthalmological Society of the United Kingdom to report on the results of treatment of detachment of the retina during the war recorded no case of cure by surgical treatment or detachment associated with a hole, and only very rare instances by rest. Such results are borne out by my own experience and that of my colleagues, so far as I have been able to learn.

It would seem then that treatment such as is at present devised in cases of detachment with holes is practically valueless and should not be urged except in only eyes as a last clutch at a straw of hope. If this view be correct it emphasizes the importance of a careful search for holes in every case of simple detachment, so that our patient may not be subjected to a useless form of treatment.

Next we come to the exudative cases where the retina is pushed in by albuminous fluid poured out into the inter-retinal space. It is in this group where the detachment is associated with retinitis and choroiditis, that the greatest hope of success lies. Here by treatment, we may hope to allay any inflammatory process which is taking place to help in the absorption of exudate or by operative measures drain the inter-retinal space.

In theory with the clearly cut groups our course would appear fairly simple, but in practice, alas! the majority of cases cannot be thus pigeon-holed, we are unable to state definitely whether the retina is pushed in or pulled in or floated in, we find no definite signs or signs which we discover no vitreous bands or retinitis striata, we see no sign of inflammation either of the retina or choroid after careful searching, we detect no actual rent. We may thus have no clue as to the mechanism which has produced the detachment. This group includes the bulk of the traumatic and myopic cases. What are we to do with them? It seems only rational till our knowledge improves to give the patient the benefit of the doubt and to treat them.

In whatever group the case falls, should we decide to give treatment let me urge the advisability of treating as thoroughly as is possible once and for all. In our patient let us give him time and incur the tuition and expense of a course of this treatment, let everything known to be useful be tried fully in the six or eight weeks which he is going to devote to the cure, let us give him the satisfaction of knowing that every effort is being made and what is just as important to protect him from the poisoned darts of mere talk or a half-hearted because some one measure—such as puncture or diathermy or uncomplicated operation—has not been tried, may suggest that when the time has been used and that the treatment was valueless.

## DETACHMENT OF THE RETINA.

THE BRITISH  
MEDICAL JOURNAL

Personally I am in favour of attacking the condition from every possible point of view. Absolute rest in bed, constitutional treatment to combat any general condition, absorptive treatment, and counter-irritation to endeavour to remove the exudate in the inter-retinal space—for example, hot-in baths, mercury injections, potassium iodide, blisters to the temple, and subconjunctival injections. If after a fortnight there is no improvement it is advisable to proceed to scleral punctures to drain the inter-retinal space, with or without making an adhesive spot to which the retina may become glued.

For purposes of discussion, I would summarize my remarks in retinitis striata and diffuse fibrous degeneration of the vitreous all treatment is useless.

In detachment associated with a hole treatment offers little chance of success.

Definite fibrous bands in the vitreous may be divided. Detachment associated with retinitis or chorioiditis should be actively treated.

Simple detachment in which the mechanism of the detachment is not determinable should be given the benefit of the doubt and treated.

Firstly, treatment, if attempted at all, should be thorough. The plea of this short communication is for greater thoroughness in our examination of cases of detachment, which should include the careful exploration of the vitreous with the slit-lamp by an expert. By such an examination we may hope to gain new information (1) by which to group our cases more rationally, and (2) by which to treatment may be more successful than that of the past. By these means the more hopeful cases will have the best chance of restoration of sight, and the hopeless cases may be protected from a course of mental strain and expense the disappointing results of which were a foregone conclusion.

## DISCUSSION

Dr W. CLARK SOUTH (Aberdeen) gave short notes of six cases of spontaneous reattachment of detached retina—two traumatic, two idiopathic, one myopic, and one of retina had apparently disappeared, leaving chorioiditis. He discussed the pathological findings in published cases where reattached retina had come to the microscope, special mention being made of the cases of Rounie and Klungström. In one of his retinitis striata cases, an idiopathic one, watched over seventeen years, the long white band at the edge of the reattached area was crossed by vessels which were obviously not retinal, and not likely to be chorioiditis but rather like new vessels, making a strong resemblance to, and in the author's opinion a possible explanation of, those cases described by Sir William Liston in the *Ophthalmic Review* for 1903, under the heading "Angioid streaks of the retina."

Mr INGLIS POLLOCK (Glasgow) said he had operated on two patients with detached retina, both of whom recovered. In the first case a relapse occurred and, although the patient had to wait six months for readmission to the infirmary, a second operation was successful in restoring the retina to its normal situation. This was seven years ago, since when there had been no recurrence. In the second case one operation sufficed and the patient had had no recurrence since the operation, six months ago. Both cases showed that there was no improvement until the inter-retinal fluid was withdrawn, in fact, both patients became worse while they lay up at home with both eyes bandaged. The first showed that success might follow operation further and that he had seen a small detachment cured by operation followed by recurrence of the detachment, and subsequent complete loss of sight in the eye by the extension of the detachment all over the fundus.

Mr J. W. TUDOR THOMAS (Cardiff) described a case of double detachment of the retina in which reattachment of the retina followed in one eye, leaving pigmentary changes

resembling slightly the pigmentation of retinitis pigmentosa. A detachment developed first in the left eye, which became blind, and the lens gradually grew opaque. A large fluid detachment of the retina developed in the right eye about six months after the left eye commenced to fail. Posterior sclerotomy was performed, using the electric cautery. Some opacity developed about the posterior pole of the lens, but ten months later no detachment of the retina could be found, and the retina showed numerous spots of pigmentation. The opacity at the posterior pole had not advanced further up to the time of the last examination. During the last year or so he had observed three cases of detachment of the retina in pregnancy. These cases had several points in common. They were all double detachments, and all three patients had albuminuric retinitis of pregnancy. The detachments all cleared up, and useful vision was restored in each. The vision in one case became 6/12 for each eye, slight macular changes were present.

Dr J. ROWAN (Glasgow) mentioned several cases of retinal detachment, in one of which the condition was obviously due to a tumour, the patient was myopic in the eye affected. Later the myopia was gradually reduced till the patient became hypermetropic. Both conditions were confirmed by retinoscopy. Enucleation was refused till the eye became glaucomatous, it was then removed and the diagnosis was confirmed. He discussed another case where, with rest in bed and subconjunctival injections, there was a complete cure. The late Mr Edward Nettleship had agreed that the detachment was completely back in its place, this lasted for a few months, but after going a short railway journey the condition returned. In spite of different methods of treatment the outlook in these cases was very black.

Dr KERRY (Montreal) gave details of a case of traumatic detachment of two weeks' duration which recovered after a course of iodine injections, in this case there was also almost complete recovery of the lost field. He advocated these iodine injections to promote absorption, and cited another case in which recovery had followed then use. Dr Kerry thought that the subject of retinal detachment would be much better understood when more was known of the cellular function of absorption.

THE VALUE OF ANTISEPTICS IN MODERN  
OPHTHALMIC SURGERY

BY  
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I HAVE been tempted to bring this subject of antiseptics in ophthalmic surgery before the meeting, because it seems to me that there is still a considerable amount of difference of opinion on what is or should be a simple matter in these enlightened days.

Some time ago I read in one of our chief ophthalmic journals a long record of an operation for the extraction of cataract, the description of the operation being preceded by meticulous details of preliminary disinfection and treatment applied to the eye in order to obtain an aseptic condition, which would eliminate risks of operative and post-operative sepsis.

Similarly, a very recent article in the *Lancet* (Ophthalmological) dealing with the same subject of disinfection of the conjunctival sac, starts thus: "It is hitherto proved impossible to make the conjunctiva reliably sterile. It is therefore always with a certain feeling of insecurity that the ophthalmic surgeon proceeds to his operations."

Many surgeons, in fact, seem still to be of opinion that the field of intra-ocular operations requires a somewhat similar course of preparation as is essential when a skin surface is involved. They are impressed with the possibility

\* A paper read before the Section of Ophthalmology at the Annual Meeting of the British Medical Association at Edinburgh, 1927.



of disaster in the way of sepsis if such preparations are not carefully observed.

I propose to consider the question of treating the ophthalmic operation field, antiseptically or aseptically, from four points of view (1) contamination from the conjunctiva (2) contamination from instruments and dressings, (3) contamination from the fingers of surgeons and assistants, and (4) contamination from the air.

There are, of course, other minor sources of contamination but the ones just mentioned are the most important, and I will confine my remarks to them.

#### The Conjunctival Sac

Many years ago I published the report of an exhaustive inquiry into the bacteriology of the normal conjunctival sac. The results of this investigation which so far as I am aware, have never been contradicted, and which have certainly guided me safely through many years of operative work, may be summarized as follows. The normal sac is in itself antiseptic and requires no treatment prior to operation. So far as its lower section is concerned it is never sterile, it always contains many organisms but these are either in themselves perfectly harmless, or if not so harmless, their virulence is speedily destroyed by some inherent antiseptic power of the conjunctiva, which in this respect resembles the peritoneum. This can be easily proved by growing cultures from the lower sac and injecting a solution into the conjunctival sac of animals or even subconjunctivally. In neither case does anything happen. The normal conjunctival sac can never be sterilized for even twenty-four hours by any known means, and all attempts to effect this by antiseptic lotions of sufficient strength to be as effective germicides are futile simply tending to defeat their object by setting up a reactionary irritation.

Long before antiseptic or the later aseptic surgery was introduced intra-ocular operations were performed with comparative safety as compared with operations on the body. Indeed long after the principles of aseptic surgery were generally accepted ophthalmic surgeons as a class took no very special precautions. I was the first surgeon at Moorfields Hospital to adopt an overall and my election was in 1890, my revered teacher Sir John Tweedy up to the time of his retirement in that year always used his index finger to effect counter-pressure, and to prevent the eye rotating inwards when making his catract section instead of employing fixation forceps. The result obtained then will bear quite a favourable comparison with those seen nowadays with masks, caps, overalls and all the other appurtenances, which are quite rightly held to be desirable. I do not advocate a neglect or precautionary measures before operation the point I wish to make is that the routine use of antiseptic measures arises from a wrong appreciation of facts. What we have to ensure is not that the conjunctiva is sterile for that is unnecessary and impossible, but that it is healthy, and we can do that by the simplest means. The one great factor in determining this point is the presence of discharge which can be definitely proved by tying up the eye for a few hours with an aseptic pad. If any discharge appears on the pad on removal or is found clinging to the lashes or eyelids then the conjunctiva is unhealthy and means must be taken to free the sac from the cause of the discharge before operation is undertaken. Taking smears from the conjunctiva and acting on the report of the presence of organisms found by this method of examination, is only of value if discharge is present in its absence the organisms found may be held to be avirulent and harmless. As a matter of fact it is generally possible to tell by mere inspection whether the conjunctiva is healthy or not but I always adopt this well known and simple expedient or determining it.

If the conjunctiva at the time of operation is healthy it may safely be assumed that it will remain healthy during post operative treatment under bandage and pad, and such is indeed the case.

#### Contamination by Instruments and Dressings

This may be dismissed in a cursory manner, for it is a first principle of all surgery that instruments and dressings

must be sterile. I would simply just mention the point that the instruments should not only be sterile but dry.

#### Contamination from Surgeons' and Assistants' Fingers

The surgeon's fingers as a source of contamination may obviously be a fruitful cause of disaster. Some surgeons avoid trouble by wearing rubber or other forms of gloves but, personally speaking I found the disadvantages or gloves in destroying as they do, the fine sense of touch which is so important in many ophthalmic operations to outweigh entirely their manifold advantages in maintaining aseptically, and I entirely gave up their use many years ago in intra-ocular and strabismus operations. But if no gloves are used the surgeon must be meticulously careful that no part of any instrument other than the point or handle is ever touched by his fingers. It has to be remembered that washing and scrubbing the hands before operation in no sense renders the fingers sterile. It has been shown that rubbings taken from fingers freshly washed and scrubbed in warm water produce luxuriant growths of organisms and that while removing surface contamination to some extent, the hands still remain a means of readily infecting the wound. Personally, I endeavor to counter the point to some extent by well soaping my hands in spirit after scrubbing, and by having a bowl of spirit at hand during operation in which I can rinse my hands at any moment if I think it desirable. I do not think this simple act is nearly so much appreciated as it ought to be otherwise one would not observe as I have often done great indifference on the part of surgeons in the handling of instruments when gloves are not worn. I have often seen surgeons, when operating for strabismus, pick up needles with their fingers and put the needles in the needle holder, instead of using serrated forceps for the purpose with the consequence that the sutures are apt speedily to become more or less septic. Then, again sutures are themselves a ready means of contamination, even after careful sterilization. The satisfactory manipulation of sutures presents real difficulties and requires meticulous care. It is presumed that in cases where sutures are going to be employed the skin of the face as a matter of course will be shut off by a gauze mask excluding all except the operation field while the scalp is guarded by a folded sterile cloth. The sutures must be kept free from the surgeon's finger, and this can only be effected by the greatest attention to detail. If, as is commonly the case the needles and threads are rolled each one on a piece of folded gauze or lint the needle should be disengaged from the roll with serrated forceps as just mentioned and the suture as it is unrolled should be held by the assistant in a pair of serrated forceps, and kept free from all contact with his or the surgeon's hands until the suture has been properly adjusted, and when it is being tied the surgeon must be extremely careful that his fingers never approach that part of the suture which is applied to the wound area. It is all perfectly simple but often I think, there is lacking that degree of attention to detail which is required.

It must be admitted that even with the greatest attention to detail sutures will sometimes touch something that they should not and in this respect an efficient antiseptic which can without any irritation whatever be applied to the wound area is most helpful, and gives the surgeon a great feeling of security.

There is nothing I think so good for this purpose as flamine. A solution of 1 in 1000 of this drug can be freely applied to the eye at the time of applying the sutures and thereafter it can safely be dropped into the eye twice daily in a strength of 1 in 4000 without causing the slightest disturbance or without producing the least delay in the healing process. The charge has been made against flamine that it delays healing but I can assure all who have not tried it that this accusation when flamine is used of the strength just mentioned (1 in 4000), is entirely baseless. Healing pursuing its natural course by first intention. I can assure you using this drug regularly, as I have done now for ten years I have not had a single case of infected sutures after strabismus operations.

*Contamination from the Lash Area*

The last point I wish to mention is contamination from the lash area, which is the neighbourhood most difficult to preserve clean when in eye has to be kept bandaged for any length of time. It is not, I am thankful to say, the most important, because there is not the same risk of infection of the operation field from the ciliary border as there is from the other sources of contamination—the conjunctiva, the instruments and accessories, and the surgeon's fingers. On the other hand, I think it is quite impossible, unless special means are taken, to keep the lash area from becoming dirty, and often very quickly so when the eye is kept tied up. In other words, it is quite impossible to sterilize the ciliary borders satisfactorily on account of the organisms which lie beneath the surface round and about the lash follicles. The testing pad worn before operation may be entirely free from all discharge, and the lashes themselves be apparently perfectly clean, but soon after operation, even if they have been cut short, as they should have been, the stumps are apt to get sticky and dirty, and the discharge will then tend to get more and more objectionable, unless the source of trouble can be checked.

It is, therefore, in this regard, as well as in the dealing with sutures, that a non-irritating, efficient antiseptic becomes of extreme value, and once more I urge the use of fluvine, which will generally do its work admirably.

After every operation I cover the affected eye with a gauze pad well sprinkled with a 1 in 4,000 solution of fluvine. It makes a delightfully comfortable dressing, which I change twice daily, if this procedure is followed the lash area will rarely cause any trouble whatever. If trouble does occur it will be of a mild character and easily controlled. Something must then be used in addition to, or as a substitute for, fluvine, and I know of nothing better than a 2 per cent solution of protargol employed

three daily as drops. Used at this strength protargol never irritates the wound, and it acts very efficaciously in arresting the discharge.

To sum up, then, the gist of these few remarks is to urge that the maintenance of a healthy operation field with quick normal healing can be obtained by the simplest methods before, during, and after operation. Antiseptics of any kind are only needed as extra measures, especially with regard to needles, sutures, and the lash area. If to these simple measures is added meticulous attention to detail, suppuration in the operation field can be eliminated with absolute certainty.

One exception must, however, be made to this assertion, and that arises when force of circumstances prevents the taking of routine precautions. It is occasionally necessary to operate on an acute glaucoma when there is intense congestion and obvious sepsis. In such an exceptional case I think the best antiseptic to use is hydrogen peroxide, with which the eye is flooded immediately before the knife section is made. It is much better than fluvine, because the latter is strictly an antiseptic in the true sense of the word, and is not of much value when sepsis is already present.

Finally it is, perhaps, legitimate to quote personal experience in these matters, and I can claim that, in my private practice, I have never experienced the tragedy of intra-ocular suppuration after operation. In hospital practice I must, I think, have occasionally experienced this misfortune, though I cannot recall any instances, and certainly I have no single case impressed on my mind. In hospital work, however, it is not nearly so easy, for many reasons, to impress attention on certain details or to see that such details are carried through, and consequently accidents are more likely to occur there than in private work, where one assumes sole and entire responsibility.

## **PATHOLOGY OF THE TUBERCULOSIS OF CHILDHOOD AND ITS BEARING ON CLINICAL WORK**

BY

EUGENE L. OPIE, M.D.

(From the Henry Phipps Institute, University of Pennsylvania, Philadelphia.)

Recognition of the widespread occurrence of tuberculous infection acquired during childhood introduces into study of the disease two conflicting factors, one or other of which is often forgotten: (1) the increased resistance to the disease from a somewhat ineffective immunization, and (2) the danger that latent infection may cause manifest and perhaps fatal disease.

Attention is limited to tuberculous infection which is so advanced that it produces cough, fever, loss of weight, and obvious physical signs, while less advanced infection which remains concealed, for a time at least, is ignored, spread of the disease in families and in the community is studied under a heavy handicap, and ancient problems concerning its contagion remain unsolved. We might with equal reason study the epidemiology of measles by limiting our attention to instances of the disease followed by pneumonia, or of small-pox by excluding all cases except those with hemorrhagic lesions.

*The Pathology of Latent Tuberculosis*

I am inclined to believe that more knowledge of the pathology of tuberculosis can be obtained by careful examination of the tuberculous lesions of those who die from causes other than tuberculosis than from fatal instances of the disease. The frequency of concealed tuberculous infection is thoroughly recognized, in great part as the result of almost innumerable studies made with the tuberculin test, but the variety and severity of latent tuberculous lesions is not fully understood. Sir Arthur Newsholme<sup>1</sup>

assembled evidence to show that there is a long latent period between exposure to infection and the appearance of the symptoms of phthisis. The frequency of calcified pulmonary nodules which may be regarded as scars of an infection required in childhood is well known, but it is less fully realized that one in five of adults who die from causes other than tuberculosis have apical tuberculous lesions which are caseous or partly calcified.

X-ray photographs of lungs excised at autopsy furnish a satisfactory means of depicting the distribution of tuberculous lesions, particularly when calcium salts have been deposited in caseous material, or new formation of fibrous tissue has increased the density of lung tissue. They serve as a guide in dissection to scattered nodules and reveal lesions which would otherwise be difficult.

All types of lesions which x-ray plates prepared from excised lungs can be identified in plates prepared from the living chest. Radiologists who are doubtful concerning the interpretation of latent tuberculous lesions evident in x-ray plates of the living chest should prepare a series of plates from lungs removed at autopsy and should identify by dissection the lesions which are revealed.

*First Infection with Tuberculosis*

Tuberculosis of infancy and early childhood, which resembles that of an animal inoculated with tubercle bacilli, forms a lesion at the site of infection and quickly affects the nearest lymph nodes. The severity of tuberculosis in early infancy seems to indicate great susceptibility to the disease, but exposure of the infant to massive infection from those who tend it may explain the high mortality from tuberculosis during the first year of life. At this period general dissemination through the body accompanied by tuberculous meningitis is common. During the second year of life the mortality from tuberculosis falls rapidly, and during the next few years gradually. From the fifth to the twelfth year the death rate is lower than at any other period. It is noteworthy that during this interval of low mortality infection with tuberculosis, indicated by the tuberculin reaction, makes its appearance with

<sup>1</sup> A paper read in giving a discussion in the Section of Tuberculosis at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

great frequency, but the lesions with few exceptions heal. A nodule is formed in the lung substance, and fact which are usually much larger are formed in the nearest lymph nodes. Occasionally, particularly when disease of bronchial lymph nodes is advanced, a few tubercles which undergo encapsulation are formed in distant organs such as spleen and liver,<sup>2</sup> but general dissemination and death are uncommon. With healing, encapsulation is followed by calcification, and scars of these first infections remain throughout adult life in lungs, bronchial lymph nodes, and sometimes in other organs.

Tuberculosis in young children usually proceeds more rapidly in the lymph nodes than in the lung parenchyma, so that the lesion or bronchial lymph nodes at the hilum of the lung is often very conspicuous. Many have thought that the disease begins in the lymph nodes and spreads peripherally into the lung substance. A nodule occasionally found with difficulty is, as Kuss<sup>3</sup> showed, invariably present in the lung substance and is presumably the primary site of lodgment of tubercle bacilli which have entered by way of the bronchi. The term "hilum tuberculosis" is, it seems to me, unfortunately chosen, because it suggests that the disease has its origin at the root of the lung. In x-ray plates made during the progress of pulmonary tuberculosis in children the lesion occasionally seems to extend from the hilum to the periphery of the lung, but this deceptive appearance is caused

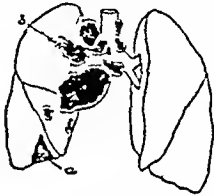


FIG 1.



FIG 2.

FIG 1.—Diagram showing tuberculosis of the lungs and tracheo-bronchial lymph nodes with secondary extension into adjacent lung substance in a child aged 1 year. The primary focus (a) which contained a small cavity was in the right lower lobe. The caecus tuberculous centre of a lymph node had penetrated the capsule (b) and produced a secondary infection of the adjacent right upper lobe. Death occurred with tuberculosis widely disseminated throughout the body.

FIG 2.—Diagram showing tuberculosis of lung (a) and of tracheo-bronchial lymph nodes (b, c) with secondary extension of tubercle from lymph node to lung substance in a girl aged 6. The primary focus of infection was the caecus encapsulated nodule (a) 1.5 x 1.2 cm. The caecus centre of the lymph node (b) had penetrated the capsule and extended into the lung substance. The caecus centre of the large lymphoid mass (c) had penetrated the capsule of the node and the adjacent tracheal wall so that caecus material protruded into the lumen of the trachea just above the orifice of the right bronchus. There were tuberculous ulcers of the intestine, tuberculous peritonitis and tuberculous salpingitis.

by the projection of three dimensions on one plane. Post-mortem examination occasionally shows that caseous lesions of bronchial lymph nodes have penetrated the capsule of the node and produced tuberculous pneumonia of the adjacent lung (Fig 1) or have ulcerated through the wall of a bronchus (Fig 2) and perhaps caused dissemination of the disease in the domain of tributary bronchial trunks but in such instances a primary focus of infection can be found in the peripheral lung field (Fig 1 a Fig 2 a).

Experimental studies indicate that tuberculosis is conveyed to susceptible animals with much more difficulty by way of the gastro-intestinal tract than by way of the lungs. Several years ago I had the opportunity to compare the frequency of latent tuberculosis of mesenteric lymph nodes in British and American adults.<sup>4</sup> In slightly more than one-fourth of young British adults examined who had died from causes other than tuberculosis there were healed or healing tuberculous lesions of the mesenteric lymph nodes whereas in Montreal Klotz<sup>5</sup> found obsolete lesions in 8 per cent of those examined and in San Francisco Ophuls found them in 5 per cent. I found that focal lesions of the lung were usually absent when mesenteric tuberculosis had occurred. Todd<sup>6</sup> has recently found that the incidence of mesenteric tuberculosis is very high in young persons in Edinburgh, and has observed that pulmonary lesions are uncommon when mesenteric lesions are numerous.

### Reinfection with Tuberculosis

Phthisis of adults, unlike the first infection of childhood has little resemblance to tuberculosis of susceptible animals,<sup>7</sup> but resembles the disease of reinfecting animals. Why select the apex of the lung is not yet evident, but once established it tends to pursue a chronic course and remains so in the last stages, a localized disease of the lung. The apical lesions which heal so completely that they never produce symptoms are much more numerous than those which cause progressive disease. Less than 1 in 10 of all deaths is caused by tuberculosis, whereas approximately 1 in 5 of those who die from causes other than tuberculosis have characteristic tuberculous caseous or calcified lesions of the pulmonary apex. The number of those having fibrous apical scars with no gross microscopic characters of tuberculosis is even greater.

Once infected, the experimental animal undergoes change, which alter its reaction to the bacteria and bacterial products (tuberculin). We have no clear understanding of the relation between hypersusceptibility in the infected animal and the resistance conferred upon it by immunization but analogy with similar changes produced by more readily studied protein substances<sup>8</sup> suggests that accentuation of the inflammatory reaction following infection by the tubercle bacillus is a beneficial process which tends to overcome the second invasion.

This conception concerning the pathogenesis of phthisis has little value unless it is in harmony with changes which are evident in the human body. (1) When phthisis of adults occurs the calcified scars of a first infection can be found in the lung substance and in adjacent bronchial lymph nodes.<sup>9</sup> (2) Like a second infection of experimental animals, phthisis of adults pursues a chronic course, remains localized and does not implicate the nearest lymphatic nodes. (3) When people who have not come into contact with European civilization escape tuberculosis during childhood they suffer if infected during adult life, with a type of tuberculosis which resembles that of childhood. The susceptibility to acute forms of tuberculosis of native African troops serving in Europe has been clearly shown by Dr Lyle Cummins.<sup>10</sup> The American negro not infrequently escapes infection during childhood and exhibits recently fatal lesions of first infection during adult life. (4) When reinfection occurs at an early age, after a still earlier first infection it exhibits the characters of the disease of adults. The adult type of tuberculosis with localization in the apex, chronic course, and cavity formation is seldom seen during the first decade of life but during the second decade with increasing frequency as age advances. In adolescent children after 15 years of age pulmonary tuberculosis is in most instances has the characters of the adult disease.

There are two peaks upon the curve representing mortality from tuberculosis. There is one in infancy reaching a maximum during the first year of life. It is due to first infection having its origin in the lungs and bronchial lymph nodes or, in a smaller number of cases in the intestine and mesenteric lymph nodes. Mortality from these lesions of first infection diminishes rapidly during the second year and then gradually during subsequent years until the fifth year. After the fifth year and during the greater part of childhood mortality is lower than at any other period of life. After the twelfth year in girls and somewhat later in boys the curve of mortality begins to rise and reaches a second peak in early adult life or even later. It is noteworthy that this second wave of mortality from tuberculosis is caused by lesions of reinfection having their origin with a few exceptions in the apices of the lungs.

### Bacteriology of Latent Tuberculous Lesions

My associate Dr Aronson<sup>11</sup> and I have attempted to determine the frequency with which living tubercle bacilli can be recovered from latent lesions or first infection present as encapsulated and calcified nodules in the lungs and bronchial lymph nodes. Tubercle bacilli are seldom recovered from these healing nodules unless there is a latent apical lesion in the same lung and when latent apical lesions are present living tubercle bacilli are

recovered not only when material from enlarged nodules is injected into guinea-pigs, but when material from parts of the lung which contain no evidence of tuberculosis is used for inoculation. These observations indicate that living tubercle bacilli are present in the surrounding lung tissue rather than in the nodule itself. In latent lesions of the apex, on the contrary, tubercle bacilli are almost invariably found when the lesion is fibroid and caseous, and persist even after apparent healing, so that they are found in one-fourth of the fibrous apical scars which have none of the gross or microscopic characters of tuberculosis. Tubercle bacilli in most, if not all, instances seem to have disappeared from the lesion of childhood by the time the lesion of reinfection makes its appearance. Furthermore, histological evidence furnishes little support to the opinion that the apical lesion of adults is derived by extension from the focal lesions of childhood, for the one is seldom in continuity with the other, and not infrequently the lesion of first infection is in one lung, whereas the apical lesion of reinfection is in the opposite organ. The available evidence

physician. The means at our disposal for the discovery of latent tuberculosis are the tuberculin test, which shows whether tubercle bacilli have found lodgement in some part of the body, and x-ray examination, which, within certain limitations, discloses the character and extent of the lesion. The term "latent," in the sense in which I have used it, has long been used in medical literature, and may be found in the writings of Lenné and Louis. Some authors have assumed that it is applicable only to lesions which are dormant or arrested, but long accepted usage gives no support to this interpretation of the word. Lesions which are unaccompanied by symptoms or physical signs are often progressive, and manifest disease is invariably preceded by a long or short period of latency.

My associate Dr. McPhedrin and I have undertaken a study of latent tuberculous lesions in children of families exposed to tuberculosis, and have attempted to determine whether they produce manifest disease. By means of x-ray examination we found that it was possible to discover all types of lesions which can be recognized in x-ray plates

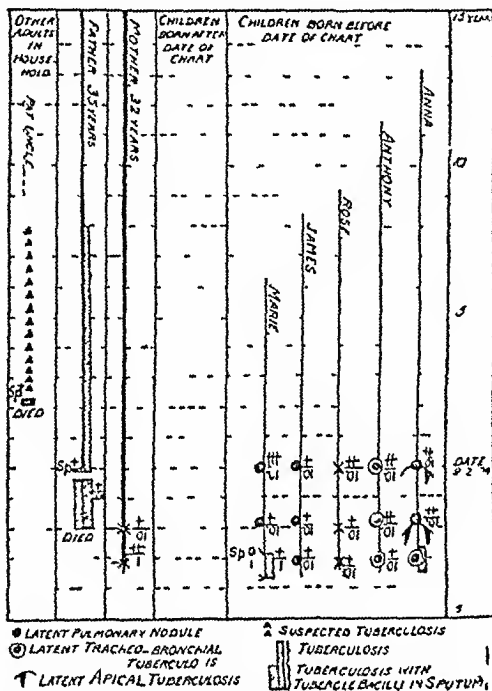


FIG. 3.—Graphic chart used to depict the occurrence of latent and clinically manifest tuberculosis in families. Vertical lines represent each member of the family, and their length corresponds with the duration in years of residence within the household. They are divided upon a horizontal line which represents the date at which the family came under observation. Later observations are recorded below this line. Tuberculin reactions are shown by 0 (negative) or from one to three plus signs over the quantity in milligrams (0.01 to 1) of tuberculin used. The result of sputum examination (sp) is indicated by zero or plus placed above the number of examinations.

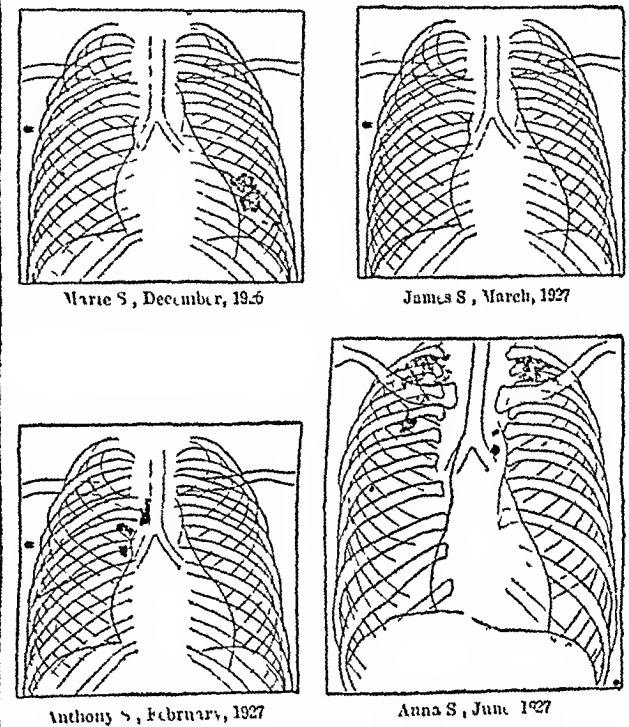


FIG. 4.—Diagrams prepared from x-ray films to show the position of the lesion in the lungs of children of the family shown in Fig. 3.

of excised lungs and identified by subsequent dissection. Examination of members of families exposed to contact with tuberculosis showed that latent lesions were more numerous and more extensive among them than in families which had no contact with the disease. The severity of infection bore a measurable relation to the elimination of tubercle bacilli by the tuberculous member of the family, and to the duration of exposure to contact with the micro-organism. Transitional stages from latent to manifest disease occurred, and it became evident that it is often possible within certain limitations to predict clinically manifest disease long before it makes its appearance.

These observations have brought about important changes in our procedures for the prophylactic treatment of tuberculosis. Families are studied as units and the progress of infection in them determined. The usual method of sputum examination is the best means for determining whether members of a family are exposed to present danger of contagion but latent infection in members of a family may serve as an index of past exposure to open tuberculosis. We have prepared for each family under the care of our out-patient department a graphic chart (Fig. 3) which records how long each member of the household has been exposed to contact with tuberculosis, and shows for each the presence or absence of a tuberculin reaction, the character of any latent tuberculous lesions revealed by x-ray examination (Fig. 4), and the presence or absence

indicates that pulmonary tuberculosis of adults is not the continuation of an infection acquired in childhood, but is an exogenous reinfection.

#### Clinical Significance of Latent Tuberculosis

Concealed foci of tuberculosis in lungs and lymph nodes which give none of the manifestations of pulmonary disease may be the source of serious tuberculosis in distant organs. Ophuls<sup>13</sup> has recently attempted to determine the primary focus of infection when tuberculosis causes recognizable disease of the genito-urinary tract, adrenals, bones, joints, etc. In seven cases of Addison's disease tuberculosis of the adrenal had apparently had its origin in a pulmonary focus, and in six instances this focus had healed. In twenty-seven cases of tuberculosis of bones and joints the primary focus of infection was in the lungs, and in one-third of these it was healed. Genito-urinary tuberculosis is always secondary to tuberculosis of lung or intestinal tract, and in 20 per cent of instances referable to the lung the pulmonary lesion was healed.

Latent tuberculosis may be defined as tuberculous infection which is unaccompanied by significant symptoms evident to the patient or by physical signs discovered by the

of manifest disease which has been recognized by symptoms and physical signs

The children of the family shown in the chart (11-3) were exposed to tuberculosis of the father and of the mother. Sputum of habits were when first seen had in them a tubercle bacillus and a small nodule in the lung. Two years later a focus of fibrin in the left lung and riles were heard over it. Another had advanced tracheo-bronchial tuberculosis. Anna when first seen had nodules in the lungs and a latent apical lesion on the right side. One year later there were bilateral apical lesions. After another year the lesions had extended and riles were heard over the apex.

This study has emphasized the value of the tuberculin reaction as a means of recognizing tuberculosis in children. Its significance is well known diminishes with increasing age from infancy to adult life when immunization of large cities almost all react. In our group of families exposed to open tuberculosis over 80 per cent have acquired an active tuberculin reaction before the age of 5 years and 90 per cent at the age of 10 whereas 23 per cent react at the age of 5 and 62 per cent between the ages of 15 and 20 years.

Examination by x rays gives trustworthy evidence concerning the frequency of latent tuberculosis among children exposed to contact with open tuberculosis and furnishes a means by which the severity of infection may be measured. Focal lesions within the lung substance are readily recognized if the characters of the lesions found at autopsy are kept in mind. Blood vessels directed in the axis of the calcified nodules. Thirty per cent of our children who were exposed to tuberculosis in their families had pulmonary nodules as compared with 17 per cent of the children who were not thus exposed. More significant is the recognition of lesions of the tracheo-bronchial lymph nodes, although anatomical study (Fig. 5 from the lungs of a youth who had been in contact with open tuberculosis) shows that they invariably accompany focal pulmonary lesions. They are seldom recognizable in x ray films unless they have attained considerable size. Tuberculosis of tracheo-bronchial lymph nodes was found in 23 per cent of children in contact with open tuberculosis, and in only 4.5 per cent of children of non-contact families. The average duration of contact with open tuberculosis when tuberculosis of tracheo-bronchial lymph nodes is recognized has been four years and five months and the lesion is seldom found in those who have been exposed during a period of less than two years.

Of greater import is the occurrence of latent apical tuberculosis in adolescent children. At the time of our report one year ago this lesion was found in 16 per cent of our children of families with open tuberculosis, but subsequently the incidence has increased to 32 per cent. Latent apical disease has not been found in children of non-contact families. Among those in whom latent apical tuberculosis has made its appearance including adolescent children and adults the average duration of contact has been even years and 11 months but this is evidently no the minimal period of contact required to produce the lesion.

Parallel with the frequent occurrence of such latent lesions of tuberculosis in families with open tuberculosis there is high incidence of clinically manifest tuberculosis with symptoms and physical signs. In the group of contact families 9 per cent of children among those examined

had manifest tuberculosis. No manifest disease has appeared in the non-contact families.

This study has shown that the usual method of sputum examination reported at short intervals is an effective means of measuring the danger to which is infected individual subjects his family. The frequency of tuberculin reactions of lesions recognized by x ray examination and of clinically manifest disease was much lower in families in which a member suffered from pulmonary tuberculosis but had no tubercle bacilli in his sputum than in families exposed to open tuberculosis and was only slightly greater than in those having no contact with the disease. There was another group of families in which some members had symptoms and other evidence suggesting tuberculosis. In these families with suspected tuberculosis the incidence of infection was not materially greater than in non-contact families.

Isolated nodules recognized in the peripheral lung field in most instances represent well circumscribed infections and have little clinical significance. Although they indicate that tuberculous infection has occurred and his doubtless conferred some degree of immunity upon the child they do not exclude the possibility of progressive disease or of reinfection.

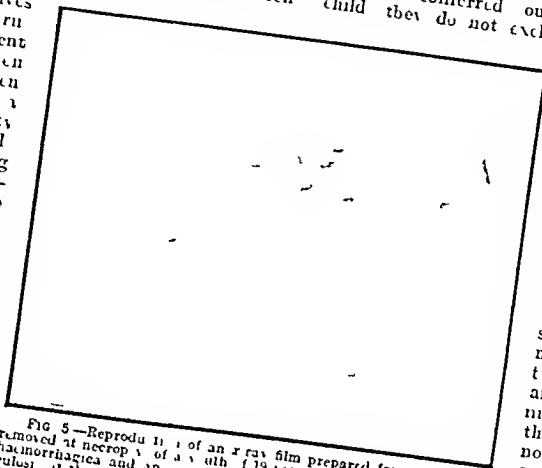


FIG. 5.—Reproduction of an x ray film prepared from the lung removed at necropsy of a youth (19 years) who died with purpura fulminans and an enlarged tracheo-bronchial lymph node. The diameter of the area of necrosis (Fig. 5) is 1.5 cm. (the figure) and there were 1.5 cm. of the right lung (referred to in the text) at the hilum of the lung. A right lymph node containing calcified tubercle bacilli was lymphoid in character and placed in the bifurcation of the trachea. The calcified material (Fig. 5) was partly calcified and encysted and it was partly calcified.

with few exceptions are recognizable only when calcification has been deposited within the caseous material. It has been claimed that the lesions of bronchial lymph nodes are never visible except when they are calcified and completely healed and no longer a source of danger. This view is certainly incorrect. When there is impregnation with calcium salts scarcely sufficient to increase the consistency of caseous material, a lesion which is arrested and calcified in one part may be progressive in another. Figure 6 represents the lung of a child there are in one part nodules of lungs and in another part progressive caseous lesion (c d) which have produced death by general dissemination. It is probable that the two kinds of lesions since they occur in a child 12 years of age began at approximately the same time. Figure 7 represents the lungs of a child 9 months of age with caseous and calcified foci in the lungs and bronchial lymph nodes. Death occurred with disseminated tuberculosis and tuberculous meningitis.

Although I believe that recognizable lesions of the tracheo-bronchial lymph nodes in many cases indicate disturbance of the local and local complications that they should be regarded with grave concern especially when they appear during the first decade of the beginning of the second decade of life. This opinion is

### Tuberculosis of Tracheo-bronchial Lymph Nodes

Tuberculosis of the tracheo-bronchial lymph nodes is recognized by clearly defined oval granular shadows in contact with the larger bronchial trunks at the hilum of the lung or in immediate contact with the trachea and often below the bifurcation (Fig. 4). Accentuation of the hilum shadow or thickening of the mediastinum is seldom due to tuberculosis of lymph nodes and does not aid in the recognition of the disease. Lesions of the tracheo-bronchial lymph nodes often attain considerable size and in such instances indicate that infection is advanced. Occasionally very large groups of caseous lymph nodes are well defined in x ray plates, in comparison with x ray films prepared from lung removed at autopsy shows that tuberculous lesion of lymph nodes



## SECTION OF TUBERCULOSIS

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based upon the frequent coexistence of tuberculosis of the tracheo-bronchial lymph nodes and clinically manifest lesions of the lungs in children of families exposed to open tuberculosis, and the development of manifest tuberculosis in another group of children in whom tuberculosis of the tracheo-bronchial lymph nodes has been recognized. All of our children who exhibit this lesion have been placed

signs are at times astonishing. The anatomical characters of apical lesions depicted in x-ray plates when associated with clinical evidence of the disease do not differ from lesions with which there have been slightly elevated tempera-

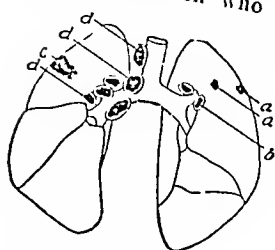


FIG 6

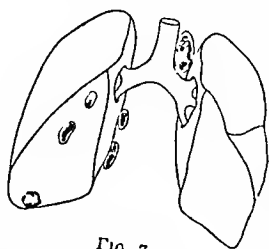


FIG 7

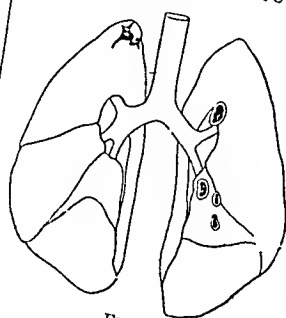


FIG 9

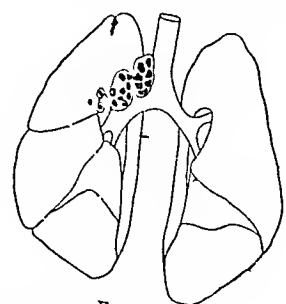


FIG 10

FIG 6.—Diagram of lungs with caseous calcified lymph nodes in one lung (b) and with progressive caseous lesions in the other (c, d) in a child 2 years of age. In the left lung there were two small caseous encapsulated nodules at the hilum of the lung, nearby there was a lymph node replaced in great part by a tuberculous lesion with caseous partly calcified centre and fibrous capsule. In the right upper lobe below the pleura there was a wedge-shaped area of consolidation, the adjacent lymph nodes were much enlarged and caseous. Death occurred as the result of tuberculous meningitis.

FIG 7.—Diagram showing encapsulated tuberculous foci in lungs and lymph nodes with tuberculous meningitis in a child aged 9 months. At the base of the left lower lobe (posterior view in diagram) there was a caseous encapsulated focus impregnated with caseum so that opaque spots were seen in an x-ray plate of the excised lung, though the caseous material was soft. At the hilum of the lobe there were lymph nodes with lesions of the same character. On the right of the trachea there was a large lymph node replaced in great part by caseous material surrounded by fibrous tissue.

FIG 9.—Diagram showing the distribution of lesions shown in Fig 8 (in which right and left are reversed). FIG 10.—Diagram showing fibrous scar of apex and advanced calcified tuberculous lesions of tracheo-bronchial lymph nodes in a girl aged 13. Death occurred as the result of typhoid fever. At the right apex extending inward from the puckered pleura there was a thick fibrous scar 2.5 cm in length. In the substance of the right upper lobe there was a nodule 0.5 cm in diameter with caseous, partly calcified centre and fibrous capsule. In the lung substance near the hilum of the lobe were two small lymph nodes which contained caseous partly calcified and encapsulated nodules. At the hilum of the lobe was a large lymphoid mass studded with caseous and calcified nodules, and a similar mass was wedged between the inner surface of the right upper lobe and the trachea. The spleen contained encapsulated tubercles from 1 to 2 mm in diameter, with caseous and calcified centres.

so far as possible under conditions which are known to retard the progress of tuberculosis when it is manifested by symptoms and physical signs. Effort is made to avoid malnutrition and fatigue. I feel sure that measures which are effective in retarding the progress of clinically manifest tuberculosis will in most instances prevent the transformation of latent infection into evident disease.

The presence of soft shadows in the peripheral lung fields is recognizable in x-ray plates of the chest is often difficult to interpret, and introduces a consideration of the diagnosis of pulmonary tuberculosis in children. They are at times unrecomplicated by symptoms or physical signs. The following criteria indicate that these soft shadows are the result of tuberculous infiltration: (1) occurrence in a child in contact with tuberculosis, (2) an active tuberculin reaction (with 0.01 mg of old tuberculin), (3) association with lesions of adjacent lymph nodes recognizable in the x-ray plates.

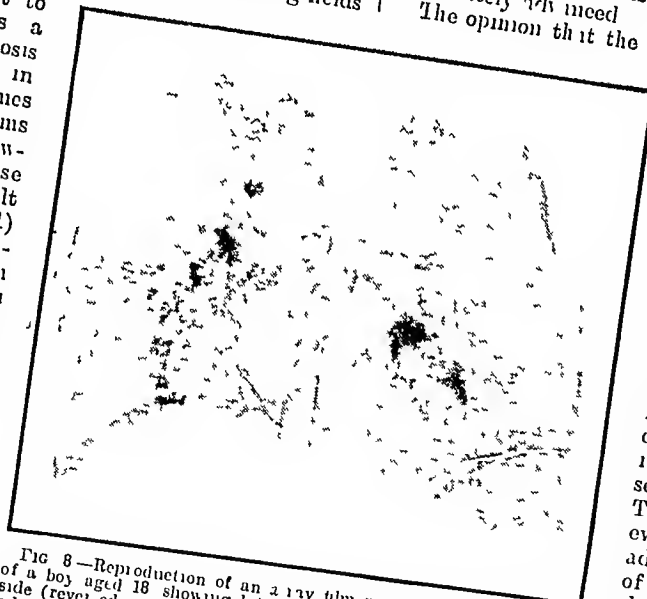


FIG 8.—Reproduction of an x-ray film prepared from the lungs of a boy aged 18 showing latent apical tuberculosis on the right side (reversed in the figure) and calcified nodules in the lung and adjacent lymph nodes on the left side. Death occurred as the result of peritonitis following laparotomy. At the right apex in continuity with the puckered pleura there was fibrous and caseous tissue forming a mass 3 cm across. In the left upper lobe there was a small calcified nodule and larger firmly calcified nodules in lymph nodes at the hilum of the lobe. In the substance of the left lower lobe and in adjacent lymph nodes there were similar lesions.

time, cough, and rales heard over the affected apex. During the relatively short period of our observations—months, from years—we have had opportunities of following the transition from latent apical disease to advanced tuberculosis with loss of weight, cavity formation, and appearance of tubercle bacilli in the sputum. It is noteworthy that adolescent children with latent apical lesions may be well nourished and in good health. Loss of weight does not usually make its appearance until the disease is moderately advanced. The opinion that the tuberculosis of adults has its origin in childhood has long been maintained and is still widely held. Von Behring claimed that all tuberculosis had its origin in early infancy, but most of those who think that phthisis does not originate in adult life believe that it is the continuation of an infection acquired at any time during the period when focal lesions are making their appearance in lungs and bronchial lymph nodes. Nevertheless, it may be noted that few of those who discuss the subject define the relation of these lesions to subsequent apical disease in adults. There is, as I have shown, no evidence that tuberculosis of adult life is the continuation of the first infection of childhood. Nevertheless, it is evident that latent apical tuberculosis of older children may gradually develop into phthisis of early adult life. The transition may be followed by means of radiological examinations.

Latent apical lesions of adolescents which have all of the characters of infection are in a considerable number of instances associated with advanced tuberculous tracheo-bronchial lesions. These massive tracheo-bronchial lesions accompanied by latent apical tuberculosis with few exceptions occur in children who have been exposed to intimate contact with open tuberculosis for several years, and apical

## Latent Apical Tuberculosis of Adolescent Children

Latent apical tuberculosis is encountered with increasing frequency as age increases during the second decade of life, and is evidently in many instances the precursor of phthisis of early adult life. Examination of adolescent children of families in contact with open tuberculosis has revealed almost all of our cases of latent apical disease, but in a few instances it has been discovered in others. It occurs only when contact with open tuberculosis has been long continued. In x-ray plates it is recognizable as a mottled shadow in one or the other apex, evident in the second interspace, and extending into the third and even into the fourth interspace. The extent and density of lesions which are unaccompanied by symptoms and physical

disease is superimposed upon the first infection because resulting immunity is an ineffective protection against tubercle bacilli in vast numbers.

#### Conclusions

Latent tuberculous lesions of the lungs and tracheo-bronchial lymph nodes are revealed by radiological examination and when they are accompanied by an active tuberculous reaction it may be assumed that they are not dormant or healed. These lesions well known to pathologists may have grave clinical significance. They are not infrequently the source of tuberculosis of meninges, bone, genito-urinary system, adrenals and other organs, they may produce clinically recognizable pulmonary tuberculosis of the type of childhood, or, as in index or exposure to tuberculous infection, may be followed by the adult type of pulmonary disease.

Latent tuberculosis of the tracheo-bronchial lymph nodes or young children and latent typical tuberculosis of children during the second decade of life indicate the presence of grave infection and may forewarn against clinically manifest disease. These latent lesions appear with great frequency in families exposed to open tuberculosis. All members of families in contact with tuberculosis should be given repeated tuberculin tests and radiological examinations even though they appear to be in good health. When these examinations reveal grave latent disease the well known measures directed to retard the progress of tuberculosis will prevent the development of manifest disease.

Tuberculous infection in childhood increases resistance to the disease but is at the same time a source of danger. Recognition and control of latent infection are effective means of preventing tuberculosis.

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#### DISCUSSION

Dr R. G. CANT (London) said that the question of the primary tuberculous focus in the lung in childhood had not received much attention in this country. He had reported in the *Quarterly Journal of Medicine* (1919) 84 consecutive post-mortem examinations on children under 10, 16 were tuberculous, and of these 10 had shown the primary lung focus. Further experience had convinced him that Guon's theory of the relation of primary focus and glandular infection was tenable. He showed diagrams of the scheme of lymphatic drainage from the lung, and said it was possible to predict from the glands infected in a particular case the position of the primary focus in the lung. He supported this by diagrams of three cases. He believed it could be proved that the mediastinal glands were secondary to the lung focus, since while there was a lung focus there were tuberculous glands in the corresponding mediastinum and where the mediastinal glands were tuberculous a tuberculous focus was present in the lung. Moreover anatomical study had shown those glands to be tuberculous which would be expected to be so affected if the lung focus was primary. The changes in the glands never appeared older than those in the lung focus. He thought it was also proved that the lung focus was not secondary to one elsewhere in the body. In the majority of cases showing a lung infection no focus could be found outside the thorax. In most cases with a focus outside the thorax there was no lung lesion. If the lung infection was secondary to some other infection—as, for example, in the abdomen—the type of tubercle bacilli would be bovine, tuberculous foci in the lung yielded the human type of bacillus. The human bacillus had no predilection for lung tissue, feeding experiments had shown that the lesions produced by human and

bovine bacilli were the same, the greatest concentration of infection being abdominal. This point had an interesting confirmation in the work of Scott in Hong Kong. In conclusion Dr Cant showed, for Dr Hadfield of Bristol, five museum specimens from five consecutive cases of children dying of tuberculosis in which Dr Hadfield had been able to demonstrate the primary lung focus.

Dr P. T. ARMAND-DEILLE (Paris) said that, contrary to general opinion tuberculosis in children was found in the varied adult types. Most valuable information was to be obtained from comparing lung shadows and autopsy findings. He described his technique for the study of lungs post mortem in their proper relative positions and showed how it was possible thus to find every important lesion and compare it with x-ray shadows. Investigation on the lines might reveal one of two conditions—tuberculosis apparently limited to the tracheo-bronchial glands, or associated with different forms of lung tuberculosis. In nearly every case careful examination indicated the primary lung lesions. These might be (1) diffuse miliary tuberculosis in its various forms, (2) localized lesions, usually broncho-pneumonic lobar infiltrations, (3) unilateral lesions of a whole lung and (4) bilateral terminal lesions. His experience had convinced him that normal lungs showed x-ray hilum shadows which bore no relation to enlarged bronchial glands. Even when the glands became enormous caseous tumours their shadows might be lost in the larger shadow of the cardio-vascular apparatus. Post-mortem findings were gradually aiding in the interpretation of lung shadows from a prognostic point of view, it was possible to correlate progressive modification in the character of shadows with analogous anatomical evolution. Tuberculous bronchial gland tumours frequently occurred in the middle of the mediastinum where their shadows could but rarely be observed because they were usually masked by the cardio-vascular apparatus. So-called 'petitular shadows' were not produced by the glands. The primary focus was seldom detectable in the x-ray picture as it was often localized at the opposite pulmonary base behind the shadow of the heart, liver, stomach, or spleen. In lung lesions a study of well taken plates might reveal miliary tuberculosis before the characteristic signs and symptoms had appeared. It was difficult from x-rays alone to arrive at the accurate diagnosis of the type of pathological lesion present. A series of x-ray photographs during treatment showed progressively disappearing shadows while tubercle bacilli were still found in the sputum. Dr Armand-Deille illustrated his remarks with many beautiful slides of sections and comparative x-ray plates.

#### VOMITING AFTER OPERATIONS ON THE STOMACH

BY

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VOMITING coming on within a day or two of an operation on the stomach whether a gastro-jejunotomy, partial resection or other surgical procedure is not uncommon and may be serious or even fatal. In some cases it is merely due to the anaesthetic or to blood in the stomach. In that event it is likely soon to cease. Repeated vomiting that persists for days and puts the patient in danger, may be due to one of the following causes:

1. **Vicious Circle**—Years ago this was frequent and often fatal nowadays in good hands it is seldom seen. It is due of course to a bad lie or the efferent loop or jejunum the afferent loop may have been too long or the efferent loop may fall away from the opening in the stomach so sharply that the duodenal contents re-enter the stomach and cannot find a way out. The vomit is copious and contains abundant bile. Prevention as such is only necessary to use a short afferent loop or jejunum in the operation of gastro-jejunotomy and to insert a suture, after completing the anastomosis to anchor the efferent loop to the transverse mesocolon in such or two to the

right of the hole in the mesocolon, and this complication will not be seen.

**2 Infection of the Suture Line**—Several French surgeons maintain that vomiting beginning a couple of days after the operation may be due to infection of the peritoneum around the suture line. It is quite possible that this may be true, but I have no recollection of seeing it.

**3 Adhesion of the Suture Line**—I am persuaded that the commonest cause of persistent and sometimes dangerous vomiting after gastric operations is a sticking together of the anterior and posterior suture lines in the mucosa. Of course, a careless surgeon may actually sew them together, but my rate is a point or two, but apart from this gross technical error it is possible for the cut edges to adhere. If this occurs there is no copious and persistent vomiting, which differs from that of vicious circle in that no bile is brought up. The chyme cannot enter the stomach, and the gastric contents cannot leave it. I first learnt of this danger after performing gastro-jejunostomy for pyloric ulcer.

The patient a woman, vomited about twice a day for three days, bringing up all she took and much gastric juice besides, but no bile. I reopened the abdomen, and found the stomach very large and tense but the jejunum empty. On opening the jejunum and inserting a finger it was perfectly plain that the anterior and posterior edges of the anastomosis had stuck together. It required some little force to separate them, but they were not bridged by a stitch. After various other complications she recovered.

A few weeks later a patient with cancer, on whom I had performed a partial resection by the Polya technique, began to vomit the day after operation, and brought up all she was given and much gastric juice besides, for three days. I reopened, and found a huge tumor in the distended stomach and an empty jejunum. Here also exploration with a finger inside showed that the suture line had adhered badly, but there was no stitch bridging it. She died.

These two cases brought to my mind other patients at an earlier date, who gave me great anxiety for a few days by persistent vomiting, which then stopped. It is quite likely, of course, that sufficient pressure might be developed in the stomach to force the passage, in fact, in both my cases the stomach was extraordinarily tense. If that happened the condition would be relieved.

In my opinion, then, adherence of the suture line is a not uncommon, and potentially very serious, complication of gastric surgery. Fortunately it is easily prevented. Ever since the experience related above I have inserted a piece of corrugated rubber dam, a little larger than a postage stamp, within the lumen of the anastomosis, fixing it by a fine catgut stitch to the mucosa of the stomach so as to overlap the suture line and point the way to the efficient loop of jejunum. I have had no trouble with vomiting after stomach operations since adopting this device. If it be objected that one has to take the clamps off before completing the interior suture line, in order to insert the piece of dam, the reply is that that ought to be done in any case to make certain that there is no bleeding. Intestinal anastomoses can be made safe and pervious by the same device.

## THE ETIOLOGY AND TREATMENT OF PSORIASIS

BY  
J. H. HEANEY, M.D.

The baffling nature of the cause of psoriasis is illustrated by the fact that one dermatologist has even called in the aid of embryology to show in analogy with the scales of lizards. He suggests that psoriasis is a "hark back" defence against cold, since it occurs almost invariably on the elbows and knees, which are the most thinly protected.

The most obvious proposition is that psoriasis is a parasitic disease, but there is no cultural or microscopic confirmation of this. The circumstantial evidence consists in (1) well authenticated cases of direct infection, (2) the marginal method of extension, (3) an observed connexion with osteoarthritis, (4) the fact that psoriasis resembles rheumatism in seasonal incidence and tendency to remission, and (5) the curative action of parasitocidal medicaments.

There can be no doubt that poison attacks the skin by way of the blood stream, just as it appears certain that

seborrhoea, in the beginning at least, is a more or less widely spread local infection connected with the bottle bacillus, and later associated with certain cocci. Confirmation of this is afforded by the sudden outbursts of activity in old-standing cases, by the symmetrical distribution of the lesions in acute cases, and by acute forms accompanied by asthma and headache, the last named suggesting sensitization. The evidence adduced in favour of other causes is so unconvincing that it might almost be cited in favour of the parasitic theory.

It has been suggested that psoriasis is a stage of seborrhoeic dermatitis, and the case of a patient, now aged 50, who has been under observation for some years will illustrate what is meant. The disease began as a profuse dandruff in early youth, later greasy scaly patches appeared, and still later dry patches on the scalp, followed by dry "spots" here and there on the body. Dry patches subsequently developed on the elbows and lumbar region, and still later extensive dry scaly patches on both shins. This, with two acute attacks of "spots" on the face and hands, extended over the age period 14 to 50. There is now baldness of the seborrhoeic character and very little dandruff, a psoriatic patch on the lumbar region, some involvement over the elbows and shins, and a few patches more truly seborrhoeic in type here and there on the body.

Beginning on the head and extending downwards, this is a classical case of seborrhoea, but if the history and the uppermost lesions are ignored there remains a typical psoriasis of the back, elbows, and shins, extending upwards or not at all. Some say that the two diseases may coexist. At first sight the view that psoriasis is a stage of seborrhoea appears temptingly obvious. What more likely than that a seborrhoeic dermatitis is the forerunner of psoriasis, sometimes in the same subject, as possibly in the case described, or that a seborrhoeic ancestor may have descendants with bald heads and a typical psoriasis beginning below? It is not disputed that a tendency to baldness is hereditary, and it is generally conceded that there is a predisposing disposition to psoriasis.

If it be taken for granted, then, that one of the factors in seborrhoea becomes "fixed" in the blood, and later may cause a psoriasis, which is it? The vegetable parasites to which the bottle bacillus belongs do not usually, if ever, set up blood sties, but the cocci do. Moreover, a vaccine of the bottle bacilli has no effect on psoriasis. On the other hand, chrysarobin has a special lethal effect on vegetable parasites and an almost specific action on psoriasis. Used locally in various strengths it is stimulant or irritant, it may stimulate growth of hair or cause a dermatitis. It has a special action on primitive vegetable organisms, and kills the spores of ringworm. Two local actions stand out therapeutically, the stimulant and the parasitocidal. Recently a patient with chronic psoriasis came under observation. The eruption was almost universal, and the irritation and fall of scales were such that it was feared chrysarobin might precipitate a pityriasis rubra. No treatment had any effect until chrysarobin was prescribed. It is difficult to think of a stimulant effect here. There remains the parasitocidal action and the further possible effect of absorption into the blood stream.

Whitla wrote forty years ago that chrysarobin ointment rubbed into one side of the body alone cured the lesions on the opposite side, such an event could only happen through the agency of the blood. How does chrysarobin act in the blood—directly, as silver does, or indirectly? If indirectly, it is possible that, since chrysarobin taken by the mouth induces a rise of temperature, it might give rise to a copula and complement of its own. The complement, not being specific, might unite with the copula of the disease—another instance of complement deviation—and in that way, or partly in that way, might effect a cure. This would presume a previous deficiency of complement in the blood. Apart from psoriasis, if it were found that chrysarobin was a ready and efficient means of producing complement, its use might become greatly extended.

On the other hand, chrysarobin may act directly on the "poison" both in the blood and in the skin lesions. It is found that the typically seborrhoeic lesions respond better to mercury and tar, but that the dry and more

chronic ones require chrysarobin. This would point to the presence of a particularly obstinate descending of the bottle bacillus in these lesions, and to the predominance of the bottle bacillus in it. And the special cocci in the more scabrous lesion. In conditions due to the bottle bacillus, such as dandruff nothing answers better than chrysarobin in weak strength, but where there is a combination of the bacilli and cocci as in the scaly, greasy form, chrysarobin shows only irritative properties and does harm, mercury and tar being much more efficient.

For use in the case described above a 0.2 per cent colloidal solution of chrysarobin was made by Messrs Crookes with a view to intravenous use, it is not stable in strong solutions at present. Quick progress in so chronic a case is not to be expected but the results are far better than any hitherto obtained. A daily dose of 30 drops in water one hour after dinner is being given by the month and the solution is well rubbed into the lesions night and morning with a pledget of cotton wool. The scales are not previously removed they seem to become partly absorbed where healing is occurring. This solution is the best I have yet tried for dandruff and seems to promise a permanent cure after short use. It does not discolour the hair, but rather gives it a gloss.

It might be concluded then on observed facts and the result of treatment—principally the differing actions of chrysarobin—that scabrous is the forerunner of psoriasis. Just as we find a gouty joint in the thin rhaemic descending of a ruddy and gouty ancestor so psoriasis may occur in the classically accepted form without concomitant sign of its scabrous ancestor. What has been said about treatment was in the first place intended to clarify the etiology but seems of some importance in itself. Thus the suggested intravenous injections in properly calculated doses might effect a permanent cure of even the most inveterate psoriasis.

It may be added that in the case of seborrhoea recorded acute gout developed at the age of 36, but the two diseases showed no other common factor except the general good health of the subject.

## DIRECT OBSERVATION OF THE CIRCULATION IN THE LIVING LIVER

BY

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Using one quarter to half sized toads (pithed) I have been able by living a lobe of the liver on a sheet of glass on the microscope stage to observe the circulation of the blood in the liver sinusoids and branches of the hepatic vein under a low power. No coverglass is required and no solution of any sort is put in contact with the liver. The liver cells are clearly seen and the course of the blood flowing in the sinusoids (capillaries) can be accurately followed.

The liver circulation is now open to direct observation. Some years ago Leonard Hill greatly extended the microscopic study of the living tissue by his observation of the circulation in the glomerulus of the kidney and the principle guiding me was the belief that organs apparently too thick for direct observation under the microscope in the adult might not prove so if the observation was made at an earlier stage of growth.

I have noted several times that a pulse may be apparent in the liver sinusoids and in branches of the hepatic veins. It appears to be a pulse of arterial blood current due to the contraction of the auricle. It will be easily understood that the blood flows from the liver through auricle into ventricle during diastole of the auricle and ventricle and when the auricle contracts there is a retardation of the blood current in the liver sinusoids and hepatic veins.

Hence the description given by Sir James Mackenzie in his treatise on the heart is confirmed in great part. If the auricle is able to contract the pulsation in the liver sinusoids and hepatic veins is auricular in time—that is the a wave of the liver pulse is more or less synchronous with the a wave in the jugular pulse. If

the auricle fibrillates and no proper contraction occurs it acts as a passive receiving chamber, and the a wave of the ventricle becomes the retarding agent on the circulation in the liver sinusoids and hepatic veins. Or cause this retardation of blood current would be propagated to some extent to the portal vein and to the hepatic artery. Hence the pulse described in the portal vein must have, as one of its factors of origin, this retardation.

Mackenzie believed at one time that the auricle would have to be hypertrophied to produce an auricular form of liver pulse. He also believed an auricular form of liver pulse was a sign of tricuspid stenosis. Latterly he has stated in his treatise found cases of auricular liver pulse with no stenosis of the tricuspid valves. Drs. Turnbull and Weil described such a case.

It will be seen from the foregoing observations that an auricular form of pulse must exist in the liver because the pulse is created in great part simply by retardation and arrest of the blood flow out of the liver. On systole of the auricle the liver swells as the blood flow is arrested because blood is continuously coming to it by the hepatic artery and the portal vein. The demonstration of that pulse is a matter of technique. It would be easier to demonstrate with swelling of the liver sinusoids in cardiac disease and enlargement of the organ. It would not require any hypertrophy of the auricle or tricuspid stenosis to be present. The auricle not only distends the liver—it dams the outflow. Of course regurgitation or blood into the hepatic veins would add to some extent to the distension of the liver.

It is obvious that the shock of retardation of blood flow falls in great part on the liver cells. This shock is greatly increased when the auricle is practically non-contracting and the ventricle in its systole regurgitates blood through the auricle to the inferior vena cava. The blood pressure in the liver sinusoids must rise and pulsation with increased capillary pressure is always damaging to cell life. It is apparent in bedsores where the capillary pressure in the area of contact with the bed is raised by the compression of the venous outlets towards the valve or the pressure in the entering arteries. Increased pressure in the capillaries with pulsating shock is disintegrative of cell life.

In the cardiac liver Sims Woodhead notes (*Practical Pathology* p. 253)

that the central or hepatic vein is considerably dilated and the lobules are distinguished more readily than in the normal liver. The capillaries leading to the central opening are also dilated. The liver cells between the dilated capillaries are atrophied, etc. Later the liver cells may have disappeared from the immediate neighbourhood of the central vein.

It will be noted from this description that the pathology follows physiological findings. The pulse of retardation (auricular form normally present) when exaggerated falls first on the hepatic veins and the liver sinusoids that feed them. Similarly with the ventricular form or pulse of retardation.

But the liver pulse differs from any other form of pulse in that it has three components.

A The retardation of blood flow by the shutting off at the wave of the blood stream through contraction of the auricle.

B Where the auricle is passive as a shuttering agent the ventricular systole acts similarly. In both A and B some blood may be driven back into the hepatic veins but more in the case of B.

C While A or B in operation the liver swells through the entry of fresh blood by the portal vein and hepatic artery.

Consequently the fall in the liver pulse tracing is due to blood flowing unimpeded out of the liver.

This method of direct microscopical investigation of the liver will lead to further results. The pressure in the liver sinusoids will be measured and light thrown on the problem of the formation of liver lymph. The reactions of liver sinusoids (capillaries) to various stimuli etc. are now open to investigation. The question of nerve stimulation and its effects on the liver will no doubt be finally submitted to direct visual examination, and perhaps in the future micro-chemical reactions in the living animal may reveal something of the working of the liver.

I am indebted to the Medical Research Council for the loan of apparatus.

THE CLINICAL VALUE OF ANDREWES'S DIAZO  
TEST IN RENAL INEFFICIENCY.

BY

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AND

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In 1924 C. H. Andrewes<sup>1</sup> described an unexplained diazo colour reaction which he found only in uraemic serums. He was working on van den Bergh's test, and noted this peculiar colour reaction incidentally. His procedure was as follows:

To one volume of serum two volumes of alcohol were added. The mixture was centrifuged and the alcoholic supernatant layer removed. To four volumes of this alcoholic extract were added two volumes of alcohol and one volume of freshly prepared diazo reagent, as in van den Bergh's test. In a narrow tube the mixture slowly developed a brown buff colour. It was often necessary to let this mixture stand for twenty-four hours at room temperature to obtain full colour development. At the end of this time an addition of a slight excess of strong soda solution (10 to 40 per cent) produced a cherry red colour. This latter was the characteristic part of the test. The colour was fleeting. It lasted for a few seconds up to half an hour or so, depending on the concentration of the unknown substance responsible for the colour.

Andrewes obtained a positive reaction in eight cases of uraemia with blood ureas ranging from 220 to 650 mg. per 100 c.c.m. Five other cases of nephritis with blood ureas of 40 to 275 mg. gave negative reactions. Twenty-two other patients suffering from various diseases gave negative reactions. Normal serums were negative (Tables I and II). Andrewes made a number of experiments to try to discover the cause of his reaction. He excluded urea, uric acid, creatinine, and proteins. Normal urine, he stated, did not give the reaction. In only one out of three instances in which the cerebro-spinal fluid was examined was a positive reaction obtained, and in this there was slight contamination with blood. In three rabbits with blood ureas of 100 to 300 mg. per 100 c.c.m. the reaction was negative. Two of these had experimental nephritis.

L. F. Hewitt<sup>2</sup> confirmed Andrewes's work. He found the reaction limited to uraemia. He simplified the method as follows:

After adding the diazo reagent to the alcoholic extract of serum or plasma the mixture was boiled thoroughly for about half a minute. The maximum brown buff colour was thus obtained in a few seconds instead of twenty-four hours. The soda was added at once while the solution was still hot. The reaction has become very simple and a serviceable clinical test.

Hewitt's tentative suggestion, after performing a large number of chemical experiments to ascertain the cause of the reaction, was that a cyclic amine such as histamine or tyramine might be responsible. Contrary to Andrewes's experience, Hewitt found that alcoholic extracts of urines sometimes gave a reaction which appeared very similar to that in the blood. He noted negative reactions in two infants with uraemia and high blood ureas. In each of these cases there was hyperbilirubinaemia instead of the

H. C. Canda confirmed the value of Andrewes's reaction in patients with marked retention of waste products due to kidney damage. He found positive reactions before the blood creatinine reached 5 mg. per 100 c.c.m. One of his cases with an initial positive reaction recovered. He suggested that defective elimination was probably not the only factor responsible for the reaction. Becher<sup>3</sup> in Germany published a paper on the diazo reaction in alkaline solution shortly after Andrewes, but his technique was essentially different from that of Andrewes, and from our own work. We are satisfied that Becher's reaction could not have been given by the substance responsible for Andrewes's reaction.

Blotner and Fitz<sup>4</sup> in the United States of America obtained positive reactions in cases with much lower blood

ureas than has been experienced by other workers (Tables I and II). They made the following additional points:

(a) The reaction was of prognostic value in clinical work. A high blood urea was not so significant when accompanied by a negative, as when accompanied by a positive, reaction. The test was of value in differentiating renal coma from other types of coma.

(b) The reaction was positive in two nephrectomized rabbits one or two days after removal of the kidneys.

(c) A dog was nephrectomized, and when Andrewes's reaction was positive an extract of about 33 c.c.m. serum was made, partially purified, dissolved in physiological saline, and injected intravenously into a rabbit. The rabbit showed no toxic symptoms.

(d) The ascitic fluid of a human patient gave a positive reaction. The cerebro-spinal fluid did not.

The following tables summarize most of the findings of the above workers, and include our own subsequent work.

TABLE I—Andrewes's Reaction in Plasma or Serum

Author	Reaction Positive	Reaction Negative
Andrewes 1924	8 uraemics	5 nephritics 22 miscellaneous diseases 2 rabbits with nephritis Normal human serums
Hewitt 1925	12 uraemics	Many miscellaneous diseases in children 2 uraemic infants with hyperbilirubinaemia
Rabinowitch 1925	8 uraemics	Many miscellaneous diseases 4 cases of typhoid 12 cases of arterial sclerosis or nephritis
Blotner and Fitz 1927	35 cases with marked renal insufficiency 2 nephrectomized rabbits 1 nephrectomized dog	Several hundreds of cases with miscellaneous diseases 170 cardio-renal cases
Harrison	13 uraemics	17 kidneys diseases 25 miscellaneous diseases 4 normal
Hewitt	22 uraemics	18 kidney diseases Many miscellaneous diseases in adults
	Total 93 human cases	

We may conclude from Table I that in all probability the reaction is confined to uraemia, or at any rate to severe renal inefficiency. A negative reaction, however, does not absolutely exclude the diagnosis of uraemia.

TABLE II—Relation of Andrewes's Reaction to Urea Retention

Author	Positive Diazo			Negative Diazo		
	Cases	Blood Urea mg per 100 c.c.m.		Cases	Blood Urea mg per 100 c.c.m.	
		Max	Min		Max	Min
Andrewes, 1924	8	650	220	5 rabbits	275 100	40 100
Hewitt, 1925	12	692	240	—	—	—
Rabinowitch 1925	8	450	152	12	225	33
Blotner and Fitz 1927	7	107	60			
	8	171	103			
	10	223	172			
	7	321	224			
	4	536	322			
	36	536	60			
	2 rabbits	725	311			
Harrison	13	633	154	34	370	22
Hewitt	22	725	114	18	300	50

The results in Table II confirm Andrewes's conclusion that nitrogenous retention always accompanies retention of the substance responsible for his reaction, but that urea retention and his reaction do not run strictly in parallel. We have noted that the reaction is not confined to any one of the different clinical types of uraemia. In general the reaction becomes more marked as the uraemia becomes more severe clinically. The following findings in one case are given in illustration (Table III).

\* A report to the Medical Research Council.

† Working under the auspices of the Freedom Research Fund.



TABLE III

Date	Clinical Notes	Andrews Reaction	Effect of 100 c.c. of 10% NaCl
July 11 1925	La Colle	At a time	141
August 16th 1925	—	At a time	117
October 6th 1925	First convulsion on October 1st	At a time	1.3
December 1st 1925	Second convulsion on December 1st	At a time	212

TABLE IV — Findings in Cerebrospinal Fluid in Andrew's Case  
Perfection is 1.5 in 100 c.c.

Author	Andrews Reaction Positive No. of Cases	Andrews Reaction Negative No. of Cases
Andrews 1925	1	2
Harris 1925	0	1
Brown and Fitz 1927	0	1
Harris	0	2
Harris	0	3
In a case of F and Bloch and Fitz 1927	1	0

It appears probable that the substance responsible for Andrews' reaction does not pass into the cerebro-spinal fluid. It seems to have come into the cerebro-spinal fluid in the point has been tested. In this connection we would add that we have been unable to obtain a positive reaction with an alcoholic extract of the corpuscles separated from serum which give strongly positive Andrews' reactions. The substance responsible for the reaction therefore probably does not diffuse into the red corpuscles or only to a slight degree.

In a paper one of us (L. F. H.) published in 1925, it was noted that in two cases of uraemia in infants with megaloblastic reactions there was hyperbilirubinaemia in the blood. In the usual hypobilirubinaemia we have since counteracted a third case. The patient an adult with clinically uraemic and the blood urea was 320 mg. per 100 c.c. of blood. There was in addition severe jaundice with marked hyperbilirubinaemia and bile in the urine. Andrews' reaction was however negative. We thought at first that there might be some connexion between the hyperbilirubinaemia and the negative Andrews' reactions but subsequently four cases have been encountered in which hyperbilirubinaemia was associated with positive reactions.

In conclusion Andrews' reaction is so little known that a brief outline or the simplified method may be of value.

**Simplified Method**

Reagent (identical with those used in van den Bergh's test)

**Solution A**  
Sulphanilic acid  
Concentrated hydrochloric acid  
Diluted with water

**Solution B**  
Sodium nitrate  
Diluted with water

The diazo reagent is prepared by mixing 25 c.c. of solution A with 0.75 c.c. of solution B. The mixture may be kept for at least 24 hours at room temperature without loss of sensitivity. So far as Andrews' reaction is concerned although of course the test. The mixture often turns highly yellow after keeping for a day or two but this does not matter in van den Bergh's test. Serum or oxalated plasma is obtained from the patient in the usual way. Post mortem blood from a case of uraemia in which the reaction though our impression is that the reaction obtained after death does not give so strong a reaction as the serum obtained from the same patient shortly before death. So per cent. are added. The precipitated proteins are separated by centrifuging or filtering. (A lightly improved extraction may be obtained by heating the mixture of serum and alcohol to the boiling point.) To four volumes of the filtrate one volume of the diazo reagent is added. The mixture is boiled thoroughly for half to one minute and a solution of 10 per cent. soda is added drop by drop shaking after each addition. The soda may be added immediately after the boiling.

The colour change on making alkaline with soda is the essential part of the reaction. The test should be called positive only when a definite pink or cherry red colour is seen. This pink colour is fleeting. It may last for a few seconds only and the mixture thus therefore be observed carefully whilst adding the soda. In a few very severe cases of macraemia the pink colour may persist for longer periods even up to half an hour. The test in its present form is only qualitative. We have found that the volumes recommended may be judged sufficiently well by eye without exactly measuring the sensitivity of the reaction.

On boiling the mixture or protein-free filtrate and diazo reagent a yellow brown colour always results in positive cases but a similar colour may also be obtained in negative cases. We have found that substances other than that it is possible for Andrews' reaction may give a yellow brown colour at this stage (in acid solution) but that these other substances do not yield a red colour on alkalinization.

One of us (G. A. H.) has established a clue as to the nature of the substance responsible for Andrews' reaction but the work is not so advanced as to allow of a definite statement here. It may be mentioned however that the substance is certainly present in normal urine.

**Summary**

- 1 A positive Andrews' diazo test is only found in uraemia or severe renal insufficiency. A negative reaction, however, does not exclude uraemia.
- 2 The unknown substance responsible for the reaction does not appear to pass into the cerebro-spinal fluid and is either absent from or present only in minute quantities in the red blood corpuscles. The blood of uraemics obtained post mortem often gives the reaction.
- 3 Nitrogenous retention always accompanies retention of the substance responsible for the reaction but uraemia, retention and Andrews' test do not run strictly in parallel.
- 4 An outline of the simplified method is given. It is claimed that the reaction has become a simple clinical test.

Andrews C. H. 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 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to light and accommodation. The condition of the lower extremities was similar to that already described, but very much improved.

On the twenty-third day the patient complained of pain on respiration. Nothing abnormal was found in the chest. There was a visible swelling of the abdomen and flank which gave the physical signs of fluid, as it extended from the umbilicus deep into the loin its colonic nature was dissimulated and only became evident after a copious motion. Acetone was still present in the urine in spite of large quantities of barley sugar and glucose lemonade.

The patient's subsequent progress was uneventful, and she was discharged ten days later somewhat emaciated, but able to walk. The systolic blood pressure was 105 mm. Hg. The knees and legs were still tender on the thirty-fifth day, and she had, according to the parents, attacks of drowsiness accompanied by flushing and puffiness of the face lasting about ten minutes.

The sister, M., has had no ill effects at all. Her hair had been clipped rather too short before we saw her, and to assist depilation we adopted the following plan. On the eighth day the scalp was treated with Unni's zinc gelatin and covered with a ceresine bandage. This was peeled off on the twenty-first day with very little discomfort, yielding a perfect "billiard ball." The hair in both cases has begun to grow.

Most of the symptoms described are explicable as the action of a poison on the nervous system, but the arthritis and periarthritis of the knee-joints, with which we are familiar as occurring nearly invariably to a lesser degree, seem to demand a different explanation. The constant presence of the condition seems to argue against the theory that thallium has a biotrophic influence towards some micro-organism capable of producing an arthritis.

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### FOREIGN BODY IN THE BLADDER

I was recently called to a patient, aged 29, two months pregnant who had symptoms of cystitis and pelvic inflammation which had been going on many months. On passing a metal catheter I felt a hard foreign body in the bladder, and on questioning the patient she said she could not remember ever having inserted anything, so I concluded it was a case of calculus, especially as it had a distinctly stony feel. Mr. Frank Belben operated a week later and removed a piece of wood three and a half inches long by one inch wide, partly covered with calcareous deposit, evidently a peg-label for garden plants.

About a month later, when the patient had quite recovered, I inquired when she had put the wood there, and she said she had used it to insert some pledges of lint soaked in iodine lotion which I had ordered two days before the operation on account of the inflamed state of the vagina, and did not know the wood had remained inside. The calcareous deposit, of course, proved it to have been there much longer. The urethra appeared to be quite normal in size, but she assumed me that the insertion caused no pain or difficulty. If I had not been called in till the time of confinement the case might have ended as one of purpural septicaemia of unknown origin, as I should not have suspected the presence of the foreign body then.

H. HUNTER WOODS, M.R.C.S., D.P.H.

New Milton, Hants

### CONGENITAL UNUNITED FRACTURE WITH FALSE JOINT

The rarity of congenital ununited fracture gives the following case some interest.

A child, aged 3 years, was seen by me at a welfare clinic. The history was that the child was apparently normal when born, but a day or two after birth it was noticed that the right leg was deformed. On examination at the clinic both bones of the right lower leg were found ununited, a false joint was present at the junction of the lower and middle thirds of the leg. On the anterior aspect of the joint was a bursa, and the whole appearance resembled nothing so much as a second knee. A fair amount of movement was present, and the child could get about fairly well, using the normal or abnormal "knee" at will.

It is curious to note that the child had seen but two doctors, one shortly after birth, and myself almost three years later.

EUSTACE THORP,  
Assistant M.O.H., Sunderland

### TREATMENT OF SPIRILLUM FEVER WITH STOVARSOL\*

The wide prevalence in Africa of "spirillum" or "typhoid" fever indicates the need of obtaining some simple and safe treatment which could be entrusted to the ordinary intelligent native, when he is at a distance from skilled medical help. The stovarsol series provides a more or less certain cure, but these drugs cannot be put into the hands of an untrained native. Their use is not without danger, and the necessary outfit and technique prohibit their employment outside regular medical establishments. It occurred to me that stovarsol, successful and safe in its treatment of other spirochaetal diseases, would be worthy of trial as an alternative to the arsenobenzols, accordingly a test was undertaken in the Church Missionary Society's hospital at Toro, in Uganda. The success met with so impressed me that I feel justified in publishing the result.

When first using stovarsol I continued its administration longer than was necessary, I have now decreased the length of the courses of treatment without any failure of result. The clinical details were as follows.

Seven patients were treated with stovarsol, five being Europeans and two natives. One of the Europeans had previously had intravenous injections of novarsenobillon, but the others had had no treatment. In each case the spirochaetes of spirillum fever were found in the blood. The first two patients—one a European—were given the 4 gram tablets in water, in the early morning, four tablets being administered on the first day, five on the second day, six on the third and fourth days, five on the fifth day, and six on the tenth day, no relapse followed. The next two patients were given a four-day course, the first dose being administered immediately on the first signs of fever, and not, therefore, necessarily on an empty stomach. The first dose was four tablets followed on the next day by five tablets, and on each of the two successive days by six tablets in water, no relapse followed. The other three patients received only two days' treatment, six tablets being given each day, swallowed whole, followed by water. No toxic symptoms were seen and no relapse occurred.

Though this is too small a series for a dogmatic statement to be made I have no hesitation in advising others to test this drug. In treating patients with jaundice and syphilis I have used as large a dose as nine tablets in one day without ill effects. I consider, therefore, the administration to adults of six tablets, each of 4 grams, to be perfectly safe. I gave three supplies of stovarsol to an intelligent native pastor, who reported that three patients had been cured without relapse. I feel very hopeful that a real solution has been found of the difficulty of dealing with spirillum fever in districts far from medical help. Its diagnosis by the layman will depend on the characteristic tick fever headache, compared with which the headache of concussion has been described as trivial. The pains in the long bones are also marked, but the terrible intensity of the headache, which has led to suicide in some cases, should be the symptom upon which the layman is advised to act. The medical practitioner will be able to examine blood films for spirochaetes.

A. T. SCHOFIELD, M.R.C.S., L.R.C.P.

Toro, Uganda

### Reports of Societies.

#### INSOMNIA

At the meeting of the Medical Society of London on December 12th, with Mr. H. W. CROSON in the chair, Dr. E. M. CALLENDER opened a discussion on insomnia.

Dr. Callender said that the most striking fact in normal sleep was the partial or complete loss of consciousness due to lessened activity of the brain tissue, and particularly of the cortex cerebri. The first of the special senses to go was vision, the last was hearing, and during sleep the auditory sense was the most easily excited. Respiration became deeper and slower, the blood pressure fell, the pulse frequency was lessened, and knee-jerks were lost. Normal sleep varied in intensity during the night. For the first two hours there was a rapid increase in intensity, from the third hour onwards the depth of sleep became gradually less, but there had been observed to be a second period of intensity about the sixth hour. The periodical

\*Owing to limitation of space it has been necessary to abridge Dr. Schofield's original paper.

recurrence of sleep appeared to be due to fitful nature of the vasomotor centre in the medulla brought about by its continuous activity during waking hours. Insomnia might arise from any cause which disturbed this equilibrium, it made its appearance in states of excitement, worry, emotion of any kind, pain, fever, cardiac or respiratory disease, and extremes of arterial pressure. Sometimes it arose from external causes such as the noise of traffic or the unaccustomed tactile sensations produced by lying in a strange bed. The treatment of insomnia was the remedying of the underlying cause of ill health. When there was insomnia without illness the sometimes advised patients to try going to bed an hour or two later or to alter the hour at which the last meal was taken. In the case of aged and debilitated patients the administration of hot milk or some patent food in the middle of the night might cause a resumption of sleep. It was important to attend to the type of bed and bedding, the weight of the clothes and the temperature of the room. Many kinds of pain causing insomnia were relieved by a dose or two of aspirin. The misery of dental abscess might be relieved by the application to the face of a pepper plaster—flannel soaked in brandy peppered freely on one side and tied to the face with the pepper next the skin. Insomnia in patients with hyperpnea might be relieved by a good dose of calomel which acted as a hypnotic long before it acted as an aperient. Hypnotics should be avoided if possible but sleeplessness might cause such havoc that they must be given. It was a good principle never to use them until satisfied that it was really necessary to do so.

Dr COOPER HOLMES speaking from the neurological standpoint said that although insomnia was found in many forms of organic nervous disease it was usually due to the attendant pain or discomfort. It occurred as a primary symptom however in some conditions, of which encephalitis lethargica was an example. It was in psychogenic nervous disorders that the neurologist most frequently met with insomnia. Lack of sleep was one of the most common symptoms of neurasthenia of any origin. Occasionally insomnia was met with where no organic or psychogenic factor could be found. In some of these cases inability to sleep appeared to be constitutional or hereditary. In others insomnia had become a habit the patient repining to bed convinced that he could not sleep and therefore in no proper frame of mind to ensure slumber. In neurasthenia a change of environment was often required. Most normal people slept more soundly after exercise if not too fatiguing and this held also for some of the neuroses. Of physical treatments massage was the most important. He usually ordered general massage in the late evening, at least 90 minutes after the last meal. Hot baths of en provoked sleep but occasionally made patients more restless and wakeful. Drugs should not be employed if it was possible to do without them. The danger of hypnotics if these were prescribed with reasonable care and supervision had been exaggerated though the risk of abuse in dosage and prolonged administration was probably greater in the case of neurasthenic patients. Alcohol was perhaps safer than and as effective as any of the hypnotics. A glass of beer before retiring often secured a good night's sleep but it acted only with those not accustomed to alcohol the stronger spirits should be avoided. He thought that mednal was one of the safest and most efficacious of hypnotics.

Sir MATTHEW CRAIG said that in his earlier years he thought drugs a pernicious method of treatment for sleeplessness only to be resorted to in dire necessity but he had come to revise that opinion. Sleeplessness in the young was probably more damaging than in those of later age. The general practitioner often did wrong in allowing children to go with very little sleep with the result that they had digestive and other difficulties whereas a small dose of bromide would correct these. He thought it was a mistake to use the term 'sleeping draught'. Most of the sedatives were not sleeping draughts in the true sense of the word they would not produce sleep if given by day. These preparations acted only as a sedative to the nervous system, and the sleep that followed them was natural sleep. If mednal were given only by day the

patient would probably have a quiet day and sleep at night. Bromides were very valuable in small doses, but large doses were dangerous. They furred the tongue, upset the digestion, were toxic to the skin and confused the mind. Another drug which was regarded as safe was paraldehyde but it had great disadvantages. If a patient had been without sleep and was just becoming confused it was a most valuable drug for ensuring slumber but the danger was that it was excreted through the respiratory tracts and in some persons it caused the air tubes to be filled with mucus. He had used the barbituric acid group freely for many years and had never seen any bad effects other than minor difficulties such as rashes, which might arise from personal idiosyncrasy. Sulphonal was valuable with old persons. It was perhaps one of the best, but was toxic in its effects. When a sedative had been obtained which suited the person it should not be changed just because the person was beginning to sleep. The few persons who became addicts were of the type who would respond thus to any drug but he had seen very few cases of addiction, even including the following treatment with preparations of opium.

Sir WILLIAM WILLCOX thought that treatment of insomnia should not begin by resort to drugs but that general measures should be tried. In insomnia associated with delirium better results followed the application of a hot pack than a resort to drug. With neurasthenic patients it was necessary to give hypnotic drugs in some cases but caution should be employed. He believed that he had seen more cases of unfortunate results following the use of hypnotic drugs than most medical practitioners and had concluded that it was not only the unstable who became addicts. He thought that if the members of a first-class football team were given a dose of heroin every night for a month half of them would become addicts. A drug which was much less toxic than others was adalin bromural also was helpful.

Dr F M R WALSHES urged the need of a new orientation with regard to insomnia. He asked if insomnia was anything more than the absence of sleep or if there was more than one kind of insomnia and if the insomnias of an exciting neurosis or a nocturnal delirium and of high blood pressure were identical. Dr H A ELLIS reported observations of the specific gravity of the urine early in the morning and said that it was evident that in neurasthenia some faulty elimination during sleep accounted for subsequent wakefulness, one cause of which was the inability of the stomach to empty itself anything which would release the tightness of the sphincter or the stomach would do away with the common wakefulness in the middle of the night. Dr C P SIMONDS shared Dr Walshes's belief that the whole problem of sleep should be approached from a new physiological point of view in the light of the work of Pavlov. In many persons with the major complaints of insomnia and depression the latter was considered to be the result of the insomnia whereas they were really cases of mild depressive psychosis in which the insomnia and the depression were both symptoms of the same underlying condition. Dr COOPER LANE thought that absolute sleep was much less often attained than was supposed. It indeed was never attained at all. It seemed to him that in any condition in which the insomnia was the result of toxicemia from the accumulation of waste products little good was likely to be done by sedatives.

### THE ACTION OF SYNTHALIN

At the meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on December 13th with Professor J A GRAY, President in the chair a discussion took place on the action of synthalin, a synthetic preparation recommended for the treatment of diabetes to be given by the mouth.

#### Physiological Experiment

Dr H H DIX in opening the discussion commended himself to a consideration of the action of synthalin as appreciated by laboratory experiments. Others who followed

in the discussion would be able, as he was not, to deal with the question of its action on the diabetic patient. Synthalin was a guanidine compound, the discovery of which started from the observation that poisoning by guanidine itself was accompanied by a hypoglycemia. This fact suggested to Frank of Breslau that it might be worth while to search among guanidine derivatives for a substitute for insulin. The relation became more favourable as the carbon chain was lengthened by building up synthetic compounds, and ultimately, with ten carbon atoms, a compound was found to be sufficiently promising to warrant an extended clinical trial. The name of the compound was decamethylenediguandine, the formula of which Dr Dale displayed on the blackboard. According to Frank, synthalin lowered the blood sugar of a dog which had been made diabetic by removal of the pancreas, reducing it to or below normal level. It was also stated that in a diabetic dog the abnormal relation between the arterial blood sugar and the venous blood sugar in a limb was changed to the normal by injecting a large dose of synthalin—that is to say, the normal slight excess of glucose in the arterial over the venous blood was restored if a large dose of synthalin was given to the diabetic animal. In these cardinal features, therefore, the action of synthalin, at least superficially, seemed to resemble that of insulin, but it differed in certain important respects. The action of insulin, when given intravenously, began almost immediately, whereas the action of synthalin usually began to be manifest only after a delay of some hours. On the other hand, synthalin had the practical advantage that its action could be produced on oral administration, and so far as the speaker was aware this was the only method of the kind tried to any extent in practical medicine. A substance promising such convenience in administration as compared with the tiresome injections of insulin administration was certain to be given a ready trial.

It might be taken as a general rule, continued Dr Dale, that a new remedy which was going to establish itself as a permanent addition to therapeutic methods would find a substantial unanimity of approval quite early in its career. Its advantages early became so obvious that the ingenuity of many workers was attracted to the elimination of the drawbacks, whatever those might be. In recent medical history salvarsan and insulin might be taken as examples. There was another class of newly introduced remedies with regard to which a different course was taken. Here the enthusiasm engendered by a number of early optimistic reports soon showed a tendency to diminish as the opportunity of trial spread to a wider constituency. Experience served to discover new limitations and drawbacks, and in course of time remedies of this kind were apt to be superseded and to retain only an historical interest as stages on the way to something better, or, if they did find a more permanent use, it was a use in a much more restricted field than that which the first descriptions had appeared to open up. He was inclined to think—though he might not be interpreting the signs correctly—that synthalin would be found to belong to this second class. From his own point of view as an experimental physiologist the real interest of synthalin had been in a different direction. A substance having an action so similar to that of insulin in some features could not fail to have an interest as possibly giving a clue to some part of the quite unknown structure of insulin itself. From this point of view the matter of chief importance was to discover whether the hypoglycemia which synthalin could produce was the result of an action fundamentally similar to that of insulin, or whether the resemblance was merely superficial, and the hypoglycemia produced by its action of a different kind. Accordingly workers in his laboratory had carried out a number of experiments on the details of the action of synthalin in comparison with that of insulin. They repeated, in the first instance, the observations on its effect when administered to normal rabbits. For this purpose very large doses in comparison with those used in therapeutics had to be given in order to produce any definite effect at all, and even then the result was somewhat uncertain. The usual effect, during the first hour

or two, was a rise of the blood sugar percentage above the normal. That did not always happen, sometimes there was practically no effect on the blood sugar for an hour or so, and in an occasional rabbit the fall might begin quite early without any preliminary rise, and even without much latent period. But the usual course was a preliminary period in which the blood sugar rose to a varying degree above the normal, followed by a fairly rapid fall at the end of from four to six hours. If the animal was killed when hypoglycemia had once definitely appeared, the liver on analysis would be found to have lost practically all its glycogen. A second point was that when this hypoglycemia had been produced no measures to relieve it—not even the production of a lasting restoration of the blood sugar to normal—would save the animal's life. The dose necessary to produce hypoglycemia in the rabbit, therefore, was a generally toxic dose. A third point to be noted was that, even before a definite hypoglycemia had set in, adrenalin in doses which would normally produce a large rise in blood sugar failed to have any such effect.

The impression produced on his mind by these observations was that, while synthalin in sufficiently high doses would produce a great though delayed fall of blood sugar, these doses had to be large enough to produce a serious impairment of function of the liver. The one feature which could be regarded as having perhaps a fundamental resemblance to insulin—and not merely a superficial one—was the depression of new carbohydrate formation, which was suggested as one of the two main effects of insulin itself. But in insulin such an effect, if it was a true effect, was temporary and physiological, in synthalin there was so far no evidence that it was other than a permanent and toxic effect on the liver function. The fact was recorded clinically that synthalin might be unsuitable and even dangerous to patients whose livers were already unhealthy. Perhaps also the fact might be taken as pointing in the same direction that the means most widely advocated for counteracting the anorexia and nausea obtained with synthalin were the simultaneous administration of a bile acid, it was difficult to see why this bile salt should have a value in avoiding any anorexia and nausea produced by synthalin unless this was the result of a secondary action on the liver, and not a primary effect on the stomach itself. On a closer analysis, endeavouring to trace the glucose which disappeared with the administration of synthalin, the similarity between synthalin and insulin appeared no longer to hold. So far from the change in muscle-glycogen accounting for the glucose lost, it merely provided an additional loss, also needing explanation. Under no conditions had any change other than a loss been found in the muscle-glycogen as a result of synthalin. Although extra glucose was disappearing the muscles simultaneously lost—not gained—glycogen. It was quite clear that the glucose was not, in that form of experiment, disappearing in the same way as it did under the action of insulin. The next obvious possibility was that the glucose was being simply taken into lactic acid, that possibility was at the moment under experiment in his laboratory. He could only say, so far as information was available, that during that period of increased glucose disappearance, with diminished oxygen consumption, the fact that the respiratory quotient rose far above unity was certainly in favour of a change of glucose merely into lactic acid or kind, but further experiments were necessary.

his. If lactic acid were indeed the substance produced from the disappearing glucose it might in turn be built up into glycogen under the more favourable conditions of the intact living body, and when the dose of synthalin was not of such toxic dimensions as were found necessary in the laboratory in order to get the clear demonstration of this action.

In conclusion Dr Dale made a brief reference to another antidiabetic preparation called "glukhorment," which was put forward with the high authority of Professor von Noorden, Dr Dale, however, said that he had nothing to add to what he and Dr H. W. Dudley had written on this subject in the *BRITISH MEDICAL JOURNAL* (December 3rd, page 1027).

*Clinical Observations*

Dr G. GRAHAM said that reports of the clinical value of synthalin had varied greatly. The earlier workers in Germany had quite good results. In America Joslin had reported on a few cases and thought the substance worthy of further trial. From Montreal came similar reports. In this country Dr R. D. LAWRENCE had had disappointing results while the results obtained by Professor Melen and others had been rather more favorable. Dr Graham's own cases were twelve in number. These had been under the observation of his colleague Dr Linder and himself at St. Bartholomew's. He showed graphs relating to each patient. The first two cases in which synthalin was tried convinced him and his colleague that there was a definite action on the sugar in the blood and also in the urine though the normal blood sugar was not recovered. In the next four cases, as the result of experience, treatment was placed on a more scientific basis, but the attendant nausea and increase were found to be considerable. The toxic effects in many of the other cases were a very serious inconvenience. One child aged 6, was rendered very ill probably because too large a dose of synthalin was given. Of the 12 cases in 4 synthalin had very little effect indeed in the remaining 8 there was quite a definite result but in only 2 of these had synthalin treatment been continued, 4 had been given up on account of toxic symptoms, and 2 for other reasons. Synthalin undoubtedly had an action on the glycosuria but it worked very unsatisfactorily in this respect from insulin which practically always produced good results. It caused toxic effects, and there were no means of predicting which patient was going to suffer these and which was not. It was difficult to say whether synthalin had any place in the treatment of diabetes. For the patients who needed insulin and were willing to have it synthalin had no value at all at present in his opinion for those who were unwilling to have more than one dose of insulin and should have more doses synthalin might be of some help and for those who would do anything to avoid insulin although they needed it synthalin was worthy of trial. But the patient must be watched and the treatment stopped as soon as any untoward circumstance occurred.

Dr R. D. LAWRENCE said that his first experience of synthalin, from January to April of this year was discouraging. In two mild cases of diabetes synthalin had its usual effect in reducing glycosuria. He saw no effect on the ketosis in these cases and no increase in weight, strength or energy. In four severe or moderately severe cases he tried to substitute synthalin both entirely and partially, for the accustomed dose of insulin but he failed to produce any definite effect in sparing the amount of insulin. In one of them he thought he had spared 15 units of insulin, but when he stopped the synthalin again he found the case was adequately controlled by the same amount of insulin as was then being given and that apparently the patient had improved in her carbohydrate tolerance. The chief difference between his own series and that of Dr Graham was that many of Dr Graham's cases he thought, were on treatment for the first time (Dr GRAHAM About half of them). Cases which had not been previously treated either by diet or insulin for a long time were of very doubtful value from the experimental point of view. For the first two or three months—at any rate for the first month—one could always expect that the insulin at first required in large amounts might be considerably reduced afterwards. These cases of his own had been for a long period on a stable diet and had had very minor changes in their insulin. He had shown his results to Professor Frank when he was over in this country. Frank had no criticisms to offer as to the way in which he had used the synthalin, but said that he could not understand the results and that he had seen a considerable number of other cases in which it had been impossible to produce any effect with synthalin. He could only advise him to go on trying. Frank divulged the fact also that one could not go on with synthalin indefinitely and that even patients who tolerated it well for the first two or three weeks usually developed an intolerance after six, eight, or ten weeks when synthalin had to be stopped.

Of course, in such cases it was necessary then to readjust the diet or the insulin. The speaker therefore decided from his practical point of view that this drug which had to be interrupted and always to be under control was not of any great value in treatment. The next experience he had with synthalin was rather an unwitting one. Dr Dale had asked him to test the effect of "glukhormont" on diabetic patients, and he followed out two cases very carefully, changing them over to synthalin after they had been for a time on the other preparation. The results showed how similar—indeed, identical—were the effects with "glukhormont" and with synthalin, both in the reduction of glycosuria and in the production of the same toxic symptoms: anorexia and nausea, sometimes actual vomiting. One of these last two cases was the only one in which he had produced any satisfactory results with synthalin, here he got it to spare about 15 units of insulin a day. In his opinion synthalin possessed more disadvantages than advantages in the treatment of diabetes. The disadvantages were its frequently toxic action when given in efficacious doses (probably it was always at least mildly toxic), the uncertainty of its action, the fact that it could not spare much insulin in severe cases, and the fact that it could not be taken continuously, but must be intermittent, involving a readjustment of the diet and insulin. It was a brake upon metabolism, but (he thought) a toxic brake and there seemed to be no evidence that it built up the body or had the anabolic action which insulin possessed. In a word, he did not think that synthalin had brought anything of importance into the routine treatment of diabetes which still depended on diet and on insulin if necessary, and to introduce a doubtful factor could only complicate matters and do harm.

Dr P. J. CANNING said that he had done some experimental work, though not on the same scale as that carried out under Dr Dale. His results however had been very similar. In his experimental work the doses of synthalin given had corresponded as far as possible to the physiological or medicinal dose, and the huge doses of which Dr Dale had spoken were not employed. The main thing that came out from these experiments was that in most of the animals there was an effect on the blood sugar generally coming on about two hours after the animal had taken 2 mg. per kilo of body weight but the maximum effect of synthalin was not seen until after about twenty or twenty-two hours. In quite a number of rabbits the blood had been examined every hour for forty hours and the maximum effect was found to appear at the twentieth or twenty-second hour after the normal dose. The drop extended from about the second hour to about the twenty-second but the rise up to the thirtieth hour was much more rapid when as a rule the blood was back again at its fasting normal level. His clinical experience of synthalin was limited: the cases he happened to get hold of were perhaps not suitable. From the recorded cases it appeared that success was most pronounced in elderly patients and his experience was that the diabetes of the elderly patient—over 45 or 50—was really not the same thing as the diabetes of the younger and that was the reason probably why synthalin acted better with the former. It was likely that the diabetes of the elderly was essentially a liver condition and that synthalin had some slowing effect upon the metabolism there and so proved to be more beneficial than in the young patient who probably was essentially and primarily suffering from a pancreatic defect.

Dr DALL in reply, said that the plan he and his colleagues had adopted ordinarily indefensible had been to examine the effects of abnormal toxic doses or a kind which would never be used in therapeutic practice because it was desired in the first instance to obtain some recognizable effect. With therapeutic doses it had not been possible to observe anything which could be regarded as significant. He understood from Dr Cammidge that with the animal still fasting the blood sugar returned to normal (Dr CANNING Yes). Dr Dale said that that was a point he had not been sure about. He added on the general discussion, that it was very gratifying to find clinical results coming up to the expectations derived from physiological experiment.



## TRAUMATIC NEURASTHENIA AND THE "LITIGATION NEUROSIS"

A COMBINED meeting of the Section of Neurology of the Royal Society of Medicine and the Medico-Legal Society was held on December 8th, when Sir FARQUHAR BURNARD opened a discussion on traumatic neurasthenia and the litigation neurosis. It included an interesting digression by the Rt Hon H P MACMILLAN, K C, chairman of the recent Royal Commission on Lunacy and Mental Disorder, on the subject of the expert witness Professor LAWRENCE PRINCEWILL and, later, Dr GORDON HOLMES presided.

Sir FARQUHAR BURNARD said that "traumatic neurasthenia" was a term applied to a clinical condition familiar to both the medical and legal professions. It had led to much confusion, and until its etiology and pathology were clearly recognized and generally accepted the confusion was likely to continue. He submitted that traumatic neurasthenia had a psychopathological basis. Generally it developed slowly after an injury, the site of which was of no consequence, it rarely supervened on an injury which had caused grave physical disability, or on an injury the responsibility for which could not be placed on the shoulders of some person or persons other than the patient, and it was very rare apart from motor and railway accidents, workmen's compensation cases, and minor war injuries. He had seen three cases of this kind associated with a railway accident in which it was admitted that all the patients escaped without a scratch. It did not develop after such accidents as those of the hunting field, for which only the rider or his horse could possibly be responsible, the difficulty in such cases was to make the patient take his concussion or other injury seriously enough. The psychopathological features included fear (at the time of the injury), anxiety as to possible consequences to health, with a subconscious desire to safeguard the future in that respect, a sense of injury, ignorant interpretation of symptoms which arose as the neurosis developed, injudicious remarks and advice of doctors, relatives, and friends, and the worry of litigation. When the nature of the accident was such as to cause an emotional disturbance in the form of fear, this condition was, unfortunately, not referred to under its proper name, but as "shock." Recently the speaker had seen a woman who had been in a railway accident. She carried with her an illustrated paper with photographs of the wrecked train, in order that, although she had escaped unhurt, she and others might not underestimate the horrors of her adventure. For the first week she was exhilarated, and then followed an emotional reaction to which had been attached the unfortunate designation of "delayed shock." From that moment the question of compensation arose in her mind, with the result that the familiar picture of traumatic—or in this case, non-traumatic—neurasthenia was established. In workmen's compensation cases the contributory factors were often trivial separately, but their cumulative effect was overpowering, and the condition of anxiety neurosis was soon well established. To the lay mind trauma was still the most important and universal etiological factor in medicine. A pain here or there was sufficient to keep a person alert or complications or sequels, fear and anxiety robbed him of sleep, and so the vicious circle was formed. Was this condition to be regarded legally as the result of the accident? That some doubt was felt in juridical minds was evident from a letter which he quoted from a firm of lawyers in a compensation case.

"The employer's case is that the man's inability to work is caused by brooding over the effects of the accident and that he is suffering from weakness of will and a fixed but erroneous idea that he is a chronic invalid. If they establish this proposition the court could refuse further compensation. If, on the other hand, this man is suffering from neurasthenia as we are advised, he is entitled to a continuance of the compensation."

The problem was an important one from both the economic and ethical points of view. Its solution did not rest entirely with lawyers. If medical practitioners were as much alive to the psychological as to the physical dangers of a patient who had been in a railway or other accident, it they took as much care to prevent

infection of his mind with insidious morbid ideas as they did to prevent infection of his body with pathological organisms, many of these cases would be cleared up. The medical profession was to blame for using the term "traumatic neurasthenia" as denoting some disease which was the direct result of injury, and for talking about "shock" when what was really meant was "fright", still more reprehensible was the practice of treating a patient with established neurasthenia by giving him a weekly bottle of medicine and the exhortation to take plenty of exercise in the open air. Improvements in the standards of medical treatment, both preventive and remedial, would certainly lessen the incidence of traumatic neurasthenia, though they would not abolish it. Even if it were practicable to alter the law for dealing with these difficult cases, the matter of diagnosis would still give rise to perplexity, and the time-honoured but painful conflict of medical testimony would only be shifted to another field.

The Right Hon H P MACMILLAN, K C, said that this kind of problem was a familiar one, the judge had to discriminate daily between things which were and those which were not the direct consequences of the original wrong, or tort, or accident. The doctrine of remoteness came in, and not everything that followed an injury was treated by the law as a consequence of the injury which entitled the victim to recover damages for that sequel. But in the case of a railway accident, for example, it was legitimate to estimate the damages with regard to the supervening psychological state. The patient might have suffered no direct physical injury, but a pathological state of mind had supervened which would not have supervened but for the occurrence. Was this state of mind a matter for compensation? The law was not an exact science like medicine, criteria which might not commend themselves scientifically had to be applied. A criterion employed in the courts was that no person could recover in respect of a breach of contract or a tort (an injury) unless he could show that the consequences upon which his complaint was founded were the natural and probable consequences of the occurrence. Such a criterion was easy to formulate, but often difficult to apply, as in the case of a person injured in a railway accident who happened to be of a highly nervous temperament. The railway company must take its passengers as it found them. If some susceptible person were injured, so that the consequences in his case were graver than they would be in a person more temperamentally robust, that was the railway company's responsibility. Nevertheless, the law recognized what was called a *novus actus interveniens*, and if it could be shown that the condition of the patient was due, not to the occurrence, but to the patient having done something subsequently which had introduced into the chain of causation a new element for which the railway company was not responsible, then the law would say that the consequences were not directly and naturally attributable to what the company had done. The mere fact, however, that the patient was of a highly nervous type, with a disposition to brood or to magnify grievances, would not necessarily introduce a few factors absolving the company.

Mr Macmillan then discussed the function of medical practitioners in assisting the court to determine whether the symptoms exhibited by a plaintiff were the probable consequences of the occurrence, and said that they could make an invaluable contribution to the cause of justice. The expert witness, in spite of the gibes at him, was indispensable, and of all expert witnesses the medical practitioner was perhaps the most conspicuous in the service he was able to render to the administration of justice. Why was it that in certain types of actions the law had admitted a kind of evidence—evidence of the nature of opinion and inference—which it strictly ruled out in other actions? It was because the judge was not himself competent to draw the inferences. The expert witness was needed in order to illuminate with his scientific knowledge facts which would otherwise be meaningless. Courts of justice had enlisted expert assistance in three ways: by the use of an assessor, as in Admiralty cases, by appointing an expert referee, and by calling an expert witness, whose value depended entirely upon his attitude. The vice of the situation, not applicable to the

medical profession alone, was that there had grown up a wrong theory that the expert witness was in a sense an advocate of the scandal—it was a scandal—which had arisen over the conflict of medical testimony, not from a misconception as to the part which the expert played in court. The speaker had sometimes witnessed the struggles of an expert witness of the advocate type, trying to maintain an untenable scientific position. The function of an advocate should be left to the legal profession. The doctor was not entitled to distort the views he had expressed in the witness box, whereas the lawyer was not bound by what he had argued at the bar. The function of the witness was to assist the court by stating to the best of his ability the scientific position as he conceived it, without colour or favour.

In conclusion, Mr Macmillan said that probably the medical and the legal points of view would never be wholly reconciled, though some progress was being made in law, and cognizance was being taken of finer shades of differentiation, but the medical view remained necessarily scientific and exact, while the legal view was neither. He was not sure that it would be right to delegate to a body of medical men not subject to cross-examination, the function of determining whether or not the state of a plaintiff was attributable to the accident. The law had to take the standard of the jury in these matters. The conflict was between rough justice on the one hand and unmerciful refinements on the other. The law had learned from medicine to discriminate with more justice, but it would never overtake medicine in the precision with which certain questions could be determined nevertheless he thought such questions should be determined by a court of law, with the assistance of expert testimony.

Sir James PRAVIER STEWART said that traumatic neurasthenia was a genuine medical illness, whereas "litigation neurosis" was a legal complaint in the courts, the two conditions shrank into one another, and it required much skill to disentangle them. Litigation neurosis might be compared to a drink originally innocuous to which various exciting ingredients were added, so that it became a rather expensive and uncertain cocktail. The purely medical aspects of illnesses which became the subject of litigation would be a simple affair were it not for the element of compensation. The Workmen's Compensation Act had had widespread beneficial effects protecting the injured workman against the careless, unscrupulous or selfish employer, but one could not help thinking that it contemplated in the main the gross physical accidents arising out of employment. Nervous symptoms following accidents might be recognized as of two classes: those due to the expectation of financial solatium, and those due to actual physical injury. The patient's family and friends his solicitor also heightened the symptoms and thus the original condition was elaborated, decorated and intensified. The manufacture of symptoms if conscious was branded as malingering but much more commonly it was an unconscious affair. The injury afforded the patient a temporary freedom from work. His accident evoked sympathy and discussion with his family, friends, and solicitor fostered resentment. In a series of 17 compensation cases he had tried to obtain information as to what happened after the settlement. In 10 of them no medical particulars could be traced subsequent to the verdict of the jury; the remaining 7 had promptly recovered and gone back to work. In some of these cases large sums—up to £1,000 or more—had been awarded. Even the loss of his claim sometimes had a beneficial effect on the patient if he knew that it was final. A pension as a solatium was less advantageous for both parties than a lump sum for the pensioner tended to aggravate and maintain his symptoms in order to "earn" his pension.

Dr RUSSELL PERELL said that in cases where there was no question of litigation he had found precisely the same factors at work to produce neurasthenia. One of the provocative factors leading to litigation was sometimes the attitude of the medical practitioner representing the company who had been known to display incredulity and braggadocio and—on the other hand—what almost amounted to brutality. The company on the other hand, in the most gracious way, but an unkind attitude on the part of the medical man appear-

ing for the company not only aroused fear in the patient, who suspected that an effort was being made to defeat him, but also roused the antagonism of the patient's doctor, who set out to protect his patient, and thus all the elements of a litigious quarrel were introduced. People injured in the hunting field who did not develop these symptoms were those who could afford to be ill, but when a man was earning a small wage and had a family to maintain the prospect of being set aside for many weeks contributed greatly to his anxiety. There was no need to assume malingering. In many cases litigation might have been prevented by proper consultation beforehand between the medical men on the two sides. He had frequently been consulted by employers, but although in a sense on the opposite side, he conducted his examination of the patient and discussed the matter with his doctor in such a way that agreement was often arrived at without going into court.

Dr W. A. BREND, speaking from the point of view of a medical referee attached to three county courts, said that there had been a very marked decline in recent years in the number of cases coming into court. Two considerations seemed to help parties to come to a compromise: a belief that the case was settled quickly the applicant was more likely to recover quickly, and also the great uncertainty as to how the case might result in court. He thought the question of tremors and reflexes very important.

Dr W. SULLIVANT STURGE said that it was a commonplace during the war that the graver injuries were rarely followed by shock of any kind. Most of the neuroses following injury were in fact effects of fear. The worst case of so-called shell shock he had seen was that of a man who had been for nearly ten years wholly incapacitated by a purely functional paralysis, and yet who had been at no time nearer the war than Plymouth. Another patient incapacitated for life, was a fireman on an engine which nearly came into collision with another engine but in fact did not. There was no injury, but severe fright.

Sir WILLIAM WILCOX agreed with Mr Macmillan's view that the final decision in these cases ought to be left to judge and jury for the result would be a more commonsense and practical decision than one which emanated from a body of experts, medical or legal, but the best expert evidence should be available to assist the court.

Sir FARQUHAR BRIZZARD said that he had not had an answer to his question. Where a certain train of events chiefly psychological in nature, followed an accident, whose was the responsibility?

Mr MACMILLAN, in reply, said that he had been interested in what had been said about the curative effect of a verdict. It was not possible for any lawyer to answer categorically the question put to him by Sir Farquhar Brizzard. All that the law could do was to proceed on the best evidence it could get and so it threw the ball back to the medical profession. He suggested that there was no true distinction between a psychological and a physical injury because he rather understood that the psycho-pathological state would be found to be associated with some form of organic lesion and he had indeed on the basis of what he had heard in evidence committed himself to a statement of that kind in the report of the Royal Commission on Lunacy.

## FRACTURES OF THE SPINE

A MEETING of the Section of Orthopaedics of the Royal Society of Medicine was held on December 6th with Mr W. ROWLEY BRISTOW the president in the chair for a discussion on fractures of the spine.

Mr GEOFFREY JEFFERSON (Manchester) speaking first of the ordinary compression fracture drew attention to the effect upon the spinal column of hard injury. If the skull was struck by a hard body or moderately high velocity the almost certain result was fracture of the skull but in the injuring body was soft and yet heavy like a axe, the skull would probably escape injury and the full effect would be felt upon the spine itself. It was possible for a force to be so adjusted that it would be unable to overcome the resistance of the skull but overcoming that of the spinal column. The force might vary in weight

duction, and point of contact, and to this had to be added a very common thing in vertebral injury—namely, the movement in an oblique direction of the force itself, or of the vertebral column under the influence of the force. In the vertebral column there were two structures, one of them anterior, consisting of the vertebral bodies, and the other posterior, of the pedicles and laminae, and the former was much more easily collapsible than the latter. The speaker then went on to show statistics regarding injuries of the vertebral column treated at the Salford Royal Hospital from 1919 to 1927. The total number of such cases, not including fractures of the spinous and transverse processes, was 85, in 67 of which the level of the vertebral injury had been accurately localized. In 34 the injury was in the cervical vertebrae, in 13 in the thoracic, and in 20 in the lumbar. These cases, as well as 2,000 cases from literature, showed that there were two outstanding peaks of incidence, one in the lower cervical region, at the fifth and sixth vertebrae, and the other at the twelfth thoracic and first lumbar. These two groups of injuries were the result of entirely different causes. Practically the whole of the cervical ones were due to head injuries, while the others were caused by flexion fracture of the spine itself, particularly from such accidents as falling on the nape of the neck or on the shoulders. It was very difficult to produce fracture in the middle of the thoracic spine by compression, and the incidence of such injuries was very low. The cervical portion above and the lumbar portion below were the main sites of injury. After mentioning other points regarding anatomical structure and the mechanism of injury, Mr. Jefferson concluded with a word about treatment. The ideal which surgeons had in view, he said, was always reduction, whether obtained simply by manipulation or by an open operation, but he was doubtful as to the value of the latter in very many cases. Of the 18 patients who died in the Salford series just quoted, 16 died within the first week after injury, and none of them would have been saved by open operation.

Dr. GEORGE RIDDIOCH advanced some considerations from the neurological standpoint. The clinical course of a severe spinal injury, he said, might be divided into three stages. In the first stage there was acute paralysis and muscular flaccidity, with great diminution of reflexes and retention of urine—a more or less complete physiological block. Part of this disturbance of function was due to quite transient causes, such as oedema, and perhaps haemorrhage, and part was the result possibly of permanent structural defect. For many years it was looked upon as axiomatic that if the spinal cord was transected completely and permanent abolition of reflex function became evident, but this had been shown to be fallacious by the experience of the war. It was true that it held good in certain complicated cases, but in uncomplicated cases reflex function, even after transection of the spinal cord, began to return within a week or fortnight of the injury. Usually the first manifestation of it was an alteration in plantar response. About three weeks after the injury the tendon reflexes began to return—first of all ankle-jerks, then knee-jerks—and the retention of urine was no longer complete. These reflex activities gradually became more vigorous, especially the flexor reactions of the lower limbs. This was the second stage. It was clear that, although the cord might be completely transected the reflex activities could return. Patients with completely transected spinal cord might live for a considerable time. There was one case in literature of a woman who broke her back twenty-five years before and was still living. The longest case which had come under his own observation dated back for eleven years, to a war injury. The man was still active and went to his business. But too many such cases developed bladder sepsis and other conditions, such as pneumonia, so that a third stage was reached in which there were regressive changes, mirroring in the backward direction the improvements noticed in the second stage. The bladder, after having returned to more or less regular function, once more returned to the urine, and finally perhaps, before death took place, all the patient's reflex activities were abolished. The indications for operation in spinal injuries were few, and it had to be realized, in the first place, that the main

damage was immediate and irreparable in so far as anatomical change was present, and that it was impossible, during the period of spinal shock, to determine how much damage was due to such structural alteration and how much to a transient disturbance. No operation ought to be undertaken in any circumstances until the period of spinal shock was over—that is to say, from two to six weeks after the injury itself.

Dr. BERTHA SHINES continued the discussion from the standpoint of the radiologist. He believed that injuries of the spine were not sufficiently studied radiographically, but the method, especially with the use of stereoscopy, was capable of very great refinements. For example, he believed subluxation of the vertebrae to occur and to be discernible by efficient x-ray stereoscopy. The antero-posterior x-ray view of the upper cervical spine could be obtained only through the mouth, and this was not as easy as it appeared, on account of the different shape of the occiput in different persons. The x-ray diagnosis of fractures of the transverse processes, especially in the lumbar region, was rather difficult because of conflicting shadows of muscles and intestinal contents, only by careful stereoscopic radiography, again, could one be sure of the appearance. In fractures of the coccyx the lateral view was the important one. Fractures that caused encroachment on the spinal cord revealed themselves without the aid of lipiodol.

Mr. GEORGE STUBBING gave an analysis of the cases of fracture of the spine received recently at Lambeth Poor Law hospital. The number of cases was increasing rapidly. During the three years 1919-21 there were five cases, in 1922-24 twelve cases, and in 1925-27 thirty-two cases. This was due to the increasing frequency of street accidents, many such cases finding their way into a Poor Law hospital, especially if they were of such a nature as to require long institutional treatment. But spinal injuries appeared to be increasing at a greater rate than injuries to the limbs. Of the thirty-two cases received during the last three years, fourteen had gross injury, and five died in hospital. The date of death was, in general, a few days after the injury, but in one exceptional case a man died many years after his injury, a fracture of the dorsal spine which he had sustained at the age of 11. He had had a spastic paraplegia, but had been able to get about on crutches and even his living as a hawker. He died of pyelonephritis, which was the cause of death in all the cases of any long standing. Only a minority of the fractures were associated with gross nervous lesions, and those cases in which such symptoms were absent were still very commonly not diagnosed early, or, if diagnosed, were not treated by prolonged immobilization, which was the best treatment. Decompression operations had not proved to be of any value in this series.

Mr. T. H. OPENSHAW agreed with the last speaker that most of these cases died of pyelonephritis, also that long immobilization of the spine was essential for the recovery of many of these fractures. There were many cases of injury to the spine which had practically no nervous symptoms, and those were cases with which it was very important that the orthopaedic surgeon should be familiar, because they were liable to get into the hands of bone-setters, and to do the profession a great deal of injury. In one series of cases, having seen four deaths in patients with definite compression paraplegia, which had all the symptoms pointing to the cord being cut across, he determined to save if possible a fifth man similarly injured, and accordingly performed an operation which involved the wiring of about five of the vertebrae together, and the man recovered.

Mr. Sr. J. D. BURNETT reviewed a small number of cases which he had had the opportunity of investigating during the last five years. They numbered 29, 17 patients died, the last five years. They numbered 29, 17 patients died, 7 of them immediately, 11 survived and were well, and one other was unlikely to live. In nine cases the site of injury was at the fifth and sixth cervical vertebrae and in seven in the region of the tenth to the twelfth dorsal, so that his figures, although so small, bore out those of Mr. Jefferson as to the two principal peaks of incidence.

Mr. JOHN EVERIDGE raised the question as to what should be done with regard to bladder infection. In the cases of spinal injury there was at first retention of urine, which later passed on to retention with overflow, and

after a variable period a cessation of periodic micturition was brought about. In fact, the bladder in the later stages had the condition which one associated with children up to about the age of two years. If patients could only be bled over this period without infection there might be some hope. He wondered whether early suprapubic cystotomy, to be carried out as soon after the injury as possible, was to be recommended as a procedure not only for combating but for preventing infection.

Mr P. B. BORN described a case at the Miller Hospital, following in which Mr. Leidecke had just stated in which, after consultation with his colleagues, it had been decided on the narrow to do a suprapubic cystotomy. It was an interesting question whether in this operation were carried out a day or two after the injury cystitis would be prevented. Dr J. F. BRIDGES showed a large number of x-ray pictures illustrating the appearances in various conditions of spinal injury.

### OPERATION FOR PAPILLOMA VESICAE

At the first meeting of the Midland Obstetrical and Gynaecological Society at the Medical Institute Birmingham on November 8th the President Professor D. L. RYAN, in the chair Mr CHRISTOPHER MARTIN (Birmingham) read a paper on the operative treatment of papilloma of the urinary bladder.

Mr MARTIN said that papilloma of the bladder occurred much more often in men than in women and was easily recognized by the sudden onset of haematuria which rapidly increased in severity by the finding of papilloma fragments in the urine and by cystoscopic examination. In the operative treatment the bladder was washed out with some non-toxic antiseptic, such as iodine water, and filled with from 10 to 20 ounces of the same solution. The patient was now put into the Trendelenburg position at about an angle of 45 degrees and the abdomen was opened by an incision in the middle line extending from the middle of the pubes upwards for about four inches when the anterior surface of the bladder protruded into the wound. Two temporary silk traction sutures were passed with a curved needle through the muscular wall of the bladder about an inch apart one on each side of the middle line, and the bladder was opened with a sharp scalpel by a mesial incision from two to three inches long. As soon as the lotion distending the bladder had escaped it was advisable to put two other silk sutures through the cut edges of the mucous membrane to act as additional tractor. The interior of the bladder was wiped dry with soft gauze pads care being taken not to bruise the growths and start bleeding the cavity was carefully inspected with a good light and the position of the growth or growths determined. A tubular metal speculum three and a half inches long and an inch and a half in diameter was passed into the bladder through the wound and the growth made to project into its lower opening. This speculum was of great service in isolating the growth, in keeping the field of operation nearly dry and in protecting the abdominal wound from contact with the cavity. The base of the papillomatous growth was then seized with a stout pair of curved artery forceps at the point where it sprang from the mucosa, and was crushed by closing the forceps firmly. With scissors or Piquet's cautery the growth was cut or burned away close to the upper surface of the forceps and the cautery point heated to a dull redness passed to and fro over the charred stump if this was done slowly and deliberately there would be no subsequent haemorrhage. The forceps were cautiously loosened and if haemorrhage restarted the pedicle was cauterized again. When the forceps were removed the pedicle should be a thin bloodless horny ridge almost flush with the mucosa. With multiple growths the same procedure was followed with each in turn until they were all completely burned away. The whole of the interior of the bladder was now carefully inspected and any small growths isolated with the speculum and burned out, for such papillomata—no larger perhaps than a pin's head—the fine needle point of the cautery was very useful. The bladder was then gently wiped out with soft gauze swabs care being taken not to start bleeding by roughly rubbing the charred tumour

basis. The silk traction sutures were removed, and the wound in the bladder was closed without drainage from below upwards with a continuous suture of fine catgut. It was important not to pass the stitch through the mucous membrane. The line of continuous suture was usually strengthened by three or four interrupted mattress sutures. A "cigarette" drain was passed through the lower part of the abdominal wound into the cellular space between the bladder and pubes, it was removed in about forty-eight hours. A glass self-retaining catheter about three inches long was inserted into the bladder through the urethra. The upper slightly bulbous end lay just above the pubis and the lower flanged end outside the natus. A short rubber tube passed from it to a urinary in the bed laid between the patient's thighs. This glass catheter was removed every twelve hours and a freshly sterilized one inserted. This continuous drainage of the bladder was maintained for ten or twelve days after the operation. The abdominal silk sutures were removed on the twelfth day and the patient allowed to sit up if all was well on the fifteenth day. During this fortnight the diet must be light and non-stimulating with plenty of bland diluent fluids such as barley water.

### Degeneration Changes in Fibroids

Mr FURNEAUX JORDAN read the notes of four cases of fibroids undergoing degeneration and exhibited specimens of two of them.

The first was a patient aged 53 from whom the late Proctor Taylor had removed the ovaries for a large fibroid in 1912. She came to Mr Jordan in 1917 with a history of five years amenorrhoea but no diminution in the size of the tumour and lately there had been attacks of acute pain in the abdomen and a slight blood-stained discharge. The uterus was removed and the fibroid was undergoing red degeneration.

From the second patient who was 43 years old both appendages had been removed in 1912 for a left tubal pregnancy and a cystoma of the right ovary. Five weeks before the date of her meeting he had been seized with pain in the back, creeling round to the front of the lower abdomen and causing pain on micturition with frequency. A fibroid was found two weeks later completely filling the pelvis and rising half way to the umbilicus. For three and a half months she had menorrhagia too often each period lasting for two weeks and accompanied by bearing down pain. The tumour was removed by subtotal hysterectomy and very deep adhesions were found on the left side of the site of the previous tubal gestation. The fibroid was large, lobulated and was beginning to undergo sloughing on the surface. The patient was making a good recovery.

The third patient aged 62 was single, the menopause had occurred at 51 for many years but she had felt a weight inside her and always tired easily three years ago. Very troublesome frequency of micturition had tarred and was now getting progressively worse. The pelvis was filled by the second stage of labour which ennobled the pelvic head in the second stage of labour. During hysterectomy the uterus was found to be a thin shell stretched over an old fibroid which had become calcareous. It had probably become wedged in the pelvis recently. The patient had regained very good health.

The fourth patient aged 67 had had no children and had suffered from rheumatoid arthritis for many years. Twenty-five years previously the ovaries had been removed for fibroid tumours of the uterus. For three months she had had a discharge white at first but for over a month blood-stained for three months pain had persisted in the lower abdomen. There was a hard rounded tender mass about the size of an apple in the uterus. Hysterectomy was performed and developed universal dense adhesion coils of intestine matted together and growing from the uterus into the right broad ligament and a fibroid calcified on the surface but not in the interior. The patient had made a good recovery.

Mr Furneaux Jordan said the cases showed that fibroids, even after the menopause whether natural or produced artificially might even further trouble by undergoing degeneration. He doubted whether this contingency was sufficiently remembered when patients were advised to wait until the menopause had occurred. It was possible that in the first two cases and almost certain in the second one the ovaries were not removed in their entirety. It would be a matter for subsequent observation whether cases of fibroid treated by deep x-ray therapy with the symptoms completely arrested would not later on, be liable to undergo degenerative changes.

### Obscure Coital Growth

Miss HILDA SHUFFLEBOTHAM (Birmingham) showed a case for diagnosis.

An unmarried woman aged 33 had had a history of rufles at the age of 3 months followed by a nodule when she was old. She had been treated for scabies but the

Wassermann reaction was still positive. The mother was syphilitic and the father had died from general paralysis at the age of 28. In May, 1927, the patient had been prevented from working by a pain in her left side. Four months later she noticed two swellings on the chest wall, tuberculosis of the ribs was eventually excluded by negative x-ray findings. She also suffered from frequent vomiting, pain in left side, general malaise, and depression. The two large swellings on the left side of the chest were about the same level, one was near the anterior border of the axilla just below the breast, the other just behind the posterior border of the axilla. They were apparently attached to the ribs and partially cystic, with indurated tissues around. They were tender, and hot, but there was no redness of the skin, nor were they attached to it. The x-ray examination showed some slight involvement of the ribs, but no abnormal lung condition was present, the swellings were entirely outside the thorax. About 40 ccm of practically clear yellow fluid was withdrawn from the anterior swelling. No tubercle bacilli and no definite tumour cells were found, but there was a predominance of polymorphonuclears. Both swellings were completely aspirated and each was injected. The ribs were found to be tender on pressure after aspiration. The blood count showed diminution in the red cells and an increased percentage of large lymphocytes. A second x-ray examination showed much more marked involvement of the eleventh and twelfth ribs, with complete bone absorption, and involvement of the lower border of the tenth rib.

Miss Shuffelebottom said that the differential diagnosis lay between (1) syphilitic periostitis of the tenth, eleventh, and twelfth ribs, with localized collections of fluid, (2) sarcoma of ribs, and (3) tuberculous periostitis of the ribs. The history and physical signs seemed to point to the first diagnosis as being correct.

#### *Echinococcal Cyst of Pelvis*

Mr ALFRED B. DUNN described a case of a primary extraperitoneal echinococcal cyst of the pelvis.

A healthy female child, aged 6, had suffered from five attacks of acute retention of urine during the preceding four months and on each occasion catheterization was necessary. A median hypogastric swelling reaching half way to the umbilicus was found. It was punctured by catheterization, and was continuous with a large cystic swelling in the pouch of Douglas occupying most of the pelvic cavity. A diagnosis was made of an impacted ovarian cyst, probably dermoid. At an operation the bladder was found displaced upwards several inches above the symphysis pubis, and behind it was a tense cystic swelling the size of a foetal head which occupied the pouch of Douglas was retroperitoneal, and appeared to distend the layers of the broad ligament. The abdomen being carefully packed off, a small incision was made into the swelling, a trocar inserted, and slightly opalescent fluid drained off which was found to contain the characteristic hooklets. On enlarging the opening the cyst was completely shelled out and the typically translucent elastic wall of the endocyst was recognized. The abdominal contents were inspected, including the liver, but only a small rudimentary cyst barely 1/2 in by 1/4 in attached to the distal free end of the great omentum was found, this was removed. Great care was taken over the peritoneal toilet, the retroperitoneal cavity was packed with iodoform gauze and a rubber tube was inserted. No signs of further infection had appeared subsequently.

Mr DUNN said that the specimen showed the ectocyst and endocyst clearly, but there was no sign of formation of daughter cysts, which in the opinion of Sir Alexander MacCormick were only formed after rupture of the cyst wall of the parent hydatid. The cyst appeared to have arisen from the cellular tissues at the base of the broad ligament, but how the embryo invaded these tissues must be largely a matter of conjecture. The early recognition of the cyst could be explained by its causing urgent urinary symptoms. Examination of the blood showed no eosinophilia. No other cases had been reported in the same district and there was no history of eating water-cress or keeping pet animals.

#### TREATMENT OF RAYNAUD'S DISEASE

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on November 25th the president, Dr G. E. NEWMAN showed jointly with Mr A. V. McCONNELL a case of rather severe Raynaud's disease treated surgically in a woman who had suffered for six years.

The patient's hands were almost constantly cold blue and stiff and the skin about the nails of the right hand frequently threatened to break down. She had been compelled to abandon her occupation of nursing in consequence. On November 8th Mr McCONNELL had performed a sympathectomy by injection of alcohol into the sheath of the right brachial plexus. Immediate improvement had been noticed in the condition of the right hand, which became pink in colour, the hardness and stiffness disappeared and the patient could now use her fingers even for fine work with comfort.

Mr McCONNELL said that although the immediate effect had been quite satisfactory these cases were liable to relapse, and that permanent cure could scarcely be expected from this method of treatment.

Sir WILLIAM WHEELER said that he had performed the operation of sympathectomy on many occasions, but in true Raynaud's disease and in thrombo-angitis obliterans he met with no marked success. Vaso-dilatation occurred below the site of operation, and the temperature of the part was materially raised. In impending gangrene, certain cases of embolism, and in intractable ulcers, the operation was followed by good permanent results. In true Raynaud's disease of the lower extremities Adson and others had obtained success by combining the operation of sympathectomy with removal of the lower lumbar sympathetic ganglia. Sir William Wheeler had tried Simpson-Hurdley's method twice, he believed it produced the desired effect, but he did not find it more simple to perform than the removal of the sympathetic plexus with the adventitious internal sheath. The operation was followed by remarkably quick healing in refractory ulceration and torpid wounds, one of the most striking sequelae being the relief of the pain which was associated with vascular disturbances in the extremities, this occurred even in Raynaud's disease and in thrombo-angitis obliterans, which otherwise were not benefited. Pruning the segment of the vessel with phenol had recently been suggested as an alternative to Simpson-Hurdley's method.

Dr L. ABRAHAMSON stated that in one case of Raynaud's disease no permanent good result had been obtained, and there had not been relief of pain after the operation.

Mr W. PEARSON said he had often performed this operation during the war, but so far as nerve conditions were concerned he had found it useless, and had abandoned it, he had not tried it for Raynaud's disease. He referred to a case of frost-bite in the feet with gangrenous ulceration, and almost perpetual vesication of the dorsum in both feet, which sometimes broke down into superficial ulcers, after the operation the patient had recovered completely. In a man aged 70 with symptoms of intermittent claudication in the right leg the pain had been greatly relieved since operation.

#### *Propulsion Through the Colon*

Dr C. L. McDONOUGH read a short note on the movement of the contents in the large intestine, and showed illustrative radiograms. The importance of "mass movement" in the passage of material through the transverse and descending colon was emphasized, and the stages of this movement clearly shown by radiograms from the author's cases.

Dr M. R. J. HARRIS said that it was due to the investigations of Cannon and others in America that so much was now known about the movement of the intestinal contents. Formerly it had been thought that the movement in the colon had an onward direction, now it was known that there were two varieties, a pendulum and an onward propulsive movement. When the contents of the colon entered the rectum there was a desire to empty this part of the bowel. If this desire was neglected the rectum enlarged, and the desire to defecate passed away till the next day. This had been described as dyschezia. He did not think that this fact was appreciated by those who had not recently studied physiology.

The PRESIDENT thought that neglect to respond to the stimulus of the rectum was responsible for most cases of constipation.

#### JAMES MACKENZIE INSTITUTE

On November 15th Dr EDWIN MATTHEW read a paper on the clinical significance of haematemesis. He first enumerated the conditions in which haematemesis might occur, and pointed out that it might be present in certain blood conditions associated with high blood pressure, or from a variety of other inner causes. He quoted statistics derived from the clinical material in his own wards in the Royal Infirmary, Edinburgh, which went to prove that in the diagnosis of chronic gastric ulcer, especially when other signs and symptoms were indefinite or atypical, haema-



tumescence was an all important factor in the diagnosis. In his experience haematemesis in duodenal ulcer tended to be more severe and more prone to prove fatal than in gastric ulcer. A large, sudden haematemesis might, however, be associated with acute gastric ulcer, high blood pressure, and also might occur in splenic anaemia, rendering differential diagnosis difficult. Haematemesis, especially if repeated, offered an indication for surgical treatment in chronic gastric and duodenal ulcer, and in splenic anaemia, in which splenectomy might be performed with cessation of haematemesis.

## Reviews.

### THE NEUROTIC PERSONALITY

Dr R C Gordon, honorary secretary of a special Psycho-analysis Committee appointed by the British Medical Association and the author of *Personality in the International Library of Psychology*, reviewed in our columns in June, 1926 (p. 949), has now written *The Neurotic Personality*. This is of a more general character, and addressed not so much to the specialists as to the rank and file of the profession and even to the general public, who, he considers, should also appreciate the vagaries of the neurotic. In the first chapter, on the construction of personality, the influence of the internal secretions is considered and it is pointed out that the anterior lobe of the pituitary, which milks for masculinity may be responsible for conflicts between femininity and masculinity in a woman with anterior hyperpituitarism. Dr Gordon agrees with Professor W McDougall that failure of integration within the self regarding sentiment is the characteristic mental lesion in neurotic states and that attempts at treatment should be directed to restoration of this integration.

The Freudian theory attributing neurosis to sex influences is discussed as is the Oedipus complex and without accepting these views appreciation is expressed of Freud's services to psychology. Among other conceptions of the neurosis Jung's view that they depend on inability of the individual to adapt himself to life as incompetence due to failure in psychic force is quoted as being singularly complete if the premisses on which the hypothesis is based could be established. Dr Gordon rather wickedly adds that the gist of Dr E D Adrian's contribution to the Psychological Congress in 1923 was that there is nothing except lack of the slightest evidence in its favour, to prevent the discussion of a special form of energy which differs from other forms as electricity does from heat. After accounts of the psychological types in neurosis the anxiety states, obsessions, hysteria, the dissociation syndromes, and exhaustion neurosis there is a well considered chapter on the physician and the neurotic individual in which emphasis is laid on the importance of a real understanding of the patient who is like a young and frightened horse dashing about in a field and trying to get out while all the time the gate through which the physician must lead him is open. But it must be realized that no one, however skilled, can succeed with every neurotic.

The part the physician should play in treatment the Freudian transference between them, and the risk to which the medical man may be exposed are all explained, and the subject of treatment is fully dealt with under the heads of the scope and limitations of psycho-analysis, suggestion and persuasion. The concluding chapter of this well written and open minded book deals with the relation of the patient to the public at large, and the attitude of the man in the street to the neurotic.

### CRIME AND CRIMINALS

The number of books on crime and criminals which are being published at the present time is very large even those that are sent to us are so numerous as to be embarrassing. We may, however, notice a book on Crime

and the Criminal by Dr PHILIP ARCHIBALD PARSONS, Professor of Applied Sociology in the University of Oregon because, though it is primarily concerned with the methods followed in the United States of America, it has considerable interest for British readers. Legal processes for the arrest, conviction, punishment and amendment of the criminal differ considerably in the two countries, but their aim is the same.

The criminal is a menace to life and happiness. He imposes financial burdens upon society and is himself an economic liability. He is a great obstacle in the way of social progress and is a striking example of social inefficiency. Society views him with a lingering fear, a fear which in special crises develops into terror and even hysterical manifestations. There is a cry for vengeance or a clamour of special pleading which may defeat the end of justice. The loss due to crime in the United States is estimated at five to six billion dollars a year and this estimate takes no account of loss due to "graft" nor of the costs of police, law courts, judges, juries or of penitentiaries. The modern criminal is not like his popular picture. Once two celebrated actors took the parts of Fagin and Bill Sikes in a stage version of *Oliver Twist* played in New York. The chief of Pinkertons, and later of the New York detective force was asked to see it and decide whether the actors were true to life. He reported that the play was fine but if the actors had stepped on to Broadway they would have been arrested on sight. "They looked too much like criminals. And present-day criminals don't." Lombroso was responsible for fixing a physical type in the public mind. His conclusions were wrong as has been conclusively shown by the work of Goring and Karl Pearson but he did good by initiating investigations. Goring's conclusions better meet the case—that criminals as a class are inferior human beings characterized chiefly by their stupidity and inability to play the game according to the rule of modern society.

Dr Parsons recognizes varieties of criminals thus: insane criminal, born criminal, habitual criminal, professional criminal, occasional criminal, the criminal by passion or accident. The tendency is to the belief that while mental deficiency is not in itself a primary cause of antisocial conduct under certain conditions it becomes a contributing factor in the product of conduct disorders. Whether or not crime has increased in incidence is a moot point our ideas of crime change. But there is evidence—so far at least as the English speaking peoples are concerned—that there is a modification in the violence and seriousness of criminal acts. The decrease Judge Holt of New York City says is the result of civic and social effort to eliminate the factors responsible for delinquency and neglect.

In cold countries crimes against property are, it appears, more prevalent than crimes against the person. Obscene acts rise from a minimum in cold January to a maximum more than double the minimum in warm July. Crimes against property reach their height in early winter. In many European countries statistics indicate that crimes against property—principally theft—rise and fall with the price of the principal cereal food. There is reason to believe that this correlation exists with a fair degree of regularity all over the world. Men who work for themselves have a much lower rate of criminality than those working for a wage. At the present time there is no evidence that the system of education has either increased or decreased crime. It has been pointed out with what frequency crime is preceded by truancy from school, itself a sign of individual maladjustment.

After dealing with the criminal and modern crimes Professor Parsons proceeds to consider the reaction of society to the criminal and discusses the police theories of punishment, reform of penal institutions, substitutes for imprisonment, the treatment of youthful offenders, and new conceptions and treatment of crime.

His review of trial by jury is of great interest. In this country there is no difficulty in getting a jury empanelled with order and speediness, it is otherwise in

*The Neurotic Personality*, By R C Gordon, M.D., D.Sc., FRCP, Ed. International Library of Psychology, Philosophy and Science, M. D. London: Hogarth and Trench, Trubner and Co., Ltd. 137 (D.M.) 8vo pp. x + 22. 10s. 6d. net.

*Crime and the Criminal*, In *Interpretation of Crime*, By Philip Archibald Parsons, Ph.D., New York and London: 1927. 11.11.1. 8vo pp. 226 (Ext. 12. 8vo pp. xvi + 257. 10s. 6d. net.)

the United States, where, on occasions, weeks have been wasted on this ritual procedure. "In 1920 two months were required in securing a jury, and 1,200 prospective jurors were examined." His criticism of the jury in sanity trials is particularly severe.

Perhaps there was some excuse for the use of the jury in passing on the sanity cases in the days when insanity was detected by the obvious depravity of an individual from what was considered to be a normal mental state. With the present development of the science of the mind and nervous system in health and disease, however, it is now a well known fact that the number of persons who reveal their mental pathology by conduct strikingly out of the ordinary is relatively small in proportion to those whose deviation from normal mental health is commonly detected only by the trained observer. Most of these would appear to the ordinary jury as normal individuals.

The author is disturbed by a sinister aspect of the present situation, in which an individual of good standing in the community discovers that he does not lose caste with his group by unsocial or antisocial behaviour.

The law is a crude device for restraining conduct. Only the stupid and impulsive, the poor, and the weak violate it. The clever and the rich can gratify their unsocial and antisocial desires to a great extent by extralegal means, or, in many instances, by open defiance of the law. Antisocial mobilizations of power, such as criminal political organizations, may be strong enough to afford members protection against the authority of the State.

This is a book which every magistrate might read with advantage, and will be a help to those who have to do with child delinquents. There is an excellent bibliography.

### OTOLARYNGOLOGY IN GENERAL PRACTICE

Dr. Crow describes his book on *The Ear, Nose, and Throat in General Practice* as an informal guide to the main principles, and thus dismisses criticism, for there is no attempt to present a complete, even though condensed, account. The author has selected certain aspects upon which he holds strong views, and considers that the mind of the practitioner needs to be enlightened on it in its entirety.

Although he touches upon other matters, the adequate treatment of acute otitis media, the prompt removal of foreign bodies from the ear and food passages, and the technique of operations for removal of adenoids and tonsils are those which chiefly engage his attention, and he also advocates a wise conservative policy towards the nose. The views expressed are sound and definite, and they relate to points about which many practitioners hesitated to pronounce. The author really produces that additional emphasis after which he evidently strives. In a volume of the same size a balanced review of the whole subject might have been presented by omitting many redundant illustrations and many pleonasmic in the text. The result is a book which is no colourless compilation, but full of character, and evidently based upon intense personal convictions, with the natural corollary that the outlook is limited.

### LIVING MACHINERY

*Living Machinery*, by Professor A. V. Hill, contains six lectures he delivered at the Royal Institution last Christmas. The book deals chiefly with the neuro-muscular mechanisms of the body, and especially with the laws governing the activity of the voluntary muscles. The mechanisms of cardiac and involuntary muscles, however, are considered also. The book is written in an interesting style, and shows that Professor Hill has a special gift for simple and lucid exposition. Although originally written for children, there are few adults who will not require much interesting new knowledge from its perusal. The last chapter entitled "Speed, strength, and endurance," has a particularly wide interest, for in it we considered the factors that govern the making of athletic

*The Ear, Nose, and Throat in General Practice* By D. A. Crow  
M.B. Ch.B. Ed. Oxford Medical Publications London Milford Oxford  
University Press 1927 (Demy 8vo, pp. x + 150 4s 6d) 2 plates  
10s 6d net

*Living Machinery* By A. V. Hill M.A. Sc.D. F.R.S. London  
G. Bell and Sons Ltd 1927 (Cr. 8vo pp. vi + 256 5s 3d) 23 plates  
7s 6d net

records. Endurance is shown to be due chiefly to the rate at which the heart can supply oxygen to the body and to the capacity of the body to run into oxygen debt. The author suggests that it would be an interesting experiment to construct a suitable tunnel and fill it with pure oxygen, to see if it is probable that under such conditions a champion would be able to run the mile in less than four minutes. Another point he makes is that ability to climb at high altitudes probably depends on the same factors as the necessity for success in long-distance running, he thinks, therefore, that the long-distance runner is the most likely type of person to succeed in climbing Mount Everest.

The book is full of examples of the way in which general physiological principles can be applied to practical problems. Anyone, indeed, who wishes to get a general idea of the latest recent advances in our knowledge concerning neuro-muscular mechanism will find this book very useful and interesting.

Unfortunately, functions of the body cannot be explained without assuming an elementary knowledge of physics and chemistry, and those who do not possess such knowledge may not always find it easy to follow Professor Hill's statements, although, as has been said, he writes in a remarkably simple and clear style. All, however, who have knowledge of elementary science will find the book both interesting and instructive.

### PLOUGH COURT

The history of any long established business must needs be interesting and in some cases romantic, and it is a pity that more have not been recorded. That of a great firm of chemists and druggists, such as Allen and Hanbury's, is of special interest to the medical profession, whose activities have been so closely connected with those of the druggist, some of its members have taken important parts in the management of that firm. In *Plough Court: The Story of a Notable Pharmacy, 1715-1927*, Mr. Ernest C. Cripps has drawn a pleasant picture of the doings of the forceful but fine character of the men who built up the business, Plough Court, Lombard Street, where Alexander Pope was born, his being the seat of this pharmacy ever since. Syllums Bevan, the Quaker descendant of Jenkins of Evesham, took a lease of No. 2 from Sir John Osgood in 1715, and added No. 3 to it soon afterwards. For 157 years the same premises were used, and for almost exactly the same period the partners in the firm belonged to the Society of Friends. In 1893 the business became a limited company, with members of the family of Hanbury on its board of directors.

Syllums Bevan, like a number of his successors, was more than a business man. He linked in his day is a man of science, and in such became a Fellow of the Royal Society, the first of five Fellows who were named in the Plough Court pharmacy, not counting Luke Howard, F.R.S., who was at one time a partner and the founder of a firm still celebrated for its quinine and many other products. Bevan, although he did not hold any diploma, seems to have practised as a physician, and was known as Dr. Bevan. His son, another Syllums, gave up pharmacy to join the Quaker banking house of Barclay and Co. The name of Allen first appeared in the style of the firm neglecting his business he became widely known as a pupil at Thomas's Hospital. He had been "physician's 1807. He was a friend of Sir Humphry Davy and ketmed at the Royal Institution. Like others of the Quaker partners in the firm, no consideration of profit would induce him to forsake his principles, and it does not seem that he lost thereby. In order to contribute even so little to discourage negro slavery he returned from the use of sugar—a slave-made product—for forty-three years. His partner, Barry, refused to supply drugs to a French mil-

*Plough Court: The Story of a Notable Pharmacy 1715-1927*, compiled by Ernest C. Cripps London Allen and Hanbury's Ltd 1927 (Med. 8vo, pp. xvi + 227 Illustrated 10s 6d) Medical practitioners 12s 17s 6d net one copy from Allen and Hanbury's at the reduced price of 5s 4d net

the hospital because he held that it was "professedly for the purpose of encouraging men to enter the army"

The name of Hambury first appeared in the firm when Daniel Bell Hambury and his brother Cornelius, nephews of William Allen, became partners in 1824. Daniel Bell's son, Daniel, rivaled in scientific repute his great uncle, William Allen. As a botanist and pharmacologist his fame was world wide. At present the medical cabinet of the firm is Mr. Reginald J. Son Hambury. Space does not permit further comment on the many interesting things in this book, which itself bears evidence of the widened interests of the company, for it has been printed and produced in the Bethnal Green factory. The descriptions of this factory and of that at Warr, where oink and milk preparations are made and of the over a branches and agencies in the Norwegian cod liver oil factories are all of interest. The book is well illustrated with portraits, views and facsimile letters, and we feel sure that many medical practitioners will avail themselves of the offer of one copy each at the less than half price of five shilling.

## NOTES ON BOOKS

THE eighty fourth annual issue of the *Medical Directory*\* for 1923 has been published this week by Messrs J and A Churchill. There are very few changes in it as compared with previous issues and the care taken in the compilation of the records of 53 289 members of the medical profession is as evident as heretofore. Whereas in each of the four previous years however the annual increase was over 1200 it is now noteworthy that the total has been increased this year by only 731 names, there being a decline in the sections devoted to Scotland and the Services. The increase in the number of names of medical practitioners in the Provinces is about the same as in previous years but London shows a sharp drop compared with 1927. Dr R Lortuesque Fox has again supplied a description of the past and climatic health resorts of Great Britain, Ireland and New Zealand; this covers thirty seven pages and it is conveniently arranged and well illustrated. At the end of the volume is a date list, including new names and recent changes of address. The present issue of the *Medical Directory* fully equals the best of its predecessors and a indispensable book of reference will return the favour it has won in the past.

In *The Game of Health* Dr J. MAXWELL TAYLOR sets out the principles of health education in the form of an analogy, and with a simplicity of language calculated to appeal to the older boys and girls of the elementary schools. The method adopted is well illustrated by the chapter headings—namely Games, The health team, The opposing team, The playing field. The strategy of the game<sup>1</sup> and the core emphasis is laid throughout on practical rather than theoretical aspects, and a considerable number of useful suggestions are attractively given. The analogy of Association football is not unduly strained, since the modified game used as an illustration of the contest between hygiene and disease is now very different from that played by children on public commons. The book may be recommended as having an immediate value for children and also as being likely to kindle in them an interest in the cultivation of health which in later years may lead to further study and more careful observation of its rules.

In *A Short Account of the Antiquity of Hindu Medicine*, Dr. David C. Mitter covers a period of 5600 years from 4000 B.C. the date of the Rig Veda, until A.D. 1600. The beginnings of civilization in India with which medicine was contemporaneous go back, as recent excavations in the Punjab and Sind amply prove much further than those of ancient Greece and it would appear that Greek and Arabian medicine was indebted to the Hindus and not that the Hippocratic teaching influenced the medicine of India. From 2,000 to 600 B.C. the Epic Period the Indo Aryans reached the zenith of their civilization and the standard works of Charaka and Susruta then produced were revised and reedited until A.D. 1500. In the Buddhist period (600 B.C. to A.D. 600) civilization began to decline and anatomy previously practised was discouraged but though surgery did not advance the study of chemistry and medicine did. One of the last great

men who threw lustre on Hindu medicine was Bhava Misra or Bharras (A.D. 1500), who is said to have anticipated Harvey in speaking of the circulation of the blood and to have prescribed mercury for syphilis.

*The South American Handbook* for 1928, the fifth year is a reminder of the importance of the great Latin American continent. Information on every topic is given in very readable and attractive form, and the print is never too small or indistinct. The steamship routes are set forth in detail whether by the eastern route to Buenos Aires with calls at Bahia Rio de Janeiro and Santos, all of them important ports of Brazil, or by the western route to Valparaiso through the Panama Canal with a call at Callao for Lima, the capital of Peru. The book contains one large coloured map of the continent, and many small sketch maps of particular areas. In the huge map the vast extent of Brazil is clearly shown, most of its area is indeed still unexplored. Portuguese is the prevailing language of civilization in Brazil, but some Indian dialects persist. Elsewhere from Venezuela in the north to Chile and Argentina the language is Spanish. The seasons are, of course, reversed and the South American summer is at its height in January. It may be noted that Buenos Aires, the capital of Argentina, actually lies further south than Capetown. The most striking trip the tourist can make is from Buenos Aires to Valparaiso across the continent from east to west, the journey can be broken at Mendoza, the garden of the Andes and continued through the mountains in view of the highest peak—Aconcagua, 23,000 feet (said to be the highest mountain of the Western Hemisphere). A steep descent leads to Valparaiso the chief seaport of Chile. The natural resources of all the different republics are described as also the habits and customs of the Indian tribes—for example the Araucanians or Chile particulars will be found too as to climate and as to currencies and costs of living. The book has been carefully prepared, and no pains have been spared to show the magnitude of Latin American contributions to the real wealth of the world.

<sup>2</sup>The 5th American Handbook 1953 Edited by J. A. Hunter  
London South American Publications Ltd Atlantic House Moorgate  
E.C. 1 A 71 Tel Aviv 7-2 6d net per free s

## PREPARATIONS AND APPLIANCES

**A SIMPLE THERMO-TAT**  
**TRISTROY DAVIS** has devised a simple thermostat, the principle in construction of which is inexpensive in construction. A piece of glass tubing (a) bent as shown in the illustration contains mercury and a small drop (c) of a liquid which boils at the temperature desired. The inlet pipe (b) is drawn out to a point and may if desired have a by pass hole in it or a by pass may be arranged separately. The outlet is indicated at (c). A cork (d) is bored to take the tubing and is thoroughly impregnated with paraffin. If the tubes are warmed by a fire resembling them the apparatus is gas tight. The liquids used are ether for the incubation temperature of 35° C. acetone for the embedding bath of 50° C. and carbon bisulphide for the hot plate at 47° C. When carbon bisulphide is employed it should be well shaken with a little mercury before use this will prevent it blackening the mercury in the thermo-tat.

**RADIO-TOL.**

We have already mentioned on more than one occasion the preparation Radio tol manufactured and sold by the British Drug Houses. It is obtained by ultra violet radiation of ergosterol and is believed to be identical with the substance previously known as vitamin D. Undiluted radiotol possesses 200,000 times the activity of good cod liver oil—one sixth of an ounce being the equivalent of a ton of cod liver oil. It has hitherto been issued in an oily solution but the firm has now sent us samples of an improved method of dispensing the substance in a sugar-coated pellet into which has been incorporated a measured quantity of radiotol. A bottle of these pellets containing fifty can be obtained at the price of a cod liver oil. The existence of this preparation should facilitate antirachitic therapy since difficulty is occasioned with the pronounced taste of cod liver oil can now be avoided.

**THYROID TABLETS**  
Thyroxin, the active principle of the thyroid gland, is now issued by Burroughs Wellcome and Co. as Tablet Thyroxine in bottles of 100. Two strengths are available: 0.005 gm and 0.001 gm. The dose for adult is from 0.002 gm to 0.002 gm orally. Minimum doses should always be given at first and the optimum amount for each case should be determined by trial.

**DRIED LIVER**

Messrs. Allen and Hanbury Ltd inform us that they have prepared and are now in a position to supply liver in the form of a fine powder which is palatable and readily taken. 2 oz. of this product are rated to be equal in activity to 8 oz. of fresh liver. It is supplied in 1 oz., 2 oz., 4 oz. and 8 oz. bottles.

*Melical Directory*, 1223 Lendon J. and A. Chubb H. 6s net  
*The Cause of Health* By J. Maxwell Taylor M.A. B. CHB DPH  
 With introductory note by Sir W. Arbuthnot Lane M.B. C.B. Glasg.  
 1 Crown St. N. (Lancaster) L. 1.37 (Imp 16mo tin) 3s net trade  
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*Short treatise of the antiquity of Humane Medicine* By David C.  
 Aubrey M.D. & sequel London Baillière Tindall and Cox 197  
 (tot. 8vo. 10 s.) 1 nls. 2s. 6d. net)

## British Medical Journal.

SATURDAY, DECEMBER 17TH, 1927

## FRACTURES OF THE SPINE

SEVERE injuries of the spinal column have long attracted the interest of surgeons and neurologists, but until recent years their incidence has been, generally speaking, confined to mining districts and those where what are called heavy industries are carried on. Formerly opportunities of studying these injuries were few in other places, but the great increase of fast and heavy motor traffic has made these—and, indeed, all manner of severe fractures—familiar to surgeons in most parts of the country, and particularly in places situated near the great cities and the main roads which lead to and from them. The effects of being hurled from a car travelling at high speed, or of being violently squeezed between two vehicles, are as damaging as those of a fall of roof in a colliery or of falls of the body from a height. Mr. George Stebbing's experience in only one London Poor Law hospital shows an alarming sixfold increase in the admissions of cases of fractured spine in the last decade. Whatever deductions from the totals may be necessary on account of the increased resort to Poor Law institutions in place of voluntary hospitals, they will not be such as to render the figures anything but startling. This being so, the Orthopaedic Section of the Royal Society of Medicine was well advised in choosing these injuries and their treatment for the subject of the discussion last week, and in asking so well qualified a member as Mr. Geoffrey Jefferson to open it. In his paper, of which an abstract will be found in our report of the discussion at page 1145, he dealt, as did most of the speakers who followed him, more with the symptoms and signs and pathology of these lesions than with the details of treatment. This is perhaps best accounted for by the reflection that the arrangement of the parts involved is somewhat complicated, and the mode of action of the forces concerned somewhat obscure, although essentially similar to the mechanism of fracture of a long bone from indirect violence. Nearly all indirect spinal fractures are the result of forced flexion. The few cases of fracture from hyperextension of the head are almost all confined to the odontoid process of the axis, and may be dismissed from present consideration. On the other hand, the opportunities of active treatment are few and small, and there is a very general agreement as to the principles of fixation and support on which treatment is based.

It is a commonplace of surgery that the gravity of every injury of the spinal column depends first on the presence of concomitant damage to the spinal cord which it contains or to the nerve roots which pass out through its foramina. It is perhaps less widely realized that without nerve injury a crush fracture of a vertebral body, unless early detected and promptly and properly treated, may cause long enduring or permanent weakness, by rendering the great main beam or kingpost of the body framework unequal to its normal functions apart from any lesion of the cord or its nerves. The effect of a compression fracture on the body of an individual vertebra is to change its outline, as seen in a

lateral radiograph, from what is roughly a parallelogram to a wedge like form. It is obvious that no surgical intervention can be expected to restore it to its normal shape at once, and that even partial spontaneous restoration, if it takes place, must be a very slow process. There is a general consensus of opinion in favour of treatment by long continued fixation, at first in the recumbent position, and the only serious difference of opinion is found in discussions as to how this fixation should be brought about. Some surgeons, mostly in America, are in favour of permanent fixation by means of Allbee bone grafts, others in Europe and America rely on plaster-of-Paris supports during the period of recumbency, to be followed by spinal supports of various kinds after the erect position and perambulation are allowed. There is no question but that this conservative method, which leaves the patient with a spine flexible in the affected region, gives, if successful, better functional results than any fusion method which permanently stiffens the back.

Dr. George Riddoeh, who opened the discussion on the neurological side, emphasized the importance in cases of cord lesions of delaying all operative intervention—if ever it be needed—until all symptoms of spinal shock had passed away, which might not be for two to six weeks after the injury. He confirmed the general belief, based on experience, that the pressure which damages the cord without destroying it is usually only exerted for a moment, and that any damage done is immediate and irreparable. Paralytic symptoms are very rarely due to irremediable compression, and hence operations for the relief of nerve symptoms are very seldom to be undertaken with any hope of success. In the diagnosis of the nature and extent of the injury the x rays are of the first importance, without them many compression fractures would escape detection, and even with them and it is in some cases very difficult to discover what is wrong. As Dr. Bertram Shries rightly insisted in the discussion, repeated exposures in different planes and stereoscopic pictures may be necessary before a decision can be come to. Such cases call for the highest skill and widest experience in the radiologist. Dr. Shries believes in the occurrence of subluxations of vertebrae which could be radiologically demonstrated and which, when undetected, might furnish opportunities for the triumph of irregular practitioners. Whether or not such cases are really slight subluxations or merely cases of adhesions is at present, we think, an open question. His reference to this problem of the non-detection of compression fractures opens another important question for discussion, which has recently been set forth by Dr. R. B. Osgood of Boston in an able paper read before the Section of Surgery of the American Medical Association last May.<sup>1</sup> After reviewing 242 cases of fracture of the spine he came to the conclusion that compression fractures are common injuries which are often not recognized early, and are consequently often treated by unsound methods, involving serious disability and medico-legal difficulties, and that if properly treated in uncomplicated cases a return to full wage earning capacity may be expected. He has a peculiar personal interest in this matter, for he tells us that he himself suffered and recovered from a crush fracture of the sacrum, sustained whilst skiing. In his experience, in the vast majority of cases only one vertebral body is crushed, and in some three-fourths of the cases this body is that of the eleventh or twelfth thoracic or the first or second

<sup>1</sup> *Journal of the American Medical Association*, November 5th, 1927, pp. 1553-9.

lumbum. It may be noted that in Dr. Osgood's series the incidence is much less in the cervical region than it is in the series of cases discussed by Mr. Jefferson or Mr. St. John Burton, in which the cervical cases were nearly as numerous as those at the thoracic lumbar junction.

Dr. Osgood strongly advocates conservative treatment such as we have outlined and would let the decision to insert a bone graft rest with the patient and not the surgeon. His paper is well worth careful study by all surgeons interested in this question and, in fact, no practitioner can be sure that he may not have to treat a spine damaged in a motor accident any day, and without warning.

## NORMAL TERMINATION OF PREGNANCY

The factors that cause the termination of normal pregnancy have always been a subject of speculation, but knowledge regarding this important problem has advanced very slowly. Recently, however, certain definite facts have been established.

The work of Dixon, Marshall, and Knaus in establishing the influence of the pituitary gland on the uterine activity during pregnancy was reviewed in these pages a year ago.<sup>1</sup> Dixon and Marshall showed that ovarian extracts increased the pituitary secretion but only when the extracts were made from ovaries which contained no corpora lutea, whilst Knaus showed that the effect on the uterus of administration of pituitary extract increased steadily towards the end of labour. The action of the drug on the uterus was measured by the ease with which abortion could be produced in rabbits.

The views expressed were not identical for Knaus was led to conclude that changes in the contractile power of the uterine muscle constituted the chief factor that terminated pregnancy, whilst Dixon and Marshall's work suggested that changes in pituitary secretion excited by the ovary were the chief cause. Knaus<sup>2</sup> has now furnished additional evidence for his view. The method he employed was to sterilize one uterine horn in each of a series of rabbits, to kill the animals at various periods of pregnancy, to remove the sterilized horns and to record their activity as isolated muscles. The presence of foetuses in the pregnant horns caused the muscle of the sterilized horns to undergo all the changes normal to pregnancy, but as their form was not altered by the development of foetuses in their interior their activity at different stages of pregnancy could be accurately compared. This ingenious method provided excellent records by means of which the changes of the activity of the uterine muscle could be determined very exactly. During the first half of pregnancy the uterine muscle showed a diminution in tonus and the contractions were much feebler than those of the non-pregnant uterus. During the second half of pregnancy the spontaneous activity of the uterus increased steadily both in amplitude and frequency and attained a maximum at parturition. These observations appear to indicate that parturition is the culminating event resulting from a gradual but steady increase in the excitability of the uterine muscle.

The reaction of the uterus to drugs also showed very interesting variations. Adrenaline and quinine caused powerful contractions at all stages of pregnancy, ergot and pituitary extract on the other hand had no effect during the first half of pregnancy but produced strong

contractions in the second half. The effects produced by pituitary extract in particular were much greater in the period immediately preceding parturition than earlier. If we accept Knaus's work we get a picture of an orderly change in uterine activity occurring throughout pregnancy, with parturition as the terminal event in the cycle. Parturition can thus be accounted for as a result of the changes actually occurring in the uterine muscle which changes, it is suggested, are induced by some hormone set free by the foetus. The possibility that the pituitary gland also plays a part is, however, not excluded since the sensitiveness of the uterus to pituitary extract is seen to change in such a remarkable manner as parturition approaches. This new work of Knaus therefore fits fairly well into the hypothesis outlined by Dixon and Marshall that one cause of the termination of pregnancy is a sudden increase in pituitary secretion excited by the ovary, in consequence of the regression of the corpora lutea.

## NOMENCLATURE OF DRUGS

A CORRESPONDENT has sent us the following complaint. He read in an American article a strong recommendation of a drug called methenamine as a urinary antiseptic. Inquiries made by the dispenser or his hospital failed, however, at first to identify any drug of this name, and it was only after some trouble that our correspondent learned from America that methenamine was the title adopted by the tenth edition of the *United States Pharmacopoeia* for hexamine. This is a very typical example of the confusion that is bound to arise if more than one official name exists in the same language for a single drug. We know that similar confusion is constantly arising in regard to many other common drugs which have different titles in this country and in the United States. In this particular instance the actual history of the nomenclature of the drug is as follows. The substance hexamethylene tetramine became known to the medical profession under the proprietary title of urotropine. It was included in the *British Pharmacopoeia* 1914 under the title hexamine and in the *United States Pharmacopoeia* IX, 1916 with the name hexamethylenamine. Although these titles were not identical yet they were sufficiently alike to prevent confusion but unfortunately in 1926 the name was changed to methenamine in the *United States Pharmacopoeia* X. We understand that this change was made because it was felt to be desirable to shorten the name and unfortunately proprietary rights were claimed in the United States of America over the name hexamine. Some similar reason will usually be found in most cases where a heterogeneous official nomenclature for a single drug puzzles and annoys the practitioners or medicine. Such histories obviously indicate a very unsatisfactory state of affairs. Medical literature is international and this is true in a special sense of all medical literature written in the same language. There is every advantage in having only one official name in the English language for any particular drug. One difficulty is that a large proportion of new drugs are introduced as proprietary articles, and it will usually be necessary for the medical profession to endure one change of name when such drugs are first introduced into the *Pharmacopoeia*. There is, however, no reason why more than one such change should be inflicted, and it is to be hoped that some international agreement will be obtained to ensure that when a name has once been introduced as an official pharmacopoeial name in either the United States or this country it shall be free from capture as a proprietary name and shall be adopted as the official name in both countries. The value to be

<sup>1</sup> BRITISH MEDICAL JOURNAL, 1920 II 602.  
<sup>2</sup> *Ibid.* *Proc. of Exp. Path. & Pharmacol.* 1, 152, 1927.



been introduced under proprietary titles is that an official and non-proprietary name often reduces the price of a drug by throwing its manufacture open to competition, but if the official names do not succeed in establishing themselves in common use they fail to serve this purpose. Now the task of obtaining a satisfactory official name for any drug that has been established under a proprietary title is always likely to be difficult, because the most suitable and obvious names are just the ones which are most likely to be subject to proprietary rights. Moreover, the proprietary name usually has a long start of the official name. If in addition to these unavoidable handicaps the official names differ in different countries, it must often happen that the official names will be ignored and the proprietary names retained in use.

### MECHANISM VERSUS VITALISM

RATHER more than a year ago Professor Eugenio Rignano's *Man not a Machine* was reviewed in our columns, and now, to show the other side of the shield, Dr. Joseph Needham, of the Biochemical Laboratory of the University of Cambridge, has contributed to the same series of little volumes one with the title, recalling the eighteenth century controversialists, *Man A Machine In Answer to a Romantic and Unscientific Treatise written by Sig. Eugenio Rignano and entitled "Man not a Machine"*. As if to prove that this plan of blast and counterblast has not originated with the publication of *Daedalus and Icarus* as a product of brighter biochemistry, Dr. Needham begins with an account of two somewhat similar books published 180 years ago—namely, "Man a Machine," written by Julien Offray de la Mettrie (1709-51), "a celebrated physician of the Faculty of Paris," and in the same year (1748) "Man More than a Machine," described as "in answer to a wicked and atheistical treatise written by M. de la Mettrie," by an anonymous person, de la Mettrie himself did not escape suspicion, for his methods bore a resemblance to his slightly senior contemporary Voltaire, he was, for example, guilty of a satirical lampoon purporting to describe the Medical Faculty of Peking, but actually ridiculing the leaders of the profession in Paris, he had to seek refuge in Berlin, where he became physician to Frederick the Great. Taking up the cudgels for de la Mettrie, whom the reader may at first be erroneously inclined to suspect he invented, Dr. Needham, with a light touch and very cleverly, contests the arguments of the vitalists, including one of the most recent, J. S. Haldane, and attacks Professor Rignano's argument that teleology, purposiveness, striving, aiming at a goal, is the unique characteristic of living matter. After a full and reasoned analysis of his opponent's thesis he draws together the threads of his essay in the concluding chapter, describing and discussing the methodological importance of mechanism in science and its inadequacy everywhere else.

### THE ROCKEFELLER FOUNDATION

THE report of the Rockefeller Foundation for 1926 opens with a general review of the work by the President, G. E. Vincent, which was published separately and noticed in our columns on August 13th (p. 289). This is followed by the report of the secretary, Norma S. Thompson, which shows that the programmes of the Foundation were carried out during 1926 by two boards and two divisions—the International Health Board and the China Medical Board, the Division of Medical Education, and that of Studies. The International Health Board promotes public health and

the prevention of disease by assisting Governments all over the world in the development of their own official health agencies. During the past year the Board took part in public health work of various kinds in eighty-eight States and countries throughout the world. It assisted Governments in yellow fever, hookworm, malaria, and general surveys, in campaigns for the control of yellow fever and hookworm disease, in demonstrations of malaria control, and in the development of public health organization in county and rural districts. Further, the Board has aided Governments in establishing or strengthening the technical services of public health work, such as sanitary engineering, the collection and interpretation of vital statistics, and public health laboratories. Numerous contributions were made to schools and institutes of hygiene for food, housing, equipment, maintenance, or endowment, for the London School of Hygiene and Tropical Medicine alone a pledge of 2,330,000 dollars has been made. Study tours for Government health officials have been continued, and fellowships in public health were provided for 253 men and women of thirty-one countries. The Board continued to co-operate with the Health Section of the League of Nations by contributing funds towards the support of international interchanges of public health personnel and in other ways. The total expenditure incurred by the Board since July 1st, 1913, to the end of 1926 amounts to about four million pounds. Much of the report is devoted to hookworm disease, malaria, and yellow fever, three widely distributed diseases of economic importance which the Board has chosen for special attention. The account given of these three scourges illustrates the great importance of primary field inquiries into the local circumstances of communicable diseases in order to ensure that subsequent administrative measures shall be as effective and economical as possible. Thus, in the case of hookworm disease it was found in Alabama that a temperature of 50° F. and under checks larval developments in the soil. In Mexico and in India it was proved that, besides temperature, the rainfall was also an important factor. Again, field inquiries in Tennessee showed that the hookworm larvae flourish only in sandy or loamy soil, and do not survive in clay or silt soil. Hookworm disease is chiefly found among those who work upon the soil, such as farmers and gardeners, but the Board's workers in China made the interesting discovery that, while hookworm disease is rare among the mulberry-tree coolies, it is relatively unimportant among the coolies on the rice plantations. In both industries human excrement is used for fertilization, but whereas large amounts of fresh excrement are applied to promote a rapid growth of the mulberry leaves, in rice culture the excrement used is stored for some time and in consequence most of the hookworm ova are destroyed. Moreover, rice cultivation is carried on under water, and this again prevents the development of the eggs. In general, the distribution of the disease was found to correspond closely with the economic circumstances of the population, where the people can afford shoes for the children and provide suitable latrines the parasite finds no foothold. The campaign against this disease has resulted in its almost complete disappearance from the United States and increasing control of its spread elsewhere. Every person harboring these worms does not suffer from them, for usually the amount of harm bears a direct relation to the number of worms, the Stoll dilution egg-count method, which demands a careful technique and is somewhat tedious, has been extremely useful in India in determining the intensity of the infection in various districts. Field investigations in malaria have thrown light on the species of mosquito conveying the parasite, and laboratory work has been devoted to the possible use of the precipitin reaction in the diagnosis of latent malaria and to suggested substitutes for quinine. An account is given

<sup>1</sup> *Man a Machine*. By Joseph Needham. Fellow of Caius College, Cambridge. *Psyche Miniatures General Series No. 12*. London. Hegan Paul Franch Trubner and Co. 1927. (Pott 8vo pp. 111. 2s. 6d. net.)

<sup>2</sup> *The Rockefeller Foundation. Annual Report for 1926*. New York. 61, Broadway. (Demy 8vo, pp. 450. 72 illustrations.)

of the West Africa Yellow Fever Commission, which started work in June, 1925, the disease is sporadic, but its endemicity among the natives has not been established. It appears from the report of the China Medical Board that in spite of civil wars and other disturbing events the work went on in 1926 without any serious interruption. This section of the report contains some particularly successful photographs and an imposing list of the papers published by the staff members of the Peking Union Medical College during the year under review. Dr R. M. Pearce, director of the Division of Medical Education, shows that representatives of the Division visited twenty countries in connection with medical education or co-operative programmes, and human biology and nursing education have been promoted by the Division of Studies. The reader cannot fail to be deeply impressed with the efficiency and widespread beneficence of this great Foundation.

### THE OPPORTUNITIES OF SPA PRACTICE

THE opportunities which spas present for collective research was the theme of the Samuel Hyde Memorial Lecture delivered by Dr Whitridge Davies to the Balneological Section of the Royal Society of Medicine on December 8th. He suggested that hitherto, notwithstanding the keenness and up-to-date outlook of many spa practitioners, such clinical research as had taken place at spas had been less fruitful than might have been hoped for from the amount of time and energy spent thereon. The reason possibly was that in much so-called research too great attention had been paid to the results of a single method of investigation or the alleged results of a single therapeutic procedure applied to a number of cases. The more promising method of clinical research was to study by every possible means the etiological factors involved, the symptoms and manifestations, the functional changes and the effects of various procedures in comparatively small groups of cases and this required co-ordinated effort. The lecturer went on to describe the physiological "background" for the investigation of disorders of joints and instanced some recent work on the nutrition of articular cartilage and the secretion of the normal synovial fluid matters on which textbooks of physiology were silent. He mentioned also the work of A. V. Hill and others on reflex regulation of tonus and pathological physiology of muscles related to diseased joints. From this he passed to the physiological basis of various balneological procedures, the effects of local heat upon the circulation, and of general heat and immersion upon circulation and metabolism, and again recent physical and chemical studies of various natural waters, radioactivity "zymosthenic" and catalytic activity, and the chemical "architecture" of salts and other constituents of such waters. Here were large fields of research offering complex problems which spa practitioners could appropriately tackle. A medical man in a spa, said Dr Davies was fortunate as compared with many of his colleagues in industrial practice who were often so overburdened with work that they had no time even to apply the knowledge they had gained as students not to speak of acquiring and applying fresh knowledge. He had, as a rule much more leisure, during a limited season he was extremely busy but for the rest of the year he had ample time to take mental stock, to improve his technical skill and to carry on research. In many health resorts the means for investigation and treatment were at hand while the number of doctors gathered there, with many different interests and points of view provided first-rate opportunities for combined research. The patients also owing to the chronic nature of their maladies or to their happier economic circumstances, were able to remain longer under observation. Spa hospitals had many empty beds during considerable periods of the year, and so were able to carry out

work which was not open to the voluntary hospitals in large towns where very few beds as a rule were available for any continuous investigation. But it was possible only by team work to take advantage of such opportunities as existed in spas. No one individual could hope to unravel more than a few threads of the tangle, but by working together much more could be done. The example of the Mackenzie Institute for Clinical Research might well be emulated by physicians in the principal health resorts. In one respect at least they would start with an advantage for while Mackenzie and his co-workers had to lay the foundations before they could build, many spas already possessed facilities for such work as had been done at St. Andrews.

### THE LOAD AND THE LAD

THE latest report (No. 44) issued by the Industrial Fatigue Research Board is entitled 'The physico-chemical changes in women in industry, a contribution towards the determination of the optimum load'. The painstaking investigations which are the subject of this report were due to a request from the Home Office. It is not clear, however, what evidence of serious damage to women in industry from carrying loads induced the Home Office to ask for an inquiry which has taken two years to complete, occupied the time of five experts, and led to the publication of a volume of 140 pages. Indeed it would appear from the report that no such injury occurs, or at most that it is limited to some boys who, when able to choose their own load occasionally attempt more than the expert deems suitable. Anthropometric data were first collected for 3,493 women engaged in industry, and as a control, for 413 unemployed women and 460 college women. This part of the inquiry indicated that the college women were taller, heavier and more powerful than the industrial women, that the strength-weight ratio was strikingly uniform for workers in good condition and that there was some evidence of a relation between "heaviness" of the trade and the physique of the women employed in it. The second section of the report deals with the physiological cost of the various modes of carriage to the individual worker. Departure from the erect posture, abnormality of gait, much static effort, strain (especially on the smaller joints), led to a higher physiological cost. The investigators in this section decided that 50 lb for 'well disposed' loads and 40 lb for 'ill disposed' loads were the maxima for women engaged in continuous work. It is interesting to compare this decision with a statement on an earlier page that girls in brick works carried three or four large bricks each weighing 26 lb supported on the left hip for a distance of seventy or eighty yards. The good carriage of the girls in this factory was also very remarkable. The third part of the report reproduces observations made by Dr Sybil Overton for the Chief Inspector and Senior Medical Inspector of Factories at the Home Office. This is perhaps the most illuminating part of the volume. She managed to discover two cases of alleged injury from weight lifting. A boy of 16 had a hydrocele which was said to have been caused by 'strain at the work' and a woman aged 22 believed that heavy work during the war led to a femoral hernia. Two surgeons on the other hand informed Dr Overton that in their experience so far as women and young persons were concerned heavy work alone was not responsible for injury and that some contributory factor was always present. As Dr Overton says this opinion was largely borne out when accidents said to be caused by weight lifting were carefully investigated. It was found that the highest percentage of load occurred in industries in which the worker could select his own load to suit his personal convenience, and not in industries in which he could not exercise his volition. Dr Overton is of the opinion that

the work required of the woman and the young person is, on the whole, well within their capacity, that the strongest women gravitate towards the heaviest industry, that women are generally self-protective in their choice of the size of load. But the justification for her errand is, in Dr Orison's opinion, the "young person." These individuals, especially the male young person (or, in homelier language, the lad), require "more regulation and supervision in their work if they are to avoid overstrain in the physically exacting period of adolescence." And the results of overstrain—when it occurs—are "the multiple sequelae of fatigue, increased incidence of accidents, lowered resistance to infection, increased suggestibility."

#### MYOPE CLASSES

THE National Committee for the Prevention of Blindness, which has carried on an energetic and effective propaganda in the United States for the cure of diseases such as trachoma and the prevention of ophthalmia neonatorum, has recently turned its attention to the establishment of "sight-saving classes," the American term for our myope classes. Last year the committee sent to this country two of its members to investigate our methods first-hand. The report is a generous recognition of the work done in this country for the education of the short-sighted. "England is the Mecca to which every supervisor and teacher of sight-saving classes in America turns with longing eyes, hoping that an opportunity may offer to visit the country in which this specialized education originated, and to note its development." A brief account of the general system of elementary and secondary education is followed by a history of the origin of the myope classes first formed in 1808 at the instigation of Mr. Bishop Harman as "a step for helping lame dogs over stiles." The character of the children eligible for the classes, the training of the teachers, their salaries, schedules, varieties in classes in different places, the manner in which the difficulties of rural cases are met, the curriculum of the town classes, health regulations, classroom accommodation, and the actual teaching methods are all reported upon. It is noted that the size of classrooms varies, not only in different parts of the country, but in the schools of any one place, and the London classrooms are criticized on the ground that many are too small, giving little room for the children to move about. "In fact, the conditions are sometimes so crowded that there is not space for the children to change the position of their seats so as to get the best light, or to pass to other parts of the room for different types of work without seriously inconveniencing other children." The report contains accounts of visits to the ophthalmic hospital school at Swansea maintained by the Metropolitan Asylums Board, to Birmingham and Bradford, to the private residential myope school conducted by Mrs. Bridge at Pitkdown, near Brighton, and to schools in Scotland. In summing up their impressions the delegates say: "In the myope school of Great Britain the visitor is impressed by the fact that the greatest emphasis is placed on the medical aspect. The medical inspection and follow-up work are most carefully and systematically done. The educational work for the most part appears somewhat subservient to the medical department. This is fitting and proper in many ways, as the main object for the existence of these classes as separate units is to save sight. On the other hand, this plan has some drawbacks. In most cases no attempt is made to keep abreast of the assignments of the regular schools. Some children are able to return to the regular schools, and are then at a disadvantage. Since competition is so keen in vocations, it is an added handicap to the pupils not to have the best education compatible with their eye difficulties." Then there follows this paragraph: "The myope schools are hampered by

conditions over which they have no control. The lack of sufficient funds is a most serious drawback. The teachers deplore the fact that there is practically no opportunity for special training. Improved lighting, smaller classes, and books printed in proper size type are all necessary improvements, but all would add materially to the cost of conducting the classes. In spite of the lack of these things, the myope classes are justifying their existence." An appendix contains a reprint of an article by Mr. Bishop Harman which appeared in our columns (February 2nd, 1924, p. 203) and a useful bibliography.

#### ETHICAL COURSES FOR MEDICAL STUDENTS

FOR many years the suggestion has been made it intervals that the medical student's education might usefully be rounded off with a lecture or lectures, given by an experienced general practitioner, on the proper conduct of practice. An experiment in this direction has now been made in London, and the November and December issues of the *St. Bartholomew's Hospital Journal* contain the text of a lecture on "Manners and customs in general practice," delivered at the hospital in October by Dr. L. G. Glover. The experiment was, no doubt, the outcome of an address which Dr. Glover gave to the Abernethian Society at St. Bartholomew's in 1925. It is interesting to compare the lecture with the syllabus, published last May in the *Journal of the American Medical Association*, of a course of six lectures which have been given during the past four years in the Washington University School of Medicine by the lecturer on professional conduct, Dr. Paul J. White. Dr. Glover, in a simple and straightforward manner, told the well worn path of English medical ethics, basing his discourse on the ancient rule in *Angustiman* monasteries for the master of the farmstead, that "he ought to be gentle, good tempered, kind, compassionate to the sick, and willing to gratify their needs with affectionate sympathy." If Dr. Glover had almost unnecessarily stress upon some of the rules of right conduct, this was as it should be in an address to beginners unacquainted with medical life. The American syllabus, on the other hand, though equally designed to keep the new practitioner in the narrow way of orthodoxy, is graminished with nesting subheadings. Thus, under the title "Acquiring practice properly" we find an item "Medical mismanagement." Advertising is dealt with as "legitimate" and "illegitimate," and practice may be improperly acquired by undue optimism or "alarmism." In the lecture on medical finance, after a description of the medical plight of the "genteel" middle classes, the student is instructed how to cope with patients "shopping" to learn size of fees for comparison with those of other doctors. For variety and topical interest, however, we are much impressed by lecture five, which embraces not only eugenics, euthanasia, and birth control, but also quackery and cults. A subheading of the last item concerns "pervasive practices of the medical profession itself, such as unwarranted glandular, elective, and intravenous therapy employed for effect"—the words "for effect" meaning here, no doubt, "to impress." We are not sure whether it is wise to introduce the student to all this, even sins of medicine at once. Perhaps he will find the middle path of Dr. Glover, which offers the amount of ideal, and here him, fortified with this tool of norms some of the more heinous wickednesses of himself.

THE President of the W.M.S. presided on December 13th at the distribution meeting of the General Council of King Edwards Hospital Fund for London. It was announced that the sum for distribution was £231,500, including a special grant of £34,500 from the Wells estate for extension and improvement. Further particulars will appear in our next issue.

## THE HEALTH ORGANIZATION OF THE LEAGUE OF NATIONS

### THE WORK OF THE CANCER COMMISSION 1923 TO 1927

When received from Dr. I. Pijl in the Medical Director the following summary of the work accomplished by the Health Organization of the League of Nations on some well determined cancer problems during the last four years. Before the Organization meets on the next phase of the 'march' it is thought that wider circles of the medical profession might well be interested in the results so far obtained.

This report relates to a corner of the field of cancer study which has been under the observation of the Health Organization of the League of Nations for the past four years.

The Health Committee in 1923 decided that from the international point of view there might be advantage in looking into the official figures of mortality from cancer as a whole, and particularly of cancer of certain sites of the body which have been furnished over a long series of years in certain European countries. England and Wales, Italy, and Holland were taken as specially suited for these comparisons, but auxiliary and complementary data from Switzerland and other nations in Europe and for some purposes from America also were laid under contribution. The investigation was made by a Commission of members of the Health Committee with the assistance of statistical, clinical and other experts, as well as of the Secretariat of the Health Section of the League. Its results promise to be of value both directly and indirectly. Directly they relate chiefly to cancer of two sites, the breast and uterus, which were chosen because fatal cancer of these organs is less likely than cancer of other sites to pass undetected or to be inaccurately reported as the cause of death. The Commission find that even when they have limited their consideration to these sites and deal solely with countries for which over a long period of years the national system of certification of cause of death has been well established and in many ways perfect of sources of error which seriously affect the proper comparison of the death rates between one country and another and even as between one part of the same country and another part. Much valuable knowledge can and should be obtained by the comparison of cancer death rates, but the Commission has found that in even one of the countries to inquire the certification of cause of death in relation to cancer is more or less unsatisfactory. There is particularly great uncertainty regarding the observance of the rule that cancer deaths should be referred in statistical statements to the primary site and not to the secondary site to which the final fatal result has ultimately been due. There is in the Commission's opinion urgent need of investigation in all countries possessing an organized service of statisticians of causes of death to determine exactly the degree to which certification by causes is unsatisfactory and how its scientific value may be improved.

The Commission with the aid of a distinguished anthropologist Dr. E. Pittard and an eminent statistician Dr. Nicotro made an effort to determine whether there was a relation in Europe between cancer mortality on the one side and race as judged by anthropometric characters on the other. The inquiry produced an invaluable monograph on the known facts regarding anthropological characters of different nations but the anthropometric data even more than the mortality data proved to be too defective and the Commission has sadly to record that its efforts show how much must yet be done before attempts to appraise racial elements in the prevalence of disease can be successfully undertaken. When a moment of consideration is given to the facile claims which have been made for individual nations and races that they are specially prone to be specially exempt from liability to cancer, this reasoned judgement though negative in character is not without practical value.

The direct results of the inquiry however have been by no means all of a negative kind. In each of the countries

concerned national expert work was undertaken to ascertain the circumstances in which so many deaths from cancer presumably preventable in large measure by early diagnosis and by early surgical (or radiological) intervention were occurring. Special observations were made of sample series of cases of cancer of the breast and uterus at particular hospitals and in selected areas as well as of the massed figures for the country as a whole. The results cannot fail to give a very considerable impulse and encouragement to the efforts which are being made in many quarters to organize a system of medical and hospital service and of popular instruction which will in fact prevent a large loss of life and the occurrence of a still larger amount of avoidable individual suffering. In a matter of this kind a wide survey, obtained by putting together or contrasting the experience of several countries differing in the type of their medical services in their hospital facilities and in the outlook of their people towards medical and surgical science is invaluable. The notable conclusion is reached by the Commission that when all these national differences are allowed for it is demonstrated everywhere that on the one hand early operation is a far more successful measure than even the general body of the profession suppose and on the other, that in fact the frequency of resort to operation remains deplorably low. This opinion in one form or another has often been expressed before but the value of the Commission's conclusion on the point is its authority derived from large and recent series of cases specially studied for the purpose and critically and judiciously analysed. It is well thus to be reminded that while we are waiting for more knowledge on the ultimate causation of cancer or on specific remedies to cure cancer we have already before us a glimpse of immediate practicable action which in respect of the sites of cancer at least is capable of reducing death and suffering from cancer to a far lower level than at present obtains. From this point of view of education the Commission's researches into the natural duration of untreated cancer and into various antecedent conditions connected with cancer at these sites furnish useful additions to medical knowledge. In regard to the influence of fertility they find from the experience of all the countries that a fertility below the normal for the particular nation is associated with increased liability to cancer of the breast while cancer of the uterus is to be associated not so much with fertility itself or with the number of pregnancies, but specially with the occurrence of a first pregnancy. The Commission lays stress on the evidence that cancer of the cervix is connected with conditions of labour particularly in primiparae which are in some measure preventable by the efficient management of the labour.

Indirectly the investigations of the Commission have been of value in each country in which they were pursued by helping to open up a comparatively new line of cancer research which may be called field work or team work. The questions at issue have required that in each country clinicians, surgeons, health administrators and statisticians should be brought together for consultation and to arrange for the suitable selection of case, the determination of other histories of operation cases and the assessment of results. This co-operation has in some cases been central and related to the country as a whole in other cases local in connection with a particular communal area or a particular hospital. But in every case it has been fruitful and the Commission urges that the organization of group studies of this kind should be extended to other countries and applied to all sites and varieties of cancer. On the completion of the studies now reported the Commission has undertaken the further duty of collecting and analysing for the consideration of the Health Committee of the League of different suggestions for applying the special opportunities of international scientific collaboration which the Health Organization at Geneva can furnish to the elucidation of other specified purposes of cancer research or for the prevention of cancer mortality. That the Health Organization of the League should compete with or overlap the mass of cancer investigation national and international already proceeding in every civilized country in the world would be an undeniable proposition but the inquiries summarized in the present report demonstrate that by the wise selection of appropriate matters for international inquiry the cancer studies made in individual countries or by individual investigators can be materially helped by this organization.

## UNDULANT FEVER

## AN APPEAL FOR THE DISCONTINUANCE OF GEOGRAPHICAL DESIGNATIONS

The unfortunate designation "Malta fever" has long caused annoyance to the inhabitants of the island. Although at the International Congress of Medicine in London in 1913 a resolution was adopted by the Section of Tropical Medicine and Hygiene substituting for it the descriptive term "undulant fever" (JOURNAL, 1913, II, p. 429), this improvement has been neglected, particularly by American and Continental authors, though it has been accepted by most British writers. The Malta Branch of the British Medical Association, in conjunction with the Camera Medica (Maltese Medical Association) has, therefore, issued the memorandum printed below appealing for the general use of the designation "undulant fever," instead of the term "*Micrococcus brucei*" instead of *M. melitensis*. The latter change is not discussed in this memorandum, in view of the proposal to hold an International Botanical Congress in 1930, when the general question of bacteriological nomenclature will be considered.

## Memorandum by the Malta Branch of the British Medical Association and the Camera Medica of Malta

1 A suitable and generally acceptable designation of this fever has long been the subject of discussion. The disease is one of those that have been labelled with a multitude of names. Thirteen appellations have been given to it on account of its supposed resemblance to typhoid or malaria, the character of its fever and the symptoms it presents give rise to fourteen other designations, and nine more were derived from the conditions which from time to time were considered to favour its prevalence. From the localities in which it was recognized and studied it came to be called Mediterranean fever, Malta fever, Italian fever, Neapolitan fever, Rock or Gibraltar fever, Cyprus fever, Crimean fever, etc.

2 The name "undulant fever," originally proposed by Captain M. L. Hughes, Army Medical Staff in 1897, was recommended by the International Congress of Medicine held in London in 1913, and is the one generally used by English writers. The terms "Malta" or "Mediterranean fever," however, are still frequently met with, and the purpose of this communication is to point out the objections to the use of these appellations, and to make an earnest appeal to all medical and scientific writers to discontinue them in favour of the more proper and less controversial one—undulant fever.

3 The term "undulant fever," though not perfect, is the most suitable designation of this disease in the present circumstances. As Hughes had pointed out, it describes one of the most constant and characteristic features of the disease—namely the undulations of the temperature curve. The temperature constitutes the primary, and although the only, clinical manifestation of the illness, and although the curve may not always be of the "undulant" type, yet the phenomenon is sufficiently frequent and typical to justify the adoption of the word "undulant" as a term which would clearly convey to any person the principal clinical feature of the disease. Parallel cases are the designation "typhoid fever," in general use for the disease in which the "typhoid" state is a frequent and silent but not constant symptom, and even more so the term "relapsing fever," derived solely from the variations of the temperature.

4 The term "undulant" has so far been used only for this disease. It cannot therefore give rise to ambiguity, and does not offer the same drawbacks as the terms "remittent" and "intermittent." Hughes had also rightly claimed that it has a familiar sound and is easily learned from the tongue, and is easily translatable into any language from the Latin form of *fibris undulans*. Its use has been accepted by many authorities whose attention has been called to the matter, and is continually gaining ground with scientific writers. It is continuing to have the test of time, and once that, accepting the objectionable geographical names, no other term has been more frequently used as a designation of this disease, the coming of a new name does not appear to be opportune at present.

5 It is urged that geographical names given to specific diseases are undesirable from a scientific point of view. They are mainly relics of the time when the miasmatic theory of disease held sway and each kind of fever was considered to be caused by "infective emanations" inherent to the particular country or locality where it prevailed. They have no relation to the symptomatology of a disease, or to any of its primary or secondary features, and are neither characteristic nor significant of its nature. As Sir William Aitken said when advocating the use of a general nomenclature of diseases: "Except in matters of history and as beacons to warn us from a greater danger to science, let these and such like names be consigned to oblivion." And, as a matter of fact, the disease which forms the subject of this communication appears to be one of the very few for which a geographical name is still in use.

6 A consideration of the history of fevers for the last 150 years brings home very clearly the part which the use of geographical names played in helping to retard progress in the unravelling of the nosology and etiology of diseases. This is specially evident in connexion with the "Mediterranean" group of fevers. Under such names were frequently grouped together indiscriminately such diverse diseases as typhus and typhoid, yellow fever, another fever accompanied by jaundice of doubtful nature, sandfly fever, relapsing fever, and probably malarial crises and other febrile diseases which are still unclassified.

7 The name "Malta fever" was eventually assigned to the long continued fever of the undulant type comparatively recently. Formerly by "Malta fever" or "Maltese fever" was understood the "simple undulant fever" of short duration now known as phlebotomus fever. Mastron, who was the first to give a detailed description of undulant fever in Malta (Army Medical Report, 1863), called the disease "Mediterranean or generic remittent fever," and clearly differentiated it from "simple undulant fever," which he continued to call "Maltese fever." Boileau (1866) described "Malta fever" as "a pyrexia with sudden onset terminated in seven days by lysis." Later on the term came to be applied also to fevers of longer duration (Maclean, Wood, Netter, 1876). It is evident, therefore, that the designation "Malta fever" cannot be retained for the fever of the undulant type on the plea of length or priority in use.

8 The fact that undulant fever is not confined to the island of Malta or to the Mediterranean needs hardly to be emphasized. It has been identified in other European regions and in widely separated localities in China and America, South Africa and India, etc. Nor, it may be mentioned, is it peculiar to the Maltese goats.

9 Recent observations that the *B. abortus* of Bang may give rise to a continued fever of the undulant type similar clinically to that caused by the *M. melitensis* of Bruce would furnish a further argument against the retention of the term "Malta fever." Whatever connexion there may be between the designations "Malta fever" and "*M. melitensis*," it does not hold good when the fever is due to the *B. abortus*. The adoption of the term "undulant fever" for the clinical condition, followed in each case by an indication of the causative agent—for example, undulant fever (Bruce), undulant fever (Bang)—should prove useful as in the case of the paratyphoids.

10 The prejudice to the moral and material interests of the island of Malta in consequence of the association of its name with a disease which is far from being peculiar or limited to the locality is considerable. The Maltese nation keenly resents the resulting stigma and feel that the reputation of their country has suffered mainly on account of the important research work on the disease that has been carried out in the island. The Government of Malta, in fact, has on several occasions considered it necessary to make representations on the subject.

11 The members of the 'Camera Medica' of Malta and of the Malta Branch of the British Medical Association have ventured to submit the above observations in the hope that their fellow members of the medical and allied professions will take them into sympathetic consideration, and that they will accept their suggestion for the general adoption of the designation "undulant fever," and for definitely discarding the inappropriate geographical names.

A. V. BERNARD,  
President

P. P. DEBONO,  
Honorary Secretary  
Malta Branch British Medical Association  
Valletta Malta November 1927

G. DEBONO,  
President,

G. HAZIER,  
Honorary Secretary,  
Camera Medica Malta



## HEALTH OF THE SCHOOL CHILD

SIR GEORGE NEWMAN'S REPORT

(Continued from page 1167)

ONE of the most notable expansions of the school medical service in England and Wales during the past year has been in the development of schemes for the treatment or crippling defects. New schemes were approved in forty-seven areas, bringing the total number of such schemes up to 132. Orthopaedic treatment in connexion therewith is carried out in 59 hospitals (and in 20 of these the education of the patient is provided for) in 122 school clinics and over 100 voluntary clinics. The ultimate success of any scheme in effecting the cure of crippling conditions must depend upon the early discovery and treatment of these conditions, the majority of which arise in pre-school life. Especially is this true of infantile paralysis, which is responsible for a large proportion of all cases of crippling. There is evidence of definite progress in the prevention of crippling defects. Tuberculous home diaries, one of the chief causes of crippling, shows a decline. Severe tickets, another important cause, have been diminishing for several years owing to knowledge as to its prevention. A complete local scheme can only succeed when there is (1) knowledge of the cripples or the area, (2) provision for remedial facilities, (3) following up of all cases and (4) measures for prevention. Provision must be made also for training and rehabilitation of the cripple and for a full range of suitable occupations so that each individual may be put to the most suitable employment.

*Treatment by Artificial Light*

Artificial light as a method of treatment for various defects and diseases has achieved great popularity during the past few years. It is a form of treatment which appeals vividly to the imagination, but experience shows that both skill and caution are required in its administration. The following notes are founded on the reports of school doctors. Dr Hill of Carshalton is of opinion that the treatment has no actual influence on the rate of gain of weight. Dr Saunders, tuberculosis officer of Croydon, notes that "the very debilitated anaemic, chronically delicate child appears to react adversely to the treatment. In cases of extreme debility the tissues do not appear to be able to respond, and the net result is a further drain upon the vitality of the child. This manifests itself in loss of weight, increasing listlessness and nervousness." In catarrhal conditions it was found that there was no diminution of the symptoms as a result of treatment. Rickets did not show any better response to light than it did to cod liver oil. In the treatment of surgical tuberculosis, on the other hand light has proved of great value. Children suffering from tuberculous glands do well; the effect is most manifest in those cases with discharging sinuses. The most successful results have been obtained in the treatment of lupus. Pronounced successes are reported in the treatment of psoriasis, impetigo and alopecia areata. There is very little evidence of any benefits obtained in the treatment of nervous conditions. Certain children become ill and irritable. Generally children become more cheerful but where strict investigation has been made as at Carshalton, it has not been found that artificial light has any lasting influence on either mentality or character.

*The Child before School Age*

Last year suggestions were made that the state of entrants should be the subject of special investigation. It is now clear that one-quarter to one-third of the children need medical attention immediately on admission to school. The defects found are constitutional. Not a mere defect just to be put right, but some degenerative process—in part hereditary, in part due to some lack of home nurture such as irregular feeding and lack of sleep in part due to infective fevers. In some areas there is an indication that conditions are better now than formerly, but London shows no change for ten years. A fault in methods is the fact that the child from birth to 5 years of age is under the maternity and child welfare authority, and thereafter the educational authority, and the two are separate

"There is no continuous supervision by the same authority." In a few cities, such as Liverpool there is continuity, for the authority is one and the same. There is evidence of a great need for more effective welfare service—something in the nature of an institution which combines the advantages of the day nursery with those of the nursery school. The nursery school seeks to remedy the defects often inherent in the conditions of home life as found in some parts, it aims at medical and social education and the provision of right environment, physical, mental, and social, for the proper development of very young children. Experience shows that tears lest the removal of such children from the home should result in lessened parental responsibility have little foundation, on the contrary, increased parental interest and co-operation for the welfare of the child is obtained. This is shown in improved cleanliness and nurture, both personal and domestic, a vider dietary, and in many cases more suitable clothing. Such schools should be closely associated with the school medical service, for the congregating of large numbers of young children or susceptible age demands the attention and supervision of medical officers, nurses and teachers skilled to detect early symptoms of disease and easy to take prompt preventive measures against infection. In many areas where mothers go out to work day nurseries are inevitable, but it is suggested that it would be better to have one type of nursery for all children under the school age in areas where the social condition makes such a provision necessary for the protection of child life. Such an institution might be established at or in connexion with the maternity and child welfare centre and near the local elementary school. Such a system would give the infant the advantages of habit training and medical supervision at the critical time and would relieve the school medical service of much of the disease which has to be faced when the entrants come under examination.

*Acute Rheumatism*

The hypothesis that acute rheumatism is the reaction of the human body to the presence of the *Streptococcus viridans* is mentioned with favour. It is noted that this organism is widely distributed, is frequently found as a harmless saprophyte, or as the causal agent in lesions which have nothing to do with rheumatic fever. If it be, as believed a common, perhaps constant habitant of the human body, attention must be concentrated on the conditions and predispositions which induce it to assume an activity which results in rheumatic fever. The organism cannot be annihilated, we must discover the means of fortifying the body against it. It is advised that the school doctor should search for any case in which there is suspicion of acute rheumatism, a register should be kept and these children watched, their work and attendance being modified. Facilities for consultation at a heart centre are recommended, with some hospital beds available and residential hospital schools for lengthy cases, and finally continuous after care. A detailed account of a scheme developed by an association for the prevention and relief of heart disease, organized in New York in 1915 is given. The completeness of the scheme depends on the close and willing co-operation between the officers of the school and public health services, the private practitioners and the staffs of voluntary hospitals, and the co-ordination of these by one man, of acknowledged skill and consultant standing, on the staff of the hospital and acting as expert adviser to the school medical officer.

*Health Teaching in School*

The teaching of hygiene is unequal and variable in form, the form itself is dependent upon the circumstances of the school. A competent and well informed teacher well supported by the local authority, will ensure an effective presentation of the subject. There are, however, many difficulties to be overcome. In some places the school premises and equipment do not provide a very favourable environment for health demonstration purposes, rather the reverse, in many schools the teacher has not yet devoted himself to a thorough understanding of hygiene and a wise exposition and interpretation of it, in many others the responsible authorities have let hygiene be crowded out of

the curriculum, failing to understand its value. It is suggested that for children under 11 years of age there should be a periodical and, if practicable, a daily lesson in health of a few minutes' duration. It should be directed to healthy habits, with illustration of, and the requirement of, clean hands, clean hair, clean teeth, and the requirement becomes a habit. The child should become accustomed to fresh air in the classroom, be taught to breathe with mouth shut, trained to sit squarely, and to use sanitary conveniences decently. For older children the lessons might be associated with the teaching of elementary science (chemistry, physics, and biology). It should be less a school subject than an integral part of the whole life of the school. The Board of Education is publishing forthwith a special handbook of suggestions to teachers on the teaching of hygiene.

#### Investigation and Research

That the school medical officers are keenly interested in the increase of medical knowledge is shown by the list of individual investigations undertaken by them. Besides, there have been collective investigations on certain subjects. There are committees at the head office for co-ordinating these particular investigations. One on enlarged tonsils and adenoids, another inquiring into defective vision, an anthropometric committee, a committee on mental deficiency, and on the physical condition of "entrants."

In his conclusion Sir George Newman remarks that this year's report makes the nineteenth issued since 1908. The series constitutes a sort of Doomsday Book of the physical condition of the English child for that period. It is only by the careful study of the actual facts over a period of time that we can appreciate the influences and conditions which affect not only the child's school days, but the whole life of the individual. Education, occupation, production, heredity, even character, are dependent upon physique. That is, and must remain, the bedrock. If it fail us all else will be imperilled. We may design admirable schemes of education in literature, science, and the arts and crafts, and reform and adjust them from time to time, but if the pupil does not possess a healthy and well balanced body, unimpaired special senses, a "thinking hand," and an alert and developing brain, we labour in vain, and our schemes may come to naught.

*Correction*—There was a printer's error in the notice of Sir George Newman's annual report to the Board of Education published in last week's issue of the JOURNAL at p. 1106. In the small print under the heading "Nutrition" (column 2) he is quoted as saying "Insufficient sleep, chronic fatigue, absence of fresh air, and lack of exercise are exerting a very good influence," etc. The word "good" so obviously incorrect, should have been "great."

## Scotland.

### DR C E DOUGLAS

A LARGE company from the town of Cupar and county of Fife assembled in the County Hall, Cupar, on December 8th when a testimonial was presented to Dr C E Douglas on the occasion of his retirement after fifty years of active medical practice in the town of Cupar. Provost H J Smith presided, and the presentation was made to Dr Douglas by Sir Ralph Anstruther, Lord Lieutenant of the county. He said that Dr Douglas was not only greatly esteemed as a medical man, but he had played a large part in the social life of the community. He had been a great worker in the Volunteer Force and afterwards in the Territorial Army, while during the war he had set a fine example in the public service by his work in the Royal Army Medical Corps abroad. Dr Douglas, in reply, said that he had all his life suffered from a disability of looking younger than he really was. He considered that during his fifty years of medical experience the greatest advance had been the rise of preventive medicine. He believed that the present practice of taking children once or twice a year to be examined by a doctor was not sufficient, and every man and woman over the age of fifty should be periodically examined in a similar manner, no matter what was their state of health. In this way many ailments could be checked at an early stage. It may be recalled

that Dr Douglas graduated at Edinburgh in 1877 and afterwards took the M.D. degree of that university, the F.R.C.S. Ed. in 1898, and the D.P.H. of Cambridge in 1894. He served as a temporary surgeon with the South African Field Force, when he was made an honorary captain in the R.A.M.C. and during the great war he acted as a lieutenant colonel in the R.A.M.C. with the Expeditionary Force. He has been a prominent member of the British Medical Association, in which he has held many offices, including those of chairman of the Scottish Committee and a member of Council of the Association. He received the honorary degree of LL.D. from his university last July, during the Annual Meeting at Edinburgh. In his retirement Dr Douglas has taken up residence in St. Andrews.

### FUTURE OF SCOTTISH HOSPITALS

The Government's hospital policy and the future relations of the public authorities to voluntary hospitals were discussed on December 9th at a meeting between Sir John Gilmour, Secretary of State for Scotland, and a deputation from the Scottish voluntary hospitals. The meeting took place in the offices of the Scottish Board of Health at Edinburgh, and the deputation was introduced by Colonel J A Roxburgh, chairman of the Scottish Regional Committee of the British Hospitals Association and chairman of the Glasgow Western Infirmary. The deputation was representative of voluntary hospitals in Edinburgh, Glasgow, Aberdeen, Dundee, Falkirk, Stirling, Paisley, Dumfries, Inverness, Greenock, Dunfermline, and Perth. Colonel Roxburgh explained the object of the deputation, which was a desire to put six questions to the Government in regard to co-operation between public authorities and the voluntary hospitals. The hospital position in England and that in Scotland were different. In Scotland there was an estimated shortage of some 3,600 beds, and the voluntary hospitals were in favour of co-operation with the public authorities, but felt it necessary, specially in view of the proposals for Poor Law reform, to obtain a lead from the Government on the methods of co-operation likely to be adopted. The questions were as follows:

- 1 Is it proposed to establish a unified hospital service in Scotland?
- 2 If the answer is in the affirmative, would the statutory hospital service cover the whole field of medicine and would it work in competition with the voluntary hospitals?
- 3 Who is to provide the necessary additional beds after the present building programmes of the voluntary hospitals are completed?
- 4 Will the voluntary hospitals and the public authorities work in co-operation round the voluntary hospitals as centres?
- 5 Is it proposed to give financial aid to the voluntary hospitals as recommended by the Mackenzie Committee?
- 6 Is there any need to establish a statutory general hospital service?

Sir John Gilmour, in reply, said that he was glad to have the opportunity to discuss a question of such vast importance to the country. He thought that the problem might be varied in different parts of the country, and it was perhaps not possible to lay down a common policy. With regard to the future of the Poor Law system, he thought it was safe to say that in any scheme it would be necessary to have larger units. He assured the voluntary hospitals that they had no reason to apprehend that anything inimical to them would result from Government action. He and the Minister of Health agreed that the Government's object must be to conserve the voluntary system, for the voluntary hospitals had maintained and improved their position, and Scotland especially had reason to be proud of the position of those hospitals. Taxpayers and ratepayers had enough difficulties at present without facing the burden of cost of the whole hospital services. He could not, however, commit the Government on the subject of a proposed grant, but he looked to co-operation between the public authorities and voluntary hospitals for the future development of hospital services. He agreed with the view that the co-operative arrangements should centre round the voluntary hospitals. Some advance on co-operative lines had already been made—for example, at Stirling, Falkirk, Aberdeen, and Glasgow. As part of the solution of the increasing demand for hospital services he thought that the Poor Law hospitals must be brought up to the standard of the voluntary hospitals. He suggested

that the voluntary hospitals might appoint a small committee of three or five persons to act as a link between the Regional Committee and the Department.

A general discussion thereafter took place in which several of the speakers endorsed the proposal to extend the system of paying patients in the general hospitals. It was also suggested that a Government grant for capital expenditure would probably solve the difficulty so far as Glasgow was concerned. At the close of the meeting a liaison committee, as suggested by the Secretary of State, was appointed as follows: Colonel D. J. Macintosh and Dr. MacLachlan from Glasgow; Sir David Wallace from Edinburgh; Mr. C. I. Henderson from Dundee; Mr. Thomson from Stirling; while a member still remained to be nominated from Aberdeen.

#### PRESENTATION TO DR. MURRAY INVERNESS

A complimentary dinner of physicians in the counties of Inverness, Ross, and the neighbouring areas was held on December 3rd to celebrate the jubilee in medical practice of Dr. James Murray. Dr. John W. Macenzie, Inverness, presided, and the health of the guest of the evening was proposed by Dr. John Macdonald, M.O.H. for Inverness town and county. He said that the credit of introducing antiseptic principles in surgical treatment in the North of Scotland belonged to Dr. Murray who had been a pupil of Lister at Edinburgh University where he had graduated in 1870. In returning thanks Dr. Murray said that his period as a student had been a very interesting time when the discoveries of Pasteur and Lister were revolutionizing the practice of medicine and surgery. He had been a prisoner in the class of Lord Lister, and had later acted as house-surgeon in Edinburgh Royal Infirmary under Sir Patrick Heron Watson. The students of that time had been impressed with the wonderful success of surgical cases obtained in Lister's wards as compared with the greater tendency to sepsis in other wards of the institution. He mentioned that the poet Henry had been a patient in Lister's ward at the time in Edinburgh Infirmary.

## Ireland.

#### RETIREMENT OF PROFESSOR PEARSON OF CORK

HAVING reached the statutory age Professor C. J. Pearson has retired from the chair of surgery at University College, Cork. On November 19th Professor Pearson gave a valedictory address to his students in the examination hall of the college. Many of his old pupils from the city and county were also present together with his colleagues on the teaching staff of the college. He reviewed his long connexion with the college as a teacher, starting a demonstrator or anatomy, then for many years as professor of materia medica and lecturer in medical jurisprudence and finally since 1900, as professor of surgery. Originally a graduate of Queen's University of Ireland he saw that institution replaced by the Royal University and the latter by the National University of Ireland. As a mark of their appreciation of Professor Pearson's services to the teaching of medical science his colleagues are anxious to perpetuate his name in the college by founding a 'Pearson' prize or medal to be awarded at the final M.B. examination. A committee has been formed and invites the co-operation of Professor Pearson's old pupils at home and abroad. Subscriptions limited to one guinea, may be sent to Dr. W. J. O'Donovan, Pathology Department University College, Cork.

#### SAMARITAN HOSPITAL BELFAST

The extension of the Samaritan Hospital Belfast is now making good progress, and on December 5th Viscountess Craigavon accompanied by her husband the Prime Minister of Northern Ireland laid a commemorative stone. The new building will double the accommodation of the institution. Two large new wards will be available on the ground floor and the additional accommodation will enable the hospital to extend its sphere of usefulness. Sir Thomas Dixon who presided in proposing a vote of thanks to Lady

Craigavon, recalled that the hospital was founded in 1872 by Sir M. Mordecai College Street. After a year or two the premises were found too small but, thanks to the generosity of Mr. Edward Benn the hospital was able to remove to its present site. In 1897 the accommodation was found unequal to the growing requirements, and the late Mr. Forster Green added a wing at his own expense. Later it again became evident that the hospital premises were not large enough, and Lady Craigavon issued an appeal and organized a very successful bazaar, with the result that the committee was in a position to build the present extension. Lady Craigavon is replying to that a magnificent response to the appeal had been made in the six counties, and she was sure that the contributors would feel that they had in the Samaritan Hospital an institution worthy of the city of Belfast. Though the response had been generous it was still necessary for the maintenance of the hospital that the subscription list should continue to grow, and she urged that the public in going through their charity lists at the beginning of the year, should bear in mind the needs of this excellent institution.

#### VACCINATION IN WEXFORD

In the Dail recently Mr. Michael Jordan asked the Minister for Local Government and Public Health whether he had issued to the County Wexford Board of Health a threat of mandamus because of their failure to enforce the vaccination laws, whether he was aware that the vaccination laws had been in abeyance in that county for the last twenty years, and that in an attempt to enforce them now would involve the ratepayers in very heavy expense for legal proceedings, and whether he was prepared to introduce legislation for the purpose of amending the vaccination laws to exempt conscientious objectors. General R. Mulcahy, Minister for Local Government and Public Health, in the subsequent debate said that he could not hold out any hope to the County Board of Health in Wexford that he would not do everything possible to enforce the vaccination laws there and in every other county in the Saorstát. He did not know what Deputy Cornish meant by saying that attention was paid to sanitation; they need have no fear of smallpox. He did not agree that the vaccination laws had been in abeyance in Wexford for twenty years, though there had been a certain amount of agitation against vaccination there for some time past. The medical officer received 2s. for every vaccination case and whenever a notice had to be served on a person who had not arranged for his child to be vaccinated during the statutory period it cost 1s. legal expenses were however another matter. In January, 1925 the urban district council had taken over the administration of vaccination from the board of guardians or New Ross, which had a population of 5,609, the average yearly number of birth being 112. Since 1925 the Board of Public Health had endeavoured to administer the vaccination laws there and 763 successful primary vaccinations had been performed. There had been some legal expenses in the case of 33 defaulters prosecuted recently. The total legal expenses in connexion with vaccination since January 1925 including the 33 defaulters in New Ross were £21 14s. 7d. so that the cost of having the vaccination laws put into force properly in Wexford was not going to be excessive. It was clearly shown that there was a present danger because of the position with regard to smallpox there was no reason to believe that the Wexford people would not be as efficient as any other people in the country. While the point had been raised that adults were unprotected by their first vaccination and were liable to contract smallpox it was known that childhood was a dangerous period. It was worth noting in connexion with the present outbreak in England and Wales that in 1926 there were 10,141 cases of smallpox. An analysis of the figures showed that complete immunity against the disease was conferred by vaccination under the age of 12 years and that no more of young children who had been vaccinated were attacked by smallpox. Indeed, such was the efficacy of infant vaccination that only eight children who had been successfully vaccinated contracted the disease under the age of 15 years whereas amongst the unvaccinated children of the same age period

the disease developed in 4,840, with fatal results in seven cases. If they were not prepared to follow Prince and Germany in having adult vaccination at a particular period, they could be assured that infantile vaccination would protect the children of the country up to the age of 12 almost completely against the danger of small-pox. The cost of a small-pox epidemic was very heavy, for in addition to the charges for vaccination, there were expenses for medical fees, special nurses, and destruction of clothing of cases and contacts. The person attacked was laid up for three to twelve weeks, and the contact case was isolated for twelve to twenty-three days. It would be rash to assume that there would be no outbreak simply because they had had only eleven cases. Within the last two years a serious situation had arisen in England, and owing to the way in which small-pox was carried they might very possibly find a number of cases springing up in their midst in persons who had come from England, the disease only developing in Ireland. If it was thought that there was no sound medical basis to their present vaccination laws the position ought to be stated from the medical point of view.

In an interview given to the press a few days later Dr E F Stephenson, chief medical officer of the department, declared that Wexford was a danger to the community. For twenty years the vaccination laws had been in abeyance in the county, and the inspectors had protested against the present attempt to enforce them, on the ground of expense. If a person infected with small-pox came there, he added, the disease would spread widely, and the expense could be imagined when it was considered that the isolation and treatment of a single case at Cobh, Co Cork, cost £183. Living, as they were, with their ports in constant communication with Great Britain, they must certainly regard seriously the presence of the extensive and dangerous outbreak of small-pox in that county, and they would be neglecting very serious duties if they did not point out the danger, or left anything undone to secure that the vaccination laws were administered to the greatest possible extent.

## England and Wales.

### MEDICINE AND LAW AT DINNER

THE annual dinner of the Medico-Legal Society was held at the Holborn Restaurant on December 9th under the presidency of Sir William Wilcock, when the principal guest was Mr Justice McCardie. The usual toast of "Medicine and Law" was proposed in a few sentences by Sir Russell and responded to by Lieut-Colonel C T Sumner (Warden of the Society of Apothecaries), and by Sir Leonard Keirshaw (Registrar of the Court of Criminal Appeal). Mr Justice McCardie, in proposing the toast of "The Medico-Legal Society," reminded the gathering that the society was founded twenty-six years ago. How the wise physicians and lawyers of past times would have rejoiced over such a union of their professions! It would be deplorable should anything arise to cause antagonism between medicine and law. The two professions had much in common especially in the fact that they both jealously preserved their traditions. Mr Justice McCardie vowed himself a great lover of the law, conceiving it as an edifice beneath which all citizens might take shelter, and he looked upon medicine also with deep respect, recalling the remark of an old writer, "When I read the history of disorders I wonder that men can live but when I read the history of cures I wonder that men can die." There were two things which might lead to antagonism between the professions. One of these was the question of insanity and crime. He did not believe that the law was unprogressive, or that the social and scientific philosophy of 1927 must necessarily be the same as that of 1845 but he thought this question ought to be placed on a wider basis than that on which it was commonly taken. In newspaper and other discussions on the subject insanity in its bearings upon crime was always treated from the aspect of murder

whereas, in fact, it ought to be considered in relation to very many lesser crimes. The other question was medical secrecy—a vital question to the medical profession, as he himself had reason to know. But again he pleaded for a broader view. The medical man was naturally eager to break down the legal obstacles in the interests of public or individual health, and he respected his point of view, but the lawyer also had his ideal, which was the elucidation of truth, the very root of criminal justice. "Justice," said Daniel Webster, "is the great interest of man." He knew of no other test to apply to both these questions than the test of utility, the Benthamite test—the greatest good of the greatest number—and if that test were applied it would be found that the problems were by no means capable of the simple solution which was taken for granted in some quarters. Sir William Wilcock paid a tribute to his predecessor, Lord Justice Atkin, who had been president of the society for seven years. The great advantage of the society was that every new development bearing on medico-legal science was discussed from the double aspect. The past few years had seen not only an increase in membership, but a fresh stimulus to discussions. He hoped to see medico-legal work much better co-ordinated, it possible by the establishment of some institute in London, where teaching and research in forensic medicine could be advanced. Dr F G Crookshank, in a witty speech, proposed the health of "The Guests," and Sir John Anderson, Permanent Under-Secretary to the Home Office, and Mr Herbert Carson, president of the Medical Society of London, made brief responses.

### BRISTOL MEDICAL SCHOOL DINNER

THE annual dinner of the Bristol Medical School was held on December 8th at the Berkeley Cafe, Bristol, under the presidency of Professor J A Nixon, CMG, the guest of the evening being Colonel T Smeaton, CB, MP, emeritus professor of surgery in the University of Belfast. The President, proposing the toast of "The Guest of the Evening," said that Professor Smeaton was the first member of Parliament to be welcomed by them as an honoured visitor. He was usually returned unopposed for Belfast University, and had once had the singular distinction of being, for a few hours, the first and only member of the House. In 1914 he was selected as principal medical officer of the army of Ulster, but, as events turned out, he was not required to function in that capacity, and became instead one of the consulting surgeons to the British Army. Professor Smeaton proposed the toast of "The Bristol Medical School," and complimented the citizens of Bristol on their liberal financial support of their University. He recalled many well known names of past members of the medical school, and paid special tribute to Colonel Paul Bush, CMG, and Professor Hey Groves. Colonel Bush and Mr R H Moore responded for the school, and Mr S V Stock proposed "The Health of the President."

### PROFESSOR R HOWDEN

Professor Robert Howden retired on September 30th last from the chair of anatomy and post of registrar at the University of Durham College of Medicine, Newcastle-on-Tyne, and a testimonial fund is now on foot to recognize in some fitting way his invaluable work as an anatomist, teacher, and administrator. It is felt that his old students will welcome an opportunity of expressing their gratitude for what he has done for them, while colleagues and other friends in Newcastle and elsewhere will join in appreciation of his work for anatomy, and in particular of his devoted services to the medical school for the long period of thirty-eight years. It is suggested that the testimonial should take the form of a small memento and a cheque. The present students are desirous that the presentation should also include a memento from them. A strong general committee has been formed, and contributions already amounting to some £400 have been received by the executive committee, of which Dr S Whitley Davidson is honorary secretary. Further donations should be sent to the honorary treasurer, Sir Joseph Reed, at the College of Medicine, Newcastle-on-Tyne, before the end of the year.

## MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN

It was reported to the London County Council on November 23rd that the popularity of treatment for school children continued to increase and that during the last six months the centres had been exceptionally busy. The total number of children treated during the half year to September 30th was 129,128, as compared with 114,223 during the corresponding period of last year. Increased provision has been necessary for the treatment of eye defects and conditions of the ear, nose, and throat. Ring worm cases have fallen off, and the provision under this head is decreased. The process of treating ear cases by ionization has been continued at five special centres, the number of ear cases ionized last year was 1,392. New treatment centres to be opened in 1928-29 include two for in-patient treatment of throat cases, one centre for eye defects, two for minor ailments and two for dental treatment. The total number of cases for which provision is authorized is 265,000, as compared with 254,000 last year, and the cost of the arrangements will be £102,500, an increase of over £4,000 on the year. At the same meeting of the council the education committee reported on the special clinic at Guy's Hospital, set up as an experiment for one year, for the treatment of children found to be diphtheria carriers. The number of children treated during fourteen months was 102. The committee was informed that considerable benefit had been derived from the treatment and it proposed to make arrangements during 1928-29 with selected hospitals for the treatment at special clinics of child carriers. The expenditure involved is estimated at £200.

## Correspondence.

## TREATMENT OF CANCER BY RADIUM

SIR—Dr Fletcher Shaw (December 3rd, p 1054) evidently belongs to the school of diehards who assert that the Wertheim operation is the one and only treatment for cancer of the cervix. He repeats the challenge which Victor Bonney has so frequently thrown down that when statistics are published in this country showing that cases of carcinoma of the cervix treated by radium have as high a percentage of non-recurrence after five or ten years as have those treated by Wertheim's hysterectomy, I will most gladly abandon this operation which until then I feel compelled to advise and perform. Apart from the fact that this is a direct repudiation of other clinics' results, notably that at Stockholm, which I have had the privilege of visiting and an experience which confirmed me in the unreserved acceptance of their reports, this attitude can only be that of one insufficiently experienced in the method condemned. He asks for the production of statistics which are comparable to any produced by the advocates of operation, for instance, Bonney, claims to have an operability rate of 63 per cent which means that he considers there is a chance of excising the malignant disease in that number of cases. In the treatment of approximately 300 cases by radium I cannot estimate the operability rate, but my treatment rate is 96 per cent.

The relief obtained from radium is acknowledged by the most sceptical and is only denied to those with fistulae, malignant exheria and the presence of severe septic infection of the pelvic organs. These constitute 4 per cent of patients presenting themselves for treatment. The question arises whether the more advanced cases are to be refused treatment in order to obtain statistics which would satisfy Bonney and Fletcher Shaw. Radium enthusiasts might easily turn the tables by telling their critics that until their operability rate is 96 per cent they have no statistics in common. The Wertheim school declines consideration of the unfortunate people, save into the two divisions of operable and inoperable and the latter are left as an unconsidered trifle, whereas most of them are eligible for radium. I have reported a number of cases treated by radium, only to have them compared with operative results, which, of course was a comparison of the unlike. From my experience I have no doubt that radium does permanently cure cases of cancer of the cervix, and, could

we but decide upon the virulence of a tumour by clinical or microscopical examination, it would materially help in the decision to be taken. Finally I have to declare that I am not prejudiced on this question, for I treat some of these cases by Wertheim's operation, some by radium and operation, and some by radium and x-rays—I am, etc.,  
London W 1 Dec 3rd. SIDNEY FORBES, F.R.C.S.

SIR—Dr Fletcher Shaw's letter in your issue of December 3rd (p 1054) conveys a definite challenge which, as the present radiologist to the Manchester and District Radium Institute, I feel compelled to take up.

I agree with Dr Fletcher Shaw that no definite statistics have been published in this country on a five- or ten-year basis, but statistics on a five-year basis have been given by the Radiumhemmet, Stockholm, and I see no reason why a particularly insular attitude should be adopted towards these. I quote those given by Donaldson in your issue of May 9th, 1925 (p 679).

Of 181 inoperable cases treated 166 per cent were well after five years.

Of 36 operable and borderline cases 40.5 per cent were well at the end of five years.

However, the main point is this. Dr Fletcher Shaw has used the words, "Unfortunately I have to form my judgement upon the results obtained in my own cases." He advocates the statistical method of argument in favour of this or that treatment for carcinoma of the cervix uteri, and in coming to the conclusion that operation is, in his opinion, preferable to radium treatment he bases it upon the results of his own cases. As an argument this would be more conclusive if his exact figures were given (a) in his cases treated by operation, (b) in his cases treated by radium—I am, etc.,

Manchester Dec 10th G E BIRKETT

## LATE RECURRENCES OF BREAST CANCER

SIR—In your leading article (p 1100) on the Medical Society of London's report you appear to doubt the direct effect of radium on malignant cells and attribute any beneficial effects to stimulation of the surrounding connective tissue. But surely Dr Canti's experiments on the effect of x-rays and radium on growing tissue cells would disprove this theory, and how can the extraordinary effect of radiation on a very sensitive growth such as lymphosarcoma—sometimes visible within five or six hours—be explained but by a direct effect on the malignant cell? Many clinical and experimental observations indeed show there does exist a direct effect as well as an indirect one by way of the connective tissue, vascular, metabolic, or other changes.

Again, you say that "controlled observations do not tend to confirm the utility" of post-operative radiation. Here it is essential to take into account variations in radiological technique. There are errors of deficiency and of excess, the first shown, I believe at the Cancer Hospital, where we must conclude the technique some years ago at least was as recommended by Dr Robert Knox in his book—the first dose along the line of the car unfiltered" (Radio-therapeutic, 1918, p 462). A result of this might be a stimulation of any remaining cancer cells below the skin level. But the existence of a stimulation dose is challenged by the Vienna school and is not yet definitely proved or disproved, either experimentally or clinically. And any stimulation might be a result of the operation, as I have seen seven or eight cases with rapid widespread local recurrences coming on within a few months of operation in which no radiation had been given.

On the other hand excessive treatment as by the so-called Erlangen method used for post-operative cases has led to an increased proportion of recurrences in some clinics, it is used for primary, but not for prophylactic work at Erlangen itself. Certain glancing intensive methods may be employed, but the best prophylactic results so far have been with a medium technique.

I hope to publish soon details of a number of successful primary, recurrent, and post-operative cases from the Middlesex Hospital, from a series of over 500 treated by x-rays and radium—I am, etc.,

London W 1 Dec 10th J H DOUGLAS WEBSTER



## TRAUMA AND MALIGNANCY

SIR,—In a recent communication to the *BRITISH MEDICAL JOURNAL* Sir G. Lenthal Cheetham asks whether anyone has met with the development of a tumour in a wound inflicted on a combatant during the late war. The following case may be of use and interest, it certainly was sad and dramatic.

A man aged 35, of the New Zealand Expeditionary Force, was wounded by shrapnel in the right jaw and submaxillary region in 1918. He stated that the shrapnel was never removed, and that the wound healed well and gave him no trouble until 1920, when he experienced occasional swelling and tenderness.

In April, 1923, when in the country, he had what he thought was an attack of toothache, and a swelling appeared below the jaw in the situation of the old wound. The swelling got rapidly larger and he went to a town, where the supposed abscess was opened. He was sent to me on May 9th, 1923. As the swelling was in the region of an old wound I thought it might be due to some foreign body. A ray examination did not show any shadow, but revealed an abscess cavity at the apex of a lower molar—the only tooth on that side. The tooth was loose and tender. I explored the swelling as he had a temperature of  $100^{\circ}$  and a pulse of 100, and the former incision was suppurating. I immediately found that it was an extensive neoplasm necrotic in the centre. He was given massive doses of x-rays (the radiologist did not recommend radium), but the tumour grew with most alarming rapidity, the increase in size could readily be appreciated from day to day. In eight weeks he was dead, with a huge fungating mass on the right side of the neck.

Professor Drennan and myself were unable to agree as to the precise pathology of the tumour, so we submitted history, photograph, and sections to Professor James Ewing of Cornell University, and the following is his reply:

'In the remarkable case of tumour of the jaw, of which you send me history, photos and sections, I have been unable to reach a positive conclusion regarding its nature. From all the facts I am inclined to think that you had to deal with a very malignant osteogenic sarcoma, and one which took the form of spindle cell growth without new bone formation. These tumours arise from the periosteum. The structure in the sections is much altered by inflammation.

"I would rule out adamantinoma on the rapid growth, fungation, ulceration, and structure. There are always distinctly epithelial structures easily recognized in adamantinoma, and I find no such structures in this section. I could also find no signs of epidermoid carcinoma.

The question had previously arisen for pension purposes, and liability was admitted by the pensions department. This is the only neoplasm following war injury I have seen. I am occasionally, however, asked whether of the numerous skin grafts made in mucous cavities some will not become malignant—the whiteness of the graft probably prompting the idea. I can only say I do not think so, and have not seen anything indicating such a possibility.—I am, etc.,

Sydney N.S.W.

H. P. PICKERILL, C.B.E., M.S.

## TREATMENT OF PROSTATIC ENLARGEMENT

SIR,—I was much interested to read Sir Cuthbert Wallace's Bradshaw Lecture on prostatic enlargement (November 19th, p. 907), and to note the comments on radiation treatment of this condition by Dr. Curtis Webb (December 3rd, p. 1053). It is well recognized that the more highly specialized tissues like the ovary, the thyroid, and the thymus are very amenable to radiation treatment. Wintz of Erlangen gives the dosage for ovarian tissue as 34 per cent of the unit skin dose, and we do know that when this dose is applied the ovaries cease to function and a menopause is produced. I have no doubt that the prostate also responds to its dose of choice, although this dose has not been worked out.

There is, however, another factor in addition to a quantitative dosage, and that is a qualitative dosage. When the science of radiology becomes more exact the question of this qualitative factor, or the wave-length of the ray employed, will play a greater part. I have been investigating recently the treatment both by radium and x-ray therapy of a number of cases of enlarged prostate, mostly of the simple adenomatous type. In the treatment by radium the sphincter was dilated under an anaesthetic, and a heavily filtered radium plaque inserted per rectum and placed in contact with the enlarged prostate. The results were quite satisfactory. I also used deep therapy,

giving one penneil and two suprapubic ports of entry, directed towards the prostate and aiming at a depth dose of 40 per cent unit skin dose. The results here were not so satisfactory.

More recently I have been treating these cases by superficial therapy, giving multiple small doses, about twelve in all, over a period of six weeks, and directed through one rectal port of entry. The results by this method have been the most encouraging of all. Out of eleven cases treated in private one only failed to respond, and in this case complete incontinence of urine was present, which was not due to the prostatic condition. All these patients were referred to me by surgeons on account of the mid-visibility of operation from systemic causes. Records of the frequency of micturition and the number of times that the catheter was used were kept by the patient. In the ten cases mentioned where a catheter was used this was dispensed with, and the frequency in all cases dropped from six to eight times a night to a complete undisturbed night. The prostate was examined at frequent intervals and the reduction noted. One patient returned after a year's interval on account of his having to use the catheter. About six exposures were given, and the catheter has now been dispensed with. The dosage employed was about one Holzknecht unit filtered through three millimetres of aluminium. The last four applications were filtered through four millimetres of aluminium. A 16-in. coil and a standard Coolidge tube were used, with a spark-gap of about 65 in. and two milliamperes of current.

The only explanation that I can offer of these results is that with these repeated small doses and a medium hard ray I have, as it were, approximated the prostatic ray and dose of choice. In all these cases the testicles were not protected, so that the margin of the field affected these, and the giving of this partial castration dose helped the reduction of the prostate.—I am, etc.,

Hull, Dec. 10th.

J. E. BARNES

## PROPHYLAXIS AND CURE OF COLDS

SIR—"Never a scientist has dared to hint that he has discovered a cure for the common cold." These words occur in a recent leader in the *Morning Post* on "November colds", and the statement I take to be true in substance and in fact. Nor have we as yet a settled opinion as to the value of prophylactic antiserumal vaccines. Partially controlled experiments in schools have been published from time to time. On the whole these tend to throw doubt on the efficacy of this method of prevention. All of them apparently are open to the objection that the majority of the individuals inoculated have volunteered, and the treated class, in consequence, consists mainly of those who suffer frequently from catarrhs due to infected respiratory passages. It is agreed, I think, that the chronic carrier of catarrh germs is not the best subject for prophylactic inoculation, since not only may the inoculation provoke a cold, but it usually fails to clear away the patient's own microbes, for which purpose an autogenous vaccine must first be administered. None the less, many people assert with conviction that in their case prophylactic catarrh vaccine has prevented recurring colds. To obtain useful statistics where numbers are small, only those individuals should take part whose nasal mucous membrane has been found sterile, or has been so rendered by autogenous vaccines.

It is fairly certain that prophylactic injections act by raising the blood immunity, whereas theoretically the first requirement of cold prophylaxis is to render the mucous membrane immune. This, if practicable, together with an enhanced blood immunity, should provide the ideal cold prophylaxis.

Besiedky's remarkable experiments on the local production of immunity to influenza in the skin of guinea pigs, followed by the application of the same principle in the treatment of local infections such as furunculosis, acne, and colitis, led some bacteriologists to make use of this principle in the prevention of colds. At the present time there is quite a number of antiserumal sprays vaccines on the market, either as extracts (according to Besiedky) or combined with bile, glycerin, or other diluent with a view to assisting penetration into the mucous membrane.

I have not been able to find any published reports or the results, therefore I thought my experience with the method might be worth giving. In general I have found that with a vaccine of the correct strength benefit accrues, but if the strength is too strong a child may be provoked just as with prophylactic injections. After a good deal of experiment, which established the above two points, I settled down to a routine method as follows:

A highly polyvalent vaccine of various catarrhs of the eye of a strength of 500 million per cubic centimetre diluted with simple 0.5 per cent phenol in normal saline is used for adults, and half that strength for infants. It is given regularly once a week, and, in addition, whenever the catarrhs or early catarrh are experienced.

The spray (or the Atlas type) is used intelligently so as to cover the whole ground. The next I do not plugging by the nasal end of the spray, but I pass the left so that the vaccine can be sniffed up as the bulb is squeezed. This is done two times to each nostril. Afterwards the mouth and throat are sprayed whilst the breath is sharply drawn—expiration takes place through the nose. Thus all the upper passages are reached. The results have been very good, not only in preventing colds, but also in curing a cold even in the most acute stage. My experience has now lasted over some two years and I feel able to assert with a good deal of confidence that the above method, faithfully carried out, in combination with prophylactic anti-catarth inoculations, will be successful in a large proportion of all cases. It has one great advantage—namely, that the actual spraying can be carried out by the patient himself—I am, etc.,

H WARREN CROWE

London W1 Nov 25th

#### TUBERCULOUS LESIONS FOLLOWING INJECTION OF PITUITARY EXTRACT

SIR—Within the last three years we have had four cases of mild tuberculous lesions of the lung which we have every reason to believe followed injections of pituitary extract.

After the first two cases one of us got in touch with the makers of this drug, who told us euphorically that it was quite impossible for the living tubercle to exist in the extract. Now that two more cases have come under our care we should like to hear whether other people have had similar experience as if there are a number of such cases the matter should be taken up by the various firms who are making this drug.

In two of these cases the lungs have been excised and sections showed undoubted tuberculous lesions. We are, etc.,

MALCOLM DONALDSON, FRCS  
C S LYNE ROBERTS, FRCS

London W1 Dec 6th

#### ERGOSTEROL VITAMIN D, AND RICKETS

SIR—Professor Wynne's letter in your issue of November 26th recalls very clearly the respective theories as to the etiology of rickets submitted by Professor Mellanby and his co-workers on the one hand and by the Glasgow school on the other hand some years ago before the facts as to the influence of ultra-violet light on this disease became generally known. It is however with the concluding paragraph of Professor Wynne's letter that I am chiefly concerned, as it raises a question of very great importance in the field of public health at the present time—namely, whether the prevention of rickets should be tackled by public health authorities exclusively along the lines of instruction in diet and provision of cod liver oil or whether artificial sunlight clinics should be developed as part of a public health policy. As one who has experimented with both of these lines of action in children welfare centres in a northern town may I be permitted to emphasize the great value of the latter?

In my experience far quicker and more constant results in the cure of active rickets with improvement of general health are obtained by the use of ultra violet light than by instruction in diet and provision of cod liver oil, and I am of opinion that exposure of the

skin of infants to light and air should be our primary means of preventing rickets. If the prevention of rickets is intended to come primarily by absorption of vitamin D through the alimentary tract why is there so much rickets in breast-fed babies? On the other hand many breast-fed babies who have never had cod liver oil escape rickets, and do not these belong mainly to the classes who take every opportunity during the summer of freely exposing their children's bodies to light and air? Does it not seem from the facts that nature intended us to absorb vitamin D primarily from our skins?

The great value of artificial sunlight clinics, from the public health point of view is not only that they marvellously restore rachitic infants to health, but that they draw attention to the vital necessity of regular and repeated doses of sunlight on the naked body for the healthy rearing of infants.

This, I submit, should be regarded as a factor of primary importance in the prevention of rickets even in this climate. In practice every antirachitic influence that can be utilized is often required for success. An antirachitic diet of course should be our aim for all children and cod liver oil and its substitutes are of great assistance although their application is quite often limited. But if we recognize the prime importance of the skin route for the absorption of vitamin D with maintenance of general health, we shall concentrate upon teaching people to make the most of our sunlight and we shall consider the expense of the public provision of artificial sunlight clinics justified—I am, etc.,

H STANLEY BAKES

Isolation Hospital and Sanatorium  
Leicester Nov 6th

#### THE PHYSIOLOGY OF DEFECATION

SIR—It seems evident that the habit of constipation has been evolved as an adaptation to the necessities of civilization. A cow may derectate whenever and wherever she pleases. A monkey with his arboreal life may do almost the same though possibly he has developed an instinct to retire to the lower branches for defaecation so as not to inconvenience his fellows. But when primitive man took to gregarious life in caves or huts it was necessary to deter defaecation and the individuals who could not do so must have been eliminated as unfit. As civilization became more complex a further elimination must have occurred. Think of the primitive conditions when there were no conveniences, houses, and when the retirement to a "draught-house" or privy was a thing to be avoided as long as possible! And think of the long journeys, with inadequate accommodation at the stopping places!

Nowadays the man who has two or three evacuations a day though in consequence he may enjoy better health and longer life, has certain disadvantages to put up with which some persons find serious for his call to defaecation is apt to occur in the midst of a social function or a journey and (far too often) in the night—I am, etc.,

Cambridge Dec 14th

F J ALLAN

SIR—The very great importance of the correct understanding of this subject prompts me to suggest that it is the greatest pity that the views of Sir Arbuthnot Lane and his school and those of Dr A F Hurst cannot be compared and reconciled for I know that these two schools are in possession of knowledge or, rather insight into the physiology of the colon that can hardly be aided to exist academically, and is therefore not available to the profession generally.

I was years since deeply indebted to Sir A Lane for his guidance in the study of the physiology and pathology of the abdomen but I am also largely indebted to Dr Hurst for drawing my attention (through his book on constipation) to the wonderful observations of O'Brien after years of study I came to these conclusions, briefly stated:

1 That the mass peristalsis observed by X rays to occur in the colon three or four times in the twenty four hours was the natural, but in civilized people a futile effort at defaecation

and that, therefore, repeated defecation during twenty four hours is the true physiological state

2 That, therefore, "normal" people were living unphysiologically

3 That—most important of all, it seems to me—the primary lesion (or the primary stage) in the development of chronic intestinal disease was residual faeces in the pelvic colon

It is to this condition that I wish especially to draw attention. Here is a grave and most common pathological condition which is unrecognized by the profession at large. So little is it known that it is commonly described, when seen by a ray, as "faeces in the rectum."

I have drawn the attention of Sir A. Lane and others to this really serious error, which occurs in authoritative books on constipation and the radiology of the abdomen (I can give exact references if required). I drew attention to this grave pathological condition in my pamphlet *A Study of Intestinal Stasis* (1922, J. Bale, Sons and Danielsson), which was favourably reviewed in the *BRITISH MEDICAL JOURNAL* and the *Indian Medical Gazette* and elsewhere. I there also appealed for the serious consideration as to whether our "normal" was really a truly physiological standard. Dr. A. C. Jordan (*BRITISH MEDICAL JOURNAL*, December 10th, p. 1120) evidently agrees with me that it is not.

Until this question is examined, academically and clinically, we shall not make progress in the prevention and control of acute and chronic intestinal diseases. On the other hand, let it be once realized that the chronic presence of residual faeces in the pelvic colon is as definite a disease as, say, pyelitis or residual retention of urine in the bladder, or empyema in any cavity of the body, and we shall go ahead.

At present, in routine x-ray reports on the alimentary tract, this gross lesion is commonly ignored and overlooked. Physicians should ask for a picture of the pelvis taken immediately or shortly after defaecation, whatever hour this may occur after the opaque meal has been given—I am, etc.,

London Dec 12th

JAMES C. WITT

### THE PROBLEM OF MENTAL DEFICIENCY

SIR,—A very important report has just been issued by the administrator of the Besford Court Catholic Mental Welfare Hospital for Children. So retrograde are the views expressed that I venture to call attention to them through the columns of the *JOURNAL*.

It is difficult in the short space I can expect from you to comment adequately on all the points raised. I will deal with the principal one, the mental deficiency problem viewed in the light of Catholic philosophy. The author claims that four inherent rights of humanity have been assailed by modern social reformers. They are (1) the right to live, (2) the right to bodily integrity, (3) the right to freedom, (4) the right to marriage.

(1) No one disputes this. The lethal chamber for aments is not advocated by any social reformer. The point therefore does not need discussion.

(2) The author condemns, on religious grounds, the sterilization of defectives. It is, he says, a brutal assault on innocent and defenceless members of society. Although I am a very strong opponent of sterilization I cannot for one moment agree with the reason given against it. There are other and much better ones. If sterilization would diminish the sexual crimes of defectives, if it would do anything to help to cure the state of mental deficiency, if it would in any way lessen the antisocial tendencies of the aments or in any way assist in solving the problem of our defective population, I would whole-heartedly support it. But sterilization does one thing, and one thing only, and that is prevent the production of children. It does not alter or improve the mental condition. It does not diminish sexual power or desire, and therefore it does not lessen the risk of sexual offences or of the propagation of venereal disease. It does not make the defective criminal into an honest man. It does not make the unemployable ament into a useful citizen. It does not make the immoral feeble-minded into a moral being. It does not enable the pauper or vagrant defective to earn his own living. Therefore it leaves exactly the same necessity (with the single

exception of the question of propagation) for constant and perpetual supervision as before the operation was carried out. If sterilization must of necessity be followed by segregation (and if we are properly to control the mentally defectives, segregation is essentially what benefit is it to sterilize at all?)

(3) This right of freedom, if conceded, would entail enormous harm on the general community. The antisocial propensities of the mentally defectives (as evidenced by crime, sexual outbreaks, pauperism, vagrancy, alcoholism, and so on) must be controlled. This is best attained by segregating the aments in special institutions, where, under proper control and care, they live happy and contented lives, yet cannot inflict harm on the community. Their injurious tendencies are kept in bounds, and cannot cause much mischief or suffering to their fellow creatures.

(4) It is generally agreed, I think, by those who have made a study of the subject, that the offspring of two mentally defectives is *always* a mentally defective, the offspring of a mentally defective and a normal is *generally* defective. This fact by itself justifies the conclusion that in no circumstances should a mentally defective be allowed to marry and propagate. The problem is serious enough as it is. By deliberately encouraging the further production of aments it would become far more difficult.

With every admiration for the well meant efforts of the institution, it is impossible to accept them as a forward contribution to the solution of the important question of the management of the feeble-minded. It is a very distinctly retrograde movement. The present-day attitude of sociologists in this matter cannot truthfully be called "a regression towards pragmatism." The efforts being made for the efficient and adequate treatment of this sociological question are sane, sensible, and humane. They at least have a chance of lessening the number of the antisocial elements in our population—I am, etc.,

Hove, Nov. 18th

L. A. PARRIS, F.R.C.S.

### CONTRIBUTORY SCHEMES FOR HOSPITALS

SIR,—The success of contributory schemes in raising money is due to the demand for specialist advice and a nursing home, two necessities which only the very poor or the fairly rich can obtain.

The fruits of the schemes are (1) Poor people are crowded out of hospitals. (2) The general practitioner loses his patients. (3) The specialist, more especially if not on the staff, also loses patients.

The remedies are (1) Contributory schemes should be on such a scale that they can pay establishment charges, etc., in order that the necessary enlargements may be made. (2) The general practitioner should be able to use the hospital as a nursing home. Of course it will be said that this is impracticable, but general practitioners follow their cases in private nursing homes. Poor law infirmaries might be turned into municipal nursing homes and the panel doctor treat his cases there. (3) Provision from the fund should be made for payment of specialist fees as in the ophthalmic benefit scheme.

Your correspondent Dr. Fothergill (November 12th, p. 899) writes of specialists not on the staff of a hospital. All specialists and general practitioners should have an opportunity of serving on the staff. The above remarks do not apply to teaching hospitals—I am, etc.,

Southsea, Nov. 17th

F. C. B. GITTINGS, M.D. Lond.

### THE THERAPEUTIC ACTION OF CALCIUM SALTS

SIR,—Dr. Priest's communication to the *JOURNAL* (November 19th, p. 958) raises some interesting points. The first is the greater therapeutic value of calcium in the colloidal than the crystalline state. In the discussion on calcium therapy (October 29th, p. 777) most of the speakers referred to the use of calcium in the crystalline form, solutions of calcium salts being discarded as calcium ions. As there is a carefully maintained balance of calcium ions in the blood, it is unlikely that medication with calcium ions will do much to upset this balance more than a very short time.



ROYAL FACULTY OF PHYSICIANS AND SURGEONS  
OF GLASGOW

Medical Notes in Parliament.  
[FROM OUR PARLIAMENTARY CORRESPONDENTS.]  
House of Commons.

Notes in Parliament.  
[FROM OUR PARLIAMENTARY CORRESPONDENT]  
House of Commons this  
(s) Bill was read  
is voted for

Board of Education Medical Department—Answering Mr. Harris, seven medical officers (five men and two women) were employed in the medical department of the Board of Education. They visited dry schools for blind, deaf, and mentally deficient children but the special problems of these schools necessitated moving appointments by medical experts. The Board had not minimum qualifications in psychology or in knowledge of schools and educational organization.

of the original outbreak there and in Wiltshire by Mr. Bland concerning the circumstances in which the Leekbarnstead district vaccinated the wife and children of a

*Percentage of Diphtheria.*—The official memorandum of the Government of Bihar and Orissa, issued by the Secretary to Government, dated 10th March 1926, contains the following information:

*Tuberculosis*.—On December 13th Sir K Wood in reply to Mr Hore Belsham said, and the new educational methods, and the assistance which the authorities were empowered under the provisions of the Public Health Act, 1921, to make arrangements for the treatment of tuberculous persons suffering from tuberculosis.

*Tuberculosis.*—On December 13th Sir K Wood in reply to Mr Horé Bishai, said he could not state what percentage of tuberculous cases, died from the assistance which the authorities were empowered under the Public Health Act, 1921, to make arrangements for the treatment of those who had suffered from tuberculosis for more than six years of their lives.

[illegible]

the health of the community. Mr. Hore Belsham said that the health of the community was the first consideration, and that the health of the community was the first consideration. Mr. Hore Belsham said that the health of the community was the first consideration, and that the health of the community was the first consideration.

He replied that Mr. Hore Belshy was collected and to show the many steps necessary to take such steps as the local medical officer of health under the Tuberculosis Regulations to prevent the spread of infection in every case of tuberculosis which was notified to him. Mr. Hore Belshy said it was the duty of the local medical officer of health under the Tuberculosis Regulations to take such steps as necessary to prevent the spread of infection in every case of tuberculosis which was notified to him. Mr. Hore Belshy said it was the duty of the local medical officer of health under the Tuberculosis Regulations to take such steps as necessary to prevent the spread of infection in every case of tuberculosis which was notified to him.

Wood said that in a number of crises again and spread in the  
of their own desire, or sometimes at these people returned.  
asked if Sn K Wood was satisfied with such crises.  
No, I am not.

... difficult to deal with such crises, these people returned home  
... doing all in their power to deal with these crises. Dr. Vinson Davies  
... No, I am never satisfied in these matters these crises. Sir K  
... *Aystagnus*—Su W. Joynton Hicks, said that he felt  
... Luce on December 12th, said that he felt  
... *Aystagnus* The matter is still  
... necessary to deal with these crises. Sir K

On December 12th, said that he fully realized the importance of the present position in regard to definition of the term "syngamus". The matter was one of difficulty and he had not yet possible to come to a final decision. He regretted, therefore, that he could not give a definite answer. He had, however, had a preliminary meeting with the Medical Research Council for Research.—On December 12th Mr. O. J. Joyson Hicks, Secretary of the Council, had concluded that grants made or offered to the Council for research on metazoan parasites of the human body should be made available to the Council for research on metazoan parasites of the human body.

cluded £9,000 to the Liverpool School of Tropical Medicine for research at the Ister Institute on the Medical Research Institute, Aberdeen, for produce on the vitamin content of vegetables, and dairy products for research into the effect of different conditions associated with the Rous virus on tumour growth.

Office Employers—Replying to native tribes in Kenya  
Chamberlain said he had no evidence that the  
powers of local authorities in offices called for  
to be insufficient, but insisted in the case of  
financial circumstances.

to be insufficient, but inspection must at present be made in offices were worse than among the general public would look into any evidence which Dr

Hospitals.—Mr Chamberlain has stated that information available there were 54,406 beds, in the form of 3,948 beds and Wiles on December 31st, voluntary Hospitals in two and a half years since the at its disposal Commission That Comm

Wood in reply to Brigadier  
the 13th said that  
Minister of

Minister of Health in reply to Brigadier General Clifton Wood in 1941 said that a case had been brought to his attention in which a dairyman who had been brought to the attention of the Ministry of Health in 1938, although he did not hold a Milk (Special Designations) Order, had not held a Milk and Dairies (Amendment) Act, 1932, Order, and that the Ministry had no power to issue such an Order.

and Druries (Amendment) Order Proceedings.  
The Ministry had no power to take them  
authority and in the local authority. It was a  
which should be brought to the Depart-  
ment further asked how the Ministry expected  
to had not got the Ministry tested with it he expected



## Medical News.

**THE** late Mr W Thelwall Thomas of Liverpool who died in September last has left estate of the value of £118 388, with net personality £109 759. He bequeathed £5 000 each to the University of Liverpool to endow a fellowship in surgical pathology, the Royal College of Surgeons of England and the Royal Medical Benevolent Fund for pensions for medical men and their widows. He has also given £1 000 to the Liverpool Medical Institution for the annual purchase of books of reference or journals. He directed that his house in Rodney Street should be used as chambers for medical men so long as the executors shall think fit the portrait in oils of himself he bequeathed to the University of Liverpool.

**MR HORACE H REW** assistant secretary of the Conjoint Board in England has succeeded as secretary Mr I G Hullett whose resignation took effect on December 5th.

**THE** house of the Royal Society of Medicine will be closed from Friday, December 23rd, to Tuesday, December 27th, both days included.

**AT** the meeting of the Royal Microscopical Society to be held at 20 Hanover Square, W 1 on Wednesday, December 21st at 8 p.m. papers will be read by Dr W J Elford on the principles of ultra filtration and by Dr G C Sansom on the origin of giant cells in the placenta. The annual meeting of the society will be held on January 18th when Dr James A Murray F.R.S. will deliver his presidential address.

**A** POST GRADUATE course on diseases of the nervous system will be held at the National Hospital, Queen Square, London, W C 1, from January 30th to March 23rd 1923. The course will consist of clinical lectures and demonstrations teaching in the out patient department and pathological lectures and demonstrations. The fee will be £5 5s. A course of lectures on the anatomy and physiology of the nervous system will be arranged if there are sufficient applicants. fee £2 2s. Clinical demonstrations of methods of diagnosis in diseases of the nervous system will also be given. fee £2 2s.

**AS** announced in our advertisement pages the Grocers Company with the object of encouraging original research in sanitary science is offering scholarships of £300 a year each, together with an allowance to meet the cost of apparatus and other expenses in connection with the work. Applications forms can be obtained from the clerk to the Grocers' Company, Grocers' Hall, E C 2 to whom they must be returned before the end of April.

**THE** Old Epsonian Club held its fiftieth annual meeting and dinner on December 8th. Sir Cecil Armitage the new president of the club in proposing Floreat Epsonian related how he entered St George's Hospital and studied materia medica, but on reaching bones decided to join the West African Colonial Service and through the first aid he learnt at the hospital gained the respect and affection of the natives. He said that the colonial service offered many openings to medical men especially in West Africa some times leading as in the case of Sir William McGregor, to governorship. The headmaster Mr Powell in replying described the efforts now being made to raise the age of entry at the school to 12 years thereby bringing Epson into line with the large public schools. The boys of public school age now numbered 329 instead of 234 and shortly should be 400. Mr Powell gave an account of the successes achieved in scholarships the classrooms and sport. Dr H F Ealand, in a humorous speech proposed the health of the guests. In reply the Right Hon W Ormsby Gore parliamentary under secretary to the Colonial Office twitted Dr Ealand with inaccuracies, urged the advantages of the colonial service as a career and said that owing to the doctors' West Africa was no longer the white man's grave. The dinner was very successful and the attendance was said to be the largest ever attained.

**OLD** St Bartholomew's men will be glad to know that a new edition of *Round the Fountain* (with illustrations) is due to appear before Christmas. Besides the paper covered edition at 3s. 6d. a limited number of copies will be printed on superior paper in cloth binding at 7s. 6d.

**DR W HENDERSON DAVISON** O.B.E. barrister at law at present acting medical officer of health for Birmingham has been appointed coroner for the city of Birmingham at a salary of £1 250 a year in succession to the late Mr Isaac Bradley. At a meeting of the Public Health Committee of the corporation of Birmingham on December 9th a resolution appreciative of Dr Davison's services was adopted.

**SOME** more cases of the disease described by Drs Olmer Boinet and Picri to the Académie de Médecine and referred to in the paragraph entitled *Brill's disease* at Marseilles published a fortnight ago were reported on November 15th to the Académie de Médecine by Drs Plazy, Marcon, and

this case to the notice of the authorities concerned and still hoped that something might be done. Brigadier General Brown asked the Minister to consider the question of placing a mark on tuberculin tested milk which had been properly inspected. No answer was given.

**THE** *Ill-rite*—On December 13th Mr G Locker Lampson told Lieutenant Commander Kenworthy that the Government had decided not to ratify the convention against gas and baculo logical warfare agreed upon at Geneva until all other important Powers had ratified its protocol or had signed their intention of doing so.

**THE** *Electric Medical Officers of Health*—On December 12th Sir K Wood replying to Dr Vernon Davis said that there were 118 non county boroughs and 182 urban districts in England and Wales with full time medical officers of health.

**Votes in Brief**

It is not the practice of the Civil Service Commissioners to examine the physical qualification of persons who apply for admission to civil service examinations. Their physical eligibility for appointment is investigated in the event of their success and the Government cannot consider the suggestion of a prior medical examination at the candidate's expense.

**A**sked whether the Government would now ratify the International Labour Office Convention on Maternity Protection, Sir Arthur Steel Maitland said this country already had in force a policy aiming at the same results, and the Government could not to the adoption of the specific proposals of the Convention would lead to administrative difficulties.

**Information** showing the number of former patients of sanatoriums who had become chargeable to the guardians is not available.

**The** Minister of Education is raising one of the medical officers of the Board of Education to make a special inquiry into the physical state of children in South Wales.

**The** Ministry of Transport rules that grants could not properly be made from the Road Fund to enable hospitals to meet the extra costs resulting from the number of motoring accidents.

## The Services

## NO 1, STATIONARY HOSPITAL

**THE** eightieth annual dinner of the No 1 Stationary Hospital was held at the Trocadero Restaurant, London, on December 9th. Lieut Colonel J R Harper C.B.E. who was in the chair proposed briefly the toast of The Hospital and in reply Colonel J S Warraek contributed a few anecdotes which provoked a brisk interchange of pleasant and humorous reminiscences ranging over the four years' activity of the hospital on the French coast. Numerous letters had been received from members of the staff now in foreign countries. A hearty vote of thanks was accorded to Dr H L Tidy the organizer of the dinner.

## DEATHS IN THE SERVICES

**DR** **SAMUEL KEYS** R.N. (ret.) died at Kingstown, Co. Dublin, on November 7th. He was educated in the school of the Irish College of Surgeons, and took the L.R.C.S.I. in 1875. He entered the L.R.C.Q.P. in 1876 and the M.K.Q.C.P. in 1884. He entered the navy in 1878 and became fleet surgeon in 1889 and retired in July 1903.

**Colonel William Edward Riordan** Army Medical Service (ret.) died at Southsea on November 11th, aged 87. He received his medical education in the school of the Irish College of Surgeons and took the L.R.C.S.I. in 1863 and the L.R.C.Q.P. in the following year. Entering the army as assistant surgeon in September 1864 he attained the rank of colonel in 1895 and retired in 1900. In the old regimental days he was medical officer in the Royal Artillery. He served in the Egyptian war of 1882 receiving the medal and the Khedive's bronze star and in the Sudan campaign of 1885 at Suakin gaining a clasp. He was the author of a *Manual for the Army Medical Service*.

**Inspector General Harry Hadlow** R.N. (ret.) died at Southsea on November 30th, at the advanced age of 91. He took the L.S.A. in 1857, seventy years ago, and the M.R.C.S. in 1859. Entering the navy soon after as assistant surgeon he attained the rank of deputy inspector-general on May 3rd 1883. He retired with an honorary stipend in rank as inspector-general on Mar 7th 1894. He received the Sir Gilbert Blane medal for his journal of practice on board ship. As assistant surgeon he was in the traits of Simons etc. present at the attack on the batteries on HMS *Cerberus* in Japan, from September 5th to 8th 1864. His active service therefore was at a period prior to the revolution in Japan which brought the Mikado to the headship of that country—a actual as well as nominal ruler.

**Further** details have now reached us regarding the career of Lieut Colonel Lewis Cameron on whom an obituary notice appeared on October 23rd (p. 800). While civil surgeon of Backerganj a storm wave swept the district killed large numbers of people and threatened the remainder with cholera. Colonel Cameron placed considerable time and money in travelling by boat from place to place in order to treat those in need and prevent further disaster. During his service in Rajshahi he was for 12 years in control of the central prison and at the time of his retirement was offered an inspectorship of jails.

Carboni. The onset was sudden, with headache, lassitude, constipation, and meteorism. The spleen was enlarged, 50 per cent of the cases. The rash was discrete and either morbilliform or in lenticular rose spots. Occasionally it became purpuric. In some cases there was a buccopharyngeal rash, or the conjunctivae were injected. None of these patients died. All the cases occurred between the months of March and October. The patients came from ships or from the neighbourhood of the port, none were venimous, and the authors were inclined to attribute the source of infection to rats or mice. As noted in our original paragraph and emphasized in Dr Goodall's letter last week, the disease would appear to be a mild form of typhus, or, as Plazy and his colleagues would call it, "benign endemic typhus (Brill's disease)".

THERE has been more small pox during the past summer in the United States than in the corresponding periods of 1926 or 1925, the figures given by 37 States for thirteen weeks being as follows: 1927, 2,900 cases, 1926, 2,400 cases, 1925, 2,000 cases. The virulent type, however, has not appeared in the United States this year, and very few deaths from the disease have been reported. Poliomyelitis also has been more prevalent than in either of the two preceding years: 37 States reported 4,000 cases for the thirteen weeks in 1927, 1,100 in 1926, and 3,200 in 1925.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to the **EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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## QUERIES AND ANSWERS

### TRIALMENT OF SYPHILIS

"K" asks for advice in the treatment of a stubborn case of syphilis, or of proctitis, a living child in the following case. The patient has had three dead born full term babies one being an anencephalic monster. The disease is of seven years' duration. For three years he injected her intravenously and intramuscularly with novarsenobion and in addition gave full doses of mercury and potassium iodide. This year a colleague took charge of her and gave her eight injections of salvarsan and massive doses of mercury and potassium iodide. She aborted in a month and her blood to day gives a Wassermann reaction (plus four). She is very stout and apparently in excellent health. Her husband responded to treatment very readily, and his blood gives a negative Wassermann reaction.

### INCOME TAX

#### Motor Car Allowance

F.C. inquires with regard to a sequence of car transactions. It should be remembered that the cost of replacement allowance is not given in respect of the loss on the car displaced but as representing the appropriate part of the expenditure incurred on the new car. Thus the net cost of the second car bought in 1914—that is £537—£110=£427—should have been the amount allowable in respect of the 1914 transaction and so on. The question of capital improvement is complicated by two factors—first the fact that a saloon car was used between 1914 and 1922 and secondly by the full market prices between 1922 and 1926. If the last two cars are taken by themselves the inspector of taxes is right in objecting to the 'saloon' basis of cost, but seeing that a saloon car was in use to 1922 we think he would probably drop the objection if that fact is emphasized. The

proposed future depreciation allowance of 15 per cent is not uncommon. The decision on the matter rests with the Commissioners, to whom an appeal would be made. They might take into account the fact that to the extent to which it is insufficient an obsolescence claim will normally put the taxpayer right when the car is renewed.

### Change in Partnership Cash Basis

"APEX" explains that as from January 1st 1928 his share in the practice will be increased from one third to two fifths. What effect on income tax will result from (1) including, and (2) excluding outstanding book debts in the valuation to be placed on the additional share purchased?

The amount of the income tax paid by "APEX" should not be affected by the choice arrived at, the cash basis method is only an approximate method of calculating the true liability, which is on the basis of the value of gross earnings. If the firm as reconstructed adhere to the cash basis system for the future, as we assume they intend to do, the tax payable by "APEX" will bear a close ratio to his net cash receipts from the practice. It is true that he will have bought some of those receipts but, on the other hand, he will be accounting for income tax (as is legally correct) on other income which has been earned but has not actually been received.

### Change in Membership of Firm Cash Basis

"C" and "L" were in partnership to July 1st, 1926, when they were joined by "H," formerly their assistant. The assessment for 1927-28 is based on the cash receipts of the practice for the year to 1926 less the expenses of the three partners including, presumably, "H's" salary for the six months to July 1st 1926, but the fractional division of the subsequent profits does not apply to fees earned before that date.

It is, of course, clear that "H's" share of the tax will exceed what he would have to pay on the basis of his share of the cash receipts of the year, but this is correct, because, as a commencing partner, such receipts do not adequately indicate his income tax liability. The figures supplied by the inspector of taxes seem to us sufficiently correct in the special circumstances, the only alternative is for the firm, as a whole, to disband the cash basis for 1927-28 and future years and base their returns on the value of the fees booked instead of the cash received. "H" may perhaps be unfortunate at the moment if, as is possible of course, the cash receipts for the six months prior to his entering the partnership were abnormal in which case he will be helping to pay tax on the harvesting of his partner's past earnings.

## LETTERS, NOTES, ETC

### PIREXIA WITHOUT VISCERAL SIGNS

DR SUNDARA RAJAN (Coimbatore, South India) writes to express his interest in Dr Franklin's note (*JOURNAL*, August 27th p. 350) on pyrexia without visceral signs, which he thought might be due to slight intestinal influenza. Dr Rajan states that he has seen ten such cases within three years. The patients had a sudden rise of temperature unaccompanied by pain, but with a little cough, for which no cause could be found in throat or lungs. The tongue was furled and very often there was slight constipation. When this was relieved and the patient put on a diaphoretic mixture the pyrexia still persisted for three or four days. Even mixtures containing sodium salicylate did not influence the fever.

### PREMATURE RUPTURE OF THE MEMBRANES

DR J. S. PRARSL (Plymouth) refers to the comments of A. Mayer and E. Frey (*Lancet*, December 3rd, paras 529 and 530) on the increasing number of cases of premature rupture of the membranes. Dr Prarsel has noted also frequent reports of such cases in the **BRITISH MEDICAL JOURNAL**, and raises the question whether this premature rupture, if it occurs, can be classed as a definite post-war condition. He remarks, however, that it is used to be a common experience, both before and during the war, to be told erroneously on arrival at a midwifery case that the membranes had broken. The mistake arose from the escape of the "forewaters" in hydrotome gravid woman, premature rupture of the membranes being quite a rare event.

### CORRECTION

In our report of the discussion at the Medical Society of London on late results of operation for carcinoma of the breast published last week the initials of Mr A. J. Walton (page 1036) were incorrectly given.

### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 43, 46 and 48 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 236.

## A DISCUSSION

ON

THERAPEUTIC MODIFICATION OF THE DIET  
IN INFANCY

BY

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DEALING upon the subject of infant feeding seldom arouse profitable discussion. As a rule, the aim is to make clear only the difficulty or reconciling the views of those who might be supposed to speak with authority. Therefore, in the first place, I would ask the question: Whom has this difficult and complex subject? Why is it that in this subject, on the importance of which all are agreed, opinion has remained so fluid and so little that is solid and concrete has crystallized out from it? Why is it that in practice we still encounter, on the one hand, a frozen view among a host of proprietary foods for one which may run up to the promises of all or on the other hand, a too rigid adhesion to some one system of feeding despite the persistence of symptoms?

*Difficulties Inherent in the Subject*

It is obvious that some of the difficulties with which we have to contend are inherent in the subject itself. In the practice of infant feeding the data are difficult to interpret for two reasons. On the one hand it is mercifully the nature of the child to wax and wane strong and thus upon a very great diversity of dietetic prescriptions. Yet the prescriber of each diet is prone to claim this most vital happening as evidence of success and as proof of the virtues of his prescription. On the other hand the human infant is of so sensitive a nervous organization that a great variety of adverse circumstances are capable of producing ill effects upon its health—effects which almost always manifest themselves in gastro-intestinal and nutritional disturbance.

The infant has but one function highly developed that of the digestion and absorption of food. So hypertrophied a function is necessarily unstable and in the absence of other functions capable of manifesting symptoms of derangement disorders of very different natures are apt to show themselves in the guise of digestive and nutritional disturbance. Thus intercurrent infective diseases, great variations in the atmospheric temperature or humidity, extreme restlessness from timid or uncertain handling or from overstimulation on inco-ordinate and ineffective suction with its phagor, individual inherited idiosyncrasies against certain constituents of the food are each and all capable of so lowering the tolerance for a diet in itself quite unobjectionable that severe dyspepsia may result. Because of the action of one or other of these adverse influences many dietetic prescriptions in themselves admirable are apt to fall into disrepute and to bear the blame of a disturbance of which they have not primarily been the cause. On the other hand since these influences are more often than not transitory in their action many dietetic recipes tried at the moment of recovery, bear off the credit for that recovery which was in fact quite unconnected with their use.

Thus difficulties are inherent in the study of the infant and of its diet but in this country at the present time there are other difficulties with which we have to contend and which are responsible in part for the confusion which surrounds the subject. I will briefly refer to three only.

*The Neglect of the Study of Pediatrics in Universities and Medical Schools*

In medical schools and universities too little attention is paid to the scientific study of the child. The subject is regarded as a specialty. It is regarded as a specialty for recognition among the conflicting claims of otolaryngology,

orthopedics and even proctology. We may be sure that only when it has been elevated to the rank of a subject of the first importance, and takes its place with medicine and midwifery as one of the pillars of the final examination can we hope to find the profession as a whole equipped as we would have it equipped to deal with so all important a branch of general practice. Operative surgery on the other hand, which occupies to-day so large a part of the student's time and attention belongs rightly to the specialties. Its practice is a matter for post-graduate rather than undergraduate study and its technique can only be usefully acquired by the special training of some of those who have already received a medical education. The dearth of professional chairs in pediatrics in this country is both symptomatic of and productive of the widespread neglect of the subject.

*Detrimental Effect of the Advertisements of Proprietary Foods*

To the lay mind the proof of the pudding is in the eating. Digestive derangement however caused is taken as indicating that the particular diet adopted is responsible for the disturbance and a change is demanded. One food after another may be tried in an unmethodical search for something which suits. The numerous advertisements of proprietary foods are cleverly designed to play upon the anxieties of the mother. Their effect in producing this constant demand for change and in increasing our difficulties is not lightly to be set aside. Nothing is more amazing to-day than the success of advertisement in a population trained to read but not to reason. The latest device is the advertisement in the form of a Socratic dialogue—hitherto confined to the vendors of cheap furniture—under a picture of the kindly doctor with his arm resting reassuringly on the shoulder of the distressed young mother, while he extols the virtues of the food, and she dutifully undertakes to follow such good advice.

These foods are to some extent the raw materials of the physician's art. Their virtue lies in the uses to which they are put not in their composition. Many owe their origin to successful prescriptions in the past for particular types of disturbance. Commercially however there is little profit to be made by putting on the market a diet for sick infants only hedged by restrictions and indications for and against its use. It is more profitable to make the claim of universal applicability based on selected cases which have undoubtedly thrived by their use.

*III Effects due to Misunderstanding of Propaganda for Infant Welfare*

The appreciation of the disastrous effect of these repeated and injudicious changes of diet in the dyspeptic disturbances of infancy has led some to go to the opposite extreme and to maintain that by a rigid adhesion to some particular formula or scheme of feeding success can always be attained at least in what is called a "well baby." This is the attitude which has been associated to take one well known example with the name of Sir Frederick Truby King. He says in effect "Give me a healthy baby and I will show you how to keep it healthy." It were to ask him he would say "With sick infants I have nothing to do. My work is preventive not curative." He rightly regards the preparation and supervision of the diet of the healthy infant as falling within the province of the educated mother or children's nurse supervised and instructed, it need be by the trained nurse or infant welfare worker. No one can fail to admire the enthusiasm which he has thrown into his work and the energy with which he has conducted his extensive propaganda among mothers and nurses. But propaganda upon matters of health is by no means free from danger to the public. There is indeed, at the present time an attempt on the part of certain medical men to enlighten the services of the lay press in bringing medical knowledge to the notice of the public. Those who oppose the suggestion are all too fearful of its effects. They will point to certain unhappy results which have followed on the propaganda for infant welfare. No one branch of medicine has been so subjected to this process of popularization. For popular consumption propaganda must be so simplified that the truth is

The foregoing paper of a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association in Edinburgh, 1927.

almost squeezed out of it in the process. An outline, a mere diagram, is all that can be depicted, without light or shade, without degrees of emphasis, and without consideration of exceptions or variation. Hence we find that the successful propagandist is seldom himself expert. Late in life a surgeon, supreme in his art, turns dietitian, or an asylum superintendent devotes his later years to the standardization of infant feeding.

All standardization is detrimental to the progress of medicine, although it immensely simplifies elementary teaching. The effect of standardization in this instance, although certainly not its aim, has been to tend to leave the doctor out as one no longer needed. The public has become confused. It hears the Tinby King or some other "system" of feeding extolled as giving admirable results. Why should these great benefits be confined to healthy infants? The mother of some ailing child demands that it, too, should share in them. And so it comes about that ailing infants are admitted to institutions which were designed only for preventive work, and that mothers and nurses come to regard the standard diet—which I should look on much as a sighting shot, to be persisted in only if successful—as conferring health on all dyspeptic infants.

If it were possible to feed all infants, healthy or sick, in the same way, it would indeed be true that the subject could have no possible interest for medical men. The nurse, trained in the preparation of the particular diet, would then rightly take charge. The routine dietetic treatment, known beforehand, is then all that is required, beyond that skilled nursing and handling which every baby needs, and which is, in truth, the replaceable and all-important contribution of the trained nurse. Indeed, under a standardized system it is not necessary before giving advice to see the infant at all, or to make any examination of it. In one of the largest institutions for infant welfare it is considered possible to manage the whole business by letter. The nation conducts a consultation department known as "Better Babies by Post." From all over the country mothers write describing the symptoms from which their babies are suffering, and question and answer are published in the lay press. The child may be overfed or underfed, it may have pectus, or it may be suffering from injury to its medulla oblongata at birth—no one knows, but the advice by post, a little stereotyped perhaps, but simple and legible, is always to be obtained. Such happenings bring discredit upon a subject the welfare of which all of us have very much at heart.

We need, I think, above all the elevation of pediatrics, as the most truly educative of all subjects, as well as one of the most important in practice and for the service of the State, to a more important place in the curriculum. I would welcome, too, some restriction on the trade in proprietary infant foods, and in the character of their advertisements. The difficulties of the infant welfare movement will right themselves in time. In time the public will learn not to confound sensible advice on the care and diet of a healthy infant with the therapeutics of the sick.

#### *Therapeutic Modification of the Diet*

In the last twenty years much progress has been made in the attempt, based upon the study of the etiology of particular symptoms, to devise modifications which may suffice to control and correct disturbances originating upon the standard diet. In other words, if the sighting shot is unsuccessful we must seek to determine the nature of the error, and how it can be corrected. No doubt these therapeutic diets are for the most part to be regarded only as temporary expedients. By their use freedom from symptoms and a gain in weight, in vigour, and in well-being can often be achieved. But the ultimate aim must be to restore the child as quickly as possible to the standard diet of health. Only when it has demonstrated its power to thrive on the standard diet can we claim to have achieved complete success.

It is on this subject of the therapeutic modification of the diet that I especially wish to invite discussion. In

order to open that discussion I choose three such modifications

- (A) High caloric feeding in post-infective dystrophy
- (B) Thickened feeding in the vomiting of refluxity, nervous vomiting, and hypertrophic pyloric stenosis
- (C) Feeding with a high percentage of casein in fermentative diarrhoea

[The speaker discussed the results attained by these devices, illustrating his remarks by charts.]

#### DISCUSSION

Dr. DINGWALL FORDYCE (Liverpool) first referred briefly to breast-feeding. The quality of maternal milk was, in his experience, seldom at fault, and the most powerful factor in modifying it was nervous unrest and instability. Chemical tests were of little practical value, but occasionally bacteriological examination was of the utmost importance. The demonstration of *B. coli* in the milk of apparently healthy mothers had explained the unsatisfactory progress of three of his cases. The relation of diet to general health and constitution was a complicated problem. The late Dr. John W. Simpson had been among the first to use thyroid extract in the treatment of wasting babies, and his results were very good. In order to influence the thyroid function, it was not, however, necessary to administer the extracts of the endocrine glands, adjustment of the diet, particularly by modifying the nature of the carbohydrate and the amount of fat, could effect the desired result. Success in infant feeding could not be attained by rule of thumb. Each infant must be regarded as a patient with a constitution demanding study. Practical infant feeding could be learned only in the clinical atmosphere of the bedside and the home. The time must inevitably come when the subject of the feeding of infants as part of the larger subject of the medical care of children would receive adequate recognition in universities and medical schools. When it did, this in itself would largely counterbalance many detrimental effects associated with propaganda in favour of proprietary foods and misunderstandings in child welfare. With increasing knowledge therapeutics in childhood was joining hands with prophylaxis. When the subject was suitably recognized it was very desirable that development should take the form of a department for the medical care of children, and not be limited to the relatively narrow subject of therapeutics in sickness.

Dr. G. B. FLEMING (Glasgow) thought that hardly enough attention had been paid to the quantitative modification of the diet in infancy. In his opinion underfeeding was an extremely common cause of malnutrition. He considered that the average infant less than 6 months old required about 55 calories per kilo of body weight for basal requirements, 5 calories for growth, 5 calories to make good loss in the excreta, and perhaps about 35 calories for muscular exertion—a total of 100 calories per kilo. It had to be borne in mind that marasmus, atrophy, or decomposition did not represent a disease but a state of malnutrition. He had been interested in the problem of whether this malnutrition was the result of a too rapid utilization of nourishment by the atrophic child. Rosenstein first suggested that infants should be fed according to their age rather than their weight. Investigations on metabolism had thrown considerable light on this problem. It had been shown that the basal metabolic rate of the overweight infant was no higher than that of the normal, and also that there was little difference in the milder degrees of malnutrition. When, however, the infant was about a third below the average weight for its age there was a fall in the metabolic rate, and this became progressive as malnutrition proceeded. His conclusion was a result of these investigations was that, when an infant's weight was 70 per cent of what it should be for the age, the requirement was 90 calories per kilo of expected weight instead of 100 calories. Beyond that point the caloric intake had to be further reduced proportionately to the fall in the basal metabolism and the diminution in

muscular activity. Roughly a reduction of one calorie per kilo of expected weight should be made for every 1 per cent the child is below 65 per cent of its expected weight. Thus at 55 per cent of expected weight the allowance should be 80 calories, and at 45 per cent 70 calories per kilo of expected weight. In trophic then, it appeared that there was no excessive utilization of food and that the condition was brought about by one or both of the other causes of malnutrition—starvation or malassimilation. These considerations were useful in helping to avoid gross errors of under- or over-feeding.

Dr LEWIS THATCHER (Liverpool) confined his remarks to the use of acidified milk. In many feeding cases the food that was being given was deficient not only in total calorie content, but also in protein value. The idea on for this was often not that the diet had not been recognized as deficient but that all attempts to give an adequate quantity had been attended by signs of intolerance. In many such cases he had found acidified milk most valuable. There was nothing new in the use of acidified milk to meet this difficulty. Buttermilk had long been used and Gmelin's artificial milk was a mixture of hut milk and extra curd. In practice, he thought that acidification was best brought about by adding an organic acid. He used lactic acid, as the method was not difficult and the degree of acidity was easy to control. 1 drachm of lactic acid (B.P.) was added to a pint of milk which had been boiled for two minutes and allowed to cool. It was important that the milk should be nearly cold and be constantly beaten with a spoon or shaken up in a large bottle till the acid was added slowly drop by drop. It was convenient to prepare the ration for the twenty-four hours at one time. The milk might be strained or whole and carbohydrate preferable in the form of dextrinulose added as considered necessary. It was better to give no more than five feeds if sufficient could be taken at each feed. This allowed of more complete emptying of the stomach and also of the administration of orange juice and water between feeds, a plan which was preferable to diluting the mixture. When the change over was taking place it was, however wise as in all modifications to build up the diet gradually. Mothers could prepare the milk quite efficiently after a demonstration from the ward sister. There had been two main explanations of the undoubted benefits obtained, the first was that the coagulated casein salt was in a finely divided flocculent form which passed easily into the duodenum, and the second that the essential process was one of debuffing. Marriott and others had shown that the buffer value of cow's milk was much higher than that of human milk which meant that about three times as much acid had to be added to it to change the reaction to an equal degree. The result was that in the process of digestion of cow's milk the hydrochloric acid in the gastric juice was used up for this purpose and little or none was left for keeping the stomach content at the optimum acidity for peptic digestion stimulating gastrointestinal motility and killing off micro-organisms. The formation of a finely divided curd ought also to facilitate fat digestion.

Dr L. G. PARSONS (Birmingham) agreed with the view that lactic acid milk was valuable in the treatment of certain types of case. He was in the habit of using milk modified by the growth of the *Streptococcus lactis* for his original culture he was indebted to Dr Alan Browne of Toronto. He thought that this form had certain advantages but the method of preparation was no so simple as that in which lactic acid was added. It was therefore less suited to out-patient and private practice. It was difficult to understand why sick and debilitated infants should thrive better on lactic acid than on other forms of acid milk. The fat and calcium absorption on lactic acid milk was not so good as on ordinary cow milk and the calcium absorption was considerably less than on hydrochloric acid milk. The probable explanation of its superiority was that it did not put so much strain on the acid base balance as hydrochloric acid milk. Svorog of Heidelberg had suggested that the value of lactic acid lay in the fact that it was synthesized to carbohydrate and stored as glycogen in the

liver. Lactic acid milk was useful in cases of pyloric stenosis when breast milk was not available. In that condition is a result of the loss of hydrochloric acid from vomiting, a state of alkalosis was liable to develop and led to convulsions and a fatal termination. The importance of giving an acid milk both before and after operation was therefore obvious. There was no objection to giving lactic acid milk to newly born or even premature babies. It could be given also over prolonged periods. One patient had taken it, owing to an oversight for twelve months on end with excellent results.

Dr C. W. VINING (Leeds) associated himself with those who regarded underfeeding as an important cause of marasmus, and pleaded for a more general use of calorie measurements of food. At the same time it was desirable to keep feeding methods as simple as possible. The chief merit of the calorie method was that it offered a means of regulating and controlling food requirements. There was room also for improvement in methods of measuring quantities of foodstuffs. The table spoon was commonly believed to hold half an ounce of fluid whereas its measure was nearer three-quarters of an ounce. Larger quantities than were intended were therefore administered when this domestic measure was used. He believed strongly in leaving young infants with their mothers even when the latter were poor and ignorant rather than in admitting them into a hospital ward where there was always the danger of stray infection. As a routine in out-patient hospital practice he employed mixtures of dried milk and dextrinulose. These were made up in three strengths and were dispensed at cost price. He had been impressed with the usefulness of lactic acid milk and had also had success with banana pulp feeding in the stationary type of case. He hoped that pediatrics would soon appear among the subjects of the final examination for medical students.

Dr CHERINE CHISHOLM (Manchester) strongly supported the speaker's contention that pediatrics did not occupy the place it should in the medical curriculum. She urged the use for teaching purposes of the abundant clinical material now to be found in special municipal wards for infants, infants hospital and well equipped Poor Law institutions. Such teaching could not be given in out-patient department. She was glad that Dr Cameron had emphasized the real value of proprietary foods as a temporary diet for prescription in cases in which some special need of digestion had to be met. She had found lactic acid milk prepared by culturing the lactic acid bacilli of great value in infants of the age of 3 months. In younger babies, he relied in bad cases on breast milk from foster mother. A supply of such milk should be available in every institution dealing seriously with infantile dystrophies. Her experience of the use of banana pulp had been disappointing. In several cases the immediate effect was good but after a week or two intolerance developed and the diet had to be changed.

Dr MARGUERITE IOWENFELD (London) said that a fundamental difficulty in the therapeutics of infant feeding was the lack of agreement as to the criterion to be chosen in arriving at a standard diet both in respect of composition and quantity. One school aimed at giving a food the composition of which approximated as closely as possible to that of breast milk, another took the actual energy needs of the baby as a basis. In the obstetrical department of the hospital she had taken part in a study of the amounts taken by normal babies at each feed during the twenty-four hours, together with a biochemical analysis of the milk. One point of considerable significance in the matter of the fat percentage had emerged. It had long been known that in both human beings and animals the fat content of the milk tended to rise towards the end of a feed. Experimental workers had found however that this was not invariable. This investigation had shown that two factors had to be taken into account. The first was the amount of fluid present. The greater the amount of fluid the smaller the percentage of fat. The fluidity of milk was greatest at the beginning or feeding. The second factor was the degree of direct pressure exerted on the areola. This was aided by using



degrees of pressure varying from that obtained by the gentle use of a breast pump to that resulting from vigorous digital expression. The greater the pressure the higher the percentage of fat. With a maximal amount of fluid in the milk and a minimal pressure on the areola, the content of fat might be 8 per cent below that obtained when the fluid was small in amount and the pressure vigorous. When, however, the pressure was maximal at the outset of a feed and minimal at the end, the percentages of fat could be equalized or even inverted. She was convinced, therefore, that no two infants would get the same percentage of fat from the same mother, even under identical conditions. It might be that the so-called overfed infant to which Dr. Cameron had referred was really the vigorously sucking infant, who obtained not necessarily in excessive quantity of milk, but a milk with a very high percentage of fat.

Dr. HENRY MACKAY (London) emphasized the point that it was not only necessary to have some knowledge of caloric values, but also to be able to instruct the mother as to the conversion of weights of given foodstuffs into the domestic measures available. She instructed the great variations that existed in this respect in different foodstuffs in common use.

## MESENTERIC LYMPHADENITIS AND ITS CLINICAL MANIFESTATIONS

WITH SPECIAL REFERENCE TO ITS DIFFERENTIAL DIAGNOSIS FROM APPENDICITIS

BY

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MESENTERIC lymphadenitis was well known to physicians in the past under the name of the "strumous abdomen." During life it was guessed at on general symptoms, or from the *post-mortem* table an accurate scientific fact was recorded. It is only since abdominal section has become common that the protein aspects of the condition have been realized. Whether the glands are acutely or subacutely inflamed or have resisted their invaders, symptoms may arise at each step. An acutely inflamed appendix, a stone passing down the ureter, a carcinomatous obstruction, a duodenal or gastric ulcer, can be most accurately mimicked. In fact, there is hardly an abdominal condition for which laparotomy is commonly performed that may not be simulated by diseased mesenteric glands.

That these glands are frequently infected is common knowledge. The tubercle bacillus has been stated to be the causative organism. Still found enlarged mesenteric glands in 59 per cent of all *post-mortem* examinations in children. Dingwall Fowdree in fifty autopsies could trace tubercle bacilli in 20 per cent. McIndoe and MacConkey found 25 per cent of clinically non-tuberculous patients to harbor active tubercle bacilli in their mesenteric glands. No child is too young to be infected. De la Albera reported three cases on which he performed *post-mortem* examinations and found no lesion excepting caseating mesenteric glands. One child was 5 years of age, one 4 weeks, and one had been born only 7 days before. At the Ulster Children's Hospital twenty-five cases of acute appendicitis were treated during 1925 and 1926. So that if one considers the numbers that do not reach hospital these cases must be almost as common as cases of acute appendicitis.

Accurate diagnosis in the case of a patient who is suffering from a pathological condition of the mesenteric glands rests to a great extent on a knowledge of their physiological properties and of their anatomical distributions. The lymph channels follow closely the blood vessels of the same region. The glands are situated in relation to these blood vessels. There is as a rule three sets. The glands affected in mesenteric lymphadenitis are the ileo-cæcal, the mesenteric, the inferior mesenteric root gland, the middle glands in the transverse mesocolon, the

root glands at the origin of the superior mesenteric vessels, and the lateral aortic glands.

The flow of the lymph through these glands is as a rule direct from one to the proximal one. The lymph may jump from one set of glands to reach a more distant group. This occurs in intestinal infections where the juxta-intestinal group seems to be passed over and the middle mesenteric group infected. It occurs where the cæca drained has suffered a developmental change in position. The lymph may take a circuitous route to reach its termination if the glands in its direct route are destroyed by accident or disease. It is in this way that a diseased appendix may infect the subpyloric group of glands. Sometimes the lymph flows backwards, this occurs when its onward way is blocked. This has been cited as a frequent cause of phthisis, where the bacilli in the mediastinal glands have their efferent paths blocked and the backward flow of lymph carries the bacilli into the lungs. Radwin reports a case where a mesenteric lymph abscess was opened and drained. The surroundings appeared healthy. Four months later the cæcum and ileum were the seat of hypertrophic tubercle. This was in all probability a case of infection of the intestine from a backward flow of infected lymph.

Now pathological changes in these glands are a great worry to the surgeon when it comes to a question of diagnosis. In 6,000 to 7,000 cases admitted to various hospitals only 45 were correctly diagnosed. Even the time-honoured aphorism of appendicitis—pain starting at the umbilicus, followed by vomiting, followed by the pain settling down in the right iliac fossa—may attend the beginning of an attack of inflamed mesenteric glands.

At operation three main types of glandular conditions are found: (1) Discrete enlarged inflamed succulent glands. This type is found in children who have exhibited the symptoms of acute appendicitis. (2) A mass of glands grouped around a caecous gland or a small abscess. There is an acute inflammation of the whole mass, and often there is free fluid in the peritoneal cavity. These cases simulate acute appendicitis with abscess formation, occasionally they get intestinal obstruction. (3) The terminal or herled stage of lymphadenitis—a single gland or several caseified glands lying in the mesentery. It is this type that is usually found in adults. The symptoms simulate those of a duodenal ulcer, a renal calculus, or a chronic appendix.

It is noted that children suffering from mesenteric lymphadenitis have a long history of stomach trouble. This history may only be obtained after long and judicious questioning. The history of the complaint may date from babyhood, or from a distant severe illness, such as scarlet fever or measles. Other points to notice are the numbers of cases that suffer periodically from headaches, drowsiness, and loss of appetite for breakfast, these symptoms are probably the sequel of acidosis, a condition common among these patients. Unfortunately the urine of all children was not examined systematically in hospital, and it was after their acute attack—in some cases two years after—that my examination of the urine was made. In my series of cases acetone was present in 63 per cent. During an attack the percentage would certainly be higher. Nausea and vomiting are frequent in their history—some 71 per cent of cases. I am inclined to think that the acute abdomen due solely to acidosis of the older children does not exist, but that the real condition in these cases is an associated inflammation of mesenteric glands. Distaste for fats is a common symptom. Constipation is not more frequent amongst these cases than amongst the rest of hospital patients.

### Pain

The pain may be severe. A number of patients are awakened out of their sleep by the pain. One has drawn attention to the sudden onset and the sudden cessation of the pain. Although this is frequent, it is not so frequent as to be a good diagnostic point. The duration of the pain varies from five minutes to about two hours. It frequently starts at the umbilicus and settles in the right iliac region. It often starts in the right or left iliac region, sometimes in both. It may be epistemic, usually to the left side of the epigastrium, in certain cases,

to be mentioned later, the pain may have the sudden severity of a perforation, or be more chronic and simulate that of a duodenal or gastric ulcer.

When the cases in children that simulate acute appendicitis are considered it is well to remember that the conditions are equally common, at least in the province of Ulster. In England the group most commonly affected is the mediastinal group in Ulster the gland in the neck and in the abdomen are most commonly affected. In England the human type of bacillus is relatively more common than in this province, where the bovine bacillus is the commoner. The social status of the patients seems to have no bearing, the condition occurs so frequently in the well-to-do as in the poorer classes.

Most surgeons who have written on this subject have stated that it is a localized inflammation of the ileocaecal group. Undoubtedly it is the group most seriously affected, but thorough examination rarely fails to detect other glands enlarged, though maybe to a slight extent. The glands of the neck are nearly always palpable in the case. Lymphatic glands are more easily palpable in normal children than in adult, but in children with mesenteric lymphadenitis, hotty glands larger than in healthy children can usually be found. In quiet and subsiding cases the gland lying at the root of the inferior mesenteric artery can be palpated frequently is the gland in the right iliac fossa. Enlargement of the lateral sacral gland has often given me the clue to the correct diagnosis in a doubtful case.

The points of special significance in the history are the long period that symptoms have existed, the weak stomach or so-called bilious attack, periodically recurring pain dating from an original mild attack and becoming more frequent and more severe. (It is this peculiarity in the history that is the reason of the long duration of symptoms before the patient is seen by the surgeon.) The pain may begin at the umbilicus and settle in the right iliac fossa. The attacks of pain are usually preceded by headache and drowsiness. Vomiting is a frequent symptom before or after the pain and it does not as a rule affect the pain.

The common age for the patient to be seen by the surgeon is between 7 and 11 years; it is rare to meet a case under 3 years of age.

*Period over which symptoms have existed before seen by the surgeon*

	Cases
Since birth	7
Under 1 year (average 6 months)	8
Over 1 year and less than 5 years (average 2 years)	15
No previous history noted	2
<b>Total</b>	<b>27</b>

*Age of Patients (Children under 12 years)*  
Average age 9 years 8 months.

	Cases
Below 4 years	1
Between 4 and 7 years	9
Between 7 and 11 years	23
Over 11 years	4
<b>Total</b>	<b>37</b>

*Percentage of Features*

	Percentage
Males	57
Females	43
Laparotomy performed	33
Acetone present	65
Headache	75
Vomiting	71
Lethargy and drowsiness	78

*Site of Onset of Pain*

	Cases
Epigastric	5
Umbilicus	33
Left iliac fossa	25
Right iliac fossa	39

*Penal Symptoms*

Two cases had pain on passing water.  
One case had haematuria.

As regards physical examination the patient is often pale with bright red lips, the tongue is moist but often has a whitish fur. Acetone may be detected by the odour of the breath. The tongue of an acute appendix case is dry, redder. The pupils are more prominent and the mucous membranes to be brown in colour. A child suffering from mesenteric lymphadenitis has never a tongue of this type.

Hotty glands can be felt in the neck especially in the posterior triangle. The abdomen moves freely with respiration. There may be some muscle spasm in the right lower quadrant of the abdomen but no true involuntary rigidity except in those cases of Group 2 where there is much peritonitis and the glands are matted together. The muscles in the flank or the lower fibres of the external oblique are never rigid. Rectal examination will reveal nothing or an enlarged lateral sacral gland may be palpated. Nearly all authors state that there is tenderness at McBurney's point. Now a glance at the lie of the glands in the ileocaecal angle will convince you that this is an improbability. The maximum point of tenderness in acute appendicitis is most frequently McBurney's point in an appendix lateral to the caecum or lying retroperitoneally tenderness may best be elicited in the flank, above the crest of the ilium. Glandular affections never involve the oblique muscles here. In mesenteric lymphadenitis the site of maximum tenderness is not McBurney's point but higher up and more medial as might be expected the tender area extends upwards in a vertical manner under the right rectus muscle to the transpyloric plane (Fig. 1). This is the position of the inflamed mesenteric glands. I have never found this area of tenderness to betwix me, given other suggestive signs. Careful palpation of the left iliac fossa may show local tenderness or an enlarged lymphatic gland. Rectal examination is especially useful. If the finger is inserted to its fullest extent and starting in the middle line posteriorly is swept round the side wall of the pelvis an enlarged gland the lateral sacral or the gland of the promontory can frequently be felt. This lateral sacral gland is felt like a pea. Hyperaesthesia of the skin, simulating the hyperaesthesia or an acute appendicitis, is sometimes present.

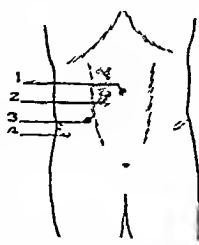


FIG. 1.—Showing the area of tenderness in cases of lymphadenitis of the ileocaecal angle as compared with the position of McBurney's point. The area of tenderness may extend over the whole of the flared area or be limited to the area of 1. Umbilicus 2. Maximum point of tenderness in ileocaecal angle. 3. The ileocaecal angle. McBurney's point is anterior superior iliac spine.

The temperature varies. It is frequently elevated depending upon the type of glands found. In Group 2 it is frequently high it may reach 104° F.

Taking the above points into consideration the diagnosis of the condition can be made with confidence in practically every case.

*Group 2*

Here the glands have become caecous and are the seat of acute inflammation they are usually matted together with adherent intestines. There are more general disturbances. It is these cases that give the high temperature. High temperatures in these cases were also noted by Dingwall Fordyce. The mass may be adherent to the anterior abdominal wall giving rise to a true localized rigidity. The case has then the objective sign of an appendicitis. These cases are admittedly difficult to diagnose. If the condition is suspected then the expectant treatment is best. The treatment of the appendicitis and of the mass of glands will coincide if it is possible to keep the patient under observation. The position and type of the mass when the acute symptoms abate with the other clinical signs of lymphadenitis will decide the question. If the patient worries one it is best to operate. If a laparotomy is rarely harmful. A blood count is of no help in the diagnosis. There is usually a lymphocytosis of from 14,000 to 17,000 with 80 per cent polymorphonuclear leucocytes. The cases of inflamed glands may go on to abscess formation. The abscess may behave like an appendicitis abscess and burst into the peritoneal cavity bringing about an abdominal catastrophe.

*Group 3*

In this group the symptoms approach those of renal calculus, duodenal or gastric ulcer, or a chronic appendicitis. On looking over the records of the Royal Victoria Hospital for the last year I found some twenty cases which

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Occasionally a mass of glands may simulate an abdominal tumour. The most common site for these masses simulating a growth is around the origin of the superior mesenteric artery. It may give rise to a chronic obstruction, and this together with a hard swelling and the wasting common to mesenteric lymphadenitis induces the clinician to decide that it is a case of malignant growth. Without a laparotomy the diagnosis is often difficult, and a microscopic section is sometimes necessary to decide the diagnosis.

Chronic intestinal obstruction is common enough. Four cases of occlusion of the rectum have been reported, and seven cases of obstruction of the common bile duct. Wilkely reported a case causing dysphagia and giving rise to a lump in the stomach. Hounth and Binning have reported cases of reute lens. Umbilical fistulae occur, and a cold abscess lying in the retroperitoneal tissues has simulated the psoas abscess of Pott's disease.

Before the satisfactory treatment of these cases is undertaken it is necessary to determine the symptoms and

Before the satisfactory treatment of these cases can be undertaken it is necessary to unravel the cause of the symptoms and the pathology of the condition. When the glands in the ileo-caecal angle and the main group affected, it at first suggests a diseased focus in the intestine of that structure, yet enlarged ileo-caecal glands in cases of acute appendicitis are an unknown occurrence. The appendix when removed in cases of enlarged mesenteric glands is admitted by almost all observers to be within the range of normal. It may show fibrosis or have a few surrounding adhesions—a state common enough in persons who go about free from discomfort. Cusson thought that 16 out of his 50 patients had some abnormality of the appendix. Appendicectomy does not cure all these patients, which would be the logical conclusion were it the cause. In a follow-up of 20 cases on whom appendicectomy was done in the Royal Victoria Hospital 12 were traced six to twelve months after operation, of these, 2 felt improved, and one patient who had had the appendix and the gland removed was cured. As has been stated previously, the time was really too short to determine whether a patient was cured, is periods of freedom of from one to two years are common enough.

On examining a series of sections

unable, by the mucosa

there

On examining a series of sections of these glands I was unable, by the microscopic appearance, to discover whether there was more peripheral or cortical destination. The latter would have indicated a lymphatic, the former a blood infection. The distribution of the diseased glands can best be explained by Crimmette's view. He considered that there is first an infection of the local glands, the infecting organism overcomes these glands and then reaches the blood stream. The lower end of the ileum is the site that favours the entrance of organisms. It is in this part that there is most stagnation of contents, and it is here that the retention of the intestinal contents clings from in acid to an alkaline medium. The glands in the ileo caecal angle are then the most likely to be picked out. When the infection has passed this barrier the whole lymphatic system becomes quickly infected.

It is difficult to decide definitely, as I have done due to the tubercle bacilli, whether the whole lymphatic system becomes quickly infected.

It is difficult to decide definitely if this infection is due to the tubercle bacillus or to another organism. The pathological changes in the lymph nodes are those most typical of tuberculous infection, namely, caseation or calcification, passing on to fibrosis or sclerosis. In the case of cold abscesses, suppuration is more typical, and this would not be the case if the infection was due to a pus-forming organism. Corner suggested that the seemingly normal lymphatic glands in the ileo-caecal region might be infected due to the infection of the lymphatic system.

direction was due to a pus-forming organism suggested that the seeming proneness of the glands in the ileo-caecal region to aento inflammation was due to the change at this point of the reaction of the intestinal contents from acid to alkaline. Tuberculous ulcers of the intestine occur most frequently in the lower part of the ileum. Strintheis considered the cases of acute inflammation of the glands to be due to the superimposition of secondary infection on a pre-existing old or healed tuberculous gland. A calf injected with human bacilli will show no effect, except that, some months later, the glands during the aera will be the seat of a chronic fibrosis or calcification. Might not these fibrosed and calcified glands found in the mesentery of man, with their infrequent generalization of tubercle, have a corollary in an infection with the bovine bacillus, which is the type usually found?

had calcified mesenteric glands. They had on for duodenal ulcer or chronic appendicitis seen how the pain may come on after food, or with nausea or vomiting. If the glands high up in the mesentery the pain is felt in the The skiagram usually shows good peristalsis of or some pylorospasm, with the duodenal cup badly hypermobility of the colon. The picture could be with that of duodenal ulcer, which is the diagnosis suggested. Pylorospasm due to lymphatic spleenleo-caecal angle has been demonstrated by B. Further resemblance to duodenal ulcer is imperio periods of freedom are not so characteristic, though may last for over a year. Exercise usually gives patients acute pain. Screening of the stomach denum by the "whitewash method" under the x-ray to show an ulcer. A good picture taken from a paired subject ought to show the glands, as they are in most cases. The test meal is within the limits of The two conditions may coexist. A diagnosis of appendicitis is rarely justified without a history of previous definite attack. Here again the acute attack be simulated by a previous attack of acute lymphatic Accumulate history taking ought, however, to help the diagnosis. The skiagram ought to reveal a shadow of calcified glands cannot be palpated. Owing to the site of tenderness, during a rapid examination, being put down as a McBurney's point these patients are often labelled "reflex dyspepsia" from chronic appendicitis. In all cases considered the appendix removed if it had not been previously dealt with. The more frequently state that there were adhesions on some fibrous of the appendix. The removal, however, of this organ cured 42 per cent of these cases. A good many of the patients were only treated for some six to twelve months and as a long period (from one to two years) of relief from symptoms is frequent in cases due to calcified glands, it is doubtful if the percentage of cures is ever as high as 42. Dissection of the urinary tract is often necessary in cases. In my series in children, metrorrhagia, one had bronchitis.

In my series in children, one patient had prun or meturation, one had hematuria. The prun is often brought on by exercise, it is stabbing in character and may radiate down, it may be felt in the right or left side Rest cures the prun Sir J Thomson-Wilker in 1922 had met with 42 cases of calcified mesenteric glands simulating renal disease Blood was present microscopically in 6 cases There was profuse intermittent hematuria over eight years in one case, this was cured by the removal of a calcified gland In 11 cases he operated and removed the glands, this operation cured the prun in these 11 cases Undoubtedly the diagnosis from renal disease may be very difficult The prun, its character and site, its association with hematuria, its provocation by exercise and relief by conservative oliguric prun If to these symptoms is glands in 59 per cent showing a shadow in the renal area in children Dingwall, the clinical picture of renal calculus three tubercle bacilli in 20 per cent of these cases there is no MacConkey found 25 per cent of tubercle bacilli in the prun cesses patients to harbor active tubercle bacilli in the prun cesses There Albrecht reported three cases on which 14 cases have been cystitis examinations and found no tangible evidence of metastatic mesenteric glands One child's plates taken at one 4 weeks, and one had been born only Pylorography and At the Ulster Children's Hospital twenty-five cases of appendicitis were treated during 1925 and

one considers the numbers that

One child with a valuable evidence at the plates taken at the Hospital Children's Hospital twenty-five years ago and considers the numbers that do not testations of the must be almost is common as include the complete from a pathological condition of a will occasionally In the extent on a knowl divisions In with the first and of their untoward case of this usually follows closely the swimming got the glands are situated to suggest the mesenteric lymphadenitis In the inferior meso gland that

One child with visible evidence of plates taken at the Ulster Children's Hospital twenty-five and appendicitis were treated during 1925 and considers the number that do not include the must be almost is common as include the diagnosis in the case of a p will occasionally from a pathological condition of it and give rise to the complete In extent on a knowledge of this the case usually follows the anatomical case of this gland closely the swimming got The glands are situated to suggest The lymphatic drainage is the mesenteric lymphatic drainage reported The drainage is the inferior mesenteric drainage in the transverse mesocolon gland that

The 6 per cent of cases that ultimately develop signs of general tuberculosis could be accounted for by an infection with the human type of tubercle bacilli.

The common symptoms of acidosis may be explained by the interference with the supply of fats to the liver. The child's metabolism is easily disturbed. Frew showed that the urine of most children suffering from any acute disease contained acetone. The lower ileum and the appendix are great absorbers of fat; appendiceal coections are chiefly fat. A calcification and fibrosis of the glands of the ileo-caecal angle must to a great extent interfere with the supply of fat to the liver, and set up acidosis. It seems to me that this acidosis has some relation to the onset of the acute attack of pain in the right iliac region. A dietetic indiscretion, a period of nervous strain, or muscular exertion often starts an attack. Many organisms too latent till an acid is presented to them. In children first come the symptoms of acidosis, headache, drowsiness, and then pain.

The pain has been attributed to different causes by different observers. Corner thought it was due to the reflex action on the appendix. Carson attributed the pain to the irritation of the mesenteric nerves causing enterospasm. Thus, he thinks, explains the colicky nature of the pain, and its sudden onset and cessation. He actually saw an intussusception occurring when he was operating on a case of lymphadenitis. Probably Carson's explanation holds good in many cases. It would explain the colicky pain at the umbilicus at the beginning of an attack. The shifting of the pain to the right must be explained by the local inflammatory lesion.

It is easy to understand how a calcified gland in the mesentery with no recent inflammation can, on exercise, cause acute pain. The site of the pain will depend on the part of the mesentery affected. Its irritating presence will also give rise to pylorospasm or enterospasm by reflex nervous action, or its bony hard spicules may irritate a ureter and give rise to renal colic and haematuria. The movements of the intestine after eating will readily cause the calcified gland to act as an irritant, and bring about pain after food stimulating that due to digestive ulcer. The treatment, then, will resolve itself into preventing the condition by a clean milk supply, and in the established cases according to the type.

#### Group 1

In the succulent inflamed glands of children operation is not necessary and it is unsatisfactory. Fresh air, sunshine, dietetic treatment and alkalines are recommended. The diet should consist of large quantities of green vegetables and a liberal amount of protein. Excess of sugars cause fermentations and acid changes in the intestine and should be forbidden. Highly saturated fats are likely to be incompletely burned and to continue the acid state. I think small quantities of the unsaturated fat in Norwegian cod-liver oil are useful. It is probably absorbed higher up in the intestine than the diseased area. As a medicine small quantities of sodium bicarbonate after meals are useful in preventing the acidosis. When it has occurred large doses of the bicarbonate and glucose are indicated. I have never tried insulin. Fortunately the removal of the appendix does not harm the child if attention is paid to the acidosis.

When a gland abscess is present it may be treated by absolute rest in bed with only glucose and sodium bicarbonate by mouth and by rectum. It will usually subside. If the child appears to be getting worse under this treatment the abscess should be evacuated and wiped out with hipp, with as little disturbance as possible to the surroundings for the intestines are likely to separate leaving holes in their lumen. In cases where future obstruction seems to be pretty certain a side-to-side anastomosis from above the lesion to below it, will save many a life and hasten convalescence.

In cases of calcified glands I think the evidence is all in favour of their removal. Their close relation to the mesenteric blood vessels should be noted and the blood supply of the adjacent bowel not interfered with. In an account of the close relation of the gland to the blood vessels the surgeon thinks it dangerous to remove the

gland completely a partial removal of the gland will in many cases cause a cessation of symptoms.

Violet rays have proved to be of great use in the treatment of the disease in children and in the fibrosed glands of adults. Deep x-ray therapy is useful, especially in those cases of massed glands simulating tumours. The dosage should be light, as intensive treatment is apt to cause abscess formation.

#### Summary

- 1 Mesenteric lymphadenitis is of frequent occurrence in children. The most common period for the complaint is between 7 and 11 years of age.
- 2 Symptoms date back over a long period.
- 3 The history of frequent attacks of lassitude, drowsiness, headaches, and loss of appetite for weeks past is very common in these patients.
- 4 Attacks simulating acute appendicitis, duodenal ulcer, and other abdominal diseases are common.
- 5 Other enlarged glands will be detected.
- 6 The site of tenderness in inflammation of the ileo-caecal group of glands is not McBurney's point, but a situation higher up and more medial than this point.
- 7 Operation is unnecessary in the case of Group 1.
- 8 A calcareous gland causing symptoms should be removed.
- 9 The cause of the condition in children is probably infection by the bovine tubercle bacillus, with a superimposed condition such as acidosis causing an acute attack.
- 10 The acute abdomen of children due to acidosis is really caused by an underlying mesenteric lymphadenitis.

My best thanks are due to the surgical staffs of the Ulster Hospital for Children and the Royal Victoria Hospital for permission to make use of their case records to Dr. Vint or the Pathological Department, Queen's University for the supply of sections of the glands, and to the house-surgeons and out-patient sister at the Ulster Children's Hospital for their help in collecting the cases.

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## THE TREATMENT OF CERTAIN MENTAL DISEASES BY RINGER-LOCKE SOLUTION

BY

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Acting on the suggestion of Ishida, confirmed by Morowoka (*Journal of Mental Science* April 1927) a number of patients in the St. Luke's Mental Hospital, Middlesbrough, have been treated by the subcutaneous injection of massive doses of Ringer-Locke solution. The solution used contained, in a thousand parts, or distilled water sodium chloride 9.0, potassium chloride 0.42, calcium chloride 0.2, sodium bicarbonate 0.1 and glucose 0.1. The patients have been somewhat carefully selected and the debilitated general paralytic and the toxic case have been considered to be most suitable, but a number of the manic depressive type have received injections over a considerable period and latterly no sound or advantageous to treat the debility or senility in this way.

The aim in all the treatment has been to better the physical condition of the patient, but latterly in view of the results obtained we have felt that it is quite reasonable to expect a good deal of mental improvement in certain types of mental conditions. A dose of 1000 c.c.m. has been

injected twice a week, no trouble has been experienced in the introduction of the apparently large amount of fluid, and even the most debilitated patients, male or female, have shown no ill effects.

An ordinary two-way aspiration syringe of 100 ccm capacity is used, with a needle of suitable bore. If the bore is large there is considerable leakage from the site of the puncture, and if it is too small the back pressure on the syringe makes the giving of the injection a tedious process both for the patient and the giver. The syringe and needle are sterilized by boiling, where an antiseptic solution has been used for this purpose one has found difficulty in removing all trace of the antiseptic, and a slight local reaction has occurred. The flank or the back is the most suitable place, and each side is used alternately, the near side of the sciatic nerve should be avoided, and if the temporary swelling is at the level of the three spine a little more discomfort is caused to the patient.

The skin of the selected site is well washed with ether soap and then treated with iodine before being frozen with an ethyl chloride spray. It is impossible to give a general statement as to how deep the needle should go. In some cases the needle is passed definitely to the subcutaneous tissues, in others there is less discomfort if the injections are made into the superficial muscles. As a rule the treatment causes transient discomfort and nothing more.

The fluid has been injected at varying temperatures, but one has found that about 105° F is very suitable, and tends to cause less of a rigor than a temperature lower than that of the body. The fluid should be injected slowly, otherwise the tissues have insufficient time to avail themselves of their natural elasticity, and the patient becomes very restless and complains of a "drawing" pain. When the desired amount has been given the needle should be slowly withdrawn, and the site of the puncture massaged with iodine before being sealed with flexible collodion and covered with a swab. Slight oozing nearly always occurs if the injection has been actually subcutaneous, but this readily stops without interference. If the injection is made into the superficial layers of muscle there is, as a rule, no leakage.

The patient should be carefully propped up in bed by pillows so that the distended area does not take any pressure. Absorption is very rapid, and there is seldom any trace of the fluid after two hours. We have had none of the reported soddenness of the skin even after fifteen or twenty injections have been given.

If it is desirable to give intramuscular medication to the patient this can readily be combined with the Ringer-Loocke injection into the superficial muscles. The absorption of, say, kaesulphur has, it is thought, been much more rapid, and no after-effect has been observed.

About two to six hours after the injection most patients have some rise in temperature, attended in the majority of instances by a mild rigor. Morowoka states that general paralytics seldom have a rigor, but this has not been borne out here. Practically every patient of this type has a definite elevation of temperature after one or more of the injections, in one patient the temperature rose to above 102° F twice in the first twelve injections, in another 101.6° F was the highest figure recorded, whilst a third had a temperature of 103° F after the second and fourth injections, and no rise above 100° F subsequently.

The senile type of case, as a rule, shows little reaction of temperature, but in the toxic case there is a definite tendency to rigor. One such patient had a temperature of 103° F four times in the first fifteen injections, in another the temperature rose to 102° F after each treatment, whilst a third rose to 104° F after the first three injections and then settled down to an almost regular normal figure.

Usually the temperature subsides within twelve hours and suffering is unimpeded by any disturbance of the pulse or glands rests well. Sleep is usually much more tranquil, physiological but feels decidedly better.

The body has no contraindications. In only one case of the same patient by Ringer-Loocke solution been administered these blood vessels because a coexistent and spreading attack of the glands affected a matter of difficulty to find a suitable dose, the mesencephalic in the general paralytic was by no gland, the middle gland, indeed, we have found that in

the very rare cases where such existed they tended to heal more quickly when ordinary treatment was combined with the injection of Ringer-Loocke solution. Certainly, the tendency to secondary septic infection is much lessened.

Except for rise of temperature no complications have been observed. Morowoka states that in demented precox a rash is sometimes seen, this has not been the experience here with other classes of cases, only once has a slight rash been observed, and that in a patient of plethoric mind.

### Results

Treatment by the Ringer-Loocke solution has been carried on here with great regularity and comparatively extensively, but the results obtained with the treatment will not bear comparison with those of either Morowoka or Ishida in point of time, numbers, or actual benefit to the patient. Nevertheless very definite improvement has been observed which may be summarized as follows.

In toxic insanities, after the third or fourth injection it is quite usual to see a clearing of the complexion, and to find a returning power of free natural elimination, a return of tranquil sleep, with an accompanying mental improvement. In debilitated general paralytics, where the stage of auto restlessness has been reached, it has been noticed that after the third or fourth injection the patient becomes much more tranquil.

Daily catheterization was needed in one such case which was admitted in an extremely low condition. Enemata and hypnotics were a routine. After the third injection the catheter was used chiefly as a precaution, and after the sixth its use was discontinued altogether, after the seventh injection the daily enema was discontinued, as a dose of liquid paraffin was sufficient to ensure free elimination. Hypnotics are now practically never necessary, as the patient sleeps most of the night.

Another patient, having frequent and heavy seizures which resulted in a partial left-sided paresis, was treated by injection of Ringer-Loocke solution. Marked improvement was noticed in both the number and severity of the seizures after the second injection, and the paresis cleared up after the third. No further seizures have been noted. Restlessness is diminished, urine is being passed in full quantities, and a fair measure of sleep is being obtained.

Repeated treatment with Ringer-Loocke solution in debility of senility has been followed by really good results, restlessness diminished, elimination increased, there was less danger of the onset of stupor, and appetite tended to revert to the normal.

### Conclusions

Regular and repeated injections of the Ringer-Loocke solution have been of definite benefit in cases in which there was a toxic element, and the mental condition seemed to improve more rapidly under this treatment than when "forced" elimination alone was employed. In the debilitated toxic patient the time which must necessarily elapse before the toxic focus can be attacked is materially shortened.

The general paralytic in poor bodily health seems to benefit to a very considerable degree, in fact, the treatment is used here with a view to bringing the patient into a suitable condition for typhosomycin medication. In addition, with the bodily improvement there is an increase in the eliminatory powers. So far but little difference in habits has been observed.

In the "psychological" insanities little improvement has been noticed from the mental side, but even in this difficult class of patient the increased length of sleep and diminution of restlessness is of considerable advantage both to the patient and to the hospital.

I am indebted to the medical superintendent of this hospital, Dr H G Drake-Brockman, for his permission to publish details of the work.

## CONGENITAL WORD-BLINDNESS

BY

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D O M S

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In congenital word-blindness the visual memory for letters and words is defective, that is to say, great difficulty is experienced in learning to recognize printed letters and words, so that spelling and reading are exceedingly troublesome, or even impossible. No other defects may be found



in the eyes and eyelids, and no difficulty may be experienced with figures and sums. The condition is said to be uncommon, but it is highly probable that it is frequently overlooked. The following case is evidence of this.

A boy aged 14 years was brought to me by his widowed mother with the object of ascertaining whether his difficulty in learning the letters of the alphabet and his inability to read could be attributed to some visual defect. The family had only recently removed to Dundee from another district of Scotland.

The following history was obtained. He was sent to school at the age of 5 years. At once his teachers noticed that he experienced the greatest difficulty in learning the written letters of the alphabet and that he was totally unable to recognize written words, however simple. This peculiarity being attributed to lack of sense or stupidity he was related to and kept in the infant class throughout his school life even although he showed no difficulty in learning figures and in being able to do simple mental work.

On examination his vision was found to be 6/6 in each eye as confirmed by the figures on Snellen's type. The refraction was emmetropic. This boy was under 12 for his age, but healthy looking, bright and intelligent. He had had no serious illness and no history of eye troubles could be obtained in any other member of the family. When asked to read printed letters he only did so correctly after several unsuccessful attempts. He was unable to read even the simple word such as cat or dog, but the picture of a cat or a dog he once recognized and named correctly. Figures and easy sums such as are suitable for infant classes, presented no difficulty. He could write slowly and distinctly but was unable to do so to dictation. He showed a marked aptitude and keenness for drawing.

The patient was shown at a meeting of the Forthshire Medical Association in January 1927.

The chief interest in this case lies in the fact that its true nature was not realized until the boy had reached the age when he was about to leave school and try to earn a living for himself very heavily handicapped by his inability to read. Had the condition been discovered earlier special tuition in spelling and reading could have been instituted with the hope of overcoming to a certain extent this congenital disability. Several successful results have been recorded by various authorities.

The condition as has been said may very easily be overlooked the child's inability to learn his letters put down to mental backwardness or sheer stupidity. It is therefore highly important that all cases of children who exhibit a marked difficulty in learning their letters should be carefully investigated and special individual tuition adopted if congenital word-blindness be diagnosed.

## ANEURYSM OF THE LEFT INTERNAL CAROTID ARTERY SIMULATING PITUITARY TUMOUR

BY

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AND

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LEEDS

THE patient a woman aged 52, consulted Dr S T Rowling on September 27th 1926 with a history of failure of left vision since January of that year. She noticed, as the first indication of disability that she was bumping into objects on her left side only. In July 1926 right vision began to fail but there were no other symptoms except slight dizziness of one month's duration. She was admitted to the General Infirmary at Leeds on November 1st 1926 complaining of headache and nausea in addition to the failure of vision. Examination revealed complete amaurosis of the left eye in the right eye fingers could be counted at two feet distance, but in the temporal field only. The pupils were dilated and sluggish the fundi were normal and showed no evidence of optic atrophy. The patient was drowsy and there was polyuria. It was thought that the hands and feet were slightly enlarged, but this was doubtful and the general appearances rather suggested hypopituitarism although without definite signs of myxoedema. It appeared that the condition was one of physiological block rather than of atrophy of the optic nerves and that decompressive operation might restore some degree of vision. The urine was normal as to constant weight and sugar tolerance and the blood sugar was within physiological limits. The Wassermann reaction was

negative. Further neurological investigation yielded negative results. A ray examination showed absorption of the posterior ethmoidal process, the sphenoidal air sinus being clear. A diagnosis of pituitary cyst was made.

At 4 p.m. on November 9th a cervical cataphorax took place. The patient complained of severe occipital pain and of flashes of light before the eyes. She vomited copiously, and gradually passed into coma. The pupils became contracted and sluggish and the arms flaccid. The abdominal reflexes were absent. The knee jerk was absent on the right side, just present on the left. There was a bilateral Babinski's response. The coma deepened, and death ensued at 7 p.m. Clinically it was suggested that the cataphorax was the result of haemorrhage into the tumour.

### Autopsy

At post-mortem examination on November 10th a firm, globular, pedunculated mass was found projecting upward from the base of the skull into the region of the pituitary fossa. On further investigation this was found to be an aneurysm springing from the left internal carotid artery the interior being filled partly with pale, laminated thrombus, partly with soft mixed thrombus, and partly with blood clot (see figure). The aneurysm was almost



Medial (antero-posterior) section through the central portion of the base of the skull showing the aneurysm situated on the top of the flattened out pituitary fossa and the optic chiasm. A Wall of an artery B pale firm laminated thrombus occupying a large part of its interior C off red blood clot D posterior ethmoidal process E pars posterior and F pars glandular of pituitary body G basi-sphenoidal air sinus occipital bone H sphenoidal sinus I left internal carotid artery

exactly spherical and measured 3.5 cm in diameter. It projected deeply into the base of the brain in the region of the interpeduncular space the under surfaces of the frontal lobes and the anterior extremity of the corpus callosum. There was much softening of adjacent brain tissue and the optic tracts and chiasma were stretched out ribbon like over the mass, obstructing its forward extension. Recent haemorrhage presumably from the aneurysm had taken place into the third ventricle and had extended from there both upwards into the lateral ventricles especially the right and downwards into the fourth. Escaping to the surface the blood had accumulated in the pia-arachnoid at the base of the brain and had even trickled down the spinal canal. The pressure of the aneurysm had also led to much flattening of the ellipsoidal with compression of the pituitary gland.

There were no other evidences of syphilis a scar near the apex of the left lung being regarded as tuberculous in origin. The gall bladder contained a solitary cholesterol gall stone.

### Histology

The wall of the aneurysm is composed of extremely dense fibrous tissue with much collagen and few and flattened cells and still bears some resemblance to the arterial wall from which it was derived. Some small foci of early calcification are seen in the inner layers. The contents of the aneurysm consist of typical rubeolous and thrombus in the one part and a mixture of blood clot and early thrombus in the other. There is no evidence of organization of thrombus. The pituitary gland, which is slightly compressed shows a considerable mass of colloid in the

paris intermedia The parotis glandularis is intensely congested, otherwise there is no evidence of pathological change

The case is of interest as exhibiting the presence of ocular symptoms in the absence of glandular or neighbourhood phenomena. Thus incongruity fortunately delayed operative measures, and so prevented what might otherwise have proved catastrophic surgical intervention

## FAMILIAL PELLAGRA IN IRELAND

BY

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THE fewness of the cases of pellagra reported from these countries in the past was due probably to the prevalent idea that the disease was confined to subtropical countries. Between 1850 and 1910 no cases appear to have been reported in the British Isles. The discovery of several unrecognized cases by Sambon and others in 1916 in England and Wales raised the probability that others escaped diagnosis. This and the fact that the disease must have become familiar to many civilian medical men serving in the great war combine to account for an increase in the number of cases since recorded. Even so the disease would appear to be of sufficient rarity here to deserve reporting. It is not unlikely that some cases still escape recognition, particularly cases of pellagra sine pellagra in countries of little sunshine. In this connexion, too, it may be pointed out that 1926 (in which year these cases were observed) and the previous year were years of exceptional sunshine in Ireland.

It appears probable that the first of the cases here recorded was an acute exacerbation of a chronic affection. Most Italian writers consider that the acute type is never primary, but always an exacerbation of the chronic. Wood and others, however, from their study of cases in the southern States of America, state that at least 50 per cent. are of the acute type. The view that the disease is due to an inability of the patient to use biologically valuable protein would appear to account for these two cases, in them such inability may have been a familial failing. The diet would appear to be a fairly useful one, it certainly is a very usual one in this country.

### CASE I

A woman who had been married fourteen months presented herself on May 27th, 1926. She complained of weakness and loss of energy. She was inclined to be sick in the mornings, and the menses had ceased. She was constipated, she wondered if she were pregnant.

She was of the melancholic type, and her mentality was sluggish, the pupils were very large. The face was grey and dark, giving the impression that it required washing. There was marked seborrhoea of the nose and mandibular region. There was a rash on the forearms extending about half way to the elbows, and on the backs of the hands to the metacarpophalangeal joints. On the thumbs it extended to the middle joint. It was much less extensive on the flexor surface of the forearms and did not come below the wrists. This rash she said, was of recent origin. The pulse was a little fast. The knee jerks were lively, and there was a suspicion of ankle clonus. No other physical abnormalities were found.

She was told that it was just possible that she was starting pregnancy, and asked to report later on. Her husband, however, was informed that no evidence of pregnancy could be found but that her general condition strongly suggested pellagra; this disease was, however, so rare that I hesitated before definitely diagnosing it.

She returned on June 14th. She was then very weak and had had diarrhoea for some days. She had intense vulvitis, moist and red. During the next few days the diarrhoea became severe and was only partially controlled by opium or morphine in one or other combination. There was distressing retching at this time, due probably to intense salivation, as food was not vomited.

On June 20th she presented all the textbook appearances of very acute pellagra. The rash on her arms and face had diminished somewhat and now resembled very closely the coloured plates of pellagra in Dr. Norman Walker's *Introduction to Dermatology*. She was very much mentally. There was still intense moist circumscribed dermatitis of the vulva. The anal region was red and excoriated, probably from the almost constant passing of liquid motions. There was vague tenderness over the spine, the abdomen was tender all over, but most markedly in the gastric region. The knee jerk could not be elicited on the left side, and only slightly and with difficulty on the right. She complained of pain in her back and lightning pains in the legs. The pulse was 120 and the rectal temperature 103°. Perhaps the most striking symptom was the intense stomatitis. The tongue was swollen,

clean to the point of "beefiness" (Sandwith's bird tongue), ulcerated deeply about its edges, and the buccal mucous membrane was ulcerated and fetid. The fuses could not be seen owing to the swollen tongue and soreness at the angles of the mouth. There were enlarged inguinal glands. Prostration was intense. She died of exhaustion on June 28th.

In support of the view that the disease was an acute exacerbation of a chronic condition, a few notes may be added. Inquiries locally reveal that her neighbours had considered her "not quite right," and had commented on this at the time of her marriage. Her husband informed me that a couple of months after marriage she became "gloomy" and developed "nigres" and unreasonable jealousies. She got out of her bedroom window one night and went to her mother's home scantily clad and barefoot. She had to be restrained physically at times from doing queer things, and there had been some talk of having her sent to an asylum. Her sister says she remembers her having to go to bed years ago because of "a rash about her neck." Her family history is given in connexion with Case II.

Her diet was that usual for people of her class in this country: bread-and-butter and an egg in the morning, potatoes, meat, and vegetable (usually cabbage) for dinner, and tea or cocoa at bedtime. This diet hardly suggests a deficiency disease.

### CASE II

A woman, aged 33, presented herself on July 28th, 1926. Her father had died of "heart disease," aged 56, her mother was alive, she had two brothers, of whom one was weak minded or erratic, and three sisters, of whom one was living, one had died of meningitis, aged 27, and the other was Case I.

She had been married two years and five months, and up to marriage had had good health except for dysmenorrhoea. About eighteen months ago she began to feel weak. She had a miscarriage in October, 1925, and saw a doctor afterwards. She has been weak ever since. The periods have been irregular since, recurring every two months, lasting about seven days, and varying in amount. She has to go to bed at these times. In the forenoon she feels dizzy and has noticed that her mouth fills with water. The bowels move every second day without medicine, and the appetite is fair. She says that her speech is affected and that she cannot continue speaking for long because her mouth feels stiff and tired. When going to sleep she has noticed that her mouth is inclined to fill with water, and she feels as if she could choke. She believes she has been losing weight for the past eighteen months. She presented dermatitis on the backs of the hands, and said that she gets this every summer and that her neck, too, gets very sunburnt. The rash covered the backs of both hands and arms forward on the extensor surface of the thumb to the middle joint, it was red, with a good deal of branny desquamation, and some scattered brown pigmented warty or psoriasisiform spots on an erythematous surface. There was one such spot on the neck. Her face was seborrhoeic, especially the nose and lower cheeks. The liver was rather easily palpable but not tender, the cervical glands were palpable. The pharynx was a little red. The pulse was 88, and the blood pressure 90/130. There was a suggestion of ankle clonus and both knee jerks were lively. All other examination gave negative findings.

She was advised to go to bed for a time and afterwards to avoid sunlight and to wear a veil. An iron and arsenic mixture was prescribed and instructions were given as to diet and general hygiene.

In February her sister reported that she was well.

The Registrar-General of the Free State has courteously informed me that two deaths from pellagra were registered in 1922 and 1923. They were of females aged 55 and 60 years.

## TRENDELENBURG'S OPERATION FOR REMOVAL OF A PULMONARY EMBOLUS

BY

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THE operation for the removal of a pulmonary embolus, first suggested by Trendelenburg, is one that the surgeon can but rarely be called upon to perform. As a consequence the number of recorded cases in which an attempt has been made to remove the clot is very small, and the results almost uniformly disappointing. In the case here described an opportunity was afforded of testing the practicability of this rather dramatic procedure.

On August 5th 1926 a woman aged 19 was operated upon at Charing Cross Hospital for a chronic right-sided pain. A diagnosis had been extremely doubtful and an exploratory laparotomy was performed through a paramedian incision. The only

pathological structure discovered was a cyst the size of a large egg, at the right ovary. This was a nod very simply and without difficulty by ligation of its pedicle. The healthy appendix was also removed in the usual fashion. Convalescence was uneventful except for the presence of a very slight oedema of the right leg, which was attributed to a mild suppurative stasis. On August 10th, shortly after having left her bed for the first time, she gave a sudden cry of intense pain and collapse. She was immediately lifted into bed, where I saw her about a minute later. Her appearance was characteristic of a large pulmonary embolus. She was pale, with a mottled, patchy white and purple colour, the expression of extreme anxiety with eyes widely open and pupils dilated. Dyspnoea, a intense cough for every breath but was apparently unconscious. The diagnosis was obvious but it was very difficult to decide immediately whether recovery was possible. At the end of two minutes, however, he was still alive, which seemed to indicate that only one branch of the pulmonary artery was involved, operative intervention therefore was not only not imperative. Within the course of another two minutes, he appeared to improve considerably and regained partial consciousness. Violent paroxysmal movements of the whole body notwithstanding, connected with the air hunger dyspnoea still being intense and at the same time the bowel acted involuntarily. The movements could only be restrained by force and continued for a further two minutes, when suddenly he gave collapse and after one or two attempts, but ineffectively, at inspiration, apparently died. The heart nevertheless could still be felt beating feebly at the apex but at the conclusion was reached that a second clot had been detached which was now blocking the remaining branch of the pulmonary artery so that spontaneous recovery was impossible. After a moment's hesitation it was decided to attempt removal of the clot.

#### Operation

Within about a minute after a very happy cleaning of the hands and the perfunctory application of iodine to the chest wall with a scalpel and three pairs of artery clips as the only immediately available instrument, a semicircular incision was made at the level of the second and third costal cartilages. After turning up the flap of skin and fat the origin of a portion of the pectoralis major muscle was reflected outwards, the second intercostal muscle was detached from the cartilages and the latter then removed by rapidly cutting through them with the knife. This gave a limited exposure through which the margin of the pleura and the base of the pericardium could be seen. All pulsation on the heart had ceased but the operation was nevertheless continued. In hastily attempting to enlarge this aperture the pleura was torn and the left lung collapsed, better exposure of the pericardium was however thereby obtained. The pulmonary artery was still partially hidden by the border of the sternum and although an attempt was made to hook it forward with the finger and by artery forceps, heavily applied it quickly became obvious that the time of opening it and removing the clot would be almost impossible without further exposure. In the meantime a pair of bone forceps were available and a portion of the sternum corresponding to the length of the exposure and including about half its width was thus removed. The pericardium itself was now opened medially to the left phrenic nerve which could be seen coursing downwards over its surface and the artery was palpated in the hope that the clot might be felt perhaps broken up and driven through into the smaller branches. This failed, the clot could not be detected through the thickness of the vessel wall and nothing remained save extraction through an incision. Two artery clips were placed in close proximity upon the outer sheath and the index finger of the left hand was passed behind the transverse sinus to hook the pulmonary artery and aorta forwards. It was hoped that this manoeuvre would control the bleeding while at the same time rendering access easier.

An incision about an inch long was made longitudinally into the vessel on its anterior surface and immediately a large quantity of blood escaped ob-curing the field. By pulling the vessels forward with the finger the haemorrhage was to a great extent controlled but at the same time the pulmonary artery was so compressed that it became impossible to insert forceps or palpate the interior in order to determine the position of the clot. This method was therefore abandoned and a pair of soft bowel clamps placed across the roots of the pulmonary artery and aorta. Control of bleeding being now quite reasonable a finger was inserted into the lumen where the clot could be felt in the left branch of the artery with its base riding across the dividing ridge into the right branch which it partially obstructed. It was extracted with ordinary dissecting forceps and the wound in the vessel rapidly closed with a continuous catgut suture

keeping the edges well everted so that endothelium was in contact with endothelium everywhere. The aperture in the pericardium was also closed.

Direct massage of the heart resulted after an interval of a few minutes in a regular and reliable contraction. The effect of the heart was light but it was impossible to perform efficient artificial respiration to help the circulation owing to the large opening in the chest wall, positive pressure apparatus too was not immediately available. At this stage more than 1 c.c. of 1 in 1000 adrenaline was injected into the ventricle with remarkable effect, since the heart commenced to beat at a more regular and with increased force. This continued for a minute or so and great hope were entertained of recovery. Gradually however the encephalogram died away and the heart again became feeble and irregular. Massage was continued but although in intermittent contractions were obtained for several minutes, more no permanent effect resulted. The chest wall was closed and artificial respiration with further injection of adrenaline tried without avail.

The clot removed was about 2 inches long and tapered from the size of the finger at one end to two small branches about one-eighth of an inch each at the other. It showed in addition several side branches and from it I hope it was brought probable at the time that it came from the internal iliac vein.

#### 1. Thrombotic Embolization

The postural wound was well healed in its whole extent without any sign of infection. The abdominal cavity was clear and the ear of the appendicectomy clearly marked without adhesion.

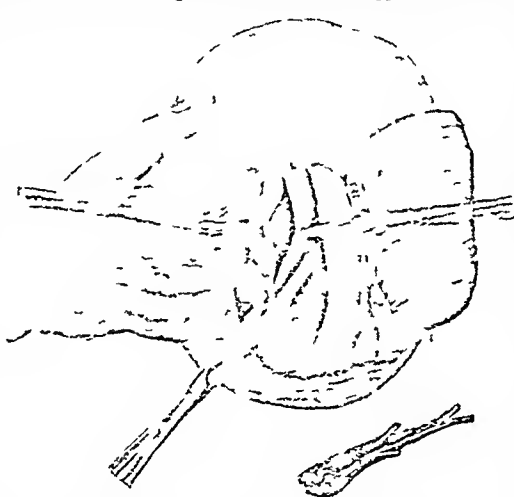
The right broad ligament was slightly thicker than the left and around the ligature on the ovarian pedicle was a small blood clot but there was no indication of surrounding thrombosis. The internal iliac vein was carefully explored throughout its length no sign of a clot or of roughness at the endothelium associated with the recent detachment of a clot were seen. The left internal iliac the external and common iliac superficial and deep femoral indeed all the larger veins of the body were examined but no signs of thrombosis could be found. The left lung was collapsed but otherwise healthy in the lower lobe of the right was a rounded area of a bright cherry red colour possibly a recent infarction. In the right auricular appendage of the heart a small irregular and apparently antero-posterior clot was found.

The difficulties confronting the surgeon in this operation are those of circumstance even more than those of technique while the decision to perform it is not an easy one to make in view of his limited experience as to whether

spontaneous recovery can occur and the knowledge that no permanently successful case has been recorded occurs as a hesitation born of despair. In his original article Trendelenburg says that two conditions must be fulfilled:

- (1) Can the diagnosis be made with sufficient accuracy?
- (2) Is there sufficient time for an operation? He answers both of these questions in the affirmative and states that there is an average interval of fifteen minutes between the onset of the symptom and death. He also shows partly as a result of experimental investigation and partly from actual experience of the operation in two cases that the pulmonary artery may be compressed for forty-five seconds without fear and that this may be repeated if necessary after the re-establishment of the circulation for a short period of time.

Experience of the present case would appear to suggest yet another query. Is it possible to resuscitate a patient after removal of the clot when the heart has already ceased to beat? The remarkable effect of the injection of adrenaline directly into the heart and even more the great stimulant effect upon the auricle or forced intermittent aeration of the lung rendered possible by modern appliances—for example in tracheal catheter and lung-motor—probably make resuscitation feasible even in such desperate cases. In future he two methods should be used from the moment the clot is removed, the time taken by the preliminary stages of the operation makes it possible for the necessary apparatus to be available when required, at least in institutional practice.



Sketch showing the manner in which the pulmonary artery and aorta are exposed. The flap of the chest with its clearly marked lateral branch is indicated by 'a'.

When the belated decision to operate has been made, further delay is occasioned by the fact that nothing is ready, instruments usually have to be obtained from a distance, and the surgeon is taken unawares, and so has no stereotyped technique to follow. To add to these difficulties the patient's posture as he lies in bed is by no means an ideal one for this type of operation, the only possible approach through the chest wall cannot be carried out rapidly in the absence of adequate instruments, while the lighting is apt to be very poor.

Although definitely recommended by Trendelenburg, the opening of the pleura was quite inadvertent, since it was thought that the pleural reflection might be brushed well out of the way by gauze dissection. The experience of this case, however, shows that valuable time would thus be lost, and that there need be no hesitation in deliberately opening the pleura. This is especially so since in all cases some variety of positive pressure apparatus should be brought into use before the operation is completed. It must again be emphasized that the efficient and early application of such a method is probably the most important single factor in re-establishing the circulation. In experimental work *in vivo*, with perfused hearts which had been maintained in a quiescent condition in the cold chamber, I found that the most effective stimulus to restarting the beat was the stretching of the musculature of the auricles by the entry of the perfusing fluid under pressure, *in vivo* a similar effect was obtained by positive intermittent ventilation of the lungs.

The fact that no adequate source of origin of the clot was found in this case is, in a way, not to be wondered at, since in many cases of fatal pulmonary embolism, both post-operative and spontaneous, it appears to be impossible at the post-mortem examination to trace the vessel from which the clot rose. The shape of the clot in this instance showed that it had not originated in the auricular appendix, but probably in the internal iliac vein, along which it had grown without producing sufficient changes in the surrounding endothelium to be visible. It was then carried into the circulation as a whole, and not, as is frequently pictured to be the case, a small fragment detached from it as it grew from the internal into the common iliac vein.

The small bead of pus surrounding the ligature was

likely enough aseptic and due to the chemical irritation of the antiseptic in the catgut (picric acid), but this was not put to the proof.

One further point of interest is the fact that the leg had been lightly massaged twice a day after the operation as a prophylactic against femoral thrombosis, according to the suggestion of Moisson. This is of doubtful value even in the case of the femoral vein, and can obviously be of no avail in the commoner cases of pelvic thrombosis. Until our knowledge of the etiological factors which determine the onset of thrombosis is much more extensive than it is at present no rational method of prevention can be suggested. It would seem possible that the role of sepsis has been exaggerated in the past, for the incidence of embolism in frankly septic cases is smaller than in those performed with all aseptic precautions. It is at the same time true that in the majority of cases of embolism the temperature chart shows a slight rise for a few days following the operation, but whether this is due to some mild grade infection (perhaps by an ultra-microscopic organism since the ordinary pyogenic organisms are rarely recoverable at post-mortem examination) or is a true traumatic pyrexia remains to be proved.

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## THE TREATMENT OF SOME OCULAR DISEASES WITH ULTRA-VIOLET LIGHT

BY

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SINCE the introduction of the ultra-violet light apparatus at the Bristol Royal Infirmary we have endeavoured to arrive at some conclusion as to its effect on some of the ocular diseases subjected to this treatment. Hitherto we have been working on rather "blunderbuss" methods, as very considerable work has yet to be done in sorting out the rays most helpful in medical treatment, the rays range from the near ultra-violet through a big spectral field up to the far ultra-violet, differing considerably in their action, the short being strongly irritative and destructive, whereas the long are more penetrating and stimulative. Still, even with the present methods ultra-violet light plays a very important part in clearing up a number of ocular conditions which, in the past, have been difficult to deal with.

We have made no local applications of light to the eye, but have used the mercury vapour lamp for general irradiation of the skin, the first exposure is of three minutes' duration, this is increased by two minutes at each subsequent treatment up to twenty minutes, two exposures a day being given. The distance of the patient from the lamp is 36 inches. Care must be taken that the eyes are not exposed to the light. The knobby coloured goggles

only slightly and the Conjunctiva and Lids—These have all been in her back and of a type which has resisted symptom was the m

ordinary treatment. In chronic and long-standing blepharitis conjunctivitis it has been our practice to have tonsils and adenoids dealt with, and an autogenous vaccine prepared from the lids when possible, it is in cases which have continued in spite of this treatment that we have found ultra-violet light valuable. The curative effect of light seems to be due to the improvement in the child's general condition, thus increasing its resistance to infection. The treatment is also very beneficial in cases of chronic and recurring sties.

**Phlyctenular disease of the Cornea or Conjunctiva**—Undersized, delicate children, often with enlarged cervical lymphatic glands, respond most readily to treatment. The throat should always be examined for tonsils and adenoids, and these conditions dealt with before the light treatment is begun. Here again astonishing results are often seen in the child's general condition. As a result of light treatment the cure of phlyctens appears to be more permanent than before this method was used, recurrences being much less frequent.

**Corneal Ulcers**—The chronic and recurring corneal ulcer so often met with in children, associated with conjunctivitis and blepharitis, does remarkably well under the action of ultra-violet light treatment.

**Tuberculosis of the Conjunctiva**—The best result that we have had so far occurred in this disease.

A child aged 10 was seen with a large tuberculous ulcer, situated in the outer part of the upper lid. Surrounding the ulcer were tuberculous nodules whilst the remaining conjunctiva was thick and velvety. There was a chain of lymphatic glands in the neck, the upper ones soft and evidently on the point of breaking down. The patient was seen by a surgical colleague who advised removal of the glands but before doing this it was proposed to use ultra-violet light. In order to estimate the value of

this particular method no local treatment was applied to the ulcer the eye merely being kept clean with simple antiseptic lotions. After a month's treatment the glands had become very much smaller and those that were breaking down were hard. The conjunctival ulcer was cleaner and smaller until the remainder of the conjunctiva showed obvious improvement.

Light treatment was continued and in four months no trace remained of either the ulcer or the lymphatic involvement. The child's general condition had improved out of all recognition.

This is the only case of tuberculous conjunctivitis that has been subjected to light treatment, but the result is extraordinary when it is remembered how very unattractive treatment has usually been in these cases.

**Tuberculous Keratitis**—In a case which was probably tuberculous of the cornea, occurring in a child aged 10, in which there were present a small central corneal ulcer, with grey infiltrations in the substance of the cornea, iritis, and enlarged cervical glands, the tonsils and adenoids were first dealt with, and subsequently ultra-violet light was used as an adjunct to local treatment. The progress was slow, but there was a gradual and very marked improvement in the child's general condition, which we had not been able to obtain by any of the usual methods of treatment. The enlarged cervical glands have disappeared and except for some corneal scarring the eye has cleared up and remains quiet.

**Injury to the Eye**—Ultra-violet light appears to be useful for cases in which the eye remains intractable after an injury, particularly if the cornea has been involved.

In our patient a young adult who had lost one eye in childhood and received a severe injury in the other by an explosion of a detonator ultra-violet light was tried after all local treatment had failed to allay a mild iritis and vascular condition of the cornea. In spite of treatment the patient's general condition had been below par after the accident. He responded splendidly to ultra-violet light the eye became quiet and the improvement in his general health marked. The use of light seemed to give this patient just that improvement in his general condition which we had not been able to attain with other methods.

There is no doubt that ultra-violet light is of considerable value in dealing with many ocular conditions seen in children. The progress of the eye depends very largely on the condition of the child's general health and it is in this direction that we have found ultra-violet light very helpful. Used in suitable doses it will certainly give good results where other methods have failed, but patience is needed by the operator and patient nothing being gained by trying to speed up recovery by big doses. Nor is it a 'cut-and-run' in diseases of the eye; further work will no doubt very soon show us the type of case in which we may or may not expect good results.

## GAS GANGRENE FOLLOWING A MOTOR ACCIDENT

BY

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Cases of gas gangrene are comparatively rarely met with in civilian surgical practice and the following case is therefore thought worthy of record.

A strong healthy youth aged 19 employed as a gardener was admitted to the Litchfield Cottage Hospital on July 23rd 1927 with a laceration having been kneed on his bicycle by a motor car.

On examination there was a transverse laceration about two inches long of the left shin in its lower third, it exposed a portion of the tibia, antiseptic wash was lavaged. There was also a piece of skin about the size of the palm of the hand missing from the outer aspect of the left ankle and the extensor tendons were thus exposed. Both wounds were irrigated with road dirt.

After a general anaesthetic a scrubbing brush and were then washed with spirit. The wound edges and all obvious dead tissue were excised and a glove drain was inserted into the shin wound. An antiseptic serum 1500 units was given.

At 10 a.m. on July 24th the temperature was 101°F and the wounds were very painful. Although their outward appearance was much better before swabs were taken from the shin wound for bacteriological examination and the leg was dressed again. At 7 p.m. on the same day the temperature had risen to 102°F and the inner side of the leg was swollen and brown. Short of a surgical emphysema the leg was noted just above the internal malleolus. Under general anaesthetic a long incision was made on the inner aspect of the leg, dividing the skin and subcutaneous and a Carrel tube was inserted and Dakin's solution was subsequently injected every two hours.

On the morning of July 25th the patient was somewhat better.

The wound however looked unhealthy and the bacteriological report was that the swabs yielded a profuse growth of *B. welchii* and *B. proteolyticae*. At 7 p.m. his condition was much worse. The temperature was 101°F. He was looking very toxic and both the inner and outer aspects of the leg were swollen and aetere tender. There was a peculiar sour odour from the wound.

The patient was therefore anaesthetized and the wound previously made was extended. The muscle was brick red and very friable and on squeezing bubble of gas could be expelled. All infected muscle was therefore excised. A similar knee to ankle incision was made on the outer side of the leg down to the middle of a portion of which was excised. The wound was swabbed with hydrogen peroxide and Carrel's tubes inserted. 30 ccm of anti-gas gangrene serum were given intramuscularly.

On the following day he was much better. 60 ccm of anti-gas gangrene serum were given.

On July 26th he was still improving and a third dose of 30 ccm of serum was given. The wounds were still very offensive and were covered by greasy black slough. They were being swabbed with hydrogen peroxide twice daily and Dakin's solution was being injected through the tube every two days.

On July 30th he was still doing well and a second dose of antitoxic serum was given. Bacteriological examinations showed *B. welchii* and *B. proteolyticae* to be still present.

On August 5th both wounds were comparatively clean and granulating and a bacteriological examination on August 8th showed a profuse growth of *B. proteolyticae* but none of *B. welchii*. The wounds were being swabbed daily with hydrogen peroxide and dressed with gauze soaked in Dakin's solution. The Carrel's tubes were removed as they were becoming embedded in granulation tissue.

On August 31st both wounds were covered with Thiersch skin graft obtained from the thigh. They subsequently did very well and on September 22nd as they were almost healed the patient was allowed to get up.

The serum used in this case was supplied by Messrs. Burroughs Wellcome and Co. and I am informed by Dr R. A. O'Brien of the Wellcome Research Laboratories that it contained a large amount of *P. welchii* antitoxin and probably a small amount of *B. tetani* antitoxin but it was not the polyvalent antitoxin against *B. welchii*, *Librium plique*, and *B. oedematis* which was used during the war.

The literature on this subject previous to the war period is somewhat scanty. Simonds in 1915 collected 175 cases from the literature, 111 of which were classified as follows: Compound fractures 61, lacerated wounds 20, operation wounds 11, gunshot wounds 10, and hypodermic needle punctures 9. It will be seen that in this series compound fractures and lacerated wounds form at least 45 per cent of the cases.

The most authoritative contribution to the subject covering the period of the war appears to have been made by Weinberg and Seguin who produced the condition experimentally in the guinea pig and definitely established the anaerobic group of organisms of which *B. welchii*, *B. oedematis*, and *Librium plique* are the chief—as its cause. They advocated serotherapy in the treatment of the condition but insisted that radical surgical measures must also be taken and all diseased tissue thoroughly excised.

In civilian practice Christopher reported nine cases from the literature covering the period 1915-22. They were all traumatic in origin. Baldwin and Cilmour collected 64 cases by twenty-six authors during the period 1922-27. Of these 20 were traumatic in origin, 20 complicated obstetrical and gynaecological cases and the remaining 18 belonged to that class in which the causative organism had been derived from the patient's own intestinal canal. The authors also record two personal cases each due to *T. tetani* and each treated energetically by antitoxic gangrene serum and by appropriate surgical procedures. In each case the end result appears to have been excellent.

Bricker and Welch report three fatal cases from 1910-1911 in which *T. tetani* was isolated and in the third *T. tetani* was identified. In each case a tetanizing organism (Welch bacillus) serum was given in large doses and radical surgical procedures resorted to.

It would seem then that our best hope in dealing with this condition depends on three main factors: (1) Early diagnosis, (2) early treatment, (3) it is necessary to adopt the operation of ephelage as described during the war—that is to say the excision of all contaminated tissue regardless of its amount or situation caused. (3) The condition appears to some extent can follow by the early and energetic use of antitoxic serum. This serum may be



either of the polyident variety, or it may be a specific putrescine for the particular causative organism, the latter having first been determined by bacteriological examination. In conclusion my thanks are due to Dr J. J. Menton, Director of the Staffordshire County Bacteriological Laboratory, for his kindness in performing the many bacteriological examinations necessary during the course of this case, and for many useful suggestions as to its treatment.

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## GAS GANGRENE FOLLOWING A MOTOR ACCIDENT

EDWARD C. ELLIS, M.B., Ch.B., D.P.H. Ed.,  
 COCKERMOUTH

As the opportunity seldom arises in civil practice for observing gas gangrene, the following case is, I think, worthy of record, occurring as it did after a motor accident, cases of which are now so frequent both in town and country districts.

A youth aged 18 ran into the rear of a motor car sustaining a punctured wound of the left leg produced by the projecting arm of the luggage carrier on the car. The head of the fibula was torn away from its articulation and the rim of the car passed through the interosseous space tearing the tibia, anterior to the extensor digitorum longus, and the posterior tibial vein, to the apex of the fibula was cracked just below the head. The posterior tibial artery was intact.

On admission to the cottage hospital the wound was enlarged thoroughly cleansed with hydrogen peroxide, and binned skin and tissue removed. The posterior tibial vein was ligatured at its commencement and the muscle and sheaths repaired. The wound was closed anteriorly drainage being provided through the wound in the calf of the leg. A prophylactic injection of antitetanic serum (1500 units) was given locally. The limb was cold but in a few hours became warm and comfortable. Within eighteen hours of the accident a foul acid smell from the leg was noticed and the toes were cold. Twenty-two hours from the time of the accident the whole limb from just below the knee was cold discoloured and swollen. The patient was delirious with a high temperature and a rapid feeble pulse. After consultation amputation was decided upon and carried out forthwith just below the knee. On cutting the stitches the underlying tissue was seen to be discoloured and of putty-like consistency. On cutting from portions of the vein distal to the ligature gas also escaped left open and irrigated by the Carrel-Dakin method. The patient had a relapse about a week after the amputation accompanied by a rise of temperature and delirium, the cause of which is described below. Eventually he made a good recovery.

I am deeply indebted to Dr J. T. Selby, Cockermouth, and Mr. Richardson Keswick, by whose courtesy I am able to publish these notes.

### Bacteriological Examination

A small piece of vein and tissue which showed the presence of gas was sent for examination, and the report stated that two types of Gram-negative bacilli were present in large numbers, the one short and plump the other much larger and exhibiting, in many cases terminal or subterminal spore formation. Gram-positive cocci were also present in small numbers chiefly in chains resembling streptococci. The following facultative organisms were isolated from the vein and tissue: *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus saprophyticus*, *Streptococcus faecalis*, and *B. welchii*. A large Gram-positive, pleomorphic, capsule-forming bacillus (*B. welchii*) was isolated also. No spore or non-motile bacillus (*B. welchii*) was isolated also. No spore or microbe and actively streptococcal. No *B. tetani* were recovered. There is no doubt that the emphysematous condition of the wound was due to the activity of the *B. welchii* in the tissues. but additional interest was given to the case because a slough taken from the wound was given to the case because a slough patient had a relapse with rise of temperature etc. showed on culture a mixture of the presence of a motile spore-bearing bacillus which produced red and gas in carbohydrate but failed to coagulate milk and did not liquefy gelatin. It was therefore not a typical organism of the *B. welchii* group but resembled the clostridium *B. multiseptatus*. It was not pathogenic to summer pigs but produced in them a large amount of oedema.

The question now is to where the contraindications had arisen. The road surface had been recently tarred and was comparatively clean but the patient was wearing his firm trousers part of which had been driven into the wound. Examination of blood stained and non-blood stained portions of the trousers showed the presence of *B. welchii*, *B. coli*, *Streptococcus faecalis*, *Staphylococcus aureus*, and *B. megaterium*, no microbes other than *B. welchii* were recovered.

This case is of interest from several points of view. One is the exceedingly rapid onset of gangrene and the presence of terminal and subterminal spore-forming organisms, emphasizing the need for prompt prophylactic inoculation of antitetanic serum in all street accidents, although no typical *B. tetani* were isolated, the inoculation may have inhibited their growth. Secondly, we have the presence of two gas-forming bacilli, the typical *B. welchii* being evident in the region of the wound, while *B. multiseptatus* was demonstrated in a slough removed a week later.

Furthermore, it points to the advisability of treating all punctured and contused wounds occurring in street accidents and in agricultural districts by open irrigation and dressings, although a somewhat similar case recently treated by primary suture of muscle and sheath resulted in complete functional recovery without sepsis or complications. My patient, with thirty-three years' experience in an agricultural district, tells me that he has never had a case of gas gangrene, but his husband has four cases of tetanus. Of these four cases three were punctured wounds, one was an abrasion of the elbow received in a cycle accident, in this case the wound was covered over with adhesive plaster by the patient himself. In this district a large number of wounds received by farm labourers and road workers in the course of their work come under my eye, and it is only in punctured and contused wounds that any complications have to be feared. Simple incised wounds lend themselves to easy cleansing.

The minus of infection was here provided by the clothing, and the primum for growth by the injured yet viable muscle, assisted by stasis of the circulation and lowering of the temperature of the limb due to shock.

## Memoranda: MEDICAL, SURGICAL, OBSTETRICAL.

### DIABETES MELLITUS TREATED WITH GLUKHORMENT

At the request of the Medical Research Council the clinical effect of a preparation called "glukhorment," introduced by Professor van Noorden in May, 1927, for the treatment of diabetes, has been investigated. It was stated to be obtained by strong trypsin digestion of fresh pancreas substance, and to contain no synthetin or related gummino compound. This statement, however, has been shown to be incorrect in the recent article by Drs. Dale and Dudley (JOURNAL, December 3rd, p. 1027).

In two cases of diabetes the effect of glukhorment has been observed on sugar and ketone excretion, on the blood sugar concentration, and on the general clinical condition. From tablets a day were given after meals. In both cases definite reduction of the glycosuria and the blood sugar was obtained without any appreciable effect on the ketosis, weight, or general clinical condition. Similarity in the action of glukhorment to synthetin was at once noticed, in regard to the slow onset of action, its prolonged action after omission, and the production of toxic symptoms of vomiting and depression.

**CASE I**  
 A man aged 57, a moderately severe diabetic requiring 10 insulin was fed beyond his carbohydrate tolerance until a glycosuria of some 30 grams was produced (diet carbohydrate 140 grams, protein 45 grams fat 150 grams). Glukhorment reduced his blood sugar concentration slightly and his sugar excretion from 20 to 15 to 10 gram. No nausea or depression was produced.

**CASE II**  
 A girl aged 11 with very severe diabetes. The dose of insulin was reduced sufficiently to allow glycosuria of about 25 grams. She was receiving 20 units of insulin twice a day and 100 grams carbohydrate 60 grams protein 60 grams, and fat 100 grams throughout the test and for ten days previous. She had been entirely stable and her carbohydrate tolerance still high. Glukhorment a day produced vomiting, loss of appetite, and days and her sugar excretion fell from 25 to 1 or 2 gram. The number of tablets was reduced to three for two days, after which she again tolerated food without nausea or vomiting, the glycosuria remained low, and the blood sugar was reduced. On continuing

the gliukhoimint the sugar excretion rose to nearly its previous figure. This was again induced by further administration of the tablets but this time she was able to tolerate only three without gastric disturbance. Synthalin 20 mg was then substituted for the gliukhoimint as this was judged to be the equivalent amount from information received from Dr Dudley but it caused severe nausea, headache, and depression and 10 mg of synthalin appeared to be about the clinical equivalent of three tablets of gliukhoimint. When synthalin was omitted the glycosuria and hyperglycaemia returned though to a less degree than before.

In this case the toxic symptoms of nausea, vomiting, headache and depression caused by gliukhoimint and synthalin were precisely similar. The difference on commencing and the continued action on omitting gliukhoimint (in both about two days) is exactly what happens in cases where synthalin has any effect. Slight proteinuria without casts was produced by gliukhoimint, but no haematuria, jaundice or mobilization was observed.

From the above results it might appear (roughly) that three tablets (0.9 gram) of gliukhoimint contained the equivalent of 10 mg of synthalin and that it therefore has about 1 per cent of the clinical activity of pure synthalin. The chemical analysis of gliukhoimint, however, suggests a higher percentage of synthalin or a synthalin-like substance so that the potency of the active principle of gliukhoimint is probably reduced either by its poor absorption when mixed with dried pancreatic extract or by the antagonistic action of the latter.

In conclusion, the clinical results observed with gliukhoimint in the cases of diabetes are practically the same as may be obtained in many cases with synthalin—namely moderate reduction of glycosuria and hyperglycaemia and the production of similar toxic symptoms.

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### A CASE OF PROTRACTED LABOUR

The following case of protracted labour, apparently due to premature ossification of the foetal skull, seems worthy of record.

Mr. X gives a maternal history as follows. Her first child was born at term the labour being so quick that she was unable to have attention and the child died during birth. The second child was born two years later the confinement being normal; the child is alive and is now 10 years old. No further pregnancy occurred until the one under consideration.

She started to be in labour five days after the expected date and continued in labour over two days without sending for me. I found the abdomen rather larger than usual; the presentation was a left occipito-anterior and on vaginal examination I was unable to feel the promontory, although the head was rather higher than usual, the os was dilated to the size of a half-crown piece, and the membranes projected.

I saw her again early the next morning and found that no progress had been made and indeed even after noon the conditions locally were just as at my first examination, but her pulse rate had advanced to 120 and her tongue had become dry. I then had her removed into hospital and performed a Caesarean section. The child weighed 10 lb 6 oz and mother and child were quite well.

On examining the child's head I found that the anterior fontanelle was smaller than usual and I then arranged for an x-ray examination of the head and also for a conrol examination of the head of another child three weeks older. The negatives show that the frontal, occipital and parietal bones give a much more dense shadow in the child in my case two days after birth than the one of the other child three weeks older.

I wonder if such a condition of the foetal head could have been diagnosed before birth and if not, how often some general practitioner has been blamed for an unfortunate result which he could not have been expected to anticipate, however scrupulous he might have been in his ante-natal care.

Oldham

FRANK RADCLIFFE, M.D., J.P.

### ACUTE PERITONITIS COMBINED WITH LABOUR

The following case is worth recording as illustrating the difficulty of recognizing acute abdominal conditions during and after labour.

A married woman aged 39 was admitted to the maternity ward at Saltburn Infirmary on September 15th at 11 a.m. Two years earlier she had a child weighing 7 lb (instrumental delivery) and three years before that he had been in a surgical ward with a very intracapsular cystitis due to *B. coli*. I saw her at 7.30 a.m. when her temperature was 100.8° pulse 104 respirations 23. She said she had been feeling unwell for about a week with abdominal pain which she ascribed to tight lacing in order

to conceal her condition. She had done her ordinary work and had not mentioned her pain to her friends. She complained of abdominal pain but not more than many women do in labour. She also said her abdomen was tender but he did not report palpation. The abdomen gave the impression of rather excessive liquor amni and the position of the foetus could not be made out. The os was about the size of a half-crown and the head was not engaged. The position of the head could not be diagnosed with certainty. The pains had become weak and she was given one sixth of a grain of morphine. She was examined again about three hours later. She still complained of some abdominal pain and tenderness; the pulse and temperature were about the same. The os was then found to be about the size of half a crown; the head was still above the brim and was in the right occipito-posterior position. The pain was stronger and the general condition quite good. The head was easily flexed and rotated into the right occipito-anterior position when it engaged at 6 p.m. An enema was returned unchanged. The membranes ruptured three-quarters of an hour later and a female child weighing 6 lb was born normally twenty minutes afterwards. The placenta came naturally, five minutes after the child.

That evening the temperature was 98° pulse 135 respiration 40. She was comfortable except for some slight abdominal pain. Next morning the temperature was 98° pulse 132 respirations 40. She had vomited several times in the night and she was slightly distended and tender. No physical signs could be found in the chest.

A large enema was given and a faecal motion obtained but no flatus. In the evening the temperature was 100.6° pulse 135 respirations 60. Vomiting had continued and distension was marked and there was free fluid in the abdomen. A needle was inserted and turbid fluid was withdrawn which was not blood stained and had no smell.

My surgical colleague, Dr Kempe, opened the abdomen and found general peritonitis but in spite of careful search no local lesion to account for it. He expressed the opinion that it was a case of pneumococcal peritonitis. The abdomen was drained and closed.

Her condition went from bad to worse and she died thirty-six hours later.

The fluid withdrawn from the abdomen gave a copious growth of pneumococcus. The child appeared to be perfectly healthy.

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### TRIGEMINAL NEURALGIA PRECEDING ACUTE GLAUCOMA

The following is a brief account of an unexpected sequel to an apparently straightforward case of trigeminal neuralgia or tic douloureux.

A woman aged 65 had been subject to neuralgic headaches all her life; they had become more severe and localized during the last two or three months. They occurred at frequent intervals, usually began on waking and consisted of a dull right-sided headache (hemispherical) with brief stabbing dart or pain in the right temple, forehead and cheek, radiating over the right side of the scalp. At such times the whole of the affected area was exquisitely tender. Sight was not affected and the attacks were usually relieved in a few hours by rest and aspirin.

Examination on September 10th, 1926, showed nothing abnormal in the heart, lungs, alimentary or nervous system. The blood pressure was 110/60 mm. Hg. The fundi were normal. A diagnosis of trigeminal neuralgia for which no exciting cause could be found was made. The patient was anxious to proceed on a tour to the Continent but was dissuaded from this by her medical adviser who suggested a short period of rest and observation. On September 25th, 1927, she awoke with excruciating pain in the right forehead and cheek coming on in paroxysms of a few minutes' duration. The parts were tender to touch and the eyes were closed. A little circumcorneal injection was noted on the right side. Vomiting followed but without relief; the pain being eventually relieved by 1/4 grain of morphine. The patient passed a good night but the next day the pain was still present and was localized in the right orbit. The tension of the globe on that side was increased and there was much circumcorneal injection but no disturbance of the acuity of field of vision. In the evening the diagnosis of acute glaucoma was no longer in doubt, the cornea being tense, tension — and the measures and on the condition failed to react to palliative measures and on September 29th Mr. Hugh Jones of Liverpool performed the operation of trephining and iridectomy on the right eye. Recovery was uneventful. During the past year there have been occasional mild headaches but the severe neuralgia attacks have completely ceased.

The manner in which glaucoma in the prodromal stage may mimic other disorders is well known and this case is of interest in presenting a picture of itching tenderness to headache and of trigeminal neuralgia for some months without any symptoms until the actual onset of acute glaucoma.

My thanks are due to Dr R. B. Edwards of Mold from whom the patient was referred for help in the preparation of the notes.

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Pu-blic Castle North Wales.

## Reports of Societies.

### INCIDENCE OF THE MINOR PSYCHOSES

At a meeting of the Section of Psychiatry, held at the Royal Society of Medicine on December 13th, Dr MILLAIS CURRY read a paper entitled "A study of the incidence of the minor psychoses—then clinical and industrial importance." The President of the Section, Dr R LONDON-Down, was in the chair.

Dr CULPIN explained that the work, of which this paper was a summary, arose from an inquiry into telegraphists' cramp, which was undertaken by the Industrial Fatigue Research Board. Cramp was assumed to be a fatigue phenomenon until the investigators discovered that the symptoms appeared to point to a psychological rather than a physiological basis. Dr Culpin was then given the opportunity of interviewing cramp subjects and of comparing them with a control group of persons not so afflicted in order to discover whether cramp was definitely associated with other symptoms of a recognizably psychoneurotic type. This was found generally to be the case, the other symptoms being often of a degree which would lead to the diagnosis of a severe psychoneurotic state. It also became evident that there existed an unexpected prevalence of these symptoms among the control group of presumably healthy people. Students in the school of telegraphy contained 19 per cent of subjects having symptoms of significant severity. The results of this particular inquiry were published by the Stationery Office under the title of "A study of telegraphists' cramp." The question then presented itself: Was the fact that minor psychoses were associated with cramp attributable to some feature of the work, or was it a phenomenon common to the general population? Thus the investigation was next directed towards ascertaining the proportion of the general population which suffered from the minor psychoses. Associated with this question were two others—Did the distribution of such subjects vary in different occupations? and, What was the probable influence of occupation in determining the incidence of psychoneurotic illness? Sickness records were obtained from various Government departments and from private firms. It became clear that disabilities arising from the minor psychoses played a great part in swelling the totals of time lost through illness. Many employees of various trades and professions were interviewed. The subjects were given a short psychological examination on a more or less formulated plan which elicited the replies necessary to form a diagnosis. Dr Culpin gave several examples of the types of replies received. Observations were made on day-dreaming at work, the effect of noise, and the reaction of ex-service men towards their war experiences. These phenomena were found to vary according to the temperament of the subject. In addition to the psychological examination, Miss May Smith tested the subjects independently by the McDougall-Schuster dotting machine, the "pursuit meter," and the piezograph, an instrument which registers the pressure exercised in using the Morse key. The results of these tests showed some correlation with those of the examinations. It was found that the dotting test was the best objective procedure to be associated with the results of the psychological examination. An interesting point in connexion with this test was that obsessional subjects produced extremely good dotting records surpassing those of normal people. Examples were given of the responses of subjects suffering from hysteria, hysteria with anxiety, pure anxiety, and obsessional states. The standards of assessment were then discussed by Dr Culpin. The subjects were put into six groups assessed according to absence of symptoms or to the degree of symptoms. Roughly 50 per cent of the total number examined were found to be free from symptoms. Sickness rates varied, but they appeared to be independent of the number of minor psychoses that were found in each group. Laundry workers had as high a percentage of high assessments as clerical workers, but illness rates were low. Satisfaction of the workers with their work seemed to be an important factor in illness. It was found that there was no significant statistical differ-

ence between the results of the two sexes. Dr Culpin's general conclusions were as follows: the dotting test kept a check upon the results of psychological examination; there was a high proportion of persons in the general population suffering in varying degrees from the minor psychoses. There was no reason to believe that there was any active selection of particular occupations by psychoneurotic people, except in the case of art students, where the results of investigation confirmed popular belief about the "artistic temperament." The results suggested that the commonly supposed "causes" of psychoneurotic illness were merely factors in exacerbating a previously existing condition. But the fact that such illness was absent in some groups indicated the importance of studying exacerbating factors that must be present in those groups with a high sick rate.

In the course of a brief discussion the President remarked that such an investigation opened up many interesting and important questions from the clinical and industrial standpoints. Sick rates had been shown to be affected, probably accident rates might be affected, and the whole question of the efficiency of the work might depend on whether the employer or employee were suffering from the minor psychoses.

### SUPERNUMERARY BREAST

At a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland on November 11th the President, Professor T T O'FARRELL, showed a specimen of supernumerary breast, which had been removed by Mr Doolin.

A married woman, aged 45, the mother of twelve children, had had a nipple-like swelling in the right groin for twenty years. Two years ago it began to increase in size, but there had never been any discharge or sign of a duct opening on the surface. At the time of operation (tumour in the left groin) showed subcutaneous. Owing to its nipple-like appearance and the fact that it was situated in the nipple line, the possibility of a supernumerary breast was considered. The tumour, with a surrounding ring of skin and subcutaneous tissue, was removed under local anaesthesia. It was about the size of a walnut, and appeared to consist of two parts, a deeply situated portion closely resembling a scirrhous carcinoma, and a superficial rather spongy tissue, the interstices of which were filled with a yellowish, crumbly material. It consisted chiefly of irregular glandular acini lined by columnar epithelium cells containing many mitoses. In places the acini were round but in others very tortuous, suggesting adenocarcinoma. Some of the spaces contained concentrically arranged cells suggestive of cell nests. Groups of acini were widely separated by masses of necrotic tissue, which contained fat crystals. There were patches of large clear cells containing fat globules closely resembling the cells of sebaceous glands. They did not form definite glands, but nevertheless appeared to be included in, rather than to be part of, the growth.

Mr W Doolin said that on removal milky material had exuded, and on pathological examination the growth had proved to be a supernumerary breast. Cell nests had been present, and in the literature he had only found two references to cell nests, which had occurred in cases of ordinary carcinoma of the breast.

Dr W D O'KEEFE did not think it possible for a pathologist to say what the origin of the tumour in this case had been. He had seen cases of ordinary carcinoma of the breast in which cell nests had been present, and, in fact, thought it was rather extraordinary that cell nests were not found often.

### Ophthalmic Cases

Dr ALAN MOONEY showed three specimens of gloma retinae, and a microscopic specimen of cylindroma of the lacrimal gland. Two of the sections exhibited were gloma endophytum, and the third a gloma exophytum with involvement of the optic nerve. The first specimen was particularly interesting because it was the second eye involved, it was in a very early stage, and it originated in the ganglion cell layer of the retina. Parsons had only reported 5 out of 54 cases as being of that variety. The first eye was removed when the patient was 12 months old, and he believed it contained a large growth. The second eye was enucleated four months later. Macroscopically the eye presented three chief foci, the largest being the size of half a small pea, besides these there were

many tiny satellites scattered over the surface of the retina, which was not detached. On microscopic examination the largest focus was made up of the usual type of cells found in gliomata. At the most posterior part of the focus were present many of the so-called "rosettes" which were found in much greater numbers in the earlier stages of a glioma. The area of the growth was "rosettes" were present was more vascular than elsewhere, and the blood vessels had very thin walls. The optic nerve was normal and there had been no recurrence. The second specimen was a glioma growing from the inner layers of the retina, which was in place and the optic nerve was normal. In the case of the glioma exophthalmos the growth arose from the outer nuclear layer causing detachment of the retina. It pushed the crystalline lens forward till it was practically lying against the ball of the cornea then by causing secondary glaucoma. The tumour showed many dead white granules due to calcareous degeneration; this condition was only found in gliomata which had existed for some time. This patient was 2 years old and two days after the enucleation on the child had a severe haemorrhage, presumably due to the optic nerve extension ulcerating into the central artery of the retina. Some weeks later the socket contained a nodule about half the size of the enucleated eye which was probably a recurrence of the growth. Since then the child had been undergoing a course of x-ray treatment the whitish nodule was still present in the orbit and about the same size. The child had enjoyed good health since the operation so that the spread of the growth into the brain had probably been arrested. The other eye was normal. The last specimen he showed was a cylindroma of the lacrimal gland. Tumours originating in this gland were relatively rare and of the 132 cases which Parsons had collected only one was a cylindroma though 48 other varieties of lacrimal gland tumour were described. The specimen exhibited was composed of cylinders of hyaline connective tissue between which ran a network of tumour cells there was a complete row of cells surrounding each cylinder. In places the cells were grouped round a central lumen which in a few cases contained red blood cells. Broken up blood cells were found extravasated in some parts of the section and in these places were to be seen masses of amber-coloured pigment, probably of haematogenous origin.

Dr EUPHRA MAXWELL, referring to the case of cylindroma of the lacrimal gland said that the patient was a woman aged 40 who had first felt pain in the left eye in 1917. In 1922 the eye had become displaced forwards and slightly downwards and a soft palpable tumour was found in the lacrimal cornea. X-ray treatment was then given and there had been no change in the size of the eye for four years. In 1926 there was an increased enlargement of the eye and more pronounced displacement. The patient complained of pain and double vision in certain directions. Two applications of radium were followed by shrinkage in the size of the growth, and the vision returned to almost normal. In July, 1927 the tumour again began to increase in size and vision was almost lost. A corneal ulcer and glaucoma were found. It was decided to remove the eye since this operation the patient had had two treatments of radium and was better, but Dr Maxwell thought that it was too soon to predict the outcome. These tumours were rare, and Dr Maxwell believed that there was a certain amount of malignancy present in them. She had only seen four cases in which, on microscopic examination, a tumour of the lacrimal gland had been found.

#### Insulin and Lactic Acid Metabolism

Dr J. J. McGRATH in a paper on the influence of insulin on the metabolism of lactic acid described research in the *Städtischen Krankenhaus* in Mannheim Germany under the direction of Dr F. J. LEBER and announced conclusions from the results obtained. An endeavour was made to discover if insulin had any influence in the Meyerhof process. White mice used in the experiments were killed by sudden total immersion in carbon dioxide snow which prevented any post-mortem variation in the lactic acid content. The lactic acid, sugar and glycogen in the whole body of the animals were estimated. The first

series of seven experiments consisted in the intraperitoneal injection of insulin, and the determination of the amounts of lactic acid, glycogen and sugar present thirty minutes later. The amount of lactic acid present was not changed by the injection of insulin. In a second series it was shown that the amount of insulin injected caused the blood sugar to fall 50 per cent, and, further, that more than 50 per cent of the sugar which disappeared from the body after the injection of insulin must have been tissue sugar. Also, by reference to B. SINGER and LEBER'S figures, it was deduced that the burning of the amount of sugar which disappeared would not change the respiratory quotient by an appreciable amount. In the next four series of four experiments each rat was given lactic acid alone and with insulin was injected intraperitoneally and it was found that the injection of lactic acid caused no change in the carbohydrate content of the body though some of the acid had disappeared in thirty minutes. The injection of insulin did not alter the lactic acid values, and the loss of carbohydrate due to the injection of insulin was similar to that in the first series of experiments. The next series of experiments indicated that only 60 per cent of the lactic acid injected was absorbed from the peritoneal cavity and of this absorbed amount 50 per cent had disappeared after thirty minutes had elapsed. In the last series of two experiments dextrorotatory lactic acid was injected thus being the form found in the body. It was thought that it might give results different from those obtained with the racemic form. It was found, however, that although more of the dextrorotatory lactic acid was irrecoverable after a lapse of thirty minutes, this rate of disappearance was not influenced by insulin. It was also shown that the amount of sugar lost was not altered by the injection of lactic acid. In this series the injection of dextrorotatory lactic acid seemed to cause a slight increase in the glycogen present in the body, this increase was not in the liver. It was concluded that neither the lactic acid pre-existent in the body nor the injected lactic acid, was affected by the injection of insulin.

Professor J. M. O'CONNOR thought that Dr McGrath had made a definite advance in the study of the physiology of insulin. If the results were treated statistically a further advance might be made.

Dr A. R. J. DUNN thought that perhaps the time allowed for the action of insulin (thirty minutes) was short. In the dog as well as in the human being he personally had found that it took at least two hours before any effect began to be demonstrable on the blood sugar. As there was no certainty that insulin was absorbed very rapidly and as nothing was known about the manner in which insulin acted it was not possible to state definitely how long the interval would be before it began to act with the lactic acid.

#### GYNAECOLOGICAL SYMPTOMS DUE TO PANCREATIC CYST

At a meeting of the Section of Obstetrics or the Royal Academy of Medicine in Ireland on December 2nd Dr BERNARD SOLOMONS (Master of the Rotunda Hospital) in the chair, Dr D. J. CONNOR read a report of a case of pancreatic cyst which had given rise to gynaecological symptoms. The clinical details were as follows:

The patient had a history of amenorrhoea for three months with profuse vaginal discharge and a feeling that her abdomen was getting bigger. Her face was bronzed with the sun and she had a rather healthy look. The enlarged abdomen gave the impression of ascites rather than of a dense tumour and there was unmistakable evidence of fluid in the abdomen. The uterus was normal in size and shape and position but an indurated mass was felt in the pelvis. A profuse discharge was seen flowing from the cervix but it appeared certain that the absence of signs of inflammation made it quite certain that the case was one of non-infective leucorrhoea. The lungs were normal. From the physical findings it was surmised that the case was one of tuberculous peritonitis complicated by tuberculous tubes though the appearance of the patient was rather against this diagnosis. She was continued at the end of a fortnight but the symptoms were unchanged except that the abdomen became larger. There was no shifting dullness and the tumour was much better defined. The mass in the pelvis proved to be a loaded sigmoid and when the abdomen was opened a large cystic tumour of the pancreas retroperitoneal in position and below the transverse colon was seen. It was opened and drained. A tube was inserted and kept

in position by a purse string suture. The abdomen was closed in layers, and dressings of sterilized vaseline were applied, to prevent blistering of the skin from the irritating discharge, at the end of four weeks the fistula had completely closed, the leucorrhoea had disappeared, and menses had returned.

Dr Cannon said that these growths were essentially retention cysts, and not proliferating ones like cystadenomas of the ovary. Their removal was therefore not necessary in order to effect a radical cure. Should the cyst, however, be so small that it would be impossible to anchor it to the abdominal wall, enucleation would be the ideal treatment. To drain a cyst under these circumstances involved great risk of general peritonitis from the irritating fluid. He concluded that pancreatic cysts were rare tumours which were very difficult to diagnose, and might be easily mistaken for other pathological conditions. When the abdomen was opened they were easily recognized by their anatomical position, which was retroperitoneal and either above or below the transverse colon. If the tumour was large there was no need for enucleation, since conservative treatment would effect a radical cure, but if the tumour was small such treatment might cause general peritonitis. The pathological report of the specimen was that the fluid showed a tendency to clot such, but no action on egg albumen after two days. The sediment consisted of blood and pus. On cultivation *B. coli* was isolated. These findings indicated infective changes, perhaps, in a cystic condition.

Dr D G MADILL drew attention to the difficulty of relating the presence of the pancreatic cyst with the general gynaecological symptoms of the patient. Dr F S BOURNE thought that in cases of this kind some symptoms of pancreatic obstruction were to be expected, which would appear in the faeces. Dr BETHEL SOLOMONS dwelt on the difficulty in diagnosis in this case, and mentioned that other non-gynaecological tumours with pelvic symptoms were hypopharyngeal, displaced kidney in the pelvis, the spleen, and mesenteric tumours.

Dr CANNON, replying, said he thought that gynaecologists would probably meet with these cases as frequently as surgeons, and should be equally able to treat them. He referred to a somewhat similar case which he had seen, in this there had been shifting dullness. At operation a large retroperitoneal tumour had been found. He thought that this case might have been mistaken for a case of ascites. If a small pancreatic cyst was found it would be difficult to know whether to leave it until it grew larger and then to remove it, or to excise it at the time of operation. He personally would leave it. He thought that these cases were not really so difficult as they appeared from textbooks to be. He had recently removed a mesenteric tumour in a child, aged 2, much more easily than he had expected. It was possible that some cases might be functional. The faeces in his first described case were normal in colour, but had not been microscopically examined. There had been no symptoms of diabetes, and no sugar in the urine.

#### Ovarian Teratoma

Professor A H DAVIDSON read notes on a case of teratoma, and showed a specimen and slides. He said that solid teratomatous tumours of the ovary were rare and usually malignant, but teratomatous cysts of the ovary, or dermoids, formed about 10 per cent of ovarian tumours. In these were commonly found ectodermal structures such as skin, hair, teeth, nails, and sebaceous glands, endodermal structures such as thyroid tissue and mucosa of small intestine and air passages were rarely present. These teratomatous cysts were usually innocent, and only became malignant in about 3 per cent of cases. The interest in his case lay in the fact that it exhibited thyroid tissue alone, and in the last ten years there had been no more than four similar cases reported.

The patient was 39 years old, had been married twenty years, and had had three children, the last pregnancy being ten years before the present date. She complained of pain in the back and right side, headaches, and slight vomiting. Her menses occurred regularly every twenty-eight days, they lasted for nine or ten days and the loss was considerable. There was no leucorrhoea, the appetite was good and the general health satisfactory. The vulva and vagina were normal, the cervix healthy, but the uterus was enlarged to the size of a large pear by an interstitial myoma. The left ovary was very multicystic. The right was

enlarged to the size of a goose egg and was seen old in consistency, it was adherent to the peritoneum in the region of the superior and right lateral aspect of the bladder and of the right anterior fossa of the abdomen. There was some difficulty in separating the tumour, and various bleeding points had to be tied. Right salpingectomy, left salpingo-oophorectomy and total hysterectomy were also performed. Convalescence was uneventful and there had been no sign of any recurrent trouble up to the present time. The pathological report of the case was that there was a solid encapsulated tumour in intimate contact with the ovary. The cut surface presented a somewhat peculiar appearance with scattered areas of haemorrhage, it was surrounded by a dense capsule which merged into the ovarian tissue at its upper pole. Microscopically the tumour was composed of thyroid tissue with alveoli of varying size, some of which were lined by low and others by high epithelium, many of them were filled with a colloid material, while in others there was only an indication of the lumen. The capsule was composed of fibrous tissue and contained no ovarian structures. It was an ovarian teratoma and there was no evidence of malignancy in the sections, but cases had been reported of such tumours appearing histologically benign and later giving rise to metastases.

Dr D J CANNON believed that in a typical solid teratoma, if it was malignant, all three embryonic layers were represented. In this specimen only one layer was represented, and therefore he doubted if it was malignant and was inclined to consider it benign. Dr SOLOMONS said that the teratoids which he had met with were much larger than this specimen. He believed that the best classification of teratoids was into malignant and benign, for either could be present.

Professor DAVIDSON, replying, said that a dermoid was a tumour which developed in an ovarian cyst. It seemed to him quite feasible for a growth of thyroid tissue to develop in the ovary, and grow to such an extent as to make it solid. Solid teratomata were all essentially malignant.

#### Improved Gynaecological Instruments

Dr BETHEL SOLOMONS showed Bonney's myonectomy forceps, which he had improved by putting rubber at the ends of the blades, thus, he said, prevented damage to the vessels. He had found two new uses for the instrument: (1) when splitting the uterus in his operation for sterility, (2) it was an efficient clamp to prevent soiling of the vagina in performing a total hysterectomy with enucleation of the body, or when there was any suspicion of septic material in the uterus.

He showed also a modification of De Lee's stethoscope, which he had found most useful. The part which was applied to the abdomen was movable, making it easy of application to the pregnant abdomen. He used De Lee's stethoscope in conjunction with Rubin's apparatus when working single handed, it was easy with the stethoscope to hear the oxygen passing through the tubes, and to confirm the result given by the manometer.

Professor A H DAVIDSON said that Bonney's clamp was a very useful instrument, and the new use for it to prevent soiling of the tissues by clamping off the cervix seemed to him very practicable. Such soiling was always a difficulty in performing a hysterectomy. Dr D G MADILL said that he had not used a Bonney's clamp until about six weeks ago, when he had used it in two or three cases of myonectomy and found it very good. He had never tried it in any other operation, but was sure it would be useful in performing a hysterectomy or any operation. Dr J F CUNNINGHAM said that he had seen Dr Bonney himself using this instrument, and there had been no haemorrhage at all during the operation. He believed that the instrument was not sufficiently used.

#### Interstitial Tubal Pregnancy

Dr BETHEL SOLOMONS showed a specimen of interstitial tubal pregnancy and gave the following clinical details:

A woman aged 30 had been married three years and had two children, the last having been born in 1925. There had been no miscarriages. There had been amenorrhoea for a month and she then noticed a blood stained discharge from the vagina. Two days later she passed a more solid substance per vaginam and since then a reddish brown discharge had persisted. There had been no previous operations or illnesses. She had menstruated every twenty-nine days for four or five days, heavily, without intermenstrual pain or discharge. There was a swelling in the right lower abdominal region, close to the uterus, and a diagnosis of broad ligament tumour was made. The urubimogen test was negative. The abdomen was opened and a tumour the size of a tangerine orange was found to occupy the right corner of the uterus, external



of tumour and a thinness of tube. Its colour was bluish with patches of yellow here and there. The uterine vessels were controlled with Brunner's forceps and the ovary with ring forceps. The portion of the uterus involved was resected wide of the tumour. The uterine cavity was opened and the incision closed with two rows of interrupted catgut. The round ligament was brought over the uterine wound and the abdomen was closed.

The tumour on section presented a cystic cavity about the size of a plum which was apparently the ovum surrounded by a blood clot about three-eighths of an inch thick. In section through the blood clot were scattered shadowy villi. The tumour was an interstitial pregnancy which had not ruptured but had been dead for some time. The patient was discharged in good condition.

Dr. Solomon said it was believed that an interstitial pregnancy never aborted into the uterine cavity but that the most usual thing to happen was rupture into the abdominal cavity with severe, if not fatal, haemorrhage. It was impossible in most instances to make a definite diagnosis of interstitial pregnancy although a swelling either posteriorly in the region of the tube in close proximity to the uterus, might suggest the diagnosis.

Dr. D. C. Macmillan said that he recollected a case in the Rotunda Hospital once years ago which was thought to be an interstitial pregnancy but which had turned out to be a tubal pregnancy very near the uterus. He thought that this was an excellent case for demonstrating the utility of Brunner's plug. Dr. C. Brunner asked what had determined the necessity for operation in this case. Had there been an excessive pain or only the persistent discharge? Dr. A. H. Davidson referred to a paper by Rubin in which he described how tubal pregnancy might be explained possibly by the fact that the ovum was being driven along the tube at an early period of the menstrual cycle and the peristaltic movements of the tube were not sufficient for the ovum was arrested and a tubal pregnancy developed.

Dr. Solomon, in reply, said that the patient had been operated on because of the history of morning sickness and slight haemorrhage.

#### Adenocarcinoma of the Uterine Body

Dr. Solomon showed three specimens of adenocarcinoma of the body of the uterus.

The first was in an unmarried woman aged 43 who complained of pruritus vulvae, slight leucorrhoea and pruritus mammae. Apart from backache her general health was good. She was a virgin intacta and examination under anaesthetic revealed a small fibroid uterus which was removed.

The second patient was aged 55 and sterile. She complained of recurrence of menstruation after amenorrhoea for two years. In addition to this was a certain amount of yellow discharge. Both breasts had been removed for malignant disease—one eight years and the other five and a half years ago. She had no other complaint and had not lost weight. There was a slightly enlarged uterus in good position. A diagnostic curettage revealed adenocarcinoma and hysterectomy was performed.

The third patient was a single woman aged 53 who complained of constant haemorrhage for the past two years. Regular menstruation had ceased a year previous to the start of the haemorrhage. Her only former illness was rheumatism. Her weight was very anæmic but had not lost weight. The uterus was small and in good position. A diagnostic curettage disclosed adenocarcinoma and hysterectomy was performed.

Dr. Solomon commented on the fact that the only complaint of note in the first case was a mucous discharge and pruritus. In the second case that both breasts had been removed but he did not believe they had anything to do with the present trouble. He noted that fibromatous were present in two cases and that the uterus was small. Nulliparity was nearly always present in the cases, and the age incidence was what was expected. He commented on the necessity for a diagnostic curettage in cases of irregular haemorrhage about the menopause and had found that the most usual differential diagnosis was between simple endometritis and simple carcinoma. The microscopic report of the three specimens was to the effect that the gland structure was very well marked and in some places had infiltrated the muscle wall to a considerable extent in some the epithelial cells appeared normal but in the uterine it was degenerated and necrotic. There was much round-celled infiltration. The condition was an adenocarcinoma of high maturity and consequently of low malignancy.

Dr. D. C. Macmillan agreed about the value of a diagnostic curettage in these cases of haemorrhage occurring after the menopause. Sometimes the report received on the specimen was that it was non-malignant but after it was

malignant. He himself had had a similar case two or three years ago in which the breasts had been amputated for carcinoma previously. A tumour in the pelvis was found to be very densely adherent and proved to be carcinoma of the ovary. He asked if a Wertheim operation had been contemplated in any of these cases, and mentioned a case which he had seen some months ago with ordinary multiple fibroids, in which he had performed a supravaginal hysterectomy, and had received a report of adenocarcinoma. Referring to the after-treatment of these cases he asked if Dr. Solomon gave morphine, and if there was subsequent constipation.

Dr. Davidson thought the important thing in adenocarcinoma of the body of the uterus was the diagnosis. These cases frequently did not begin to show symptoms till the condition was advanced. An important fact to remember when examining these patients was that the condition usually occurred after the menopause. At this time the uterus was very atrophic and it was easy to be misled by finding a small uterus. It should be borne in mind that cancer of the uterus might be present in cases where the tumour was very small. In the cases it was necessary to use the curette with care since sometimes it entered the wall of the uterus and perforation occurred with disastrous results. He drew attention to the necessity for examining the groins in the cases for the possible presence of enlarged carcinomatous glands.

Dr. J. T. Cunningham asked if in the case described by Dr. Solomon there had been any haemorrhage and if not why operation was performed. The patient apparently had had a small movement of the uterus but he wondered if there had been any other reason for deciding on an operation.

Dr. Solomon in reply said he considered that total hysterectomy and not Wertheim's operation should be performed for cancer of the body of the uterus. He had never found the inguinal glands enlarged. He operated on the first case because he believed that the disease in the uterus was producing the mucous discharge which caused the pruritus. He was a strong believer in the value of morphine after operations.

#### JAMES MACKENZIE INSTITUTE

On November 29th at the James Mackenzie Institute for Clinical Research St. Andrews Dr. Forster Spriggs in a paper on the early symptoms of cancer of the stomach and that study of a series of patients showed that the onset of the disease was appreciable in most cases. In two-thirds of them the symptoms dated back more than nine months on the average an interval of a year or more having elapsed before a full investigation was made. Analysis of the symptoms in order of frequency and of the order in which they arose showed that the most important early symptoms were fullness, discomfort or pain not severe or continuous but recurring persistently and arising in a middle-aged or elderly person. The next symptoms in order of frequency and importance were lack of appetite, dislike of food, nausea with retching loss of weight. Haemorrhage might be a first symptom. The pain or discomfort was often relieved by food in cancer of the pylorus and of the body of the stomach. Among the cardinal symptoms of cancer was pain and tumour were late results and pain was so variable that no security could be gained from its absence. Anaemia was usual though in exceptional cases the blood might be normal up to a short time before death. When cancer arose in the subject of ulcer or other form of dyspepsia there was often a recognizable change in the symptom. The earliest objective sign of cancer was probably local arrest of the wave in the stomach as shown by x-ray. This was demonstrated by the superposition of x-ray films taken at such an angle that the lesion was in profile. The sign was common to cancer, ulcer and fixation by adhesions. A filling defect or mud induration at the edge of an ulcer as shown by bending over the shadow suggested cancer. The tests for achylia and occult blood were of great value. If there was a pathological and clinical suspicion of cancer the first operation to make sure was much smaller than the rest was to clamp the caecum. It was wrong to treat indigestion for

any length of time in a middle-aged person without taking steps to exclude cancer. Resection of the pylorus or the body of the stomach, if undertaken at an early stage, could be performed successfully. In conclusion, Dr. Spriggs declared that the fight against cancer was a fight for early diagnosis. If the delay between the onset of symptoms and investigation could be avoided, life could be saved in a great proportion of cases. Further progress depended in present upon the profession and the public becoming alive to the fact that earlier diagnosis could and should be made.

## Reviews.

### EMERGENCIES IN GENERAL PRACTICE

It is a truism to say that as each year passes the perceptive citizen becomes more exposed to risk of life and limb in going about his ordinary affairs. Quite apart from the enormous increase of mechanically propelled traffic, even such an apparently innocent amusement as "listening in" may be fraught with the gravest danger, as one of two recent accidents have testified. It is incumbent upon every member of the medical profession to arm himself that he may deal promptly and efficiently with the many and various emergencies which sooner or later he may encounter either in the routine of his duties or as a casual passer-by. For these reasons the appearance of such a book as *Emergencies of a General Practice*,<sup>1</sup> by two American practitioners, the late Dr. Nathan Clark Moulton and Dr. Asa Corcoran, is cordially welcome. Every conceivable emergency to tubal rupture, from poisoning by ivy to fractures of the long bones. The advice given is dogmatic and practical, from the seasoned experience of men who have done the things they describe and not simply read about them. Of necessity in a book of this kind, the wider considerations can only briefly be touched upon, but useful references to original papers are given so that those interested can probe more deeply.

Where necessary the authors do not hesitate to indicate when in their view a method of treatment is beyond the skill of the ordinary general practitioner, but while they urge the supreme importance of the doctor recognizing his limitations at all times, they never fail to encourage him to increase his sphere of usefulness by "learning to do many things better." They say in the preface "One cannot but feel that the general practitioner is sending too much work to the specialist, that the good old family doctor is passing." As in the United States, so it is, we speak as to the harm done in workshops and elsewhere by the hybrid darning on of tincture of iodine to cuts and injuries by unskilled—and unwashed—hands and then hoping for the best.

The subject of shock, from both the theoretical and practical aspects, is very well epitomized. In describing the treatment of shock no note that no mention is made of pituitary extract—a useful aid, if not of absolutely supreme importance. A flat contradiction has been allowed to creep in, in the discussion of the treatment of antio infections of the knee-joint. On one page active movements are extolled and the statement is made "Recovery is quicker and the function of the joint much better than under the old immobilization treatment. This method is in use by most surgeons." On turning the page we are faced with the remark that "immobilization of the joint is of the greatest importance." The value of insulin in diabetic coma and the method of using it deserve more than the casual reference made by the authors. One other position on her right side." These slight blemishes do but confirm our opinion of the book's very high standard of general excellence. It is not only useful, but inspiring, and certainly one which should be read by every doctor who

<sup>1</sup> *Emergencies of a General Practice*. By the late Nathan Clark Moulton and Asa Corcoran. W. B. Saunders Co., Philadelphia, 1927. (6 x 9 1/2 in.) 1 P. 541. 311 figures. 42s net.)

is not a pure specialist or a fashionable signpost therapist. The illustrations, on the whole, are good, but more have been employed to depict the use of zinc stripping instead of bandages than seems quite necessary.

### RHEUMATISM AND GOUT

In the preface to his volume entitled *Aspects of Rheumatism and Gout, their Pathogeny, Prevention, and Control*, Dr. L. Jones Llewellyn apologizes for some overlapping, as the essays and addresses it contains were composed at various dates. In the opening chapter the history of the conception of diathesis is traced, and its recent revival approved, this prepares the way for the argument that the rheumatic diathesis is "an inborn predisposition to endocrine autonomic imbalance" and particularly connected with thyroid inadequacy, this opinion he supports by various considerations. The association of hyperthyroidism and Graves's disease with acute rheumatism is fully discussed, while believing that rheumatic fever probably develops on a hypothyroid basis, he assumes that there is a compensatory swelling of the thyroid, so that Graves's disease develops as an extension of acute rheumatism. Much consideration is given to the relation of goutic with the rheumatic diathesis, and thyroid instability or inadequacy is held to be important both in the uticular and non-uticular forms of chronic rheumatism. The relation of oral sepsis to arthritis is also considered in detail.

The author's work on gout was reviewed in these columns (1921, 1, 271), and in an address given at a later he returned to his conceptions of its etiological relations to focal infection, food idiosyncrasies, and protein hypersensitiveness. He suggests that gouty subjects, no hypersensitive not to alcohol, but to some protein contained in alcoholic beverages, such as horden in beer, or yeast or other proteins in wines, red wines being often tainted with white of egg. For this view that gout is an allergic disease support is sought in the writings of the French school of Chauffard and Vidal, the latter having shown by skin tests the peculiarly selective hypersensitiveness of the gouty to certain wines.

### AN AMERICAN TEXTBOOK OF GYNAECOLOGY

The well known treatise on the *Diseases of Women* by Harry Sturges Crossen, M.D., F.A.C.S., is a characteristic American production. It is bulky, very weighty, profusely illustrated, and encyclopaedic in its scope. The preparation of the new edition has not called for material alteration, save in the direction of bringing its matter generally up to date. The investigation of cases of sterility by a rays after the injection of opaque matter into the uterine cavity and tubal lumen for the diagnosis of tubal occlusions is one subject that has been fully revised. The general layout of its matter is as it was in the previous editions, though it cannot be described as scientific or logical. The arrangement is more on an anatomical than a pathological basis, but does not follow either. To give an idea of the author's scheme some of the chapter headings may be noted. The book opens with three chapters in which gynaecological examination, diagnosis, and treatment are discussed, next comes a chapter on diseases of the vulva and vagina, in which infections, growths, and regressive changes are dealt with. This begins from the external organs and working up to the ovary and peritoneal cavity. The next chapter, however, is one on relaxation and fistulae, then follow four nutritive disease, "displacement," and "growth," "inocent" and "malignant." There is a chapter on

*Aspects of Rheumatism and Gout, their Pathogeny, Prevention, and Control*. By Llewellyn Jones. W. B. Saunders Co., Philadelphia, 1927. (Demy 8vo 1 P. viii + 231.) 10s net.)  
*Diseases of Women*. By Harry Sturges Crossen, M.D., F.A.C.S. Sixth edition revised and enlarged. London: H. K. Lewis, 1927. (Sup. roy. 8vo, pp. xxvi + 1160. 933 figures. 50s net.)

pulvic inflammation in which the internal infective processes generally are treated, but such specific infections as tubercle are relegated to odd chapters. There is also a chapter on malformations, in which vulval, vaginal, and uterine developmental errors are described. This outline will suffice to indicate the total lack of orderly arrangement of its matter which is the chief fault in what is otherwise a sound presentation of gynaecological practice.

The clinical teaching is judicious and strikes a happy mean between the excesses of the extreme surgical enthusiast and the medical and minor procedures that were once supposed to characterize gynaecological practice. The use and place of the pessary is well discussed and the sections on the internal secretory glands and their relation to gynaecology give a well balanced view of our present knowledge. There are a few pages on the neurological side of gynaecological practice but this aspect is scarcely considered in some sections of the book where it might have been expected to be discussed. For instance, in conditions such as vaginismus and dyspareunia in which the psychoneurotic element is clearly predominant no reference is made to the psychological factor.

The illustrations are excellent particularly those of pathological specimens and histological slides; this sixth edition is sure to meet with as hearty a welcome as its predecessors.

### VICIOUS CIRCLES

As most of our readers are aware, Dr Jamieson B. Hurry, formerly of Reading, has written several books on vicious circles in disease. Now we have from Dr Lorenzo Pezzotti an Italian criticism of the conception of vicious circles in pathology. Dr Hurry describes a large number of circles and discusses how they may be broken; the Italian author seems to think that the method has been rather overdone inasmuch as an impression has been created that there is such a thing as circular pathology, although Dr Hurry warns his readers against any such one-sided view. One of the instances cited is stone in the bladder; the stone gives rise to cystitis, the cystitis causes further increase in the size of the stone; this intensifies the existing cystitis and so on. The inference to be drawn is that a vicious circle has been established which needs breaking, and that this is best effected by removal of the stone. This seems an unnecessarily roundabout way of arriving at the fact that the patient wants to get rid of his stone. There are cases however in which the notion of a vicious circle is useful and Dr Pezzotti admits this; he contends on the other hand that generally speaking, it is unscientific and undesirable to regard disease from the point of view of vicious circles.

Dr Pezzotti maintains that the circles are in fact not vicious, but depend on normal physiological arrangements; that the vicious element is merely a defect in one of the organs concerned in the circle or altogether outside it and that in concentrating attention on the circle important factors are apt to be overlooked. Thus to take another example of Hurry's, that of nephritis, a toxæmia damages the renal epithelium; this causes an increase in the toxæmia which in its turn further damages the renal epithelium and so on. The danger here is to lose sight of the fact that the circle depends on an outside factor, namely the cause of the initial toxæmia; the whole disease depends on this factor and the vicious circle can be interrupted only by its removal. To leave it out of account would Dr Pezzotti considers be analogous to regarding the swing of a pendulum to the right as the cause of its swing to the left and vice versa without reference to the spring or weights. It must be admitted however that where the primary cause of a disease is inaccessible it may still be possible to make some beneficial modification short of complete interruption in a vicious circle; palliative treatment is often of this nature and the notion of the vicious circle serves a useful purpose in such cases.

### TREATMENT OF CANCER BY INJECTIONS OF METALLIC SALTS

Just May Dr J. LERICHE of Joigny read a paper to the French Society of Therapeutics on "the medical treatment of carcinoma," this has now been published in a pamphlet,\* together with another article by him on the association of the endocrine glands with cancer, in which he suggests that the "specific factor" postulated by Gre and Barnard has its origin in endocrine disturbance. Leriche holds that the neoplasm and its metastases can be attacked by the injection of colloid metal salts but that it is also necessary to correct certain mineral and other deficiencies in the body. For the first purpose he employs a mixture of the colloid preparations of copper, selenium, palladium, magnesium and arsenic sulphide with mesothorium bromide and strontium. He states that intramuscular injections of this medley are not painful and are always well tolerated. He administers concurrently intravenous injections of a combination of the citrates of sodium, magnesium, and manganese, magnesium chloride and ferric potassium tartrate. If benefit does not follow speedily he gives intravenous or intramuscular injections of a protein suspension of lead. With a view to dealing with the alleged mineral deficiency in the tissues, Leriche also administers three preparations: the first containing crystallized haemoglobin, manganese sulphate and ferrous oxalate; the second colloidal sulphur and the third a mixture of magnesium carbonate, yeast, lactose and calcium carbonate. If these are not well tolerated an aqueous solution or the double peptonate of iron and manganese is substituted. Organic deficiencies are treated by the administration of glandular extracts, the mixture containing the fresh pituitary and thyroid glands of sheep or suprarenal and according to the sex, either ram's testis or heifer's ovary; this polyglandular medication is varied according to the seat of the cancer. In mammary carcinoma for instance it should include extracts of thyroid, pancreas and mammary gland while in elderly patients genital gland extracts should constitute the greater part of the medication. Chemical details of six patients so treated are given with illustrative radiograms. His cases were a large pleuric neoplasm, an inoperable tumour of the chilo-pelvic colon, an inoperable gastric neoplasm, and another of the descending colon, an inoperable carcinoma of the right thigh and a similarly situated osteosarcoma. These patients had received other treatment previously (surgical, x-ray or radium) without definite benefit. In each case apparent cure without recurrence is stated to have followed the injection treatment. It is to be noted that the diagnosis was based only on the clinical symptoms and radiograms, no confirmatory histological examination being made. In this awe-inspiring galaxy of medicaments there is a reminiscence of the elaborate prescriptions of a bygone age. It is easy to understand that a certain amount of scepticism has resulted but it is apparent that the age of brighter therapeutics is still with us.

### IDIOSYNCRASY AND CONSTITUTION

SIR HUMPHRY ROLLESTON has written a book on *Idiosyncrasies*† which small as it is seems to touch upon every aspect of that perplexing subject. It is a contribution to a series of little books called "Psyche Miniatures" because published in connexion with *Psyche*, a quarterly journal on psychology. The series is edited by Mr C. K. Ogden who seems to possess a broad-minded mental perspective and chooses his writers wisely. In the course of his essay Sir Humphry Rolleston has to deal with the subjects of diathesis and the constitutional factor in disease recently discussed with so much acumen in our columns by Sir Archibald Garrod and Dr A. F. Hurry. It is difficult to define idiosyncrasy. Sir Humphry Rolleston speaks of it as an abnormal reaction in an otherwise normal

\* *Grandes Endocrines et les Cancres*. Dr J. Leriche. Paris, 1917.  
 † *Idiosyncrasies*. Sir Humphry Rolleston. London, 1917.  
 ‡ *Idiosyncrasies*. Sir Humphry Rolleston. London, 1917.  
 § *Idiosyncrasies*. Sir Humphry Rolleston. London, 1917.  
 ¶ *Idiosyncrasies*. Sir Humphry Rolleston. London, 1917.

# NOTES ON BOOKS

person, which may be either on the one hand greatly exaggerated, or on the other hand greatly diminished, more briefly it may be described as an unusual physiological personification of "Idiosyncrasy" may be held to embrace both diathesis and constitution, but the author of this informing book would limit diathesis to a condition favouring the onset of disease, whereas idiosyncrasy is an abnormal reaction not necessarily disposing to disease. Within the definition of "constitution" he would bring the inborn errors of metabolism, so named by Sir Archibald Garrod, we are inclined to think that he is right, and even disposed to suggest that he has not quite attached sufficient importance to these inborn conditions.

One section of the book deals with asthma, it contains a comprehensive survey beginning with Sir John Floyer (1649-1734), and coming down to the latest views of Hirst and Storm van Leeuwen. The same subject is dealt with in Hirst's own contribution to the series entitled *The Constitutional Factor in Disease*, which is a revision of the address published in our columns in May, 1927. He, it may be remembered, lays stress on the influence of heredity, and it is perhaps on this account that he defines asthma as "a condition in which that part of the vagal nucleus which controls the motor and secretory activity of the bronchi is abnormally sensitive to chemical, reflex, and psychical stimuli."

## NOTES ON BOOKS

*Mental Handicaps in Art*, by Dr. T. B. Hyslop, the author also of *Mental Handicaps in Art*, which is reviewed in our issue of June 4th, 1927 (p. 1025), is introduced by a foreword from Professor Arthur Thomson of Oxford, who, with the authority of a professor also at the Royal Academy of Arts, sternly rebukes the modern fashions of perverted art, and about a tendency to degeneracy in present day art, remarking that one of the great mental handicaps in some schools of art is a failure to perceive the illogical nature of then tenets, and that since the evolution of taste in art has proceeded agreeably, impressionists, post impressionists, and decadents having contributed respectively either to its growth or decay. The five chapters of this attractive little volume deal with the aims and objects of art, industry and art, the artistic faculty, disease, and the influences of toxins on mind and body. Dr. Hyslop, who by his artistic abilities is specially fitted to write on these subjects, points out that while normal functional powers are essential for a healthy artistic faculty, abnormality may lead to something out of the beaten track or a work of degeneracy—in fact, the artistic merit of a painter may be great. But he concludes by insisting on the importance of mental and physical health, so that *mens sana in corpore sano* should be the motto of every artist.

*Common Procedures in the Practice of Pediatrics* by Dr. May Brown and Dr. F. F. Isidore, includes a curious assortment of subjects and its contents are indicated by the subtitle—a detailed description of diagnostic, therapeutic, and dutet methods employed at the Hospital for Sick Children, Toronto. There is a short account of physical examination and two chapters on the diet and general control of infants and young children, which, although not complete, deal with the more important matters both in then general principles and in then practical details, the remaining chapters are devoted to the exposition of a long series of diagnostic and therapeutic procedures both chemical and laboratory. A useful section on the diagnosis of certain conditions that frequently give difficulty is interspolated. The authors themselves make it clear that the book is not a complete account of the comprehensive subject of pediatrics. But it is a very useful book for it is written from experience, and it deals with a miscellaneous group of subjects which are either omitted or dealt with inadequately in the ordinary textbooks.

*Mental Handicaps in Art*. By Theo F. Hyslop. M.D. C.M. etc. With a foreword by Arthur Thomson. M.B. F.R.C.S. L.D. D.C.L. Mental Handicap Series. London: Baillière Tindall and Co. 1927. (Fcap 8vo, pp. xviii + 98. 3s. 6d. net.)

*Common Procedures in the Practice of Pediatrics*. By May Brown and Frederick F. Isidore. M.D. F.R.C.S. L.R.C.P. London: Baillière Tindall and Co. 1927. (Med 8vo, pp. x + 250. 4 dollars.)

The third quarterly number of this year's *Annals of Medical History* begins with an oration delivered at the College of Physicians of Philadelphia by Dr. Astley Paston Cooper, an Ashmun on "The centenary of Lister's tale of sepsis and antiseptics," which is accompanied by the pleasing portrait of Lister is President of the Royal Society and for many years its emperor, shown by Dr. W. S. Middleton and for many years its much in advance of his time, for he made many attempts to fly, was an early microscopist, and made experiments on telephony. Dr. A. H. Brinkley tells us that Dr. Joseph Buchanan (1785-1829) was an inventor as well as a medical man, he designed an economical steam engine with spiral capillary tubes, and he also attempted to construct a ship. On the cover of this number is the portrait of Alexander Monro secundus, who, with his father and son, is discussed by Dr. S. William Simon, then tenures as professors of anatomy at Edinburgh covered the period 1719 to 1859. The second Monro, the ablest of the three, among other notable achievements invented the original stomach pump. His son was robust, and it is stated that his editing of his father's essay and heads of lectures detracted considerably from their value. Dr. O. L. Denney of the U.S. Marine Hospital No. 66 (National Leprosarium) contributes an "Inaugurate medical debate on Elephantiasis on Leprosarium," translated by Chiplum Binchut Shetter from the original Latin and Greek of Benjamin Niesius, who defended this thesis in July 1673 at Strasbourg. It closes with a eulogy to William Niesius also a physician, coming. In the twenty-first instalment of pre-epithological studies Dr. Roy L. Moodie, in a generous illustration which occupies thirty pages, describes the head injuries among the operations.

A second edition has appeared of Dr. D. C. Munro's book on *Pulmonary Tuberculosis, its Etiology and Treatment*, which was reviewed the first on October 28th 1922 (p. 805). In the new volume the original scheme and the philosophic outlook are retained. Although in many respects the orthodox outlook as regards etiology is rejected, yet the author's experience in treatment and his skill in setting out his case render it a provocative book well worthy of study. It is only to be regretted that too many of the recommendations for after care involve a return to a less useful form of life than is at present possible for the majority of tuberculous patients who are forced by financial considerations to live in crowded communities.

Smith's Medical Visiting Lists for 1928 (Nos. 3 and 4) are handy little volumes, with ruled pages for visits, for obstetric and vaccination engagements, addresses of patients and nurses, and cash memoranda. The visiting list (No. 3) has space for seventy-five patients each week, with a weekly journal attached. It costs 7s. 6d., and can be obtained from Messrs. Hazzell, Watson and Viney, printers and binders, 160, Shaftesbury Avenue, W.C.2.

*Annals of Medical History*. Vol. 15, No. 3. Edited by Francis R. Packard. M.D. New York: Paul B. Hoeber, Inc. London: Baillière Tindall and Co. 1927. (8 1/2 x 12 1/2 pp. 265-314. Illustrated. Subscriptions in Great Britain £2 2s. for volume of four numbers.)

*Pulmonary Tuberculosis, its Etiology and Treatment*. By David C. Munro. M.D. W.R.C.S. L.R.C.P. Second edition enlarged. London: Baillière Tindall and Co. 1927. (Demy 8vo pp. cxxi + 81. 8s. net.)

*Smith's Physicians and Surgeons Visiting List, Diary, Memoranda and Book of Engagement for 1928*. Eighth second year. London: Hazzell, Watson and Viney Ltd. (No. 3 cloth 7s. 6d. leather 10s. 6d. No. 4, cloth 10s. leather 12s.)

## PREPARATIONS AND APPLIANCES

**METALIX X-RAY TUBE**

One of the notable pieces of apparatus shown at the recent exhibition in connection with the inaugural meetings of the Royal Society and the British Institute of Radiology was the Metalix X-ray tube introduced by Philips' Lamps Limited of Charing Cross Road, London. There have been many changes in X-ray tube construction since the first models—wooden looking affairs now as seen in the collection at South Kensington—first years ago but each tube has obviously evolved from its predecessor, whereas the Metalix tube is such a radical departure that it is partly because of its extremely small size and non-bulbous shape, and also because the rays are generated within a metal cylinder working conditions but two types warrant special attention. The Philips 'Metalix' tube is constructed with a metal cylinder of other a special tube for deep therapy. In the radiography tube it is claimed by the makers that the high load which in the past is made to stand is not at the expense of fine focus and that which are well known. It is claimed for all these tubes that they embody their own protection.

## RADIUM THERAPY

## REPORTS FROM RESEARCH CENTRES

THE Medical Research Council, which is entrusted by the Government with a stock of radium salt for distribution, has issued a summary of the reports on the medical uses of this element received from centres for the year 1926. Radium was supplied to nine clinical centres—namely, the Middlesex Hospital, University College Hospital, St Bartholomew's Hospital, King's College Hospital, the London Hospital, St Peter's Hospital, Birmingham General Hospital, Cardiff Royal Infirmary, and Aberdeen Royal Infirmary. In addition to this the London Association of the Medical Women's Federation receives radium for use in a group of hospitals, and radium salt is also allocated to the Irish Radium Committee in Dublin for distribution in Ireland. In an introductory note to this report of the Council it is stated that during the last five years it has become clear that these centres have followed three main lines of radium treatment—namely, a combination of surgical measures with radium, the introduction of this element into the tissues, and its superficial application. Reports for the year under review have been published elsewhere in *extension* from University College Hospital, the London Association of the Medical Women's Federation, and the Irish Radium Committee.

## Clinical Investigations

The investigations considered in the report are classified as in previous years, under six headings—namely cancer of the breast, cancer of the cervix, carcinoma of the mouth, nasopharynx, larynx and oesophagus, carcinoma of the rectum and bladder, sarcoma and lymphosarcoma, and experimental investigations.

Cancer of the breast was treated by surgical radium therapy at the Middlesex and St Bartholomew's Hospitals, the radiological methods being appreciably different in the two cases, though the aim from the surgical point of view was the same. The employment of comparatively large quantities of radium acting for about twenty-four hours was the method adopted at the Middlesex Hospital while at St Bartholomew's Hospital a number of distributed foci containing small quantities of radium were allowed to act for about a week. By continuing such comparisons for a few years it is hoped that a decision will be reached as to which technique is the more advantageous. The Middlesex Hospital report describes the radium treatment of thirteen cases of recurrent carcinoma of the breast, eleven being radical operations and two being local, or incomplete operations. In three cases recurrences disappeared finally, in seven they disappeared but returned locally or elsewhere, and in three there was little or no improvement. The results of treatment of seven patients with recurrent carcinoma of the breast are also given in four recurrences disappeared and did not return, in one case the growth was excised before treatment and there was no recurrence, in two cases there was little or no improvement. Five primary growths were treated similarly, in four cases they disappeared without recurrence and in one case there was great improvement. Surface radium therapy was tried at the Middlesex Hospital in seven cases of primary carcinoma of the breast with considerable benefit in most cases. It was also used in twenty cases of inoperable supraclavicular recurrences, and in thirty-three cases of nodular recurrences. Ten cases of recurrent carcinoma with cutaneous nodules were treated with radium in conjunction with x-rays at King's College Hospital; the nodules generally diminished in size and in some cases disappeared, but seven out of ten cases showed evidence of mediastinal involvement. Cardiff Royal Infirmary reported five cases of recurrent carcinoma treated with comparatively large quantities of radium for one to three days. Three patients were relieved, one was unrelieved, and one died.

Cancer of the cervix is discussed from the point of view of statistics and of current technique. University College Hospital reported that in fifty-eight inoperable cases traced from October, 1921, to October, 1926, six patients were alive, three of whom had recurrences, and fifty-two had died, the average duration of life being fifteen months. Of thirteen operable cases, seven were alive and six have had no recurrences. Of twenty-two cases treated with radium and subsequently by Wertheim's operation five were alive without recurrences, and three who also survive, have developed recurrences at the end of fifty-four, fifty-three, and eighteen months respectively. St Bartholomew's Hospital reports on 196 patients treated with radium since May, 1921. In 146 cases the occurrence of haemorrhage before and after treatment was noted and it was found that it ceased entirely in 124, with the exception of a return shortly before death in some cases. Hyper-trophic growth disappeared in sixty out of sixty-nine cases noted. Of ninety-two cases of malignant ulceration this disappeared, temporarily or permanently, in sixty-two. Similar statistics are also reported from Birmingham General Hospital, Cardiff Royal Infirmary, and the Medical Women's Federation. Three main lines of technique were employed—namely, (1) the introduction of one or more radium tubes into the cervical canal supplemented by applicators packed round the cervix in the vaginal fornices, (2) the introduction of one or more radium tubes into the cervical canal tubes being inserted into the cervical tissues, and (3) the introduction of a large number of tubes of low radium content into the cervical tissues. The comment is made that the introduction of single tubes of radium into the cervical canal has been proved to be inadequate unless it is supplemented in one of the ways mentioned.

Cancer of the mouth, nasopharynx, larynx and oesophagus is dealt with in reports from St Bartholomew's Hospital, the Middlesex Hospital, King's College Hospital, Birmingham General Hospital, Cardiff Royal Infirmary, and Aberdeen Royal Infirmary. There was a considerable increase during the year in the number of patients of malignant disease involving these sites who were treated with radium. It is added that the combination of surgery with radium has not yet been fully exploited in these situations. The comment is made in the report from St Bartholomew's Hospital that primary growths of the mouth often yield to radium treatment, whereas the glands affected do not respond. It is thought that the resistance to radiation varies with the region where the growth arises and depends on some intrinsic quality of the tissues. The technique adopted in the case of carcinoma of the nasopharynx and larynx at St Bartholomew's Hospital is described in detail; it includes the making of a large window in the thyroid cartilage so as to allow the needles to be placed as close to the growth as possible.

Sarcoma of the rectum and bladder is the subject of reports from St Bartholomew's Hospital, Birmingham, King's College Hospital, Aberdeen, Cardiff, and St Peter's Hospital. At Birmingham twenty advanced and inoperable cases of carcinoma of the rectum were treated, seventeen being columnar-cell carcinoma. Improvement was obtained in four cases while eight were unbenefited and three patients died. The five remaining cases were too recent for any conclusions to be drawn. Colostomy is advised before treatment by radium is commenced, though removal of the cervix is not advocated. St Peter's Hospital reported upon the treatment of five cases of carcinoma of the bladder. In three cases no benefit resulted apart from the arrest of the haematuria, but in two cases there was also considerable improvement in the general condition.

Sarcoma and lymphosarcoma are considered especially interesting in relation to radium treatment because of the aim of the Radiology Committee of the Medical Research Council to establish some connection between the results of radium therapy and the histological character of the growths. Evidence has been obtained that many of the sarcomata are highly sensitive to radium, growths of considerable size diminishing when adequate doses are given. Among the lymphosarcoma, however, there appears to be great probability of the recurrence of the



growth. An impression has been received that round-celled sarcomata do not do so well as the spindle-celled varieties, but later information throws some doubt on this.

### Experimental Work

Experimental work was continued at the Radium Institute by Dr Mottin, who reported in investigation into the effect of beta radiations on Rous chicken tumour. He has also studied the action of these radiations on *Colpidium colpoda*. In the Middlesex Hospital report there is an account of experiments by Professor Russ and Miss Scott on the changes produced in the liver and tumour tissue of the rat by radon "seeds."

headache powders unnecessary. It could not replace endocrine extracts, but their administration could safely be combined with light.

Dr F Howard Humphris discussed the parts played by the chemist and physicist in actinotherapy, and prophesied that more would be discovered about the specific therapeutic effects of different wave-lengths of light and that the present clumsy method of using the whole light from any source would be abandoned. The wave-length of the light required for any particular treatment would be isolated by means of filters, which could, at the same time, serve as a protection to the patient. At present he thought such filters as existed in the ultra-violet region of the spectrum would "cut out the sunstroke-causing rays of Hindustan and give only the healthful rays of Honolulu."

The irradiation of foodstuffs and the relation thereto of vitamin D was treated by Professor I M Heilbron, who gave a few examples of research work in this field. It had been discovered that cholesterol itself was not a provitamin, but contained a minute quantity of another substance readily detected by means of the spectroscopic, to which the antirachitic properties were attributable. The provitamin was probably identical with ergosterol, a substance present in large amount in yeast and in a small amount in human and animal skin. Professor Heilbron emphasized the importance of team research in this new science of retinology, which promised to be so fertile in the treatment of disease. Professor Leonard Hill also gave an address on scientific research in relation to the practical energy of actinotherapy, dealing particularly with the relative sources of ultra-violet in sunlight and in artificial light.

## CONFERENCE ON "LIGHT AND HEAT IN MEDICINE"

WHAT was described as the first international conference on light and heat in medicine, surgery, and hygiene was held at the Central Hall, Westminster, from December 13th to 17th. It was organized by the *British Journal of Actinotherapy*, and the international character was given by the presence of four or five medical visitors from Paris and Berlin, who read papers. In the absence of Sir Alfred Mond the conference was opened by Dr F E Fremantle, M P, who sketched the enlarging field of actinotherapy, and especially the lead given to other countries by British medical men and scientists. He also referred, as did the chairman, Dr R King Brown, to the danger in untrained hands of the increasingly powerful arc and mercury vapour lamps. The sessions were well attended, some of them crowded, though it was stated that invitations had been issued only to medical practitioners and to others interested in the subject professionally, such as nurses engaged in the administration of light treatment under medical supervision.

At the first session a paper was read by Dr L G Dufestel on contraindications for ultra-violet therapy. He mentioned the great caution necessary if it was employed in pulmonary tuberculosis, and said that old persons with very brittle or rigid arteries ought not to be irradiated, nor patients with acute or chronic nephritis, nor cases of uncompensated myocarditis. A similar ban was placed upon light treatment in albuminuria. Certain skin diseases, such as acute eczema or lesions with bullae, might be found to be aggravated by ultra-violet light treatment. In addition, there were cases in which contraindications only made their appearance after preliminary treatment—for example, cases of tuberculosis in which the result of light treatment was the rapid appearance of intense pigmentation with a fall in blood pressure. In nervous patients, too, the treatment was found occasionally to aggravate the nervous condition.

Some recent advances in actinotherapy were described by Dr Albert Eidmow. A study of the effect of ultra-violet irradiation on the bactericidal power of the blood had convinced him that the maximum increase in this respect was obtained with a minimal erythemic dose of light and the irradiation of a surface area of skin corresponding to one-sixth of the surface area of the body. He had adopted a special line of treatment with lamps emitting shorter rays than 2,970 Angstrom units, exposing to a minimal erythemic dose two or three times a week successive areas of the body equal to about one-sixth of the surface, and allowing an interval of ten or fourteen days before repeating the irradiation on the same area.

The use of light in combination with other remedies was the subject of a paper by Dr F Heinaman-Johnson. He said that most therapeutic agents acted by stimulating the natural defensive powers of the body, and the benefit from the carbon arc was very similar to that from natural sunlight. Firing the carbon arc, a kind of "synthetic" light, might be produced by high candle-power incandescent lamps and non-erythem-producing rays from mercury vapour. He claimed that light treatment could imitate, at least in some degree, the effects of a great many drugs. It could take the place of iron and arsenic in anaemia and debility, of strychnine as a tonic, and, in a little time, it might even render the use of such things as

One session was occupied with the place of actinotherapy in public health work, Dr H Stanley Brink giving an account more particularly of the treatment of rickets by light at a welfare centre in Scotland. In some 120 cases treated with twenty or more light baths from both the carbon arc and the mercury vapour lamp, 95 per cent showed complete healing and the remainder partial healing. He held that artificial sunlight clinics at child welfare centres were well worth the trouble and expense involved, not only for the good in the individual case, but for their educative value to parents, who were led to appreciate what natural light and fresh air meant to their children. In school medical work actinotherapy was useful, and he had had experience also of its value in isolation hospitals, light was specially helpful in a general tonic after all acute fevers. The subject of rickets was also dealt with by Professor K Huldshinsky of Berlin, who spoke of the value of irradiation from the preventive point of view.

Among other contributions were papers by Dr Franz Nagelschmidt of Berlin on "bioluminescence," and Dr Jean Sudman of Paris on the therapeutic value of infra-red rays. Dr F W Edridge-Green gave a demonstration of colour vision, and several papers were read in a special section dealing with the eyes, including one by Dr J Spino on general, as distinct from local, ultra-violet irradiation in certain common eye conditions, such as keratitis and corneal ulcer. Although "heat" as well as "light" was included in the title of the conference, there were few papers on that subject, but Dr E P Cumberbatch gave an interesting account of recent advances in diathermy, drawing upon his experiences during a visit to America.

Concurrently with the conference an exhibition was held to which all the principal firms engaged in the manufacture of light apparatus and accessories appeared to contribute. The tendency of the new models of lamps shown was certainly towards portability. There were, in addition to lamps for treatment, many others for general or special illumination. An interesting exhibit was a lamp to exhibit by the Bermondsey Borough Council, which, as is reported in our issue of September 24th (p 565), has installed a solarium, equipped with a dozen carbon arc and mercury vapour lamps. The outcome, as Dr King Brown (medical officer of health for Bermondsey) told the conference, of a visit he had paid to the sunlight clinic of Dr Rollier at Leysin.

## British Medical Journal.

SATURDAY, DECEMBER 24TH, 1927

### CRIMINAL LAW AND INSANITY

ON November 16th the Lord Chief Justice began his David Lloyd Roberts Lecture on criminal law and insanity<sup>1</sup> by regretting that there should be any difference between the legal and medical professions in their views upon the actual and the proper attitude of the criminal law towards insanity. After a lucid exposition of the existing legal theory and practice Lord Hewart passed—strangely enough in view of such an opening—to a severely adverse criticism of the recommendations of the Atkin Committee a body which consisted of nine distinguished lawyers appointed by Lord Birkenhead when Lord Chancellor in 1922, in deference to the widespread uneasiness caused by the case of Donald Tru. That exclusively legal body far from emphasizing the cleavage between legal and medical opinion on this point actually endorsed the main recommendation on the subject submitted by a special committee of the British Medical Association—namely, modification of the Rules in *M'Naghten's* case by the recognition that a person charged criminally with an offence is irresponsible for his act when the act is committed under an impulse which the prisoner is by mental disease in substance deprived of any power to resist.

Publication of reports of the David Lloyd Roberts Lecture provoked some comment in the lay press notably a spirited apology for the Atkin Committee from Sir Herbert Stephen himself not the least distinguished signatory of its report which he characterizes as not dead as Dr John Cresswell in an earlier letter to the *Times* on the subject seemed to infer, but nearly five years old. We may take comfort in the reflection that as Sir Herbert Stephen observes legal reform in this country sometimes takes a long time arriving but arrives eventually nevertheless. Meanwhile we turn from the contemplation of so distant an event to a point upon which the Atkin Committee and Lord Hewart appear to be substantially agreed. In our opinion (say the Committee (referring to the report of a committee of the Medico Psychological Association in 1896) in 1923, as in 1896 to the insane person justice is done. This may well be, for the law has fenced the insane round with many safeguards other than the limitation of criminal responsibility set out by the Lords in the *M'Naghten* case. Juries are apt to make short work of legal definitions which run counter to their sense of natural justice—as Sir Herbert Stephen points out in the letter already quoted—and even we may add of obvious facts. If such excess of zeal may tend at times to the disadvantage of the accused there is always the Court of Appeal to correct so untoward a result whilst in cases not involving a capital charge the judge can apportion the punishment to the degree of criminality making allowance for the weakened or disordered intellect. Finally there remains the protection

conferred by Section 2 of the Criminal Lunatics Act of 1884 which provides for medical examination and certification of prisoners, and vests in the Home Secretary a discretionary power to act upon any certificate of insanity secured in such circumstances. Under this Act the Home Secretary has to consider primarily not the legal question of responsibility but the medical question 'What is the prisoner's present state of mind?'—a question the answer to which may well involve a review of the original finding as to responsibility.

But if to the insane justice is indeed done it is at times by ways which to the medical mind at least, would appear somewhat devious. This reflection is prompted by examination of page 5 of the *Times* of December 13th which contains reports of no fewer than five cases in which the question of the prisoner's sanity or insanity was a material issue. The opening of a sixth case of this class is recorded on another page of the *Times* of the same date. Three of the five cases were appeals from convictions of murder, of which two were dismissed by the Court of Criminal Appeal and one allowed.

The first two appeals call for little comment here. In the case of John Thomas Dunn the defence put forward at the trial had been that the dead woman committed suicide the issue of insanity had only been raised incidentally and counsel for the defence had not asked the jury for a special verdict. In these circumstances as the Lord Chief Justice said in dismissing the appeal a plea of misdirection on the ground that the judge had ruled that there was no evidence on which a special verdict could be founded was a plea wholly inconsistent with the defence and a *reductio ad absurdum* of appeals in murder cases. In the case of Rex v. Kirby—a second case of a murder in which the appeal was dismissed—the original defence had been one of insanity. The grounds of the appeal were certain alleged misdirections in the summing up. The Lord Chief Justice in delivering judgement said that in 1915 Kirby was discharged from the army as insane. Early in 1925 he underwent a serious operation which it was said, would be likely to increase his liability to a return of mental trouble especially in view of the fact that he had financial worries. The jury had before them the opinion of a doctor that Kirby was insane for just that space of time in which he committed the crime and they came to the conclusion that the defence of insanity had not been made out. There was no ground for complaint of the summing up and the application was refused.

In the third case the court allowed the appeal, substituting a verdict of Guilty but insane for the verdict of Guilty returned by the jury at Durham Assizes against Edward Lloyd a man who shot a police constable at Hilton Durham last June. The original defence had been one of insanity. At the hearing of the appeal Mr Paley Scott for the Crown said that Lloyd had shown no sign of legal insanity before the crime or after it and no medical witnesses were called at the trial to prove that he was insane. Commenting upon this failure to call medical witnesses Mr Justice Avery expressed the opinion that the evidence of ordinary witnesses is of a better than that of experts on these matters. At the original trial considerable sympathy was excited and the judge, after directing the jury as to the alternative verdicts open to them added that it would be right to return a verdict of guilty of murder with recommendation to mercy, in which case he, as presiding judge,

would be asked whether he agreed with that recommendation, which would not be lightly disregarded. Thus instructed, the jury returned a verdict of guilty of murder coupled with a strong recommendation to mercy, in the evident belief that such a verdict would prove the most merciful to the prisoner. The Court of Criminal Appeal, satisfied that Lloyd was actually insane when he committed the act charged against him, and that in all probability the jury would have found a verdict of guilty but insane had it not been for the direction of the judge, rectified the error. The Lord Chief Justice, in giving the judgement of the court, said that "Lloyd had been described as having been a 'very decent sort of chap' before the war. His military medical records showed that in 1916 he was removed from duty in the field in France suffering from exposure, exhaustion, and shock, and that after that date grave records were made of his mental condition. In September, 1925, he was described as having a childish mentality, and as being 'asocial,' unstable, and emotional. In 1926 he was said to be a 'congenital mental defective.' His wife said at the trial that he had always been a good husband, but that last Christmas he had attacked her with a rolling pin without any reason. On certain occasions he had seized his father-in-law by the throat, and, on being told afterwards what he had done, he had wept. Sometimes it had taken six or seven men to prevent his injuring himself and others."

We should have thought that there was here abundant material for the medical evidence which Mr. Justice Avois considers inferior to that of the ordinary witness. Possibly his attitude is determined by the fear expressed by Lord Hewart of a time when the decision of the question whether a great number of ordinary criminals should be held responsible to the law may be transferred to a section of the medical profession. We are not impressed by this fear. The legal definition of criminal responsibility and the scientific description of mental disease are and will remain different questions, but if full justice is to be done it will be well for the law to take cognizance of progress in medical as in other sciences. In this the Right Hon. H. P. Macmillan, K.C., chairman of the recent Royal Commission on Lunacy and Mental Disorder, would seem to agree with us, to judge by a statement he made when discussing the general functions of the expert witness, at the joint meeting of the Section of Neurology of the Royal Society of Medicine and the Medico Legal Society on December 8th. The law, he said, had learnt from medicine to discriminate with more justice, but it would never overtake medicine in the precision with which certain questions could be determined.

In the fourth case James Gillon, a gardener, was convicted at Sussex Assizes of the murder of his sister Anne Gillon, a maid employed in the same household. Evidence was given to the effect that after a disagreement with her brother the woman refused to get his supper one evening or his breakfast the next morning whereupon he attacked her with a razor, inflicting wounds from which she subsequently died in Hoxham Hospital. Dr. F. R. P. Taylor, medical superintendent at Hoxham Mental Hospital, called for the defence, said (we quote again from the *Times*) that "he had examined Gillon last Friday, and from the history prisoner gave came to the conclusion that he was a high grade mental defective, having developed premature degeneration of the nerve cells of the brain. He developed the idea that he was inferior to other

people, known medically as the 'inferiority complex.' He showed definite symptoms of delusion and persecution, which were progressive and were one of the forms of mental disease in which a patient was likely to develop homicidal tendencies. Probably the accused man knew legally he was doing wrong, but morally thought he was doing right." In reply to questions Dr. Taylor said that he thought Gillon knew he was taking the woman's life, but that he was undoubtedly insane. He did not show the slightest emotion when the dying depositions of his sister were read over to him. The jury returned a verdict of guilty, and sentence of death was passed.

In the last of the cases reported on December 13th Susan Eliza Turner, a chairwoman of 60, charged on indictment and on a coroner's inquisition with the slaughter of her daughter, a woman of 40, was found guilty by a jury and sentenced to ten years' penal servitude. The prisoner and her daughter had lived in a room in Walworth for many years past, both mother and daughter doing charring work until about ten months ago, when the latter disappeared and was not seen again. Apparently she was concealed during the whole period in the room shared with her mother until November 6th, when a fellow lodger and the landlady were called in by the mother, and the daughter was found in bed unconscious. A doctor was summoned, and the patient was removed to the infirmary, where she died on November 10th. The medical evidence was that the dead woman's body was very well nourished, that death was due to blood poisoning consequent upon an ulcer on the hip joint and general neglect, and that if she had had medical attendance her life would have been saved. In this case the jury had first to find whether the prisoner was insane so that she could not be tried. Dr. Morton, governor and medical officer of Holloway Prison, gave evidence that the prisoner had the mentality of a child of 6½ years. She was unable to answer quite simple questions, she had to count her fingers before she could say how many she had on her hand, she could not read or write, she did not know the date of the year, she knew that there were twelve pennies in a shilling, but she did not know a half crown, or how many shillings went to the pound. He thought she was unable to take any intelligent interest in her trial. Dr. Morton, when asked about the prisoner's statement that she locked the door "because she said that if I did not she would go out and make away with herself, she was very lazy and would not do anything for herself, she was old enough, I think, to shift for herself," said that this was practically the same reply that the prisoner always made—that the dead woman was old enough to look after herself.

On this evidence the jury found that the prisoner was not insane and was able to take her trial. On the prisoner being found guilty the judge (Mr. Justice Talbot) passed sentence of ten years' penal servitude, saying that it was necessary in her own interest to sentence the prisoner to a long term of imprisonment. In prison her health, mental and bodily, would be well looked after, and any special treatment she needed would be given her. His Lordship also expressed the opinion that, whilst the action of the jury had made it impossible to send the woman to a criminal lunatic asylum, that was where she would probably be sent ultimately, she would be carefully watched in prison.

So, in spite of difficulties, justice is being done to the insane. But whether the law has reason to be proud of its manner of doing so is a point on which opinions may differ.

## VITAMINS AND DISEASES OF THE EYE

Ever since the discovery of "accessory food factors" by Sir F. Cowdell Hopkins in 1912 it has been universally recognized that the lack of these substances now known as vitamins, in the diet leads to such marked disturbances of the general metabolism as to produce a number of definite and peculiar diseases—namely, rickets, scurvy, beriberi, and pellagra collectively known as the deficiency diseases. It has, however, not been so widely recognized that there are local as well as general disorders which can be included under the heading of deficiency diseases, and these may be well exemplified in the case of the eye certain diseases marked by eye symptoms having long been attributed by ophthalmologists to an ill balanced or deficient diet. These ocular disorders have recently been well described by Adair of Philadelphia. The three diseases of the eye described as being definite deficiency diseases are xerophthalmia (keratomalacia), certain forms of cataract and night blindness. Changes in the eye due to deficient or ill balanced diets similar to those now recognized as xerophthalmia were described under various other names long before the discovery of vitamins. As early as 1857 Dr Livingstone described an affection of the eyes in members of his party during his explorations in Africa, stating that "the eyes became affected (as in the case of animals fed in experiment on pure gluten and starch)." Again, in 1865 under the name of ophthalmia Brialmont, Cama Lobo described a disease of the eyes affecting poorly nourished slaves on Brazilian coffee plantations and in 1880 the Japanese observer Muro of Tokyo reported an epidemic of severe inflammation of the conjunctiva and cornea attributed to the absence of fat in the diet. Russian ophthalmologists have also ascribed the high incidence of certain inflammatory diseases of the eye in their country to the insufficient and poor food taken during the Lenten fasts. Again before the discovery of the fat soluble vitamin a somewhat similar disease was produced experimentally in the eyes of rats by Falta and Noeggerath in 1906 and this observation was confirmed by Knapp in 1909. This disease was thoroughly investigated by Mendel and Osborne in 1913, who proved that it was caused directly or indirectly by a diet deficient in the accessory substance which had by then come to be known as the fat soluble vitamin A. They also showed that by the addition of butter fat or cod liver oil containing the fat-soluble vitamin A the xerophthalmia experimentally produced in rats could be cured. The occurrence of xerophthalmia among rats has now come to be accepted as a criterion for the adequacy or the inadequacy of vitamin A in the diet. Rats which have been kept on a diet deficient in vitamin A for four to six weeks suffer from swelling of the lids and lacrimation. A discharge first becomes serous then purulent ensues. The cornea becomes cloudy, ulcerate and the eye is lost. Human xerophthalmia commences with the formation of white plaques on the conjunctiva constituting xerosis conjunctivae or Bitot's spots. Cloudiness and softening of the cornea follow with ulceration and loss of the eye although acute suppurative is seldom observed. It remains to be seen whether this human xerophthalmia is identical in origin with that of the rat but Bloch has described an outbreak of xerophthalmia in one division of an institution for children in Denmark. In all the divisions the diet of the children was identical except that in that affected it contained no butter, eggs cream or whole milk. When cod liver oil was added to the diet rapid recovery ensued. Again Widmark showed that practically all the butter made in Denmark was exported, and margarine came instead. In December, 1917, owing to the German submarine blockade the Government took over the control of all

the butter, which was then rationed so that everybody received 250 grams a week. From that date xerophthalmia practically disappeared. Whether other factors also enter into the etiology of xerophthalmia such as bacterial infection or the character of the inorganic moiety of the diet, as in the so-called "alt ophthalmia," has been much disputed, and McCollum and Simmonds express doubt "whether a deficiency disease ever occurs uncomplicated in man or animals." In addition to xerophthalmia, certain cataractous changes in the lens have been considered to be dependent on a vitamin deficiency, but the evidence is conflicting. Night blindness has also been described as a symptom often observed as accompanying or preceding xerophthalmia. Night blindness is, however, a symptom which occurs in many diseases under varying conditions. A consideration of its pathological physiology, however, indicates that in all cases we are dealing with some disturbance of what Sir John Parsons terms the scotopic mechanism—that is to say with some defect in the functions of the rods and visual purple. Night blindness is often associated with xerophthalmia, but may occur in its absence. It is of interest to note that the treatment of this condition dates back to Hippocrates who recommended the use of liver in abundance which is now known to be rich in the fat-soluble vitamin A. The subject has also been studied experimentally in the rat and a consideration of the results obtained would show that vitamin A starvation in rats produces a defect in the functions of the visual purple as shown by its slow regeneration after it has been bleached through exposure to intense light and that this abnormality occurs at an earlier date than do the pronounced symptoms of xerophthalmia.

## LONDON WATER

The Royal Society of Medicine held a social evening at 1 Wimpole Street on December 14th when the president, Sir James Berry, and Lady Berry received a large number of Fellows and guests. The feature of the evening was a lecture by Sir Alexander Houston, director of water examinations Metropolitan Water Board who spoke on the romance of London's water supply. In the library the method of chlorination of the water was demonstrated in a small plant and there were other exhibits, some of them dating back to a pre-scientific era such as a wooden water main which had been excavated from the neighbourhood of the society's house and had probably been laid in the reign of William and Mary. On more than one occasion, in reviewing Sir Alexander Houston's lively reports on a subject which in any case could not be called dry, we have commented on the fascinating story of the watch on the river. Sir Alexander Houston asked his audience whether the word "romance" was ever more fittingly applied than to the task of supplying a highly purified water to the great population of the metropolis. The magnitude of the task is itself romantic. The storage reservoirs of the Metropolitan Water Board number 49 covering 2,704 acres and holding 20,000 million gallons. The crude reservoirs number 91 covering an equal number of acres and holding 323 million gallons. There are 172 filter beds covering as many acres, engines of a total of 4,600 horsepower, and water mains extending for 6,725 miles. The result is to bring to the taps of London every day 250 million gallons, or 37 gallons for each inhabitant. Sir Alexander Houston pointed with pride to the virtual absence of typhoid fever from the county of London during the present century, though there had been epidemics in the provinces, notably at Lincoln in 1905. He did not claim that this result was entirely or mainly due to improved water supply, it was due to an improvement in sanitation generally, but he thought the waterworks engineer could claim some of the credit. Thames water, which accounted for 60 per cent

of the London supply, was purified by storage, chlorination, and sand filtration. There had been a wonderful improvement, he said, in the quality of the water consequent upon storage. Some telling slides were exhibited, contrasting, for example, Thames river water before storage and Chelsea storage water, on the *B. coli* test the latter showed an improvement of at least one hundred times. Unfortunately, storage encourages the development of algal and other growths in the reservoirs, such as *Asterionella*, *Fragilaria*, *Dinobryon*, *Oscillaria*, and *Tabellaria*. These, while quite harmless, give rise occasionally to taste troubles. One method of overcoming this is to treat the water with innocuous chemicals suspended in sacks over the sides of a boat, which forms the reservoir until the chemical is dissolved. The filtration process is also full of interest, it is very slow, less than two gallons of water per square foot per hour being filtered, the filter bed seen in section shows 36 inches of fine sand, below this 12 inches of coarse sand, then 9 inches of fine gravel, and 9 inches of coarse gravel. With regard to chlorination, this process, it will be remembered, was first adopted on an extensive scale during the war, mainly to save coal used for pumping, but the result also was to yield a better water bacteriologically than would have been the case had it undergone prolonged storage. Sir Alexander Houston did not forget to pay a tribute to Sir Hugh Myddelton, who, at the beginning of the seventeenth century, conferred a great boon upon London by bringing thither the New River from Amwell and Chiswell in Hertfordshire. He described Myddelton as truly one of the pioneers of preventive medicine. Sir William Hare-White, in proposing a vote of thanks, said that the audience must be extremely grateful for the lecture, and still more for the achievement which the lecture narrated, even though some, like himself, felt chastened because they had known so little and taken for granted so much.

#### THE PROTECTION OF MOTHERHOOD

In 1923 Dame Janet Campbell, senior medical officer for maternity and child welfare, Ministry of Health, produced two reports bearing on the subject of maternal mortality, one dealt with the education of the medical student in obstetrics, and the other with the training of the midwife. In the following year a further report by her, on the causes of an excessive maternal death rate and the means for its reduction,<sup>1</sup> was issued by the Ministry, and a notice of it appeared in the *BRITISH MEDICAL JOURNAL* of April 12th, 1924 (p. 682). That report aroused great interest in the medical profession, and some of its statements and implications were strongly criticized, more particularly by general practitioners. Seldom indeed has a public medical document led to so much controversy in our columns and elsewhere. One effect was a resolution by the Council of the British Medical Association, adopted on December 17th, 1924, declaring that it could not accept the opinions expressed in Dame Janet Campbell's report as to the causation of puerperal morbidity and the influences which had been drawn therefrom. Another effect was the appointment by the Council of a special committee to inquire into the matter generally. That committee has met many times since its first appointment in February, 1925, and an interim report by it appeared in the *SUPPLEMENT* to our issue of January 9th, 1926. We now have to record the issue this week by the Ministry of Health of another report from Dame Janet Campbell, supplementary to the last, and entitled *The Protection of Motherhood*. In it she reviews the existing position of the problem in England and Wales, supplies the latest available statistics, discusses anew the vexed question of puerperal infection

as illustrated by a number of recent outbreaks, and sets out what she regards as the necessary provisions for a complete maternity service. Her concluding paragraph speaks of the protection of maternity as being part of a comprehensive scheme of safeguarding and improving the public health, "but it is basic and fundamental because it is only upon a foundation of healthy, happy, and contented motherhood that we can hope to build up a Nation sound in mind and body. We shall be wise, therefore, to neglect nothing which will ease the burden of childbearing and relieve it, as far as may be, of its weariness and its dangers." A prefatory note is contributed by Sir George Newman, Chief Medical Officer of the Ministry of Health, and an appendix on the pathology of puerperal pyrexia by Dr. Arthur Eastwood, senior bacteriologist to the Ministry. The report will no doubt be studied with close attention by the medical profession at large, and not least by general practitioners. Meanwhile we reserve comment to a later issue.

#### FRENCH VITAL STATISTICS

ONE of the most valuable of the series of statistical handbooks issued by the Health Organization of the League of Nations deals with the official vital statistics of the French Republic. There are considerable differences between French and English practice, and a general outline of the French procedure will be interesting. In France the census, which is taken quinquennially, is designed, first, to enumerate the legal population of areas for the purposes of government and taxation, and secondly, to ascertain specified data regarding all persons. Since 1896 the institution has been to concentrate on civil condition and occupation in alternate censuses. In 1921, however, the census included both. The census agents, appointed by mayors of communes, are each responsible for a district containing from 100 to 200 persons. The census agent makes preliminary inquiries, issues, recovers, and checks the schedules, of which one is prepared for each person, and delivers them, together with a house bulletin and memorandum, to his census supervisor. The supervisor sends them, with a summary report, to the mayor of the commune. The mayor prepares a nominal roll of the inhabitants in duplicate, retains one copy for the communal archives, and forwards the other, with a summary statement and all the schedules, to the prefect of the department. The accumulated papers are finally sent by the prefect to the General Statistical Office of the Ministry of Labour, where they are centralized. The results are published as the census report. The prefects also prepare departmental summaries, which are consigned to the Minister of the Interior. The birth of a living child must be declared within three days by the father, or in his absence or default by the doctor or other person, on pain of fine or imprisonment. The declaration is made to the registrar, who draws up the *acte de naissance*. There are special provisions for the recognition of illegitimate children by their parents. Stillbirths must be similarly declared, but it is not now necessary to submit the body to the registrar. A death must be declared before the registrar by a relative of the deceased or other appropriate person. Declaration, by custom, is made within twenty-four hours, but no time limit is prescribed. The mayor of the commune or his deputy is the sole competent authority for drawing up the *acte de décès*. The body in all cases must be viewed by an authorized verifier, to verify the fact of death, but premature burial occurs. The *acte* contains no information as to the cause of death. As the medical practitioner in attendance is not required to give a certificate—though some do—the medical or other verifier who views the body endeavours to trace the cause of death by inquiry.

<sup>1</sup> Reports on Public Health and Medical Subjects. No. 25. *Maternal Mortality*. By Janet M. Campbell, M.D., M.S. London: H.M. Stationery Office, 1924. 1s net.

<sup>2</sup> Ibid. No. 28. *The Protection of Motherhood*. 1927. 9d net.



reliability of the data so recently varies, and the official record in some cases may merely reflect the views or relations of neighbors. The sole official list of causes of death is the "Abridged Interim Report," which contains thirty-eight numbers. The registrar in most communes draws up a special bulletin setting forth, among other facts, the cause of death. The mayors of communes transmit the bulletins drawn up by their registrars together with a covering summary, to the prefect of the department, and the prefect hands them on also with a covering summary, to the General Statistical Office. The general mortality returns are published in the *Statistique du Mouvement de la Population*. The infectious diseases compulsory notification in France are eighteen in number. They include not only the diseases named in the English Infectious Diseases Notification Act with the addition of plague, yellow fever and one other. For nine further diseases notification is optional. Responsibility to notify rests with medical practitioners, public health officers and midwives. Notification is required to be made, forthwith and in duplicate, one form to the prefect or subprefect of the department and the other to be mayor of the commune. Notification forms in the shape of letter cards with counterfoils made up in book are issued free. In order to ensure prompt action the disease is referred to by number only according to a list of numbered diseases printed inside the cover of the book of cards. The practitioner is under penalty if he fails to notify; he is under penalty also if he intrudes medical confidence in this dilemma it is understood that he sometimes withholds notification. A register of notifications is kept by the prefect who sends a monthly summary to the Department of Health of the Ministry of Labor. A general statement based on the summaries is published annually. In most departments and big towns a bacteriological laboratory service is provided for medical practitioners free of charge. In diseases compulsorily notifiable disinfection also is compulsory. In the case of poor persons it is carried out free of charge. Others pay on a sliding scale according to income and size of house. In diseases optionally notifiable disinfection may only be carried out with the consent of the families concerned. Vaccination and two revaccinations are compulsory in France. For pulmonary tuberculosis, which is one of the optionally notifiable diseases there are 500 dispensaries and 54 sanatoriums with 7,000 beds. For venereal disease, which is not notifiable, dispensaries have been organized and special facilities are provided for pregnant women nursing mothers, soldiers, sailors, sailors and prostitutes.

#### TRISTAN DA CUNHA

In connection with the little exhibit of Tristan da Cunha in the South African pavilion at the British Empire Exhibition a handbook was prepared by Mr. Denis M. Kane. He has now brought out a further edition describing the place in the Empire of this loneliest British possession, the condition of its inhabitants and the efforts that are being made, especially by the Tristan da Cunha Fund and the Society for the Propagation of the Gospel for their welfare. The 150 people who live on this extinct volcano in the South Atlantic do not appear to be completely isolated from the rest of the world as formerly. From time to time big liners crossing the Atlantic on world tours call at the island and have letters and stores, so that there is hope that the inhabitants may escape in future the severe privations to which in the past they have been exposed. The Tristan da Cunha Fund hopes to achieve these ends by establishing periodical communications with Cap Colony to form an affiliated settlement on the South African mainland and to cultivate the interests of an administrative authority with benevolent ultimate

jurisdiction vested in a visiting warship. Some years ago a proposal was made to transfer the population to the mainland but many refused to leave their homes, notwithstanding the hardships to which they are constantly exposed. Mr. Kane suggests that an affiliated settlement would relieve conditions on the island whenever the number of people exceeds its capacity to sustain them. Moreover, whether we agree or not with his view that Providence has designedly put such places as Tristan da Cunha in our hands for the purpose of protecting the British Empire, there may be something in his contention that such outposts may one day prove a civil as a second string to the Sure-Civil. The men of Tristan da Cunha have on several occasions been of assistance to shipwrecked mariners. For these reasons a periodical visit by a warship conveying stores to this outpost of empire, may well be justified.

#### CHINESE HOSPITAL, SHANGHAI

The time has come when there are given the chance of doing so is illustrated by the annual report for 1926 of the Chinese Hospital in Shanghai. This institution is controlled by British trustees and staffed by members of the London Missionary Society. The eighty-first annual meeting was held early in June and the chairman expressed the hope that within a year the projected rebuilding would have become a fact. Under the will of Mr. H. Foster, a British resident in Shanghai who died in May 1926 an adequate sum has been provided for the replacement of the present old and inconvenient buildings by a well equipped modern hospital. It is proposed to begin the work of reconstruction before the end of this year and efforts will be made to continue the activities of all the hospital departments during the rebuilding period. A convalescent home is to be established shortly in the outskirts of the settlement in order to give both the patients and members of the staff the advantages of change of air and scene. Dr. C. J. Davenport who died in September 1926 began work in the Shanghai Hospital in 1904 and was primarily responsible for the great advances subsequently made. Dr. H. Fowler who has been the acting medical superintendent since the death of Dr. Davenport comments on the increased work thrown upon the hospital by the armed robbery and assaults which in spite of all the efforts of the excellent Shanghai police have filled the surgical wards with seriously injured Chinese men, women and children. He adds that casualty work always a notable feature of this hospital has continued to increase with the growing congestion of traffic in the crowded tortuous and narrow streets of the settlement. In the section of the report devoted to the women's hospital it is announced that an annual physical examination has now been arranged for the Chinese women nurses; this has been found essential in view of the prevalence of tuberculosis in China where the girls are without the early physical training and outdoor habits of their British contemporaries. With the provision of the new convalescent home it is hoped that nurses showing consumptive tendencies will be able to overcome them.

#### THE EDITOR OF THE BRITISH MEDICAL JOURNAL

The Council of the British Medical Association at its last meeting on December 1st received the resignation of Sir Dawson Williams M.D. LL.D. D.Sc., who will shortly complete his thirtieth year as Editor of the British Medical Journal and who before his appointment to that post in January, 1923 had for sixteen years been connected with the Editorial Department. At the same meeting the Council appointed Dr. V. G. Horner, who has been Assistant Editor for the past eleven years, to succeed Sir Dawson Williams as Editor.

## Nova et Vetera.

### RICHELIEU AND THE SORBONNE

THREE hundred years ago Richelieu approved the plans of the architect Lemercier for the reconstruction and enlargement of the Sorbonne, the college which had been founded in 1257 by Robert de Sorbon. The fame of this great Paris institution is known throughout the learned world, but probably few could give an account of its history. It is therefore opportune that Professor G. Dupont-Ferrier, of the Ecole des Chartes, now lodged in the building, should have celebrated the anniversary by contributing an illustrated article to the *Revue Scientifique* of Paris.

Robert de Sorbon, whose parents were peasants in the Champagne, became chaplain to Louis IX, over whom, though he was little of a courtier, he had great influence. He established his college as a home for students and teachers at a date probably earlier than any college at Oxford or Cambridge, and he left to it his name and his fortune. His desire was to help poor students and teachers in theology, and to counter the monopoly of power enjoyed at that time by the mendicant friars. Consequently many of the distinguished early teachers in the Sorbonne were strong adversaries of the mendicant orders. The students for whom Robert de Sorbon provided had long been the victims of predatory lodging-house keepers, who increased the students' difficulties by letting adjoining rooms to *filles de joie*. With aid solicited from the King, the Queen, nobles, prelates, and foreigners, Robert was able to establish his *pauperum domus*. His regulations remained in force down to the time of the French Revolution.

The personnel of the college was formed of foundation scholars, foreign students who paid their way, associates, and guests. The last named had no part in the administration of the community, but hoped to be incorporated in the ranks of the Sorbon, who remained associates for the whole of their lives. The governance of the college was in the hands of a master, assisted by a prior who maintained discipline, and a proctor who managed the finance. A registrar and a librarian completed the governing body, all the offices except that of master were annual appointments. The offices were controlled by three councils, one to supervise the observance of regulations, the second for finance, and the third concerned with the discipline and good behaviour of the students. All the members of the community met together at various assemblies. In the fifteenth century two-thirds of the masters in theology belonged to the Sorbonne, and in the sixteenth century its authority had become so great that difficult cases of conscience were submitted for its decision. Many of its professors were not only doctors in theology, but also in law and medicine. The position of the college became so important in theology that it has sometimes been confused with the Faculty of Theology in the University, an error into which even such men as Luther, Pascal, and Voltaire fell.

A library was attached to the Sorbonne by its founder, and it was at the Sorbonne that the first printing presses in Paris were installed. The greatest care was taken in the preservation of the books in the library, but lending was allowed under strict precautions. While most of the colleges founded later only admitted students from certain provinces, dioceses, or towns, the Sorbonne, like the University of Paris, welcomed from the first the attendance of foreigners.

To this foundation of Robert de Sorbon, cardinal-duke Richelieu was appointed master in 1622. Richelieu, who was born in Paris, was not a Sorboniste but was educated at the royal college of Navarre. Nevertheless, he became imbued with a deep affection for his adopted college, desiring to give it a more worthy home, he, with the help of Lemercier, converted the cloister of Sorbon into the Palace

of Sorbonne. The original site of the buildings was retained, but was increased by one third towards the south. The new construction was in the form of an irregular quadrangle. Richelieu's white stone and red brick edifices remained until it was pulled down and rebuilt at the end of last century. Now all that remains of his building is the chapel, which contains Richelieu's tomb, the work of Girardon (1694). But the Sorbonne of Richelieu, the college for students of theology, was destroyed during the revolution (1792), though teaching in this and other subjects was resumed in 1821. In addition to the library, the buildings now house the Ecole des Chartes.

During its long career the Sorbonne, according to Professor Dupont-Ferrier, maintained its traditions of frugality, poverty, work, and modesty. The Sorbonistes took their meals in common, with friendly discourse; they played tennis together in their garden. Poverty was accepted as one of the most solid of the virtues. Often the revenues of the college were insufficient to meet its needs, and money was saved by suppressing a course at meals, by going without fires and lights in some of the rooms, the library, or the staircases, or by making the old cassock last a little longer. Work in teaching was arduous, so that even the most distinguished Sorbonistes published but little in comparison with the professors of other colleges. They were faithful to the vow of Robert de Sorbon to live only for their pupils.

The confusion which arose between the Faculty of Theology and the Sorbonne—a confusion which even led to such loose appellations as doctor of the Sorbonne instead of doctor of theology—arose mainly from two causes. The Faculty of Theology had the duty of supervising the publication of new books, and for a long time this duty was discharged by professors of the Sorbonne. Secondly, the Faculty of Theology was in the habit of attending at the hall of the Sorbonne for the purpose of hearing theses for licentiates in theology. The presentation of his thesis must have been an ordeal for the candidate: his examination, in the presence of theologians and strangers, lasted for twelve hours, during which time the judges replaced one another in having tips for the unfortunate student. An additional cause of confusion, perhaps, came from the fact that up to the end of the ancient regime the Sorbonne maintained its autonomy. Its independence was such that in 1666 the college refused to open its doors to the rector of the University of Paris, and within its threshold even the powers of the King were limited.

At the present time the Sorbonne is the home in Paris of the Faculties of Science and of Literature, as well as of the Ecole des Chartes, which is a school of history, but combines with that some of the functions of the Record Office in London. In the past and in the present, says Professor Dupont-Ferrier, the Sorbonne has worked for the great and good renown of France.

## New South Wales.

### HOSPITALS AND INJURED WORKERS

THE Workers' Compensation Act, 1926, contained a provision whereby medical fees up to £50 were a charge on the employers but the Act was so worded that the medical practitioner, unless directly employed by the employer, was unable to collect fees except from the injured worker. As a result the employer or insurance company, as the case might be, promptly ordered the injured worker to go to a public hospital for treatment, although they did not support the public hospitals financially. This naturally led to considerable irritation, both among medical practitioners and hospital authorities, who felt that the insurance companies were evading the provisions of the Act and were making unfair use of public charities. In March, 1927, an amending Act was passed, containing the following clauses:

- 1 The worker shall notify the employer without undue delay that he has obtained treatment and the cost of such treatment to the employer shall be limited to £50 unless the Commission otherwise directs.
- 2 If the worker obtains medical treatment for himself or his family, he shall be entitled to have the worker examined by a medical practitioner by the employer in consultation with the worker's medical adviser.



American College of Surgeons, while on a visit to the hospital recently, recommended the following basis for such a scheme

(a) That there should be various grades of accommodation and charges

(b) That the question of professional charges should be a matter between the doctor and his patient

(c) That those who voluntarily enter paying wards of the hospital and those who are deemed by an investigating official of the hospital to be able to pay professional fees in addition to maintenance, should make their own arrangements for attendance with the doctor of their choice, and should not be under the medical or surgical control of the resident medical staff

(d) That private patients entering wards should not be attended by the stipendiary staff, but by the doctor of their choice. Fulfilling such a choice being made nothing should prevent a member of the honorary staff from attending the patient in a private capacity

## England and Wales.

### KING EDWARD'S HOSPITAL FUND

THE annual distribution meeting of the King Edward's Hospital Fund for London was held on December 13th, with the President, H R H the Prince of Wales, in the chair, for the purpose of awarding grants to the hospitals and convalescent homes for the present year.

The Prince of Wales read a message from the King congratulating the Fund on increasing its distribution from £245,000 to £247,000, with the help of the League of Mercy, which was contributing £17,000 instead of £15,000. Commenting on the increase, the Prince expressed his gratification at this forward step by the League of Mercy, and his thanks to the British Charities Association for its donation of £15,000. One anonymous gift of £8,000 had been received during the year by the General Fund, legacies had increased by £10,000, and the income from investments had risen by £3,000. The capital fund continued to grow, the largest addition to the investments this year being Mr H W Marshall's gift of £10,000 conversion stock. The total distribution for 1927 amounted to £281,500, including a sum of £34,500 from the legacies of the late Mr and Mrs Wells, which was being devoted to schemes of extension and improvement. These legacies had already helped to provide more than 1,300 additional beds, including 144 for accident cases. The Distribution Committee had been studying the problem of providing immediate medical attendance for accidents and other emergencies, and it was proposed that the conclusions reached should be published. The annual statistical report on the financial state of London hospitals had been issued (Reference to this was made in our columns on November 5th). During 1926 hospital expenditure had continued to expand with the increasing number of beds, while the income was slightly less, a small deficit had appeared, therefore, this year for the first time since 1922, chiefly due to a falling off in legacies. Contributions from patients had continued to grow, and were being received at the rate of £220,000 a year. The Prince referred to the Pay Beds Committee of the Fund, which was inquiring into the question of hospital accommodation for people with incomes above the ordinary, and also to the pensions scheme for nurses and hospital officers, which would begin on January 1st, with eighty-nine London hospitals, representing more than 12,000 beds.

Lord Revelstoke, honorary treasurer, stated that, contrary to anticipation, it had not been necessary to make use of the whole of the £9,000 added to the reserves in 1925. In consequence of some unexpected contributions the withdrawals had been limited to about half this amount. With regard to the Wells legacies £214,240 had been received so far on account, and it was believed that these legacies would amount eventually to more than £240,000. Lord Inglegh had bequeathed £60,000. Sir William Collins stated that since 1899, when the League of Mercy was established, it had distributed to voluntary hospitals £515,731, of which £415,034 had been given to the King's Fund. The increased grant this year was rendered possible by the generosity of subscribers.

Lord Somerleyton, honorary secretary, presented a schedule containing a list of awards to hospitals, including

recovery and convalescence branches. Among the largest grants were

The London Hospital £16,150, Guy's Hospital, £11,500, Thomas's Hospital, £11,000, Royal Northern Hospital, £9,700, Middlesex Hospital, £8,825, St George's Hospital, £7,900, King's College Hospital, £7,500, St Mary's Hospital, £6,750, Royal Free Hospital, £6,500, St Bartholomew's Hospital, £6,000, Westminster Hospital, £5,750, Prince of Wales's General Hospital, £5,600, Charing Cross Hospital, £5,500, Queen Mary's Hospital for the Last End, £5,200, Metropolitan Hospital, £5,000, Westminster Hospital, £5,000, Miller General Hospital, £4,575, Royal National Orthopaedic Hospital, £4,500, and the Queen's Hospital for Children, £4,050.

### DURHAM UNIVERSITY MEDICAL SOCIETY

The annual dinner of the Durham University Medical Society was held at Newcastle in the University Union on December 15th, with Mr Harvey Evers, president, in the chair. The chairman, in proposing the toast of "Our Guests," made special reference to Professor Thomas Beattie and Sir Thomas Oliver, whose names were received with acclamation. He said that it was a great shock to them to know that Professor Beattie was retiring from the staff of the Infirmary. Professor Beattie had been born, bred, and educated in the city, of which his father was at one time mayor. The loss was very great to them, though they had the pleasure of knowing that he was remaining awhile as consulting physician. It was also a great satisfaction to know that his services would not be lost to the University. Professor Beattie, in acknowledging, said that his severance from the Infirmary was due to the fact that the calendar told him he was older than he felt. Though giving up his clinical activities, he hoped to teach for some years to come. His association with the Infirmary had been continuous since 1886, while his connexion with the society commenced in 1888, when he was its secretary and afterwards president. Sir Thomas Oliver, in proposing the toast of "The Medical Society," said that medical men of the present generation had fuller opportunities for participating in public life than heretofore, and their services would be of great practical value in Parliament. Mr T A Hindmarsh expressed the indebtedness of the members of the society for the heavy labours of the president and secretary on their behalf.

### MANCHESTER TRIBUTE TO DR MCGOWAN

On December 16th a large company of Manchester medical men and women met at the Grand Hotel at a dinner in honour of Dr R G McGowan, who retires this month from the secretaryship of the Manchester Medical and Panel Committee, which he has held since the inception of the Insurance Act. Dr Skinner, the doyen of medical men in practice in Manchester, took the chair, and was supported by Mr A H Burgess, Dr Dunn, chairman of the Insurance Acts Committee, Dr Frank Radcliffe, representing the Lancashire panel practitioners, and Dr G C Anderson, Deputy Medical Secretary, in the absence, owing to recent bereavement, of Dr Cox. Mr Walter Davies, J P, the first and only chairman of the Manchester Insurance Committee, was the only layman present. The toast of the evening was proposed by Dr T A Goodfellow, who recounted some of the doings of Dr McGowan as secretary, representative of panel practitioners on the Manchester Insurance Committee, as adviser in cases before the Medical Service Subcommittee, as member of the Insurance Acts Committee, and as sage counsellor and friend of all in time of doubt and difficulty, and presented to him on behalf of the practitioners of Manchester a gold cigarette case suitably inscribed, containing a cheque for £1,000, together with a platinum and pearl necklace for Mr McGowan. The presentation led to a scene of enthusiasm, showing conclusively the admiration and esteem of his colleagues. Dr McGowan's response was very brief and lacked much of the incisiveness and vigour usual in his public speeches, to the amusement of many with whom he had dealt faithfully in times gone by. The toast of the guests was proposed by Dr Coulthard, whose speech at the Edinburgh dinner will be remembered by many, and responded to by Drs Dunn, Radcliffe, and Anderson. As Mr Walter Davies had to leave to catch a train, Dr Edmund Johnstone responded on his behalf.

## A BLOOD TRANSFUSION SERVICE IN LONDON

The British Red Cross Society has recently published a special report on the blood transfusion service, which has been carried on under its auspices since 1925. The foundations of the present service were laid in 1921 when a request was received by the Camberwell Division of the British Red Cross Society for a blood donor for a case of emergency, and soon numbers volunteered. Mr P. L. Olivier, honorary secretary of the division, collected about twenty volunteers for subsequent cases, and has maintained the necessary organization since then. In 1922 thirteen transfusions were given, in 1923 twelve, and in 1924 the number increased to sixty-two. An appeal for volunteers was made to the general public, and thirty responses were received, one from a boy scout who interested his organization in the work. In 1925 a total of 389 transfusions were supplied, of which 277 were given by boy scouts. In 1926 477 were supplied by boy scouts and 159 by members of other organizations. At the present time the number of donors enrolled is approximately 450, about sixty of whom are women. After each transfusion the hospital supplies clinical information as to the result, and this is duly recorded. Medical practitioners may obtain full information from the secretary, Mr P. L. Olivier, 210, Peckham Rise, East Dulwich, S.E.22. The report gives a list of the sixty-eight institutions from which applications were received during 1926. The Blood Transfusion Service has been financially self-supporting from the start. The bulk of the income is derived from donations, the sale of or time for collection, and from the organization of entertainments. The British Red Cross Society hopes to form similar services all over the country.

## Ireland

## ULSTER MEDICAL SOCIETY ANNUAL DINNER

The annual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast on December 15th. The president, Dr J. C. Rankin (Belfast) occupied the chair, and a company of about 120 was present. After dinner the toast of 'The King' was duly honoured and the president then gave the toast of 'Prosperity to Northern Ireland' which was responded to by the Right Hon. E. M. Archdale, Minister for Agriculture for Northern Ireland. 'The Royal Colleges of Ireland' was proposed by Mr S. T. Irwin, F.R.C.S. Ed. (Belfast), and responded to by Dr W. A. Winter (Dublin), President of the Royal College of Physicians of Ireland, and by Mr A. Fullerton (Belfast), President of the Royal College of Surgeons in Ireland. The health of the guests was proposed by Prof. C. G. Lowry and responded to by Mr John McGonigal, K.C. and by Mr D. Wilton Smith. The president's health was proposed by Dr Foster Coates (Belfast) and responded to by Dr Rankin who asked the company to join him in drinking the health of their honorary secretary, Dr Marjand Beith on whom so much of the hard work had fallen.

## NOTIFICATION OF INFECTIOUS DISEASE

In a letter to each sanitary authority in the Free State the Minister for Local Government and Public Health states he has had under consideration the adequacy or compliance with the requirements of the Infectious Diseases (Notification) Act, 1889, and he has formed the opinion that a result of correlating the registered deaths with the statistics of the known incidence of the graver epidemic diseases (enteric fever, diphtheria and scarlet fever) that the duty of notification is insufficiently observed. Furthermore, a comparison between the records for urban and rural districts goes to show that the deficiency of notification is more clearly marked in the latter areas. In the circumstances the Minister desires to impress on sanitary authorities the importance of a strict enforcement of the notification system. Attention is directed to the circular letter of May 28th 1925, intimating that uniform application throughout the Irish Free State (Sorstat Eireann) was given by the Local Government Act of that year to the

obligation to notify infectious disease—namely small pox, cholera, diphtheria, membranous croup, erysipelas, scarlet fever, and the fevers known as typhus, typhoid, enteric relapsing continued, or puerperal. It should be realized that notification is not only essential for the protection of the public in facilitating disinfection and other precautionary measures, but in the interests of the individual patient himself, the medical officer of health to assist in arranging for suitable institutional accommodation and nursing attendance where necessary. It is suggested that general notice of the duty of notification and of the liability to penalty in case of default should be given by the sanitary authority to members of the medical profession and to the public at large by advertisement in the local press and such other means as may be considered advisable. It may also be explained that upon the appointment of a county medical officer of health he becomes entitled to receive notification of infectious diseases in substitution for the dispensary medical officer (Article 9 (7) of the County Medical Officers of Health Order 1926) and it will devolve upon him from time to time to undertake a critical survey of the practical working of the notification system in the county for which he acts.

## ORGANIZATION OF THE CO. FERMANAGH DIVISION

A very successful meeting of the members of the Enniskillen or Co. Fermanagh Division of the British Medical Association was held in Enniskillen on December 15th. Many of the members who attended had only just joined and their recruitment was entirely due to the efforts of Dr Leonard Kidd who entertained the company at dinner at the Imperial Hotel, Enniskillen. The Irish Medical Secretary (Dr T. Heune) was present and gave an account of the aims of the British Medical Association and what it had done for the profession in Ireland. A vote of condolence was passed to Dr Alfred Cox, Medical Secretary, on his recent bereavement.

## Scotland.

## REGISTRATION OF MATERNITY HOSPITALS AND HOMES

The Scottish Board of Health has issued to local authorities in Scotland regulations dated November 24th 1927 prescribing the necessary forms for compliance with Part II of the Midwives and Maternity Homes (Scotland) Act 1927. Under the Act and Regulations every maternity hospital and home will require to be registered by the local supervising authority of the area in which it is situated and will receive a certificate of registration as from January 1st, 1928. The Regulations prescribe the particulars which must be entered in the registers to be kept in such maternity hospitals and homes. Copies of these may be obtained from H.M. Stationery Office, price 2d. The general regulations connected with registration were outlined in our columns on November 5th (p. 347). The points which have to be entered in the registers to be kept by the homes are the names of medical practitioners attending the patients or infant children in the home, the names of other persons attending on the home, the names of each patient and of the infant children or such patients and the names of all children born in the home who are removed from the home to the custody of other persons than the parents, guardians or relatives. The last part is known as the removal register. Case records must also be kept showing a daily statement of the health of the patients and children and also a record of the amount of payments made to the keeper of the home by, or in respect of, patient. Notice of deaths at the maternity home must also be sent to the local supervising authority within twenty-four hours of their occurrence. The form which the various registers are to take is given in the Regulations.

## MEASLES IN GLASGOW

A bulletin issued by the public health authorities of the city of Glasgow shows that at the present time there are 2,560 notified cases of measles in that city as compared with 65 at the corresponding period last year. The incidence



of the disease is spreading at the rate of about 800 or 900 cases each week. Although the distribution of cases is fairly general, the eastern, south-eastern, and northern parts of the city are chiefly affected. Diphtheria shows 386 cases, as compared with 232 cases at the corresponding period last year.

#### EXTENSION OF EDINBURGH WOMEN'S HOSPITAL

An extension of the Hospital for Diseases of Women, at 2, 4, and 8, Archibald Place, Edinburgh, was opened on December 16th by the Duchess of Buccleuch. Mr T L Usher presided, and explained that the hospital had been opened in 1910 at No 2, Archibald Place, a house used by the late Dr Haultain as a private gynaecological home, and this had been bequeathed by him for the purposes of the hospital. The hospital had opened with fifteen beds. In 1912 the house at No 8 was added, and used for the accommodation of the nursing staff, and in 1926 the house at No 4 had been purchased, thus increasing the accommodation of the hospital to thirty-three beds. The patients paid a proportion of their maintenance, and in this way the home differed from a teaching hospital, where patients could go for nothing. Over 7,000 women had been treated and 1,600 major operations had been performed since the hospital began seventeen years ago.

### Correspondence.

#### MEMORIAL TO THE LATE PROFESSOR FRANCIS MITCHELL CAIRD

SIR,—A number of the friends of the late Mr Francis Mitchell Caird, a former lecturer on surgery in the Extra-Mural School and professor of clinical surgery in the University of Edinburgh, having expressed a desire to perpetuate his memory in the Edinburgh Medical School, a committee was appointed by the Medical Faculty of the University and the Council of the Royal College of Surgeons to consider what steps should be taken for this purpose.

The committee and the two bodies which it represented decided that the memorial should include a prize and medal open for competition to graduates of the University and Licentiates and Fellows of the Royal College of Surgeons of Edinburgh who have studied for two years in Edinburgh and have been qualified as practitioners for not more than seven years. The prize, offered biennially, will be awarded for the best essay in surgery or surgical pathology based on personal observation and research, the subject being chosen by the candidate.

Subscriptions of one guinea and upwards will be gratefully received. Those who have not been approached directly by the committee and are desirous of subscribing are invited to send their subscriptions by cheque or postal order, payable to the Francis Mitchell Caird Memorial Fund, per the accountant of the University and addressed to him at the University of Edinburgh, Old College, Edinburgh.—We are, etc.,

ALEXANDER MILLS,  
President Royal College of  
Surgeons of Edinburgh  
J LOBBAN SMITH,  
Dean of the Medical Faculty,  
University of Edinburgh

Edinburgh Dec 16th

#### TREATMENT OF PROSTATIC ENLARGEMENT

SIR,—I think it well to take exception to one (if not more) of the provocative statements made by Sir Cuthbert Wallace in the interesting Bradshaw Lecture published in the BRITISH MEDICAL JOURNAL of November 19th (p. 907). It is this that he says: "I am unaware, however, that a man has ever begotten a child after a prostatectomy."

Now patients who have undergone prostatectomy done by myself according to a method described in the BRITISH MEDICAL JOURNAL of October 3rd 1908, with illustrations, and in 1909, have begotten children. I well remember being startled by one of these patients during an evening visit to my private hospital, when he said, "I am afraid

<sup>1</sup> Nouvelle méthode de prostatectomie, 22nd Congrès de l'Association Française de Chirurgie.

something is going wrong with me, I had a wet dream this afternoon, a thing I have not had for nearly forty years." I administered a psycho-analyst's mixture with good effect. The question of paternity will, no doubt, be raised, but in one of my cases it can be solved by anthropological study of the offspring's features.

I had another patient (aged 60) who returned six months after operation to seek my advice about nocturnal emissions which worried him, because he had had no sexual desire for at least three years before operation. He promptly recovered after a mixture of heart to heart talk like unto the above.

I met this very brother old patient who is very proud of his second family from his third marriage.

I gave up private practice in July, 1914, but these cases have left fairly definite impressions about the relative merits of the two routes for attacking prostates. They may be worth relating as a contribution to the present controversy about the advice it is wisest to give.

I believe the safest course in most cases is to do this operation in two stages—that is, to do a preliminary suprapubic cystotomy, and let the patient get up as soon as he feels inclined to, then, when all is apparently going on well, to do the next and last stage by the combined suprapubic (already done) and perineal method referred to above.

Suprapubic cystotomy takes a short time to perform, and I agree with Sir Thomas Crues Evans's views on the assessable value of time in determining the rate of mortality after prostatectomy. Only this year, when visiting, with other members of the Chirurgical Club, a capital city in Europe, I happened to remark to a very distinguished foreign surgeon, while looking on at a suprapubic cystotomy being performed under a local anesthetic, that I had never seen perfect local anesthesia. The unexpected reply came, "You are quite right, I had the first stage of my prostatectomy done that way and I suffered lots of pain." He told me he was then wearing a muff. The next day I saw him do several abdominal operations in brilliant style, the second stage of his prostatectomy was going to be done after we left the capital for home, the delay was, I thought, sound.

The second stage of my operation, mentioned above, can be done in less time than any other method of prostatectomy finished it one sitting, because the perineal opening, in the second stage, can be made within one minute and the prostate is enucleated by the forefingers of both hands working simultaneously. Before enucleation is started I always filled the bladder with tincture of iodine so as to have a reliable antiseptic in contact with the new raw surfaces being formed.

It seems to me that success on the road to abolition of mortality will be found in the following factors, amongst others: (a) Preliminary psychic treatment of reassurance to the patient that he need not stop in bed, but can get up whenever he likes after operation. The dread of being bedridden is to old people a bog to be avoided. (b) Assurance that each stage of operation only takes a few minutes, and not hours or a big portion of one. (c) The operation to be performed in and through a harmless but efficient antiseptic—for example, tincture of iodine or 2 per cent mercuric iodine—I am, etc.,

Lechryd, Cuthbert hire Dec 13th

JOHN LEE THOMAS

SIR,—With reference to the statement that in the London hospitals a mortality of 40 per cent from the operation of prostatectomy has been experienced over a period of years, I think it is worth while to record that this mortality does not represent the average mortality throughout the country for this operation.

Taking my own private and hospital cases all together I have performed the suprapubic prostatectomy operation on thirty consecutive occasions with one death—a mortality of a fraction over 3 per cent. This includes several operations on malignant prostate.

It is evident that the mortality for selected cases will be very different from the mortality where many favourable cases are included and, of course, the subject

for operation in a country area are undoubtedly more favourable in constitution than those in a town area. At the same time, although the figures refer to a comparatively small number of cases, I think they dispose of Sir T. Carswell's contention that prostatectomy is an operation only to be performed by genito-urinary experts—I am, etc.,

Old Colwyn Dec 12th

A. NORMAN LEEMING

Sir—In your issue of December 10th (p. 1114) Sir T. Carswell alludes to the high mortality of suprapubic prostatectomy for which he is inclined to hold the general surgeon responsible. Thus, "so long as it is claimed that this operation is put off general surgery the mortality rate will remain where it is."

This is a formidable indictment based on a study of statistics from some general hospitals. Now the statistical approach to a surgical problem has its pitfalls. It is even possible to make too seriously some errors of statistics. For Sir T. Carswell uses the operation of prostatectomy as a "special" one beyond the compass of the average general surgeon—and I write as one. It demands he is told in his letter, a "particular knack or gift" and thus useful talent is the exclusive possession of the genito-urinary specialist. In his zeal for specialism I am afraid he has unduly stressed the difficulties of this operation. He will find little support for his argument in the address of the distinguished Bradshaw lecturer in November last who said removal of the adenomata is not a matter of delicate and difficult dissection but really consists in entering a line of cleavage already established and following it to its end. It matters little whether this is done under the eye or not."

So much then for the technique of the operation which after all it is only necessary to learn. A note is added on Freyer's pace in operating his dramatic mannerisms and low rate of mortality in a long series of cases. A fair inference would be that the bulk of them were adenomata capable of rapid enucleation by a dexterous surgeon. There cannot have been many examples of the small fibrous prostate in the series and reference to the case records in Freyer's book bears this out.

Several other points of interest arise in the letter. Operation by the open method is preferred to so-called "blind" prostatectomy. There are those who hold that either has its particular sphere of usefulness. For the simple adenomatous enlargement of the gland operation by the method popularized by Freyer has been found to suffice and has given good results in many hands. It is far other view in the small fibrous adenoid type of gland with little or no intracapsular projection. Here it is often hazardous to attempt enucleation and only by wide exposure of the bladder base and dissection under vision can removal be accomplished with safety. In every respect I have found this open operation a more severe procedure than enucleation, and reserve its employment for the cases of the fibrous type already referred to.

On the subject of after-treatment importance is attached to thorough irrigation as a means of maintaining the prostatic cavity clean. Unless the tube became blocked by clots I have always been averse to doing this, for I have found that irrigation tends to prolong oozing especially during the first few days after operation. In fact I have placed the cavity tightly with iodoform gauze, a method which I learned from E. S. Judd at the Mayo Clinic. The gauze serves a dual purpose. It promotes haemostasis and prevents stagnation of urine in the prostatic cavity. My practice is to loosen it up a little on the third day after operation and withdraw it entirely on the fourth when the tube is replaced—I am, etc.,

Winton Colwyn Dec 12th

GERALD RALPH

#### THE RAPID THERAPEUTIC ABORTION

Sir—The subject of therapeutic abortion ably discussed recently by Dr. Dalton in your correspondence column is one in which the honour and reputation of the profession are deeply concerned. Dr. Binnie Dunlop's definition of the term as "abortion performed by a medical practitioner or public medical—thatis, pathological—grounds" is a

point at issue. We need a detailed statement, acceptable to the majority of the medical profession, of what the words "pathological grounds" cover.

Dr. Binnie Dunlop's interpretation of them seems to be exceptionally wide. In the discussion on abortion in the Section of Obstetrics at the British Medical Association's Annual Meeting in 1926 the abstract of his speech contains the following sentence: "He considered it an indication of the desirability of this [that is, of terminating a pregnancy before the viability of the child] merely if the woman wished it, or rather if the woman could not be persuaded to desire the pregnancy to go on" (BRITISH MEDICAL JOURNAL vol. II, 1926, p. 247). In opening this discussion Dr. Edey mentions the barrister's wife on whom he after consultation with Dr. Herman, induced abortion merely because she objected to having a third baby shortly after the birth of a second. He also states that a consulting obstetrician procured an abortion for the same woman in her fourth pregnancy, and for the same reason. Later he gives details of a case in which he induced abortion because the woman was in a pitiable state of fear about the possibility of her death if the pregnancy (her third) went to full term.

In view of these openly expressed opinions by leading obstetricians I will state a case of common occurrence and ask a question.

An unmarried woman pregnant for the first time consults a string-lining medical practitioner in one of the poorer quarters of London. She tells him she is in a deadly state of fear if her pregnancy is allowed to go to full term. She feels she cannot face the anguish of the months that will elapse before her confinement nor the subsequent loss of employment and disgrace. If the doctor will not end her pregnancy she will try to do it herself and in so doing she feels she will go mad or she will commit suicide.

Now in this case is it the opinion of the majority of the medical profession that the doctor ought to induce abortion? If the answer is "Yes" then we as a profession are allowing, without protest, certain of our members to be criminally prosecuted and to be removed from the Register because they carry out a procedure which we consider correct and morally justified. If the answer is "No" then as a profession we are condoning a similar procedure if carried out by consulting obstetricians on wealthy and married patients. On which horn of the dilemma shall we impale our lives?—I am, etc.

London W 6 Dec 12th

C. TRACEY PAPSON

#### THE ABUSE OF CAESAREAN SECTION

Sir—Dr. Jellett was kind enough to refer to some statistics I had collected during a recent visit to America as a guest of the Rockefeller Foundation. Unfortunately it appears that America is not the only country where Caesarean section is popular. The abuse of Caesarean section may be classified under at least five headings.

1. As a method of treating eclampsia. In the year 1835 Dr. Collins as a result of his experience as Master of the Rotunda Hospital wrote as follows: "I would strongly caution junior practitioners to avoid hasty measures for the delivery of the child which perhaps alarm for the mother's safety might induce them to have recourse to." Although times have changed the word *recourse* is now as on the day they were written. Incidentally I may add that Dr. Collins's mortality rate for eclampsia was 16.0 per cent.

2. *Placenta praevia*. Holmes of Chicago gives the maternal and foetal mortality in placenta praevia treated by Caesarean section as 20 per cent and 30 per cent respectively while obstetrical treatment gave a mortality of 7 per cent and 55 per cent respectively. This according to him. Caesarean section saved one baby for every mother who was killed by the procedure.

3. *A ring for an experience*. Williams of Baltimore believes that in many places the mere diagnosis of contracted pelvis is regarded as an indication for Caesarean section irrespective of the fact that 75 to 80 per cent of cases of contracted pelvis will deliver themselves spontaneously if allowed to do so. In the Montreal Maternity

Hospital during the year 1923 there were 52 cases of contracted pelvis, but only 11 of these patients were delivered by Caesarean section

4 Its frequent performance is believed to add to the reputation of the operator (Williams)

5 Its mortality rate is considered trifling. The average mortality rate for this operation throughout the United States of America is believed to approach 10 per cent (Williams)

While passing no comment on the remedies that have been suggested, I beg to submit that a thorough ventilation of the limitations and the dangers of this operation may tend to make some practitioners less proud of the number of times they have performed it—I am, etc.,

Hon. Hong, Nov 5th

R E TOTTEHAM

#### SUSCEPTIBILITY TO INFECTION DURING PREGNANCY

SIR,—I would through your columns thank Dr C E Douglas for the booklet (containing much valuable and stimulating matter) which he has just sent to the doctors of Fife, but there is one paragraph with which I cannot agree—namely "We have in the pregnant woman a subject in which the immunity from disease and particularly from sepsis is not increased but diminished." I am sure Dr Douglas will agree that before accepting a deduction we must be sure of our premisses, and that the deduction logically follows therefrom.

A woman suffering from tuberculosis becomes pregnant. She remains well till her confinement." I quote Dr Douglas. This, in my opinion, is the premiss, and not what happens after parturition. Dr Douglas might have gone much further, and said that during pregnancy many tuberculous women very greatly improve. I have, for example, seen a tuberculous abscess completely dry up during pregnancy and in a month or two afterwards again become active.

My reason for writing is that I, too, have given much thought to this subject, my premiss being that there is in the pregnant woman's blood something which is antagonistic, certainly to tuberculosis, and probably to all microbial disease, and my deduction is, if we could find what this endocrine (for I presume it is such) is, we would be on the way to the discovery of a cure for tuberculosis. I have tried corpus luteum and thyroid, but without marked results. Still I am convinced that if the right substance could be found the results would be as I have stated. The pregnant woman's reaction to specific fevers bears out my contention. I agree that the parturient woman soon loses this immunity from disease, and may even reach a stage of less resistance than normal, but this does not affect the argument—I am, etc.,

Thornton Fife Dec 6th

A TAIT

#### CATARACT AND ULTRA-VIOLET LIGHT

SIR—Whilst flattered by Mr Duke-Elder's interest in my letter published in your issue of December 3rd, I feel that some of the conclusions he draws in his communication published in your issue of December 10th (p 1114) are unacceptable—any rate, by me.

Experiments on animals, especially on the excised eye of a rabbit supplied in normal physiological saline (which appears to be the only experiment Mr Duke-Elder has made on the eye with ultra-violet alone), are not convincing evidence that small, therapeutic doses of ultra-violet in conjunction with other luminous and infra-red rays are capable of producing cataract in the human eye. If so, may I ask him why he has advocated the use of ultra-violet radiation in the treatment of other diseases of the eye, both superficial and deep? Is he not of the opinion that, whilst he admittedly is curing these other inflammatory and infective disorders, he is not producing cataract? I feel quite assured that he has well satisfied himself upon this point.

Both he and Mr Bishop Haimm agree that ultra-violet light, in combination with strong luminous light, is capable of producing an intense conjunctivitis. Yet at least one of them would use ultra-violet in the treatment of the more chronic form of inflammatory diseases of the eye.

I can assure him that I have read with great interest

and profit his articles in the *Lancet* on the pathology of action of light upon the eye. In these articles he has admitted, and quotes an overwhelming mass of evidence to the effect, that luminous light and heat rays are well known to be causes of cataract. He states that "under experimental conditions opacity is difficult to obtain, owing to the difficulty of getting a sufficient amount of short waved radiation through the anterior eye. Further the lens proteins appear to be more stable under these radiations than most others. Several observers have therefore reported negative results." In his letter he states that "cataract is a coagulation of the proteins of the lens and proteins are coagulated by ultra-violet radiation." I agree—so are proteins coagulated, and much more readily, by heat. The chemistry of proteins covers an immense amount of literature, and is still far from complete.

What I suggest ultra-violet light may do, in therapeutic doses, is to arrest the pathological processes whereby normal proteins of the lens are being slowly converted into opaque coagulated material, and further permit Nature to remove some of the deposits via the lymph channel. If Mr Duke-Elder will read my original letter again he will see that nowhere do I suggest that radiation of any kind will "cure" cataract. When I wrote my first letter it was to prevent those who might read Mr Bishop Haimm's first communication being persuaded that ultra-violet light exerted a harmful effect in all conditions of the eye, and might, indeed, cause cataract.

I do not know whether the sting in the tail of Mr Duke-Elder's letter is especially intended for me. I would like to remind him, however, that but for enthusiasm and perseverance on the part of clinicians there would be no such things as "ascertained experimental data." Practically all the advances and discoveries in the history of medicine owe their inception to the enthusiasm and accurate powers of observation of practising clinicians, rather than to those who work in laboratories.

Nearly twenty years of constant practice in general medicine have not left me unable to make accurate observations, or liable to fail "to assess the complicated systemic influences which from time to time may alter the refractive properties of an unstable lens."

I have reported elsewhere two cases of cataract which I personally treated. Both had been under the care of ophthalmic surgeons of repute.

In one case after some two months' treatment with actinotherapy, the ophthalmic surgeon reported to me as follows: "There is no doubt that the vision has improved, as shown by the following: R V before was 6/12, now 6/9. L V before 6/9, now 6/6, and she herself thinks she is certainly better. Ophthalmic examination also shows some change which seems to me to be a thinning of the lens striae, so that the clearer intervals between them are wider."

In the other case, after twelve exposures spread over two months the patient—who had not been able to read the printed page for seven years, nor to distinguish faces—was able to read page 10 (Jaeger) with ease and to write letters in the train as well as to walk about the streets unaccompanied. The lady still has her cataracts but she has also got vastly improved vision.

There are possibly other cataract patients who might gain a like benefit. Certainly removal of the lens is not a "cure" for cataract, any more than amputation of the limb is a cure for an ankylosed knee-joint—I am, etc.,

London W Dec 10th

PERCY HALL

SIR,—It may interest some of your readers to hear that I had a patient with a slowly maturing cataract who had been to me for some years. A year ago he left me for some unqualified person's light treatment. I was somewhat surprised when he was led into my room by his son a fortnight ago. His vision was reduced to perception and perception of light only, in both eyes. He told me that he had been, and that it had cost him a hundred guineas, and asked me to operate on him which I did. He perfectly again, after refusing to stay longer in the hospital than a week.

Years ago Colonel H Herbert, now of Hong Kong, told me that in his opinion (he did some 20,000 lens extractions in India) cataract there was caused by the malarial fevers, possibly compounded with malnutrition in the native population—I am, etc.,

London W, Dec 15th

SIDNEY H.

## DII 1 AND PYORRHOEA

SIR—For the past few years I have been firmly convinced that diet is a most important factor in the causation of both dental caries and pyorrhoea, and have advised my patients accordingly, with varying results, depending on which the patient considered of greater value, 'the pleasures of the table' or 'the teeth'.

On January 20th 1927 Mr. X was referred to me by his medical adviser with the object of having several of his teeth extracted on account of pyorrhoea. He suffered from the typical so-called pyorrhoea with marked gingivitis and pus exuding on pressure from several points. Alveolar calculus was present in abundance on the lingual surfaces of the lower incisors and on the buccal surfaces of the upper molar teeth, and whitish was very marked. In the upper jaw were three teeth with ill fitting gold crown. A ray examination revealed general absorption of the alveolar margins but no apical infection. I removed the gold crowns, drained the pulp chambers, inserted creosote dressings and sealed with temporary cement being unwilling to proceed

I felt a ured that the condition was so treatment. At the same time I per- and instructed the patient in the proper care and hygiene of the mouth including the use of a mouth wash composed of lemon juice and water.

I reported the results of my examination to his doctor at the same time telling him that I thought it would be possible to save all the teeth if the patient could be persuaded to adopt a diet I should schedule for him. The doctor readily agreed to this and gave me wholehearted support which was of great assistance in tiding the patient over the difficult period that ran its course before any result could be seen or felt. The patient rather grudgingly agreed to give the treatment a trial for six months.

I prescribed a diet which contained a large proportion of fresh raw fruit and vegetable and of which the salient features were three meals daily—one fresh fruit one carbohydrate and one protein. The fresh fruit was eaten absolutely alone for breakfast the carbohydrate meal consisted of any kind of coarse grained bread with plenty of butter followed by a large raw vegetable salad and the protein meal consisted of a small portion of meat (to be taken not oftener than twice a week) or eggs or fish or cheese or poultry etc. always accompanied by two of the less starchy vegetables properly (that is conservatively) cooked and followed as in the carbohydrate meal by a large raw vegetable salad. I also allowed him when he desired to partake of a purely vegetable soup (neither bones nor meat or any kind to be used in its preparation) or stewed dried fruit. The carbohydrate and protein meals were to be taken one at mid-day and the other in the evening in whichever order the patient preferred. No condiments of any description were to be consumed.

The patient has reported at intervals since his first visit and an improvement has always been manifest. On November 14th, 1927 examination of his mouth revealed teeth firmly implanted in sockets, absence of pus pockets, no halitosis, no alveolar calculus and only the slightest traces of gingivitis which I am confident will disappear after a further period of treatment. The patient himself said that the rheumatism from which he had long suffered was quite gone and that constipation is much less marked. In appearance he looks much more virile his skin is clean and healthy and he declared voluntarily that his diet suited him admirably and that he would never think of returning to the old regime.

This result confirms what Howe McCollum Simmonds and others have been teaching—namely, that pyorrhoea is merely a symptom of a general poisoning of the body brought about by a wrong diet—I am etc.,

J. MENZIE, CAMPBELL  
LDS DDS FRSEd

Glasgow N 2 Nov 23rd

## TUBERCULOUS LESIONS FOLLOWING INJECTION OF PITUITARY EXTRACT

SIR—Would it not be as well to bear in mind the possibility that the cases noted by Messrs Donald and Lane-Roberts were due not to fresh infection by tubercle bacilli in the pituitary extract but to stirring up of an existing tuberculous focus in the patient, either by the injection or by the disease for which it was given?

In our urban population most people are infected with tubercle, though only a small proportion of these suffer from it, and the breakdown is nearly always due to quite other causes than the infection. That disturbance of endocrine balance is concerned is extremely probable though the connecting metabolic links between different accepted causes of tuberculosis have not yet been clearly traced—I am etc.,

Farnham Dec 15th

F R WALTERS

## THE BIPP METHOD

SIR—With reference to the remarks of Professor Rutherford Morrison in your issue of December 16th (p 1077) on the "bipp method" of treating infected wounds, I think that one reason why this invaluable method is not more widely used is that many of the leading chemists sell under the name "bipp" an ointment with a base of soft paraffin (paraffinum molle) instead of the liquid paraffin. Such a preparation will not form a film on the surface of a wound and is therefore perfectly useless for the purpose intended—I am etc.,

A G COLLIE MD FRCS Ed,

Cheadle Staff. Dec 14th

Lieut Colonel I M S (ret)

## CONVEYANCE OF MILK

SIR—From your interesting note on the conveyance by rail of London's milk supply in glass-lined tanks (BRITISH MEDICAL JOURNAL, December 10th p 1102) it is not clear what precautions are taken to prevent contamination of the milk by mud and refuse from the churns when the churns emptied into the trough which leads to the coolers. I learn that in Denmark care is taken to avoid such contamination by not turning the churns upside down in emptying them and by rejecting the bottom layer of milk in which the grosser impurities accumulate. Moreover it is said that the milk is centrifugalized in order to remove muddy deposit. Perhaps the United Dairies Company would state whether any such methods are used in their process or whether reliance is placed on sterilizing the milk by pasteurization—I am, etc.,

December 14th

Edna

## Universities and Colleges

## UNIVERSITY OF WALES

## Honorary Degree

At the last meeting of the Court of the University of Wales held at Colwyn Bay it was decided to confer the honorary degree of LL.D. upon Sir Thomas Lewis FRS for his distinguished scientific work in medicine particularly in cardiology upon Sir Robert Philip President of the British Medical Association for his distinguished services to the science and profession of medicine and upon Dr H B Brackeborn Chairman of Council of the British Medical Association for his distinguished services to the profession of medicine.

The actual Pro-Chancellor explained that the list of recipients of honorary degrees might not yet be complete since in view of the British Medical Association holding its annual Meeting in Cardiff next July it was contemplated that the University might like to confer degrees upon some eminent visitors attending the conference.

## UNIVERSITY OF OXFORD

THE Board of Management for the Francis and Taylor Memorial Prize in Physiology has awarded the prize to John Carey Eccles B.A. Magdalen M.B. B.S. Melb. who was recently elected to a Junior Research Fellowship at Exeter College.

At a congregation held on December 17th the following medical degrees were conferred:

MD—Subir J Eastwood  
BM—H A Bywater L W H Burt H P Gilding A W Cubi  
A P Kimbley R E Havard

## UNIVERSITY OF CAMBRIDGE

At a congregation held on December 19th the following medical degrees were conferred:

MD—D Laarus Barlow  
MB B Chm—G F Galden A S Hollis W S Grove  
By proxy

## UNIVERSITY OF LONDON

THE title of Emeritus Professor of Pathology in the University has been conferred on Sir Frederick Andrew OBE DCL MD FRCP LPS who retired from the University Professorship of Pathology, tenable at St Barholomew's Hospital Medical College in July 1927.

Lord Dawson of Penn has been appointed his representative of the University at the tercentenary celebrations in honour of William Harvey to be held in May 1928 at the Royal College of Physicians.

The following candidates have been approved at the examinations indicated

THIRD MB BS—\*H R C Brock \*S L B V Fekhoff \*A B Hyman \*H R S Picher (University Medal) \*K H Watkins C Amesur V Litz G Anderson W A Ball B Baring P Ball L R B But J W Bottoms R V Bowles I W Bradley Doris E Bunbury M R Bunko Isabella M G Butler I C D Cuthbert, Phyllis P Case J A Cholmeley M V Cowasjee I H N Cluchie R P P Davies D A Dewhurst H I Dunlop Phyllis M Edgum D C McG Eddies, L Ratti R R Fells J R Forster Isabella Forshall K F Gannai Helena M Gambiell Dorothy Godden A Golombek Helen L Good \*C \*H Hicks Catherine M Hest S L King James A W Kendall A J Kim \*L Lloyd Isabella L H Livingstone L J McGiegor R M Mober H L Marriott S P Meadows R L Mid lov W S Molau L Moss M I Nicholson W D Nicol Ethel E M Olive N D Patel R T Payne K R T Penris Ethel E A Pepper G M Phadke L G J Pitt-Payne W V Posel L R Rics Elsie L A Ridley Violet Rippin E H Roche J E C Rouse B F Russell Margaret I Saul W D Sheldrake E W Skipper Hilda W Slack W R C Spicer Olive F Sidenham, Victoria W Simonds Dorothy Taylor Kathleen A Vernon P F Ward J G Weston Dorothy M Wilkins M C Wilkinson J E B Williams Elsie B Wright, H D Wise

\*Honours. †Distinguished in Medicine. ‡Distinguished in Pathology  
§Distinguished in Surgery. ¶Distinguished in Midwifery

### UNIVERSITY OF LEEDS

The West Riding panel practitioners' prize in medicine and the William Hey medal have been awarded to D W Currie, MB, Ch B Leeds

### UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examinations indicated

MD—R W Brookfield Ethel Browning Kathleen Edgecombe M T Morgan  
Ch M—W H A Dodd  
M Ch Orth—L O Betts  
Final MB and Ch B—\*W S Cicer \*G T Roberts †S L Tunnicliffe  
Part III A B Anderson A N Cameron F Edwards A W Giecu Elsie A Griffiths I T Lotter J McWilliams J J O Donovan G J W Pickup E S Smith D F Thompson Part I W W Gerard (Pathology) I Hossew I Lipchitz Part II Aiol R S Diacon H F Coheu R A Furniss J L Jones Hilda M C McElhannon Guri N W Roberts (Public Health) Elizabeth B Robson  
DIPLOMA IN TROPICAL MEDICINE—H S Baya R R Evans F A Aban M M Khan P N H Labuschagne W J Land B F Lewin A I Meek H C Mehta V V Menon H V R Miles S N Mokand T Viragathod Pauline I Murray P L Nuala D O Peters J H Pottington G V S Rodriguez H Sima S D Statton S A Wilkinson  
DIPLOMA IN TROPICAL HYGIENE—P N H Labuschagne  
\*With Honours Class II Surgery. †With Honours Class II Medicine

### UNIVERSITY OF MANCHESTER

The following appointments have been made. Lecturer in anaesthetics, L Falkner Hill MB Ch B, lecturer in diseases of the throat and nose I G Wrigley, MB, lecturer in histology, Miss E R A Cooper, MD, M Sc, demonstrator in anatomy, Miss I May Howe, MB Ch B, demonstrator in chemistry in the department of bacteriology and preventive medicine, M W M Short, M Sc

### UNIVERSITY OF EDINBURGH

At the graduation ceremony held in the Upper Library of the University on December 16th, under the presidency of Sir J Alfred Ewing, Vice Chancellor the following degrees were conferred

MD—F W Anderson M J Bette \*G Brewster J C L Craig S I (honorary) D M Dunlop H J C Dunward J I Fraser I M D Grieve H H Holden G J Hughes †D I A Kerr \*J G Kinnmonth Helen M Russell H T Smith †D Stewart †D White  
Ch M—A L V Giegor  
MB Ch B—C H B Adamson H J van den Berg A G Bonnyman A V R Choudary Clements B Cohen J L Cowan T A Jessio D Forester J Fraser L M I hton S Jesudasan W H E Johnson A A Mac Arthur J W B Macdonald A A Mac Arthur  
Phy B—A W MacQuarrie F F Main R Mennie W M G Mitchell W D Moore J S R Paudyal W H D Patterson P J G Payne Frances M Porter L L Ratazzi A S Reilly R H Robertson I W Russell B S Sandhu Margaret A Spencer E R Thomson E W T Webber Elisabeth M Williams  
DPh—Margaret A Mackenzie

\*Awarded gold medal for thesis. †Highly commended for thesis  
Commended for thesis

### ROYAL COLLEGE OF SURGEONS OF EDINBURGH

The following 49 candidates, out of 94 entered, having passed the requisite examinations, were admitted Fellows on December 16th

H H Barnett I Blain P D Braddon C A Braumbridge J W D Buttery W J W Close P Connan C E Cross J T Danis Besie P Darling B V Dunn J I R Edwards H G Furgell L G Gerstenberg R L Gibson E G M Gilchrist J G Gillies W C Gissano W R D Griffiths F W Gutteridge W G Hazelton W A Herve S W Houston L W Johnston Mary Keith Thompson G B King F A Lamb G L J Lamm G Lowe D J Martin R Morton E A Menon R R Menon J MacGowan A A Macpherson D C Macrae S Macvicar D J P O'Vera S M Rao S I H Reid C C Ross H Rush A E Sawdas H W Simpson H Singh C M Smiths T W S'phens N Waddle A S Wong

## Obituary

AMAND JULES McCONNELL ROUTH MD FRCP,  
Consulting Obstetric Physician Charing Cross Hospital and  
the Simultaneous Free Hospital for Women

We much regret to report the death, on December 15th of Dr Amand Routh, who rendered distinguished services to gynecology and took a great interest in the active campaign for the prevention of infantile mortality.

Amand Routh, who was the son of Dr C H Routh, a gynecologist well known in his day, was born in London in 1853. He was educated at King's College School and University College Hospital, he obtained the diplomas MRCS, LRCP in 1880, and graduated MB, BS and became MRCP in 1882. In 1882 he proceeded to 1900. During his student days he was captain of the Rugby football club of University College Hospital from 1875 to 1877, and for several years was a member of the United Hospitals football team. After practising for a little time in Upper Montagu Street he removed to Manchester Square, where he resided for nearly forty years, he also had a house and grounds close to the golf course at Northwood, which enabled him to devote himself to this game, of which he was no mean exponent. He was appointed pathologist and chloroformist at the Simultaneous Free Hospital for Women in 1881, he became out-



patient physician in 1882, and received charge of beds in 1884, being elected full physician soon afterwards. On his resignation in 1901 he was appointed consulting physician to the hospital. Dr Routh was elected obstetric physician to St Markham General Dispensary in 1882, consulting physician in 1890 and consulting obstetric physician to St John's Hospital, Twickenham, in the following year. From 1883 to 1893 he held the post of assistant physician in connection with Charing Cross Hospital, he then succeeded Dr Watt as obstetric physician and lecturer on midwifery. When he resigned in 1912 he was appointed consulting obstetric physician to the hospital. Soon after his appointment to the gynecological ward of Charing Cross Hospital he succeeded in getting the rule removed which prevented obstetric physicians from performing abdominal operations unless the patient was pregnant. He was examiner in midwifery and gynecology for the Conjoint Board from 1894 to 1900, for the University of London from 1901 to 1904 for the University of Birmingham from 1903 to 1906, and for the University of Cambridge from 1909 to 1915. He was on the standing committee of convocation of the University of London from 1904 to 1923, and a member of the Board of Advanced Medical Studies from 1906 to 1910. In 1910, on the invitation of the committee of the International Congress of Obstetrics and Gynecology at St Petersburg, he opened a discussion on Caesarean section. He attended this congress as representative of the Royal College of Physicians and Surgeons and of the Royal Society of Medicine. He published his report in a book entitled *Caesarean Section by Living Obstetricians in Great Britain and Ireland* (1911). This report, to which we refer at the time (JOURNAL, 1911 vol 1, p 219) led to much discussion and it was subsequently concluded that in most suitable cases when there had been no attempt at delivery the mortality of Caesarean section was only 10 to 12 per cent. Afterwards, however, the operation was employed in many unsuitable cases of eclampsia and parturition haemorrhage, and for minor pelvic contractures.



In 1917 he was elected president of the Hygienic Society, and his presidential address dealt with intestinal syphilis.

Dr Routh joined the British Medical Association in 1881 and about the same time was elected a fellow of the old Royal Medical-Chirurgical Society and of the Medical Society of London becoming a member of the councils of the two societies in 1902. He joined the original Obstetrical Society of London in 1882, and was a member of its council from 1886 to 1893, librarian from 1898 to 1900, secretary from 1900 to 1903, vice-president, 1904, and in 1911-13 was President of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine with which the old society had united. During his two years' presidency Dr Routh delivered presidential addresses emphasizing the need for advance in the chemical, physiological and pathological sides of menstruation, pregnancy, labour and lactation. One of these addresses was the basis of a leading article in our columns on 'The return to chemistry' (1911, vol. ii, p. 1118). Dr Routh also contributed to the volume on *Gynaecology* edited by Playfair (1894) for Allbutt's *System*, and published a large number of papers in various medical periodicals.

In 1912 Dr Routh joined the council of the National Association for the Prevention of Intestinal Mortality and persuaded this society to include in their scope the antenatal care of death and the need for medical supervision of pregnancy. In 1914 he delivered a lecture on antenatal hygiene and its influence on infantile mortality (*Journal*, 1914, vol. i, p. 355) which aroused considerable interest. It was estimated that the number of foetuses which perished was equivalent to the death rate in the first year in life, which was then about one in ten. Deputations to the Local Government Board followed and an important conference was held at the Guildhall. Dr Routh read another paper in April 1914 on the need for research in antenatal pathology, to which we referred in a leading article (1914, vol. i, p. 502). In the same year he gave evidence before the Royal Commission on Venereal Disease on the effect of syphilis on antenatal and infantile mortality and disease. The consequence of his strenuous advocacy was felt after the war when antenatal clinics were founded throughout the country and medical supervision during early pregnancy became increasingly popular.

Dr Routh was a strong opponent of artificial birth control except under medical advice and at the Church Congress at Leicester in 1919 he read a paper on the subject in which he advocated the two years' spacing of the birth of children by voluntary abstinence. He was churchwarden at St Paul's, Portman Square for nearly twenty years, and for several years was a member of the London Rural Medical and Middlesex Archdiocesan Conferences. He took a considerable interest in freemasonry from the year 1887 and obtained London Rank in 1910. He passed through the chairs of the Chere Rine (Charing Cross Hospital) Lodge which he founded in 1903 of the University of London (1905) of the William Harvey Chapter in 1915 and of the University of London Conclave or the Order of the Secret Monitor in 1918. After his retirement from active practice in September 1923 he removed to Folkestone and interested himself in local municipal affairs being elected a member of the borough council in November of that year.

Dr HENRY ERNEST KNIGHT to whose death we referred in our issue of December 10 (p. 1123) took a very active interest in the work of the British Medical Association in Rotherham. He was chairman of the Division from 1909 to 1925 and a member of the Executive and Editorial Committees from 1925 to 1926. Dr Stanley Wildman honorary secretary of the Rotherham Division, writes: It seemed scarcely credible that Dr Knight should have passed beyond, when it was remembered that precisely a week earlier he had been at dinner on November 25th. He had been his usual cheerful self. One cannot help feeling that with a smaller share of responsibility and a less warm devotion to duty he might have been still with us. Never was a man more devoted to the ideal and ambition of the British Medical Association. His sixteen years of chairmanship in the Division had afforded him a real knowledge

of all the difficulties that may be met as a medical man and his advice and example had always been helpful. It had been hoped that in the very near future he might have been elected chairman of the Yorkshire Branch. The Division and the profession of the district are the poorer for the loss of a kind, loyal and honoured brother. A remarkable tribute was paid to his memory at his funeral on December 5th. Rotherham Parish Church was crowded to its fullest capacity with a congregation representing the public and professional life of the district while thousands of the general public gathered outside to pay their respect. His loss will be greatly mourned especially by his professional brothers to whom he had always been ready and willing to give help or advice. The wreath which they sent to his funeral bore the inscription *With sorrow and remembering affection*.

Dr WILLIAM JOHN FRANKLIN CHURCHOTSE who died on December 5th, was born in 1855 and received his medical education at Charing Cross Hospital. In 1879 he obtained the diplomas L.S.A., L.R.C.P. Ed. and L.M. and four years later the I.R.C.P.S. Glasgow. He had held the posts of medical officer of health for the Daventry Urban and Rural Districts and had contributed two clinical notes to the *British Medical Journal*. He was a member of the Executive Committee of the Northamptonshire Division of the British Medical Association from 1923 to 1925, vice-chairman in 1924 and chairman from December 1924 to December 1925.

Dr MATTHEW THOMPSON, who died suddenly at his residence in Richmond on November 12th at the age of 56 received his medical education at St. Bartholomew's Hospital. In 1884 he obtained the diplomas M.P.C.S. Eng., L.R.C.P. Ed. and L.M. After holding the posts of house surgeon and house physician at the West London Hospital in 1886 he was attached to the Scots Guards as surgeon and accompanied Lord Wolseley's expedition to Khartoum. On his return he practised for a time in Lincolnshire and then removed to Hemel Hempstead, where he was appointed surgeon and later consulting surgeon to the West Hertfordshire Hospital. He took an active interest in local affairs, was mayor of Hemel Hempstead and a member of the Hertfordshire County Council. Dr Thompson was also chairman of the local Conservative Association and was selected as their candidate for Parliament but stood down in favour of an official nominee. At the beginning of the late war he received a commission in the R.A.M.C. and served at several home stations until 1919 when he retired to Richmond. He was a member of the British Medical Association. A colleague writes: As a striking example of Matthew Thompson's genius for friendship he for twenty years dined on May 27th with Bait's and Guy's friends made during student days. He will be much missed by many friends, and leaves a widow and two sons.

We regret to record the death on November 23rd of Dr GEORGE EDWARD MOORE of Maidenhead. He was born in 1857 received his early education at the South Grammar School and then proceeded to King's College. He took the diplomas of M.R.C.S. Eng. and L.R.C.P. Lond. in 1874 and graduated M.B. Lond. with honours in medicine in 1875. He was a keen athlete winning two half miles at the Inter Hospital Sport and playing Rugby football in the United Hospitals XV. On the formation of the Thames Valley Rugby Football Club he was elected its president. After serving as house-physician to King's College Hospital he joined as junior partner with Drs Richard Cooden and Playne at Maidenhead, where he continued to practise until his death. He was president of the Oxford and Reading Branch of the British Medical Association in 1885 and chairman of the Maidenhead Division in 1912-13. He took a great interest in educational work and was a governor of the County Boys' School for several years. He was chairman of the board of governors of the Maidenhead Hospital. Dr Moore's made a justice of the peace for the borough in 1924. His

son, Lieutenant R. L. Moore of the Somerset Light Infantry, was killed in 1914. Another son is Dr. Gilbert Moore, M.C., who was in practice with his father.

Dr. JOHN EALEY died on December 8th, aged 62. He was educated at Yorkshire College, Leeds, and took the diplomas of L.R.C.P. in 1887 and M.R.C.S. Eng. in 1888. Early in his professional career he acquired the practice of Dr. Hick of New Wortley, and had remained in the district ever since. He was medical officer of the Leeds Prison, Armley, for twenty-five years. He resigned the post of district medical officer for Wortley in August, 1926, which he had held for thirty-seven years. In 1920 he was elected a member of the city council, and represented the New Wortley Ward for three years. In 1924 he was appointed a justice of the peace. He is survived by his widow, one son (Dr. Cyril J. G. Ealey), and one daughter. At the sitting of the Leeds Police Com. on December 8th sympathetic reference was made to Dr. Ealey's death from the bench, and by the chief constable and members of the legal profession.

Dr. CHARLES MACARTHUR ARLEN of Longton, who died on December 12th, was a member of an old Highland family and was born at Strathspey 67 years ago. He received his early education at Granton and Old Aberdeen Grammar Schools, and studied later at the University of Edinburgh. He graduated M.A. in 1882, M.B., C.M. Edin. in 1887, and proceeded M.D. ten years later. He commenced practice in Longton in 1888 in partnership with the late Dr. James Grant, on whose death he succeeded to the practice. He took great interest in ambulance work, and in recognition of his services was appointed an honorary life member of the Order of St. John of Jerusalem. He was public vaccinator for Longton and formerly school medical officer, and had served as a member, vice-chairman, and chairman of the Longton Education Committee. Dr. Allan was president of the North Staffordshire Medical Society for 1923-24, and was a member of the North Staffordshire Division of the British Medical Association. He had been president of the Men's Golf Club since its inception in 1889.

Dr. WILLIAM GIBB DUN, who died on December 10th, in his 78th year, received his medical education at Glasgow, where he graduated M.B., C.M. with commendation in 1877, and proceeded M.D. three years later. He became F.R.F.P.S. Glas. in 1881. After holding the post of house-surgeon at the Royal and Western Infirmarys he was appointed assistant to the professor of clinical medicine in the University of Glasgow in 1881. For many years he was assistant physician to the Western Infirmary and physician to the Society for the Prevention of Cinelty to Children. He was an ex-President of the Royal Faculty of Physicians and Surgeons of Glasgow of which he was for some years treasurer, and was president of the Glasgow Medico-Chirurgical Society.

Dr. JOSEPH McGRATH, who died on November 11th at the age of 59, received his medical education at Queen's College Belfast, and graduated M.B., B.Ch., B.A.O. of the Royal University of Ireland in 1893. He served during the war in the Tank Corps. He had practised for several years in South Kensington, and was a member of the British Medical Association.

In a footnote to his paper in our issue of December 3rd (p. 1019) we had to announce with regret the death in his sixtieth year, of Dr. JULIUS PETERSEN, professor of medicine in the University of Lund. He was a well known writer on renal and tuberculous subjects, especially diabetes, nephritis and international congresses and a few months before his death which occurred from cerebral hemorrhage on October 15th, he took part in the discussion

on epidemic encephalitis in the Section of Nervous and Mental Diseases, and read a paper on the statistical evidence of the value of insulin in the Section of Medicine at the Annual Meeting of the British Medical Association at Edinburgh last July. A sympathetic memoir by Professor Knud Faber of Copenhagen, with portrait, appears in the issue of *Hospitalstidende* for October 20th.

## Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

BOTH Houses of Parliament were busy this week in hurrying bills through their closing stages to be ready for the Royal Assent which was arranged to be given on Thursday when the session was due to close. The House of Commons also debated unemployment and the state of British agriculture. No official information was available on the Government programme of business for next session, but a Factory Bill is still anticipated and a suggestion has been heard during the week that the Government may introduce in 1928 a National Health Insurance Bill based on the recommendations of the Royal Commission.

### Medical and Dentists Acts Amendment Bill

*The G. V. C. and the Irish Free State*  
In the House of Commons, on December 16th Sir Kinnaird Wood moved the second reading of the Medical and Dentists Acts Amendment Bill, embodying an agreement between the Irish Free State and the United Kingdom consequent on the establishment of the Free State and legislation which had followed by it, he said, the General Medical Council had to exercise its authority on control over the medical profession in the Irish Free State, and had ceased also to be able to place on its Register students who had obtained medical qualifications in the Irish Free State. Both sides regarded the position as unsatisfactory and had been negotiating. By an interim arrangement the General Medical Council agreed to accept for the United Kingdom Register students with qualifications obtained in the Free State. To validate that agreement was one of the objects of the bill. A signed agreement set out this year and had the concurrence and support of the General Medical Council. The Government had been assisted in the matter by Sir Donald MacAlister, president of the Council. Under the agreement the Council would continue to admit to the Medical Register all persons who, prior to the establishment of the Irish Free State, would have been admissible in respect of qualifications there obtained. The Council would possess the right to such admission so far as was necessary for keeping the United Kingdom Register and would have complete control of that Register and of the profession in the Irish Free State. The bill provided for admission to that Register on equal terms of all persons on the United Kingdom Register. The position with regard to the Dentists Act was similar, and was embodied in Part II of the schedule. The Government had been assisted by Sir Francis Ashford, chairman of the Dental Board of the United Kingdom. The Free State had passed legislation to give effect to the medical side of the agreement in the Irish Free State where two bills were required. He thought the bill before the House was a happy solution of the difficulties which had arisen. The House read the bill a second time without opposition.

### Nursing Homes Registration Bill

On December 16th the House of Commons considered the Nursing Homes (Registration) Bill as reported with amendments for Committee. Captain Cazalet moved a new clause as follows:

1. Under of Minister to Exempt Christian Science Nurses from this Act in respect of any nursing home as respects which it is that it is a nursing home, or will be carried on in accordance with the principles of the body known as the Church of Christ Scientist.
- (2) It shall be a condition of an exemption granted to a nursing home that the nursing home shall adopt and use the Christian Science nursing home.
- (3) An exemption granted under this section in respect of a nursing home may at any time be withdrawn by the Minister if it is found that the nursing home is not being carried on in accordance with the principles of the body known as the Church of Christ Scientist.

Captain Cazalet said the bill as received from Committee would compel any nursing home to have in charge a qualified medical practitioner or a qualified nurse. He thought the bill was a happy solution of the difficulties which had arisen. The House read the bill a second time without opposition.

entirely different from that of the medical profession and a qualified medical man or qualified nurse must disapprove of the methods adopted in Christian Science homes. Captain Cazale explained that these homes, of which there were thirty in England and Wales, did not take maternity cases requiring surgical operation or cases of infectious diseases. No attempt was made under the proposed new clause to exclude any of the rules and regulations on ventilation, sanitation and such matters. The homes were prepared to submit to any inspection and registration thought desirable by the Ministry of Health and he understood the new clause conformed with the requirements of the Ministry. Viscountess A. for seconded the proposed clause. Sir Cyril Cobb who had been chairman of the Select Committee on Nursing Homes said that committee held on the evidence which came before them that there should be no exemptions for institutions in the nature of nursing homes where payment was made. They had been told among other things that the General Medical Council would ensure that homes kept by medical men where they received patients for fee were properly run and that they need not fear such homes would not be provided with trained nurses. But evidence showed some of the worst cases of neglect occurred in nursing homes which were run by doctors. On the proposed clause they were not dealing with a religious question but a medical and nursing question. Though a small exemption had been made in the bill for existing nursing homes the evidence had been conclusive that a nursing home should have qualified nurses on its staff even if it did not have at the moment a qualified nurse or a qualified medical man at its head. He must vote against the clause which according to Sir Kingsley Wood's words in Committee would drive a home and coach through the bill. Mr Morris asked how the Minister of Health would be kept informed of any modification of Christian Science doctrine, practice and principles. Lady A. for They do not change.

Sir Richard Luce, a member of the Select Committee on Nursing Homes, opposed the clause. He said the Committee had received two applications for exemption of nursing home one from member of the medical profession and the other from representatives of the Christian Science Church. It became evident that it was unwise to grant exemption for homes under the charge of medical men and it would be unfair to give exemption to any other body which claimed it on much the same grounds. Before the Select Committee the representative of the Christian Science Church had said there were only three Christian Science nursing homes in the country located in places in the nature of boarding houses where patients could go to a treatment. Now Captain Cazale said there were thirty or forty Christian Science nursing homes. If the boarding houses were now being included there would not come under the name of nursing home and there would be no great hardship in closing down the few which were definitely nursing homes. The clause did not seem to guarantee that the homes it proposed to exempt would be properly inspected. The Minister was not to take the responsibility of inspecting them and the guarantee that they belonged to a particular Church did not give any guarantee that the homes were being run on proper lines. Other unorthodox methods of treatment were in vogue in this country. How could the Minister of Health in future refuse exemption to these also set up homes? He opposed the House would not agree to the clause.

Mr Chamberlain and he was not a Christian Scientist. So far as the practice of Christian Science was to substitute other methods or medical and surgical and he disapproved of it. The House was not concerned with doctrines but to see that no member of the public was deceived and Christian Science was not carried out as medical treatment there was no pretence that treatment which was given by Christian Scientists was offered as an alternative to medical treatment or as a variety of medical treatment. If by bringing these points under the bill the House required them to appoint a qualified nurse as superintendent who would be a piece of camouflage introduced so that they could be said to be nursing homes and would be likely to deceive the public. Members were unwise to attempt to bring these homes under the bill.

Dr V. Davies intervening said the bill referred to nursing homes. If the Christian Scientists referred to their homes as homes of rest or homes of treatment they would not come under the bill and the public would not be deceived.

Mr Chamberlain and he was advised that such institutions would come within the definition of nursing homes in the bill. To say that the practices of Christian Science should not be carried on in an institution though legal elsewhere would be regarded as persecution of religious opinion. The inclusion of these institutions under the bill offered difficulties so serious that he could not contemplate it. The main consideration was to see that the public if it entered one of these institutions did so with its eyes open. His object would be secured if they could get some test whereby the institutions could be separated from homes set up by unqualified persons posing as medical practitioners. Captain Cazale's clause carried out his idea in that the homes were to be called nursing homes. Mr Chamberlain suggested that Captain Cazale should use some other title such as Christian Science house which did not involve any suggestion of medical practice. The public could not read the Act they would read the title put up on the door of the institution. Mr Montague suggested Christian Science home. Mr Chamberlain said that even the word home suggested something in the nature of nursing home.

Mr Thomas said the Minister had made it clear that no body whether Christian Scientists or otherwise could come to the House with the hope it would co-operate in right to an institution to say "No matter what we do no matter what a practice we are engaged in or in a profession. The House would not be in any way such claim. Captain Cazale said the responsibility for the new clause was resting on a point my name which I submit might suggest and the House approve.

Dr Fremantle asked the House to recognize that it was the position of medical men called to make such an exemption. These were not questions of kindred humanity charity or liberty. They were concerned with the protection of the public. He saw nothing about the homes to which exemption was claimed nor did the Minister of Health. He understood there was no body in this country representing the Christian Science faith which could certify these homes. If they were rest homes they would attract people who had disease and to know whether they were nursing homes or not would become practically impossible. The more ignorant portion of the public did not know the difference between Christian Science and any other science. If the House opened the door to this could they prevent it opening to the older and more widespread cult of homeopathy or to the osteopaths? He wondered how the Minister was to have the knowledge which would make it appear to him that the exemptions were not being properly carried out. Would the Minister and his officers have the right to inspect? He could not vote for this clause without further assurances.

Mr Gerald Hurd said he had come to oppose the clause but he thought the courses open made by Captain Cazale removed all suspicions and distrust. He suggested drafting amendments including the name of the word institution at certain passages in the bill.

Dr V. Davies thought the alteration of the word home to house got over much difficulty. He could not associate himself fully with Dr Fremantle. If it was necessary that homes or houses should be provided for the particular treatment of Christian Science then people had a right to go to them and neither medical men nor members of Parliament had a right to interfere provided the public were safeguarded and were not being deceived. It would be impossible for a person of adult age to go into a Christian Science house in ignorance. Whether when there he would be well or ill treated was no concern of the community. He suggested that the Minister to be satisfied that the house was carried on in accordance with the principles of the body known as the Church of Christ Scientist should require the head of that church in this country to certify that it was one of their houses carried on according to their principles. Sir Kingsley Wood said the head of the church would give the certificate. Miss Wilkinson remarked that there was no more profitable way of making money in this country than having some way of curing people which was different from anything previously advocated. Would the houses be situated and by someone in this country or in Boston. Sir Kingsley Wood said the head of the church in this country was well known and would be recognized by the Ministry. Captain Cazale said new clause was then read a second time and with the substitution of "house" for "nursing home" added to the bill.

On Clause 5 (Inspection of Nursing Homes) Mr Gerald Hurd moved to insert "qualified nurse or" in page 4 line 37 after the word "one" to emphasize that when the medical officer of health deputized some official to inspect and visit nursing homes he should bear in mind that the official primarily qualified would deal with questions of nursing while a qualified nurse Miss Wilkinson seconded and applied for a qualified nurse to be the back premises and the nursing side. She knew instances of epileptic and dirty material was stored in the kitchen or in the bathroom. A busy practitioner could not go into such details they were jobs for nurses. The amendment was agreed to.

On Clause 8 (Local supervising authority) Mr Chamberlain moved to insert as the authority "the council of each county as respects that county and the council of every county borough as respects that borough." He said the Standing Committee before which the bill came had decided that a district committee whose medical officer was not otherwise employed might also act. Since the proceedings in Committee representatives of the various classes of local authority had agreed on the amendment which was included in his name. This amendment went back to the original county borough or county council as the supervising authority but powers were given to the authority to delegate its powers to a minor authority and the minor authority had the right to apply along to the Minister if their application for such delegation were refused. Mr Paine said the compromise had been reached without authority from the County Councils. On occasion Dr Fremantle said that that association chairman had power to act. Dr Fremantle said that certain that to have the inspection entirely to county councils and county borough council was best as had been done in the Maternity Homes Act but friends of the bill had the alternative of doing it or of accepting the compromise. With great hesitation he asked them to accept the compromise and asked the Minister to see that the bodies to whom the powers were delegated used them in the interests of the public. Miss Wilkinson condemned what she thought a thoroughly retrograde step. She had resolutions from the National Council of Nurses against it being carried on by these smaller bodies. Colonel Appin asked for assurance that the midwife would not be under the authority of Mr Viant said a number of urban districts had their own medical officers. Mr Chamberlain said he would not put his name to such a compromise even to secure the bill unless convinced it was a good one and would work out in practice. The next amendment with reference to delegation said

The council of a county may, on the application of the council of any county district within the county, delegate to the council of that district or to any sub-committee, or to any committee, or to any other body, such powers as it may think fit in relation to the powers or duties of the council of that district under this Act.

He felt certain these words would avoid the duplication of inspection. Where a minor body had a committee staff undertaking work in connection with prenatal conditions a county council might delegate the inspection of maternity homes to them and say

Will you take from us the inspection of midwives and act as our agents? It would be possible to make arrangements of that kind. Miss Wilson asked whether the effect of what the Minister had said was to make it possible for the county council to hand

over to the smaller authorities the supervision of midwives, which they could not do under the terms of the Maternity Homes Act. Mr Chamberlain said the county council could not delegate responsibility. They might make arrangements for the inspection to be carried out by the officers of another authority, if that authority cared to lend them for the purpose. If was not a question of the delegation of responsibility, but merely a question of the particular individual who would make the inspection.

The first amendment restoring the powers of inspection to the councils and county borough councils was carried by a vote of 10 to 4, which also added the metropolitan councils to the list of authorities above by Mr Chamberlain.

The first amendment would make the inspection of the district council and county borough councils which also added the amendment restoring the powers of inspection to county councils and county borough councils was then made by the House, above by Mr Chamberlain), and a further subsection declaring that if any district council by which an application is made under sub section (2) of this section is aggrieved by the refusal of the House, council to delegate any of its powers or duties otherwise than subject to restrictions, the district council may make a representation to the Minister with respect to the matter, and the Minister, after consultation with the county council, may direct the county council to delegate to the district council, either with or without restrictions or conditions, such of its powers and duties under this Act as the Minister thinks proper, and the county council shall comply with any direction so given.

After adding consequential amendments on the payment of expenses the House reported the bill and, on the motion of Mrs. Philipson, it was read a third time.

Viscount Gage moved the second reading of the bill, and the bill was read a second time.

(Registration) Bill in the House of Lords.

Lord Dawson of Penn said:

The bill among other things

Lord Dawson of Penn said there was not universal agreement among the laity and the professional body as to the necessity of the bill to carry out its provisions.

the bill among the House of Lords on December 20th. I have to carry out its provisions. The sole justification for the bill was that the report of the professional men who would have considered the matter disclosed very serious abuses which had gathered round certain nursing homes in various parts of the country. The public were being exploited and he thought that anyone who had studied that report sufficiently must recognize that there were abuses which would justify action on the part of the Government. So far as the improvement of nursing homes from a professional point of view was concerned he was very sceptical as to whether it was possible to improve them by any system of inspection. The real way to secure improvement was to set up proper institutions and buildings for the care of the sick. In so far as they did that the more inefficient nursing homes would cease to exist. The bill gave powers of a most extraordinary character, and those powers should be used well. He thought that they might lead to intolerable abuses if they were not used with the utmost care. He thought that the bill was a most important one.

the real way to improve them was very proper institutions and buildings for any sick In so far as they did that the more they would cease to exist The bill gave powers of the character, and those powers should be used with great discretion, or they might lead to intolerable tyranny. He feared that there might arise a pettifogging type of inspector, who would do more harm than good. One incidental effect of legislation of this kind would be that they would put the medical profession of this kind local authorities, and the more they did that the more would they make for the municipalization of medicine in this country. Ho could understand people who were in favour of a State medical service voting for this bill. He was strongly in favour of setting up some sort of committee which would correspond to the committee set up by the education authority. That Committee would deal with the health services and would bring the official and unofficial sections together. The real case for the bill was that it would prevent the abuses that were disclosed before the Select Committee. Ho would therefore support the bill. Earl Russell criticized the clause dealing with the homes, and protested against the clause dealing with the Marquess of Salisbury.

The bill was read a second time

*Mental Deficiency Bill*  
The Mental Deficiency Bill was read a first time in the House of Lords on December 16th and passed through Committee without amendment on December 20th

*Landlord and Tenant Bill Compensation for Improvements*

During the Committee stage of the Landlord and Tenant Bill in the House of Lords on December 16th, the Duke of Northumberland moved to amend the subsection of the bill which provided that in claims for improvements made by leaseholders premises used for carrying on a profession shall be deemed to be premises used for carrying on a trade or business. He proposed to insert the words 'A profession for the purpose of this section means the habitual and regular practice of a learned or skilled profession as the chief means of livelihood.' He said the object of adding 'professions' in the section was that the Act should apply to learned and scientific professions which were essential to any civilized society to doctors, dentists and so forth. Lord Sumner said a person who practised the subordinate arts of healing—the man who took x-ray photographs was a good instance—would not be regarded as a tradesman and would not be called a business man but to what profession did he belong? He supported the amendment. The Lord Chancellor said the framers of the section intended to meet the case of a doctor who wished to add a surgery to the house where if at the end of the term some value remained to the landlord the tenant should have compensation for the unexhausted value. The professional man had no right in the Duke of Northumberland would raise difficulties. If at the beginning a doctor got little profit from his profession, should he for this reason be cut off from compensation if having found the money for the surgery he lost it? To meet the point raised by

*National Health Insurance*—At a rough approximation Mr Chamberlain estimates that some 14,000,000 persons insured in England and Wales under the Health Insurance Act lost upwards of 150,000 000 working days from sickness in 1925, and upwards of 169,000 000 working days in 1926. No data are available on days lost through sickness in the general population.

*Health of Troops in China*—Introductory statement by the Hon. the Commander-in-Chief, India, on the supplementary estimate of 1927-28.

*Health of Troops in China*—Introducing, on December 14th a supplementary estimate of £3,090,000 for British troops in China, Commander Douglas King, Financial Secretary to the War Office, said that the troops at Shanghai had been in a confined space with improvised encampments and restricted facilities for recreation. Their health, in view of these circumstances, had been very satisfactory. During the early months of the occupation there had been a serious outbreak of pneumonia, attributed to the climatic conditions and to the common habit of the Chinese of spitting on the ground everywhere, in public carriages, and all public places. Mr. Trevelyan, in an attempt to learn the average amount of sickness among the British troops in China, said he was never able to get any definite information as to the number out there. He would assume that there was an average of 20,000 during this year. According to figures supplied, the approximate number in hospital in March was 580, in April 710, in May 870, in June 959, in July 1,309, in August 1,132, in September 1,191, in October 799, and in November 713. These figures showed that there were always something like one in twenty in hospital. He did not think that was a very good average. Mr. Welles drew attention to the statement in a medical newspaper that the rate of venereal disease among the British troops at Shanghai had been high and had given the command much anxiety. Many tragedies would follow what an eminent doctor who had been out to China stated to have taken place. The estimate was carried.

*Small pox*—The Home Secretary states that 1,000 notified in prisons of England, Scotland, and Wales, in the month of December 12th 1927, eight small pox cases.

*Small pox*.—The Home Secretary states that during the year ended December 12th 1927, eight cases of small pox had been notified in prisons of England and Wales. Prisoners suffering from small pox were removed at once to hospitals for infectious diseases. The Minister of Health has no previous information on the cost of recent outbreaks of small pox. This cost is met from local funds. In an answer to Mr. Groves on December 15th Mr. Chamberlain said forty five cases of small pox recently occurred in Newcastle on Tyne Poor Law institution. Forty two patients, whose ages ranged from 17 to 70 years had been vaccinated in infancy only one had been re-vaccinated ten years ago. Before the outbreak there had been no general vaccination of the inmates for fifteen years. Inmates recently vaccinated and re-vaccinated had been attacked by small pox, but in no case had the vaccination been successful.

*Hospitals and Hospital Beds*.—Early in 1925 the number of State hospitals and

*Hospitals and Hospital Beds.*—Earl Winterton states that in 1925 the number of State public local fund, and private ind. hospitals and dispensaries in British India was 3,972 and the number of beds available 45,049. The number of indoor and outdoor patients treated was 738,570 and 40,472,780 respectively. The number of female hospitals and dispensaries was 173, with 4,249 beds available. The number of beds available for women in general hospitals was 11,260.

*Treatment by Sunlight and Sea.*—The number of patients treated at the Commander Kenworthy's Sanatorium, Scarborough, in 1925 was 1,000.

*Treatment by Sunlight and Vapour Baths*—In an answer to  
Commander Kenworthy Mr Chamberlain said he had visited the  
sunlight and vapour baths of the Hull Corporation and regarded  
them as a valuable experiment but they had not been long  
enough in existence for him to recommend a similar system to  
other municipalities. Answering Mr Hardie Mr Chamberlain said  
he did not propose the introduction of legislation to control by  
establishments for treatment by ultra violet rays and other  
radiations

*Prescription of Alcohol*—Answering Mr Macquisten on December 15th, Mr A M Samuel said it would not be practicable to exempt from duty spirits consumed on the advice of doctors. The law provided for a rebate of about four fifths of the duty on spirits in recognized medical preparations. If spirituous preparations needed to be prescribed medicinally for spiritual purposes, the cost fell on the drug fund, and there was no question of personal hardship to deter panel doctors from prescribing. Mr Macquisten in his question alleged that brandy and other doctors frequently prescribed the use of spirits in influenza and pneumonia. I suggested that in all such cases panel doctors frequently position to supply patients with duty free spirits for medicinal purposes. He offered to give instances where consumers who were lifelong abstainers had been ordered by their doctors to consume spirits medicinally.

**Nutritive Value of Skimmed Milk**—Sir Kingsley Wood states that rather more of the nutritive constituents of milk than fat can be obtained for one penny from condensed skimmed milk than from ordinary milk. It is far cheaper, and considerably more is supplied by condensed skimmed milk over and to the sugar which it contains. Its nutritive value is concerned which amounts to about 0.5 per cent renders this milk unsuitable for infants.

**Food and Drugs Acts**—Dr Davies asked Mr. Clarendon whether he would give in traction that in future the authorities administering the Sale of Food and Drugs Acts should co-ordinate their activities upon taking more samples of the foods and

the poor rich is polonic in its and potted meat Mr Chamberlain said he was not empowered to instruct local authorities who could not continue their attention to selected article

**Blind Persons.**—The cost of maintaining the Blind Persons Act 1920 in England and Wales amount to about £200,000 a year. This is exclusive of the large amounts paid by voluntary agencies for the purpose of the Act and of the contribution made by the Free School and the local education authorities for education and training of the blind. The number of registered blind persons in England and Wales on March 31st 1921 was 46,822. Of these there were 17,252 between the ages of 50 and 70.

#### Votes in Brief

The Minister of Health will shortly publish figures giving particulars of the results of various schemes for the treatment of tuberculosis.

The Committee on Vaccination has met thirty times, and Mr Chamberlain states that it is now considering its report.

## Medical News.

THE foundation stone of the extension building of the Elizabeth Garrett Anderson Hospital, Euston Road, London, was laid on December 15th by Sir Alan Garrett Anderson, B.E., the son of the founder.

THE Royal College of Physicians of London will be closed from to-day, Friday, December 23rd, to Saturday, December 31st, both days inclusive.

THE meeting of the St John's Hospital Dermatological Society arranged for December 28th has been cancelled. The next meeting will be held at St John's Hospital, 49 Leicester Square, W.C. on Wednesday, January 25th 1923. The annual oration before the society will be delivered by Sir John Bland Sutton, Bt, on May 23rd, the subject being the debt of dermatology to optical glass.

AT the meeting of the Tuberculosis Society on Friday, January 20th, there will be a discussion on the work and aims of tuberculosis care committees and industrial agencies. At this meeting, which will take place at 8 p.m. at the house of the Royal Society of Medicine (1, Wimpole Street, W.), the draft constitution and by-laws of the Tuberculosis Association will be submitted.

AN illustrated lecture on modern athletics will be given by Mr H. M. Abrahamson at the Central Hall, Westminster, on January 13th 1923, at 3 p.m., in aid of the Tavistock Clinic for Functional Nervous Disorders.

THE Royal Institution has now issued its programme of lectures to be given before Easter. Among the Friday evening discourses will be one (on March 2nd) on the psychology of the sick, by Sir Farquhar Buzzard, the new Peckham Professor of Medicine at Oxford, and another by the daughter of his predecessor, Miss D. A. Garrod, on prebiotic cave art. The discourse on February 3rd will be by Professor E. C. C. Baly on photosynthesis and that on February 17th by the Rev. Dr. E. M. Walker on the university, its ideals and its problems. The juvenile Christmas lectures this year will be given by Professor Andrade, who will tell his hearers about engines. Among the general courses of lectures will be one on the physiological aspects of flying by Group Captain Martin Flack, Director of Medical Research, R.A.F.M.S., on March 22nd and 29th at 5.15.

THE report presented to the annual meeting of the constituents of the Metropolitan Hospital Sunday Fund held at the Mansion House on December 19th, showed that the collections this year amounted to £56,935.

VISCOUNT KNOTSFORD presided at the annual meeting of the British Charities Association held at Kingsway House, London, on December 15th. He reported that the activities of the association had resulted in a surplus for the year of £18,120, being an increase of over £4,000 on the previous year's figure. Distributions to voluntary hospitals during the year amounted to £20,600, and the council had since made further grants of £15,000 to King Edward's Hospital Fund for London and £5,000 to the League of Mercy, the latter for distribution among hospitals outside the London area. The total distributions since the formation of the association four years ago now exceed £173,000.

THE first annual dinner of the Ringer Society was held on December 10th at Jules Restaurant with Dr Henry Ellis in the chair. A large company of guests were present at the invitation of the president and council. The president delivered the Ringer Oration. He explained that the society was named after Sydney Ringer, one of the first clinicians to realize the value of physiology and biochemistry applied to practical medicine and best remembered perhaps by his perfusion experiments with the fluid bearing, his name. Dr Ellis explained that the council of the society

had been actively engaged in formulating standards of urinary analysis and as a result of team work among different members of the council, working independently, these had been almost completed. He stated that the society would, in the ensuing year, proceed to define standards for blood in the same way. Professor Maclean, in response to the toast of Clinical Biochemistry, said he was much interested in the evidence presented of the activities of the society, and Professor Joseph Barcroft of Cambridge also replied. The health of the guests was proposed by Dr Halli, Bally, who said that one of the aims of the society was to study functional efficiency and Dr Langdon Brown and C. F. V. O., who replied, spoke optimistically as to the future of biochemistry applied clinically in the way advocated by the society. The health of the president was proposed by Dr David Barcroft.

THE KING has appointed Dr Joseph Clarke McLerron, senior medical officer to be an official member of the Executive Council of the Presidency of Montserrat.

DR A. R. WIGHT, who has been elected provost of the bursar of Leslie, has been a member of the Town Council since 1905 with a break of only three years during that period. He graduated M.B. Ch.B. in 1897 and is a member of the British Medical Association and the Lincolns Medical Association.

DR FREDERICK CHARLES WILLMOT, Government Health Department, Capetown, South Africa, has been elected a Fellow of the Royal Sanitary Institute.

THE Mental After-Care Association for poor persons convalescent or recovered from institutions for the insane is appealing for funds to continue and extend its work. One of its chief objects is the prevention of relapse, and last year 1,650 persons were assisted. Contributions should be sent to the secretary, Miss Vickers, Church House, Deans Yard, Westminster S.W.1.

THE Minister of Health has issued a revision of a memorandum which was first published in March 1921 and dealt with the provision of treatment for tuberculous excretors. In the revised memorandum—30/T (Revised)—it is announced that certain modifications will be introduced on January 1st 1923. County and county borough councils are now asked to prepare and authoritative lists of patients whose treatment is chargeable to the Ministry of Pensions, thus correcting the present lists which, owing to the lapse of time, have become inaccurate. The Ministry of Pensions will continue to notify councils of any fresh cases which from time to time are accepted for financial support by the Ministry. Tuberculosis officers are warned that treatment allowances are not necessarily payable when a man is incapacitated by his war disablement but only in those cases now much reduced in number where a special treatment is to be undertaken precludes the man from following his usual occupation. A list of the addresses of the chief area officers accompanies the circular which has been sent to county councils, county borough councils, and tuberculosis joint committees of England.

By her will the late Mrs. Maryat has directed that, after paying public bequests amounting to £380,000, the residue of her estate is to be divided into two parts, one of which is to be paid to the governors of the Dundee Royal Infirmary to be funded for the purpose of that institution and the Sidlaw Sanatorium. It is understood that the sum to be funded will yield a very substantial return. Mrs. Maryat had previously given to the Dundee Royal Infirmary £10,000 to clear off the deficit on accounts and £75,000 to provide an X-ray and medical electrical department.

A POST GRADUATE course in dermatology and syphilis with special reference to therapeutics will be held in Vienna from February 13th to 25th. Particulars may be obtained from the secretary of the international post-graduate courses, Dr A. Kronfeld, Porzellangasse 22, Vienna IX.

THE first international congress of mental hygiene will be held at Washington in April 1923.

WE have received the first issue, dated September 1st, of the *Revista de Neurologia y Psiquiatria*, a Medical Journal in Spanish, a monthly journal published at Montevideo under the auspices of Dr. Americo Piccolini, M.D., professor of clinical neurology and other members of the Montevideo medical faculty. The journal aims at original articles on the pathology and treatment of nervous and mental diseases, and the current literature, society, intelligence and medical news.

THE November-December issue of *Norsk Tidsskrift for Læger* contains the obituary of the Norwegian Medical Society is dedicated to Dr. F. G. Gale, who has recently retired from the editorship of the journal.

SIR D. ARCY POWELL, B.E., one of the representatives of the Ministry of Health in the Metropolitan Asylums Board since 1921, has resigned on account of ill health.



## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

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All communications with reference to **ADVERTISEMENTS**, as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are **MUSEUM 9861, 9862, 9863**, and **9864** (internal exchange, four lines).

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**EDITOR OF THE BRITISH MEDICAL JOURNAL, Antiology Westcent, London**

**FINANCIAL SECRETARY AND BUSINESS MANAGER**  
(Advertisements, etc.), **Articulate Westcent, London**

**MEDICAL SECRETARY, Modiscera Westcent London**

The address of the Irish Office of the British Medical Association is **16, South Frederick Street, Dublin** (telegrams **Bacillus, Dublin**, telephone **4737 Dublin**), and of the Scottish Office, **6, Drumshough Terrace, Edinburgh** (telegrams **Association, Edinburgh**, telephone **24361 Edinburgh**).

### QUERIES AND ANSWERS

#### FREQUENCY OF MICTURITION

**DR J McWHIRLER** (Auckland, New Zealand) asks for advice in the treatment of a intermittent frequency of micturition in a man, aged 48, who is otherwise healthy and able to do an active day's work. The condition commenced about three years ago, without any obvious cause. The attacks of frequency last for several hours or days during which time the patient may pass urine as often as every hour. The attacks and remissions commence quite suddenly and without any warning signs. Radiological examination of the bladder and urinary tract on two occasions revealed no disease and the prostate gland is healthy. The urine is normal except for a trace of albumin and the presence of many coliform bacilli and a few Gram positive cocci, there is no evidence of vesical disease. Attempts were made to render the urine alkaline, but it only became neutral, and no benefit resulted. Two intravenous injections of a polyvalent *B. coli* vaccine produced transient rises of temperature, but had no other effect on the condition. Alcohol, particularly whisky, brings on an attack almost immediately, but diet seems to bear no relation to the frequency. A cystoscopic examination has not been made.

#### SANITIZATION OF SYRINGES AND NEEDLES

**MR T LOWLER WARD** (Ipswich) writes as follows in reply to an inquiry published on November 12th (p. 905) as to the best way of keeping syringes and needles, so that they can be ready for use without sterilizing by boiling.—The following solution is efficient. Dissolve 15 minims ether sulphur 2 diachmids, spirit to the ounce. The spirit should be basic industrial spirit, not methylated—(it is, without prejudice, it can be obtained from any wholesale druggist). I have used it for syringes, needles, etc., for the past ten years in the venereal and urogenital chancres, and no case of sepsis has supervened. It is equally useful for cleansing the skin before puncture or small operations, etc. The used syringe is washed under the tap, a small quantity of the solution drawn up into it, to get rid of moisture and then ejected, and the syringe replaced in the solution. If deposit occurs in the solution it can be filtered and used again. If my memory serves me right I saw the formula in the *Clinical Journal*, where it was stated that, as the result of experiment, a syringe that had been used for a virulent culture of *B. coli* was rendered sterile after immersion in the solution for three minutes. This solution is in general use at the East Suffolk and Ipswich Hospital.

#### CANCER AND DIABETES

**DR FREDERICK L. HOFFMAN** (consulting statistician to the Prudential Insurance Company of America, New York, New Jersey) writes in reply to "C. H. S." (*Journal*, October 29th, p. 810) who asked for information concerning the occurrence of carcinoma or other malignant disease in patients suffering from diabetes. In connection with the San Francisco Cancer Survey I obtained replies from a large number of living cancer patients asking among other questions as to whether the patient had suffered or was suffering from diabetes. Out of 834 male cancer patients 13, or 1.6 per cent, were having or had had diabetes, while the percentage for 602 female cancer patients was only 8 cases of diabetes or 1.3 per cent. The coincidence of cancer and diabetes is therefore relatively very small. The foregoing figures are confirmed by further investigations, which will be published in the near future. I allude to regarding the cases noted will be found in my fourth report on the San Francisco Cancer Survey.

#### INCOME TAX New Practice

"A F" sold his general practice three years ago and started a purely surgical practice. He asks if he is entitled to claim the present practice as a "new" one.  
\* \* Yes. The fact that the general practice was sold should have been sufficient to enable him to show that he was entitled as from the date of sale to exclude "general" practice receipts from his computation of liability.

### LETTERS, NOTES, ETC

#### BULLOUS ERUPTION AFTER PHENYLECHONOLIC ACID

"J. C. M." sends the following note of a bullous eruption following the taking of phenylechonollic acid. The patient, a middle-aged lady of 60, had been in the habit of taking a French proprietary preparation of the drug for attacks of general muscular stiffness and pain up to about twelve months ago. At this time, realizing that she was in for one of her usual attacks, she took three tablets, with potash water, in three doses during the day, in the evening she found that there were large bullae scattered over her face, neck, and the backs of her wrists and hands. A few months later a similar eruption followed the taking of two tablets. Owing to the distribution of the bullae being on areas supplied by C III to D I spinal nerves, I had an x-ray taken of her cervical vertebrae, and this shows some osteoarthritis of these vertebrae. About a week ago she asked me if she could take some more of the drug as she was in considerable pain and, in view of the fact that I said that I thought it was just chance that she had the eruption, I allowed her to do so. However, the bullae appeared after the taking of a single tablet. The question now is, "Do the bullae in any way depend on the ingestion of phenylechonollic acid?" I am not satisfied that they are so dependent, and the drug causes the general pain. But I feel doubtful in advising her to take it if the bullae are always to occur and it will be difficult to convince her of this. The bullae are not those of *D. herpetiformis*. They are very large and some of them on the neck will measure as much as 1 in. by 1 in. or 2 in. But they are usually preceded by a prickling and burning of the skin and to be involved I should like to know if any of you have seen a case of phenylechonollic acid.

#### LONG UMBILICAL CORD COILED ROUND NECK

**DR J. W. LING** (Anjou, British Columbia) writes. The case of multiple coils about the foetal neck reported on August 27th (page 349) recalls to mind a similar case. A multipara, aged 31 in her third pregnancy, gave birth to a full-term male child weighing 6 pounds in the North Vancouver Hospital. Six coils of the cord were removed from the neck of the child when the head was delivered. Labour was normal, and was not delayed by the mass of cord about the neck. The child was healthy but the cord was very long about 50 inches, and was somewhat smaller than the average. Dr Ling adds. It would be interesting to know whether the coils occur because of the great length of the cord, or whether an added length of cord is developed to compensate for that portion taken up by the coils.

#### A WARNING

Information has reached the British Medical Association to the effect that there has lately called upon members of the Association in the Newmarket and Edinburgh districts a man calling himself as a graduate of Edinburgh University, 1918 and using the surname of a respected member of the Association who graduated that year. He said that he had been sent by the Royal Medical Benevolent Fund to Switzerland suffering from tuberculosis, and asked for money. Inquiries made of the Royal Medical Benevolent Fund elicited information to the effect that the Fund has sent no one to Switzerland in the circumstances mentioned. Any reader who may be the recipient of such a visit would be well advised to get into touch at once with the police.

The Automobile Association road patrols will not be on duty in England, Wales, and Ireland on Christmas Day. During the rest of the holiday season the A.A. road organization will work as usual.

*Lohmeyer's Pharmacologia*, issued to the medical profession by Oppenheimer, Son, and Co. Ltd. combines a synopsis of recent literature on the nature and use of drugs with a listing of spaces for vaccination and midwifery engagements, and general information likely to be of use to the medical practitioner. The 1928 edition has been carefully revised, and is of convenient size for the pocket.

#### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 29, 30, 31, and 34 of our advertisement columns, and advertisements as to partnerships, associations, and locum tenencies at pages 32 and 33. A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 74.

## An Address

OF

## CLINICAL RESEARCH BY THE FAMILY DOCTOR

DELIVERED AT THE ANNUAL MEETING OF THE ABERDEEN  
BRANCH OF THE BRITISH MEDICAL ASSOCIATION,

BY

A. MAITLAND RAMSAY, M.D., LL.D.,

HONORARY DIRECTOR, JAMES JACKENZIE INSTITUTE OF CLINICAL  
RESEARCH, ST. ANDREWS

THE position in which the doctor is placed immediately after graduation is really the outcome of the progress of medicine from the earliest times down to the present day. It has taken centuries for the healing art to emancipate itself from superstition and the thrall of authority. The reformation began on the day in the second century that Celsus boldly stood insulently, erst while the old commonplaces of authority, tradition and general consent, and put his finger on the pulse with the intention of trying to predict from the variations in it the course of the disease from which a patient was suffering. Here was the dawn of a new era in medicine, and from that time onwards the physician became a clinical observer. He had, however, nothing to help in his work except his highly trained senses and a mind stored with the results of his past experience.

As the centuries passed advances were made from time to time by men who were pioneers in their own day and generation, but the great awakening came when Virchow, about the middle of the nineteenth century, attempted to systematize all previous knowledge by his doctrine of cellular pathology. His work was epoch-making and its fundamental importance was quickly recognized. Its keynote was the thorough study of the structure of the organs or the body, no science of pathology gradually developed, and its discoveries had a profound influence on the practice of medicine. Laboratories were built and laboratory technique became greatly improved, and the practical application of morbid anatomy to clinical medicine resulted in the discovery of physical signs by means of which the physician was enabled to discover evidence of organic disease in the living subject. Definite objective evidence now in great measure took the place of the study of symptom, and led to a classification of diseases based on post mortem appearances. Structure therefore was thought to be of more importance than function, and the end results or disease were minutely investigated while its causation and its early stages were relatively neglected. Intense microscopical examination of pathological specimens was the order of the day and led to the discovery of micro-organisms. The nature of those minute forms or life, and the part they play in the causation of disease, were now eagerly discussed, and research workers were attracted from the study of alterations in structure to the investigation of disorders of function.

Physiology now came to the forefront and was recognized as the only basis on which scientific medicine can rest. What may be called the descriptive stage of medical study was gradually superseded by an experimental stage. Laboratories and laboratory methods were again greatly extended, numerous instruments of precision were invented, and the techniques of the pathologist were no longer confined solely to the post mortem room. He took a share in the examination of the patient and called himself a clinical pathologist. In the early days of the study of disordered function the physician and the clinical pathologist were frequently combined in one person. That was a very satisfactory arrangement, but it did not last long because as method of examination became increasingly complicated the pathologist tended more and more to isolate himself in his laboratory and to lose touch with the clinician. He also began to bring to the solution of his problems the spirit and the methods of research in the exact sciences. His ambition was to make his observations definite and unambiguous, and so it came about that the clinician, oftentimes worried and disappointed by his failures at the

bedside, became tempted more and more to appeal to the laboratory worker to provide him with a test which would give a short cut to diagnosis. This passive attitude on the part of the clinician led to the assumption of a rather aggressive attitude by some laboratory workers who claimed that all research for the advancement of medicine ought to be left in their hands.

As a result of this unnatural distinction between practice and research the methods of the clinician through which so much had been achieved in the past tended to fall into the background. That was a retrograde step, because the true aim of all medical research is to reconcile the results of laboratory examination with the clinical symptoms. Much purely laboratory investigation has failed for want of clinical direction. It is true that phenomenal results have followed experimental research, but it must not be forgotten that some of the most notable achievements in medicine have been accomplished by men whose life was spent far removed from laboratories or seats of learning. Take four examples. Harvey was an obscure physician struggling to make a living when he first began to think of the circulation of the blood. Jenner and the worries and vexations of a country practice discovered vaccination. Koch was a district physician when he began his investigation on tuberculosis, and Mackenzie was a busy general practitioner when he laid the foundations of his epoch-making work on the heart. The best progress is likely to be made when clinician and laboratory worker pull together, each realizing the difficulties of the problem constantly encountered in general practice, and both determined that those difficulties shall be solved as a result of their mutual efforts. Some pathologists who have been trained wholly in laboratories are quite ignorant of the problems which confront the general practitioner in the course of his daily work. They are impatient of clinical observations, which they say are wanting in scientific precision, but they are only too easily led astray by the apparent exactitude of physical and chemical formulae.

When dealing with living tissues one cannot depend wholly upon rigid mechanical fidelity; formulas cannot be applied in the expectation that the result will be obtained with strict mathematical precision; there is not a rule and a measure in all things. Pain cannot be measured by any instrument or precision, yet it is one of the most valuable symptoms of disease. The true value of the laboratory in the study of clinical medicine is enhanced rather than lessened by a frank recognition of its limitations.

Although there is no reason to think that the principles by which medicine is governed are materially different from those governing other art and science, yet the method of the sciences allied and ancillary to medicine cannot be applied without certain reservations. The problems of disease are more complicated and difficult than any others with which the trained mind has to grapple. Each individual case presents its own problem and therein lies its special interest. Nature is constantly performing experiments in the laboratory of the human body, and although the reactions the result of those experiments are far too delicate to be measured by test tube or balance, yet they are revealed by the occurrence of symptoms.

The methods of research in clinical medicine are therefore peculiar to itself, and the kind of knowledge necessary to detect the earliest symptoms of disease can be best illustrated by the general practitioner because it is he alone who sees disease in its initial stage. It was not that I recall that the late Sir James Mackenzie founded the Institute for Clinical Research in St. Andrews. He insisted that it is only the general practitioner who has the opportunities for clinical research into the early stages of disease—that is, before the patient's disability is sufficient to take him to hospital. He, and he only, has the fascinating task of recognizing disorders while prevention is still possible.

Many of the great teachers of the past were to all intents and purposes general practitioners. Laboratory methods were unknown to them, and they possessed no instruments of precision, but they studied the clinical in their own powers of observation, and taught their students how to use their unaided senses. The neglect of this form of education renders the medical student of the present day less self-reliant in diagnosis and prognosis than many

of his predecessors. What has been gained, therefore, in one direction has been lost in another.

Mackenzie firmly believed that the family doctor could do as much to advance the science of medicine as any worker in a laboratory, and the goal of his ambition was to find ways and means to enable him to become a research worker. The idea of founding an institute for chemical research had long been present in his mind, and when the opportunity came he left London at the very zenith of his fame and settled in St. Andrews. He realized that his plans, as he conceived them at that moment, could only be carried out in a town of small size with a comparatively stationary population. In a letter which he wrote on the day before he died, he says:

"When I left London I dared not tell anyone the real reason of my leaving, for it would have been looked upon as a piece of folly. For years I had been gradually becoming convinced that the whole tendency of research was on wrong lines. It was devoid of fundamental principles, was haphazard, and could not supply the kind of knowledge which would enable us to solve medical problems. It was with the object of searching for this principle that I undertook, at the age of 65, the burden and responsibility, which were very heavy, of starting an institute for the purpose of this quest."

So it came about that the James Mackenzie Institute was founded in St. Andrews. For five years it enjoyed the immeasurable advantage of Mackenzie's presence and direction, and his great and forceful personality dominated its work. The general practitioners of the district gathered round him, and week after week they sat down together to discuss problems of far-reaching influence on the progress of medicine. He spoke to those family doctors like an elder brother, and all felt that to be associated with him was both an education and a revelation. His teaching has opened a great and unforeseen road in clinical medicine. He ever insisted on the habit of accurate observation, and while not fond of controversy for its own sake, or even contradictory, he was ready at all times not only to defend vigorously the existence of his own work, but combative and eager to fight in defence of his own opinions. His writings are all based upon his own carefully recorded observations. He always insisted that departure from health is made manifest at its onset by sensations experienced by the patient, and that failure to detect disease in its earliest stages is due to the fact that the patient's sensations are not systematically investigated.

With rare sagacity Mackenzie formulated certain principles underlying the production of symptoms, contending that in medicine, as in physical and chemical science, although the phenomena of disordered action are many and varied, the causes underlying their production are few. He founded his institute to develop those principles, to put them in practice, to test their accuracy, and modify them in the light of experience. He was never satisfied unless he was testing constantly and improving in detail. He had no sympathy with those who never change their mind, and, far from apologizing for inconsistency, he would denounce consistency as an evidence of mental sterility and an attribute of those who have no mind to change. Nevertheless, although he might be ready to admit that he was wrong on Monday he would be equally positive that he was right on Tuesday, and if called upon to argue in favour of his opinions he always spoke with intense conviction.

There are many who believe that the secret of progress in medicine is to be found only in the laboratory, and choose that walk in life rather than engage in general practice because they consider that it is the only way to study medicine scientifically. The scientific spirit, however, is not the exclusive property of the laboratory worker. It is unborn in the individual and whoever is possessed of the true scientific spirit can bring it to bear in the solution of any problems with which he is confronted in the course of his daily work. The observant physician possessed of the critical faculty can do more to advance medicine by his work at the bedside than many who lead a sheltered life in a laboratory. The investigator who aims at extending the boundaries of knowledge must have initiative and courage, and above all must possess vision, for without that uncanny power of seeing into the nature of things and discovering secrets hidden from others the laboratory

work may obscure the path of progress and become a real danger to the advance of knowledge.

The chief purpose of a laboratory training is not to teach the students how to use laboratory instruments or to perform complicated chemical tests. The invaluable gift of the laboratory is its discipline in scientific method, and its training in the importance of logical reasoning and the use of exact language in speaking and in writing. The scientist is always distinguished from the empiricist by his accuracy in measurement, by his precision in statement, by his honesty in accepting and handling evidence, and by his fairness in presenting it when contesting the opinions of those in opposition to his own views. In that sense every general practitioner should be a research student, and the family doctor ought to train himself to employ scientific method at the bedside in the same masterly manner that it is used by the worker in the laboratory.

Chemical medicine in the past has been so much a matter of personal skill and experience that when the clinician dies his work dies with him, whereas the results of investigations in a laboratory are recorded so carefully that something tangible always remains to enable one worker to take up a subject at the stage where another has finished. There can be no doubt that skill in diagnosis, and more especially skill in prognosis, must always be largely a matter of individual experience, but it, such valuable knowledge, gained during a studious life, is not to be lost when he who accumulated it dies, some means must be found to provide a foundation on which future investigators may build. That is one of the chief aims of the Clinical Institute, where accurate observations of the disturbance of the processes regulating the function of the different organs of the body are carefully recorded. The crisis is reviewed at regular intervals, when all the symptoms are reconsidered, and an attempt is made to distinguish those due to disturbances of those processes which are essential to the maintenance of life from symptoms due to the interference with processes which are not essential to life. The "follow up" is of the first importance in all records, because without it the case is of no clinical value, what is wanted is the patient's medical life-history, consequently the disease must be under observation from its onset to its termination.

It is generally supposed that the greater the number of patients a doctor sees the greater his experience and his knowledge. That is only a half-truth, because a doctor may see hundreds of patients, and be most meticulous in recording the symptoms during a passing phase of the disease, and yet be none the wiser regarding the prognostic significance of any one of them. Mackenzie always insisted that "prognosis is the motive which inspires note-taking with the birth of life, making the notes a personal source of knowledge that can be applied in the practice of medicine."

What is needed most of all is that the research student in the laboratory should get into closer touch with the realities of clinical medicine, because any cleavage between the laboratory worker and the general practitioner impoverishes both. There is no life in the ordinary text book on laboratory methods. The doctor in the country finds little use for tests he cannot readily apply at the bedside of his patient. The clinician can never be replaced by the laboratory worker. Each is complementary to the other, each has much to give and much to gain. I can well believe that the laboratory worker does not realize how much the clinician has lost in recent years by his reliance on the laboratory for help to diagnose disease, when by a careful study of symptoms he might have recognized it for himself. We must look to the living, to him, the laws of life, not to the dead. The true clinician never gets into a rut. He at all times feels the urge of adventure and discovery. He must always have an open mind, and when, in the course of research, facts are discovered which are opposed to accepted theories, the hypotheses must be abandoned even although supported on high authority. Work of that kind requires much persevering effort and much patient waiting for proof, but the goal aimed at must always be indisputable accuracy. Evidence can be accepted without the most rigid criticism.

The clinician must try none and more to than in the

of the normal rather than of the abnormal. It cannot be repeated too often that the symptoms of disease are only the phenomena of occurrence of the status of exhaustion due to over-exertion of the organ when in its state of health. It will be a great gain when the experimental physiologist gets into the habit of leaving his laboratory from time to time in order to visit the wards, the dispensary and the operating theatre under the guidance of the physician and the surgeon.

A new clinical physiology is much to be desired—a physiology which deals with the symptoms of ill health and tries honestly to estimate the functional activity of every organ of the body. The more the apparently simple matters are investigated the greater will be the respect and astonishment to find so many gaps in our own knowledge. Mieschke never tired of trying to drive that fact home. He took a delight in astonishing his visitors by such questions as the following: Why does cancer kill a man? What is it that kills him? Why does he die? At those times his conversation was fascinating and stimulating but sometimes very puzzling and bewildering. It was necessary to admit that usually the questions he asked although going to the very root of the matter and proving how ignorant we are of some of the most fundamental problems of life are in the present state of our knowledge unanswerable. Doubtless by the advance of science and the increase of knowledge those problems will one day be solved and I venture to predict that the family doctor will play an important part in their solution.

## VILLAGE SETTLEMENTS FOR THE CONSUMPTIVE

ABSTRACT OF THE MITCHELL LECTURE FOR 1927 \*

BY

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PERHAPS in no disease more than in tuberculosis has the outlook changed so much in recent years. With the progress of modern research its horizon has widened its problems have multiplied, and the work to be done increased. Indeed, the medical profession is marching on the whole, abreast of the time, for it is now recognized that in that common disease tuberculosis a number of conditions must be studied and provided for—a complex involving medicine, sociology, psychology, and economics.

A diseased organ is now considered in relation to its environment. Formerly it was only the affected organ apart from the rest of the body that attracted attention but gradually the conception of the interaction of organ and organism and the interplay of forces 'resistance' and immunity were taken into account. It is now essential to go a step further by recognizing that environment plays an important part not only in the propagation of but also in the fight against, disease. The recognition of this factor of environment makes it possible to combine the purely medical measures directed towards cure with the medico-social effort designed to prevent disease. As soon as the social aspect of cure and prevention is established educational health work takes its rightful place in the State.

Now it is obvious that if these ideas are to be carried into effect the opportunity must be provided for putting them into practice. An environment must be provided in which the following considerations have due weight: the functional power of the diseased organ within the organism must be protected so as to avoid exhaustion and indeed further impairment and the patient as a whole must be so situated as to avoid opportunities which may impair his power of resistance and recuperation. These ideas represent a great advance on that of the mere passive or active treatment of disease by ordinary therapeutic measures. Their acceptance presupposes a field of vision extending far beyond hospital or laboratory walls. It postulates a study of social and economic laws too often neglected by

the medical profession. It opens up a new field for research and an ever widening scope of industrial conditions of employment—and not of the healthy only, but of those who, on account of their disability, cannot keep pace with the able-bodied, and who, even if they could keep pace, are potential 'carriers' of disease.

Gradually the State attempted—and not without success—to grapple with the disease, both from the individual and from the community point of view. Sanatoriums were erected all over the country, some managed by private philanthropic agencies, others by local authorities, counties or county boroughs. It was soon obvious that the poor required further care after the period of early treatment had been completed. Statistics show that from 27 to 64 per cent of patients die within five years after leaving the sanatorium, a great majority of them dying within the first two years.

It is intelligible why patients do not enter a sanatorium until the disease is well established. The early symptoms of pulmonary tuberculosis are so vague that it is quite natural that the patient's attention should not be seriously challenged by them. Thus it is that the consulting physician and even the family doctor, too often never see the patient until the disease has done much of its insidious work. The reasons for the failure of early diagnosis and still more of early treatment lie in "human nature" and in economics. Is it not because in the case of the well-to-do the human factor, and in the case of the working man the economic factor has been ignored that a system for the treatment of patients has been built up at a stage when they do not and so far as can be seen at present will not come up for treatment? For such cases our large sanatoriums are waiting and wait in vain.

It has been said that 25 to 55 per cent of the cases of pulmonary tuberculosis remain unnoticed to the local authority and that the cases that are notified come for the most part from those on the lower rungs of the social ladder. On the higher rungs the notifications gradually become fewer and finally near the top cease altogether. Are we to assume that in the higher social scales tuberculosis is rare or unknown? Observation convinces me that this is not so, the condition is recognized but it is too vexatious to be faced boldly and promptly. It is therefore not surprising that sanatorium treatment in the majority of cases does little more than patch up the damaged organ; it is far from assuring complete arrest of the disease. One of two courses must eventually be adopted: either sanatoriums must adapt themselves for the treatment of cases without any prospect of complete arrest of the disease or a new system must be inaugurated which will do so further in addition to whichever of the two policies is adopted, preventive measures must be taken to stop the spread of infection.

It must however reluctantly be admitted that in 75 per cent of the patients now sent for treatment to our sanatoriums complete cure is out of the question. Efforts to obtain the case early will quite rightly continue to be made but how to deal with those in whom the disease can at best be only arrested is a most difficult problem for in more than 50 per cent of the cases now seen in sanatoriums arrest is far from permanent.

The most difficult problem and the most frequent patient is the man or woman in whom the disease has had its way for some considerable time and in whom permanent damage has been done. Were the main problem of tuberculosis as is constantly stated the treatment of the early case and this only, why are there still so many schemes for air cure, farm colonies and the like? The sanatorium, with its adjunct the dispensary, should meet all requirements. But this condition is now known to be a figment of the imagination, the reality is much more serious. It is not as it is upon attention and usually emphasizes the failure of sanatorium and dispensary. The position must be reconsidered. The popular opinion based upon certain findings of pathologists in laboratory work that tuberculosis is a fully curable disease does not stand the test of clinical results.

How different is the picture of the treatment of early tuberculosis from that observed day in and day out in a tuberculosis dispensary, where seriously damaged patients

\* Delivered before the Royal College of Physicians.

and crowded together, waiting for the cure which never comes, supported by small doles of food and medicine which prolong a pathetic and fruitless existence, with nothing but failure and disappointment at the end of it. Little or no effort is made to provide conditions permanently suitable for the patient's relief, and for the most part he is left to drift, or is beguiled by ignorant advisers to embark on reckless adventures. Must it not be confessed that the system of tuberculosis dispensaries and sanatoriums is now carried on, is founded upon a wrong reckoning?

Various schemes have been inaugurated to consolidate the position of those who, after a period of sanatorium treatment, have reverted well. These have been described as hardening-off processes, and both in this country and America have been followed with keen interest. The colony was started almost entirely with the object of prolonging sanatorium treatment on more economical lines. It was soon observed that certain patients, with a localized and early lesion which had become wholly or in part healed by a term of sanatorium treatment, and patients whose general resistance to the disease was great, benefited to no small extent by light employment in the open air, but when patients, even when most carefully selected, were advised to follow a similar occupation after leaving the colony the result was seldom successful.

In training tuberculous men for reinstatement in industry we are attempting what is well-nigh impossible. The organism is damaged, and damaged for ever, and the ordinary industrial environment is unsuited for its life. Add to this the incubus of providing for a family, and the position quickly becomes impossible. Tuberculosis is a fluctuating disease, and as such needs continuous medical care. It needs a thorough understanding of the principles underlying both health and industry, all of which can only be carried out under a special scheme.

The principles underlying Pipworth and the Altio workshops of New York<sup>2</sup> (where now arrangements are being made for the permanent residence of the workers in flats adjoining the factory) differ fundamentally from those of the Reco workshops of New York,<sup>4</sup> where training of the substandard man was the only objective. Recognizing that the necessary conditions are unattainable in the outside world, no effort has been made at Pipworth to train men for an occupation outside the settlement. On the contrary, all endeavours have been directed to providing permanent occupation for such men in the settlement at a full rate of pay.

In the village settlement, first and foremost, there must be the guarantee of a living wage. To provide suitable housing accommodation without providing the means to pay the rent goes but a very little way. To pay the man's rent destroys his self-respect, and, unless care is taken, the result will be a pauperized individual. Some men, therefore, of maintaining his earning capacity must be devised so that he may be able to pay his rent.

To enable the consumptive working man to maintain his earning capacity a whole set of conditions must be provided. Work, in the first place, must be such that his strength shall be equal to it—that is, it must be congenial, it may be the work of a craftsman (if the man's mental processes are equal to it) or it may be repetition work (if the man is of such a nature that he will not readily accept responsibility). But in either case it must not be playing at a trade. If there is one thing which a working man is able to detect quicker than another it is the sham industry or sham trade which has been set up by the institution for his benefit. If his employer is playing at the game, so will he.

The most important consideration is the avoidance of all exploitation of his labour. It seems self-evident that a scheme for the employment and benefit of the tuberculous man should be for his benefit, and his only. This is by no means always understood or acted upon. There is no need to invoke a kind of feudal system in which all the best positions are taken by healthy overseers and the disabled left in the position of serfs. The true village settlement for the tuberculous will be one in which there is an opportunity for all to attain to a better position, just as it is possible in a modern well managed business concern.

A village settlement should be regarded as a self-contained community, its inhabitants being substandard men and women. They can compete with one another and no stimulation by such competition, but they must not be in the bondage of the healthy—those inhabitants of a foreign country, the outside world.

What the disabled man requires is the opportunity to put his talents to good use, the provision of that opportunity is our business. The provision of opportunity is quite a different thing from charity, charity paralyzes effort. The provision of opportunity is rather the protection of the disabled from fierce and unequal competition than anything else. To introduce such competition into the village settlement in the form of a healthy overseer is to court disaster. This is hardly ever realized. The healthy overseer demands good pay, but he rarely earns it. Unless he is a man of exceptional character he looks upon the reduced working capacity of his men as a reason for reducing his own, he will come down to their standard rather than attempt to lift them up to his—which is a rule as dangerous as impossible. His salary becomes a drag on the industries. The overhead charges increase, and it is just these which the disabled man cannot meet out of his industry. He can earn his own wage, but little more. Hence lies the secret of the non-employment of any large number of disabled men in ordinary industry. A sympathetic employer can afford one or even two, but the point is quickly reached at which the subsidy required to keep these men equals the profits of the firm. A penny an hour lost on each of 300 men working eight hours a day reaches the astonishing figure of £2,800 a year. A donation of £50 or £100 a year to charity is an easy way of reaching such a disaster.

The village settlement is the ideal scheme for the after care of the tuberculous worker, whether man or woman. Sir George Newman, in his various reports,<sup>5</sup> emphasises the point. There is a certain amount of agreement as to the ideal, and it remains therefore largely a matter of detail and of application.

It will be seen that the village settlement is gradually evolved from the sanatorium. To start a settlement *de novo* would not be attended with success. A village settlement grows as naturally as any village would grow when an industry which offers employment springs up. The difference between a village settlement and the ordinary village is that the industries are specially run for the benefit of the inhabitants of the village settlement, and no one else. The spirit of co-operation, once implanted grows and increases, self-help and self-guidance follow. The institutional spirit is transformed into that of self-reliance without which no community can stand.

The village settlement, with its hospital for advanced cases, the sanatorium for those suitable for this form of treatment, and the village, with its hostels and hotels, workshops and recreation halls, forms a complete unit. The opportunity for medical research must not be lost sight of, and this aspect, combined with the opportunity for investigation into industrial and social conditions, makes the whole scheme an entirely new departure.

#### The Results

1 A complete absence, during eleven years, of clinical tuberculosis in the 133 children of men and women who are definite clinical cases of the disease and in most of whom show tubercle bacilli in sputum from time to time.

2 A village community maintained by the work of the industries.

3 A total of £72,000 paid in wages to the settlement since 1918.

4 An aggregate of sales of goods produced by the settlement amounting to £177,543 during that time.

5 The arrest of the disease, prior to such an extent as to justify an expectation of life three times as long as is usually given in sanatorium statistics.

6 The removal of a number of chronic tuberculous cases from the homes and workshops of the general community.

The question was once asked: What effective control can such permanent village settlements be said to exercise?





The entire body (back and front) has been exposed to irradiations from a mercury vapour lamp (or preferably to the rays of three of these lamps used simultaneously) twice weekly for a period of six to seven weeks, the minimum exposure being ten minutes to both back and front of the body, at a distance of about 16 inches from the burner. This is followed by a rest for one month, and then the patient undergoes a second (and, if necessary, a third) course. I have aimed at producing a second or even a third degree erythema at each exposure, in other words, the irradiations have been intensive rather than mild.

The majority of these cases were sent for treatment by their own doctors after other methods had yielded indifferent or negligible results, and in only 5 of them (12.5 per cent) was there no appreciable improvement. In the remaining 35 cases (87½ per cent) marked improvement resulted, as evidenced by increased co-ordination and steadiness of muscular control (both in grosser movements, such as walking, and in the finer movements of dressing, feeding, etc.), cessation or diminution of excessive salivation, disappearance of pain and insomnia, increased sense of mental vigour and physical well-being, and relaxation of the mask-like facial expression. In 2 cases out of the 5 apparent failures extended trials were given, the other 3 failed, for one reason or another, to continue treatment after the first three weeks.

The patients whose cases are recorded below are typical of the series treated.

**Case 1**—An artisan, aged 22, had contracted the disease eighteen months before coming for treatment. This was a well marked case of post-encephalitic Parkinsonism, with marked hypertonus, tremors, sialorrhoea, and pain in his throat. After a first course of irradiations he showed great improvement, feeling much better in his general condition, and using his hands easily. Thus he was able to feed and dress himself, but his throat was still troublesome. After a second course of irradiations the general improvement could only be described as excellent, he was walking and talking well, his legs were much stronger, and his upper limbs were practically free from tremors.

**Case 2**—A married woman, aged 47, had suffered from the disease for nearly two years. She was unable to feed or dress herself, and suffered from nerve pain and marked depression. Now after ten exposures (five weeks), she is much brighter and stronger, is feeding herself, talking, eating, and walking well.

**Case 3**—An artisan, aged 25. Parkinsonian syndrome well marked. Improved considerably from the very outset. Walked better after five exposures and felt considerably stronger. After a second course he is now eating, sleeping, and talking well. Feels his legs and body generally to be much stronger, has regained almost complete confidence in himself, has completely lost the characteristic facial expression, and is now back at his job, and working well.

**Case 4**—A married woman, aged 32, had contracted the disease two and a half years before coming to the clinic. Her tremors, inco-ordination, dragging of the legs, excessive salivation, and helplessness were silent features in a characteristic condition. After fourteen exposures she was able to dress feed and help herself. She felt a peculiar degree of mental stimulation and a definite sense of increased steadiness and strength for twenty-four hours after each radiation. She is now greatly improved.

**Case 5**—A man, aged 44. Onset of disease four years ago. During the last two years he was getting definitely worse. Twelve irradiations have so far been administered, and the patient is to day brighter, happier, and stronger, his expression has softened, and his tremors have become subdued. He expresses himself as feeling "much stronger, and better altogether."

**Case 6**—A man, aged 51, had typical Parkinsonian symptoms with distressing salivation, and paresis of right arm. Has improved from the first exposure, salivation is diminished and he is now using the right arm and fingers with comparative ease.

**Case 7**—A woman, aged 18, was treated for an acute attack of encephalitis lethargica in the General Hospital four years ago. She has so far only had eight exposures, but already shows increased strength, vast improvement in talking, and good general improvement.

**Case 8**—A clerk, aged 28. This patient had treatment spread over several months. He can now dress, undress, and feed himself, his general improvement being remarkable. He is brighter, stronger and more steady in every way.

**Case 9**—A woman, aged 19. Two years' history of illness. Was much improved, stronger, and free from excessive salivation after a course of seventeen irradiations. On cessation of the first course of treatment she became worse (possibly because she had had too many consecutive exposures), but after a lapse of one month she had a further twelve exposures, and showed marked improvement.

**Case 10**—An artisan, aged 30, had contracted the disease three years before coming to see me. Tremors, salivation, and paresis have improved greatly after eight exposures in his second course.

## DISSEMINATED SCLEROSIS THE RAT AS A POSSIBLE CARRIER OF INFECTION

BY

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THE purpose of this article is, first, to set forth some statistics on the occupational distribution, and death rate of disseminated sclerosis, and secondly, to discuss these, with the occupational history or a series of clinical cases, in their bearing on the theory that the virus of the disease may be spread by the rat.

### OCCUPATIONAL INCIDENCE

Through the kindness of the Registrar General I was able in 1926 to investigate the occupations of 688 persons who had died of disseminated sclerosis in 1925. The occupations were classified as far as possible, and then the actual number of deaths in a given occupation was compared with the expected deaths. By "expected deaths" I mean the number of deaths which would have occurred from disseminated sclerosis in those following a given occupation if the deaths had been evenly distributed among the population. For instance, if one-twentieth of the population are clerks, one-twentieth of the 345 male deaths from disseminated sclerosis should be among clerks. The matter is not so simple as it looks, but the advice of the expert staff of the Registrar-General on dealing with the figures has, I think, eliminated such error as is avoidable. The figures are as follows:

	Expected Deaths	Actual Deaths
Miners	19.17	20
Clerks	11.95	11
Farmers	7.46	16
Farm labourers	12.98	15
Railway workers	8.63	11
Carpenters	5.53	9
Painters and decorators	4.36	7
Gardeners	5.33	8
Plumbers	1.21	3
Moulders	1.91	3
Grinders	0.43	2
Window cleaners	0.39	2

The summary of the full statistics is as follows:

	33	Relatives	23
Farmers and farm labourers	33	Relatives	23
Gardeners	8	"	8
Labourers	37	"	16
Workers in chemists and dyes	6	"	2
Domestic and nursing	27	Relatives	12
Cotton workers	25	"	1
Wool workers	13	"	10
Boot and shoe makers	7	"	8
Carters, etc.	12	"	7
Timber workers	17	"	12
Painters	8	"	5
Building trades	8	"	3
Printers	9	"	
Clerks and teachers	30		
Army pensioners	11		
Engineering and plumbing	19	Relatives	13
Railway workers	11	"	11
Ships and fishing	8	"	9
Iron and steel	22	"	14
Mining industry	26	"	11
Foodstuffs	22	"	25

The remainder may be classified as "Miscellaneous."

### GEOGRAPHICAL

The death rates were calculated for 1925 in the different counties of England and Wales. A greater range of years would have been much more valuable, but the labour involved was greater than I could then undertake. The death rate for the country as a whole was 17.5. This does not mean that the 1925 rate was lower than the death rate at all ages of 18.2 for the period 1921-25, but merely that the 1921-25 figures include diagnoses on certificates which were only presumed to be those of disseminated sclerosis—for example, "spinal sclerosis." Such doubtful diagnoses were eliminated from the 1925 figures considered separately, and consequently the number of deaths is apparently smaller.

\* Part of this is accepted for degree of M.D. by Edinburgh University. October 1926. A grant was given by the British Medical Association towards the cost of this work.

The highest death rate for 1925 was in the State of Pennsylvania—103.3, then follow Merioneth 91, and Monmouth 83. Middlesex, Dorset, and Buckinghamshire were lowest, all having death rates of less than 9 per million.

There is reproduced by permission the map published in 1921 by the American Association for Research in Nervous and Mental Diseases, which shows the prevalence (not death rate) in America. It will be seen that the heaviest incidence is round the Great Lakes beside the slow-flowing navigable portion of the Mississippi, and in one or two other areas.

#### DEATH RATES FOR DIFFERENT AGES

Again by courtesy of the Registrar General I was given the figures showing the death rates at different ages for the years 1921-25. Graphs of these show an interesting difference between the curve for males and that for females. It is of special interest to note that the death rate is much more like that of all illnesses taken together than would be expected from a disease thought to attack young persons and believed to have an average duration of about eight years. Probably the explanation is that the illness last much longer than was formerly supposed. In the series of 72 cases recorded below two patients had suffered from disseminated sclerosis for over twenty years.

#### THE RAT AS POSSIBLE CARRIER

This possibility is put forward tentatively. The following facts gave rise to it. The late Dr J. W. Dixon, to whose work so many owe in part, reported the case

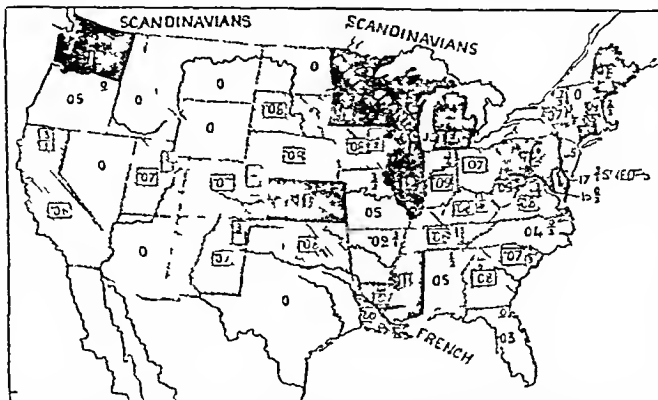
Spirochaetosis icterohaemorrhagica is caused by a rat- and water-borne leptospira, which has probably two phases (as has also the spirochaete of syphilis and that of relapsing fever), the infective phase developing in stagnant water. The spirochaete of disseminated sclerosis—which is mentioned in the descriptions of some sixteen sets of avowedly

successful experiments to find or to transmit this organism—is described as resembling closely the leptospira of Weil's disease. Here are two pieces of circumstantial evidence.

The clinical similarity between disseminated sclerosis and chronic spirochaetal infection has often been commented upon and recently by Adams. Adding to the spirochaete theory it might be suggested that variations in the life cycle of the spirochaete are responsible for the small to the large incidence in the population (only one phase being infective) and for the failure of

many investigators to find the organism (one stage being non-spirochaetal), that this organism is carried by rats, is excreted by them into water and where the water is stagnant develops its infective phase that the organism gains entrance to the patients by penetrating the mucous membranes of those who fall unexpectedly into infected water or more commonly through the skin of the hands, arms or feet or those who develop the disease as the result of occupational exposure and that this entrance through the skin is facilitated by continuous dampness of the skin and probably also by abrasions and dermatitis, occupational or other.

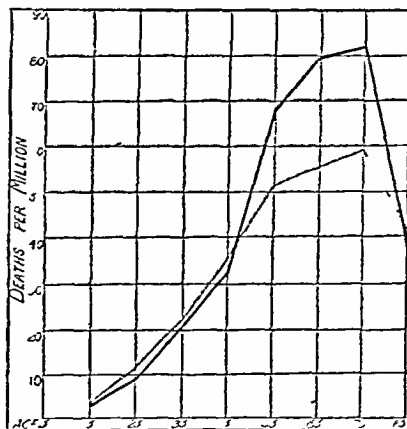
Going back to the former statistics the incidence is



Map of the United States showing the prevalence of disseminated sclerosis by state. The numbers in the Great Lakes region are the names of the carriers which the disease has been found to be carried by. From a table found in 'Drafted Me' (1917) by J. W. Dixon. Reproduced by permission of the American Association for Research in Nervous and Mental Diseases (1921). The original map is a table which has been omitted here for the sake of brevity in reproduction.

Age	Male Population.			Female Population.		
	No.	Death	Rate per Million	No.	Death	Rate per Million
0-5	17,222,3	4	0.2	17,045,0	6	0.4
5-10	15,600,112	4	3.2	17,524,412	61	3.5
10-15	13,230,433	119	9.0	14,332,903	137	11.7
15-20	12,557,618	24	20.4	14,339,647	221	2.3
20-25	10,900,048	63	33.1	11,905,901	47	3.5
25-30	7,233,730	99	68.4	8,055,377	111	51.0
30-35	3,823,120	30	50.9	4,755,577	261	50.1
35-40	1,166,193	53	8.0	1,744,600	107	57.0
40-45	1,934	5	1.5	2,610,23	11	41.7
Total	91,800,63	1,702	18.5	1,039,603	1,737	17.9

Disseminated sclerosis—death rate per million at different ages (1921-25). In the chart continuous line = males; dotted line = females.



of a patient who developed disseminated sclerosis after falling into the deep end of fresh water baths. Charcot also mentions a case arising after the patient had fallen into water and allowed his clothes to dry on him. 'Mau on Bui' wrote of a man who suffered from prochlorosis icterohaemorrhagica after falling into the Thames. In something coming to my notice one after the other suggested a possible etiological resemblance between the two diseases.

heavy among farmers and farm labourers, and Adams has pointed out among those who work in byre and with cows. These statistical investigations of 1920 and the clinical experience of Adams coincide. With regard to the former I have remarked that 'the damp or cold sheds and byres and barns from the presence of rats and the neighbourhood of the farm water supply is perhaps more likely to be infected than the ground of the open fields. Gardeners

have obvious sources of infection if the theory holds good, so also live plumbers, with their hands in water, moulders working with wet sand, often rat-infested, grinders who hold their tools under a drip of water from a can, window cleaners obviously, and printers from the washing of rolls and roughening of hands from sandpapering, which is the occupation of the young decorator or the man working with a small firm. Cloaks have only very slightly less than the "expected" number of deaths—perhaps because the semi-invalid takes to cloaking, as he becomes unfit for harder work. Cotton and wool workers seem to have a heavy incidence (often they work with materials kept damp from a tank), but could not be further dealt with owing to difficulties of census classification. I am unable to explain the aged heavy incidence on wood workers, on the basis of the present theory.

Geographically, I should like to suggest that the rice inhabiting the Great Lakes area of America which is of importance in the etiology of disseminated sclerosis is not the human *Scandinavian*, as was suggested by the Americans, but the rodents *Rattus rattus* and *Rattus norvegicus*. If the spirochaete infests water, it is interesting to see that the Great Salt Lake is too strong for it. In England the fen district of Peterborough is infected, if any value can be attached to the figures of one year.

### CLINICAL

A series of 72 cases of disseminated sclerosis has been investigated with regard to the exposure of the patients to damp and wet in rat-infested areas. The classification made was as follows: "Positive," where there was definite history of working with hands or feet in water where the premises were known to be the resort of rats, or of sleeping in wet, rat-infested places, such were some bottle washers, and all the ex-service patients. "Probable," where there was continual dampening of hands or feet, as in washwomen and window cleaners, without evidence as to contamination of water by rats, or where the patient lived in damp, rat-infested quarters without special exposure to the wet. "Negative," where there were rats but no damp, damp, without special exposure thereto, and without rats, when the hands were in strong chemicals or disinfectants, and where neither rats, damp surroundings, nor wet occupation could be traced.

The history of damp and rats was considered over the four years preceding the onset of recognized symptoms—for the onset may be so insidious—and the same criterion was applied to the control series. Of these 72 patients 38 gave a definitely positive history, 14 probable, and 20 negative. Compared with these a series of 72 patients of similar age grouping, in hospital for diseases other than disseminated sclerosis, showed 21 positive, 7 probable, and 44 negative.

Of the 41 male patients, 27 had been exposed to all suggested etiological factors, 12 of them during their war service and 15 in other circumstances. The histories of some of these war-service patients are interesting. One man had been employed in water-pumping operations during the greater part of his service. He was constantly standing in water. Of the rest of the male patients 7 were classified under probable and 7 as negative. The 41 "controls" showed 17 positive, 5 probable, and 19 negative.

There were 31 female patients, of whom 11 gave a definitely positive history, 7 probable, and 13 negative. The histories for the control series were 4 positive, 2 probable, and 25 negative. It is to be noted, however, that these recorded as "negative" in both series were engaged for the most part in domestic work, and were only negative in the sense that special exposure to the suggested factors was not proven. It is, I think, to be expected that the female patient would have less definite knowledge of the rat factor. She works with water which may easily be infected with spirochaetes unknown to her (see report at St. Alexander Hospital on London waters). The man on the other hand, works in a bare or washes bottles or prints in a tank, and knows of the rats that run in the factory at night.

The histories of one or two of these patients may be quoted.

Mary worked in a vegetable kitchen, and constantly had wet feet from water on the defective flooring, where rats were seen at night.

Ann was a tin tester, and spent her days plunging tins into a tank to see if they leaked, with her arms in the tank. There were rats in the factory.

George and Phoebe had both been bottle washers in the cellars of a wine factory (where there were rats) when they developed their first symptoms, though he was a bottle's assistant and she a cork brander when they came under observation.

Arthur, a most intelligent patient, had worked on the wet and moulding beds of a Government works, and told how the mud would even go down his neck if he stooped near some too vigorous digger, and how dead rats were sometimes found in the mud.

John had only one grumble about his shoes in a campaign on a dry frontier—that he fought in a river bed, and, coming now and then on water, would walk through and allow his socks and boots to dry on his feet, with the result that he had painful abrasions on his feet.

Nellie had worked in a cable works, her hands and arms in a tank of water, and her skin tough with "rubber rash." There were rats in the works.

Robert had had his first symptoms at 15, not long before he had spent a great deal of time learning to swim in fresh water baths in a London suburb, the water to the bath coming from a reservoir which the boys used to visit regularly on Sundays, for the purpose of rat hunting.

Interesting as these are, however, I am fully aware that most of us have been in circumstances where we might be supposed to be exposed to infection—if infection it is—at some time or another, without developing disseminated sclerosis. Proof or disproof of the view put forward can come only from the bacteriologist. The rat and water theory of the etiology of disseminated sclerosis may end as a discarded theory, but it seems to me that this is enough suggestive circumstance in the bacteriology, geographical distribution, occupational incidence, and clinical findings to justify further work along these lines.

### SUMMARY

The occupations of 688 persons dying of disseminated sclerosis in 1925 have been investigated and the occupational death rate calculated where possible, the death rate for different counties of England and Wales have been worked out for that year, and the death rate for the years 1921-25 (corrected for age) is given. Clinically, 72 patients have been interviewed with regard to their exposure to rat-infested water.

### CONCLUSIONS

1 The findings of other workers as to heavy incidence in agricultural workers, wood workers, etc., have been confirmed. Incidence appears to be heavy also among painters, plumbers, moulders, and wool and cotton workers.

2 The high death rate in the fen district is analogous to the heavy incidence round the Great Lakes of America.

3 Clinical histories show some evidence in favour of the possibility that the infection of disseminated sclerosis is spread by rats and water.

4 No positive proof of the rat and water theory is yet available.

Finally I should like to say that I am grateful to the following, who have allowed me to see patients under their care: Dr. Browning, Alexander, Dr. E. A. Bennett, Dr. Davies, Atkinson, Dr. H. N. Hinderstle, Dr. N. Holthouse, Dr. E. D. Macnamara, Dr. J. G. Port, Dr. Philip, Dr. C. P. Symonds, Dr. R. C. Turnbull, Dr. F. M. P. Walshe, Dr. Wiggins, Dr. Woistell-Drought, and Dr. Yealland. I am also glad to express my indebtedness to the Registrar-General for allowing me to have access to the records, and to the authorities of Bethlem Royal Hospital, Guy's Hospital, and the West End Hospital for Nervous Diseases for giving me facilities for work in their wards or out-patient departments.

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## A METHOD OF DRAINING THE SEPTIC UTERUS

BY

L. RIVINGTON HOBBS, M.D.,

MEDICAL SUPERINTENDENT OF ST. MARY ABERTS HOSPITAL CONSULTING GYNAECOLOGIST TO THE ROYAL BOROUGH OF KENSINGTON

To the class who are much engaged in the treatment of puerperal sepsis there is one form of treatment, at any rate, which is rapidly passing out of favour, and that is leaving the septic uterus to take care of itself. This opinion was definitely reached in this hospital when it was found that in over half the cases of puerperal sepsis admitted there was pent-up pus.

Since then it still seems to be a diversity of opinion as to the best method of draining the uterus if it is thought that a short account of that we have found most successful might be helpful to those engaged in the task.

The first point which always arises when we have to deal with pent-up secretions, naturally, from our surgical teaching is the question of placing a drainage tube in the part concerned. For some time a drainage tube was left in the uterus either as a continuous method or only for some hours. After considerable experience it became apparent that this was not the best form of treatment, as even after twelve hours the tube became offensive. It was thought that a tube left in the uterus acted as a sort of plug, or as a cork in a bottle, and retarded the flow of lymph from the tissues. In many cases it excited uterine contractions and even pain, because the organ is always tending to expel foreign bodies. Such a procedure exhausts the uterine muscle rendering it toneless and doing away with the very function it is essential to retain. In some cases we were of opinion that leaving in a tube promoted haemorrhage rather than lessened it, and dammed back the secretions in the uterus.

In order to arrive at the best method of draining the uterus two things have to be borne in mind. In severe cases the oedematous tissues of the uterus have to be drained, and in chronic cases the secretions in the over-distended tortuous glands have to have an exit. Further, the cervical canal must be kept clear of all foreign bodies and retained products, such as pieces of placenta membrane, and blood clot. The swollen cervical canal has to be reduced in size by a drug which diminishes the inflammation and so widens the canal.

In our experience the presence of a tube constantly in contact with the cervical canal does not obviously tend to reduce the swollen tissues. The whole art therefore, of draining the tissues, as well as regarding the patency of the cervical canal and the contractile power of the uterus, is to use a suitable drug without leaving in a tube.

In choosing a drug the question has to be asked. Is there a method which can be applied again and again without being followed by an increase in the fever or disease, so that each application fulfils the purpose of an aid to the draining of the tissues which are in a state of stasis which in no way injures the living cells of the tissues with which it comes in contact which promotes a flow of lymph from the infected tissues—a method which if properly applied, alleviates pain, relieves congestion and by so doing stops secondary haemorrhage mildly stimulates the uterine muscle to contract, and finally restores the function of the uterus? There is a method and that method involves the use of glycerin (undiluted).

*The Method*

The instruments required are (1) a catheter introducer, (2) terminal eved soft rubber catheters, (3) an anterior vaginal wall retractor, (4) a modification of Sims's speculum (5) 2 ccm and 10 ccm Record syringes.

No anaesthetic general or local, is necessary. The patient is placed in the lithotomy position. The external parts are washed with ether soap and water and then with saline. The vagina is treated in the same way. A Sims's speculum is introduced into the posterior fornix, and an anterior vaginal wall retractor into the anterior vaginal fornix and by a series of gentle movements the cervix is manipulated into a central position. The

speculum must not be pushed too far back, and the anterior vaginal wall retractor must be held horizontally and obliquely in the same plane. By this means a good view is obtained of the cervix, which becomes readily accessible for the purpose of passing a catheter. A terminal eved catheter is lubricated with glycerin, and gently inserted into the os, syringing the glycerin in front of the catheter so as to make a bed for its easy upward progress through the cervical canal to the fundus of the uterus. The syringing is still continued as the catheter is withdrawn. This is repeated if the uterus contains much pus.

*Modifications of Treatment for the Type of Uterus*

**After Labour or Miscarriage.**—The patients here are relatively insensitive, and the best time for treatment is certainly during the first few weeks following labour or abortion, and quicker results are obtained.

**Case, Following Labour.**—In the cases we have certainly found the undermentioned method the best in all our experience. Patients are prepared in the usual way, but after the insertion of the catheter into the uterus the anterior vaginal wall retractor and Sims's speculum are removed leaving the catheter in situ. The legs are then lowered on to the table and the syringe, with the catheter still fixed on the end, is placed on a sterile pad on the symphysis pubis. A pillow is placed under the knees to add to the patient's comfort. The assistant standing by the side of the patient, injects the glycerin slowly through the catheter, giving a slow irrigation treatment to the uterus. This may be continued for from twenty minutes to half an hour. In that time 60 to 100 ccm or even more glycerin may be injected without causing the slightest discomfort to the patient. This may be done twice a day. Undoubtedly a more thorough washing of the uterus is obtained, and in many cases after one or two irrigations the temperature has fallen by crisis, whereas the hot intermittent remedy which is used in the majority of cases has had no effect on the temperature.

**Chronic Case.**—Many patients required into the gynaecological wards have suffered from intermittent attacks of temperature, recurrent attacks of pelvic peritonitis and which have been so distressing to the patient, prolonged uterine haemorrhages. Many of our recent cases have been dealt with very successfully in the following way. Small quantities of glycerin have been injected into the uterus daily until the temperature has come down, and if there is still much discharge and erosion which is not cleared up the uterus is washed out occasionally with industrial methylated spirit under morphia gr 1/4. In cases of chronic haemorrhage as in chronic metritis and fibrosis uteri, patients are given an anaesthetic and the uterus is washed out alternately with methylated spirit and glycerin. This is repeated for about a dozen times. Subsequently in all cases the uterus is drained for the succeeding few days.

By these treatments many cases which have seemed quite hopeless have cleared up.

I wish to thank Dr. Mary R. Leach for her help in carrying out the treatment.

## CONGENITAL DEXTROCARDIA WITHOUT TRANSPOSITION OF OTHER VISCERA

ACQUIRED VALVULAR DISEASE AND ATRICULAR DILATATION

BY

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Complete transposition of the viscera *situs inversus totalis* is too well known as a clinical condition to merit any special description. The following case, however, presents several features of unusual interest.

*Description of Case*

The patient, a female, aged 20, first came under the care of Dr. Theodoro Thompson in October, 1916.

**History.**—For ten years she has had a troublesome cough, shortness of breath on exertion, and attacks of palpitation



and faintness. There has been occasional pain across the right side of the chest in front, particularly after exertion. She has never had swelling of the feet or hæmoptyses. There was no history of rheumatic fever, chorea, or of other serious illnesses in childhood. As a child her heart was found to be on the right side.

The patient was pale, ill nourished, and underdeveloped woman. The lips were slightly cyanosed. The fingers were not clubbed. The pulse was small, completely irregular both in time and force, with a rate of 80 per minute. She was taking digitalis at the time of examination. The systolic blood pressure (brachial) was approximately 120 mm. of mercury.

On examining the chest, cardiac pulsation was observed to the right of the sternum, and the apex beat was felt in the fifth space, four inches to the right of the mid-sternal line. The cardiac dullness was found to the right of the sternum, the right border extending out to the apex beat.



FIG 1.—Radiogram showing heart shadow in the right side of the chest, and the aortic 'knuckle' to the right of the midline.

No thrills were felt on palpation. On auscultation the heart sounds were irregular, and over the apex beat both systolic and diastolic murmurs were heard. The second pulmonary sound was accentuated. The breath sounds over both bases were diminished, and accompanied by rhonchi and crepitations. The hepatic dullness was present in the normal situation, and the lower edge of the liver could just be felt beneath the right costal margin during deep inspiration. The urine was normal. The Wassermann reaction in the blood was negative.

The patient was radiographed by Dr. M. H. Jupe, to whom I am indebted for the following report (Fig. 1).

The heart shadow lies in the right side of the chest, with a small area projecting to the left of the spine. The aortic 'knuckle' appears to occupy a position to the right of the mediastinum. The heart is more globular in shape than usual, and its right margin is distinctly convex in outline. Although the pneumonchial shadows are more obvious than usual, gross abnormalities of the lungs or pleura is absent. The hepatic shadow is seen on the right side. A barium meal was given and the patient screened when the stomach was found to occupy a normal position. The case appears to be one of dextrocardia accompanied by transposition of the great vessels. The other viscera occupy a normal position.

The electrocardiogram (Fig. 2) is grossly abnormal. The abnormality of waves in Lead I makes it difficult to be certain of their direction, on the whole they do not appear inverted, P waves are absent in all leads, and the ventricular complexes, many of which are ectopic, are quite irregular.

#### Diagnosis.

There can be little doubt as to the diagnosis in this case. The patient has congenital dextrocardia with normal

position of other viscera, and this is associated with a valvular lesion, probably mitral stenosis due to old rheumatic endocarditis. The case is complicated by auricular fibrillation.

#### Comments.

Congenital dextrocardia without transposition of other organs is comparatively rare. In 1921 Lambry and Pizzi<sup>1</sup> collected from the literature twenty-nine cases of this condition in which the diagnosis was certain, whereas they were able to collect 227 cases of total transposition of viscera.

The appearance of the aortic 'knuckle' to the right of the midline in the radiogram is unusual in this type of case. According to Lambry and Pizzi the cardiac chambers are not actually reversed in congenital dextrocardia without total situs inversus. They hold that the condition is due to a 'pulling over' of the heart without rotation, and thus the relative position of the great vessels shows little departure from the normal. For this reason the curves in Lead I of the electrocardiogram are usually not inverted as in complete transposition of viscera. Several cases of undisputed diagnosis have, however, been described, in which the cardiac cavities were actually reversed (Moffett and Nienhot, Goiter,<sup>2</sup> Meyer,<sup>3</sup> Capon and Chamberlain<sup>4</sup>). That the functional left heart is on the right side in this case is further suggested by the fact that abnormal murmur, presumably mitral in origin, was heard over the apex beat.

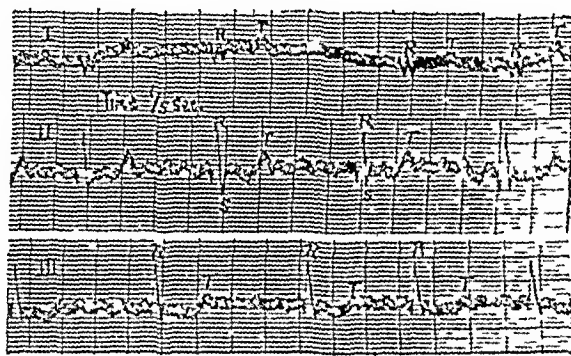


FIG 2.—Electrocardiogram showing auricular fibrillation (absence of P waves), and gross abnormality of ventricular complexes in Lead I.

in the fifth right space, and by the shape of the right border of the cardiac shadow in the radiogram (Fig. 1). In the electrocardiogram (Fig. 2) also described, one cannot be certain of the direction of the waves in Lead I as they are so abnormal. It would certainly be unusual to find the waves in Lead I normal in direction in a case where the cardiac chambers are actually reversed. A case of congenital dextrocardia without transposition of other viscera, however, was described by Gutic and Covert<sup>5</sup> in which radioscopically the cardiac cavities and great vessels appeared reversed, but in which the electrocardiogram was normal. The diagnosis in this case was not confirmed anatomically.

The coexistence of acquired valvular disease and congenital dextrocardia is by no means unknown. So far as I am aware, mitral stenosis associated with congenital transposition was first described by Owen<sup>6</sup> in 1911. Other cases complicated by valvular disease have since been described, indeed, an individual with congenital dextrocardia would appear to be as much liable to rheumatic disease as any other.

Curiously enough, abnormalities of cardiac rhythm are apparently very rare in this condition, but there are a few too few electrocardiographic records of these cases to justify any definite statement. That interference with the conducting mechanism may occur is illustrated by such records as those published by Parsons Smith<sup>7</sup> and Potts and Ash<sup>8</sup>. Auricular fibrillation complicating dextrocardia, as in the case here described, however, must be extremely rare, I could find no reference in the literature to a similar case. Lambry and Pizzi state that they have never seen auricular fibrillation occur in this condition.

concentric heart disease and this was also the experience of Parkinson and Clark-Kennedy\* in 1926

I am indebted to Dr Theodore Thompson for kindly allowing me to publish this case, and to Dr John Parkinson for the electro-cardiographic record

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## Memoranda.

## MEDICAL, SURGICAL, OBSTETRICAL

## ENLARGED RIGHT OVARIAN CYST

In view of the rarity now of extreme abdominal enlargement due to an ovarian cyst the following details and illustration of such a case may be of general interest

A woman aged 57 was admitted to hospital as a case of acute intestinal obstruction there had been no movement of the bowels for three days. She complained of generalized pain over the abdomen and in both legs which had lasted only a fortnight. There was no urinary trouble. The menses had occurred as usual every seven years previously. Menstruation had always been normal. The abdomen had been increasing in size for about twenty years. She had consulted a medical practitioner twelve years prior to admission but he had refused to operate.



The abdomen was enormously distended with large veins coursing over it. The swelling gave a remarkably distinct fluid thrill but the flanks were clear so a cyst was excluded. An ovarian cyst was diagnosed. Both legs were purple up to the knees and cold to the touch. There was dry gangrene of the toes of both feet. The patient said that she had not been able to go to bed for more than six months. She spent the time sitting in a chair. Under a local anæsthetic I cut down to the peritoneum and then passed a few stitches through it and the wall of the cyst. A trocar and cannula were thrust into the cyst and a No. 3 catheter was inserted. The patient was drained very slowly

for two days and then a large catheter was introduced. At the end of four days her legs down to the toes resumed their normal colour and became much warmer. The pain which had been present ceased. The patient could then be put to bed. The fluid which came away was of a dark colour. Each measurement of it was checked by two senior nurses. At the end of a week 103 pints of fluid had been removed. Some little fluid was still retained but the patient was getting weaker so that the catheter was withdrawn. She died a fortnight after admission. At the necropsy an enormous ovarian cyst was disclosed. There was no free fluid in the abdomen. The liver was almost unrecognizable in shape it resembled a crescent.

I do not like to publish this case my thanks are due to Mr A C Bate surgeon to the Royal Sussex County Hospital  
 H H BURNETT M.B. Ch.B.

TRAUMATIC RUPTURE OF THE DUODENUM AND  
LIVER SUBPHRENIC ABSCESS RECOVERY

The following case is placed on record on account of the rarity of recovery after such an accident and indeed of the condition itself.

A woman aged 30 when riding a motor cycle at night crashed into a motor lorry. He was admitted to Mr A B Mitchell's ward in the Royal Victoria Hospital Belfast on August 25th 1927. When I saw him some five hours after the accident he was suffering from shock and writhing with abdominal pain. The abdomen was rigid and tender especially to the right of the middle. In about the tip of the tenth rib it was somewhat tympanitic and distended.

I opened the abdomen by a right paramedian incision and found a large amount of blood coming from an extensive tear in the under surface of the liver after mopping out the blood intestinal contents were seen well up from the duodenal region. I found a ragged tear far back on the anterior surface of the first part almost at the angle of junction with the second. I sutured this with one difficulty as the patient was very stout. The hole was the size of a turrepony bit and was more or less circular but there was no induration thickening or any evidence of ulceration.

I then made a rapid survey of the small intestine to exclude other perforations. It revealed numerous bruises but no tear. His condition did not permit of further interference so I closed the wound leaving a pack down to the ruptured liver to control bleeding and a drain.

He caused some anxiety for a few days and developed a moderate degree of wound sepsis but had no vomiting. By September 4th the temperature was normal and remained so until September 10th when it began to rise at night. This continued until October 5th and he was complaining of left-sided pain when I then saw him. I explored the left subphrenic region and found pus. Next day Mr Mitchell helped me to open a very large subphrenic abscess after subperiosteal resection of the twelfth rib. The patient then made steady progress towards recovery although his pulse rate was 120 for a long time. He left hospital in good health except for a ventral hernia on November 12th. He had no gastric symptoms either before or after the accident.

Berry and Gumpert record 23 cases in the ten principal London hospitals prior to 1907 all the patients died. Choyle states that only 5 such patients were admitted to the London Hospitals from 1899 to 1919 and all died. Rowlands (British Medical Journal 1923 i 716) records 23 cases of ruptured duodenum out of 381 of ruptured intestines, but does not give separate mortality.

B.M.S.

C J A WOOD M.D., M.B., F.R.C.S.I.

GANGRENOUS APPENDIX IN A STRANGULATED  
HEPATIC SAC

The following case of strangulated inguinal hernia seems sufficiently rare to merit description.

An infant aged 6 weeks was admitted to Booth Hall Infirmary on September 15th 1927. The mother stated that she had noticed a swelling in the right groin the day before when it was tender and increased in size. The child was restless but had no vomiting. The bowels had been opened the day before.

On admission the temperature was 97° and the pulse rate was 140. The right side of the cranium was swollen tense and discoloured and the cord on the same side was thickened. The mass was irreducible.

At operation a distended sac was found strangulated by a tight external ring. Inside the sac was the appendix which was completely gangrenous together with the lower pole of the caecum which was engorged and discoloured but still viable. The lumen of the caecum and the ileo-caecal junction were outside the sac a fact which probably accounted for the absence of vomiting. The appendix was removed and the sac ligatured.

The child recovered well after operation but unfortunately died eleven days later from enteritis.

AGNES SEATON M.B. Ch.B.

Booth Hall Infirmary, Manchester

## CONGENITAL DIAPHRAGMATIC HERNIA

It may perhaps be worth while to add this to the long list of such cases on record.

On November 8th I was called to see a newborn infant. The nurse informed me that when the baby was delivered she noticed the face to be intensely blue and she completed delivery at once. The apex beat was on the right side. She tried artificial respiration for some time and as there appeared to be no sign of improvement he sent to me.

When I arrived the infant had been born about thirty minutes. The face was almost blue black the abdomen was distended and tense and the apex beat was at the right nipple. The rate was about 30 and every fifteen seconds or so the infant took a short jerky inspiration. It lived about fifteen minutes after my arrival.

At the post-mortem examination the heart was seen to occupy the right side the right lung lay above it and was very slightly inflated. The left lung was infarcted and the left side of the thorax was packed with coils of intestine. The liver was swollen and congested and occupied practically the whole of the right cavity. The hernial opening was in the left posterior quadrant and its edge was very smooth.

I took a specimen from Dr Cavendish Fletcher who was good enough to make the following report.

The posterior part of the left side of the diaphragm had failed to develop leaving a hole about three-quarters of an inch in diameter. The posterior side of the bowels was found in the posterior abdominal wall and the anterior abdominal wall was a sort of a cleft edge quite smooth and of even thickness.

to trauma. The stomach was in its normal position, and the perforation of the diaphragm by the oesophagus was normal. The liver was large and weighed 7 oz. It was congested. The extreme tip of the left lobe was turned up into the thorax through the diaphragmatic perforation referred to, a marked indentation of this lobe indicating the position of the edge of the hole in the diaphragm. The whole of the small gut and the ascending and transverse colons occupied the left side of the thorax. The spleen, too, was found in the thorax, lying in the middle line, just in front of the tiny undeveloped left lung. The latter weighed only 4 grams, having failed to develop beyond this size owing, no doubt, to the pressure of the displaced viscera. The right lung was normal, but unexpanded. It weighed three-quarters of an ounce. The heart was completely displaced to the right side, but was otherwise normal. Apart from the hernia, and the failure of the left lung to develop, no visceral disease was found.

Assuming the condition had been diagnosed *ante mortem*, it would be interesting to know what chances of life the child would have had if the hernia had been reduced by open operation.

Hayes, Middlesex

D. H. WALDROV, M.B., B.Ch.

### CHRONIC VINEGAR POISONING

The following case seems worthy of note, on account of the paucity of recorded cases where commercial vinegar has been consumed over a considerable number of years in much the same quantity as the other more refreshing beverages which are indulged in by the world at large.

In August, 1927, I was called to see a woman aged 60. She was in bed, looked ill, but was mentally bright and alert. Beside her stood a quart bottle of vinegar three pints empty. This quantity she acknowledged she had consumed during the same day. I learned from her relatives that this was about her usual daily ration, that, in fact, she never ate anything without washing it down with a liberal quantity of the liquid. This had been her habit for as many as thirty years. At one time she had weighed 112 lb., now her weight was 38 lb. Till a week before she had been up and about the house, but during the last five weeks she had taken no food, nevertheless she had not decreased her daily quantity of vinegar. Her temperature was subnormal, her hands and forearms and her feet and legs were almost black. She had no pulsation in the arteries below the elbow and knee. The apex beat was easily palpable in about its normal position, and the heart sounds were clear. She was most emaciated, but no signs of malignant disease consistent with such an advanced state of emaciation could be discovered. She had some difficulty in swallowing, but this appeared to be due to general weakness. The urine was acid, but contained no abnormal constituents.

She was admitted to the Royal Salop Infirmary, but could retain nothing by mouth or by rectum, and died within forty-eight hours.

An inquest was held, and the verdict that death was due to a chronic intoxication (the intoxicant being commercial vinegar) was pronounced in by the coroner (Dr. Curdson), the resident physician (Dr. Evans), and myself. For the following notes on the *post-mortem* examination I am indebted to Dr. Evans of the Royal Salop Infirmary.

Deceased is a most emaciated woman there being an almost complete absence of naked eye fat. The tongue shows a chronic superficial glossitis and the pharynx a chronic pharyngitis. The oesophagus is normal. The stomach is dilated, its mucous membrane very white, smooth and non-rugose, and contains clear fluid. There is some intestinal catarrh. The kidneys are small and pale. The left testis is small and shows a small amount of fatty degeneration. The lungs show atrophic emphysema, chronic bronchial catarrh. The spleen is small and normal. The liver is of the well marked nutmeg type and shows no pathological changes. The gall bladder is distended and full of bile.

It appears remarkable that the woman lived so long. The state of acidosis was evidently prevented by the formation of acetate salts, which were in turn broken down, but the condition of her digestive organs gradually became worse till they reached a state of complete abrogation of function. She was, in fact, as nearly as possible pickled alive.

Shrewsbury

D. A. TROUGHTON

## Reports of Societies.

### EXTENSIVE AORTIC ANEURISM

At a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland on December 5th, 1927, President, Dr. T. T. O'Farrell, in the chair, Dr. A. R. J. Dunagan read notes on a case of aneurysm of the aorta, and showed a specimen.

Dr. Dunagan said that the entire thoracic aorta was moderately dilated, and beyond the transverse portion of the arch was filled with a mass of laminated clot, leaving only a small lumen. There was advanced atheroma, but no microscopic signs of syphilis. Microscopically, however, there was found infiltration of the media and adventitia by mononuclear cells, and there were patches of scar tissue in the media. The Wassermann test was strongly positive.

The President said that aneurysms of the aorta were rarely seen, since these cases were not usually admitted into general hospitals. The symptoms were sometimes not very clear. Dr. J. Lutz said that he had never met a case in which there had not been a positive Wassermann reaction.

Dr. William Whelan said that he had operated upon three cases of aortic aneurysm, one man was alive and well seventeen years later. At the time of operation the aneurysm was thin walled, and appeared likely to burst when the abdomen was opened. The introduction of wire had produced in this case a complete cure. In a second case a necropsy had been performed some four years after the introduction of wire. In this case the aneurysmal portion was also completely consolidated, but the man died from rupture of a secondary dilatation. The third patient died shortly after the operation. Dr. W. D. O'Keefe said that he had never seen such an extensive aneurysm, the patient must have suffered from remote syphilitic aortitis.

Dr. John Moore referred to a description of aneurysm or the aorta which stated that aneurysms of the ascending aorta provided physical signs, while aneurysms of the descending aorta were indicated by symptoms. He feared that at present there was a tendency to attach too great confidence to diagnoses made by x-ray examinations. Dr. H. B. Goulding mentioned the case of a woman who had died suddenly while carrying a bucket of coal upstairs. She had complained of persistent cough and pain in the chest. Dr. Goulding found an aneurysm adherent to the sternum, it had apparently burst into the pericardial cavity. Dr. A. R. Parsons discussed the auscultatory signs in interthoracic aneurysm, and thought that there were quite a number of these cases in which there was no murmur present.

Dr. Dunagan, replying, said that in the Johns Hopkins Hospital there had never, he believed, been a case in which it had not been possible to disclose a syphilitic lesion microscopically. In the present case no aneurysm had been present.

### Malignant Papilloma of Kidney

Dr. T. T. O'Farrell showed a malignant papilloma of the pelvis of the kidney of a man aged 54. Three months previously the patient had felt a stabbing pain in the left side, he had never passed blood, but the urine had been colored red. On admission pain was present at the lower border of the ribs at the back, and was increased by coughing. A swelling was felt in the left lumbar region and projected into the left iliac fossa. It moved with respiration and was dull on percussion, except for a band of resonance which crossed it. The left kidney which was removed, measured 15 by 9 by 7 cm., it was highly lobulated and one surface showed many adhesions. It was almost completely cystic, due to back pressure. The whole pelvis was occupied by a papillomatous mass, unlike a villous papilloma of the bladder, which appeared to have its origin at the attachment of the pelvis to the kidney proper, though the growth extended to a certain extent into the cystic spaces. Microscopically the tumour was composed of stalks of fibrous tissue covered by a layer of transitional epithelium. Mitotic figures were fairly numerous, and though no definite metastases were

tissues could be seen the evidence of rapid growth suggested the probability of malignancy.

#### Differential Diagnosis of Uterine Tumours

Dr D C MUIR showed a uterine tumour removed from an unmarried woman aged 76 following slight but persistent vaginal discharge, she had had a severe haemorrhage. Dr Muir found the vagina filled with a clot, and there was a small papilloma protruding from the cervix, which was very big and felt sore. Dr Muir thought that it was probably a case of adenocarcinoma and in the course of a few days performed complete hysterectomy. The patient did well.

Dr J T WIGHAM said that the tumour was a particularly uncommon one, the cervix was larger than the body of the uterus. Such tumours nearly always involved the body of the uterus and not the cervix. The present growth had probably started in the body, and then extended to the cervix. It was an adenocarcinoma of "cushion" growth. It was always recognized that these tumours were either actually or potentially malignant somewhere in them there was a very definite infiltration of the muscular wall of the uterus, but in this case he had been unable to find this though there was papillomatosis of the mucous membrane of half the body and the whole of the cervix. Dr Wigham thought that it was benign in origin, but was tending to become malignant. It was always a debatable point whether these tumours began as cancer and developed papillomatous growths or began as papillomas and became malignant. He did not think that the growth in these cases extended any further into the wall of the uterus than the glands of the normal endometrium.

Dr P J ROWLETTE suggested that this tumour might be endocervical in origin and arise from the mucous glands. He said that malignant disease was very seldom seen in so old a patient.

Dr J LAIR said that when he had first seen the specimen in the laboratory he had considered it malignant but when he had prepared section he had realized that it was apparently benign. He had not met with this condition before except in the examination of curettings. These tumours originated often from the endometrium of the body of the uterus and rarely from the mucous membrane of the cervix. Inasmuch as they resembled the villous papilloma of the bladder, both in structure and from their tendency to malignancy he thought that the term villous tumour of the endometrium suggested by Sir John Blund-Sutton was most appropriate. He was not convinced that there was no infiltration of the uterine wall and agreed that hysterectomy in this particular case was the ideal treatment.

The President thought it very difficult to say whether cancers grew from the tubules in the cervix when the tumour was superficial. It would have been difficult to find infiltration in this case since the uterus was very old and fibrotic. He asked if any mitoses had been found.

Dr MUIR replying, said he had had no doubt from the clinical symptoms that this patient had malignant disease, and that it was essential to do a complete hysterectomy.

Dr WIGHAM replying said that there were no mitoses and that his reason for concluding that this was a tumour of the body rather than of the cervix was that papillomatous tumours of the body were much more commonly met with than tumours of the cervix.

#### James Exhibit

Mr W PEARSON read notes on a case of hydronephrosis and Dr J T WIGHAM showed the specimen. The patient a woman aged 45 underwent curetting three years previously and a laparotomy for uterine and pelvic trouble. The right ovary and tube were removed and suspension opeia on performed. At that time it was noted that the uterus was enlarged and adherent to the rectum and the c were also adhesions in the right adnexal region. Two and a half years later she began to suffer from stiffness and pain in the upper abdomen which spread to the right loin and sometimes into the back. At times when the pain was severe vomiting occurred and was followed by relief. There were no urinary symptoms and the urine was normal.

Laparotomy revealed a firm, rounded somewhat tender tumour, the size of a tangerine orange in the right epigastrium just above the umbilicus, and a second swelling was felt which was evidently an enlarged kidney. The bladder and ureteral orifices were normal. Urine was coming from each but in considerably less amount from the right ureter. A hydronephrotic kidney with a tenaciously distended pelvis and an enormously dilated and tortuous ureter was removed. The symptoms which were entirely despective and suggestive of duodenal trouble, were evidently due to duodenal distortion or kinking produced by the greatly distended renal pelvis. There seemed little doubt that the pelvic portion of the ureter became involved in scar tissue subsequent to the gynaecological operation, with resulting chronic partial obstruction to urinary flow.

Dr J A MCGATH read notes on cases of four tumours of the neck, and exhibited specimens. The first was an alveolar sarcoma of the parotid. It consisted of malignant spheroidal cells irregularly divided off into islands by fine bands of fibrous tissue. The islands varied in size, and the specimen bore a close resemblance to a mixed sarcoma and enchondroid carcinoma of the breast.

The second exhibit, a primary sarcoma of a lymph gland in the neck was from a man, aged 52 who had had a lump on the side of the neck for about twenty years. It slowly grew in size, was egg shaped, slightly movable, and not adherent to skin though the adjacent glands were slightly enlarged. The specimen consisted of a somewhat ragged piece of tissue not unlike a mass of lymphatic glands with considerable fibrous tissue and some golden coloured pigment. There was also a separate piece of tissue, resembling a lymphatic gland solid in consistency and of pale colour. On section it was found to be composed of malignant spheroidal cells in places collected in masses but elsewhere surrounded by fibrous tissue. Mitotic figures were very numerous. There was a very small amount of lymphoid tissue present probably the remains of the original lymphatic gland but no tendency to the formation of acini was evident. There were patches of necrosis in some sections but no similarity to endothelioma.

The third exhibit was a secondary carcinoma of a lymph gland in the neck, the secondary growth being larger than the primary, and the last a carcinoma from the anterior triangle of the neck.

Dr J LAIR read notes on a case of carcinoma of the stomach and showed specimens. A ray examination showed a dilated oesophagus the barium being longer retained than normally and passing very slowly into the stomach. There was constriction of the oesophagus near the cardiac end of the stomach with a large filling defect of the lesser curvature and an irregularity extending upwards to the cardiac orifice. The patient could take nothing except liquid foods and eventually died apparently from exhaustion. The entire stomach except the pylorus and about 2 in. of the stomach adjacent to the pylorus was found to be occupied by an ulcerating fungating and in many places necrotic tumour, which surrounded the cardiac orifice causing incomplete obstruction. There was no stenosis of the pylorus. The walls of the stomach were greatly thickened. On the anterior wall the ulceration had excavated a small area about the size of a sixpence which was only covered by inflamed peritoneum. The posterior wall was adherent to the pancreas which was penetrated by the tumour. The tumour lay spread along the lymphatics and had involved the spleen which was drawn towards and was adherent to the stomach. The regional lymph glands were involved and one secondary deposit the size of a walnut was found in the left lobe of the liver. Microscopically the tumour was a rapidly growing adenocarcinoma. Mucoid degeneration was found in the primary and secondary foci.

#### JAMES MACKENZIE INSTITUTE

##### Gastric and Duodenal Ulcer

At the James Mackenzie Institute for Clinical Research, St Andrews Professor ARCHIBALD YOUNG (Glasgow University) read a paper, on November 22nd, on some surgical aspects of gastric and duodenal ulcer. Professor Young

began by referring to a previous statistical study from his clinic into the efficiency of present-day methods of diagnosis of ulcers of the stomach and duodenum, and into the value of gastro-jejunostomy in their treatment. The diagnostic error had been found to be small, and to depend, not upon any fault in the methods, but upon erroneous deductions from the data which they provided. In this series 66.6 per cent of patients had made a complete recovery after gastro-jejunostomy, while 83 per cent had been greatly or considerably improved. The operation performed was the usual posterior anastomosis, without pyloric exclusion. The further series upon which the lecturer's present paper was based included 146 cases, of which 12.3 per cent were gastric, 28.08 per cent duodenal, and 59.59 per cent pyloro-duodenal. Of these, 130 had occurred in males, 24 in females, and in 8 males the location of the ulcer was doubtful. Professor Young emphasized his belief that many pyloro-duodenal ulcers, although often classified as gastric, had more in common with true duodenal ulcers than with those of the gastric type. He still performed gastro-jejunostomy as an almost routine operation for peptic ulcer, and found it especially valuable in duodenal and pyloro-duodenal cases. In his experience pneumonia was the chief cause of death, and he thought that its incidence might be reduced by careful nursing and, since the condition was often of embolic origin, gentleness in handling the ulcerated segment. The therapeutic effect of gastro-jejunostomy was due to a combination of factors, of which drainage and access to the stomach of the alkaline contents of the duodenum were important. It was unnecessary to occlude or divide the pylorus to ensure relief. Excision of the ulcer was generally valueless, unless combined with some method of securing gastric drainage. Plastic operations at the pylorus were no more efficacious than simple gastro-jejunostomy. Gastrectomy is reserved for large and adherent gastric ulcers, believing that so severe an operation was seldom justifiable for more limited lesions. Partial gastrectomy did not eliminate, though it might lessen, the risk of recurring ulceration. He then outlined the work of Roscnow, Mann and Williamson, and others on the selective affinity of certain strains of streptococci for the mucosa of the stomach and duodenum, and referred to the discovery by Kodama of a direct lymphatic connection between the wall of the gall bladder and that of the duodenum, also to Wilkie's recent observations. With regard to treatment of perforated ulcer great advance had been made in the speaker's lifetime. Much of this was due to Murphy, who had consistently taught rapidly in operating and the minimum of interference. Gastro-jejunostomy was rarely required either at the primary operation or later, as Nature was able to correct a considerable degree of the narrowing which might follow the infolding of the ulcer. Professor Young preferred to drain the ulcer of perforation locally. In diagnosis, most stress should be laid on the patient's history. Clinical and laboratory tests helped much but interpretation of the results of x-ray examination was very liable to error.

At a meeting of the Manchester Pathological Society on December 14th, with the president, Mr F. H. Worswick, in the chair, Dr W. SUSMAN read a paper on the relation of the spleen to immunity. Dr Susman referred to the work of many observers, which had indicated that the reticulo-endothelial system, and the spleen in particular, were concerned with the production of immune bodies. He thought it might be assumed that the pulsations of the spleen afforded an indication of its function. These pulsations, as shown by Schiffrin, were inhibited by atropine and augmented by injections of brain extract. In a small series of rabbits the subcutaneous injection of a boiled watery extract of brain tissue had enhanced the process of agglutinin formation against *B. typhlosus*. The administration of the same extract to a large series of mice infected with pneumococcus type I had shown a survival of 51 per cent of a total of 262, while an equivalent number of control animals had died. The survival extended over two to three weeks, and, in several instances, up to five to eight weeks, when the experiments were concluded.

<sup>1</sup> *Lancet* April 7th 1923.

## Reviews.

### URINARY DISEASES IN CHILDREN

A volume on affections of the urinary tract in children, by Professor Nobe-court of Paris, is the fourth of a series of clinical studies, all written by him and derived from his hospital practice and teaching. The plan of the present volume follows strictly that of the three preceding, its chief feature is the presentation of individual cases with their special history, symptoms, signs, course, and treatment, accompanied by a commentary that connects their peculiar manifestations with the general aspects of the disease. Of the 350 pages that make up the present volume about two-thirds are devoted to various types of nephritis in children and infants. These types are at first presented on a clinical basis, according as oedema, haematuria, or a high blood urea is the predominant feature, but the classification is not rigid, a good many examples of mixed types are given, and the occurrence of acute, subacute, and chronic cases is illustrated also. These case records show how often mixed types occur, also that definite haematuria is a common feature of nephritis in children, and that apparently complete repair of the kidney tissues may occur, even in prolonged and severe cases. Two interesting chapters deal with cases of nephritis complicated by purpura and by convulsions, and the relation of nephritis to infantile diabetes is also illustrated by a striking case. In the records of the cases special attention is given to the dimensions of the heart and liver, and to the blood pressure and the blood urea, these observations being often shown as graphic curves and outline diagrams. Other chapters in this admirable clinical repository deal with pyelitis and pyelonephritis, orthostatic albuminuria, paroxysmal haemoglobinuria, malignant renal tumours, bladder calculus, and waxy disease. In this collection of full and accurate case records Professor Nobe-court has made a valuable contribution to a difficult subject, and although in his discussions of the cases he does not attempt any general or systematic statement of the pathology of nephritis—this, indeed, being beyond his present aim—he provides valuable material towards such an end. This kind of book, an incorporation of case records with commentary, is of greater value to the practitioner of some experience than to the student, and it is a kind of medical writing in which success can only be achieved by one experienced both in the practice and teaching of medicine. Professor Nobe-court has this twofold experience in a high degree, and in this series of clinical studies he conveys to his readers almost as vividly as he does to his hospital classes his gifts as physician and teacher.

### BASAL METABOLISM IN DISEASES OF THE THYROID

The volume under review is entitled *Clinical Investigations into the Basal Metabolism in Diseases of the Thyroid Gland*. It takes the form of a Supplement to *Acta Medica Scandinavica*, and is, in effect, an abridged and in some respects an elaborated English translation of a treatise by Dr EGERT MOLLER, first published in Danish in 1925. The greater part of the work is concerned with the problem of Graves's disease. The author, finding that "in the literature proof was not furnished for the general opinion that Graves's disease is always accompanied by increased basal metabolism," undertook an elaborate clinical and laboratory investigation of the problem. The questions which he has attempted to answer are (a) the relation between the amount of basal metabolism and the occurrence of clinical symptoms, (b) the value of basal metabolism determined in diagnosis and prognosis, and (c) the effects upon basal metabolism of different kinds of treatment. The critical work in the literature is rejected as defective through

<sup>1</sup> *Clinique Medicale des Enfants, Affections de l'Appareil Urinaire*, par P. Nobe-court, Paris, Masson et Cie, 1927. (Med. 36, 11, 13, 57 figures, 40 francs majoration.)

*Clinical Investigations into the Basal Metabolism in Diseases of the Thyroid Gland*, By Egert Moller. *Acta Medica Scandinavica*, Supplementum XVI, Copenhagen, Levin and Munksgaard, 1927. (Med. 37, 219, 15 figures.)



of clinical trial and a precise definition of what constituted Graves's disease in the subjects studied. Moreover, there was not sufficient appreciation of the necessity for repeated determinations in order to obtain true basal values. The method employed by Dr. Moller was that of Krich, which with certain precautions which are discussed in detail, is well adapted to clinical employment. As a result of 106 determinations on 34 different normal subjects it was concluded that a deviation of 10 per cent from the standard basal metabolism, calculated from the standard values of Benedict and Harris for the weight, size, and sex of the subject was to be regarded as in all probability pathological. Some 89 cases of Graves's disease were then studied. The clinical records are omitted but may be found in the original Danish edition. Only those cases exhibiting goitre, tremor, and permanent tachycardia are regarded as cases of true Graves's disease. For these the basal metabolism was found to vary from 93 to 190 per cent of the normal, nine cases out of ten giving values above 110 per cent. The frequency of the symptoms is placed in the order: tachycardia, tremor, goitre, nervousness, increased basal metabolism, palpitation, sweat secretion, and exophthalmos. It is concluded that a basal metabolism lying within normal limits does not exclude the presence of the true disease. Treatment by x-rays and by resting and overfeeding led to a fall in the basal metabolism but usually the subjective symptoms disappeared first. In 50 per cent of the cases x-ray treatment led to definite improvement or even cure. It is suggested that cases not responding to x-rays should be immediately operated upon.

Turning to other thyroid conditions it was found that almost without exception cases of simple goitre gave normal basal metabolism values. On the other hand every case of myxedema gave a low value. The lowest was never less than 60 per cent of the normal—a level which was consequently taken to represent that attained when there is complete functional inactivity of the thyroid. The effect of thyroid treatment was always to cause a rise towards normal basal metabolism but the maximum effect was not attained for two to eight weeks. This rise is an early symptom of mitigation of the condition; it generally precedes the disappearance of the subjective symptoms. The author engages in a discussion of the principles and practice of thyroid treatment. This extensive report contains full protocols and elaborate analyses of the laboratory data which are certainly the most comprehensive available on the subject.

### THE RAPID EXPERIMENTAL AND PRACTICAL

This first volume of a German textbook of practical therapy as the result of experimental investigation, edited by Professor R. von den Velden and P. Wolff was reviewed in our issue of December 11th, 1926 (p. 1125). It dealt with the general principles of therapeutics; the second volume, which has now appeared, discusses the application of these principles in disease. It contains forty-eight articles by some thirty different authors but Professor von den Velden is the chief contributor for he has written eleven articles. The contributions vary in merit and it is possible to mention a few only.

One of the most interesting is Professor Frank's article on diabetes mellitus; it concludes with a short account of synthetic therapy. Dr. Richter writes briefly and in a cautious tone on endocrine therapy. He concludes his summary of the various methods of testicular therapy with the words "Unfortunately rejuvenation is at present only a pious hope." He considers however that ovarian therapy may give positive results. His article provides an example of the unfortunate slowness with which knowledge passes from one language to another for he ascribes to Laqueur and Zondek the discovery of the ovarian hormone "folliculin" or oestrin and does not mention the previous work of Allen and Doisy.

The article by Dr. O. W. Gross on the therapeutics of diseases of the alimentary canal is a very good summary.

Other articles deserve mention because they deal with subjects often omitted from ordinary textbooks of medicine. Such are the articles on the treatment of drug habits (Dr. P. Wolff) on psychic therapy (Professor J. H. Schmitz) and on the treatment of insomnia and of pain (Professor H. C. Hermann).

Enough has been said to indicate the general scope of the book. The aim of the editors was to set forth a system of rational therapeutics founded on the basic sciences of physiology, pathology and pharmacology, and bacteriology and they deserve great credit for making so courageous an attempt. This second volume may be regarded as a summary of the present state of therapeutics and as such presents certain points of interest. For one thing a comparison of the various articles shows very clearly how much advance has been made. In certain articles—such as those on diabetes mellitus and on gastric and thyroid disease, the contributors can describe fairly exact rules of treatment based on physiological principles. The same can be said regarding the treatment of diseases due to spirochaetes and trypanosome. But in many of the articles describing one of the commonest diseases the writers can only give general directions for symptomatic treatment which are much the same as were employed fifty years ago.

It would of course be irrational to expect a uniform advance in medicine but the failure of certain sections to make any appreciable move forwards is very striking. Yet it is indeed a hopeful sign that such a work as that before us has been produced. No one will suggest that the present output of medical literature is inadequate in volume but that attention is directed to the diagnosis or aetiology and to pathology and an attempt to produce a general account of the treatment of disease based on scientific evidence is not welcomed; it only as a stimulus to research in the more neglected fields of therapeutics.

### MEDICAL ENTOMOLOGY

The London School of Tropical Medicine has already published six volumes of memoirs relating severally to Fiji, Ceylon, Egypt, Western Pacific, the Caribbean and Southern Rhodesia, and in continuation of the series the London School of Hygiene and Tropical Medicine has now issued its first memoir on *Isaulele in Polynesia and Melanesia*. The work is by Dr. P. R. Buxton, director of the department of entomology, assisted by Mr. C. H. E. Hopkins and relates principally to medical entomology, including climate as being a part of the environment in which the insect lives. In a subsequent publication the author proposes to recount his investigations into filaria and other matter which relate to human beings. The visit to the south-western Pacific which lasted throughout the years 1924-25 was undertaken with a view to co-operating with the New Zealand Government and its local administration and department of health in the study of filaria is the principal programme was that special studies should be made on the mosquito which carries filaria and that an attempt should be made to reduce the number of the mosquitoes in this particular region.

The volume contains a mass of carefully observed facts which are not only interesting in themselves but which will be invaluable to those who propose to carry on researches in the regions concerned. Although the mosquito *Aedes (Stegomyia) triseriatus* the vector of filaria was the main object of investigation the author has properly included the whole of the insect fauna of the district in his researches as being the natural setting in which to regard *Aedes* itself. Several species of *Aedes* are known to *triseriatus* being the carrier of malaria and of this species there are several races or varieties each of which has a fairly definite and limited distribution in the islands of the south-western Pacific. The life-history, geographical distribution, habits and morphology of these varieties have been fully worked out and described by Dr. Buxton with

\* *Handbuch der Praktischen Therapie der akuten Infektionskrankheiten* (Herausgegeben von Prof. Dr. R. von den Velden und Prof. Dr. P. Wolff). Band I. Erste Hälfte. Leipzig, J. A. Barth, 1927. (Sixteen 8vo. English plates, 388, 22 figures. Zweite Hälfte 1927. 65, 22 figures. 1/3 the two parts.)

\* *Isaulele in Polynesia and Melanesia*. Part I. By Dr. P. R. Buxton and Mr. C. H. E. Hopkins. London, School of Hygiene and Tropical Medicine, 1927. (Cr. 17, 31 + 60, 1 plate, 32 plates, 10 col.)

the addition of diagrams to assist in their diagnosis. In discussing the question of the control of these insects, he explains that no work directed against the one disease-bearing species can be effective unless general anti-mosquito measures are also prosecuted vigorously, because the success of such a campaign depends largely on the help of the mass of the population. Natives will not be induced to believe in the efficacy of anti-mosquito measures which leave the irritating, night-biting *Culex fatigans* and the virulent *Aedes aegypti* in undisturbed activity. Referring to control measures in such a district as the Apurimac municipal area in Simor, where the medical department co-operated during a period of six months in an attempt to reduce the number of mosquitos, it is stated that *Culex* could be readily dealt with by such simple measures as screening the ventilators of septic tanks with gauze and the periodical disinfection of privies, while with regard to *A. aegypti* it could be exterminated by forbidding the growing of banana and taro, the leaves of which are its favourite breeding places. *Aedes variegatus* presents a more difficult problem, but the author is able to state that the measures adopted greatly reduced the numbers of the mosquito. Its breeding places are coco husks and shells, cecrop pods, rotting crinoids in trees, crab holes in sandy places on the shore, water butts, discarded vessels, and the like. Systematic work by trained health inspectors would soon reduce the number of mosquitos from these sources, but in the present state of knowledge extermination is impossible owing to the proximity of great forests with their innumerable little rot-holes which are the stronghold of the insect. The only measures, therefore, at present available are constant inspections and repeated cutting of bush, these are expensive and not generally efficient, and the conclusion is reached that the only prospect of efficient control of the insect lies in the still further study of it, in the hope of devising some plan which will give some measure of permanent reduction in its numbers. The problem is an important one, since it is estimated that 58.3 per cent of Simorians over fifteen years of age are infected and suffer from the associated diseases.

A considerable part of Dr. Burston's volume is devoted to a description of experiments performed on *Aedes variegatus* and *argenteus*. Thus experiments were carried out with a view to studying the factors which control egg-laying, the factors which cause the eggs to hatch, the mortality of the insect, the length of the larval and pupal stages, the relation to temperature and food supply, salinity, and the amount of light. Further experiments dealt with abnormal conditions such as starvation, poisoning, and putrid drying. The work concludes with an interesting general summary of the natural history of the insect, based on the author's own work and other published researches. A statistical account of malaria and filariasis is added by way of appendix, and two appendices on the hatching of *Aedes variegatus*, one by Dr. J. F. C. Huston and the other by Professor M. Greenwood and I. M. Newbold, are included in the volume.

The volume is beautifully got up and contains a large number of figures illustrating diagnostic points in the structure of the insects and photographic plates showing the special features of their breeding places.

#### FOLK-LORE AND MEDICINE

DR. DAN MCKENZIE, who has written pleasantly and effectively on various themes, professional and lay, has in *The Infancy of Medicine* discussed the questions in what manner and to what extent primitive thought has influenced the evolution of the science and art of medicine. The subtitle, "An Enquiry into the Influence of Folk-Lore upon the Evolution of Scientific Medicine," defines the scope of the essay, which won the prize in the history of medicine at the University of Glasgow in 1925, it is modestly dedicated as "a small tribute to the honour and glory" of the author's Alma Mater. The analysis and description of primitive psychology contained in these well-written chapters, which really constitute a

series of essays, may, it is suggested, among other uses provide the young practitioner with a key to "the more obscure workings of the partially educated lay mind." There can be no doubt that it is a store of material most useful to the increasing number of medical men interested in the history of their profession.

The first part, rather less than a quarter of the volume, deals with primitive medicine in a general manner in three chapters on the evolution of the medical man, primitive pathology, and primitive treatment. The savage medicine man, it is noted, was for centuries linked more or less closely with the priest. Later he attained an independent position, and in attractive account is given of Egyptian medicine. Among much information on primitive pathology it is suggested that the discovery of calculus in the body may have given rise to the idea of a "soul" or the mystical propulsion of a concrete substance into the victim's body, analogous to the entrance of a bullet. While demoniac possession ranked higher than magic as an etiological factor, the latter was regarded as more effective in primitive therapeutics.

The fourteen chapters of the second part deal with individual groups of methods of treatment, and trace the way in which the present position of medical thought has been evolved. Beginning with full descriptions of the evolution of animal and botanical remedies, astrology, the employment of stones, soul cures, healing wells, charms, numbers, the evil eye, and cures by saliva are reviewed in detail. Further chapters deal with midwifery, pregnancy, and menstruation, with surgery, major and minor, and with counter-irritation, and emmenagogue and other mutilations, thus bringing to a close a work which must have cost years of persevering research, much thought, utilization of experience, and hard writing, for it certainly makes easy reading, and compels admiration.

#### ANTE-NATAL AND POST-NATAL CHILD HYGIENE

DR. FELDMAN'S treatise on *The Principles of Ante-natal and Post-natal Child Hygiene* is intended to be a companion volume to his previous publication on *The Principles of Ante-natal and Post-natal Child Physiology*, which was noticed favourably in 1920. The new book is a worthy successor, and its comprehensive grasp of a wide subject, its well arranged mass of detailed information, and its full bibliography, conveniently grouped at the end of chapters, should ensure for it a welcome by all interested in infant and child welfare. The history and development of child hygiene through the ages is treated by the author in fifty pages crowded with graphic details, these are followed by a chapter on biometrics, in which the modern methods of statistical analysis are applied to some of the problems of child hygiene. The remainder of this introductory part of the book is devoted to a consideration of the causes of death and their prevention in the ante-natal, neonatal, and post-natal states, together with the question of maternal mortality. The second part of the book deals with ante-natal hygiene, and the third part with post-natal hygiene from birth to the onset of puberty. It is impossible to describe fully some 750 pages of carefully collected facts, reasoned conclusions, and practical suggestion. The chapter headings may serve, however, to indicate the ground that is covered. They include: general hygiene, breast and artificial feeding, the nutrition of infants and children, care of the teeth and the organs, prevention of infectious diseases, physical and mental growth, and the hygiene of adolescence. The other subjects are dealt with concisely but in detail, the attractive style of the writing preventing the weariness of reading that would otherwise be inevitable. The author has attempted, and has succeeded in, the difficult task of producing a book which will interest able pediatricians, lay workers at infant welfare centres, and all concerned with ante-natal care and welfare, and all concerned with the well-being of children. The general practitioner will find it answers to the innumerable questions of

*The Infancy of Medicine: An Enquiry into the Influence of Folk-Lore upon the Evolution of Scientific Medicine.* By DAN MCKENZIE, M.D., F.R.C.S. (Ed.). London: Macmillan and Co., Ltd. 1927. (Demy 8vo pp. xiv + 15 net.)

*The Principles of Ante-natal and Post-natal Child Hygiene.* By FELDMAN, M.D. B.S. M.R.C.P. (Lond.). F.R.S. (Ed.). London: Daniel and Co., Ltd. 1927. (Demy 8vo pp. xxiv + 753 net.)

parents. The book is provided with an abundance of illustrations and there are two good indexes, one dealing with subjects and the other with the names of authorities on child hygiene.

### VOCATIONAL GUIDANCE FOR THE TUBERCULOUS

Messrs W I HAMILTON and T B KIDNER have held various posts in America in what they call personnel and rehabilitation work. From their experience in this they have produced a chatty little book on *guiding the Tuberculous about Employment*, into which they have managed to compress a large amount of information, together with a useful bibliography of the subject. The authors consider that the keynote of work in rehabilitating the tuberculous person is "individualization," and they describe the investigations necessary for what they term "vocational advisement."

They call attention to the evils of encouraging amongst the disabled the "hero of the new job," and they lay down the principle that efforts should be made to return a man to his old, or an allied, job. They believe that village settlements are chiefly valuable in giving opportunity for prolonged convalescence, and that, even if a few permanent settlements are established by philanthropic individuals, very few dwellers in such settlements will become permanent settlers, or "colonists." It is an alternative to village settlements in solving the problem of the employment of ex-patients, the special workshops of the Aero Manufacturing Company of New York are described. This enterprise was started some years ago by a leading Hebrew hospital and social welfare organizations. It provides part-time work, paid on a piece-work basis, under medical supervision, with periodic re-examinations of the worker, so that his work and rest are regulated in accordance with his physical conditions. No patient is regarded as cured until he has had at least two years' continuous good health after sanatorium treatment. Apparently the experiment has been a great success, and the industry is now housed in a fine modern factory building.

Messrs Hamilton and Kidner's book should be useful to workers in vocational guidance.

### WORLD HYGIENE

Is that complex of nations which go to make up the manifold world of to-day national health, like national prosperity, is not solely a national problem. It reverberates upon our countries both neighbouring and remote. They must and do as prudence suggests put up their barriers against "infection" from beyond their frontiers as against "the hand of war," but with the broadening altruism of our age inter-relationships are being established and the health of nations too weak to help themselves has recently become the voluntary care of the strong. An interesting commentary on the system of procedure which gives effect to these good enterprises is contained in Dr C W HERR's *International Hygiene*, which deals among other topics with the international sanitary conventions, immigration and emigration, venereal disease, noxious drugs, the traffic in women and children and industrial hygiene. The work is relieved by vivid passages, as in the account of the drastic means adopted by the Chinese Republic in 1912 to suppress opium smoking. The President made the taking of opium an offence punishable by death. Thousands were put against a wall and shot by firing parties and men were beaten senseless in the midst of their ruined fields. The export of Indian opium to China was abolished. And the result was that opium was grown in Korea, the Japanese drove a roaring trade, and the cultivation of opium in China itself increased by leaps and bounds. There is a graphic note on the clearing of the island of Principe of sleeping sickness by measures which included the perambulation of the jungle by negroes wearing a back piece of bird lined cloth as a net for paper.

*International Hygiene* by C W Herr. Ed. by W I Hamilton and T B Kidner. London: Baillière Tindall and Cox, Baltimore, The Williams and Wilkins Co. 1937 (Pp. 320, 15s. 6d. net).

### NOTES ON BOOKS

In reviewing the first volume of the third edition of Baly's *Spectroscopy* about two years ago we said that the subject was growing rapidly, and was destined to attract an increasing number of experimental workers, so that it was not surprising that the bulk of the treatise had increased. A second and third volume have now appeared, and complete the work. The second describes the application of interference methods and treats of methods of illumination, the nature of spectra, fluorescence and phosphorescence and the photography of the spectrum. In each of these sections a vast amount of research has been carried out by many workers and the products of their labour stood in need of being collated, connected and compared. Professor Baly, both by his extensive knowledge of the work done and by his own share in it, is well qualified to perform this duty, and he has spared no effort to make his treatment comprehensive. He is therefore to be congratulated that having such a large volume of matter to deal with he has yet succeeded in giving to every subordinate incident a description which will be most helpful to anyone engaged in the study. Not least important is the attention he has devoted to historical sequence in the various developments of discovery. In the third volume theoretical considerations of the electronic structure of the atom are discussed and the development of modern theory described. The plain recital of this development in the spectral series and of the Zeeman effect would alone have made a considerable treatise, but the author has been indefatigable in writing a story of forty years' progress dealing minutely with each advance, great and small, mainly in their order of sequence. Chapters on the Stark effect and emission band spectra prepared with the same thoroughness complete the volume. The book appears destined to be the leading authority on the subject.

The *Abstracts of Dissertations Approved for the Ph.D. M.Sc. and M.A. Degrees in the University of Cambridge for the Academic Year 1936-1937* are forty-four in number and naturally deal with a wide range of subjects in the Faculties of Agriculture, Biology, Classics, English, History, Mathematics, Medicine, Physics and Chemistry. The Faculty of Biology is divided into two under the heading of Biology. There are dissertations on botanical and geological problems, and under Biology B on experimental psychology and biochemistry. Dr C S Hicks's dissertation for the Ph.D. degree dealt with the chemical and physiological relationships of thyroxine and there is doubt on the formula originally suggested by Kendall, that of Mrs D M Needham on the pH and pH of the cell in *eric* was based on the microchemical injection of pH indicators into the interior of *Amoeba proteus* marine cells and a few facultative anaerobes, and that of Dr Harold Taylor on the hydrogen ion concentration of the blood cells. From the Faculty of Medicine there are two dissertations. Dr Stanley Griffith gives the results of his prolonged investigations into the etiology of human tuberculosis in Great Britain and Dr J P Hoet discusses three different points—the rate of sugar disappearing under the action of insulin, the onset of rigor mortis and the action of drugs on the spleen. The abstracts are of course succinct but the dissertations are deposited in the University Library where they can be consulted.

The third volume of the *Annals of the Priestley Thorpe Research Laboratory* contains a historical survey of researches on the streptococci generally. It is stated that the next issue which it is proposed to publish in 1937 will deal with the pathogenic forms. The present volume indicates how differentiation of the many varieties of streptococci may be facilitated. It includes a large number of photographs and also coloured plates illustrating the use of Dr Warren Crowe's differentiating medium. The general arrangement, the full bibliography, adequate indexes of authors and subject, and the compilation of an immense amount of information should render this volume of considerable assistance to working bacteriologists.

*Medicus* is the French equivalent of the *Medical Directory* but in some directions its range of information is even wider. Thus it describes the regulations and courses of the faculties of medicine and pharmacy of the military and colonial

*Spectroscopy* by E C C Baly, CBE, M.Sc., F.R.S. In four volumes. Vol. II and III third edition. Textbooks of Physics, Cambridge University Press, London. Gr. and Co. Ltd. (Pp. 600, 12s. 6d. net).

*International Hygiene* by C W Herr. Ed. by W I Hamilton and T B Kidner. London: Baillière Tindall and Cox, Baltimore, The Williams and Wilkins Co. 1937 (Pp. 320, 15s. 6d. net).

*Medicus* Guide to the Medical Directory. Paris: A. Roussaud, 1937 (Pp. 100, 10s. 6d. net).



## Nova et Vetera.

### CAPTAIN COOK'S HYGIENE

CAPTAIN T. S. ANGUS, FRGS, FRAS,  
MASTER MARINER

UP to the time of Captain James Cook's first voyage round the world in H.M. bark *Endeavour* scurvy was the scourge of the sea service on long voyages. It was left to this son of a farm labourer, born in 1728 in a small two-roomed cottage (a "clay biggen") at Minton in Yorkshire, to prove during his three long voyages of exploration how this pest could be completely vanquished. James Cook first went to sea as a boy in a North Country collier vessel, and after some twelve years in this rough trade had reached the post of first mate. Scurvy would certainly be unknown on these colliers as the voyages between ports only lasted a few days, but after he had volunteered into the Royal Navy as an able seaman (he was promoted to master's mate five weeks from first entering) he soon became acquainted with scurvy and other sicknesses to which seamen of the time were liable. The *Eagle* on which he first served, returned to port with 150 men on the sick list out of a crew of 400, this was after only a three or four months' cruise in the Channel and Bay of Biscay. The chief cause of this high rate of sickness seems to have been that the men were insufficiently clothed, having been hurriedly impressed owing to the great shortage of seamen at the time. After two years Cook was promoted master, and served in that capacity on the North American station, where he had abundant experience of scurvy. How he distinguished himself at the taking of Quebec by Wolfe, and surveyed the coasts of Newfoundland which brought his character and talents prominently before the Admiralty and Royal Society does not come within the scope of this sketch. Suffice it to say that he was afterwards selected to command the *Endeavour* which was sent to Tahiti in the South Sea Islands to observe the transit of Venus in 1769. On passing Cape Horn into the Pacific on the way to Tahiti, his surgeon was able to report that the crew were as free from scurvy as on the day they left Plymouth five months previously. After leaving Tahiti, where the transit of Venus was successfully observed, he proceeded to New Zealand a small part of which had been discovered by the great Dutch navigator Tasman. Cook spent six months in sailing round the islands and charting the coasts and harbours he saw with wonderful accuracy considering the means at his disposal, and then sailed for the east coast of Australia which he explored and charted unfortunately while thus engaged his ship ran on a coral reef off the Queensland coast and was nearly lost with great difficulty he succeeded in getting her into a small river where he beached her and effected temporary repairs. The prosperous Cooktown now stands at the place where the ship was laid ashore for repairs. Eventually he was able to put to sea but with a very leaky ship and sailed up the coast through most dangerous navigation. The whole of this coast had never been visited by a European before. Passing through Torres Straits he at length reached Batavia and on the day of his arrival he sent a short dispatch to the Admiralty by a Dutch ship in which appears: "I have the satisfaction to be able to say that I have not lost one man by sickness (scurvy) during the whole voyage. This was indeed an achievement and had it not been for the unavoidable delay at Batavia needed to repair the ship—for the damage she had received on the reef was found to be very much greater than Cook knew—there is no doubt he would have been able to say the same when he arrived in England. It happened that it was a very sickly season at Batavia, and his crew and officers rapidly fell ill with fever and dysentery which continued for some weeks after he left, and before he arrived at the

Cape of Good Hope he had lost thirty-four persons out of his complement of ninety-four.

The scorbutics cruised in the ship, with some others, were chiefly

Malt to be made into a wort aurkrou orange and lemon juice portable soup sugar and vegetables at all times when they could be got. These were of such infinite service to the people in preserving them from scorbutic taint that the use of the malt was (with respect to necessity) almost entirely precluded. At Tierra del Fuego wild celery was collected and every morning breakfast was made of this herb with ground wheat and portable soup. No opportunity was ever lost of getting wild celery or any other wild herb that was to be found.

In a paper read before the Royal Society, Cook himself says,

But the introduction of the most salutary articles either as provisions or medicines will generally prove unsuccessful unless supported by certain regulations. On this principle many years experience enabled me to lay a plan whereby all was governed. The crew were at three watches except on some extraordinary occasions.

In the ordinary way the thirty able seamen he had in the *Endeavour* would have been divided into two watches for the ordinary work where fifteen men would be always on deck attending to the sailing of the ship and the other below off duty night and day every four hours alternately, this is known as "watch and watch" or "four hours on and four hours off," as the men themselves call it. On this plan the seamen would never get more than four hours sleep at a time. With three watches the men would be divided into groups or watches of ten men and that number on deck would be quite sufficient to sail a small ship like the *Endeavour*. In ordinary weather conditions every seaman would have eight consecutive hours off duty twice in twenty-four hours with two four-hour watches on deck intervening. Cook goes on to say,

By this means they were not so much exposed to the weather as if they would have been at watch and watch, and generally had dry clothes to lift them selves into when the happened to get wet. Proper methods were used to keep their person, hammocks, clothes, etc. constantly clean and dry. Equal care was taken to keep the ship clean and dry between decks once or twice a week she was cured with fire. When this could not be done she was mowed with gunpowder mixed with vinegar or water. I have frequently used a fire in an iron pot at the bottom of the well (where the lower end of the hys pumps go for pumping out bilge water) which was of great use in purifying the air in the lower parts of the ship. To this cleanliness as well in the ship as among the people too great attention cannot be paid. The least neglect occasions a putrid and disagreeable smell below which nothing but fires will remove.

Proper attention was paid to the ship's coppers so that they were kept constantly clean. The fat boiled out of the salt beef I never suffered to be given to the people being of opinion that it promotes scurvy. I was careful to take in water whenever it could be got even though we did not want it but always had plenty for every purpose.

Cook had great difficulty in getting his seamen to eat the nauseous strange messes he had had cooked for them—portable soup boiled with wheat wild celery etc.—but he had the same at his own table in the wardroom with his officers, and insisted that they should be eaten. When the men began to realize that the captain and his officers ate them they took to them and soon got used to them. It is recorded in the journal of his first voyage that two of the men refused to eat the fresh beef provided for them at Madena, for which he punished them with twelve lashes each.

So far I have only referred to Cook's first voyage in the *Endeavour* a small vessel of not more than 366 tons burthen 97 feet long by 29 feet broad and 11 feet deep. The height between decks where the crew berthed was only about 5 feet so that with all her people on board it was pretty close stowage showing that only by unremitting care and attention on the part of the captain could her crew be kept in good health. On Cook's second voyage he had two ships also like the *Endeavour*, built at Whitby for the coal trade and likewise selected on Cook's strong recommendation as being the most suitable type of vessel that could be got for the purpose. The select crew was most



amply justified. This second voyage lasted for three years and eighteen days, and in that time, on his own ship, the *Resolution*, he did not lose one man by scurvy or any other sickness. His consort, the *Adventure*, on the other hand, lost several men from scurvy, the reason for this was undoubtedly that Captain Cook was not on board that ship.

After arriving home from that voyage he was unanimously elected a Fellow of the Royal Society, and immediately after starting on his third and last voyage he was awarded the Copley medal.

Again he had two ships, he was unfortunately killed in an affray with the natives at Havan, but Cook's work was most thoroughly accomplished, and both his ships arrived home after an absence of four years and two months without a single case of scurvy occurring in either ship, showing that after his lamented death the officers who succeeded him thoroughly carried out his system of curing for the health of the crews.

In conclusion it may be of interest to add that Captain Cook's name was often quoted at sea in my young days in connexion with cleanliness and using the fat boiled from the salt beef, which sailors were fond of adding to their extemporized messes. Also, if a sailor grumbled about being set to a job which he thought was not of much use, he would be told it was to "keep the scurvy out of his bones." It is well known that Cook used to keep his people well at work, always finding something useful for them to do, even in the most relaxed times.

### CANCER RESEARCH IN FRANCE

The study of cancer has led in France to the establishment of a system of regional anti-cancer centres. The idea was put forward by the late Professor Bergonié of Bordeaux, and taken up by his friend M. Paul Strauss, who had been interested for many years in public health questions and recently was Minister of Hygiene. In 1922 M. Strauss formed a "Commission du Cancer," to inquire into the steps which should be taken to develop the idea, with Dr. Rouse, director of the Institut Pasteur, as president. The committee advised that centres should only be established in places where a faculty of medicine or a *grande école* was already in existence, that they should be administered by the Minister of Hygiene, and that the objects of the centres should be treatment, teaching, and research.

As long ago as 1914 the Institut Pasteur had formulated plans for building in Paris a clinic and laboratories for an institution to be known as the Fondation Curie. The work was suspended during the war, but in 1919 it was begun again, and since that date the Fondation Curie has worked under the control of Professor Regaud. When Professor Bergonié's idea of anti-cancer centres materialized in 1923 Professor Regaud looked on it with sympathy, and in course of time the Fondation Curie and the various centres became affiliated. The present position is that the Fondation Curie remains entirely free from all Government control, and carries on its work in its own way, but it is looked upon as an inter-regional centre and works in close co-operation with the directors of the regional centres.

In forming regional centres existing departments of hospitals have been converted in many cases to meet the new requirements. In other centres entirely new buildings have been erected. There are now seven centres established in hospitals in Paris and its suburbs in the provinces there are eleven dispersed amongst the larger towns. Apparently it is not considered necessary that any more centres should be established. At present the centres display varying degrees of efficiency, since some have been at work for nearly three years, while others are still in the making. But the attainment of a high standard of co-ordination is furthered by periodic meetings of the directors for the discussion of new ideas and methods in the treatment of cancer. The chief methods employed at the centres are surgical and radiological.

We are indebted to Dr. Malcolm Donaldson and Professor Sidney Russ for a report on the work done at some of

these regional centres. The highest state of efficiency in organization and technique was, of course, found in the Fondation Curie, where several grams of radium are available for therapeutics and research. Remarkable results have been obtained in this institution in the treatment of carcinoma of the tongue and of the cervix uteri. In the former disease, according to Professor Regaud, nearly one-fourth of the number of out-patients have been thoroughly cured, while in nearly another fourth the lingual localization has disappeared. In cancer of the cervix a number of quite operable patients were living five years after treatment, many with no signs of recurrence. A curious occurrence amongst the cases treated in 1919 was that, while 6 out of 64 advanced inoperable patients, and 6 out of 18 borderline patients, were still living after five years, none of the 5 operable patients treated survived for that length of time. The improvement in technique at the institution is shown by the fact that, while the mortality at the end of one year was 65.5 per cent in 1919, in 1924 it had dropped to 28.7 per cent.

The observers visited also the centres at Strasbourg, Lyons, Marseilles, Montpellier, Toulouse, and Bordeaux. While all these centres were displaying activity, in most cases they had been developed too recently to enable their records of treatment to be of any value. Research, however, was being pursued in various directions. All the centres visited possessed some radium, and had effective x-ray installations. At Lyons, Marseilles, and Montpellier the director of the centre was a surgeon, at Strasbourg and Toulouse a radiologist, and at Bordeaux a clinical pathologist. The staffs attached to the centres varied in number and nature. Thus there were, in addition to the director, two medical men and six lay assistants in Strasbourg, in Lyons seven other medical men and nine unqualified assistants, in Marseilles one other surgeon, two pathologists, and two qualified radiologists. In Montpellier, where the centre at the Hôpital St-Jacques is linked up to the department of pathology at the Faculté de Médecine, there were five medical men in addition to the director, including three professors at the University. The Toulouse staff consists of six consulting surgeons, two medical assistants, one radiologist in addition to the director, a clinical pathologist, and a biochemist. At Bordeaux the director is assisted by surgeons, one radiologist, two assistant medical officers, one intern and three externs, and three pathologists. So far as radium treatment is concerned the researches at the Fondation Curie have been so systematic that the methods in use at that institution are followed largely at the other centres.

Financial support for the expenses of establishing and maintaining centres appears to be obtained from a variety of sources. Not only do voluntary subscriptions invited, and grants received from the municipality and the French Government, recourse is also had to the pari-mutuel. The Government grant does not seem, as a rule, to be very generous. The personnel of the centres sometimes consists of full-time salaried officers, in other cases it is honorary.

It is evident that in France a national effort of some magnitude is being made in the attempt to conquer cancer. The co-ordination of eighteen regional centres by means of the inter-regional centre, the Fondation Curie, must make for efficiency, and the periodic meetings of directors all engaged in the pursuit of improvement in teaching, treatment, and research should be stimulative of ideas. Dr. Donaldson and Professor Russ think that much may be learnt by other countries from the efforts that are being made in France to-day. They have not come back from their tour prepared to answer the question whether more cancer patients are being treated by better methods than formerly. They do not know whether more interest in the study of cancer has been aroused, or whether there is more widespread knowledge of the disease among the medical men of the country. They are, however, convinced that in France radiotherapy in connexion with cancer rests on a firmly established basis of clinical observation combined with laboratory researches of a fundamental character, and that the methods adopted are worthy of study by other workers in the field.

# British Medical Journal.

SATURDAY, DECEMBER 31st, 1927.

## THE PROTECTION OF MOTHERHOOD

As noted in our last issue (p. 1198) a report by Dame Janet Campbell, entitled *The Protection of Motherhood*,<sup>1</sup> has just appeared from the Ministry of Health in continuation of her previous report on Maternal Mortality.<sup>2</sup> It analyses the figures and summarizes the progress of the four years between the two publications, and being more constructive in spirit and less controversial in tone should be the more helpful in pointing the way to a real advance. One of her conclusions is worth quoting as it would appear to be her justification of or apology for the effect of the maternal mortality report upon the practitioners of the country. The reason for dwelling upon the tragedy of an unnecessarily high maternal mortality rate is not for the sake of criticism or censure, but because until it is realized that much of the poignant sorrow and suffering caused by misadventure at the time of childbirth is not inevitable and can be lessened we shall be slow to find the time, money, effort and goodwill needed to persuade all concerned to combine to overcome the practical difficulties of this problem. A convinced public opinion has magnificent driving force and without it endeavour is apt to be half-hearted and to faint by the wayside.

The text on which this report is based may be found in its concluding paragraph—It is only upon a foundation of healthy, happy and contented motherhood that we can hope to build up a Nation sound in mind and body—and its constructive character in this direction is indicated by the prominent place given to schemes for improving the maternity service and providing means by which supervision and assistance may be secured for every child-bearing woman during the ante-natal, natal and post-natal stages. The recommendation of the Royal Commission on National Health Insurance that the scope of the maternity benefit should be extended is taken as the foundation on which a maternity service can best be built. Besides the cash payment on confinement medical and nursing services should be provided and linked with the maternity services set up by the local health authority or by voluntary effort. As the personnel of these services would be largely family practitioners and midwives it will be of interest to indicate the nature of the suggestions made in the report under consideration.

Doctors and midwives must be regarded not as rivals but as members of a team each with their own part to play. The general supervision of the women during child-bearing will fall to the medical member who will be responsible for the ante-natal examina-

tion of all his patients and will remain directly under his care cases of complicated pregnancy or labour, or those in which difficulty in labour may be anticipated. The proposal of the British Medical Association and other bodies that provision should be made for attendance of a doctor and midwife at every confinement would usually mean that the normal labours would be conducted by the midwife and medical aid only summoned for delay or complication. This arrangement is regarded with favour in the report, because it relieves the medical side of much unnecessary tax and yet allows experience of normal labour to the young practitioner so long as he wishes to avail himself of it. Besides managing many normal labours the midwife would perform all the maternity nursing. Supplementary services—such as hospital and clinic facilities, consultations with specialists, and skilled nursing—would be provided where necessary by the local authority in order that the standard of actual obstetric practice may be raised. With the object of attracting well educated and better trained women to practise as midwives an increased appointment of municipal midwives is advocated. They should be allowed to do private practice and work in conjunction with private practitioners—but it is suggested that all fees earned in this way should be returned to the local authority. The disappearance of the independent midwife would be regretted and the pious hope is expressed that some method may be found of bringing the competent private midwife into close association with the local authority and enabling her to maintain her position in the maternity service.

A feature of this as of the previous report is the space devoted to puerperal infections as the largest single factor in the production of maternal mortality and disability. Though some reduction in the septicaemia mortality rate occurred in the early years of the century the last few years have shown a tendency in the opposite direction. A number of cases or outbreaks of infection in maternity institutions are analysed with the object of illustrating the dangers or spread where puerperal women are congregated and the importance of not neglecting early warnings or a focus of infection in an institution. An appendix on the bacteriology of puerperal pyrexia by Dr Eastwood the senior bacteriologist to the Ministry of Health is included and contains a summary of the application of bacteriological data to clinical practice. Dr Eastwood is cautious and non-committal and sets out clearly the reasons for the slow advance of bacteriology in close relation to clinical medicine. On the scientific ground that the data are as yet insufficient he refuses to express any opinion as to the relative importance of exogenous and autogenous infection. The point that stands out most clearly is the need for further laboratory research in close contact with clinical cases of puerperal sepsis.

This report by Dame Janet Campbell should be carefully studied by the medical profession as a whole, for it indicates the growing tendency to bring private practice alike of doctor and midwife under the control of the local or central health bureaucracy. To the general practitioner it is particularly of interest in that it endeavours to answer two questions that greatly concern him in his maternity work—namely, Is he getting the best possible equipment for this anxious and exacting work? and Can anything be done to relieve him of certain responsibilities and to enable him to concentrate his effort upon the essentially medical aspects of midwifery practice?

<sup>1</sup> Reports on Public Health and Medical Subjects No. 33. *The Protection of Motherhood*. By Janet M. Campbell M.D. M.S. London: H.M.S.O. 1927. 94. s. 1.

<sup>2</sup> Ibid. No. 25. *Maternal Mortality*. 1927. 1. 264.

## SYMBIOTIC FERMENTATION

MANI years ago it was shown by Marshall Ward that two micro organisms living in close association may initiate changes which neither of them can produce when acting alone. This he observed in the case of the "ginger beer plant"—the changes brought about by the conjoint action of a yeast and a bacterium in a saccharine fluid resulted in a preparation resembling ginger-beer, a result not obtained with either of the organisms acting alone. These observations of Marshall Ward have long been quoted as providing the classical example of microbial symbiosis. Nenehi soon afterwards recorded the formation of normal butyl alcohol from glucose solutions by the combined actions of *B. parafactor* and *B. chauraci*, neither of these bacteria in pure culture being able to produce this substance.

Interesting observations on the results of this close association or symbiosis of bacteria have been noted in the formation of various organic acids. Thus Sherman and Shaw reported that the yield of propionic acid by *B. acidipropionici* in lactose media was increased six or sevenfold by the addition of *Streptococcus lactis* or *Lactobacillus casei* to the cultures. Again, during the great war acetone and butyl alcohol were produced on the large scale by the fermentation of cereals and other carbohydrates with *B. granulobacter pectinovorum*. It was noticed that a diminution or even complete absence of the formation of acetone with a rise in the production of lactic acid occurred, and this was found to be due to contamination of the cultures of *B. granulobacter pectinovorum* with Thaysen's *Bacterium volutans*. This result appeared to be due to an altered metabolism in the acetone producing organism. A somewhat similar inhibitory action in the fermentation of lactose by *B. coli* was observed by Theobald Smith and D. E. Smith to be produced by the addition of paratyphoid bacilli, while a marked difference between the effects of hog cholera strains and those of paratyphoid bacilli was noted. All degrees of inhibition were observed, depending on the age of the cultures, living and functionally active bacteria, or those only recently killed, were necessary. It was suggested that the inhibitory factor was some metabolic product of the paratyphoid bacilli, probably of the nature of an enzyme.

Several studies of the biochemical characters of certain bacteria when living in association or antiferrially mixed and when living separately have recently been recorded by Castellani. This observer had noticed many years ago that ordinary baker's yeast, whether in Ceylon or in England, consisted, as a rule, of two or more organisms (saccharomyces and bacilli) living in symbiosis, and that in some cases baker's yeast gas fermented a larger number of sugars than did any one of the isolated organisms. In recent years he has extended his investigations to include a study of the action of certain pathogenic germs in symbiosis with others. The same phenomenon has been observed in these cases also, and is described at length in his latest contribution to the subject, which appears in the *Journal of Tropical Medicine and Hygiene* for October 1st, 1927. These results have now been confirmed by Frillos, Peruzzi, Menon, and others. An example of what Castellani terms the "symbiotic fermentation phenomenon," and which was termed "Castellani's fermentation phenomenon" by Frillos in the same journal for December 1st, 1925, is afforded by the results he records with *B. typhosus* and *B. morganii* acting singly and combined, on each

of the three carbohydrates maltose, mannitol, and sorbite. Acting on each of these three substances *B. typhosus* produces acid only, never gas, whilst *B. morganii* has no action on any of them, producing neither acid nor gas. Acting together, however, gas in each of these three carbohydrates. Castellani accordingly defines his "symbiotic fermentation phenomenon" as follows: "Two micro organisms, neither of which alone produces fermentation with gas in certain carbohydrates, may do so when living in symbiosis or when artificially mixed." He further applied this phenomenon to the differentiation of certain organisms, particularly to those comprised in the dysentery group, and in the identification of certain carbon compounds, although in the latter case he admits that the mycological method of Castellani and Taylor is undoubtedly much simpler.

The latest contribution to this subject, from the pen of Ishikawa, appears in the *Journal of Infectious Diseases* for September, 1927. He discusses gas production by bacterial symbiosis, with special reference to the influence of nitrogenous substances, and finds that the non proteolytic gas forming bacteria alone cannot produce noticeable amounts of gas from carbohydrates and salts of formic acid in media containing only complex nitrogenous substances, such as milk, ascitic fluid, casein, nutrose, and gelatin, but that gas is generated intensively by these bacteria in such media if they are grown in association with the proteolytic bacteria, and demonstrable amounts of gas are produced if simple forms of nitrogenous substances—the digestion products of proteins, peptones, amino acids, and ammonium salts—are added to such media. The formation of gas from carbohydrates by the associative cultures of two kinds of saccharolytic bacteria—an acid producing organism and a gas forming bacterium—does not take place markedly in ascitic fluid, casein, nutrose, and gelatin media, except under the following conditions when a proteolytic organism is cultivated in association with the two saccharolytic bacteria, or when simple nitrogenous substances—peptone, amino acids, and ammonium salts—are added to the media.

The part played by the proteolytic bacteria in the above mentioned cases appears to be that they provide the way for the fermentative activity of the saccharolytic bacteria by breaking down the proteins of the media into some simpler forms of nitrogenous substances, which apparently are essential to the formation of gas. It seems probable that such simple nitrogenous substances accelerate the activity of the production of the specific enzyme, formase, which is considered to be responsible for the production of the gas. The precise nature of this bacterial symbiosis has not yet been fully determined. The stage of growth and functional activity of the bacteria concerned, and the hydrogen ion concentration with its regulation by the bacterial products, all appear to play important parts in obtaining the various results. As already stated, all degrees of the phenomena can be obtained, depending as they do on the character of the bacteria used, their age, and the employment of culture media of different composition. Further analysis of the gases produced may help to throw some light on the mode of action. There appears, however, to be good ground for believing that the acid and gas producing factors are different in time and probably depend on different endo enzymes. The further intensive study of these interesting phenomena is clearly indicated, and they provide a

wide field for exploration by the biochemist and physicist, whose labours would probably add much to our present scanty knowledge of the intimate mechanism of the bacterium.

#### PHYSIOTHERAPY FOR INFANTILE PARALYSIS

IN the course of the fifth Congress of French-speaking Pediatricians, held at Innsbruck last autumn, two papers on the treatment of infantile paralysis were read. One by Dr. P. Duhem dealt with physiotherapy and the other by Dr. P. Nicod, with orthopaedic considerations. According to H. Lemaire, who contributes a report of the congress to a recent issue of *Le Nouveau Médical*, Duhem expressed the opinion that treatment by irradiation was of very little value, and given rise of the paralysed muscles often inadequate. Restoration of muscle function was better achieved by rhythmic galvanism obtained by introducing into the circuit a rectifier which interrupts the current at intervals or a second. This procedure was usually employed when the reaction of degeneration was not very pronounced, and might be used up to the point at which it lacked a maximal contraction. Baudet in 1914, had advocated three exposures to x-rays each month for a period of three months, the application being made at the level of the cervical or lumbar enlargement of the cord. Duhem suggested that irradiation acted here by destroying the inflammatory tissue and permitting recovery of the more resistant motor cells. He added that diathermy and local hot baths were also very effective in restoring the muscular response to stimulation by electric currents, but diathermy must be used with great caution since burns were easily caused. One electrode was large as possible should be placed over the lumbar or cervical dorsal region and the other on the affected limb. The temperature recommended for hydrotherapy was 100° to 112° F. Massage was only beneficial when the atrophied muscles had recovered functional power. Nicod, discussing orthopaedic treatment, insisted that immobilization of the paralysed muscles in the position of physiological relaxation was essential from the commencement; splints should be removed at regular intervals so as to allow massage and passive exercises and testing of the limb's voluntary motion. When regression of the paralysis had ceased operation might be required to correct deformity and permit fuller use of the limb. In Nicod's view the best surgical procedure is arthrodesis, with perhaps some tendon operation.

#### POPULARIZATION OF MEDICAL SCIENCE

THE Harvey Society of New York was founded with the object of diffusing scientific knowledge of pathology and the allied sciences through public lectures given by actual workers in the subjects presented. The lectures were to be subsequently collected and published in a book. The *Harvey Lectures* for 1925-26 include several of much interest, more especially one on the parathyroid glands by Professor J. B. Collip and another by Professor F. B. Wilson on capitalism and rationalism. The former is practically an essay on the whole subject of the parathyroids but contains more particularly an account of experiments showing the action of the hormone on dogs and the relation of the gland to calcium and phosphorus metabolism. Recent studies in parathyroidectomized rabbit indicate that the part played by phosphorus in this has not been sufficiently stressed. The inorganic phosphorus in these animals increases enormously after the

removal of the parathyroid glands, and tetany or a marked type quickly develops, followed shortly by death. Injections of parathyroid hormone or even of calcium chloride may be of no avail in these cases when once the tetany has become manifest. The blood calcium is found to be lowered as in the dog and cat. In both these animals ovoids go with the hormone is followed by urgent symptoms which are coincident with a falling calcium curve and a rising phosphorus curve, and it is probable that the symptoms are due more to the blood phosphorus change than to the high blood calcium which precedes the fall. The rise in blood phosphorus would therefore seem to be the natural direct signal of ovoids rather than the blood calcium value. Professor Wilson's paper deserves to be widely read. It deals with the limits of usefulness of the statistical method. He does not condemn the method (he is a professor of statistics) but he points out that mathematical conclusions may be weaker than the premises on which they are founded, because of the necessary assumptions which are so apt to creep in. Any method, by the very fact that it is a method may tempt persons to confide their fortunes to it, ending in their own destruction (a reflection suggested by the lecturer's proximity to Wall Street at the time). Moreover the imagined beauties of their own speculations may lead them too far afield and prevent their ever finding their way back to nature. As germane to this topic he looks with some misgiving on the great elaboration of experimental apparatus in the hands of the young investigator and suggests that such elaborate equipment may perhaps shield him from wholesome contact with the stubborn facts of nature. For the beginner he recommends less of the theoretical and quantitative and more of the concrete and qualitative. If I knew a young fellow who ought advice about love I should not send him to his room to study Balzac's *Physiologie du Mariage* or Bourget's more ponderous *Psychologie d'un amour malade* nor yet to a clinic to be 'psyched' à la Freud, I should tell him to go and see some girls.

#### PUERPERAL SEPSIS ITS DEFINITION AND TREATMENT

AMONG the papers read at the Royal Sanitary Institute's Congress at Hastings and published in its *Journal* for November was one by Dr. Remington Hobbs on one reason for the high mortality and morbidity from puerperal sepsis. We publish this week (p. 1223) a further communication by Dr. Hobbs describing a method of draining the septic uterus. He objects to the definition of puerperal sepsis which was enunciated by the Ministry of Health at the suggestion of the Royal Society of Medicine—namely, 'a febrile condition or the nature of wound infection arising after labour or abortion due to bacterial invasion from or absorption of products of bacterial action from some portion of the genital tract.' Dr. Hobbs told the Hastings congress that puerperal sepsis is not necessarily a febrile disease and that the rest of the definition loses sight of the inflammatory changes which result from retained placental tissue, blood clot and lack of necrotic drainage. It would appear in fact that Dr. Hobbs attributes puerperal sepsis to interference with the outflow or secretions from the tissues and cavities of the genital organ. He regards pain and tenderness as the cardinal symptom and sign of lack of free drainage from the uterus. He thinks also that much more attention should be paid to prolonged haemorrhage after labour or abortion. Holding these views Dr. Hobbs regards all such procedures as curettage and swabbing with strong styptics or antiseptics as unsafe, and the injection of drugs or vacuum as valueless unless accompanied by free drainage or the genital tract. Hence his adoption of the method of glycerine irrigation described in the article we publish.

<sup>1</sup> Dr. Harvey Lectures. Delivered under the auspices of the Harvey Society of New York 1925-1926. Series VII. London: Baillière Tindall and Co. Baltimore: The Williams and Wilkins Company 1927. (Extra 11. 8vo 11. 29 illustrated 12. net.)

## THE JAMES MACKENZIE INSTITUTE

THE continued progress of the James Mackenzie Institute for Clinical Research at St. Andrews is clearly indicated by the eighth annual report, which has just been issued. The Institute—which, it will be recalled, was established in October, 1919, for the purpose of studying disease with a view to its prevention—has been engaged since then in promoting active clinical research by general practitioners associated with specialists, and in the provision of courses of post-graduate instruction to facilitate and intensify such research. Financial assistance for specific investigations has been forthcoming from the Medical Research Council, which contributes also £500 towards the compilation of the Institute records. During the winter of 1926 a course of lectures, free to medical practitioners, was given by various experts on the blood pressure in health and disease. Many of the lectures were subsequently published *in extenso*. It was not found possible to combine these in one volume, but it is hoped that this will be done in the case of the lectures delivered in 1927, of which reports have appeared from time to time in our columns among proceedings of medical societies. Papers on various subjects were read by members of the clinical staff of the Institute during the spring, and a post-graduate course was held during the last fortnight in June, which was attended also by students. Three volumes of reports have already appeared, and the fourth is in preparation. Considerable interest has been taken also in an attempt to correlate the public health activities of the local authority with the work of general practitioners. Special study is being carried on at the child welfare centre with reference to the first two years of life, and valuable records are being obtained illustrating such subjects as the significance of albuminuria, ovaluria, and acetonaemia in childhood, the frequency and prognostic significance of recurrent ailments such as bronchial catarrh, and the effects of environment upon the health of growing children. Recent gifts to the Institute include a recording ophthalmoscope, and additions to the library have been received from the Mayo Clinic and the Rockefeller Institute.

## RELATION OF PHYSIQUE TO MENTAL ACTIVITY

A NEWSYPER, in summarizing the lecture delivered recently to the Royal Anthropological Institute by Dr. A. A. Mumford, medical officer of Manchester Grammar School, misquoted him as upholding the view that "the better the scholar the better the athlete," and thereby started a correspondence in its columns from headmasters and others who declined against this supposed contention by Dr. Mumford, and said that in their experience excellence in both aptitudes was rare. But the argument in Dr. Mumford's lecture, the full text of which we have had the opportunity of studying, is much too carefully balanced to be adequately summarized by saying that he claimed any close connexion between "brawn and brain"—"brawn" in this instance meaning good scholarship, and "brawn" the development of the larger muscles. His purpose was to appeal for a fuller study of the differences observed among growing boys, both in mental attainments and in power to excel in physical activities. A detailed inquiry which has been proceeding over a period of years at Manchester Grammar School has revealed a slight positive relation—not a close connexion—between the physical and the mental aptitudes. The physique both of the scholarly and of the athletic boy tends to be superior to that of the average boy, and also the better scholars tend to have a better physique than the scholars less distinguished. In both cases the superiority appears to lie, not in muscular development, weight, and so forth, but in better breathing capacity and the improved body-build which results. These

conditions of function and structure enable the boy to endure the stresses involved in hard mental as well as hard physical activity. Dr. Mumford gave an interesting account of the annual body measurements which have been taken at Manchester Grammar School for over forty years, but especially since 1921, when a new system of grading was established. He was led to consider from a new point of view the common division of bodily exercises into those of strength, endurance, agility, and speed—namely, that of the different forms of body-build which are required for various excellences, and all of which may be comprehended in the term "physical fitness." He sees a danger if this term is taken indiscriminately, as a general certificate of security against disease or a guarantee of health. Physical fitness may be of more than one kind. The Medical Research Council did not succeed in its effort to apply to all forms of physical activity the Air Force physical efficiency tests, and Dr. Mumford, while he has found these same tests of great value when considering various forms of physical activity among schoolboys, has not expected to find any single test or group of tests to apply to all such forms. The school medical officer, he thinks, should appreciate how wide are the differences in the desired physical equipment for different individuals, having regard to their present school life and their anticipated career. He should not only make a routine physical examination by measurements and tests, but should compare the results of such examination with the boys' mental progress as reported by the masters. Class work in school calls for the activity of the same bodily organs and to some extent the same tissues as do physical exercises, though, of course, in a different way and to a different degree. Although undue absorption in either mental or physical activity involves damage to the powers thus over-stimulated and danger from under-development of the powers neglected, yet the proper exercise of physical powers is not only quite compatible with, but probably very beneficial to, the cultivation of mental powers. Dr. Mumford proceeded to give the results of an inquiry extending over twenty years upon a number of boys who gained entrance scholarships at Oxford or Cambridge, for the most part in open competition. The results again went to show that there was a general tendency for those boys who were accelerated in school progress to show acceleration also in physical robustness, particularly in the rate at which they required fuller respiratory power. These scholarship-winning boys tended to display an accelerated physical growth compared with the average boy. That they also possessed a slightly better physical frame was shown by the fact that the acceleration in the growth of chest girth—and therefore in breathing capacity—was rather ahead of the acceleration in respect to height and weight. This greater relative acceleration of chest girth also was most pronounced among the 102 boys of the group who obtained first class honours in one or both parts of the subsequent university examinations, as distinct from the 113 whose honours were of the second or third class, and Dr. Mumford thought this indicated that these boys were capable of maintaining a higher level of working capacity with less strain than others as a result of the combination of higher mental ability with superior physique. An attempt was also made to find out whether this total of 215 scholarship-winning boys, besides displaying energy which could be directed towards successful study, also possessed in any marked degree the energy which could be utilized in physical activity—that is, whether, taking the group as a whole, they showed special excellence in games and sports. The records were examined for records of colours for prowess in games or success in athletic contests, and it was found that out of 700 prizes competed for by 7,000 boys, 73 had been taken by members of this group of 215 boys who also possessed special mental ability. Here



in the greater the degree of mental excellence as judged by the honours obtained at university examinations the greater the degree of physical excellence as judged by the records. Thus one boy in ten in the first-class group, one boy in five in the second-class, and one boy in nine in the third-class were awarded colours. Moreover, in the first-class group nine of the boys showed special prowess in more than one form of physical activity, while in the second-class and third-class groups only two of the boys showed a similar distinction. In conclusion, Dr. Munford again pointed out that these investigations revealed tendencies only but they went to support the results or other observations in suggesting a certain relation between activity of the body and activity of the mind and in making it plain that the growth of the human frame should be viewed as unity, and not as growth of mind or body separately.

#### NEW YORK MENTAL HOSPITALS

With a prospect of amending lunacy legislation in this country, there is some interest in noting the progress of a similar administration in other countries. In the State of New York the mental hospitals are managed by the State Hospital Commission. The commissioners are three laymen and one doctor, and their last annual report informs us that, by a law passed in 1906 this work, together with the control of some other hospitals and supervision of mental defectives, is to be placed under the control of a Department of Mental Hygiene, with a single head, the Commissioner of Mental Hygiene, who is appointed by the governor of the State and retires with the governor. The department will have three divisions—of mental disease, of mental deficiency and epilepsy, and of prevention, each with its assistant commissioner. The old commission controlled some 45,000 beds and treated 56,751 patients in the last year, at a cost of four million pounds sterling. One-tenth of the total number were paying patients; the rest were paid for by the State. During the year 4,526 were discharged—1,771 as recovered, 242 as much improved, 1,017 as improved, 718 as unimproved, and 78 as not improve. The recovery rate on first admissions was 24.3 per cent, and on the total number of persons under treatment 3.3 per cent, 1,465 patients were transferred elsewhere. There is a medical examiner's office and the chief duty of this officer appears to be to send back to their home country aliens who are in need, and to transfer others to States or the Union whence they come. His work is described as efficient: last year 458 aliens were got rid of, and 758 non-residents were sent to their homes outside the State of New York. Admission appears to be by several methods. Voluntary admissions numbered 502 of these 221 were readmissions, 77 of the cases were later committed. One hundred were admitted on written petition and physician's certificate. Twenty physician's certificate cases were committed. Fifty-one mental cases were conducted by the several State hospitals, with an aggregate of 17,000 visits. It was hoped to have extended the clinic work to include school children with disorders or behaviour, but full co-operation or the educational authorities could not be secured. The medical inspectors made fifty-eight visits to the hospitals, and saw some 8,000 patients. All were recorded the privileges or the insanity law and given an opportunity to express themselves and their reasons for being there. Any requesting it were given a private interview. Thirty-four patients made complaint of ill treatment, but full investigation did not elicit anything to substantiate the complaints made. Twenty-six committed patients protested their confinement and detention, but in practically all of these a short interview and examination or the case history showed clearly the need of State hospital care. Visits are also

made to hospitals for criminal cases, to private licensed institutions, and to non-licensed institutions. The Commission maintains a school for mental nurses, and in this connection note is made of the lamentable decline in the number of pupil nurses, a lack which necessitates the substitution of trained attendants for nurses in the hospital ward.

#### HISTORY OF THE CLINICAL THERMOMETER

In *Medical Life*, described as the merger of the medical journal "one of which was the *Medical Oup* and another the *Medico Historical Bulletin*, in whose footsteps—possibly a better path—it appears to follow as regards its subject-matter, Mr. C. J. S. Thompson traces the history and development of the clinical thermometer. In 1623 Simon Stevin constructed one and advocated its use in the diagnosis of disease correlating variations in body temperature and weight, and this was much in advance of his time as seen of metabolism. M. du Val of Paris invented a clinical thermometer which was first shown in England at a meeting of the Oxford Philosophical Society on May 13th 1654. It was three inches in length and three or four lines in diameter, the central tube for the mercury being half a line in diameter; it was used in several Boerhaave's pupil van Swieten used Fahrenheit's mercurial thermometers for registering the mouth and axillary temperatures, De Haen made further observations, such as morning and evening fluctuations and the high level during a rigor. Fordyce Blagden, Bauk, and Solander experimented on themselves in heated chamber, and in 1780 Lavoisier and Laplace, working on thermometry, showed the dependence of animal heat on the combination of oxygen with hydrogen and carbon. John Spangin, physician to the Foundling Hospital, Haisseau Orator, and a follower of Swedenborg's philosophy, published in 1852 an account of a clinical thermometer, John Day in 1863 brought out his observations made in many parts of the world and in 1863 C. A. Wunderlich's essay based on observations of twenty years (translated in the New Sydenham Library in 1871) gave a real stimulus to clinical thermometry, though Aitken had used thermometers in English hospitals in 1855 and Sidney Ringer in 1865 had published a work on *The Temperature of the Body as a Means of Diagnosis of Typhoid, Measles, and Tuberculosis*. As is (or should be) well known, the late Sir Clifford Allbutt devised the present form of clinical thermometer first fitting it, when six inches long, into a stethoscope, and finally about 1867, reducing it to twice inches in length.

#### ROYAL SOCIETY OF MEDICINE

At the reception to be held by the Royal Society of Medicine on the evening of Monday January 16th, Dr. Jane Walker will give an address entitled "Saints' Medicine and Surgery." The Wellcome Historical Medical Museum is providing a series of interesting exhibits, including statues of saints to whose intercessory cures or various ills have been attributed and also ex voto offerings to the saints, and to Grecian and Egyptian deities created with similar powers. Dr. Jane Walker has secured reproductions of many old paintings illustrating her subject and in her search for material has had access to the catalogued collection of pictures in the possession of Sir Robert Witt (Trustee of the National and Tate Galleries). On this occasion guests will be received by the President from 8.30 to 9 p.m. as usual, but the address will be given at 9.15 instead of 9.30 as hitherto. Admission to the social evening is open to Fellows or the Society and their friends, but tickets are necessary for visitors not accompanied by a fellow.

## Union of South Africa.

[FROM OUR CORRESPONDENT IN CAPE TOWN.]

### NEW HOSPITAL REGULATION CAPE PROVINCE

A REGULATION (framed under Section 72 of the Cape Hospitals and Charitable Institutions Ordinance of 1912) governing the attendance on patients in hospitals by medical practitioners not on the staff was published recently in the *Provincial Gazette*. The regulation reads:

(1) Subject to the provisions of subparagraph (2) of this regulation

(a) Any registered medical practitioner who is not on the staff of the hospital desiring to attend patients paying three shillings and sixpence per diem or over towards their maintenance shall apply to the board for permission so to do, and no such practitioner shall have access to the hospital for the purpose of so attending patients until he has received the approval of the board thereto in writing.

(b) If in the opinion of the board the grant of such permission to any such practitioner is likely to cause administrative difficulties in the working of the hospital the board may refuse the application or may grant it in respect only of a specified part of the hospital.

(c) If in the opinion of the board any medical practitioner to whom such permission has been granted has caused administrative difficulties in the working of the hospital or in any portion thereof the board may revoke its permission, and thereupon such practitioner shall have no right to attend patients in the hospital.

(2) Notwithstanding anything in this regulation contained, no permission as aforesaid shall be refused or revoked by the board or shall be granted to a medical practitioner to attend patients in a specified portion of the hospital only, without the previous sanction of the Administrator.

Since the publication of the above-mentioned regulation a controversy has arisen in respect of its interpretation. The regulation lays down that before a doctor who is not on the staff of a hospital may attend a fee-paying patient at that hospital he must apply for permission to the hospital board, which, with the consent of the Administrator, may refuse to grant him permission if, in its opinion, the doctor in question "is likely to cause administrative difficulties in the working of the hospital." In view of the recent trouble at Mafeking, reference to which is made in the *BRITISH MEDICAL JOURNAL* for June 11th (p. 1078), one interpretation placed on this clause is that it is designed to apply what is virtually a colour bar. In the public press an attack has actually been directed against the Administrator of the Cape Province for taking what is alleged to be ultra vires powers in order to defeat the old traditions against discrimination on the grounds of colour. Interviewed by a representative of the press as to the views of the medical profession on the subject, the President of the Cape Western Branch of the Medical Association of South Africa (British Medical Association) stated: "As a matter of fact the profession opposed the draft ordinance originally proposed by the Administrator, as we felt strongly that it was entirely wrong principle to make any discrimination against a doctor who has been fully trained and licensed, for any reasons which could not be defined clearly. Then the whole matter was carefully considered by the Federal Council of the Medical Association of South Africa at Durban, which passed the following resolution and formally transmitted it to the Administrator:

"The Council is of opinion that it is eminently necessary that boards of public hospitals be empowered to withhold the privilege of attending upon patients in the hospital—or specified portion thereof—from any person when, in the opinion of the board, or that of an official duly authorized thereto by a resolution of the board such attendance might result in or be likely to cause difficulties in the efficient administration of the hospital. The practitioners from whom the privilege of attendance on patients is so withheld shall, however, have the right to appeal to the provincial administrator whose decision shall be final.

"It will thus be seen," pointed out the President, "that the Administrator is really carrying out in effect the recommendations of the Medical Association. In fact, we found him extremely willing to meet the views of the medical profession as far as lay in his power. All that this regulation insists upon is that any person who by his action causes administrative difficulties may, if it is considered necessary, be deprived of the privileges of the hospital. It does not refer to a colour bar at all." As

far as the Mafeking Hospital is concerned, following the gazettement of the new regulation, all the members of the staff applied for permission to attend their patients as laid down by the included ordinance, with the sole exception of the native practitioner whose action originally brought about what was virtually a strike on the part of the nursing staff of the hospital. More recently, however, the native practitioner in question has made application to the Mafeking Hospital board for the necessary permission, but this, it is understood, has been refused. What the outcome of this latest development will be remains to be seen, but there would appear to be no redress for a practitioner thus refused permission unless the ordinance is held to be ultra vires by a court of law.

### PRESENTATION TO DR. A. MARIUS WILSON

After close on thirty years in the service of the railway administration as medical officer at Cape Town, Dr. A. Marius Wilson recently retired on reaching the age limit. As a token of appreciation on the part of the members of the railway sick fund of services rendered over so long a period a presentation was made to him to mark the occasion. This took the form of a bookcase, a chair, a writing desk, and an inkstand. Mr. Potter, assistant general manager, South African Railways, in making the presentation, assured Dr. Wilson that they all very much regretted losing him, for at all times he had proved himself to be a faithful adviser and friend. While always sympathetic to the genuine sufferer, yet betide the misadventurer, who got very short shrift from him. Mr. Coppin, nominated member of the sick fund board, associated himself with Mr. Potter's remarks, while Mr. McDowell, secretary of the board, and Mr. McMillan also spoke. Dr. Marius Wilson, in expressing his thanks for the handsome gifts, found it difficult to put in words his appreciation of the spirit which had prompted the presentation. He related reminiscences which recalled incidents taking place at different times during his thirty years' work amongst the railwaymen of the Union. This period he would always look back upon with the happiest of thoughts. His only regret was that so many of the old faces had passed away. In addition to those mentioned is being present at the ceremony were Dis Jones, Dwyer Chinnock, Johnston, Lawrie, and Greys, colleagues of Dr. Wilson, as well as the majority of the officials and elected members of the sick fund board.

### UNION OF SOUTH AFRICA CENSUS 1926

The census figures recently published by the Office of Census and Statistics show that the European population of the Union in 1926 amounted to 1,676,660, comprising 819,742 males and 856,918 females. This represents an increase of 157,172, or 8.31 per cent, during the five years since the last census, taken in 1921. The preponderance of females over males has been reduced from 94,000 in 1911, and 45,000 in 1921, to 37,000 at the present time. Almost one-half of the population are under 21 years of age—thus of females 404,988 are under and 451,930 over 21 years of age; of males 393,656 are under and 426,086 are over 21. The number of males and females above the age of 75 and over is almost equal there being 8,043 males and 7,990 females, but the number of married women is only 1,529, compared with 4,784 married men over the age of 75. The total number of married men shown by the census is 307,250, while there are 305,346 married women. The number of widows, however (45,340), is nearly three times the number of widowers, which is only 16,810. Taking the married by age periods, it is seen that of males only 194 appear between the ages of 15 and 19, whereas in the same age period no fewer than 4,990 females had entered into matrimony. Three women had married at ages between 10 and 14 years. Between the ages of 25 and 29, 27,640 men are recorded as married, as compared with 43,964 women. Between 30 and 34, 43,074 men and 43,312 women were married. The number of married males reached its zenith between 35 and 39 (44,565), during which period 8,531 appear as unmarried. At 65 to 69 years of age, 11,520 men were married and 1,286 not married, and in the same period 6,401 women were married, which number

approximately to the 6,644 married miles between the ages of 70 and 74. Divorces among men are first recorded in age period 20 to 24, when 26 appear but the figures soon increase, there being 178 men divorced at ages between 25 and 29. The peak is reached with 428 divorces among men between 45 and 49 years of age. The total number of divorced men in the census is 2,570, comprised with 2,667 divorced women. Twelve women of ages between 15 and 19 are set down as divorced, the peak figures being reached among women with +41 at 30 to 34 years of age, 420 at 35 to 39 years, and 401 at 40 to 44 years.

#### MEDICAL ASSOCIATION OF SOUTH AFRICA (B.M.A.) CAPT WESTERN BRANCH SPECIAL COUNTY MEETING

During the past year or two the programme for the session of the Cape Western Branch of the Medical Association of South Africa (British Medical Association) has included a clinical meeting at some centre in the country districts. In 1925 the inaugural meeting, of what promises now to be an annual event took place at Paarl and was attended by a very large number of members, those from Capetown predominating. In 1926 Malmesbury was the venue, and once again a most successful meeting, both in point of number of members present and quality of the contributions made, had to be recorded. These meetings are proving themselves of value in more ways than one. Not only is opportunity given for town and country members to meet on common ground when matters of mutual interest can be discussed, but the social side also, is not neglected, new friendships are formed and as often as not old ones renewed. From the point of view of the townsman, confined to his consulting room day after day, such an outing is an event to be looked forward to, affording him as it does a chance of becoming more familiar with the rural districts whence come so many of his patients.

This year the Annual Country Meeting took place at Somerset West, a prosperous town situated close by the shores of False Bay, some 33 miles from Capetown on the evening of Friday, October 7th 1927. Prior to the clinical meeting the members of the Association present were entertained to dinner by the officials of the Cape Explosive Works, Ltd. Some sixty members and friends sat down to dine in the commodious recreation hall belonging to the works under the chairmanship of Dr. Gutsche, principal chemist to the company. A guest of honour present was Sir George Cory, official historian to the Union Government while all the local medical and dental practitioners were invited as guests of the company. After the customary formal toasts had been duly honoured the guests were welcomed by the chairman in a well chosen speech. Mr. T. Lindsay Sandes, vice-president of the Cape Western Branch of the Medical Association who deputized for the president Dr. James Luckhoff unavoidably prevented from being present responded on behalf of the guests in his usual happy manner. Among others who spoke were Sir George Cory, who after dinner oratory is always delightful, Professor W. A. Jolly, Dean of the Faculty of Medicine in the University of Capetown and Mr. C. C. Scully. Two dinner concluded an adjournment was made to the meeting hall where several interesting cases were shown by Dr. Griffiths, medical officer to the Cape Explosive Works and Dr. Isaacson, a local practitioner. Some very useful discussion followed, concluding the business of two evenings. Although many members were compelled to return to Capetown the same night not a few remained until the following day and were well rewarded for their trouble in so doing. The morning was spent in a visit to the estates of Lourensdorp and Vergelegen, the properties of Mr. J. W. Jagger and Sir Lionel Phillips respectively, at the last-named place members and their wives were entertained to tea on the picture que terrace of the old Dutch homestead. The afternoon was occupied by a tour of inspection to the Steenbras Waterworks, the vast undertaking of the corporation of the city of Capetown lately completed where the main reservoir formed by building a retaining wall across a narrow mountain gorge extends for some miles up the valley and impounds 6,000,000,000 gallons of water. The latter after filtration is conducted by two great pipe lines to the city, a distance

of over forty miles and serves the needs of a population which at the present time numbers close on 500,000. Great credit is due to Dr. Griffiths, who was responsible for arranging so instructive and enjoyable a programme. There is little doubt but that after the experience of the past three years the country meetings will become annual events in the activities of the Branch.

## India.

### TRAVELLING DISPENSARIES IN THE CENTRAL PROVINCES AND BERAR

ADVERSE climatic conditions during 1926 in the Central Provinces and Berar resulted in an increased mortality due to various diseases, particularly plague, cholera and malarial tuberculosis increased and more sanatorium accommodation appears to be necessary. Lieut. Colonel H. G. Stiles Webb, I.M.S., in his annual public health report, comments on the valuable services rendered by travelling dispensaries in militating against these and other diseases, often under very difficult conditions. Twenty nine of these dispensaries were at work during the year, and visited 6,216 villages, treating nearly 104,000 patients, the majority of whom were suffering from malarial diseases or the digestive and respiratory systems, and skin and eye trouble. In addition to 26,000 antiplague and 8,000 cholera inoculations, 1,418 minor operations were performed and 51,000 school children were examined. The vaccination and vital statistics were checked in the different villages visited and reports were prepared on the local water supplies and general sanitation. Many public lectures were given particularly on child welfare and the prevention of plague, cholera, small pox and malaria. A special effort was made to check the prevalent evil of opium administration to infants. Commenting on the public health work in this part of India, Lieut. Colonel Stiles Webb expresses the opinion that helminthic infection is very common in the case of hookworm he puts the incidence at 20 per cent, while that of roundworm is 15 per cent. He emphasizes the urgent need of establishing a public health institute which could take up the study of this infection and advise also as to the best lines of attack on the very high infant mortality rate which compares unfavourably with other parts of India. The institute might also take up the study of tick fevers and intestinal infection. Plague appears to be becoming endemic in Jabulpore and the local circumstances favouring this need investigation. Co-operation between the public health and veterinary services is advocated with a view to the elucidation of such matters as the relation between tick diseases in man and animals and also the spread of tuberculosis.

### MEDICAL PROGRESS IN BHOPAL

The new Prince of Wales Hospital in Bhopal was opened on October 31st by the Begum accompanied by her son the present Nawab. The pre-existing hospital was opened in 1878 when the average daily attendance was about ninety three, it has gradually expanded since that time and gained in popularity, the present daily attendance having risen to over 500 and an annual grant being received from the State for its maintenance. The Begum has always taken a very active interest in the work of the hospital since its institution, and contributed generously towards the provision of the new building which has been erected by the Public Works Department of the State or Bhopal at a cost of about £50,000. The hospital includes an up-to-date operating theatre, well equipped wards for patients, an x-ray plant with a complete electrotherapeutic apparatus, and a good bacteriological and pathological laboratory. It is hoped to add departments for dentistry, ophthalmology, and otolaryngology in the future. At the opening ceremony the Nawab appealed for continued and increased financial support, he referred particularly to the need of providing a ward for paying patients, and to obtaining an expert medical staff. Other schemes under contemplation for the improvement of medical facilities throughout the State include a supply

called upon to accept the responsibility for nursing care in the strict sense which devolves upon qualified mental nurses. They will, however, be persons of proved fitness, temperamental and other, for association with the insane, and will be competent, under the supervision of trained nurses, to have the care of certain types of mental cases which do not require skilled nursing. They will be known as "hospital assistants," and it is thought that their numbers should not be more than 20 per cent of the nursing staff. The commencing rate of remuneration of the new grade will be the same as that of probationer nurses, but the first increment will not be given until the completion of three years' service, and will depend upon the employee's efficiency in first aid. In no event will they be put permanently or temporarily in charge of wards by day or night. The proposal that such a grade be created is made in the first instance by the Departmental Committee on Nursing in Mental Hospitals, and was afterwards endorsed in the report of the Royal Commission on Lunacy and Mental Disorder.

ROYAL ALBERT INSTITUTION, LANCASTER

Open-air verandahs have been constructed at the Royal Albert Institution, Lancaster, in the course of the last few years, and during the last twelve months a most useful one has been placed on the south side of the girls' wing, providing accommodation for open-air walks, instruction classes, and games. An artificial sunlight apparatus has been installed in a room in the tuberculosis home. The Royal Albert Institution, which was established in 1864 for the impropriate feeble-minded of all classes in the seven northern counties, has found the pressure on its accommodation very great during the past year. Since its commencement 4,370 patients have been admitted, many of whom have been considerably improved, and about 10 per cent have become practically self-supporting under friendly supervision. It is subject to inspection by the Commissioners of the Board of Control and by deputations from boards of guardians and local authorities, under the Mental Deficiency Act. The sixty-third annual report, which has recently been issued, contains a detailed account, with pictures, of the valuable work that is being carried on. The institution, which is situated about a mile from Lancaster, is supported by voluntary contributions, and there is accommodation for paying patients.

Disinfection of the public swimming bath in Eccles, which contains 63,000 gallons of water, is effected by passing the water daily through two filters, it is then returned to the bath after re-aeration and warming to 75° Fahrenheit. The surface of the water is skimmed each morning and the sediment removed from the floor of the bath. In his annual report for 1926 Dr J E Spence, medical officer of health for Eccles, states that the bath was last filled in January, 1923, a small quantity of water having been added each day to replace wastage, since that date the bath has been used by over 200,000 bathers. Bacteriological examinations are made four times a year, samples of the water taken in February and June were almost sterile, but those examined in August and November were not so good, owing to some of the cones at the base of the filters being defective. At the beginning of the present year a swimming bath was opened for women, it contains 46,000 gallons of water.

ST. JOHN'S HOSPITAL, BIRMINGHAM

Reference is made in this column on November 26th (p. 1004) to the opening of the new surgical block of Queen's Hospital, Birmingham. Five beds in the new extension have been endowed by the Birmingham City Police Force, the Hulford Cycle Company, Messrs Joseph Ivimey, Mr W J Adams, and the honorary medical and surgical staff of the hospital. These beds were formally dedicated by Sir Charles Hyde, president of the hospital, on December 13th, and during the same proceedings it was announced that the employees of Messrs Davenport had given the money to endow another bed. The debt on the extension has been very materially reduced by these gifts to about £12,000.

## Scotland.

### Gynaecology Appointments in Edinburgh

Dr JAMES HAIG FERGUSON, who, on December 15th, retired under the age limit from charge of wards in Edinburgh Royal Infirmary, was on December 19th elected by the managers to the post of consulting gynaecologist to the Royal Infirmary. Dr Haig Ferguson had acted as house physician to the institution in the year 1884-85. In 1906 he became a member of the honorary staff as a consultant gynaecologist, and in 1921 he was promoted to the charge of wards. A record of the invaluable services which he had rendered to the Royal Infirmary was submitted. Dr Hugh S. Davidson was appointed to charge of wards in succession to Dr Haig Ferguson, and Dr Douglas Miller, F.R.C.S. Ed., was elected to the vacant post as assistant gynaecologist to the institution. At a meeting of the board of Edinburgh Royal Maternity and Simpson Memorial Hospital, Dr Hugh S. Davidson was appointed ordinary physician to this institution in the room of Dr Haig Ferguson, who had retired under the age limit, and who was appointed honorary consulting obstetrician to the hospital. The directors of the Chalmers Hospital have appointed Dr Douglas Miller gynaecologist to the hospital to fill the vacancy caused by the retirement of Dr Davidson on his appointment to the Royal Infirmary, and the board of management of the Dermocess Hospital has appointed Dr E. F. Fisher, F.R.C.S. Ed., as gynaecologist to this hospital in succession to Dr Davidson.

### Longmore Hospital

The annual meeting of the Royal Edinburgh Hospital for Incurables was held in the Longmore Hospital, Edinburgh, on December 9th. The report showed that the average daily number of patients under treatment had been 265 during the past year. The ordinary income for the year had been £12,565, and the ordinary expenditure £20,269, constituting a debit therefore of £7,640 which had been met out of capital. The average cost per occupied bed for the year had been approximately £69, as against £85 for the preceding year. The increase being mainly explained by the fact that the coal bill had been higher by £1,032 than in the preceding year while the increase in the cost of food had been only £81. The hospital had to a great extent, relieved the general hospitals by admitting cases of incurable disease which were in urgent need of hospital treatment but which could not be retained indefinitely in the general hospital. The chairman, Sir Henry Cook, moved the adoption of the report and appealed for increased subscriptions to the hospital. The Very Rev. C. L. Watt, who seconded the motion said that those of them who saw from week to week the difficulties that were entailed by protracted illness in small and congested houses could fully realize something of the benefit that this hospital conferred upon the hundreds who found shelter and care within its gates. It should be realized further that the gratitude that many of these thanks to unnamed investigators, were long received from the category of incurable disease. This hospital was an institution of which the city ought to feel proud, and he was sure it would never lack support and practical encouragement from the citizens.

### GLASGOW WESTERN INFIRMARY

The annual meeting of Glasgow Western Infirmary was held on December 22nd. Colonel J. A. Polburgh, chairman of the board of managers, presided. The chairman stated that the financial figures for the year just past were very much the same as those for the previous year. The ordinary expenditure being approximately £23,000. The income amounted to about £21,800, or about £7,600 less than in 1926. An appeal had been made to the subscribers to increase the ordinary income so that the deficit between it and the ordinary expenditure might be materially reduced. It was announced that the David Elder Infirmary at Govan would be ready as an auxiliary hospital for patients early in 1928, and this would bring a

casualty or relief to the pressure which had been felt in the Western Infirmary for many years. The prizes and medals awarded by the nurses for examinations were distributed by Mrs. David Wilson, wife of the Lord Provost of Glasgow.

### Diphtheria Death Rate in Edinburgh

A table has been published showing the number of deaths from diphtheria in the city of Edinburgh for the years from 1894 to 1926. In 1894 the deaths from this cause totalled 141, but the number gradually decreased till 1908 when there were only 25 fatal cases. Thereafter deaths rose somewhat so that in 1912 there were 31 deaths, in 1914 97, and in 1915 117 deaths. During the next six years the number fluctuated between 60 and 80. In 1925 it was 84, and in 1926 fell to 43. As the population of the city was increased by about 100,000 in 1920 owing to the expansion of the city boundaries the figures since that year represent a very considerable diminution. The majority of the fatal cases during the period of thirty years have been mainly in children under 5 years of age, and very few deaths over the age of 15 years have been recorded.

### QUEEN VICTORIA'S JUBILEE INSTITUTE FOR NURSES

The annual meeting of the Scottish branch of the Queen Victoria's Jubilee Institute for Nurses was held in the City Chamber, Edinburgh, on December 16th. Lord Provost Stevenson presided, and remarked that in the preceding year 102,000 cases had been nursed by members of this institute in Scotland. These cases had involved 1,872,000 visits. He regarded it as a great achievement that in these days of dull trade and unemployment £80,000 could have been raised in Scotland for the Queen Alexandra Memorial Fund to augment the reserves of this institute. Dr Thomas F. Dewar, C.B. or the Scottish Board of Health in moving the adoption of the report spoke of the gradual evolution in the standard of nursing during the past forty years. There was at present in progress in Scotland a considerable change in the relations of the associations which dealt with maintenance of health and the welfare of the sick. A process of evolution was going on almost without legislation. The organization in some countries was, however, far ahead of what it was in others and co-operation between the local authorities and Scottish Board of Health on the one hand and the nurses on the other had been especially beneficial in the outlying regions of the Highlands and islands, where difficulties were greater. It was a statistical fact that the children whose first month of life was supervised by the nurses of the institute had three times the chance of survival enjoyed by children otherwise tended. The adoption of the report was seconded by Mrs. Burnett Smith (Annie S. Swan). A letter was read from H. R. H. Princess Louise, president of the Scottish branch of the institute expressing satisfaction at the improvement in the financial position which had been achieved.

### CENTRAL MIDWIVES BOARD FOR SCOTLAND

At a meeting of the Central Midwives Board for Scotland for the hearing of penal cases Dr James Haig Ferguson, in the chair, it was reported that a certified midwife had been found guilty of attempting to procure abortion and sentenced to twelve months imprisonment and it was resolved that the secretary be directed to remove her name from the roll of midwives and to cancel the certificate and in addition thereto in terms of Section 8 of the Midwives (Scotland) Act 1915, to prohibit her from attending women in childbirth in any other capacity. At the same time it was reported that a certified midwife had been found guilty of performing an illegal operation on a young woman as the result of which the woman died and the midwife was sentenced to three years' penal servitude. Mr. G. B. Davidson, advocate, instructed by Messrs. Lindsay, Co. and Dickson & Co. appeared and made a statement on behalf of the nurse. The Board resolved that the secretary be directed to remove the name of the midwife from the roll of midwives and to cancel the certificate and in addition thereto in terms of Section 8 of the Midwives (Scotland) Act 1915 to prohibit her from attending women in childbirth in any other capacity.



## Correspondence.

## TROPICAL AUSTRALIA

SIR,—In the BRITISH MEDICAL JOURNAL of September 17th (p. 507) there appeared a reference to the possibility of peopling the tropics with a white race, with special reference to Australia. The note concludes as follows: "Meantime, in North Queensland a great experiment is in progress. Several generations may have to pass before conclusive results can be obtained."

Several generations have already passed, and the result of the experiment so far is most satisfactory. The future must necessarily speak for itself. The essential feature of life in tropical Australia is its almost complete freedom from tropical diseases. There is no incursion of infected native population, and consequently the problem is limited to the consideration of the question: Can heat, and heat alone, cause serious damage to the white race? So far the answer is unequivocal. Apparently there is no other tropical country on the globe from which tropical diseases are absent. It is this circumstance which explains the popular misunderstanding of the Australian position. Beliefs of the kind do very hard, and one is reminded that more than a century ago apparently sensible Englishmen predicted that a healthy white race could not be reared in the latitude of Sydney. The facts speak for themselves. The population of tropical Queensland increased 15.28 per cent during the decennium 1911-21, whereas in the Commonwealth as a whole the increase was 9.11 per cent in rural areas and 19.10 per cent in provincial urban areas.

The vital statistics are striking: the birth rate is higher than in any other part of Australia, and the total death rate is 7.4, as against 9.87 for the Commonwealth. The infantile death rate for the whole of Queensland (which lies north of the 29th parallel) was lower than that of the Commonwealth in nine out of the ten years. The infantile mortality of tropical Queensland is lower than that of the whole of Queensland. It follows, therefore, that residents of tropical Queensland have a better expectation of life, whether in infant or adult life, than anywhere else in Australia, or, indeed, almost anywhere else on the globe. So far elaborate physiological investigation has failed to disclose any serious organic changes in residents of tropical Queensland. The results are the more remarkable, for until recently neither the housing nor sanitation in that country was such as to commend admiration. The literature on the subject is now extensive, and a number of the references are set out by me in *United Empire* of July, 1927, the journal of the Royal Colonial Institute, London.

In my judgement some time must elapse before an educated public realizes that in the tropics it is disease that does the damage, and that at any rate at first unpleasant, but with sensible adaptation and a century of settlement mitigated. Newly-thought-out ideas that no serious ment in tropical Queensland indicated that no serious organic damage need be anticipated. I am, etc.,  
J. W. BARNETT  
Melbourne Nov. 8th

## TREATMENT OF CANCER BY RADIUM

SIR,—When a gynaecologist is consulted by a patient with carcinoma of the cervix it is his solemn duty to advise the method of treatment which has the greatest chance of curing the condition—disputing, operation, or radium—and our present difficulty is that whilst we have definite statistics of the result of operation, we have none in this country for radium.

For the operation many foreign statistics are available, and in this country Berkeley and Bonney published statistics on a five-year basis in 1916, Bonney on a five-year basis in 1921 and on a ten-year basis in 1927, and in this year I published mine on a five-year and seven-year basis. At the end of five years Bonney had 39.7 per cent, and I had 39.5 per cent alive and well, figures sufficiently close to show that about 40 per cent of the cases sufficiently reason to expect to be alive after five years from Wertheim's operation in the hands of those who regularly perform this operation.

The Manchester Radium Institute has been treating the cases for twelve years and the London Radium Institute for a longer period, so it is surely not asking very much of British radiology to publish statistics on, at any rate, a five-year basis.

Granted, the largest percentage of these cases are advanced inoperable ones, but every gynaecologist refers some early cases for radium treatment because the general condition of the patient does not warrant such a severe operation. When I refer such a patient I always label it as an operable case, and presume other gynaecologists do the same, or, if not, this question could easily be asked, and so a record kept at the institute of these operable cases. It is the result on these cases which we desire and require if we are to give the best advice to our patients.

Inoperable cases I always refer for radium treatment, how far these are benefited hardly enters this discussion, what we want is the result of radium treatment after five to ten years upon operable cases.

The letters of Drs. Forsdike and Birkett are not in the least helpful.

Every gynaecologist is familiar with the statistics of Stockholm and New York, but we are treating cases in England and we have a right to know, before we send early cases for radium treatment, whether English radiologists are obtaining results which are in any way comparable to these or to the figures published by Berkeley, Bonney, and myself. If Dr. Birkett desires I will gladly publish the results of operable cases I have referred to the Radium Institute, so far I have refused, as I was in hopes, from the much larger figures at his command, that he would show much better results—I am, etc.,

Manchester, Dec. 20th

WM. FLETCHER SHAW

SIR,—In your interesting leading article of December 10th on late recurrences of cancer you state that "the undoubtedly good effects of radium and a rise in cutaneous malignant tumours seem to be due in the main to the stimulation of fibrous tissue with its indirect action rather than to selective lethal action on the cancer cells."

That theory I am glad to say has been proved to be entirely erroneous by Lacisagne in Paris and R. G. Cant in this country. If sections are taken immediately after irradiation the selective action on the cancer cells is very obvious, and there is, of course, at that time no evidence of fibrous tissue.

The error has come about from sections cut several weeks after irradiation, when any cancer cells which may have survived are surrounded by fibrous tissue.

This may seem a very small point, but, as I have mentioned before, our great hope in the future of radiology is in finding out why the radium has this selective action on cancer and other quickly growing tissues, and what are the exact chemical and physical changes that take place in such cells, but do not take place in the less active tissues—I am, etc.,

London, W. I, Dec. 20th

MALCOLM DOWNSON, F.R.C.S.

## THE PROBLEM OF MENTAL DEFICIENCY

SIR,—May I be permitted to point out that the policy for dealing with the mental deficiency problem advocated in the eminent annual report of the Bedford Comtee Mental Welfare Hospital for Children, so far from being "a retrograde," is in advance of that advocated by your correspondent Dr. L. A. PARRY (BRITISH MEDICAL JOURNAL, December 17th, p. 1156), in that the latter appears to favour a policy which was once advocated in the United States, but which has since been discarded by all recent American writers as impracticable and unnecessary. I refer to what is known as the "policy of wholesale segregation." Similarly, in our own country, Miss Evelyn Fox, in a paper she read at the meeting of the British Association at Liverpool in 1923, pointed out that the policy of wholesale segregation may be ruled out at once by the mere consideration of numbers involved—"150,000 at the lowest estimate"—and advocated "restricted segregation" of those who otherwise would be destitute and of those showing persistent antisocial tendencies, with supervision of the remainder in the community.



knew better. She would only have "household" flour, which contained much of the germ and aleurone cells.

The false social *cachet* which has clung to the colour of bread, though it did not deviate her from the wholesome tradition, deceived the artisan's wife, and does so still, and among the "circumstances of modern civilization" are the modern miller's sixteen pairs of steel rollers, which eliminate, as of old, the germ and the other parts of the grain that hold the "water-soluble B."

No one doubts that a single action a day is so common as to be the general rule. Whether, with a less sophisticated diet, it would be, whether it is healthy that it should be, whether a higher plane of bodily efficiency and a clearer-headed mentality would be maintained if it were not, and if, instead, two actions were the rule, seem to be questions which are at least arguable—I am, etc.,

Holmes Chapel, Cheshire Dec 6th

LIONEL JAS PICTON

### THE WEIGHT OF THE BRAIN AND MENTAL ABILITY

SIR,—I was much interested in Sir Arthur Keith's article on the brain of Anatole France, and in his remarks with regard to mass of brain and complexity of mental reaction (December 3rd, p. 1048).

The weight of this brain, 1,017 grams, is certainly remarkably low, and is no greater than that of many mentally defective people. The brain of a cecitin, whose mentality was hardly equal to that of an animal, weighed more than this—that is, 1,033 grams—though the cecitin's weight was only 2 st 4 lb. A great mass of brain does not necessarily signify even normal intelligence, and the reverse may be true, although about this there is little information available.

I have recently examined a brain which weighed 1,670 grams—that is, about 300 grams greater than the average. It was from a case of pituitary infantilism with pronounced mental defect, and as the patient only weighed 5 st the increase could not be ascribed to an increase of the "corporeal concomitant" element. A superficial examination of this brain, apart from the clinical history, might have led to the conclusion that it was highly developed. Preparations such as Weigert-Pal stained more readily than usual. Chemical analysis showed, however, that the amount of phosphorus compounds was only about half that in the normal brain. Even, therefore, when the architecture of the brain is normal, there may be some defect in another direction impairing its activity.

Another point of view that may be raised is that there are areas of the brain relatively undeveloped as regards function, although it is impossible to detect this by any laboratory method. In most people the left hemisphere is functionally rather more highly developed than the right—for example, speech is almost entirely a function of certain cortical areas on the left side of the brain. Yet the predominance of the left hemisphere in this respect is not accompanied by greater complexity of histological structure of these areas compared to similar ones on the right side of the brain. There is not any difference to be ascertained by chemical analysis, nor is asymmetry of the brain a common phenomenon.

One may imagine that the brains of people of little mental ability, though perhaps of average weight, may possess a relatively greater number of non-functioning though anatomically perfect areas.

Finally, one may find an analogy between the brain and a musical instrument. The excellence of the music produced does not depend only on the use of a fine instrument, although obviously this is an advantage—I am, etc.,

ELIZABETH COMPER EAVES

The University, Sheffield, Dec 4th

### TREATMENT OF PROSTATIC ENLARGEMENT

SIR,—The letter of Sir Thomas Cray Evans in your issue of December 10th (p. 1114) invites comment.

He commences by stating that the death rate of prostatectomy in the large general hospitals is 40 per cent. (He quotes someone else's statistics without giving the year

in which they were compiled—it is impossible to suppose that they refer to the present year.) He then uses these mortality figures to suggest that the general surgeon is a dangerous fellow to employ for such an operation. For the performance of the operation, he continues, a special knack or gift is required, "which is only acquired by, or bestowed upon, individual surgeons, who eventually specialize in this particular branch of surgery." One may be pardoned if one is led to infer that the writer of that letter is himself one of those highly gifted few.

Surely there is nothing mysterious about the operation of suprapubic prostatectomy. It is often very simple, sometimes (as in other operations) it is really difficult. And it depends for its success as much on the preliminary treatment and after-treatment as on the operation itself.

Although those engaged in general surgery acknowledge with gratitude and admiration the help they derive from others whose research work and wide experience in any special subject has added to the sum of our knowledge, yet I am sure the latter would be the last to claim that in their hands, and theirs alone, any given operation could be safely and properly performed. As a matter of interest I have looked up my own books, and find that the last forty-four cases of prostatectomy have been performed without a death. I quote these figures in no spirit of boasting, and know very well that one may have had a run of luck which may suddenly be badly broken. But, if an ordinary surgeon can get results of this kind, how is one to credit the fantastic figures which Sir Thomas Cray Evans quotes, and what measure of justice does he mete out to the general surgeon when he would deprive him from performing this operation? It would be interesting to know Sir Thomas's own statistics—I am, etc.,

Sussex, Dec 12th

PROVINCIAL SURGEON

### THE ETIOLOGY OF ECTOPIC PREGNANCY

SIR,—Dr Douglas, in his paper on ectopic pregnancy published in your issue of December 10th (p. 1074) has particular stress on the mechanical factor (obstruction in the tube due to previous inflammation) as the cause of the arrest of the ovum in the tube. The comparatively small number of cases in which evidence of old salpingitis is found (much smaller, in my experience, than the 50 per cent. he mentions) suggests that this explanation is not likely to account for all or even the majority of cases.

The view that I have held for some time—but with a clearer understanding of the details since reading Dr W. E. Dixon's paper on ovarian secretion published in the same issue—is that termination of pregnancy in the tube is due to the same cause that brings about the termination of pregnancy in the uterus, whether it full time or prematurely—namely, the defective functioning or involution of the corpus luteum.

It is known that failure of the secretion of this structure results in the cessation of all changes associated with pregnancy, amongst which we must surely include the mechanism by which the fertilized ovum is conveyed from the abdominal ostium to the uterus. If the defect in the corpus luteum is primary, or occurs so early that the ovum is still in the tube, its onward progress will be delayed or arrested, though development may continue. When failure is complete muscular contractions occur in the uterus (as at full term) and in the wall of the tube, with the result that the decidua is separated and haemorrhage takes place from the uterus and in the tube. The tubal contractions cause the severe pelvic pains, and they are strong enough to expel the ovum and clot half-way through the abdominal ostium, or to rupture the wall of the tube if it has been weakened by the developing ovum.

I do not claim that this explanation accounts for all cases of ectopic pregnancy. Ovarian and primary abdominal pregnancy do occur, and the occurrence of a "false labour" at full term is evidence that the corpus luteum has been active during pregnancy in these cases. But it does explain the simultaneous occurrence of haemorrhage from the uterus and in the tube which is difficult to account for in any other way—I am, etc.,

Leicester, Dec 11th

T. C. CRAMP

## Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

### Prorogation of Parliament

WHEN Parliament was prorogued on December 22nd until February 7th the Royal Assent was signified to the Nursing Homes Registration Act, Mental Deficiency Act, Landlord and Tenant Act, Unemployment Insurance Act, Road Transport Licensing Act, Destructive Insects and Pests Act, Explosives Act, Continence Act, Medical and Dentists Acts Amendment Act, Protection of Animals (Amendment) Act, Royal Edinburgh Hospital for Mental and Nervous Diseases Order Confirmation Act and to other measures.

In the King's Speech proroguing Parliament one passage ran: "Striking progress has been made during the past year in providing housing accommodation for the people and the number of houses completed in England and Wales since the Armistice now exceeds 1,000,000. During the past year a greater number of new houses have been completed in Scotland than in any previous year. Substantial progress is also being made with the clearance of insanitary areas and the rehousing of displaced tenants."

### Nursing Homes Registration Bill

On December 21st the House of Lords went into Committee on the Nursing Homes Registration Bill. On the motion that the Bill go into Committee Lord Charnwood said he had just received a statement that objection to the proposal to delegate powers under the bill from county council to other local authorities was taken by the Incorporated Midwives Institute, the College of Nursing, Queen Victoria's Jubilee Institute and the Central Midwives Board. Lord Charnwood said he understood any reference of the clause would upset the agreement reached between two other interested bodies—the County Councils Association and the Municipal Corporations Association. In the negotiations between the three bodies first named and the Ministry of Health some understanding had arisen with the result that the bill in the form it now was came as a surprise to those who being responsible for the framing of the measure, or the country had one right to a voice in the matter. He asked the Government whether it would not bring the bill before the House of Lords early next session. Viscount Haldane declined from this suggestion. There might not be time for the bill in the House of Commons next session. He was anxious to get nursing homes inspected as soon as possible. Lord Salisbury said it gave him considerable anxiety after years of legislation nearly completed but a great body of opinion in the House of Commons was anxious for the bill as was the Minister of Health. The House then went into Committee on the bill.

On Clause 7 (power of the Minister to exempt Christian Science nursing home) Viscount Falmouth moved an amendment to provide that the Minister of Health might at any time inspect any nursing home to which this exemption applied and might refuse exemption or withdraw exemption on the ground that provisions which the bill laid down for nursing homes generally were not observed. He remarked that under this amendment home used by Christian Scientists would be liable to inspection for the experience and reputation of the person in charge for general sanitation and cleanliness and also in regard to the question of midwives. Earl Russell who had an amendment for the omission of Clause 7 said that for the convenience of the House he would discuss it then. He had already drafted an alternative clause. He saw there might be a case for exempting from the bill and particularly from its medical provisions a body which did not receive medical treatment but he could not see why this should be limited to one particular sect. They had the Peculiar People in this country long before Mrs. Eddy. He suggested its substitution for Clause 7 as a new clause to read:

The Minister of Health may grant exemption from the operation of this Act in respect of any nursing home which he is satisfied is being carried on without medical or surgical treatment. Such exemption may be complete or partial and shall remain in force for one year. No order of the Minister shall exempt a nursing home from the requirements or any by-law made under Section 4 (1) (b).

Earl Russell explained that the provision referred to required a report to be made of any death in a nursing home. Deaths in a nursing home in the absence of medical treatment ought to be reported and in any case the requirements of that provision ought not to be the subject of exemption. He added that his proposed clause concluded thus:

An exemption granted under this section in respect of a nursing home may at any time be withdrawn by the Minister if it should appear to him that the conditions have changed.

He said he had been informed that the objection of the Ministry to the wider terms was that they might let in undesirable bodies. He desired the bill to pass and thought the clause he proposed would not imperil the chances of the measure in the Commons. Viscount Alder and Lord Le was authorized to say that the Christian Science movement was willing to accept Viscount Falmouth's amendment. The only point which the Christian Scientists asked for was exemption from the obligation to have in charge of all their homes or institutions a duly qualified doctor or a duly qualified medical nurse. Neither the medical profession nor Christian Science would gain if Parliament insisted that they

should try to run an institution jointly. The Christian Scientists had always tried to explain that they would welcome all forms of inspection.

Lord Haldane said the practical question was whether Parliament was to have this bill or not. He wished to pass the bill and was prepared to accede to logic to do it. Therefore he was against this amendment.

Earl Beauchamp said it seemed important that the bill should be amended. Of those before the House he preferred Lord Russell's and would vote for it.

Viscount Gage for the Government and Christian Science was not merely an unorthodox method of treating the sick, it professed to be a religion. In that respect it could be distinguished from other unorthodox methods of treatment. No other sect whatever its beliefs thought it worth while to submit them to the select Committee on Nursing Homes. The opinion of the Ministry was that if Christian Science homes were not to come within the purview of the bill there must be an exemption clause. The Minister of Health thought it was not in accordance with the principle of religious toleration to refuse such a clause. It had been carefully drafted to make impossible the obtaining of exemption by a person who merely wished to use the cloak of Christian Science to carry on an irregular and unregistered nursing home. The Minister proposed in every case to consult the central authorities of the Christian Science Church. The size of that body and the fact that members of both Houses of Parliament belonged to it entitled it to special consideration. It was to be a condition of exemption that the home should bear a distinctive name—Christian Science Lodge. The Minister wished to be entirely free of any responsibility for these homes. He was prepared in the circular for the information of local authorities which would accompany this bill to make perfectly clear the whole object of having the clause was to take away any possibility of the public imagining the homes had any State supervision at all. The Minister was relying on the Christian Science movement for information of irregularities. Two courses were open. The first would be to require the registration and inspection of Christian Science homes in the ordinary way but with some relaxation of the conditions on qualified nurses and doctors. That would imply that the State took some responsibility for the treatment in the homes. They could claim to be regulated and to receive what would be regarded as a State guarantee. The other course which was followed in the clause was to make a patent that no home was excluded. The number of the homes was very small and they were unlikely to compete on any substantial case with ordinary nursing homes.

The Marquis of Salisbury and the Government could not accept an amendment which radically altered this clause. Earl Russell's amendment would compel the Minister of Health to authorize any home which he was satisfied was carried on without medical or surgical treatment. In that case alone the Minister might grant exemption. There were some homes where old people were taken in to die. There was no question about curing them, they just "went" and died. These homes would falsify the conditions of Earl Russell. There might be every kind of neglect yet it would come within the terms of Earl Russell's clause. There was a great deal to be said for Lord Falmouth's amendment. He was not prepared to pledge the Government to it but he did not resist its being put into the bill. If the Minister of Health saw a serious objection when he came to look at it he would move in the House of Commons to strike it out. Peppering to an intervention by Earl Russell the Marquis of Salisbury said the fact that the homes would be connected with the Christian Science Church was in the opinion of the Government a great guarantee or good faith. Under Earl Russell's amendment there would be no guarantee whatever.

Earl Russell said that as for the homes where old people went to die surely they were under medical observation and treatment and were kept as well as they could be kept.

The Marquis of Salisbury and the Government were not well kept. There were a device under which unscrupulous relatives managed to give them else of the responsibility for looking after their old relatives. Homes of that kind ought to be stopped but would be covered by Earl Russell's amendment. Earl Russell said he now saw the point being neglected would give an opportunity for claiming exemption. But had Lord Salisbury overlooked the fact that exemption would be at the discretion of the Minister who would grant it only if satisfied that the home was properly carried on? The Marquis of Salisbury said that under Earl Russell's amendment it would be very difficult for the Minister to refuse exemption on the basis of the home unless the clause had words telling him what to take into account in coming to his decision. Earl Russell had no provided anything of the kind in deciding whether exemption were possible. The Minister would only have to consider whether there was medical or surgical attention. Lord Salisbury contended that either the clause must contain some directing words which would be difficult to frame or else the clause must be a triched to a well known organization which was in a guarantee of good faith.

The Poet then accepted Viscount Falmouth's amendment. Viscount Gage and Earl Russell then supported the amendment. The clause was then carried and the new clause was then proposed. On a division the clause was carried and the amendment moved by Lord Falmouth was added to the bill.

On Clause 9 Lord Charnwood moved to omit the words "power of delegation or power by a committee" to be added to the clause. He understood that in these powers were a large number of cases as nursing homes might be subject to inspection by an independent and a maternal homes to inspect in any other of patients. The bill proposed the medical branch of the nursing profession to only object to the amendment. Viscount Gage said a compromise had been arrived at in the clause.

at after great difficulty by a large number of responsible authorities. The clause now gave the county council power to delegate any of its duties with or without restrictions that that council thought fit. They could make an exception in the case of maternity homes although these might be in the area which was delegated in all other respects to another authority. If the clause were rejected there would be practically no hope of reaching agreement again in the House of Commons.

Lord Charnwood said that out of this unsatisfactory system of dual inspection there might occur, in a home subject to delegation, one inspection under the present bill together with, and possibly conflicting with, an inspection under the Midwives Act.

The Earl of Onslow said the authority, in the case of midwives was the county council or county borough council. The only delegation permitted under Clause 9 was for purposes under this bill. He understood that, as chairman of the Royal Commission on Local Government, he himself was about to receive a letter explaining that, despite the arrangement under this bill, the Government recognized that the whole question was under the consideration of the Royal Commission, and that the Commission would form its own opinion and report in accordance with evidence which had not yet been received.

Lord Charnwood withdrew his amendment.

The bill then passed through Committee without further amendment, was reported, given a third reading, and returned to the Commons.

Later on the same day (December 21st) the House of Commons considered the amendment made by the Lords to the clause of the Nursing Homes Registration Bill respecting Christian Science houses. Mr Chamberlain moved that the House disagree with the amendment. He said that the Marquess of Salisbury had been unable to consult him before accepting it. Christian Science houses were not nursing homes as the term was understood and Mr Chamberlain did not desire that the Ministry of Health should take any responsibility for them. The House of Commons then disagreed with the amendment.

On December 22nd the House of Lords decided that it would not insist on this amendment to Clause 6, and, as stated above, the bill thereafter became law.

#### Medical and Dentists Acts Amendment Bill

The House of Commons, on December 21st, passed the Medical and Dentists Acts Amendment Bill through Committee without amendment, and read it a third time. This bill, which authorizes the new arrangements for transfer of medical practitioners between the British and Irish Free State registers, had already passed through the Lords, and became law on December 22nd.

**Mental Deficiency Bill**—The Mental Deficiency Bill was read a third time and passed by the House of Lords on December 21st, without discussion.

**Lamps on Ambulances**—An amendment added by the House of Lords to the Road Transport Lighting Bill—since become an Act—provides that the Minister of Transport shall have power by regulations to require or permit distinctive lamps to be carried in the case of vehicles used as ambulances and to prohibit similar lamps being carried by any other vehicles.

**Vaccination of Prisoners**—In a reply on December 21st to Dr V. Davies Sir William Joynson Hicks said that in normal times no special steps were taken for the vaccination of prisoners except with convicts sentenced to penal servitude, who, unless they presented good vaccination marks were vaccinated before removal to the convict prison. During an outbreak of small pox in the area where a local prison or convict prison was situated or in areas from which prisoners were received, it was the practice to vaccinate prisoners who had not been vaccinated within recent years. Mr Shepherd asked whether prisoners had any choice whether they would be vaccinated. Sir William said he had never heard of any complaints from them.

**Milk Inspection**—On December 21st Dr Vernon Davies asked whether the Minister of Health was aware that in the county of Nottingham, during 1924, 43 samples of milk were analysed, of which 97.7 per cent were adulterated during 1925, 73 samples, of which 60.2 per cent were adulterated, and during 1926, 62 samples, of which 54.8 per cent were adulterated, and whether he would impress on local authorities that for the health of their infant population they should institute a vigorous campaign against food adulterators by analysing yearly a much larger number of samples. Sir Kingsley Wood said it was the practice of the inspectors in Nottingham to take a large number of samples informally and to carry out rough sorting tests to ascertain where adulterated milk was sold. Formal samples were then taken at these places for submission to the public analyst. The published returns only referred to the latter samples, and the high proportion of adulteration recorded was a natural result. The method was a new one adopted by the county of Nottingham. The Minister of Health would consider whether advice could usefully be given to local authorities counselling the taking of a larger number of samples where past experience showed an adulteration of over 5 per cent in common articles of diet amongst the poor. In a reply to Dr V. Davies on the same question on December 22nd, Sir W. Joynson Hicks said that in the county of Nottingham during 1924 there were 16 prosecutions for the adulteration of milk, in 1925 11, and in 1926 13. In the city of Nottingham and the borough of Newark the additional figures were 17, 4 and 10 for the respective years.

#### Notes in Brief

From 1918 to December 15th 1925 £5,186,833 was paid as compensation for animals slaughtered as a result of foot and mouth outbreaks. The Government is not prepared to offer a monetary reward for an effective remedy or preventive of this disease.

It will be illegal to sell in this country as olive oil the mixed oil composed of olive oil and oil from ground nuts, the production of which has been authorized this year in Spain.

The attention of the Minister of Health has not been drawn to the refusal of the London County Council to licence a new massage establishment. Sir Kingsley Wood adds that he does not think legislation on the subject to be practicable at present.

The Minister of Transport does not see his way to amend the Regulations issued to prevent noise by motor cyclists.

Sir Kingsley Wood again states that approved societies have no power to set up dental clinics.

## Universities and Colleges

### UNIVERSITY OF OXFORD

The following candidates have been approved at the examination indicated.

**FINAL B.M. B.Ch.—Medicine Surgery and Midwifery** L. W. H. B. R. D. H. B. R. H. A. Byworth A. W. Cubitt H. P. Gilding R. E. Havard A. P. Kingsley J. C. Neely R. Oddie L. M. H. West A. L. Wilkinson Olivia H. Lister *Materia Medica* H. S. Allen A. H. Bateman F. Bell M. V. Bazel J. G. H. B. B. C. M. Dancin C. Dunham J. K. Marshall R. D. Newton J. C. Nicholson J. R. Plummer A. Seeler Walker W. B. Williams Victoria M. Robinson *Pathology* W. J. Cotton H. R. J. Dowling J. M. Gibbon H. M. Harris R. S. Hartson A. J. M. Mells J. G. Parler R. L. P. Peregrine *Forensic Medicine and Hygiene* O. A. Beadle A. R. Bowtell A. W. Cubitt H. P. Gilding R. F. Havard A. J. Teshie Spinks M. G. Isonson A. E. Poirer J. F. Ride E. E. Swaby E. M. B. West Margaret A. L. Herbertson

### UNIVERSITY OF CAMBRIDGE

Mr H. L. H. GRIFFIN, M.A., has been appointed a university demonstrator in anatomy for three years.

The following candidates have been approved at the examination indicated.

**THIRD M.B.—Surgery Midwifery and Gynaecology** M. C. Andrews W. R. Ashby D. H. Bellrage W. A. Hoyle W. Buckley A. J. W. Chawings A. D. Charters A. L. Dahar J. L. Duckley J. L. H. Easton J. Foster L. Foulds J. L. Franklin T. O. Garland J. M. Graham R. A. P. Gray A. C. Hampson L. T. Hillard W. H. Hubert L. R. Keeble M. Keethuz J. F. Lamech J. M. Licos W. J. Lloyer R. A. Moulhance D. J. Macmillan W. N. Mascall W. I. Mashiter J. B. Murray R. Osmaston E. A. C. Palmer J. E. Palmer T. N. Parish R. F. M. Picher G. W. Plimblett L. J. Rao E. G. Recordon W. H. G. Reed J. A. Richards R. W. N. Robins E. G. Roever Jones J. I. Sawwell S. W. Savage L. Shillito I. Smith T. C. Smith W. Smith E. L. C. Spooner B. Stewart G. Storr J. C. C. Telpneroff D. R. Tweedie W. E. Underwood E. H. Ward J. M. A. G. Clegg C. P. Giles E. M. Hoskin M. P. Shackle *Principles and Practice of Physic Pathology and Pharmacology* G. M. Addison R. G. Apthorpe J. R. Arnstroung G. H. Barendt W. J. H. M. Beattie H. Bell B. Maxwell G. J. O. Bridgeman W. A. Briggs J. W. D. Batteray A. D. Charters G. C. Dawes G. A. Eason T. I. Evans J. Foster H. Girling S. J. P. Gray M. J. Harter F. T. James G. K. Kuwan Fawor M. E. Lampard L. O. Lancaster, R. M. K. Macchenna W. S. M. Clav R. W. L. May G. C. Milner J. J. Mulward J. K. Munro W. J. Moody D. E. Oakley R. L. Osmaston C. L. Potts P. E. Pym J. B. W. Robertson J. W. Shackle M. R. Sinclair J. F. Stent T. R. Stevens D. R. Tweedie G. Tyagaraj K. H. Utley J. R. S. Webb W. J. Wilkin D. B. Wilson R. M. Windover C. G. Windsor E. C. Wynne Edwards *Women* I. Caley A. R. Glover E. V. E. Whiddowson

### UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated.

**M.S.—Branch I (Surgery)** C. F. Beyers E. W. Riebes G. I. J. A. Robinson M. D. R. M. Walker (*University Medal*)

### UNIVERSITY OF LEEDS

A MEETING of the council of the University of Leeds was held on December 21st. Professor J. H. Jamieson, Dean of the Faculty of Medicine, was appointed the representative of the University on the General Medical Council. Dr C. W. Young was appointed to the newly instituted chair in diseases of children and Dr J. T. Ingram was appointed lecturer in diseases of the skin, in succession to Dr Veale who is now Professor of Pharmacology and Therapeutics.

A graduation ceremony was held at the Leeds School of Medicine on December 20th. Dr J. B. Baillie, the Vice-Chancellor of the University, presided and reminded the successful students that the public would expect from them vigilant and efficient service on behalf of the public health and the individual welfare. The onus of realization was laid on the initiative and expansion of civilization depended not only on the increase and expansion of general education but also on the maintenance of sound health which was the first of the medical practitioner. As students they must have realized how little exact knowledge there was in the





THE report for 1926 of the Anna Spelman Rockefeller Memorial, of which John D. Rockefeller, jun., is the president, has just been published, and shows that during that year the appropriations made to various institutions was nearly seven million dollars, rather more than two million dollars being payable in that year, the remainder in 1927 and subsequent years. Social sciences, research in institutions in America and abroad, conferences, travelling fellowships, child study and practical education, boy and girl scouts, and libraries were helped by grants.

THE second congress entitled the "Journées Médicales et Veterinaires Marocaines" will be held next Easter, at Casablanca and Rabat. Professor Leichte and others will read papers on the grafting of glands and tissues in man and animals. Professor Calmette will speak on the use of BCG, Dr. Rimmon on murtoxin, Professor Cluchet on mesencephalitis, and Dr. J. Renault on the general hygiene of a large modern town. Excursions will be arranged in connexion with this congress. Further information may be obtained from the general secretary, Dr. Lepinay, Rue de Marseille, Casablanca.

THE mortality in the forty largest towns in Germany was lower in the first half of 1927 than in the corresponding period of 1926—namely, 10.1, as compared with 10.3 per 1,000 inhabitants, the mortality among children under 1 year of age was 1.2 as compared with 1.3, and the mortality from tuberculosis 1.01 as compared with 1.28. The depopulation of rural districts is still on the increase as is shown by the fact that the population of the forty large towns was 16,881,000 in 1926 and 17,360,000 in 1927.

EXTRACTS from the annual report of the Ministry of Health for 1926-27, dealing with the administration of the Poor Law, and including reports of general inspectors of the Ministry, have been issued separately by H.M. Stationery Office for official use at the price of 1s.

## Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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## QUERIES AND ANSWERS

### WINTER MORORING

"CANADIAN" asks whether any reader can from practical experience recommend a radiator heating paraffin lamp—safe, efficient, economical, and not too expensive?

### INCOME TAX

#### Change in Partnership

"W.A.M.W." after his return from abroad, entered his father's firm as a third share partner as from June 1st 1927. As from December 1st his father retired, receiving a lump sum of £300 and an annuity of one third share. What is his liability to income tax?

\* \* \* Our correspondent's earnings are liable as from his return to this country—apart from any other person he did not return for a temporary purpose only. Assuming the amount of the practice profits for 1926 (and, therefore, the amount of the assessment for 1927-28) to be £1, our correspondent's share of the assessment will be ten twelfths of one third of £1. The £300 is regarded as a capital payment and cannot be treated as a deductible expense for income tax.

purposes. The firm, as such, are liable to account for the tax on the whole profits, including that portion paid over as an annuity to the retiring partner, but can claim a corresponding adjustment as between the partners and the annuitant. The most convenient way of dealing with the matter would be to regard him as a sleeping partner for periods subsequent to December 1st 1927, and, as the amount of income tax ultimately payable would not be affected it would seem likely that the authorities would acquiesce in that course.

## LETTERS, NOTES, ETC.

### A DISCLAIMER

DR JAMES LEON, medical officer of the Bolton Road Infirmary, Lincoln, writes: I wish to disclaim all responsibility for the extravagant claims appearing in the lay press on December 21st and other dates with regard to a case of encephalitis lethargica treated at this institution. I can state definitely that these reports were acquired by the lay press entirely from extra medical sources.

### SHOCK AFTER PROTRUSION OF INTESTINES

DR GLO SMITH SOWDEN (L.M.D.) writes: The recent correspondence in the **JOURNAL** on disembowelment and shock has brought to mind an incident related last summer to a colleague and myself by an officer of the Sudan Defence Force who is in charge of one of the most southern posts in the Sudan, and is twenty days' camel ride from the nearest medical officer and five days' camel ride from the nearest white man and has no other white man with him, so he has to be M.O. as well as C.O. One day he espied a Sudanese staggering into the small fort holding his hands in front of his abdomen, and with his jebbah (long loose gown worn by the natives) all bloodstained. Closer examination showed that, wrapped in the folds of the filthy jebbah, were 6 ft. or 7 ft. of intestine protruding from a long, incised wound of the abdominal wall. The man said that he had had an altercation with a fellow villager that morning and had been stabbed in the abdomen with the broad stabbing knife carried by the natives with the result that his bowels protruded. He promptly set off and walked three miles to be attended by the white doctor. He had fainted more than he did the local "bul" in the hospital of the fort, and he was for internal use (1), made a solution of salt and warm water, which he washed the protruding bowels very carefully, and then proceeded to return the intestines to the abdomen with the help of the native sergeant-major. This was safely accomplished, and the abdominal wall closed up. The whole operation was performed without an anaesthetic. The result was even more dramatic than the operation. The man had a rise of temperature for four or five days, but otherwise showed very little trace of what he had gone through. It was with difficulty that he was kept in bed for three weeks, as his one desire was to return and win vengeance on his opponent. This incident is still more remarkable when it is remembered that the resistance of the black races to surgical shock is considered to be very weak, and also when the rough and ready treatment he received is realized. It gives the Latin disciple "furious to think."

### DIARRHŒA SIMULATING FOREIGN BODY IN THE THROAT

DR GAWLEY MADDIN (Education Department of New South Wales, Sydney, Australia) writes: I can corroborate Dr Charles J. Hill Aitken in his report of a case of laryngeal diphtheria simulating foreign body in the larynx (**BRITISH MEDICAL JOURNAL**, September 17th, p. 526). In the winter of 1923 a child, aged about 12 months was brought to the casualty department by its mother who stated that it had "swallowed a bone" while she was feeding it with mutton broth. The child was not very well looked after, and it was impossible to get any more detailed history so that, as far as this illness was concerned, the child had only been sick about an hour when seen at the hospital. In spite of this history the child was found to be suffering with a well marked laryngeal diphtheria, and to my double certainty the larynx and trachea of the child were invaded, but no foreign body of any description was found. The child was eventually intubated and finally a tracheotomy had to be performed, and I think from memory, the child died. I was told at the time by the bonair physician (Dr Margaret Harper) of a case in her experience in which the opposite had occurred: a child was brought to her for what was thought to be laryngeal diphtheria, but on examination she found a foreign body resting in or on the larynx. After all it is to be remembered that sometimes these conditions are mistaken one for the other. The membrane in laryngeal diphtheria acts very much like a foreign body though usually of course the degree of toxæmia leaves little doubt of the diagnosis.

### VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 36, 40 and 41 of our advertisements, columns and advertisements as to partnerships, assistantships, and other vacancies at pages 38 and 39. A short summary of vacant posts notified in the advertisement in the Supplement at page 22.

THE  
**British Medical Journal.**

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

EPITOME

OF

Current Medical Literature

JULY TO DECEMBER, 1927.

R. W. W. GILLIN, M.D.  
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READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such for instance as Brain and Cerebral Heart and Cardiac, Liver and Hepatic Renal and Kidney Cancer and Carcinoma Epithelioma Malignant Disease New Growth Sarcoma etc, Child and Infant Bronchocle Goutre and Thyroid Diabetes Glycosuria and Sugar Eye Ophthalmia and Vision etc.

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# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine.

### 1. Non diabetic Obliterating Arteritis

H. VAQUEZ and J. YACOFF (*Presse Med.*, May 18th, 1927 p 625) report four cases of the chronic form of non senile non diabetic obliterating arteritis, in which great benefit resulted from the administration of insulin. They state that the chronic is the most common form of the disease the acute type, in which both the veins and arteries are simultaneously affected and the subacute variety being rarer. The commencement of the affection is marked by a group of subjective symptoms (sensitivity to cold, numbness of the feet and toes burning sensation of the soles, vague pains on walking), and this stage may last for months or even years. When the disease is established diagnosis is easy. The first symptom is cyanosis of the foot which reaches to the ankle in the erect posture. Intermittent lameness or painful cramp on walking is pathognomonic. The pulsations and oscillations of the posterior tibial and pedal arteries are diminished or abolished. Some times a slight amyotrophy, more often spontaneous pains with nocturnal exacerbations occur in the affected member and frequently painful swellings, which are probably subcutaneous or intramuscular infarcts, appear in the calf of the leg. Unless arrested the disease progresses to serious ischaemic troubles and gangrene moist and massive of the toe, foot or whole limb which necessitate immediate amputation. The authors consider that the disease is probably the result of a trophic trouble of the arterial coats due to endocrine disturbance. Referring to the failure of other methods, Vaquez and Yacoff bring to the excellent results following insulin treatment to its effect on this trophism. Intramuscular or intracellular injections of 10 to 20 chemical units daily for twenty days are recommended then after ten days interval another series is given and this procedure is continued for months or even years till cure is established. The glycaemia should be estimated, if this is low, the dose should not exceed 10 to 15 units. If glycaemia appears local treatment with balsam of Peru or Lucas Championniere's powder should be applied while the general insulin treatment is continued. Despite this, massive glycaemia may supervene but the authors urge patience before operating as cures often occur unexpectedly after a time. Amputation should only be performed where there is danger of septicæmia or shock.

### 2. The Campaign against Tuberculosis

D. JAJA (*Il Morgagni*, April 17th 1927 p 601) discussing the prevention of tuberculosis emphasizes the importance of publishing information about errors of feeding and hygiene and concentrating on the health of children. He states that of the 1,200,000 children born each year in Italy 2,000,000 die within the first three years of life and only 70 per cent reach the age of 5. More than a million children under 3 suffer from intestinal diseases producing conditions favourable to the invasion of tubercle. He thinks that young children should be separated early from infected parents, since among children brought up by tuberculous persons only 3 per cent are infected at the age of 3 months, whereas 50 per cent are found to be tuberculous when 5 years of age. Referring to the Italian emigrants to America who are subjected both on their departure and on their landing to a strict medical inspection he reports that many of those who return to Italy are shown to have contracted tuberculosis. Out of 866,222 persons repatriated from North America in 1919 to 1923 inclusive 4,703 had tuberculosis, of all 317 repatriated from South America from 1910 to 1922 inclusive 955 had tuberculosis. These figures point he considers to the necessity for prophylactic vaccination and he adds that at the third national medical congress at Buenos Aires it was agreed that the vaccine prepared by Calmette and Guérin was mucosely stable and an effective prophylactic against tuberculosis in man and animals.

### 3. Types of Influenza Epidemics

R. FISCHL (*Med. Klin.* April 1927 p 592) compares various influenza epidemics. He states that the outbreak of 1889 was characterized by inflammation of the upper air passage, but the most striking feature was the prostration which followed and which has not been seen since in so intense a form. The epidemic of 1912 was a faint copy of 1889 that of 1918 showed the severe pneumonia resembling pneumonia plague while that of 1923 attacked chiefly the nervous system the cases being almost indistinguishable clinically from encephalitis lethargica meningitis or pseudo encephalitis. In 1927 the infection has been, in his experience of fifty

cases of a much milder type than in any previous epidemic. The disease usually began with a pharyngitis which quickly spread in the trachea, bronchi and alveoli, giving rise to every form of pulmonary complication from capillary bronchitis to multiple pulmonary abscesses in one patient, who became very anaemic, and had intermittent high fever, an enlarged hard spleen and streptococci in the urine and bronchial secretions. One case showed an apical pneumonia associated with marked meningeal symptoms, the cerebro-spinal fluid was clear under marked pressure and without abnormal constituents. Many patients, particularly females exhibited pyuria as an early symptom. Pneumococci were recovered in most cases and occasionally *M. catarrhalis*, but *I. feufferi bacillus* was not found.

### 5. Non syphilitic Genital Spirillosis

J. CANTIN (*Thes. de Paris* 1926 No 472) who records nine illustrative cases, six of which were in males and three in females, aged from 16 to 32 states that non syphilitic genital spirillosis is mainly caused by *Spirochaeta gracilis* *S. rejingensis* *S. phica* *S. balaenitidis* and *S. vineti*. Clinically, it may assume one of the three following forms: (1) single saprophytic spirillo (2) Autonomously pathogenic spirillosis of which the following varieties are described a simple balanitis (Vincent) in which the spirillum is associated with an athero c or anismus the circinate erosive balanitis of Berdat and Baillie in which the spirillum is associated with bacilli and cocci, an ulcero membranous balanitis (Queyrat) in which Vincent's *Spirochaeta* is associated with the fusiform bacilli constituting a vibriosis analogous to that which gives rise to Vincent's angina and ulcero membranous stomatitis (3) Spirillosis associated with hard or soft chancres. In some cases the fusiform spirillum can cause phagedaena. Local treatment with salvarsan preparations is indicated in every case of non syphilitic genital spirillosis.

## Surgery

### 5. Fracture of the Surgical Neck of the Scapula.

A. MAGLILLO (*La Chirurgia degli organi di movimento* April 1927 p 211) finds that these fractures are more frequent than is generally supposed. The serious characters of the fracture of the surgical neck of the scapula is the ease with which it can be overlooked in the first instance because the accompanying symptoms do not alarm the patient at the time of the accident or induce him to seek medical advice and also because when examined owing to the position of the neck of the scapula difficult of access even from the axilla the lesion may be overlooked entirely or be mistaken for simple contusion of the shoulder. The diagnosis should always be confirmed by radiogram. Maglillo finds that this fracture is caused more frequently by indirect violence such as falls on the palm of the hand than by direct violence, in the proportion of three to one. It is not possible to speak of a typical line of fracture because the effect of the injury is modified by variations of the coverings of the joint and the resistance of the ligaments of the scapulo-humeral girdle. In most cases the essential cause of the fracture is the rebound from below upwards of the head of the humerus against the articular surface of the glenoid to which is added the force of gravity of the body weight. Care usually results in the condition is not complicated by lesions of vessels or nerves, and if treatment consisting in a supporting bandage followed by massage and passive movement is adopted in good time.

### 6. Herniotomy and Appendicectomy

K. MERRINGAS (*Zentralbl. f. Chir.* May 21st 1927 p 1282) while admitting that the suggestion has no merit in general approval recommends that when a radical cure for a right inguinal hernia is to be performed the supra inguinal method should be selected in order that the appendix may be excised and removed as a prophylactic measure before the performance of Bassini's or another radical operation. Merringas has employed this as a routine operation in all cases of right oblique inguinal hernia of which he has operated during the last seven years. He concludes that such opportunely appendicectomy is indicated in all cases, and can be performed easily. He adds that when an interval appendicectomy is performed the internal inguinal ring should be closed in order to prevent the subsequent occurrence of an oblique inguinal hernia.



7 Treatment of Ulcers Associated with Crural  
Phlebitis

R LEPICHE (*Bull et Mem Soc Nat de Chir*, April 15th, 1927, p 561) draws attention to the possibility of improving or even curing the complications associated with phlebitis of the lower limbs. He records the case of a woman, aged 29, who for two years had suffered from deep ulcers of the left leg following phlebitis. The ulcers had resisted all kinds of treatment, including antisyphilitic. At a subsequent laparotomy Lerloche found the left Fallopian tube fixed by dense adhesions to the left pelvic wall. The peritoneum was much thickened and dense inflammatory tissue covered the left external iliac vessels. The vessels were dissected out and freed from this tissue. Four days later the ulcers showed definite signs of healing, their surfaces were clean, sterile, and healthy looking. Skin grafts were then applied and on the seventeenth day the ulcers had healed. Lerloche thinks that his success in this case holds out a hope of relieving this troublesome condition where it follows pelvic inflammation, and adds that it is not unlikely that many cases regarded as incurable are due to this same cause, and could be improved by a similar method of treatment.

## 8 Papillomatous Tumours of the Breast

D HART (*Archives of Surgery*, April, 1927, p 793) reports the result of investigating a series of papillomatous tumours of the breast, of which 104 were benign and 24 malignant, in 5 the nature of the growth was uncertain. The points in differential diagnosis are emphasized, and it is added that in many cases are as cancer. In the benign group haemorrhage in the nipple was present in 66 per cent, sometimes in the absence of any palpable tumour. In the absence of other symptoms discharge is not always an indication for operation. Benign tumours were found at any age after puberty, malignant only after 35 years of age. The benign type is rarely found in the male breast, and may have been present for many, even twenty years. These tumours have a firm nodular consistency due to the presence of cysts filled with fluid, and are usually found in the centre of the breast. The skin is normal over the tumour, but there may be retraction of the nipple, the cysts contain papillomata, but there is no invasion of the wall. Tumours of the malignant group were typical of cancer in many cases. The cancer may arise in a cyst or in the breast whole cysts are present. The tumour was usually large, pain was present in 67 per cent of the malignant cases and 41 per cent of the benign. In doubtful cases Hart states that the tumour should first be excised and then thoroughly examined rather than explored. Removal of the breast alone is unjustifiable, being an inadequate operation for cancer and excessive for benign tumour. In the benign group 65 per cent of the patients were followed up and none developed cancer. The malignant tumour was found to be of a high grade of malignancy, and a large percentage of the patients operated on died of recurrence. This is offered as a further proof of the correctness of the division into two groups.

## Therapeutics.

## 9 A Mercurial Diuretic (440-B)

MOUQUIN, R. GIROUX, and S. SCHMIDT (*Paris Med*, May 14th, 1927, p 457) describe a diuretic obtained by the addition of mercuric acetate to ethyl allyl amido acetic acid in a watery medium, it is termed 440-B. Marked diuresis was produced by this preparation within a few hours. Intramuscular administration is recommended in preference to the intravenous method. The doses ranged from 0.5 to 2 c.c., and it is thought that they should vary according to the weight of the patient. The authors suggest one injection a week, and add that the dose must not be given more frequently than every four days. They state that in grave cachexias, serious cardiac and hepatic insufficiency, even with signs of collapse, the injections have no effect, and in cases of fever, even though slight, the drug seems to be contraindicated, but it has been used with success in cases of nephritis, hypertension, obesity with oedema, serous pleurisy, cardiac insufficiency with oedema, and chronic hepatitis with oedema. Its mode of action is probably not directly upon the kidneys. In no case did albuminuria or haematuria follow the injections, no crystals were passed, and there was no increase in the urea content of the blood.

10 P. CARNOT, B. BARTY, and B. BORTANSEI (*Paris Med*, May 14th, 1927, p 463) have treated cases of cirrhosis with 440-B prepared in the Pasteur Institute. They state that this preparation can be administered intramuscularly as a 1 c.c. dose. One injection provokes a polyuria, reaching its maximum during the ensuing twenty-four hours. In severe cases, and will not be

able and typical cases a secondary smaller polymia occurs a few days later. Charts are given to show the resulting increased amounts of urine in cases of alcoholic cirrhosis with ascites and hydrothorax, alcoholic cirrhosis with oliguria and marked hepatic insufficiency, cardiac insufficiency of the hepatic type, and anaemia. The authors observe as a result of treatment: (1) A great increase in the amount of urine passed during the first twenty-four hours—as much as 2 to 4 litres—followed by a fall to the previous subnormal level on the next day. Three to ten days later a second, though smaller, increase occurs. The action is said to be less intense in advanced cases of hepatic insufficiency, and the diuresis is proportional to the amount of fluid and chlorides in the tissues. (2) An increased elimination of chlorides parallel with the elimination of fluid. (3) Diminished urea concentration in the urine, but nearly always a slight increase in the total amount of urine passed. (4) The drying up of serous effusion such as hydrothorax. The authors mention the similar action of calomel and mercuric cyanide, which, they state, are less effective and constant than 440-B.

## 11 Parathyroid Extract in Haemorrhage

B. GORDON and A. CANTAROW (*Journ Amer Med Assoc*, April 23rd, 1927, p 1301) administered parathyroid extract in 347 cases of haemorrhage from such various sources as the respiratory, gastro-intestinal, and genito-urinary systems, operative incisions, and in jaundice and other conditions in which the clotting time of the blood was prolonged. The best results followed one to three subcutaneous injections of from 10 to 15 units at intervals of thirty-six hours; these were continued until the haemorrhage ceased, after which a final dose was given thirty-six hours later. Other treatment was stopped as far as possible during the investigation. Cessation of haemorrhage occurred in 304 patients following one or more transient increases in the calcium content of the blood. When the treatment was tested as a pre-operative measure in jaundice it was found that the coagulation time was reduced to within normal limits and haemorrhage was apparently prevented. The authors state that overdosage or prolonged administration in patients who do not respond may lead to unfavorable results, which may also occur in blood dyscrasias (puerperal haemorrhage and haemorrhagic disease of the newborn) irrespective of the size and number of the doses, apparently owing to local changes in the tissues. Insufficient time to permit a maximum hormone effect may also lead to failure, since increase of the blood calcium and a lowered coagulation time do not occur until three hours after an injection. The method was found valuable in patients recovering from operations when oral therapy was impossible. As compared with the oral and intravenous administration of calcium the injections of parathyroid extract gave more dependable results, they afforded a means of effectively mobilizing the calcium salt normally stored in the body, which is necessary for clotting.

## 12 Preoperative Iodine Therapy in Toxic Goitre

A. GRAHAM (*Inner Journ Surg*, May, 1927, p 354) discusses the use of iodine as a preliminary to operation in cases of toxic goitre. Iodine is given not to cure disease, but to improve the patient's condition for operation. The one indication for the administration of iodine is the presence of active hypertrophy and hyperplasia of the thyroid gland. The most striking improvement occurs in patients who have had no iodine previously, they invariably improve when given Engel's solution, as shown by decrease in the nervousness, flushing, palpitation, and tachycardia, and a corresponding fall in the basal metabolic rate. The thyroid gland itself becomes firmer and may become in time quite hard. This is the result of the storage of iodine and colloid material in the gland. The greatest advantages occur when the thyroid is convoluted to the colloid state by large doses of iodine in a comparatively short period of time. With adequate preparation a subtotal thyroidectomy is a safe procedure in most instances. Patients who have had iodine previously show the greatest variations in their response to its use as a preparation for operation. The previous use of iodine over prolonged periods deprives patients of this valuable aid in preparing them for operation. Even though the response in such cases may not be so favourable it appears a safe procedure to resume the iodine before performing the thyroidectomy. The presence of adenomas in the gland is not a contra-indication to the use of iodine.

## 13 Sanocrysin in Pulmonary Tuberculosis

K. PUR and H. POHL (*Med Klinik*, May 6th, 1927, p 673) report the results of treating patients with pulmonary tuberculosis by sanocrysin. In every case records of the physical signs were made directly and by x-rays blood films were examined the sputum rates of the blood cells were determined temperature charts and weights were kept, and the patients were followed up. Extension has been very materially reduced to about £12,000.

amount and bacteriological contents of the sputum were noted. In febrile cases the authors commenced with doses of 0.05 to 0.1 gram and slowly raised this at weekly intervals, in two cases they commenced with 0.25 gram and quickly increased the dose to 0.35 and 0.5 gram. Of the eleven patients under observation three were improved, one remained unchanged, three became worse and four died. In the cases which benefited there was, in a relatively short time, an almost complete disappearance of the exudative signs in the lungs, a condition which must certainly have resulted from the injections of sacrocrystin, in one of the cases the x-ray picture showed marked improvement clearing throughout the lungs and diminution of the cavities to half their size. On the other hand in patients who became worse or died there was no retardation of the rapid progress of the exudative processes such as that credited by the Danish authors nor was the statement confirmed that after several injections of sacrocrystin the tubercle bacilli disappeared from the sputum. In one of the patients who improved a vivid scarlatiniform rash developed on the body and face accompanied by pain and oedema of the feet, after dequamation the fresh skin showed numerous painful pustules the size of rice grains. The authors regard this exanthem not as the effect of a tuberculous endotoxin set free by the desintegrative action of sacrocrystin but as an undesirable effect of the heavy metal on the tuberculous patient.

## Laryngology and Otology.

### 14. Endocrine Deficiency as a Cause of Disease of the Ear

D. W. DRAKE (*Journal Laryngol and Otol* June 1927 p 375) reports two cases in which tinnitus vertigo and a more or less marked sense of fatigue yielded to thyroid medication and suggests that the possibility of endocrine hypofunction as a cause of ear diseases should not be overlooked in auricular practice. In another case a woman with obstruction of the Eustachian tubes and thickening of the mucous membrane of the sinuses, the administration of thyroid extract was followed by definite benefit and an associated inability to respiratory infections was removed. A fourth patient a man complaining of intermittent deafness, excess of tinnitus, arthritis and neurasthenia was similarly much improved by thyroid medication and a fifth patient a married woman, aged 30 with defective hearing, and deafness of the auditory canal, became much better after local treatment had been reinforced by the administration of thyroid extract. The author mentions also a series of pituitary cases in which treatment on similar lines proved effective. He adds that endocrine medication must not be regarded as a panacea though latent forms of thyroid hypofunction are probably more common than is generally recognized.

### 15. The Diagnostic and Therapeutic Value of Bronchoscopy

A. A. HALLIDAY (*Canadian Med Assoc Journal* May 1927 p 561) discusses the bronchoscopic method of diagnosis and treatment of certain disorders of the throat and lungs and emphasizes the importance of co-operation between the physician and radiologist. Its indiscriminate use is condemned and Halliday states that the method should only be employed after thorough preparation and careful physical and radiological examination of the chest. From the experience of about a hundred bronchoscopies in which Jackson's tubes and technique were used Halliday concludes that a certain percentage of lung suppuration cases can be cured by bronchoscope drainage, a large percentage improved and relief from distress given to most while drainage and treatment relieve a certain percentage of asthmatics especially those with a tracheo-bronchitis. An hour before treatment 1/4 gram of morphine is given hypodermically or a tablet containing hyoscine 1/100 gram morphine 1/4 gram and lactine 1.60 gram and in patients over 16 years of age a 10 per cent solution of cocaine is applied to the pharynx sufficiently far down to inhibit the function of the superior laryngeal nerve. After the second or third treatment the hypodermic is omitted. No general anaesthetic is given. Each treatment lasts about five minutes. Contraindications include laryngeal tuberculosis, recent profuse haemorrhage, organic disease of the heart and great blood vessels and disease of lung tissue involving one half or more of one lung. The treatment may be said to be indicated when it is desired to supplement general measures by improved drainage. For diagnostic lung mapping with lipiodol the method not only permits inspection of the air passages and aspiration of secretion but it allows of accurate instillation of the solution into any part of the tracheo-bronchial tree and its removal if necessary afterwards. By this means it is possible to out-

line abscess cavities, the degree and extent of bronchiectasis, the demonstration of structure, and the localization of foreign bodies.

### 16. Laryngeal Complications of Influenza.

E. J. MOLPE (*Journal de Med de Bordeaux*, May 10th, 1927, p 339) classifies these under the following heads: catarrhal, ulcerous infiltrating spasmodic and perichondritis. The catarrhal complications resemble an ordinary acute laryngitis, but usually last longer and are often accompanied by muscular weakness of the cords. In the ulcerous forms symmetrical erosions very resistant to treatment appear on the anterior third of the vocal cords. The infiltrating type is said to be the most characteristic of influenza. In these cases there may be few symptoms during the daytime, but towards evening troublesome cough and irritation set in and may go on to laryngeal stenosis and difficulty of respiration. These nocturnal exacerbations are very characteristic. On examining with the laryngoscope oedema of the posterior part of the arytenoid region can be seen. The spasmodic form is most likely to appear during convalescence, starting with troublesome tickling in the throat and going on to frequent spasmodic cough without secretion. Perichondritis is uncommon but may occur either in a mild form or as a very severe and often fatal affection the author refers to one such case where it ended fatally. Brief accounts are given of the treatment suitable for these various types of post-influenzal laryngitis. It includes no applications to the throat in infiltration of powders containing antipyrine, adenosine or cocaine inhalations of menthol thymol and eucalyptol and the insertion into the no trills of pastes containing medicament. For internal administration he recommends quinine, aceto-salicylic acid, antipyrine, and belladonna.

### 17. Retrobulbar Neuritis caused by Ethmoidal Sinusitis

J. FLANN (*Med Journal of Australia*, April 9th 1927 p 573) reports a case of retrobulbar neuritis associated with sphenoidal and ethmoidal sinusitis in a man, aged 57 who had suffered from headache for two years over and behind the right eye and from post-nasal catarrh. His visual acuity with the right eye was nearly normal with glasses but he stated that he had never seen with his left eye which was amblyopic with a very high degree of myopic astigmatism. There was no fundal change. Six weeks before his sight became blurred and the neuralgic pain about the right eye increased, the eye was tender on pressure its movement was painful and there was a definite central scotoma for red and green. There was no history or sign of any other cause than sphenoidal or posterior ethmoidal tonsils. Submucous resection of the septum was performed and both middle turbinates were removed the posterior ethmoidal cells on both sides were curetted and the right sphenoidal orifice enlarged with forceps. No actual pus was detected but the ethmoidal were in a crumbly and juicy condition. Four days later he could read the top print on the charts and was having warm saline nasal douches, and a week later was discharged with normal vision. Three and a half months later he complained again of headache and pain behind the right eye of a week's duration, but the eyesight was normal and the nose clean. The application of trichloroacetic acid diluted 1 in 3 to the right sphenoid on three occasions relieved the condition and two years after the first attack he appeared to be normal. Flynn suggests that this sequel indicates that the retrobulbar neuritis was effectively dealt with by the sinus operation and emphasizes the necessity of clearing out the sinuses in such cases even though no pus is seen in the nasal cavities at the time of examination.

## Obstetrics and Gynaecology.

### 18. Treatment of Puerperal Eclampsia and Sepsis

C. A. F. HINGSTON and A. L. MCDONALD (*Indian Medical Association Journal*, April 1927 p 179) emphasize the importance of prophylactic measures during the puerperium with special reference to eclampsia and sepsis. They review 2,000 cases of eclampsia and agree that this condition occurs usually in primiparae, and nearly always in the second half of pregnancy. It is most frequent at term. A high blood pressure ranging usually between 160 and 170 mm was found to be the most important symptom. For prevention of the fits rectal or vaginal pressure is essential. During severe attacks under the anæsthetic recommended the administration subcutaneous of veratrine (1 ccum if the pressure is above and 1/2 ccum if it is below 140 mm). Morphine in 1 + 0.13 gram doses repeated at intervals of two to three hours may be administered. They think that a small dose of 1/2 gr. should not be less.

adopted, but the second stage of labour should be terminated quickly without waiting for signs of maternal or foetal distress. The prognosis is said to be more favourable in post than in ante partum eclampsia, and poorest in intra partum cases. Complications such as pneumonia, cardiac failure, and insanity are treated if they arise, but they should be prevented, and careful nursing is essential. In the case of puerperal sepsis (ibid., p. 182) the authors consider ante-natal care the most important form of prophylaxis. Vaginal examinations, only made when absolutely necessary, should be preceded by a scrupulous cleansing of the labia and perineum. They have abandoned high forceps operations as being likely to cause sepsis, and perform version and extraction instead. Post partum debris, such as membranes and blood clots, should be removed without intrauterine manipulation. If sepsis occurs diligent search must be made for the cause. In septicaemic cases hot antiseptic vaginal douches may be given every four hours, continuous irrigation being valuable when there is sloughing of the vaginal walls. The uterine douche and enema should not be employed, drainage with a Budin's tube being sufficient, but repeated swabbing with sterilized gauze has proved very useful. In cases of subinvolution the administration of ergot and quinine or pituitrin is recommended. Operative measures should be performed only when definitely indicated. Careful nursing, stimulating treatment, and a liquid diet are necessary adjuncts, and any complications should be immediately treated.

#### 19 Appendicitis and Pregnancy.

G. BARBARO (*These de Paris*, 1926, No. 653), who records an illustrative case with a review of the literature, concludes that the first attack of appendicitis is not more frequent during pregnancy than at other times, but the occurrence of a relapse is favoured, that appendicitis may be the cause of interruption of pregnancy, and all forms of appendicitis may be met with in pregnancy. Pus formation occurs earlier and more frequently during gestation than at other times, its incidence and mortality of appendicitis are higher in the pregnant than in the non pregnant woman, and the mortality is higher in cases in which no operation is performed than in those which submit to surgical intervention. The symptoms vary considerably and the difficulties of diagnosis increase with advance in pregnancy. Mild cases often escape examination and are attributed to the state of pregnancy only. Labour is very dangerous in appendicitis, relief occurs immediately after delivery, but is soon followed by a rapid aggravation of the symptoms, and the diagnosis is often very difficult in the puerperium. Surgical treatment is definitely indicated in every case of acute appendicitis, the operation should be performed as soon as possible during the attack and at an early stage of pregnancy. The operative technique is almost identical with that for appendicitis apart from pregnancy. Barbaro adds that it is advisable to remove the appendix from every woman who has had one or more attacks, in order to prevent the severe complications which may occur during pregnancy.

#### 20 Paget's Disease of the Vulva.

E. VAN DER HOOP, C. BONNE, and W. F. WASSINK (*Amer. J. Gynecol. & Obstet.*, April 9th, 1927, p. 1833) record the third case to be published of Paget's disease of the vulva. In a married woman, aged 43, the subject of psoriasis, an eczematoid eruption of the vulva had developed four years previously, it resembled Paget's disease of the nipple and was accompanied by much irritation. About four months before admission to hospital a growth appeared in the right labium minus which proved to be carcinoma. The vulva, including the clitoris, labia minora, and the skin of the labia majora, was excised and subsequent recovery was uneventful.

#### 21 Precancerous Change of the Cervical Epithelium.

O. V. FRANQUE (*Zentralbl. f. Gynak.*, April 9th, 1927, p. 898) and H. HINSELMANN (ibid., p. 901) refer to the importance of recognition of leucoplakia of the cervix uteri as a condition which, whether considered to be a pre-carcinomatous stage or a commencing carcinoma, demands speedy radical treatment. Leucoplakia in the cervix, described twenty years ago by von Franque, is a condition of which Hinselmann has only been able to find six reports in the literature, nevertheless Hinselmann, examining the cervix by his colposcope with magnification of three to fourteen times, has detected two cases among a series of 220 during nine months. The cervix was amputated in both these instances, and the histological findings, described and illustrated by von Franque, in the epithelium of the margins of the patches of leucoplakia, are regarded as justifying this treatment. Hinselmann believes that colposcopy is of great value in recognition of precancerous or early carcinomatous states of the cervix uteri.

## Pathology.

### 22. Serological Classification of Fusiform Bacilli.

P. L. VARNEY (*Journal of Bacteriology*, April, 1927, p. 275) has isolated eighteen strains of fusiform bacilli from the mouths of normal and diseased persons. The method he used was to streak 4 per cent human blood agar plates with the undiluted pus, sputa, or mucus, incubate them anaerobically for two days, and examine the colonies under a dissecting microscope. Single colonies were transplanted to fresh plates, and the process was repeated until pure cultures were obtained. Among the eighteen strains isolated there were four different morphological types: Type I, filamentous bacilli; Type II, of short wavy filamentous bacilli; Type III, of long wavy filamentous bacilli; and Type IV, of broad stubby bacilli, such as Vincent's spirillum, mixed together in the same culture, and have concluded that the bacilli and the spirilla were two forms of a single organism. According to Varney, however, this is undoubtedly erroneous, fusiform bacilli and spirilla are two entirely separate organisms, a mixture of the two occurring only in impure cultures. The spirillar forms of Type III are not likely to be confused with the spirilla. A serological study was then made of the different types. Antigens, both for immunization and for agglutination, were prepared by washing off forty-eight hour blood agar cultures with saline serum. Serums were prepared only against the first two types. The results showed that the eighteen strains could be divided into three main serological types by direct agglutination, Types I and II have each a subgroup. No antigen could be prepared for the broad stubby bacilli, but as these organisms differed morphologically from the others, they have been grouped as Type IV. The wavy bacilli failed to agglutinate with either Types I or II serums, and are therefore classed as Type III. The author concludes with a full morphological and cultural description of the organisms of the different types.

### 23 Calcification of the Kidney.

W. S. PUGH (*Urol. and Cut. Rev.*, April, 1927, p. 208), who records an illustrative case, states that occasional areas of punctate calcification are not uncommon in the kidney, though they may be so small as to be easily overlooked. Oppenheimer in 9.8 per cent of 347 necropsies recorded peripheral punctate calcification, one being found in over sixteen persons over 30 years of age, the youngest being 16 and the oldest 89. More than three-fourths of his cases occurred after the age of 50. Experimentally calcification is readily produced in the kidney by ligaturing the renal artery or the ureter. The deposit in such cases is usually in the form of calcium phosphate, while that produced by a disease process is usually calcium carbonate. A study of the literature shows that lime may be found in the kidney under the following conditions: (1) in the papillae in advanced age, (2) in resorptive processes of the skeleton, (3) in interventions such as those due to mercury and phosphorus, (4) in fibrous atrophied glomeruli, (5) in the renal pyramids in small pox, (6) in children with catarrhal enteritis and in scarlet fever, (7) in renal tuberculosis, (8) possibly as a post mortem change. Pugh's case occurred in a man, aged 34, who after five intravenous injections of 10 c.c. of a 1 per cent solution of mercuriochrome for chronic prostatitis, developed chills, fever, pain over the left kidney, and considerable salivation. X-rays showed calcification of the left kidney. The urine was apparently normal. Complete collapse and death supervened.

### 24 Etiology of Intestinal and Genital Tuberculosis.

J. TRIAS (*La Med. Ibera*, May 21st, 1927, p. 567) states that two forms of intestinal tuberculosis can be distinguished from the pathogenic standpoint. The first is found in the last stage of pulmonary tuberculosis, in which massive ingestion of tubercle bacilli is followed by their localization in the intestine and subsequent formation of intestinal lesions which are inoperable. The second form is of much greater theoretical interest, because the pathogenesis is not so clear as in the first form. It is also of greater practical interest, because it usually occurs in persons in whom the lesion is curable by surgical intervention. In the female sex transmission of tuberculous lesions of the adnexa to the intestine is possible by direct contiguity or by lymphatic channels, while in the male sex only the last route is available, the epididymis being the analogue of the Fallopian tube. Transmission by direct contiguity in the male sex is possible only in cases of the vesiculæ seminales, which are partly invested by peritoneum. In fourteen cases of intestinal tuberculosis recently studied by Trias lesions of the epididymis were found in seven. The genital lesion is not usually the first but the second stage in a cycle, of which the other stages are a preliminary one of pulmonary tuberculosis and a final one of intestinal involvement.

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine

### 25. Hypersensitiveness Following Injection of Toxin Antitoxin

W E GATEWOOD and C W BALDIDGE (*Jour. Am. Med. Assoc.* April 2nd 1927 p 1063) record six examples of marked tissue hypersensitiveness in adults who had previously been given toxin antitoxin, and on injection with diphtheria or scarlet fever antitoxin developed the phenomenon of Arthus which consists in local necrosis at the site of serum injection. A STEWART (*ibid.*, April 16th, 1927 p 1220) states that in a series of ten animals which had received a single injection of 1 c.c. of 0.1 L. toxin antitoxin and a second intraperitoneal injection of diphtheria antitoxin sixteen days later symptoms of non fatal anaphylaxis appeared in various degrees of severity and after different intervals. In a second series of three animals which had been given three injections of 1 c.c. each of toxin antitoxin prompt anaphylactic death occurred in two instances with convulsions and cessation of respiration while the third animal remained well. Stewart also reports the case of an infant previously immunized by three injections of 0.1 L. toxin antitoxin who developed a prompt serious reaction after an injection of 5 CCG units of antitoxin for diphtheria fourteen months later in spite of a small desensitizing dose twenty minutes previously. To avoid such anaphylactic reactions the authors advise the use of a preparation containing serum other than that of horses such as goat's serum which is recommended by Healer or the use of a toxin detoxified by sodium bicarbonate.

### 26. Hodgkin's Disease

S GINSBURG (*Arch. Int. Med.*, April 15th 1927 p 571) considers that Hodgkin's disease must no longer be regarded as a specific enlargement of the lymph glands and spleen with occasional deposits in other viscera associated with severe secondary anaemia. He maintains that it is a specific malignant general disease, with protean manifestations in which any tissue or organ may become clinically primary and predominantly affected. The condition is characterized by a specific hyperplasia of the reticulo endothelial elements the cellular proliferative stage being followed by necrosis and fibrosis, with increasing toxemia and anaemia as the disease advances. Ginsburg states that the nervous system may become clinically primarily, and predominantly affected and give rise to symptoms for months or years before there is any demonstrable enlargement of the lymph nodes or spleen. In thirty six cases of Hodgkin's disease observed between 1914 and 1925 invasion of the nervous system was recognized in ten cases or 27.7 per cent. He adds that diagnosis of involvement of the nervous system depends on thorough and complete study of all the clinical signs and symptoms, a neurological examination even if supplemented by laboratory tests, is insufficient. In doubtful cases the radiotherapeutic test may give considerable assistance since the lesions in Hodgkin's disease are very radio sensitive before the onset of extensive degenerative fibrotic changes. Quick subsidence of pressure phenomena may give a clue to the diagnosis and relieve an early paraplegia or brain lesion. Ginsburg considers radiotherapy the chief measure in treating this malignant disease, but adds that it must be used early, for it has no efficacy in old fibrotic stages.

### 27. Mumps in a Danish Island.

S ROHLER (*Ugeskrift for Læger*, April 14th 1927 p 294) describes an epidemic of mumps in a village on one of the Danish islands about thirty years after there had been any case of this disease in the district. The epidemic began in June 1925 and lasted till the beginning of October. It was introduced by a young fisherman who had been infected on board an English trawler and who became ill a few days after his return home. The evening before he fell ill he took part in a public dance with the result that two to three weeks later many new cases developed. The only preventive measures taken were to isolate the patients themselves and to keep the children of school age belonging to the infected families away from school as long as the affected glands were swollen. There were seventeen houses in the village occupied by forty persons under the age of 30 which remained totally immune. It would therefore seem that infection with mumps always depends on direct contact between persons and that this contact must be close. In fourteen other houses all the inhabitants under the age of 30 were attacked, they numbered 51. In nineteen other

houses most of the inhabitants under 30 were attacked but a few remained immune in spite of daily and intimate contact with one or more of the patients. Among the 390 inhabitants of the village there were 210 under the age of 30 living at home and of these 210 persons as many as 121 were attacked. The young men were more immune than the young women possibly because the latter remained more indoors and in closer contact with the patients but their natural immunity may also have been less. Only 4 persons over the age of 30 developed the disease. The author treated altogether 131 cases of which 74 were bilateral in most of these bilateral cases the swelling was greater on one side than on the other. In 53 cases the disease was unilateral or almost so—that is there was only a suspicion of a swelling on the other side. In 3 cases, both the parotid and the submaxillary glands were involved and in one case the submaxillary gland alone was swollen.

### 28. Spirochaetosis Icterohaemorrhagica

C C E BURGER (*Nederl. Tijdschr. Genees.* May 7th 1927 p 2450) alludes to the case recently recorded by I C Clijndert jun (*Lijp.*, March 12th 1927 part 270) and records a case in a soldier aged 19. Apart from vertigo and loss of consciousness, the patient did not appear to be ill and his complaint was at first mistaken for ordinary catarrhal jaundice. A fresh rise of temperature however with increase of the jaundice on the thirteenth day as well as the pre existing nephritis and complaints of vertigo and clamps in the calves suggested the possibility of Weil's disease which was confirmed by serological and bacteriological tests. Another feature of the case was the peculiar orange tint of the jaundice which appears to be more or less typical of the disease. The patient also had a morbilliform rash on the chest, abdomen and arms, the occurrence of which in spirochaetosis is mentioned by Miles. The patient was in Clevier's case probably contracted his infection in a contaminated bathing place.

## Surgery

### 29. Diagnosis of Gastric Carcinoma.

V C MACCARTHY (*Brit. Journ. Med. Sci.* April 1927 p 466) is the result of investigating 967 cases of gastric ulcer and 1353 of carcinoma reports that when multiple chronic ulcerations occur alone may be found to be carcinomatous. Chronic ulcers whether simple or malignant vary greatly in size those larger than 2.5 cm in diameter usually show carcinomatous change though this is less frequent in subacute perforating ulcers. The smallest gastric carcinomas have been seen in the borders of simple chronic ulcers not in the base when found in the base the malignant change is always in the border (mucosa). The reverse of this is not always the case. Studies of living and unfixed fresh cells of the gastric tubules in the borders of chronic ulcers reveal significant facts. In some ulcers the cells of the tubules are columnar (normal) with small spheroidal nuclei and inconspicuous nucleoli. In others these cells are replaced by ovoid or spherical cells with large nuclei and nucleoli which are morphologically indistinguishable from malignant cells. In such ulcers the cells are all apparently intratubular. Though this is not a carcinomatous picture MacCarthy considers it suspicious and states that wide removal is the safest procedure. He suggests that this appearance might easily be overlooked by pathologists who are not cytologists, and are acquainted only with post mortem or fixed and embedded tissues. In some chronic ulcers this condition is found associated with the presence of the cells on the side of the tubule in the submucosa and lymphatics. This is a true carcinoma. MacCarthy adds that the differential diagnosis by clinical examination between early carcinoma and simple gastric ulcer is impossible.

### 30. Bone Changes in Renal Rickets.

ACCORDING TO E P BROCKMAN (*Brit. Journ. Surg.* April 1927 p 634) the occurrence in children of chronic interstitial nephritis associated with bone changes resembling rickets has been noticed in recent years. In a recorded case all the organs were normal except the kidneys which were both excellent examples of the condition known as compensated cystic kidney. Histological examination showed the changes of chronic interstitial nephritis. It was found that in



"renal rickets" the shafts are straight and the deformities are due to separation and displacement of the epiphyses. Osteotomy is not to be advised in view of the risk of necrosis being caused by the anaesthesia, and also the deformities tend to recur. The renal marrow is replaced by fat and there is very little new bone formation. There is active bone absorption by osteoclasts, and replacement of the absorbed bone by fibrous tissue. It appears that the nephritis exists for a long time before the appearance of the deformities. The lower ends of the bones are involved first. It is suggested that the renal failure allows a toxic condition to arise which affects the cells in the region of the growing disc and also the red cells of the marrow. Another view is that the factor producing the nephritis may also subsequently cause the bone changes to occur. There is no evidence that the condition is due to an ascending infection of the ureters or that it is related to nutritional changes.

### 31 Gonorrhoeal Arthritis Treated by Operation

LEFVRE, COSTEDOT, and JONCHERES (*Journ de Med de Bordeaux et du Sud-Ouest*, April 10th, 1927, p. 285) report the successful treatment of a gonococcal infection of the knee by incision. A man, aged 30, bruised his left knee about three weeks after an attack of gonorrhoea, a few days later a painful swelling of the knee appeared, and also stiffness, pain, and swelling of the left shoulder. The knee became globular, the local temperature was raised, there was per articular thickening, with oedema, and very definite intra articular fluctuation. Arthrotomy by simple lateral parapatellar incision was performed and purulent fluid was removed. Neither irrigation nor drainage was employed. On the next day passive movements were begun in spite of the existence of severe pain. As on the ninth day there was slight retention of pus with fever, a wick and a small drainage tube were inserted. Injections of gonococcal vaccine were given. An abundant flow of serous fluid persisted for more than two months, but the arthritis of the shoulder subsided rapidly. The knee retained its globular form, with serious muscular atrophy, particularly of the quadriceps, but the range of movement became normal, although there was very considerable relaxation of the ligaments.

### 32 Surgical Treatment of Herpes Zoster

G. PIERI (*Arch Ital di Clin*, April, 1927, p. 545) records the case of a man, aged 63, who developed left thoracic herpes zoster, followed by persistent neuralgia, which was not relieved by any of the ordinary analgesics. The ganglion of the fourth intercostal nerve was resected, and was found to be the seat of a chronic inflammatory process characterized by an abundant infiltration, with plasma cells and lymphocytes distributed diffusely or in more or less circumscribed foci. The nerve elements (cells and fibres) were mostly destroyed. The nerve trunks in the immediate neighbourhood of the ganglion showed evidence of interstitial neuritis. The operation cured the neuralgia and there has been no return of pain or disturbance of any kind during the subsequent ten months. Pieri concludes that resection of a spinal ganglion is indicated in cases of obstinate neuralgia of the spinal nerves following herpes zoster, in preference to resection of the posterior roots, which is a more severe operation.

### 33 Echinococcus in Iceland

S. MATTHIASSEN (*Ugeskrift for Læger*, April 28th, 1927, p. 348) draws attention to the remarkable decline in the incidence of echinococcosis in Iceland during the last sixty years. From being the most infected country in the world in this respect Iceland is now outdistanced by Tunis, Morocco, and certain other countries bounding the Mediterranean. Sixty years ago it was calculated that 20 per 1,000 of the inhabitants of Iceland were infected. The estimate made of late years of an incidence of one case per 1,500 inhabitants is probably too high. Twenty-five years ago, in the author's hospital experience, echinococcus operations were the most common abdominal operations, whereas at the present time he performs such operations only three to five times a year. He attributes this improvement to the better standards of living and the increase in the number of doctors from eight, sixty years ago, to about ninety at the present time. The proportion of dogs to human beings has also greatly changed, in 1863 there was one dog to three to five persons. Legislation in 1869 and 1890 imposed a tax of 2 to 10 krona for every dog, and at the present time there is only one dog to every fifteen persons. It also obliged all persons concerned with the slaughter of animals to burn or bury echinococcus cysts and infected offal, and local authorities were authorized to issue regulations concerning courses of vermicidal treatment of dogs every autumn after the slaughtering season, and to see that these regulations were enforced.

## Therapeutics.

### 34 Stovarsol in Malaria

M. FREIMAN (*Journ Trop Med and Hygiene*, May 16th, 1927, p. 127) describes the results of treating ninety-three cases of malaria with stovarsol, which is acetyl amino oxyphenyl isonic acid. The drug was given by the mouth in tablets containing 4 grains of active substance, the doses for infants under 1 year being half to one tablet daily, for children 1 to 6 years old, one to two tablets daily, from 6 to 10 years, three tablets daily, and over 10 years old, four tablets daily. Toxic symptoms were only observed in one patient—an adult. In acute cases the preparation was given in full doses until the blood test was negative, and continued uninterruptedly in half doses for three weeks. In chronic cases it was given in courses with intervals of ten days between each course. Forty-five patients with benign tertian malaria responded well, they were considered cured when free from parasites and clinical symptoms for three months. In four cases of pregnancy stovarsol was well tolerated, and it was found effective in cases refractory to quinine. No action was observed on parasites or symptoms in twenty cases of quartan malaria and in five of subtertian. Freiman concludes that this preparation has a specific action on *Plasmodium vivax*, but is ineffective when the infection is due to *Plasmodium malariae* or *falciparum*.

35 F. GUERIN, E. BORTL, and M. ADYER (*Bull Soc Path Exot*, April, 1927, p. 331) have attempted to estimate the value of stovarsol in the treatment of the various types of malaria. They tried to give effect to Sinton's rules for testing the efficacy of any treatment, but found that some of these could not be complied with in the conditions under which they worked. Sodium stovarsol was used, 1 gram being given intravenously in 8 c.c. of the vehicle. Temperature and blood observations were made during the following three days. The authors conclude that stovarsol has no direct action in malaria except in infections with *Plasmodium vivax*, that even in such cases, although all parasites may disappear temporarily from the blood, relapse within two months is the rule, and that in benign tertian cases stovarsol causes a febrile reaction not produced in the other infections. They agree, however, that stovarsol is a valuable adjunct to quinine in quartan and subtertian cases, and consider it a very effective remedy in benign malaria, although not a definitely emetive drug.

### 36 Manganese in the Treatment of Pulmonary Tuberculosis

O. HELMS and J. FREDERIKSEN (*Ugeskrift for Læger*, May 5th, 1927, p. 371) started in the summer of 1924, at the Nakke hofsfjord Sanatorium in Denmark, intravenous injections of minute doses of manganese. This treatment was based on the experimental work of Walbum, who found that the injection of small quantities of metallic salts stimulated the tissues of animals to produce antibodies. By November 1st, 1926, 115 patients had completed courses of manganese treatment, and 97 had been discharged. Only 42 were in the first stage of the disease, 27 being in the second, and 46 in the third stage. Of the other sanatorium patients who were discharged without having had this treatment only 48 per cent were in the second and third stages of the disease. Thus the manganese treated patients were on the whole more ill than the others. The injections were usually given twice a week, and in most cases each patient received from twenty to thirty. There was little or no reaction, and in no case were alarming symptoms provoked. On the completion of the treatment 70 patients were improved, 43 were unaffected by it, and 2 were worse. The average duration of the treatment was sixty-seven days. Before the treatment 87 patients coughed up sputum, at the end of the treatment only 47 patients did so. In 15 other cases there was an appreciable reduction of the sputum, the amount of which was unchanged in 31 cases. Only in one case did the sputum increase during the treatment. Of the 115 patients, 27 had tubercle bacilli in the sputum before admission to the sanatorium, but not while in it, 69 were found to have tubercle bacilli while in the sanatorium. Thus there were altogether 95 who had, or had had, tubercle bacilli in the sputum. Of the 69, as many as 39 were sputum negative at the end of the treatment. Whereas tubercle bacilli occur in some cases in the sputum after they have been temporarily banished by stovarsol, this phenomenon is very rare in patients treated by manganese, and the authors conclude that this treatment is not only conservative, but is capable of rendering sputum negative in a greater proportion of patients than any other methods of treatment.



**37. Intracardiac Injections of Adrenaline.**  
H. HARTMANN (*Bull et Mem. Soc. Nat. de Chir.*, May 14, 1927, p. 625) draws attention to the value of injecting adrenaline into the heart when the beat has recently ceased, and reports three cases observed by J. Delaguerre. In the first, a man, aged 49, after being anaesthetized with ethyl chloride for an operation for anal fistula ceased to breathe, and the heart beat could not be detected. Artificial respiration was unsuccessful, but after about five or six minutes 1 c.c. of 1 in 1,000 solution of adrenaline was injected into the heart and was quickly followed by return of the pulse and natural respiration. Similar success followed the use of adrenaline in a case of heart failure during appendicectomy, but it failed in an eclamptic patient presumably owing to her toxic condition. Hartmann reports a successful case of his own and, by way of contrast, describes five cases in which the procedure failed to restore life. He believes that it is essential in such emergencies to combine artificial respiration and rhythmical traction of the tongue with intracardiac injections of adrenaline.

**38. Salvarsan in Quiescent Syphilis.**  
E. L. GLYNN, R. E. ROBERTS, and PHOEBE M. BIGLAND (*Brit. Jour. Ven. Dis.*, April, 1927, p. 83) as the results of investigations extending over a period of five years emphasize the value of prompt treatment of active syphilis by salvarsan and mercury, and add that the use of mercury alone is unsatisfactory, even when the Wassermann reaction is negative. Mercury seemed to increase rather than diminish the possibility of the return of a positive reaction. They add that such a Wassermann relapse signifies renewed spirochaetal activity, since salvarsan is a more potent spirochaetocide than mercury, extra courses of the former will prove more successful than mercury in preventing Wassermann relapses and in destroying any residual spirochaetes. The value of mercury in clinically active syphilis is admitted and it is only its value in quiescent syphilis when the Wassermann reaction is negative that is criticized. Mercury is admittedly a cumulative poison and may depress the patient's immunity.

## Anaesthetics.

**39. Novocain Analgesia for Amputation of the Breast.**  
I. A. ANDREJEV (*Deut. Zeit. f. Chir.*, April 1927, p. 349) states that the employment of local anaesthesia and its indications have been considerably extended during the last few years. Thus in Schaeck's clinic 78 per cent of all operations are successfully performed by this method. Recently a number of surgeons such as Chaput, Hirschel, Brann, Meyer, Lberle and Kran have successfully used local anaesthesia for radical operation of the breast for carcinoma. Andrejev now records twelve cases of mammary cancer in women aged from 25 to 76 in whom the radical operation was performed under local anaesthesia at the surgical clinic of the Leningrad faculty of medicine. The indications for local anaesthesia were advanced age, cachexia, changes in the vessels, heart, liver, kidneys, diabetes and pregnancy. The term 'radical operation' includes amputation of the breast with removal of the pectoralis major and minor, clearing out of the axilla as well as the lymph glands of the infraclavicular region and, if necessary, the supraclavicular region as well. The local anaesthesia required is obtained in the following three stages: (1) Anaesthesia of the brachial plexus according to Kulenkampf's method with 20 c.c. of a 2 per cent solution or 30 to 40 c.c. of a 1 per cent solution of novocain. (2) Intercostal anaesthesia of the upper six intercostal nerves with 15 c.c. of 1/2 per cent solution of novocain. (3) Injection of the medial portion of the operation field with 1/2 per cent novocain-adrenaline solution. Andrejev never found it necessary to exceed a total amount of 300 c.c. of a 1/2 per cent solution of novocain. No complications of any kind were observed either during or after the operation. The time required to produce the anaesthesia ranged from ten to fifteen minutes. Almost all Andrejev's patients had enlarged glands in the axilla and subclavicular region and there was recurrence in two cases. As a rule the operation was quite painless; only two complained of pain while the axilla was being cleared out and required ether. The post-operative course was uneventful, although four of the patients were over 60.

**40. Intratracheal Administration of Ether.**  
F. W. GREEN (*Med. Jour. of Australia*, April 23rd 1927, p. 398) has for five years used as a routine the intratracheal method of administering ether and finds it of particular value in operations in which there is danger of blood or mucus entering the air passages. In tracheotomies operations it provides a positive lung pressure, and in operations such as

laminectomy, and nephrectomy, the postural difficulties are overcome. The method eliminates any local respiratory obstruction from spasm or congestion of the tongue, pharynx, or upper air passages. Green finds that the tendency to vomiting is much diminished and that there is a lesser liability to pulmonary complications, which in his last 600 cases, occurred in only 0.5 per cent. He describes the technique of administration and mentions that he gives 10 grains of chloroform on the previous night and another dose one hour before the operation together with 1/150 gram of atropine. The use of warmed ether is said to be essential, and care must be taken not to overfill the receiver. Green adds that quiet respiratory movements should accompany the anaesthesia after induction and the patient's face should retain a pink color. The appearance of cyanosis indicates that the ether has been too large or has not been passed far enough into the trachea.

**41. Gastric Dilatation during General Anaesthesia.**  
W. A. McIVER (*Annals of Surgery*, May 1927, p. 704) discusses the occurrence of acute dilatation of the stomach during the administration of a general anaesthetic such as ether and reports experiments which indicate that the gas concerned is atmospheric air. He produced such acute dilatation experimentally in animals and attributes its appearance to negative pressure in the thorax, the air being forced downwards into the stomach, which acts as a reservoir since its muscle tone is lowered by etherization. Oesophageal peristalsis is also believed to play an important part. He reports the case of a man, aged 23, in whom gastric dilatation occurred during an operation for acute perforation of a duodenal ulcer and refers to other examples in the literature. He adds that the immediate systemic effects of dilatation are slight, though the later effects in neglected cases may be serious. He attributes many of the symptoms to severe dehydration of the tissues.

**42. Spinal Anaesthesia and Intestinal Motility.**  
F. D. ALSTON (*Rev. med. de Barcelonn.*, March 1927, p. 227) records eighteen illustrative cases, in patients aged from 17 to 79, whom he classifies in the following three groups: (1) ordinary cases in which the intestinal motility had not been affected; (2) cases of dynamic ileus; (3) cases of mechanical ileus. His conclusions are as follows: (1) Spinal anaesthesia gives rise to an immediate increase of intestinal peristalsis which is very intense and persists for a long time. (2) Intestinal motility which is increased by spinal anaesthesia is inhibited by atropine under the influence of which the intestine returns to a complete state of rest. (3) Intestinal motility is also inhibited by inhalation of chloroform, the action of which persists only during deep anaesthesia. (4) The increase of intestinal motility produced by spinal anaesthesia is due to a temporary blocking of the preganglionic fibres of the splanchnic by the anaesthetic which becomes diffused into the subarachnoid space. (5) A proof of this action of spinal anaesthesia on intestinal motility is furnished by the section of the splanchnic nerves when the results are similar to those obtained by spinal anaesthesia. (6) In ordinary cases neither vomit nor post-operative paralysis of the intestine occurs. In dynamic ileus it puts an end to the symptoms, especially when peritonitis is present in mechanical ileus, though it is not able to remove the mechanical obstruction, as soon as this has been effected by surgical means the retained intestinal content are rapidly expelled. (7) The effects of spinal anaesthesia on intestinal motility are superior to all other methods as regards intensity, duration, and effect.

## Obstetrics and Gynaecology.

**43. Tubal Insufflation.**  
As the result of comparative observation of 112 cases of sterility and a number of normal confinements R. A. TSCHERTOK (*Zentralbl. f. Gynäk.*, April 16th 1927, p. 395) concludes that insufflation of the Fallopian tubes first described by Rubin in 1920 is a very reliable method of diagnosing patency of the tubes. He suggests that it might also be valuable occasionally in distinguishing a tubal swelling from an ovarian tumour or a subserous fibroid. His insufflation results were confirmed in 20 out of 21 patients who subsequently came to laparotomy. In one of the other cases the tubes were found impervious six days after insufflation but patent ten days later. In unsuitable patients such as those with cervical discharge, haemorrhage or fibroids are avoided and a careful technique is adopted, anaesthesia is not required and the risk of most of the complications mentioned in the literature is practically eliminated. Tschertok found that the so-called characteristic sound of gas escaping into the peritoneal cavity from the

umbilical ostium, audible in the iliac fossa, may be produced at the internal end of an occluded hydrotome. He considers the subjective sensations of the patient and the alteration in resistance of the rubber injection bulb palpable by the observer as hard to be unchangeable guides. He therefore connects a Woulfe's bottle with the tubing of the apparatus and injects air till the manometer reading is 80 mm. After this he continues more slowly, never exceeding a pressure of 180 mm., until bubbles appear in the Woulfe's bottle, this coincides with the escape of air into the peritoneal cavity. As the value of the test depends on occlusion of the whole cervical canal, and not merely of the external os, Tschertok uses a hollow dilator with a conical end measuring 3 mm. in diameter at the tip, 6 mm. at the base, and 2½ cm. in length. It has a stem of uniform thickness, which is bent at an obtuse angle to correspond with the junction of the cavity of the uterus with the cervical canal. If air is escaping through the external os during insufflation a hissing sound is produced. The author emphasizes the importance of uniform technique when comparing the statistics of primary and secondary sterility obtained by different workers.

#### 44 Heart Disease and Pregnancy

L. E. HAMILTON and F. S. KELLOGG (*Inner Journ Obstet and Gynecol.*, April, 1927, p. 535) discuss the obstetric management of cardiac patients, based upon observations in 822 cases in hospital and private practice. The great majority of patients with significant cardiac lesions complicating pregnancy have rheumatic heart disease with mitral stenosis and/or aortic regurgitation, during pregnancy there should be careful co-operation between the physician and the obstetrician. Early termination of pregnancy is advised when there are clear signs of congestive heart failure, a complicating nephritis, hypotension, auricular fibrillation, or a recent attack of rheumatic fever. Should decompensation occur during pregnancy the patient requires treatment in hospital until the pregnancy is terminated. Such a condition arising in cardiac patients previously not disabled is due to non observance of rules as to rest, to unforeseen intercurrent disease, and occasionally to some sudden cardiac complication such as auricular fibrillation. If operative measures become necessary the authors advocate ether anaesthesia by the open method as the anaesthetic of choice as being preferable to scopolamine, morphine, and local anaesthesia, because it is safer, it enables a Caesarean section to be performed more rapidly, and it obviates the danger of having to change over to a general anaesthetic in cases where twilight sleep excites the patient and renders her more liable to acute cardiac failure. They also consider it safer for the majority of multiparous patients with heart disease to be delivered by forceps at full dilatation, with sterilization if necessary some months later, than for a Caesarean section, with its added risk, to be performed for the sake of sterilization. They add that every obstetric hospital should have a cardiac clinic since it is only by accumulation of clinical data that the problems of heart disease complicating pregnancy can be solved.

#### 45 The Use of Iodized Oil in Gynaecology

I. B. STRIN and R. A. ARNS (*Radiology*, June, 1927, p. 494) recommend the use of iodized oil in gynaecological conditions when diagnosis can be facilitated by radiography. The uterine and tubal lumina can be clearly depicted thus, and the site of tubal obstruction sharply defined. This method of examination is said to be of less value when the internal wall is diseased, since the general contour of the organ, rather than its lumen, is altered, it is also of little or no value in the diagnosis of ovarian disease. Transuterine insufflation of carbon dioxide is described as a safe and useful procedure in gynaecology. Neither method is advocated for routine use, but only in selected cases, a combination of the two methods is said, however, to yield more information about the pelvic organs than any procedure other than intraperitoneal exploration.

## Pathology.

#### 46 Sensory Innervation of the Peritoneum and Appendix

M. DE VINCENTIS (*Il Polichino*, Sez. Prat., May 9th, 1927, p. 671), from observations during operation on cases of acute appendicitis and inguinal hernia, under spinal anaesthesia, the injections being between the twelfth dorsal and first lumbar vertebrae, reports that pinching the parietal peritoneum at the margin of the incision caused immediate pain in the back, followed by itching or burning sensation, stretching the appendix with the fingers caused no pain, but pulling on the mesentery of the appendix caused localized pain in the epigastrium. Cutting out the appendix which was swollen and vascular caused no pain. In operating on

hernia pain referred to the region of the stomach followed the stretching of the hernial sac, and also after each ligature of the omentum, but the other stages of the operation were not attended with pain. From this it appears that the painful sensations are conveyed by the large and small splanchnic nerves—that is, through the sympathetic system. The author concludes that the parietal peritoneum and the mesenteries are provided with sensitive nerve fibres derived from the sympathetic, which receives painful sensations only as the result of tension. He thinks it probable that many pains provoked in the intestines and appendix as the result of inflammation or functional disturbances depend on a mechanical lesion of the ligature of the omentum.

As pain, the pain of strangulated hernia should be regarded as arising from strangulation of the omentum. Epigastric pain, so common in diseases of the intestines and appendix, is stated to be a referred visceral sensation and derived neither from the coeliac ganglion nor from the solar plexus.

#### 47 Estimation of the Gastric and Intestinal Functions

J. BUCKSTEIN (*Med Journ and Record*, May, 1927, p. 610) advocates the use of a celluloid capsule for investigation of peptic activity and acidity, of the intra intestinal digestive function, and of gastro intestinal motility. A small piece of Congo red paper is placed within a perforated celluloid capsule. The capsule, attached to a silk string, is swallowed for a distance of 24 inches from the tooth, and after being left in the stomach for some minutes is withdrawn. The presence of free hydrochloric acid will be indicated by the paper becoming blue. The peptic activity of the gastric secretion can be studied by introducing a small Mott tube within the capsule, which is swallowed at night and removed the following morning before breakfast. For the determination of lipase an Einhorn capillary tube is placed within the capsule, swallowed at night for a distance of 36 inches from the teeth, and removed the following morning. In the presence of lipolytic digestion there is a change in the colour of the Nile blue sulphate contained in the capillary tube. The efficiency of intestinal digestion is tested in the following manner: small pieces of meat fibre, mutton fat, and potato are placed within the perforated celluloid capsule, which is then swallowed and removed as in the previous investigation. A marked resistance to digestion of any one of the three substances might be an indication for the diminution of that type of foodstuff from the dietary. Again, a small amount of bromum may be placed within the capsule, which is then sealed and swallowed. The course of the capsule as it traverses the entire canal may be followed radiographically, and the total time required for passing through the intestinal tract can be observed.

#### 48 Treatment of Rat Sarcoma with Antiserums

E. HARDE and P. HILNPI (*C. R. Soc. de Biologie*, May 20th, 1927, p. 1277) state that they have been able to confirm Lumsden's results on the antiserum method of treatment of tumours in rats. Altogether 38 rats were treated with serum, 19 rats served as controls. The best results were obtained by treatment with fresh serum, serum which had been kept in the ice chest for two or three weeks were apparently inactive. Thus 11 rats with a tumour on the flank were treated with fresh serum, and 8 of them were either cured or very much improved, on the other hand, 5 rats with similar tumours were injected with serum that was two or three weeks old, none of them was cured, though in 2 an inhibitory action was noticed. Again, 6 out of 9 rats with tumours of the paws were cured after the injection of fresh serum, whereas of 3 rats treated with the older serum 1 of one was improved. The authors consider that the beneficial action of the serum is therefore due largely to the lytic effect contained in it. They found that if in a rat suffering from a tumour on each of its hind paws the serum injection was made on one side only, the disappearance of the tumour on the treated side was often, though not invariably, followed by disappearance of the tumour on the other side. However, held good only with tumours on the paws, rats with tumours on the flank this was not observed. The results were obtained with an anti Jensen rat sarcoma serum. The action of an anti embryonic serum was then tested. It was prepared by the injection of embryonic tissue of a horse or fowl into rabbits. *In vitro* this serum had a marked lytic action towards tumour cells, in *vivo* the lytic effect was said to be less than that of the fresh serum. Thus 8 animals with tumours on the paws or flanks were injected with the anti embryonic serum, 4 of them were cured, and 2 showed improvement or arrest of development. Comparing the figures relating to treatment with fresh serum only it is seen that of 20 rats treated with specific serum 14 were cured, of 8 rats treated with embryonic serum 4 were cured.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

### 42. Isolation of Patients with Scarlet Fever

P. M. HOLST (*Lancet* & *Norsk Tidsskr.* April 15th 1927 p. 407) doubts the necessity of isolating patients with scarlet fever. In his Norway and Sweden the mortality from this infectious has fallen greatly during the last two or three generations but, though it cannot be claimed that isolation was more strictly enforced in Norway than in Sweden the great fall in the mortality occurred ten years earlier in Norway than in Sweden. The higher mortality in Sweden has continued since, it has only been twice as high in Sweden as in Norway. In November, 1910 the public health authorities in Bergen decided to discontinue the strict isolation and hospitalization which had hitherto been enforced. Scarletina henceforth being treated as lightly as measles and whooping cough, with the exception that notification and disinfection of the illness remained obligatory. By December 1925 the medical officer of health for Bergen could claim that the experience of the past sixteen years had given no reason for regretting this relaxation of the compulsory measures. As regards scarletina. As early as 1927 the public health authorities of Trondheim also relaxed the regulations concerning the isolation and hospitalization of cases of scarletina and again no ill effects were apparent. Since 1921 Svinger has followed suit, and with the same success. In Oslo however isolation has been maintained up to the present time and the tables published by the author show that Bergen has continued to suffer much less from scarletina than Oslo. The author concludes that the systematic isolation of cases of scarletina entails great sacrifices which in the present economic conditions it is difficult to justify. He thinks however, that it is probable that the disease will sooner or later change its character, and it may then be desirable to return to the former measures the necessity for which he doubts at the present time.

### 53. Infections Mononucleosis

J. E. COTTELL (*Ann. Journ. Med. Sci.* April 1927 p. 472) who reports twelve cases in patients aged from 13 to 26 with a review of the literature, states that the following are the salient features of infectious mononucleosis: (1) The usual general symptoms of an acute febrile disease of greater or less severity. (2) An increase in the lymphocytosis amounting to 40 per cent or more of the total leucocytosis. (3) Lymphadenopathy. (4) Angina in the form of hyperaemia of the fauces and pharynx or a severe ulcerative and exudative process involving tonsils, uvula or pharyngeal wall or all three. (5) Splenomegaly. (6) The frequent presence of Vincent's organisms in the ulcerative and exudative lesions. (7) Increase in the total number of leucocytes. The prognosis is invariably favourable and complications almost unknown. H. Fox (*ibid.* p. 486) records his observations on the histology of lymphatic tissue removed during the disease. There was marked hyperplasia especially of the small lymphoid cells and to a less extent of the small mononuclear phagocytosis of fragments but not the whole cells was seen. The lymphocytes appeared to be soft and degenerating. By intrastain staining the cells corresponded with the lymphoid elements. No monocytes were seen.

### 54. House Dust as a Cause of Bronchial Asthma.

A. H. POWE (*Arch. Int. Med.* April 15th 1927 p. 493) refers to his previous investigation of the etiology of bronchial asthma in children and young adults (see *Epitome* April 3rd 1926 para 359) and gives an account of his recent researches, which have led him to conclude that sensitization to house dust is by no means an uncommon factor in this condition. Skin tests with suspensions of dust were made in a series of 160 asthma patients, and positive reactions were obtained in 63. 20 patients with high fever also reacted. He found that a large number of patients had a characteristic history of dust sensitization, and he believes that dust react only in a dependent manner on one substance or on a summation of minor responses to several substances, such as animal emanations or root essences and various fabric dusts. That there may be an unknown specific substance in house dust is considered unlikely. Evidence was obtained that reactions to dust rarely occurred without one or more other reactions to proteins commonly used in testing. Rowe concludes that desensitization to house dust extracts which give definite reactions in the patient is probably advisable when a marked history of dust sensitization is present.

52

### Syphilophobia

A. JORDAN (*Lancet and Brit. Med. J.* April 1927 p. 234) states that this condition which was first described by Picard, may occur both among those with and without syphilis. Among 1,038 cases of syphilis which Jordan has treated in his private practice during the last thirteen years there were in all 71 cases (6.7 per cent) of syphilophobia. While however, in the period 1913-23 the number of cases of syphilophobia varied between two and six yearly in 1924 it rose to twenty-four, receding in the following year simultaneously with a decided fall in syphilis. In 1926 the number rose again to ten. Jordan's conclusions are as follows: There may be syphilophobia among the non-syphilitic as well as among the syphilitic and in both it may occur in a mild or severe form. As a general rule syphilophobia is a mild condition in non-syphilitic persons and a severe one in those who are syphilitic. In the non-syphilitic cases reassurance of the patient and explanation of the condition are usually sufficient while in the syphilitic psychotherapy must be combined with specific treatment.

53

### Tuberculosis and Intestinal Affections

J. A. SIEPMA (*La Med. Ibera* May 14th 1927 p. 531) does not agree with the usual view that there is an antagonism between tuberculosis and intestinal infections. He finds that tuberculosis and intestinal processes may coexist or follow one another in the course of an intestinal disease. Latent in the pre-tuberculous stage undergo a considerable aggravation of their condition if they contract typhoid or paratyphoid fever or a coliform infection. Intestinal disorders may in exceptional cases give rise to tuberculous sequelae in convalescence. Most intestinal infections of which the organism has not been discovered by laboratory methods are tuberculous processes. He concludes that every prolonged intestinal infection in which the Widal reaction is negative and no organism is found in the urine, faeces or blood should be regarded as tuberculous until the contrary has been proved.

54

### Toxin Antitoxin Immunization

J. L. LANN and E. C. BLACK (*Journ. Amer. Med. Assoc.* March 19th 1927 p. 895) state that Schick tests were performed on 15,562 of children belonging to the public schools of Kansas City with 8,687 (55.5 per cent) positive results. Of the 8,637 positive reactions 3,467 (23.6 per cent) of the total number tested were in boys and 7,200 (23.9 per cent) were in girls. Of the total number susceptible to diphtheria 3,553 children (38.6 per cent) were susceptible to both diphtheria and scarlet fever. Of those found susceptible 7,210 children (83.1 per cent) were given injections of toxin antitoxin. The result of this procedure has been that the number of cases of diphtheria has been reduced by 69.1 per cent since September 1925.

## Surgery

### 55. Phrenicotomy in the Treatment of Pulmonary Tuberculosis.

FLAPAD GUILLEMINET, and DE-JACQUES (*Lyon Chir.* March-April 1927, p. 134) discuss the value of the operation of phrenicotomy in producing collapse of the lung in pulmonary tuberculosis. By paralyzing that part of the diaphragm which rises up into the thorax the lesions are given rest the lung is allowed to retract and progressive sclerosis occurs in the affected parts. Though there is no such extensive collapse as in thoracoplasty beneficial results are obtained. The simple operation is attended with little risk and it practically always produces a very appreciable improvement in the condition of the patient. Combined with artificial pneumothorax it has also proved very satisfactory. In cases of tuberculous empyema it has been followed by notable improvement at once or when employed together with artificial pneumothorax. The authors state that in these cases the operation may be performed in three stages—namely aspiration of the pus, then phrenicotomy and finally thoracoplasty. This procedure has been followed by excellent results in patients severely ill.

56

### Torsion of the Gall Bladder

ACORDO and A. M. SHIPLEY (*Archives of Surgery*, May 1927, p. 953) torsion of the gall bladder is a somewhat rare condition. It is usually aches been partial and complete torsion. In complete torsion there is strangulation and gangrene.

whereas in incomplete cases the symptoms arise from interference with the drainage of the gall bladder, and more closely resemble those of chronic cholecystitis. The condition has usually been seen in females, particularly in elderly women who are thin and have relaxed abdominal walls. The volvulus may occur in either direction. In all cases the onset was sudden, with pain in the right side and vomiting. The outstanding feature was necrosis due to strangulation of the blood supply. The gall bladder was nearly always enlarged and distended. In only one instance was a correct diagnosis made before the operation. In many cases a mass was felt in the abdomen, jaundice was never noticed. Cholecystectomy was performed in most cases and without difficulty. Stones were found in a few cases, their presence is said to play no part in torsion and to be only incidental. The outstanding symptoms in all cases were pain and vomiting, fever was often absent and symptoms of shock were not present as a rule. The clinical picture is definite, but is rarely met with, and so is not usually considered.

#### 57 Treatment of Gastric Crises in Tabes Dorsalis

J. VERBRUGGE and L. VAN BOGAERT (*Lyon Chir.*, January-February, 1927, p. 22) discuss the division of the posterior nerve roots in the treatment of the gastric crises in locomotor ataxia. This form of treatment has been abandoned by many surgeons on account of the gravity of the operation and the frequency of post-operative recurrences. An examination of a number of patients shows that there are three types of pain: (1) the pain of root type, (2) the pain of sympathetic type (parietal pain), and (3) the pain of sympathetic visceral type (deep pain). Each of these three varieties corresponds to different groups of nerve fibres. Two cases are recorded in detail. In the first patient there were thoracic crises of the root type and gastric crises with extreme erythema. Paravertebral anaesthesia brought about instant temporary relief, and, following division of the seventh, eighth, ninth, and tenth dorsal nerve roots, a great improvement was maintained for three months, when death ensued from cachexia. In the second case division of the nerves completely relieved the vomiting and pain for nine months. The actual technique of the operation is described, based on the description given by Gaza, and the present authors conclude that this operation in severe cases of gastric crises is well worth consideration.

#### 58 Ossification of Operation Scars

R. DIDIER (*Gaz. des hop.*, April 20th, 1927, p. 525), whose paper contains a photograph of a case, states that the formation of bone in operation scars, first described by Askaniazy in 1900, is extremely rare. Bontou in his Paris thesis of 1926 was able to collect only thirty cases, and since then only one has been reported by Mornard, so that there are only thirty-one examples on record. In the great majority of cases men are affected, but the age of the patient is of no importance, and the ossification is found in the neighbourhood of the linea alba, especially after gastric operations. As regards the causation, operative trauma inflicted by section of the tissues, their compression by forceps, or perforation by needles, has been invoked. There does not appear to be any connexion between the ossification and post-operative haematomas and suppuration, nor does the nature of the ligatures used seem to be responsible. Experimental attempts to produce ossification in guinea pigs by violent muscular traumatism have hitherto failed. The prognosis of ossification of operation scars is favourable, the process does not show any tendency to spread, and the osteoma does not recur after removal.

#### 59 Gastric Cancer in the Young

H. G. MOGENA (*Arch. de med., cir. y esp.*, May 7th, p. 580), who records an illustrative case in a man aged 21, states that while the earlier statistics indicate that gastric cancer is rare in early life, more recent figures show that it has become increasingly frequent in the young. Thus in Bâle from 1870 to 1898 out of 666 cases of gastric cancer there were only 2 in patients under 30 years of age, and Welch found that among 2,975 cases of gastric cancer there were only 2 between 10 and 20, and 55 between 20 and 30. Gander collected 46 cases in young subjects from the literature up to 1904, and more recently Montier found 16 cases under 35 in a series of 100 cases of gastric cancer. In Spain gastric cancer appears to be relatively frequent in the young, as among 100 cases operated on by Garcia Pelaez 10 were under 35 and Urutia saw 8 below this age among 80 on whom an operation had been performed. The characteristic features of gastric cancer in early life are the absence of cachexia, the preservation of appetite, rise of temperature, and the rapid development of metastases, which renders its prognosis very grave.

## Therapeutics.

#### 60 Treatment of Thrombosing Phlebitis by Leeches

ACCORDING TO J. MONZON (*Prassi Med.*, May 28th, 1927, p. 677) the principal disadvantages of the use of leeches, apart from aesthetic considerations, are the inability to measure the quantity of blood extracted, and subsequent secondary haemorrhages. One leech will remove only from 2 to 4 drachms of blood, but after its detachment from the skin there will be a subsequent loss from the puncture of a further 25 to 50 drachms. These haemorrhages may occur not only at the point of application, but at other sites thus epistaxis may ensue, and, when more than one leech is applied, this may prove serious, especially in cardiac and hepatic cases. Tardy clotting of the blood, due to an antecoaagulant substance in the head of the leech, is the cause of these haemorrhages. This substance is easily extracted by mastication, and its subcutaneous injection produces the same effect as the leech, it does not act on the fibrinogen or coagulant formants of the blood, but is a powerful antithrombin. Monzon states that leeches can be beneficially employed in certain affections in which there is hypercoagulability of the blood. In post-operative and postpartal phlebitis, if applied when the first obliterating symptoms appear, they can abort this complication or considerably shorten its duration, four to six leeches should be applied to the morbid limb, the application being repeated two days later, and a third time if necessary. This interval of two days depends on the facts that the neoagulability of the blood appears in four to eight hours, reaches its maximum the next day, and lasts about forty-eight hours. The results of this treatment are a rapid cessation of the pain, fall of temperature, prevention of oedema, effacement of the venous cord, and a shortened duration of the malady. Ill effects are said to be rare and insignificant, local pruritus or generalized urticaria may occasionally develop. Leeches should not be used indiscriminately. In operation and postpartal cases when there is still danger of secondary haemorrhage, in established phlegmasia, and in severe infections their use is contra-indicated. Monzon holds that the effect of this treatment on uterine thromboses merits experiment, and maintains that, combined with antispasmodics, leeches constitute a rational therapy. He adds that it is important to exclude all possibility of meningeal or cerebral haemorrhage, in which event the action of leeches would be disastrous.

#### 61 Saline Injections in Mental Disease

T. MOROWOKA (*Journ. Mental Science*, April, 1927, p. 269) recommends the treatment of psychoses and neuroses by injections of the Ringier Locke solution, which contains the chlorides of sodium, potassium, and calcium, with sodium bicarbonate and glucose. He reports particularly good results in general paralysis, improvement in the mental functions and in sleep being associated with diuresis and more frequent evacuations of the bowels. Similarly, in dementia praecox patients were definitely benefited, though repeated injections caused rashes and occasionally abscesses, which did not, however, prevent the continuance of treatment. Other conditions which responded well were senile insanity, acute delirium, and manic depressive insanity. Injections of 1,000 c.c. of the fluid at a temperature one or two degrees above that of the body were given once or twice a week for a considerable period, and Morowoka emphasizes the importance of using sufficiently large doses. He states that Ikeda, who has employed this remedy in a large number of cases of mental diseases of different kinds, believes that the solution cleanses and removes the exogenous toxins and endogenous wastes from the body. It is suggested that with removal of the irritating toxins from the cerebral hemispheres improves the general nutrition of the nervous system and of various organs of the body.

#### 62 Treatment of Hypertension with Salt-free Diet

D. R. BLAISDELL (*London Med. and Surg. Journ.*, May 19th, 1927, p. 808) gives brief notes of 35 cases showing the results of a salt-free diet in arterial hypertension. No sodium chloride or bicarbonate was used either at table or in the preparation of the meals, and only those foods having the lowest salt content were chosen. After the initial elimination of salt the aim was to keep the twenty-four hour urine of salt at 0.5 gram, as a precautionary measure protein chlorides at 0.5 gram, as a precautionary measure protein retention of nitrogen. If the blood nitrogen was high the patient was put on a low protein diet for a few days and a strict salt-free diet was not prescribed at once, as a precaution against the precipitation of uric acid. The diet adopted was that advocated by I. M. Allen, and the results were much better than those obtained by low protein, salt-free diets, rest, and drugs. The disease appeared to be



by a margin of subdermal suppuration. The large papules were covered with dry blackish very hard crusts. The papulo pustular lesions were of smaller size on the scalp, forcarms, and thighs there were a few bullae. The child had had the eruption for one month and the papules were confluent. The general health was excellent. The mother had given the infant four or five teaspoonfuls of the sodium bromide in 1 teaspoonful of syrup. Although this was discontinued immediately the presence of 0.5 gram of traces of bromine immediately after the urine contained minute traces of bromine eight days later. The serous contents of thin lesions were free from bromine. The lesions healed slowly and some persisted for four weeks after the discontinuance of the syrup. Milhan thinks that the delayed recovery in these cases indicates that the condition is not an intoxication but an infectious phenomenon induced by the treatment he advises therefore boracic fomentations, boracic dusting powder and dilute lead lotion. He has obtained a rapid cure by applying tincture of iodine to the pustules.

69. H. OLTRAVIPE, J. GOLAY and A. STAROBINSKY (*Ann. de Dermatol.* April 1927, p. 193) reports the case of a patient with chronic acrodermatitis who was cured by an antogenous vaccine. They have only been able to find twenty-two cases in the literature. The condition is very chronic and resistant to treatment so that the cure obtained in the present case is particularly gratifying. The patient was a woman aged 45 who had suffered for a year before the vaccine treatment was started. No benefit had resulted from the previous treatment with penicillin and staphylococci were recovered on the hands injured and forty-seven injections were recovered. The vaccine was followed treatment for six months and there has been a relapse for the last year.

## Obstetrics and Gynaecology

67

W. IPECHERZ (*Dermatol. Hoch* May 7th 1927 p 65b) reports the case of a patient aged 23 who received an application of x rays for the epilation of the scalp at the back of the head where there was "crasis". Without any special simultaneous treatment there was a total disappearance of the psoriasis in this area. Total epilation was avoided. The patient was treated again eleven months later but on this occasion there was no epilation and the psoriasis areas were completely refractory. The author adds that you can not use a method of epilation which is supposed to be so antagonistic and so easily applied has the great objection that the eyebrows may disappear while the hair may persist in just those places where the psoriasis areas are most abundantly situated.

65  
Sugar Intolerance in Dermatoses.  
G G CAMPBELL and J. F. BURGESS (*Brit Journ Derm and Syph.*, May 1927 p. 137) refer to the well known association between diabetes and certain skin lesions in which treatment of the glycosuria improves the dermatosis. They have found that the temporary rise in blood sugar in intolerant subjects is an etiological factor in skin lesions mainly of the dermatitis type and that dietetic measures will cure such conditions where other measures have failed. The intolerance of some middle aged persons in sugar includes two separate factors: (1) inability to deal with more than a minimum carbohydrate diet without the blood sugar rising above normal limits (2) delay in the assimilation of sugar. They divide such skin lesions into two main groups—namely those developing during pregnancy and those occurring in pregnancy over the age of 50. They record two cases of matous intolerance in which the dermatitis was eczematous and mention two other cases in which it was urticarial. The authors state that in the senile type there is nothing in the skin condition to suggest that it is due to sugar intolerance but importance must be attached to the development of an intractable dermatitis in a person of middle age who was previously quite free. In some cases there was no apparent exciting cause whereas in others irritants such as soap and antiseptics to which the individual had long been accustomed caused the condition. In other cases there was no exciting cause the condition arising at unusual sites perhaps due to sugar in the perspiration. Where authors report thirty one cases in seven patients the known improvement was noted but the end results are not condition had completely cleared up the time varying from one to six months and six patients failed to report subsequently. Relapses due to dietetic indiscretions were cleared up by a return to a suitable diet. Many patients improved in general health and increased capacity for work. It remains uncertain whether the condition foreshadows diabetes in them. The authors conclude that the question of sugar intolerance as a factor in the production of dermatitis may have wide reaching application.

65. **Bromide Eruption in an Infant.**  
JEAN ELME and R BURNIER (*Bull Soc Fran de Dermatol*  
et de Syph March 1927 p 169) report the occurrence in an  
infant aged 4 months of a reddish purple papulo impetiginous  
eruption on the face scalp and forehead. The cheeks were  
chiefly affected the round or oval lesions ranging in diameter  
from a few millimetres to 3 centimetres they projected 1 or  
3 mm. above the level of the skin and were sharply defined

[illegible]

69 Surgical Anatomy of the Pelvic Sympathetic Nerve  
J DELVIG and G DE PALMISTE (*La Gynecol Marc* 1927  
p 129) in a description of the anatomy of the sacral  
nerve supply to the genito-urinary organs state that the  
"pre-sacral nerve of La Arjet corresponds with the superior  
hypogastric plexus of Horstmann and others. The pre-  
sacral nerve resection of which has been practised with  
some success in cases of dysmenorrhoea and pelvic neuralgia.



is formed at, or as far as one centimetre below, the bifurcation of the aorta (usually at the level of the lumbosacral disc between the fourth and fifth lumbar vertebrae) by the union of (1) a right root running down from the right renal and superior mesenteric plexuses between the right margin of the aorta and the inferior vena cava, (2) a left root having a similar origin and consisting of two or three small communicating trunks, and (3) a median root derived from the inferior mesenteric plexus. Exceptionally the "pre-sacral nerve," thus composed, constitutes a single ribbon-shaped trunk, more usually it is found in three or more filaments, forming a plexus in the angle between the common iliac arteries. The length of the "pre-sacral nerve" is from 5 to 6 cm., and after running down in front of the common iliac vein it terminates at the upper border or in front of the body of the first sacral vertebra by dividing into the right and left hypogastric nerves of Latarjet (the right and left internal hypogastric plexuses of Hovetacque). The "pre-sacral nerve" is thus in reality almost completely pre-lumbar. After its entry into the pelvis it becomes firmly adherent to the peritoneum, as do its terminal branches, to free the nerve in this region is difficult, and there is danger of bleeding from the median sacral vessels. On the other hand, during the upper part of its course the "pre-sacral nerve" is surrounded by a distinct sheath and is easily and safely separable from the adjacent great vessels.

#### 70 Backache in Women

F. SCHULTZE RHONHOE and H. WATRMANN (*Zentralbl. f. Gynäk.*, April 2nd, 1927, p. 842) emphasize the importance of flat-foot as a possible cause of backache in women. In the absence of any pelvic abnormality a general examination of the patient frequently discloses such conditions as pes planus, valgus, or plano valgus. While there is no difficulty about the diagnosis of well marked flat foot, lesser degrees are not so simple to recognize or to assess, and the gynaecologist should consult with an orthopaedic expert. The authors have been successful in about fifty cases, in which the backache ceased after the feet had been treated. Occasionally a gynaecological disability is found associated with flat foot, in these cases it is recommended to treat the feet first, since in many cases the backache will be cured and operative treatment avoided.

#### 71 Treatment of Uterine Fibroids

M. KAHN (*Surg., Gynecol. and Obstet.*, April, 1927, Part I, p. 569) discusses the question whether supravaginal hysterectomy in cases of uterine fibroid should be abandoned in favour of total hysterectomy, with special reference to the possible occurrence of carcinoma in the cervical stump. He states the arguments on both sides, and concludes that in all such cases the cervix should first be examined and the complete operation be performed if this organ is found to be deeply lacerated and infected, or even suspicious. If the cervix is normal, or can easily be made so, with not very deep lacerations or with mild erosion, the supravaginal operation may be performed with the cervical pathological condition has been corrected. During the performance of the operation for supravaginal amputation he recommends the examination of uterine smudgings, so that if the pathological report suggests the possibility of cancer the complete operation may be employed. He also insists that the uterine cavity should be examined immediately after a supravaginal amputation, in order that if a suspicious area is present the cervix may at once be excised. He believes that this procedure protects the patient reasonably well from subsequent cancer of the cervix and from an unnecessarily severe operation.

## Pathology.

#### 72 Globulin-Albumin Ratio of the Serum

GERRARD LEWIN (*Med. Klinik*, April 29th, 1927, p. 643) has estimated the globulin albumin ratio in 68 patients, using the refractometric method of Robertson. In most cases, at the same time, determinations were made of the sinking rate of the red cells by Linzenmeier's method, and blood films were also studied. The normal globulin albumin ratio used was 20-35 per cent globulin (Robertson). A globulin increase was observed in most pathological conditions. Of 9 cases of pulmonary tuberculosis 7 with good prognosis gave a globulin value as high as 59 per cent, two advanced cases shortly before death 83.7 and 77.9 per cent. In all cases of severe tissue destruction, acute infections, sepsis, pneumonia, osteomyelitis, and erythraemia from globulin value was raised. In 4 cases of pernicious anaemia the value was raised only

in one case, which was complicated by pyelitis. No correlation was found between the globulin value and the fall in the diazo reaction of the serum. From 76 comparative examinations of the globulin content of the serum and the rates of sinking of the red blood cells it appeared that the globulin value had but slight influence on the blood corpuscles in this respect.

#### 73 The Blood Fibrin Content in Pleurisy

F. BEZANCON, M. P. WILL, and C. O. GUILLAUMIN (*Ann. de Med.*, April, 1927, p. 302) for the estimation of the amount of blood fibrin have modified the method of Gram (*Journal Biol. Chem.*, December, 1921), the test being performed on the plasma obtained after centrifuging citrated blood, and not on whole blood. They found that the amount of fibrin in the plasma of the normal adult was 3 to 4 grams per litre of plasma, and considered as abnormal figures higher than 4 to 4.2 grams. The amount was slightly greater in females than in males. The blood fibrin was increased in many inflammatory conditions, particularly in pneumonia, acute articular rheumatism, erysipelas, scarlet fever, gonorrhoea, suppurations, and anginas. Its fibrin figure was found to be parallel with the temperature, it commenced to decrease slowly when the temperature fell, and the amount of fibrin was proportional to the severity of the illness. The authors state that in sero-fibrinous pleurisy of any nature the blood fibrin is always increased, rising to 5 to 7 grams and even higher. In pulmonary inflammation coexists with the pleurisy. A more marked characteristic than the intensity is the persistency of the fibrin increase. This continues long after the acute symptoms have ended. With the fibrin increase is associated an increased rapidity in the sedimentation of the erythrocytes, instead of the normal 250 minutes, 20 to 30 minutes is often sufficient for total sedimentation. These characteristics of great and persistent increase in the blood fibrin and increased rapidity of erythrocytic sedimentation occur also in rheumatism. In both these diseases, according to Gram, a close connection exists between the fibrin content of the blood and the rapidity of cell sedimentation—that is, between the fibrin content and the supralateral tension of the plasma.

#### 74 The Alveolar Carbon Dioxide in Pulmonary Tuberculosis

L. BERNARD, L. BINET, and H. R. OLIVIER (*Bull. et Mem. Soc. Med. des Hop. de Paris*, May 12th, 1927, p. 601) have estimated the tension of the alveolar carbon dioxide in fifty cases of pulmonary tuberculosis, using the Haldane-Priestley method. They find that in cases where the lesions are discrete the carbon dioxide tension of the alveolar air is normal, approximating 40 mm. of mercury. When the lesions are sufficiently extensive the condition modifies the chemical composition of the alveolar air. In cases of tuberculous fibrotic lesions, in consequence of the defective circulation of the air in the alveoli, the alveolar carbon dioxide tension and also the carbon dioxide of the arterial blood are raised, there is hypercapnia and gaseous acidosis. In cases with destructive cavitary lesions, as a result of the hyperventilation of the lung the alveolar carbon dioxide tension and the carbon dioxide of the arterial blood are lowered, there is acropnea and gaseous alkalosis. By repeated estimations on the same patients it was shown that the carbon dioxide tension of the alveolar air varied with the development of the lesion. The authors urge that then findings have a practical prognostic value and render possible the distinction between cavitary and fibroid types.

#### 75 Bacterial Charges during Immunization

A. B. WADSWORTH and G. M. SICKLES (*Journal Exper. Med.*, May, 1927, p. 787) have isolated a number of strains of pneumococci from horses which became ill during the course of immunization against the pneumococcus. The usual type of illness was a chronic septicæmia characterized by ulcers, two vegetations on the heart valves. The organisms were found to differ in many respects from the standard Type I strain used for inoculation. The authors bring evidence to show that as a result of their existence in the tissues they had become attenuated. Many had lost their virulence, and their virulence to mice, they were no longer type specific and they readily underwent phagocytosis in the presence of normal serum. The changes in virulence were especially interesting. Mice survived inoculations of 1 cc. of the strains. Of two mice receiving 0.5 cc. of the fifth strain, one died, from this an organism was isolated that proved to be a typical pneumococcus Type I, 0000001. The other organism was fatal to mice within twenty-four hours. In other words, a single passage through a mouse raised the virulence enormously. Whether these changes in pneumococci are to be attributed to the effect of the immune bodies, or whether they represent an adaptation to an adverse environment, has not been determined.

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine

### 76. Diabetes Mellitus and Concomitant Leukaemia

J. GLASER (*For Amer Med Assn*, May 21st, 1927 p 1626) reports a case of the simultaneous occurrence of diabetes mellitus and leukaemia and refers to three other similar cases in the literature. In none of the three cases was any evidence of leukaemic infiltration of the pancreas obtained by microscopic examination. In Glaser's case the pathological evidence of myelogenous leukaemia in the spleen and retroperitoneal lymph nodes, together with the qualitative changes in the blood picture without increase in the total leucocyte count defined the condition as myelogenous leukaemia of the leukaemic type. The patient's skin was markedly brown with darkening over the elbows and buttocks. This colour had appeared gradually during the six months before admission to hospital and there was no history of treatment by arsenic or rays. Glaser suggests that this unusual pigmentation may be due to disturbance of the sympathetic nervous system and through this of the suprarenal glands, by pressure of the enlarged abdominal lymph nodes on the abdominal sympathetic chains and ganglia. Alternatively it is possible that injury to the liver may have prevented the removal of melanin from the circulation. The diabetes responded at first to dietic treatment but insulin was required later. The patient gradually became oedematous pneumonia developed and death followed. At the necropsy red hyperplasia of the marrow of the humeri and the vertebrae was found. Extensive areas were present in the biliary duct and the right kidney and there was fatty degeneration of the liver without increase of connective tissue. The spleen and retroperitoneal lymph nodes were much enlarged, the suprarenals were rather small but their structure appeared normal. The pancreas was firm and lobulated with some increase of connective tissue. Mucinous islands of Langerhans were present and appeared healthy.

### 77. Sero prophylaxis of Measles

W. T. BRADSON and J. D. LAWRIE (*Edin Med Journ*, April, 1927, p 216) review the literature and record their observations at the Edinburgh City Hospital. Of twelve susceptible children from 1 to 8 years of age exposed to infection with the measles virus eleven escaped infection after passive immunization with convalescent measles serum on or before the fourth day of exposure, while one who did not receive the injection till the sixth day after exposure developed a highly modified form of the disease. The doses were 10 c.c.m. for children aged from 1 to 5 and 15 c.c.m. in a child aged 8. Of nine non-immunized children from 2 to 7 years of age, in whom the conditions of contact were even less intimate than in the other group two developed typical measles after a period varying from ten to fourteen days. In hospital practice the difficulty of obtaining an adequate constant supply of measles serum can be to some extent overcome by calling for volunteers among adult measles convalescents. In the absence of convalescent serum satisfactory results have been reported from intramuscular injections of whole blood obtained from parents, brothers, or sisters who have had measles at some previous date. In such cases the amount injected must be larger, varying from 15 to 30 c.c.m. according to age.

### 78. Physiological Constipation

G. LEVEN (*Full Soc de Ther*, April 6th, 1927, p 142 and *Gaz des Hop*, April 20th 1927, p 526) who records seven illustrative cases, in patients aged from 20 to 62 in whom the constipation lasted from six to twenty-two days states that a physiological as distinct from a pathological form of constipation occurs in patients whose nutrition is defective owing, to uncontrollable vomiting accidental or therapeutic diarrhoea or in acute infection with a prolonged high temperature. In such cases the constipation appears to be a reaction on the part of the organism to diminish its losses and to make the utmost use of the products of digestion before eliminating undigested products. It therefore appears to be analogous to the physiological oliguria observed under the same conditions when the dehydrated tissues retain the fluids at their disposal as much as they can. Physiological constipation has no bad effects. Leven treats such cases by ordering green vegetables and other articles with much indigestible residue and systematically orders sodium bromide and bismuth carbonate to check gastrointestinal spasms, laxatives, purgatives, and enemata are contraindicated as

they may transform this transient symptom into a pathological and permanent constipation. He adds that physiological constipation as a beneficial condition resembles some forms of diarrhoea, sweating, cough, and oliguria.

79

### Typhoid Fever in Children

D. HERDERSCHÉE (*Nederl Tijdschr v Geneesl*, May 7th, 1927, p 2468) records his observations on 541 cases of typhoid fever in children which occurred among 1,500 cases admitted to the Wilhelmina Hospital, Amsterdam in the course of the last eight years. Only 2 were under 1 year of age, 97 (49 boys and 48 girls) were under 5, 204 (113 boys and 91 girls) were aged from 5 to 10, and 240 (129 boys and 111 girls) from 10 to 14. The mortality was 2 per cent in children under 5, 4.4 per cent in those between 5 and 10, and 7.5 per cent in those between 10 and 15 as compared with 20 per cent in adult life. Necroses showed that as a general rule the intestinal lesions were less severe and extensive in children than in older patients. Clinical experience coincided with this finding as is shown by the fact that among 1245 patients above 10 years of age intestinal haemorrhage occurred 129 times, or in 10.4 per cent, as compared with 5 cases, or 1.7 per cent, among 301 children under 10. The complication itself was less serious in children than in older patients, as 70 of the 129 older patients or 54 per cent died but only 1 of the 5 children. Perforative peritonitis occurred in 33 or 2.6 per cent of the older patients and in only 2 (0.7 per cent) of those under 10. Operation was performed on 14 of the 33 cases, with 3 recoveries, and 1 of the 2 children was operated on and recovered. Phlebitis in the lower limbs during life was diagnosed in 48 (4 per cent) of the older patients, but was not seen in children under 10. Pelapses occurred in 7 children under 5 (7 per cent) and in 11 per cent of children aged 5 to 9. The same percentage was found both in male and female patients above 15 years of age. As a general rule typhoid fever was much less severe and of somewhat shorter duration in children than in adults but it might occasionally equal in severity the worst attack in adults. The results of bacteriological and serological tests are the same at all ages. The characteristic clinical features occur somewhat less frequently in children than in later life so that the diagnosis is not made so readily. The low incidence of typhoid fever in children, as recorded in statistics, does not therefore correspond with the reality.

## Surgery.

80

### Tumours of the Male Breast.

J. E. RAGUE (*Rev med de Barcelona*, April 1927 p 380) records four personal cases with a review of the literature and the following statistics of the relative frequency of cancer of the breast in males: 8 per cent (Lowenthal and Schnchardt) 9.18 per cent (Fonchon, Goret) 2 per cent (Winiwarter and Henry) 3 per cent (Jakoboff) 3.7 per cent (Schmitt) 2.82 per cent (Billroth) 2.8 per cent (Dietrich) 1 per cent (Judd and Morse Kellogg Speed). Among 103 cases of mammary tumour Rague himself saw three in men: a proportion of 2.97 per cent. Two were examples of typical adenocarcinoma and one was a fibroadenoma. Benign tumours are much rarer than the malignant, as David in 1922 could find only five examples of papillary cysts of the male breast on record in spite of the fact that this is the commonest form of benign tumour. One side does not appear to be more affected than the other. Of Rague's four cases three were on the right and one on the left side, while in Judd and Morse's seventeen cases seven were on the right and ten on the left. The age of the patient has a marked influence on the pathological form of the growth and the course and prognosis of the disease. In Rague's series in which the ages ranged from 18 to 75 the youngest patient had a fibroadenoma and the eldest a sarcoma. The following predisposing causes which were absent in Rague's series have been suspected: heredity, constitutional disease, mastitis, and gynaecomastia or polymastia. The symptomatology and operative technique are the same as in tumours of the female breast. Rague agrees with Judd and Morse in regarding the prognosis of mammary cancer in man as more unfavourable than in woman. Of his four patients the two with adenocarcinoma died eight months after the operation with pulmonary metastases, while the other two on whom the operation had only recently been performed, were still alive.

## 81 Primary Cancer of the Lung

K. FLRINCA and T. MATOLCSY (*Hien Hun Week*, May 12th, 1927, p 618) have inquired into the frequency and the reported increase of pulmonary cancer. Of 6,791 cases of malignant disease occurring between the years 1896 and 1925 the growth was situated in the lungs and bronchi in 282 cases. Expressed as a frequency curve for yearly intervals it appears that there has been a very remarkable increase in the number of cases of pulmonary cancer, and especially between the years 1920 and 1925. Comparing the percentage of these cases with that of all cases of malignant disease, they found that whereas in the period 1896 to 1901 the rate fluctuated between 0.54 and 1.97 per cent., in the period 1902 to 1914 it rose to 5.02 per cent., there was a further rise during the war period 1914 to 1919, and this was again increased in 1924 to 10.3 per cent. One third of the cases occurred between the ages of 50 and 60, and the incidence was nearly three times as frequent in men as in women. Of the 282 patients 43 per cent. were engaged in occupations in which the respiratory organs were especially exposed to injurious influences. In 44 cases the authors found signs of healed tubercle at the apices, or calcareous bronchial glands, and occasionally old cavities, they noted only one case of acute tuberculosis. Generally speaking, there was no causal relation between cancer and tuberculosis. Discussing the cause of the greater frequency of cancer they state that many authors associate the increase of pulmonary cancer in 1920 with the severe epidemic of influenza in 1918, others blame the increase of certain occupations in which irritant particles or gases are inhaled. The present authors conclude that this question is as yet unanswered.

## 82 Erosive and Gangrenous Balanoposthitis

E. R. PALMER (*Urol. and Cut. Rev.*, May, 1927, p 297), who records two cases with a review of the literature, states that the first adequate account of this disease was given in 1891 by Bataillo and Baidal, who reported more than 100 cases and demonstrated its contagiousness experimentally. The term "fourth venereal disease" was not suggested until several years later by Scheiber and Müller, who observed 50 cases within a year, and isolated a spirillum and vibrio from the penis and preputial exudate, thus confirming the findings of Bataillo and Baidal and establishing the existence of the disease as a clinical entity. Erosive and gangrenous balanoposthitis is an acute inflammatory affection of the glans penis and opposed preputial surfaces, characterized clinically by ulceration, erosions, and sometimes gangrene, with an abundant excretion of pus, which has a peculiar putrid odour, the organisms being morphologically identical with those found in Vincent's angina, noma, and carcinoma. Predisposing conditions are preputial redundancy favouring macerations, and partial or complete phimosis with exclusion of air, thus permitting accumulation and decomposition of smegma. Two forms of the disease have been recognized—namely, an erosive or ulcerative type and a gangrenous type. In the superficial and erosive type of the disease septic symptoms are trivial or absent. In the gangrenous form there is evidence of sepsis, but it is slight in comparison with the intensity of the infective process. The invariable initial manifestation is an itching or burning sensation of the glans penis and inner preputial surface. Subsequently oedema and phimosis occur and necrosis develops. Unless adequate treatment is adopted gangrene rapidly supervenes, causing destruction of the entire penis. Treatment should be prophylactic and curative. As Carbus has pointed out, the condition cannot occur in a person who has been circumcised. In mild infections, where the prepuce can be retracted, simple cleansing measures may suffice but in more severe types attended by phimosis dorsal incision is necessary and the parts must be kept clean by washing with dilute hydrogen peroxide.

## 83 Surgical Treatment of Gastric Ulcer

J. ABADIE (*Bull. et Mem. Soc. Nat. de Chir.*, May 7th, 1927, p 614) describes the results obtained in 300 operations for ulcer of the stomach. In 26 cases gastro-enterostomy alone was performed, with 2 deaths, in 264 patients duodenopylorectomy was performed, with 14 deaths, whilst in the remainder the ulcer was resected with or without an anastomosis, with one death. Of the patients, 285 were men and only 15 were women. Lung complications were less frequent in the later cases. In 45 consecutive cases no complication occurred after the operation. Abadie considers that resection of the ulcer alone does not cure the patient, gastro-enterostomy tests the ulcer and gives a good percentage of cures. Duodenogastrostomy is the operation of choice, it removes the ulcer and does away with any risk of malignant transformation. Spinal anaesthesia with local infiltration was employed and no morphine was given, ether was rarely used.

## Therapeutics.

## 84 Tryparsamide in General Paralysis

T. M. DAVIE (*Journ. Mental Science*, April, 1927, p 217) considers tryparsamide a most valuable therapeutic agent in general paralysis and in allied neurosyphilitic infections, its marked tonic effect being produced early in the course of treatment. He finds that it arrests the progress of dementia and prevents paralysis, mental improvement occurring in almost every case, though serological changes may be delayed until a long time after the cessation of administration. He has given intravenous injections of 3 grains once a week without untoward effects, as a rule, but he agrees that disease of the optic tract probably contraindicates its use. Slight transient pyrexia occurred sometimes, but in one case lasted for three days and was associated with haematuria. M. BROWNE and A. R. MARRIN (*ibid.*, p 225) have treated seventeen cases of general paralysis by tryparsamide, and report that the most significant results were disappearance of the psychoses, increase in weight, absence of seizures, and the conversion of dull and listless patients into useful individuals. Their results were obtained rapidly, and the improvement in the majority of cases persisted. They commenced with six doses, each of 1 gram, at intervals of one week, the injections being given intravenously in fifteen patients and intramuscularly in two. The dose was then doubled and eight injections were given at similar intervals. The authors conclude that a preliminary course of tryparsamide, followed by a malarial injection, is at present the most rational method of treatment, particularly of the debilitated early paralytic patient.

## 85 Onabain in Cardiac Insufficiency

J. WYCKOFF and W. GOLDING (*Irish Intern. Med.*, April 15th, 1927, p 488) record the results obtained in 32 patients with heart failure to whom 248 intravenous injections of the glucoside onabain were administered without harmful effects. The initial dose was usually 0.5 mg., followed every half hour by 0.1 mg. doses, and full therapeutic effect was considered to have been obtained when the ventricular rate was slowed to 80 or below. No patient who had received digitals within two weeks was given onabain. A definite result was obtained in 163 cases, the initial response being noted in from five to twenty minutes and the maximum in from fifteen to fifty, it was found that the larger the dose the earlier the initial response and the more delayed the maximum effect. A greater amount of the drug was needed to reduce the ventricular rate in patients with auricular fibrillation accompanied by fever than in those in whom there was no rise of temperature. The persistence of action of the drug varied, but except in three cases it never exceeded five days. Full therapeutic digitalization was produced fifty-two times in thirty-two different patients, and in only three were mild toxic symptoms noted—namely, premature ventricular contractions in one and vomiting in two. The authors conclude that if given in fractional doses onabain may be safely administered intravenously to patients with auricular fibrillation who have not recently been given digitals. They add that since clinical improvement seems to be the only criterion for full therapeutic effect, in patients with regular sinus rhythm special care must be exercised, and they mention the danger of overdosage in moribund patients who may not show clinical improvement.

## 86 Tissue Dehydration Treatment of Pulmonary Suppuration

J. MOUZON (*Picess. Med.*, May 14th, 1927, p 615) recommends the following treatment of broncho-pulmonary suppuration of a non-tuberculous nature. An abundant salt-free diet is given, but the daily quantity of liquid is reduced to from 200 to 400 ccm. Discomfort due to thirst is relieved by orange juice or acid drops. After three days' treatment of these lines the fluid intake is increased to 1,200 to 1,500 ccm. for one day, and then the dry regime is begun again. The course is continued for four to six weeks, with two "detoxifying" days a week. The urine diminishes, but remains, as a rule, in excess of the liquid taken. The weight also decreases, but is rapidly restored at the end of the treatment. From the first the sputum diminishes, it generally becomes of a serous or 11 patients with chronic purulent bronchitis, and 11 whom were cured and remained so for at least a year, and 11 of 22 patients with post-influenzal lung abscesses, 19 of whom were cured within three weeks. He adds that the treatment is useless in tuberculous cases and is contraindicated in doubtful value in cases of purulent pleurisy and cavity.

## 87 Testicular Extract in Ovarian Neurosis

V DU LAUPH (Arch. Med. Sci., April 20th 1927 p 597) believes that psychical troubles due to ovarian insufficiency or dysfunction are very common particularly in women of the more intellectual type. Most patients present a neurotic-like syndrome in which melancholia, obsessions and fears predominate, the periods of depression sometimes alternate with phases of excitement. Phases of a neurotic type are usually present and are almost always localized in the pelvic lymphatic system and the lower limbs. Some measure of success has been obtained from treatment with extracts of the corpus luteum or of the whole ovary, but for some years Du Lauph has obtained better and more reliable results by the employment of testicular extract. This drug is administered either by the mouth in tablet form or by intramuscular injection, the two methods being sometimes combined. He describes six cases in which this treatment was adopted and cure established, and maintains that in the depressive conditions amelioration and often complete cure, follows the use of this form of therapy.

## 88 Treatment of Jaundice by Insulin

FICHTZ (Arch. de med. exp. April 30th 1927 p 558) states that in addition to its use in diabetes mellitus insulin has been successfully employed for the following conditions: diabetes insipidus (Vitt), Graves' disease (Feyn and Parurier), shock (Lieber and Snel), alimentary intoxication in children (Lieber and Wagner), induration (Lieber), Marfan's, dermatoses (Ravint), chronic rheumatism (Lieber), Erythema, and Lactaria hyperaemia (Lieber and Cadenas). Fichtz now reports a case of icterus in a girl aged 13, who presented signs of hepatic insufficiency in the form of icteroid and disturbance of the carbohydrate metabolism revealed by slight glycosuria. Ten units of insulin were injected daily for six days, one hour before meals which consisted mainly of carbohydrates, a small quantity of protein and no fat. On the day after the last injection of insulin the acidosis disappeared and only traces of glycosuria remained. These were absent on the second day of treatment, when the jaundice began to fade, completely vanishing within a week.

## Radiology.

## 89 X Rays in the Diagnosis of Gas in Intestinal Perforation

M H TODD (Amer. Journ. Surg. May 1927 p 449) advocates the routine radiographical examination of all cases of suspected perforation of the gastrointestinal tract on the grounds that the presence of air or gas in the peritoneal cavity can be demonstrated thus with certainty. He gives details of ten cases, all but one of which were traumatic. He believes that a consistently negative series of findings definitely contraindicates perforation except in appendicitis cases and possibly in perforation of the stomach. The technique employed was simple: when all preparations had been made the patient sat up for a moment, a film was placed anteriorly to show the lower part of the chest and upper part of the abdomen, double screens were used and the patient was instructed to hold the breath for a moment in order to fix the diaphragm. In this last being considered a most important point. Gastrointestinal perforation was indicated by the presence of a gas bubble above the liver. Todd considers this the most characteristic simple sign of perforation. He adds that the condition is easily demonstrable, even when the hole is minute and very early diagnosis is made possible.

## 90 Radiological Diagnosis of Hilum Tuberculosis

G DETRE (Journ. Radiol. et d. Electrol. May 1927 p 257) comments on the value of obtaining both frontal and antero-lateral radiographs of the chest in cases of suspected hilum tuberculosis in children, though he admits that it is not possible to prevent confusion being caused sometimes by hilar shadows falling on the ear space between the heart and the vertebral column. It is possible however in this way to detect and distinguish such conditions as adenopathy, perianitis and hilar tuberculosis. In some cases with suspicious symptoms and signs it is found that the pathological process is old or quiescent or that there is no evidence of tuberculosis. Detre discusses the different appearances shown by radiographs taken in the two directions mentioned and gives illustrations of the more typical pathological processes thus defined. The value of this method of examination in prognosis is also indicated.

## 91 Diathermy Coagulation in Radiologists' Cancer

H LORNIER (Acta Med. Scand. April 30th 1927 p 291) reports the cure of a cancer in a radiological worker who since 1925 had been exposed to small doses of x rays. His hands free therapy and particularly his eye receiving variable doses of the rays. In 1927 small keratomata appeared on the left hand and a year later the first eyelid lesion. In 1928 an abortive attempt at skin grafting after excision was made and two years afterwards there was a recurrence of the growth. The tumour became malignant, and in 1926 formed a swelling of about 1 cm. in the angle between the first two fingers of the left hand, it gave rise to a febrile, ichthyous discharge and prevented scintillation of the digits. After local anaesthesia with a cocaine diathermy-coagulation of the greater part of the cancer was performed, the intensity employed varying from 150 to 400 milliamperes, three minutes' application was sufficient to coagulate the tumour. An abundant lymphorrhoea lasting for two days was produced by the operation and all pain ceased from that time. The diet consisted of carbon oil and 1 percent carbolic oil daily irrigations with boric isotonic saline solution were employed. Fifteen days after the operation the large eschar came away and in six weeks cicatrization was almost complete. A second coagulation was performed in order to destroy the remaining tumour particles and a month later the cure was definite and complete. Border lesions that x-ray lesions especially if ulcerated should not be treated with radium as a radium dermatitis will be superimposed on the existing cancer producing radio-dermatitis, which renders cicatrization even after diathermy-coagulation, very difficult and often impossible to obtain.

## 92 Skiagraphy of the Spleen in Newborn Infants

P FILLAT (Lyon. med. May 15th, 1927 p 553) believes that enlargement of the spleen in a newborn infant is as valuable in the diagnosis of congenital syphilis as a positive Wassermann reaction or an epiphyseal osteochondritis. It is not always present however and the splenic hyperplasia varies greatly in degree. Frequently it is impossible to palpate an hypertrophied spleen in a newborn infant. In a healthy infant the spleen is quite small, measuring approximately 1 cm. horizontally, about 2 cm. vertically and 1 cm. in depth. Its mean weight is 6 to 10 grams. In congenital syphilis it weighs frequently 20 to 25 grams and its dimensions are three times the normal measurements. Trilobate and the splenic tissue is impermeable to x-rays. The shadow is best seen by turning the child slightly on the left side. This gives a better definition of the organ which then projects over the outlines of the ribs. The shadow of the normal spleen is often indefinite, lying below the diaphragm and moving with it, it appears as a small slightly triangular object corresponding at the maximum to two or three intercostal spaces.

## Obstetrics and Gynaecology.

## 53 Hypertension in Pregnancy

E J STIEGLITZ (Arch. Intern. Med. April 1927 p 465) has investigated the relation of the calcium content of the blood to the etiology of hypertension in pregnancy. He made 222 blood calcium determinations in a series of cases including normal pregnant women, pregnant women with hypertension and non-pregnant controls. The arterial tension was observed in each instance at the time the specimens of blood were obtained, as far as possible the observations were made at the same time of day, usually in the mid-afternoon. The cases were ranged in the following four groups according to the character of the hypertension: (1) A relatively benign type occurring moderately early in pregnancy characterized by a gradual rise in arterial tension and little evidence of serious intoxication. There were 29 cases in this group which constituted the so-called nephrosis of pregnancy. (2) A later malignant type with sudden rapid rise in arterial tension and evidence of marked intoxication, quickly becoming a triad with hypertension, headache and vomiting. (3) Hypertension in patients with pre-existing vascular and usually renal disease both undergoing exacerbation during pregnancy. (4) Hypertension in pregnancy with definite complications such as toxic gout, cardiac disease and acute nephritis. Stieglitz's conclusions are as follows: (1) Hypocalcaemia is not of major etiological significance in arterial hypertension in pregnancy. (2) During the last month of pregnancy a gradual rise in arterial tension associated with a moderate hypocalcaemia. (3) Immediately after parturition a fall in blood pressure occurs with a corresponding rise in the blood calcium concentration. (4) Simultaneous with the onset of lactation a secondary rise in arterial tension occurs with a corresponding and equally transient hypocalcaemia.



## 94 Treatment of Menorrhagia

H. SACHS (*Centralblatt f. Gynak.*, May 14th 1927, p 1242) reports 100 cases of severe menorrhagia treated by x-rays. All the patients were subjected to a preliminary curettage to exclude such conditions as malignancy, polyp, and submucous myomata, all except three were over 40 years of age. Sachs thinks that it is almost impossible to sterilize permanently a woman under 40 by means of x-rays. Physiological cessation of menstruation is said to be due to insufficiency of various internal secretions. The specific hormone of menstruation is produced in the Graafian follicle, which is attacked by x-rays, the activity of the cells is overstimulated until death ensues. The cases were divided into those treated during the menstrual period and those treated in the intermenstrual period. In the first class, with very few exceptions, there was instant and lasting amenorrhoea, while in the second class there were often two or even more severe periods after the treatment, but the method was always successful in the end, and Sachs adds that a temporary increase of menorrhagia should not deter either the patient or the physician.

## 95 Post-climacteric Haemorrhage.

M. MUIET (*Gynecol. et Obstet.*, April, 1927, p 241) restricts the term post climacteric haemorrhage to bleeding supervening more than a year after the menopause, whether physiological or post operative. He thinks that the importance of post climacteric haemorrhage is insufficiently recognized in practice, and that a complete examination is necessary to discover the actual cause of the disease. Crises of post climacteric haemorrhage are rare, and the causes are often mechanical in origin, a venous congestion due to prolapse may lead to ulceration and haemorrhage. Between 1896 and 1924 Muiet investigated 312 cases of post climacteric haemorrhage, of which 79 were due to malignant disease, cancer of the uterine body providing 42, and epithelioma of the cervix 37. Muiet remarks that this indicates the importance of thorough investigation of every case if the cause of haemorrhage is not discovered elsewhere the uterine cavity should be curetted and the scrapings examined histologically. Curetting in aged women requires great care, as the uterine walls may be thinned by senile atrophy or a neoplasm, so that perforation may occur. The author prefers Hegar's dilators to laminaria tents, digital examination appears to him useless and dangerous. Among his 312 cases he found 61 cases of utero vaginal prolapse, thus malignant disease and prolapse accounted for nearly 45 per cent of all cases. Other comparatively frequent causes of post climacteric haemorrhage were polyp and adenomata (41 cases), 8 cases were due to cervical erosion. Muiet emphasizes the favourable prognosis in cancer of the body of the uterus when total hysterectomy with ablation of the adnexa is performed, he adds that it is therefore most important to lose no time nor to neglect even a single slight haemorrhage. In cancer of the cervix this prompt action is still more necessary, as the disease progresses more rapidly and the prognosis is less favourable. The possibility of cancer must be eliminated, if necessary, by repeated curettings and histological examinations before the haemorrhage is attributed to disease of other organs.

## Pathology.

## 98 Etiology of Pulmonary Gangrene

E. SERGENT, H. DURAND, and MOISESCO (*Journal de Med. et de Chir.*, May 10th, 1927, p 305), rejecting the view of Delamare, Bozancan, Vincent, and others that spirochaetes are the chief causal agents of pulmonary gangrene, hold that anaerobic bacteria are the true cause of this condition. These bacteria, which give rise to necrosis and fermentation, are always found in massive gangrene, while spirochaetes are rarely present, and moreover, are found in other pulmonary conditions. The present authors agree, however, that spirochaetes may initiate gangrene, often of bacillary origin, they gain entrance to the respiratory tract causing an ulcerous broncho-pneumonia, which opens the way for secondary infection by anaerobes. Suppuration with abscess formation supervenes. If the abscess is badly drained or the fissure closed, suppuration proceeds in a closed chamber and anaerobes multiply, with the subsequent production of fetor and gangrene. Other conditions, such as purulent bronchitis, pneumonia and bronchoectatic abscess should not be confused with gangrene, and the authors assert that a true diagnosis can only be reached by an attentive analysis of clinical symptoms. Regarding treatment, no benefits have been obtained from the use of vaccines, anti-gangrene serum, or arsenical salts, and surgical intervention is always necessary. Pneumothorax has been tried with some success, the danger here being in infection of the pleura owing to rupture of the

infected focus. Ablation or destruction, rather than opening of the gangrenous area, should be aimed at. If the lesion is small and well localized, thermocoagulation or electrocoagulation is advisable, but when the area is large external pleural compression may be useful. Phlebotomy gives relief, and is a useful preliminary to a more direct and radical operation.

## 97 A Leukaemic Blood Picture in Syphilis

R. C. LAPRABEE and N. SIDEL (*Boston Med. and Surg. Journ.*, May 5th, 1927, p 730) describe a case of syphilis which, on admission to hospital, was considered as a probable myelogenous leukaemia. The symptoms were weakness, slight cough with purulent sputum, increasing dyspnoea, and marked pallor of the skin and mucous membranes, with a generalized brownish yellow discoloration of the face. The blood findings were haemoglobin (Sahli) 30 per cent, erythrocytes 1,640,000, leucocytes 55,800, and platelets 282,000. A differential leucocyte count showing 17 per cent lymphocytes, and 9 per cent myelocytes. A Wassermann test and x-ray examination led to the correct diagnosis, the former being strongly positive and the latter revealing marked thickening and irregular shafts of both femurs and clavicles and multiple punched out areas in the outer table of the skull. Intensive treatment with sulpharsphenamine (thirteen intravenous injections being given) caused a rapid recovery in seven weeks. On discharge the haemoglobin was 85 per cent, the erythrocytes numbered 5,046,000, and the leucocytes 7,000, with 1 per cent myelocytes. Kummblair has recently reported ten cases in which the blood pictures were indistinguishable from leukaemia, these show that acute infections may be so severe that myelocytes, or even myeloblasts, may appear in the blood as a result of unusual strain on the bone marrow. In the present case this bone marrow have been caused by the spirochaete of syphilis. The case emphasizes the facts that syphilis may present bizarre forms, and that a leukaemic blood picture does not necessarily imply the existence of true leukaemia.

## 99 The Effect of Quinine on Metabolism in Diabetes

SILBERSTEIN, TATUM, and CUTTING found that doses of 0.07 to 0.1 gram of quinine per kilogram of body weight produced hypoglycemia in animals. A. LOW and R. P. FIDELL (*Bull. Clin. Med.*, April 21st, 1927, p 526), on the other hand, working with much smaller doses—that is, 0.005–0.01 gram per kilogram injected intravenously—obtained a reduction in the blood sugar. In normal human subjects they found that the blood sugar began to fall twenty minutes after an intravenous injection of half a gram of quinine hydrochloride, reached a minimum in 40 to 160 minutes, and returned to its original level three to four hours after the injection. Similar results were obtained in mild and moderately severe cases of diabetes, with parallel effects on the amount of sugar excreted in the urine. The total ketone bodies in the blood were also found to be reduced, except in one case of severe ketonuria, which was unaffected. In the only two cases of diabetes in which it has so far been tried the oral administration of 0.25 gram of quinine hydrochloride four times daily with a standard diet also effected a reduction in blood sugar, acetone bodies and glycosuria. Low and Fidell conclude that since quinine appears to have an effect on carbohydrate metabolism comparable with that of insulin, other compounds unrelated chemically to insulin may have a similar action, and the investigation of all these is likely to throw light on a number of problems connected with the action of insulin.

## 99 The Kahn Test for Syphilis

F. BERRY, L. E. LY, and G. M. DILLON (*Journal Amer. Med. Assoc.*, April 23rd, 1927, p 1306) have performed a series of 15,000 Kahn tests in order to determine the diagnostic reliability of this procedure, its sensitiveness, and its source of error. They find that the test is as specific as, and more sensitive than, the Wassermann technique, it is also simpler and the diagnosis is obtained more rapidly. The authors add, however, that as much skill and experience in serology are required for the performance of the Kahn as of the Wassermann test. In their investigations they obtained a complete agreement between the Kahn and Wassermann reactions in 89.13 per cent, relative agreement in 6.54 per cent, and complete disagreement in 4.33 per cent. J. L. W. (ibid., May 7th, 1927, p 1469) reports, as the result of fifteen months' experience of the Kahn precipitation test, that its absolute diagnostic significance can be attached to the result in any individual case, though the stronger a positive result is the greater is the probability of the patient being a syphilitic. He considers that the functions of the test in the diagnosis of syphilis are to suggest the possibility of this disease in persons in whom it was not previously suspected, and to contribute confirmatory evidence when the diagnosis is in doubt. He prefers the Kahn to the Wassermann test by reason of its technical simplicity and greater promise of uniformity.



# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

### 100. Post encephalitic Respiratory Symptoms

L. HESS (*Wien Klin. Woch.*, May 25th 1927, p. 670) describes the respiratory symptoms which may occur in the chronic stage of epidemic encephalitis. Occasionally post encephalitic Parkinsonism is associated with a more or less permanent condition of hyperpnoea with increased depth and rate of respiration unaccompanied by subjective symptoms of dyspnoea. Intoxyminal attacks of hyperpnoea of sudden onset, generally lasting several minutes during which the respiratory rate is 30 to 40 are however much more frequent. These attacks are sometimes preceded by motor restlessness or other prodromata and while they last the lungs are hyper- resonant to percussion and the liver dullness appears to be diminished sometimes a few rhonchi or subcrural rales are audible at the bases. The heart rate is only slightly accelerated and cyanosis is not a marked feature. A small amount of watery sputum is expectorated at the end of the attack but there is no associated cough or laryngitis, though a bad attack may be followed by vomiting. These attacks may occur at any time of the day or night at irregular intervals as many as six in the course of twenty-four hours were observed in one case. The sudden onset and subsidence of the attacks together with the absence of cyanosis and of evidence of organic change in the heart or lungs in the intervals point to a nervous origin. They differ from attacks of bronchial asthma in duration, irregularity of occurrence and the character of the respirations. In the Parkinsonian type the excursions of the diaphragm are small and frequent and inspirations and expirations succeed one another regularly and rapidly whereas in bronchial asthma the respiratory rate is often diminished and expiration prolonged, while there is hypersecretion of the characteristic sputum. Hess explains this difference by the hypothesis that the motor and secretory symptoms of bronchial asthma are produced by peripheral irritation of the vagus while the Parkinsonian attacks are of central vegetative motor origin. He compares them with the air hunger of diabetic coma and of the alimentary intoxication of infants, or the paroxysmal attacks occurring in pernicious anaemia, early cerebral atherosclerosis and Graves disease, which are all probably of cerebral origin. Macroscopic evidence of lesions in the locus ceruleus forms an anatomical basis for this hypothesis.

### 101. The Dick Test.

H. D. LEES (*Journ. Amer. Med. Assoc.*, April 9th 1927, p. 1133) found that of 48 scarlet fever patients, 15 (31.2 per cent) had negative Dick reactions at the onset of the disease. A negative reaction, therefore, did not seem to be a reliable index of immunity to the disease and could not be relied on as an aid in the diagnosis of doubtful cases of scarlet fever. Out of 530 students from rural districts whose average age was 17 years, 264 (49.8 per cent) gave a positive reaction. Of 120 positive cases 76 (63.3 per cent) were rendered Dick negative by active immunization with one injection of 3 CCG skin test doses of toxin detoxified with 2 per cent sodium bicarbonate. Lees found that intradermal injections of convalescent serum produced an earlier and more complete local blanching of the scarlet fever rash than did the concentrated antitoxin prepared by the Dick method. In four out of five students who received prophylactic doses of scarlatinal antitoxin the Dick test remained positive.

### 102. Temporary Disappearance of the Dick Reaction

R. DEBRÉ, M. LAMY and H. BONNET (*C. P. Soc. de Biologie*, June 24th 1927, p. 104) have found that in patients affected with various exanthemata a positive Dick reaction often becomes negative this being particularly the case in measles. They cite the cases of four infants in whom a positive Dick test became negative on the day following the appearance of the measles rash. Absence of the specific antitoxin in the serum was also noted. Numerous tests performed about every two days proved that this disappearance of the reaction was only temporary and that it again became positive at the end of a month. According to the authors other exanthemata cause this phenomenon and a similar result was obtained in an infant suffering from an acute erythema following treatment by quartz lamp irradiation for rickets. The authors believe that these temporary changes can be observed in any cutaneous eruption and that they are in no way specific. A weaker Dick reaction has been noted over skin treated with sinapism than over normal skin. They

consider that the Dick test is liable to give erroneous results in exanthemata, and particularly in measles, and that in such cases it should be replaced by one for the presence of antitoxin. These views are in accordance with the recent findings of Carnot, Lenard, Biancamani, and Azerard as to the retarding action of ultra violet rays on the cutaneous reaction to tuberculin.

### 103. Chronic Ulcerative Colitis

P. ALESSANDRINI (*P. Policlinico Sez. Prat.*, May 22nd 1927, p. 743) discussing the etiology of this disease states that there is often no evidence of pre-existing amoebic or bacillary dysentery. In some cases excretion of material taken directly from the ulcers by means of a sigmoidoscope may solve the etiological problem and the agglutination test is sometimes helpful. The symptom of chilliness occasionally observed in colitis as in cholera is possibly of anaphylactic origin and the cool tongue may be an indication of an attempt at the elimination of toxic substances by epithelial desquamation rather than a direct consequence of the intestinal condition. The author thinks that the diet in these cases need not be too restricted but frequent examination of the stools is necessary. The most useful drugs are emetine, ipecac and stovaine even if there is no amoebic infection. Specific serotherapy does not seem to give better results than non-specific protein therapy. The children's suggestions of the existence of some relation between the skin and colon, and violet rays have proved beneficial occasionally but if used, they must produce a denude cutaneous erythema for good to be of use. In haemorrhagic cases opium and haemostatics are necessary, enemata are believed to act chiefly by removing mucous and necrotic fragments rather than by direct action on the ulcers. The moderate use of laxatives is advised. Surgical treatment such as appendicectomy, caecostomy or anastomosis on the whole gives poor results when one particularly resistant patch prevents cure.

### 104. Anthocyaninuria.

M. W. POOLE (*Amer. Journ. Dis. Child.*, May, 1927, p. 765), who records an illustrative case describes this rare condition which signifies pigmentation of the urine following ingestion of red beet (*Beta vulgaris*) and may readily be mistaken for other conditions in which red pigment occurs in the urine. According to Formanelli the red of beetroots is caused by anthocyanin, which changes to yellow under certain conditions the absorption bands of the yellow pigment being identical in position to carotin. The cause of the change being unexplained. Poole's case occurred in a boy aged 6 in whom the presence of the dye in the urine following ingestion of beetroots was probably the result of a change in permeability of the kidney due to scarlatinal nephritis as it had never appeared previously.

### 105. Periarthritis Nodosa.

H. A. SINGER (*Arch. Int. Med.*, June 15th 1927, p. 865) discusses periarthritis nodosa with special reference to the acute abdominal manifestations and reports two cases. It is generally believed that the condition is an infectious disease caused by a filterable virus or a number of different agents but that syphilis plays no part in its etiology. Most cases are not diagnosed during life and are only revealed at the necropsy so that the pathological side has been dealt with far more exhaustively than the clinical. The bewildering symptomatology may be simplified by assuming the presence of an infectious process which in addition to causing local symptoms based on circulatory disturbances in the systems or regions affected also produces such constitutional disturbances as fever, tachycardia, eruptions and leucocytosis similar to those of a chronic septic process with either acute or insidious onset. The symptoms due to local vascular changes vary according to the system involved but as a rule several systems are simultaneously affected. Limitation of the manifestations to one organ being exceptional. Abdominal symptoms especially those referable to the gastro-intestinal tract are almost always present and when multiple lesions exist it is almost impossible to determine the cause of the pain which is frequently extremely severe. Nodules in connection with the cutaneous vessels representing either granulomatous thickenings or thrombosed aneurysmal dilations are important diagnostically and rupture may cause cutaneous haematomata. Pain in the upper abdomen may suggest ruptured peptic ulcer or pancreatitis while in the lower abdomen it may give rise to suspicion of appendicitis. The appearance of cutaneous nodules is generally the first

due to a correct diagnosis, and when these are absent the real condition may not be revealed except at operation. Usually chronic and progressive in its course, its duration averages about two months, marked by irregular exacerbations and remissions, while latest statistics point to recovery in from 10 to 12 per cent of the cases.

### 103 Primary Pneumococcal Meningitis

J CHALIER and R PUIG (*Journ de M d de Lyon*, June 5th, 1927, p 281) state that pneumococcal meningitis, which was first described by Nettel in 1887, may be either secondary to another focus of pneumococcal infection, such as pneumonia or mastoiditis, or be primary, in which case the portal of entry of infection is doubtful. Primary pneumococcal meningitis is less frequent than meningococcal meningitis or pneumococcal meningitis secondary to another source of pneumococcal infection such as pneumonia or mastoiditis. Clinically pneumococcal meningitis is more severe than meningococcal meningitis, and is almost always fatal, whether its form is purely meningeal, apoplectic, fulminant, or insidious. A few rare cases of recovery, however, have been recorded. The authors record two cases, in patients aged 16 and 24 respectively, in which the presence of the pneumococcus in the blood was established by direct smears and cultures. This pneumococcus septicaemia is analogous to the meningococcal septicaemia found in meningococcal meningitis. Authorities are divided as to whether infection of the meninges in these cases takes place by the same pharyngeal route through the otiticoid, or, as is more probable, by the blood stream. The intravenous injection of serum is of great value in these cases, and should always be employed in addition to intraspinal serotherapy. Although, as a rule, antipneumococcal serum is ineffective, Cruevillier has reported a case of pneumococcal meningitis in which improvement set in as soon as intravenous injections were given, the patient ultimately recovered.

### 107 Tertiary Syphilitic Fever

VILAPLANA (*La Medicina Ibera*, April 30th, 1927, p 476), records an illustrative case, quotes M Bloch's statement that a diagnosis of pure or essential syphilitic fever may be made under the following conditions: (1) a febrile state of a pseudo malarial type, (2) slight degree or entire absence of physical signs, (3) a positive Wassermann reaction in the blood, (4) rapid disappearance of the fever under antisyphilitic treatment. Vilaplana's patient was a soldier who presented fever of an intermittent type and a positive Wassermann reaction in the blood. It was, however, impossible to say whether this was a case of tertiary syphilitic fever, as the man was both syphilitic and malarial, antisyphilitic treatment was not continued long enough to have any effect.

## Surgery.

### 103 Spontaneous Rupture of Abdominal Muscles

H KRASSO (*Wien Klin Woch*, June 9th, 1927, p 751) records two similar cases—in a woman aged 73 and a man aged 70. Both were obese persons with pulmonary emphysema and arterio sclerosis. As the result of a violent expiration—a cough in one and a sneeze in the other—violent pain occurred in the left iliac region, which was aggravated by movement and pressure. Some days later a haematoma appeared at the painful spot, though it was at first mistaken in one case for erysipelas and in the other for haemorrhagic herpes zoster. Both patients recovered as the result of rest in bed and treatment for the cold which was the cause of the disease. There was no doubt that the condition was due in both cases to laceration of the fatty degenerated external oblique muscle and its fascia, as well as of some of the small subcutaneous arterio sclerotic vessels, as the result of the mechanical strain caused by coughing and sneezing.

### 109 Primary Tumours of the Knee-Joint.

F HABITZ (*Vojsk Mag f Laeqevd*, May, 1927, p 369) describes the following varieties of primary tumours of the knee joint: (1) Primary diffuse sarcomata in the synovial membrane (two cases). The first case was that of a man, aged 22, who in the course of seven or eight weeks developed a diffuse swelling of the knee resembling tuberculous arthritis. On resection of the joint the synovial membrane was found to be uneven rough, and granular, and to present brownish tufts with calcareous incrustation. On microscopic examination quantities of calcareous granules were found in a tumour-like tissue closely resembling a mixed celled sarcoma. Remission soon followed, and amputation of the thigh was performed, but the patient died shortly afterwards. The second case was that of a woman, aged 20, who in the course of two and a half years developed a slowly growing

tumour in one knee, which was diagnosed as tuberculous arthritis and treated first with plaster bandages and after wards by resection of the joint. The synovial membrane was reddish brown and thickened and the joint cartilages destroyed. Microscopically the synovial membrane presented the appearance of a pigmented giant celled xantho fibrosarcoma. There was no recurrence. (2) Circumscribed tumours in the joint. These are usually sarcomata. Habitz had previously described eight examples, and now records another in a patient, aged 58, in whom the growth—a calcareous fibroma—had lasted thirty years. In conclusion, he describes a case of primary giant cell sarcoma of the patella, a comparatively benign growth, in a man aged 49.

### 110 Leukaemia Simulating Malignant Disease

H VON SLEMMEN (*Munch med Woch*, May 27th, 1927, p 878) remarks that it is important for the surgeon to recognize the presence of leukaemia, in view of the fact that excision of an enlarged leukaemic spleen or lymphatic gland is indicated only in very exceptional circumstances, and that an operation of any kind in leukaemia should be avoided owing to the tendency to haemorrhage and the danger of aggravating the disease. He records three cases of leukaemia, which were admitted in the course of a year to the surgical clinic of Freiburg University with the diagnosis of malignant growth (gastric carcinoma, rectal carcinoma, and hypernephroma), in patients aged 58, 61, and 65 respectively, and adds that in order to avoid erroneous diagnosis of this kind it is advisable to make a careful examination of the blood before operation.

### 111 Unilateral Nephritis

B N KHOLTZOW (*Arch des mal des Reins et des organes genito urinaires*, April 1st, 1927, p 538) considers that the good results obtained by operation in surgical affections of the kidney is in great measure due to the fact that these affections are generally limited to one kidney. The previously accepted statement that "therapeutic" nephritis is always bilateral is now open to doubt, and it is admitted that cases may be unilateral, at least at the commencement of the disease. Whereas cases have been reported of unilateral urogenital and haematogenous infective nephritis, the toxic nephritis caused by poisons and microbial toxins is always bilateral. The fact that in cases of chronic nephritis both kidneys at the necropsy are always found to be involved does not exclude the possibility of unilateral infection at the commencement of the disease, and frequently one kidney is more affected than the other. Clinically it is not possible to decide with certainty the unilateral character of a "therapeutic" nephritis, but the author believes that in those cases associated with pain and haematuria, where nothing abnormal can be found in the urine and in the function of one kidney, there is a strong probability that the affection is unilateral. He gives details of three cases in which he removed the infected kidney, with complete cessation of symptoms and recovery of the patient. The diagnosis in each case was confirmed by the pathological report of the kidney removed. His observations also indicated that the view that haematuria occurs only in cases of isolated glomerular nephritis is not correct, since in one of his cases there was a generalized glomerular inflammation, and in another the kidney was small and atrophied. Koltzow discusses the advantages of nephrotomy and nephrectomy, and concludes that removal of the organ should always be practised in unilateral infection, since it is known that infection of one kidney will sooner or later extend to the other, possibly by the action of nephrotoxins or nephrolysis, which are developed, nephrectomy may therefore be regarded as a prophylactic measure.

### 112 Operative Treatment of Splenomegaly

R GREGOIRE and P L VILLI WIL (*Bull et Mem Soc Nat de Chin*, July 2nd, 1927, p 935) remark that removal of the spleen in cases of its primary enlargement has given varying results in the hands of different surgeons. In certain cases it is not wise to operate—for example, in cases of splenomegaly associated with leukaemia the condition is usually found to be myeloid leukaemia, and an examination of the blood at once shows their unsuitability for surgical treatment. Radiotherapy, however, gives some good results. In these patients, again, in Hodgkin's disease, where the splenic enlargement is associated with swelling of the glands, operation is contra-indicated. In certain other cases the splenic enlargement is due to a definite cause, being in the nature of a chronic inflammatory condition which may be due to syphilis, or parasitic, following infection by bilharzia or other organisms. These may give rise to vascular complications causing haemorrhages and anaemia, and later infections of the liver and ascites. Splenectomy at the right time may cure the condition. The chief indications for operation are enlargement of the spleen associated with anaemia and haemorrhages, when the disease does not respond to medical treatment. Operation is contra-indicated when there is evidence

of serious involvement of the liver function. This is shown not only by the size of the liver itself but also by the presence of jaundice and ascites. Operation under such conditions is not advised. The state of the patient can be improved, however, in selected cases by transfusions of blood and the use of insulin; the authors find that blood transfusion definitely inhibits the haemorrhages in a tumour in the manner splenic metastasis is in itself progressive and usually fatal and removal of the spleen in selected cases at the right time may cure the patient.

#### 112 Epilepsy following Cerebral Abscess

J. PONS (*Revue de Laryngologie*, April 30th 1927, p. 276) reports the case of a man, aged 21, who following an old meningitis, showed symptoms of cerebral complication. A radical mastoid operation was performed and two days later the temporo-sphenoidal lobe was explored and an abscess evacuated. Improvement occurred for a time and symptoms were removed after two weeks, but a second exploration revealed a pocketing of pus in the brain. A further increase of symptoms led to trichinosis of the temporal region and a superficial abscess was discovered and evacuated from that point all well and the wound healed but about a month after complete healing, epileptic fits of a generalized type began and continued at the rate of about five or six a year. Pons remarks that while such epileptic attacks are fairly common after injuries to the skull and brain they are comparatively rare after abscesses. It is not surprising that after an abscess with its surrounding inflammatory processes, there should be some cicatricial tissue in the brain and meninges which might give rise to epileptic attacks. In a case of localized epilepsy, exploration and separation of adhesions might be useful but in a generalized type it has proved to be useless. Leriche considers that vasomotor changes play some part in producing the epileptic state and has suggested in cases of hypotension infusion of a hypertonic glucose saline while in other cases he has suggested and employed carotid sympathectomy.

#### 113 Pseudo Peritonitis in a Diabetic Patient

W. USABEL (*Zentralblatt für Chirurgie*, May 23rd 1927, p. 1564) describes the case of a man, aged 26, admitted as a case of perforated gastric ulcer. He had had a sudden attack of severe abdominal pain twelve hours previously but without vomiting. He was pale and poorly nourished, there was a strong odour of acetone in the breath, and the urine contained much sugar and acetone but no diacetic acid. The abdomen was distended and very tense especially in the epigastric region but not very tender. The pulse was weak and rapid, and the temperature was 98.6°. As the condition suggested peritonitis from perforation of a gastric ulcer 100 units of insulin were injected and laparotomy was performed. No evidence of inflammation or of any visceral lesion was found so the wound was closed. The insulin treatment was continued and the wound healed by first intention. Three months after the operation the patient was well and had not had any recurrence of the pain. Although attacks of more or less severe abdominal pain are not uncommon in diabetic patients the author is not aware of any previous record of the occurrence of such severe symptoms simulating peritonitis. Ehrmann and Jacoby believe that these attacks of pain—"pancrealgia"—occur shortly before the advent of coma.

#### 115 Incidence of Malignant Disease in Java

T. WIEBERDINK (*Nederl. Tijdschr. v. Geneesk.*, April 30th 1927, p. 2334) states that while only a few data are available as to the occurrence of cancer in the Dutch Indies the general impression is that cancer occurs much more rarely in the native population than it does in European countries. In 1924 among 1,657 Europeans who died in the Dutch Indies there were 95, or 5.9 per cent, whose deaths were due to cancer as compared with 10 per cent in Holland. In the same year 121,347 patients almost exclusively natives were admitted to 171 hospitals in the Dutch Indies and among them were 582 or 0.48 per cent suffering from cancer. Of the 6,050 deaths in these hospitals 115 or 1.9 per cent, occurred among the cancer patients. Wieberdink however shows that a large number of cases of new growth are entered in the statistics under other headings. During thirteen months residence in Java he met with 175 tumours among 9,660 patients or about 2 per cent, which is about the same proportion as that in many European hospitals. Unlike the European statistics however in which cancers of the uterus and stomach together form about 50 per cent of the cases, Wieberdink's cases showed that these tumours were not specially frequent. Another remarkable feature was that the 113 cases of carcinoma of the rectum in his series were inoperable owing to their having been mistaken for dysentery, and treated with emetine or yatein without a digital or rectoscopic examination having been made.

## Therapeutics

#### 116 Non-operative Treatment of Enlarged Prostate

J. A. WEITLANDT (*Nederl. Tijdschr. v. Geneesk.*, June 11th, 1927, p. 322a) records a case of enlarged prostate in a man, aged 76 on whom operation was considered dangerous owing to the presence of pulmonary emboli and treatment by diathermy was employed. The case was specially suited for this method as there was only a local enlargement of the gland. The application of the high frequency current was facilitated by the use of Lewis's cysto-urethroscope and an excellent functional and anatomical result was obtained. The advantages of diathermy in the treatment of prostatic hypertrophy are given as follows: (1) the method is less radical and therefore less dangerous for the patient; (2) it can be performed quite painlessly by means of paracervical anaesthesia; (3) necrosis of the tissues can be produced without any risk of haemorrhage; (4) during the whole operation there is a clear view of what is being done. The method, however, is only suitable for cases with local enlargement, and in many cases it cannot take the place of prostatectomy. It must be borne in mind that rectal examination cannot give an accurate idea of the size of the enlargement round the neck of the bladder. This can be determined only by cystoscopic examination.

#### 117 Sodium Thio-sulphate in Arsenical Poisoning

T. D. HUGHES (*British Journal of Medicine*, April 9th 1927, p. 543) records a case of arsenical poisoning treated by the intravenous injection of sodium thio-sulphate. Arsenic was still present in the urine six months after the accidental swallowing of a single large dose but it disappeared there from with rapid clinical improvement when intravenous injections of sodium thio-sulphate were given. A man after eating potatoes boiled in water containing arsenic was seized with violent abdominal pain and purging, and was admitted to hospital in a collapsed state. Four days later dermatitis of the scrotum, hand and feet developed followed by extensive edema and motor disturbance with rigidity waxing. Sixteen intravenous injections of 0.75 gram of sodium thio-sulphate in 10 c.c. of water were given on alternate days and the urine was then found to be free from arsenic. The patient's clinical condition quickly became almost normal and there was no relapse. Pain disappeared after the tenth injection, he lost the abnormal tonic contractions, and became able to walk without a stick and to perform the finer movements with his fingers. While the first five injections caused no discomfort a reaction followed the others including acute sensory disturbances in the feet and accentuation of his general symptoms. Though alarming at first the reaction passed off in about twelve hours leaving the patient in a better state than prior to the injection.

#### 118 Blood Transfusion in Chronic Enterocolitis

G. C. WOOD and R. AIDIN (*Brit. Journ. Child Dis.*, April-June 1927, p. 107) remark that although for at least a decade transfusion of blood has been regarded as a valuable therapeutic measure in the treatment of distressing conditions in adults its value in the treatment of such infants has been appreciated only during the past few years—for example, in erysipelas, traumatic shock, post-operative shock, burns, acidosis, marasmus and acute intestinal intoxication. They record twelve cases of infants aged from 2 months to 2½ years suffering from chronic enterocolitis who were treated by blood transfusion with two recoveries. Their conclusions are as follows: (1) Blood transfusion is not a specific cure for chronic enterocolitis of infancy. (2) It is of no value when given to a moribund patient and must not be tried as a last resort. (3) It is most likely to be successful when the infant is over 9 months old. (4) It results in a temporary improvement of the digestive function in the majority of cases.

#### 119 Bismuth Thioglycolate in Syphilis

O. M. GRUNZEL, E. LYONS and P. PERKINS (*Brit. Journ. Child Dis.*, May 1927, p. 504) have tried to obtain a therapeutically active preparation of bismuth which would be soluble in water and so be more quickly absorbed. As the result of experiments they found that the tri-calcium salt of bismuth thioglycolate did not cause pain or local irritation and was non-cumulative and was deemed by spectrochemical analysis to be of one sixth of a gram in a 100 c.c. of intramuscular injection it had been absorbed and was distributed throughout the body. The authors have treated seventeen syphilitic patients with this preparation in 50 injections being given without pain, except on one occasion when the solution may have been introduced into or near a nerve trunk. No lumps developed except when injections were made into the arm, when they were small and only painful.

on pressuro. In one patient there was darkening of the gums showing that the bismuth had reached the degree of saturation. Gastro-intestinal disturbances did not occur, nor did albumin appear in the urine. Secondary and tertiary syphilitic lesions were rapidly improved, and the Wassermann reaction became negative in eight cases. The authors believe that the great advantage of this preparation is that it remains soluble in water, when injected into the body it does not form insoluble albuminates at the site of injections, and is not precipitated as metallic bismuth. It saturates patients rapidly without producing a cumulative toxic effect. To keep the patients in a saturated state the drug should be given three times a week, in doses of 1.3 mg per kilogram of body weight, or twice a week, in doses of 2 mg per kilogram.

#### 120 Peptone in Asthma and Hay Fever

P. VALLERY RADOT and P. BLAMOUXIER (*Bull et Mem Soc Med des Hop de Paris*, May 5th, 1927, p. 527) have treated successfully many patients suffering from hay fever, asthma, and spasmodic coryza by intradermic injections of concentrated peptone solution, their results in other conditions, such as urticaria, were inconclusive. Hay fever gave the highest percentage of successes, but the authors consider the treatment useless for prophylaxis, and state that it should be commenced only at the onset of the coryza and sneezing. The best results occurred among patients treated on the second or third day of the coryza, when a week had elapsed the results were less favourable. The injections were given daily for twenty days, improvement sometimes appeared at once, or between the twelfth and fifteenth doses, or after the last injection. A second course, commencing one or two weeks after the conclusion of the first, was occasionally required. In asthma the most favourable results were obtained in cases of pure spasmodic asthma without bronchial or pulmonary complications. The injections were often without effect in persistent asthma without intermissions, but its chronicity is not considered a contraindication, since patients who derived most benefit had suffered from asthma for many years. Peptone injections should be limited to patients who have frequent asthmatic attacks, they are not advised when the bouts are occasional only, and in spasmodic coryza the results are said to be very transitory. The authors use Witte's or Chassang's peptone, 50 grams being dissolved in sufficient distilled water to produce 100 c.c., the solution is deep brown and very viscid. It is placed in ampoules and sterilized at 115°C. The authors add that the whole of the injected fluid must pass into the thickness of the skin, pigmented areas may be produced if the peptone passes under the epidermis or hypodermically. The quantity of fluid injected should never exceed 3 to 10 c.c. Occasionally subcutaneous nodules remain at the site of the injections, but fomentations assist their absorption.

#### 121 Treatment of Epilepsy by Amyl Nitrite

A. POPEA and G. EUSTAZIOU (*Presse Med*, May 21st, 1927, p. 643) refer to the various theories—bulbar, cortical, and nuclear—which assign the epileptic attack to excitation phenomena of the central nervous system, and to others which explain the epileptic crisis as inhibition phenomena. It is known that cerebral anaemia provokes general convulsions and that stimulation of the cervical sympathetic, which produces cerebral anaemia by vaso constriction, is followed by convulsions as the result of the inhibition of the cortical centres. Arguing that if the epileptic crisis is a vaso constrictor effect it should be possible by means of some vaso dilator substance to suppress or at least to cut short the convulsive attack, they administered 3 to 5 drops of pure amyl nitrite by inhalation to sixteen different epileptic patients with the nature and sequence of whose attacks they were previously acquainted. To ten of these the drug was given during the convulsions, which were invariably arrested, after which there followed sweating, a short period of torpor and mental confusion, and a return to the condition usual between the attacks. In two cases the amyl nitrite was administered at the first appearance of the attack with the result that the slight convulsion ceased, the patient commenced to sweat, and quickly regained consciousness with only slight mental confusion. In one case the attack was in no way modified, except that the patient did not show the stage of excitement which usually followed his attacks. When the drug was inhaled during the period of excitement after an attack the excitement was only temporarily allayed, and when the inhalation was given during the stage of excitement preceding an attack the effect was only of short duration. From their observations of the modifications produced by the inhalation of amyl nitrite, either on the convulsive attack or on the psychic symptoms which accompany or follow the crises, the authors infer that the pathogenic basis of an epileptic attack should be regarded as a vaso constrictor phenomenon, and that the sympathetic system plays a definite and important part in the pathogenesis of epilepsy.

## Disease in Childhood.

### 122 Chest Examination in Children

J. H. MARCUS (*Med Journ and Record*, May, 1927, p. 618) emphasizes the importance of attention to detail in chest examination in children. Auscultation should precede percussion. The normal respiratory sound is broncho vesicular. Bronchial respiration is heard normally over a wider area at the root of the lungs in the back in infancy and early childhood than in later childhood and adult life. In infancy and up to late childhood the respiratory sound is the same at both apices, and the expiration is not prolonged at the right apex. If a weak respiratory sound suggests disease of the lungs the baby should be made to cry and thus to take a long breath. Pleural friction sounds are hardly ever heard in infants and young children, even though pleurisy may be present, in middle and late childhood, however, they are just as common as in adults. Light finger percussion should be the only form used, the percussion note is normally more resonant during infancy and childhood than later. A tympanic element is always added at the left base because of the position of the stomach, unless the organ contains food. The percussion note is not dulled at the right apex as in adults. A slight dullness over the manubrium due to the thymus may often be demonstrated, more intense sternal dullness is to be considered pathological.

### 123

#### Progeria

D. APERT and P. ROBIN (*Presse Med*, April 6th, 1927, p. 433) describe various clinical varieties and report a case of progeria, known also as the senile dwarfism of Viorot. According to Hastings Gilford, who in 1904 was the first to describe this morbid condition, the subjects of progeria, whether children or adolescents, present an aged and dwarfed appearance. The skin is dried, wrinkled, and resembles parchment, the blood vessels are very prominent and bare, the arteries are atheromatous, and the articulations, which are knotted, allow only limited movements. The patients cease to grow and rarely attain a height greater than 3 feet. Baldness is a characteristic, and many other slight abnormalities, such as alterations in the fingers and nails, are seen. From reported cases and their own observations the authors conclude that progeria is a well defined morbid entity presenting certain symptomatic variations. The absence of hair and down is not a necessary symptom, many patients having an abundant hairy growth. Subcutaneous fat is not lacking, and may be more or less conserved. The cranium, until adolescence is reached, presents lacunae, which are especially numerous along the sagittal suture or at the fontanelles. These lacunae fill in later owing to the formation of Wormian bones. The distention of the phalanges and shortening and atrophy of the nails are important diagnostic points. The skin is always altered, and often shows warty proliferations, liable to calcification. The great articulations are sometimes affected, and the feet are often exaggeratedly flat. Fractures, spontaneous or caused by the slightest injury, are liable to occur. The alveolar arcades are misplaced, as is by compression, and the teeth, particularly the incisors and canines, are badly arranged. The etiology and pathology of this disease have not been established, and no prophylactic or specific treatment is as yet known.

### 124

#### The Anaemias of Infants

LESNÉ and LANGLE (*Le Nouvellon*, March, 1927, p. 65) group the anaemias of infancy as follows: (1) Simple anaemia appearing from the second to the fourth month, almost invariably in premature infants. The red blood corpuscles are reduced to about three million per c.c.m., with the haemoglobin index remaining at about one. The prognosis is good. (2) Chlorotic anaemia occurs from the eighth to the twelfth month. The red blood corpuscles are practically unaffected in numbers, while the haemoglobin index falls very low—20 to 40 per cent. It is a common condition, as seen in premature infants, in twins, and especially in premature twins, in this last case the combination should always suggest syphilis. There is a marked diminution of the iron content. (3) Pseudo-leukemia (von Jaksch) develops from the sixth to the fifteenth month, particularly in girls. It is indicated by pallor, weakness, enlargement of the liver and spleen, particularly the latter, and haemorrhages towards the termination. Death occurs in a few weeks from cachexia or some intercurrent malady. The erythrocytes are reduced to about 1,500,000 per c.c.m., with a haemoglobin index of 50 to 25 per cent. The leucocytes range from 20,000 to 120,000 per c.c.m., but are generally around 30,000. In the commonest type myelocytes appear in large numbers, 6 to 27 per cent. Less frequently there is a lymphocytosis, a third form cosmophil cells are prominent, 8 per cent being polynuclears, and 2 per cent myelocytes. A fourth form in which lymphocytes and myelocytes appear in equal numbers



has been described. A necropsy shows an intense myeloid reaction of all the haemopoietic organs particularly those forming the red cells. (4) Leukaemic aencha is rare, the plastic dysplastic, and aplastic forms are described. This condition is rapidly fatal. (5) Leucemia is also rare, and generally occurs acutely with an increase of embryonic or undifferentiated cells 100 000 to 300 000. As regards etiology, the authors consider that the causative factors are syphilis, digestive disturbances particularly a deprivation of iron owing to too prolonged feeding on cow's or goat's milk rickets, tuberculosis, zymotic disease, prolonged suppuration, malaria, kala-azar, helminthiasis, and neoplasms and haemorrhage. In the treatment of these cases the authors emphasize the importance of (1) antisyphilitic measures when there is any evidence of specific infection. (2) correction of faulty feeding, the diet should be rich in iron, vitamins and albumin from the seventh month fruitaceous foods, vegetables especially spinach which is rich in iron, egg yolk, meat juice, etc. should gradually be added to the feeds and the quantity of milk reduced. (3) antirachitic regime, the maximum of sunlight and fresh air and small doses of cod liver oil. (4) exhibition of iron and of arsenic in the form of proteolytic iron in doses of  $\frac{1}{2}$  to 3 grains and of Fowler's solution 2 drops daily per year of age. Other remedies mentioned are benzol 5 to 15 drops a day—a cure has been reported. X-rays any improvement is only slight and temporary. Splenectomy cannot be attempted in infants. Of great value is the transfusion of blood from a suitable donor, mixed with 10 per cent sodium citrate solution in the proportion of 1 part of citrate to 9 parts of blood. This may be injected into two longitudinal sinuses into a vein at the bend of the elbow, subcutaneously or intraperitoneally. The authors have had good results even from injecting non-citrated blood rapidly under the skin though an ecchymosis often slow in absorption is thus formed. Ultra-violet radiation is said to be of particular value in the lighter cases which are rapidly cured, and even more marked anaemias are very often improved. The pseudo-leukaemic cases are unfortunately unaffected.

## Obstetrics and Gynaecology.

### 125. Differential Diagnosis of Ectopic Pregnancy

W. T. DUNFELTER (*Journal Amer Med Assoc*, April 23rd 1927, p. 1302) recognizes six varieties of ectopic pregnancy, each of which he represents diagrammatically so as to define the characteristic clinical signs which enable a differential diagnosis to be reached. In each diagram the average pulse rate and blood pressure figures are compared and thus such conditions as an early ruptured abdominal pregnancy can be contrasted with a late tubal abortion. His six groups are: early tubal abortion (pulse 80 blood pressure 110); late tubal abortion with repeated haemorrhages from the fibrinated end (pulse 120 blood pressure 80); sudden intraperitoneal tubal rupture (pulse 150 blood pressure 50); cases in which the tube ruptures between the layers of the broad ligament (pulse 120 blood pressure 90); formation of the gestation sac in the cornu of the uterus (pulse 90 blood pressure 100); and type in which the embryo escapes from the tube without causing much haemorrhage remains viable and becomes attached to the peritoneal surface (pulse 80 blood pressure 110). Dunfelter states briefly the treatment in these respective groups.

### 126. Treatment of Miscarriage due to Uterine Fibroids

R. LEIBOVICI (*Presse Med*, May 14th 1927, p. 613) draws attention to the frequency of fibroid growths as a cause of miscarriage and comments on the dangers produced by this condition. Complicating features are introduced into the process of expelling the foetus and the placenta with consequent risk of infection and interference with the blood supply of the tumour. Curetting may give rise to serious haemorrhage or infection, and the author describes a case of submucous fibroid in which this operation employed after abortion provoked such abundant and continued loss of blood that hysterectomy became necessary. He also mentions two cases in which the curetting was delayed by such pronounced sepsis as to necessitate hysterectomy. He suggests the following lines of treatment in the case of pregnancy in a fibroid uterus. If miscarriage is just commencing a temporizing policy will be the safest with careful watch for excessive haemorrhage or the incidence of sepsis. If there is serious bleeding, hysterectomy is generally a safer procedure than curetting, except, perhaps, in the case of a young woman when the latter operation and tamponade may be tried though preparations should be made for hysterectomy in case it becomes necessary. With suppuration

occurring in a fibromatous uterus hysterectomy will also be required since vaginal myomectomy is both difficult and often disastrous in these cases. The author recommends total abdominal hysterectomy with vaginal drainage. Vaginal hysterectomy will seldom be found to be practicable.

### 127

#### Ovarian Haemorrhage

G. STRAUCH (*Zentralbl. f. Chir.*, April 30th, 1927, p. 1103) disputes the view that in cases of haemorrhage from a ruptured ovarian follicle the loss of blood is usually slight. He states that numerous examples of severe and even fatal haemorrhage have been reported and in many cases the symptoms have resembled those of appendicitis. Strauch operated recently on a nullipara aged 27, who had been married three years; menstruation commenced two days before admission. Appendicitis had been diagnosed and there was severe pain on pressure in the right iliac fossa. The rectal temperature was 100.5°. On opening the abdomen the appendix was found to be healthy, but eighteen ounces of coagulated blood were present in the peritoneal cavity. In the right ovary there was a laceration more than half an inch in length; this was sutured and the patient recovered.

### 128

#### Myo hysteropexy

UNDER this term JACOBOWICZ (*La Gynecol.*, April 1927, p. 212) describes an operation for complete uterine prolapse. The normal uterus is very mobile and when excessive mobility is replaced by an absolute immobility the change tends to give it a trouble. In his operation the author keeps the uterus in place by reconstructing the means of suspension and support the former being by means of the ligaments and the latter the pelvic floor vascular pedicle and the parametric tissues. Two variations of the operation are described in one, the psoas muscles and in the other the intra-abdominal muscles are utilized. In the former laparotomy is first performed. The parietal peritoneum is then incised at the aortic bifurcation prolonging the length of the psoas as far as the iliac artery towards the bottom of the retro-vesical pouch. The bladder and uterus are separated up to the insertion of the vagina and the peritoneum from the iliac fossa. The psoas minor muscles are cut at their lower insertions and detached as far as their upper ones. The ends are fixed by a U shaped suture to the anterior surface of the cervix immediately above the insertion of the vagina. The peritoneum and parietal walls are then closed. In the second procedure, after laparotomy and separation of the bladder and uterus a section of a bundle of the right muscles 2 cm wide and 10 cm long is made and the bundle freed to its pubic insertion. Two openings are made in the parametrium above the uterine arteries through which the free ends of the muscles are passed and fixed by a U formed suture the one to the posterior and the other to the anterior surface of the cervix. The uterus is then replaced and the wound closed. The patient should remain in bed for fifteen days. The author states that by this operation the uterus is restored to its normal site, pregnancy is uncomplicated and labor is normal. The advantages of the method are the preservation of uterine mobility and the utilization of fasciculi composed of tendons, muscles and aponeuroses the vitality of which ensures retention of the uterus in the correct position.

### 129

#### Basal Metabolism in Pregnancy

ACCORDING to A. PERALTA RAMOS and M. SCHTEINGART (*Gynecol. et Obstet.*, May 1927, p. 333) experimental research and clinical observation show that the thyroid gland influences both mother and child during pregnancy while conception cannot occur unless the thyroid shows some degree of activity. If hypothyroidism does not prevent conception the consequent oedema of the uterine mucosa interferes with the fixation of the ovum. During pregnancy thyroid hypothyroidism is almost always present and symptoms of hyperthyroidism may occur. The authors tried to determine the heat production of pregnant women at the different periods of gestation and how the thyroid responds to the physiological demands of pregnancy. In 61 per cent of their cases basal metabolism was increased, as shown by augmented heat production especially during the latter stages of pregnancy, though the cause of this increase was no altogether clear. The authors remark that pregnancy is a complex process which makes great demands on the maternal organism and particularly upon the endocrine system. The thyroid controls the heat output of the whole organism; it is the predominant although not the sole factor in the increase of basal metabolism. Among women who show signs of slight hypothyroidism under normal conditions this deficiency may be compensated during pregnancy by increased activity of the other endocrine glands giving an apparently normal basal metabolic rate if taken alone but indicating an increased metabolism by comparison with the same patient's index when non-pregnant. This appears to be the explanation of



the normal metabolic index in some cases during the later period of pregnancy. It is probable that the reduction in the quantity of protein prescribed for many patients towards the end of pregnancy helps to lower the index in these cases. The increased heat output is a physiological necessity which should balance the energy dissipated in the processes of foetal development.

### 130 Severe Ovarian Haemorrhage Simulating Acute Appendicitis

O THOMANN (*Zentralbl f Chir*, May 21st, 1927, p 1297) reports a case of haemorrhage into the ovary which gave rise to the symptoms of appendicitis. A previously healthy woman, aged 20, had a sudden attack of violent pain in the right inguinal region, followed by repeated vomiting. The previous menstrual period had occurred three weeks earlier and was normal in all respects. The patient complained of pain on pressure a fingerbreadth below McBurney's point. There was definite muscular rigidity in the right lower quadrant, but otherwise the abdominal wall was soft. The right adnexa could not be palpated on account of this rigidity, and no abnormality was found. Under the impression that this was a case of acute appendicitis the abdomen was opened five hours later. It contained about 26 ounces of blood that had escaped from the right ovary, which was as large as a walnut and was ruptured longitudinally, it resembled a sponge filled with blood—the characteristic appearance of an ovarian haematoma. The bleeding appeared to have been arrested spontaneously. The appendix and left ovary were apparently healthy. The differential diagnosis lay between ovarian pregnancy and haemorrhage from a ruptured follicle. In view of its uncertainty and the possibility of a subsequent recurrence of the haemorrhage, the right ovary was removed and appendicectomy was performed. The patient made an untroubled recovery, and two days after the operation a normal menstrual period began. The pathological examination showed very hyperaemic but otherwise normal ovarian tissue penetrated by a broad band of haemorrhagic clots in the organ. It appeared to be a case of "interstitial haemorrhage" (ovarian haematoma).

## Pathology.

### 131 Etiology of Tuberculosis of the Thoracic Wall

FROM the study of a number of cases in which infection of the thoracic wall occurred in a patient with other tuberculous lesions, G SIMON concludes (*Med Klinik*, May 20th, 1927, p 753) that though tuberculosis of the ribs is generally haematogenous in origin, tuberculous periostitis and osteitis may arise by direct spread from the lungs and pleura, since in a quarter to one third of the cases of tuberculous rib there is evidence of an old localized pulmonary focus, generally of the fibrotic type. Intrathoracic foci were found to be much more frequently associated with tuberculosis of ribs than with tuberculosis of other bones. Simon also considers that direct spread of infection accounts for the well recognized fact that the average age of patients with rib tuberculosis is higher than that of patients with other tuberculous bony lesions. In one case the continuity between a fistula from a carious rib and a pulmonary lesion was accidentally discovered when cough and unpleasant taste resulted while the fistula was being treated with injections of Calot's paste. The connection was subsequently demonstrated radiographically with iodopin. The possible continuity between a tuberculous lesion in the thoracic wall and an intrathoracic focus is of special importance when surgical treatment is contemplated.

### 132 Factors Influencing the Growth of Anaerobic Organisms

G M DICK, W A STARR, and MARIE WELFNER (*Journ Infect Dis*, April, 1927, p 525) have endeavoured to ascertain why the growth of certain anaerobic bacteria is so irregular. It is known, for example, that the spores of *Cl botulinum* may not germinate for weeks or months in apparently suitable culture media, and that in any batch of canned food only a single can may contain the toxin of this organism. It is clear that the application of heat, the hydrogen ion concentration of the medium, the amount of inoculum, and other factors play a part in this delayed germination. The authors have now investigated the effect of varying the atmosphere in which the organisms were grown. The procedure was to plant a known number of vegetative bacilli or of spores into veal broth contained in constricted test tubes. The air over the medium was evacuated to various pressures, or replaced with oxygen or carbon dioxide under low pressures. The tubes were then sealed, incubated, and watched for the pro-

duction of turbidity. The organisms used were *Cl botulinum*, Types A and B, and *Cl sporogenes*. The actual cells used for the inoculum were washed with saline solution to free them from toxin, spores were heated, in addition, to 80°C for ten minutes. The results showed that growth occurred within two days when the air pressure was reduced to 4 cm of mercury or lower, above this pressure growth was irregular, sometimes not occurring for sixty or seventy five days, at pressures higher than 16 cm no growth occurred at all. When the air was replaced by oxygen at pressures of 5 and 10 cm there was no growth, even after three months. But in atmospheres of carbon dioxide at pressures ranging from 5 to 50 cm growth occurred uniformly within two, or at the latest three, days. The production of toxin was estimated by the intraperitoneal injection of mice after the cultures were one, five, and thirty days old. The maximum production of toxin was found in the five day cultures, the titre appeared to be slightly higher in those tubes incubated under carbon dioxide than in those under air at low pressure. The authors conclude that the degree of anaerobiosis is at least one factor influencing the delayed germination of *botulinum* spores.

### 133. Histogenesis of Bronchial Carcinoma

F FEARTER (*Wien klin Woch*, May 19th, 1927, p 648) has endeavoured to determine whether the bronchiectasis and chronic pneumonic changes so often found at the periphery of bronchial tumours are secondary or primary, and if they result from stenosis by bronchial growth, or whether the cancer originates in a chronic bronchitic or pneumonic lesion. To this end he has, in four cases of squamous celled carcinoma of the bronchi, made systematic examination of the entire bronchial system, noting the nature of the growth and characters of the epithelial cells. He found at a great number of places, in bronchioles far removed from the malignant tumour, extensive pillings up of the epithelium, papillary growths of the mucous membrane, frequently atypical epithelial growths, and in one case an early carcinoma, only detected microscopically, in this case also two independent carcinomatous areas in the bronchial tubes had been recognized macroscopically. The author considers that every chronic inflammatory irritation of the bronchial mucous membrane can be regarded as a factor in originating carcinoma of the bronchial system, he associates the extensive and severe metaplasia of the bronchial epithelium noticeable in influenza infected lungs with the remarkable increase of bronchial cancer which occurred in the years following the great influenza epidemic of 1918-19.

### 134 Streptococcal Toxins and the Dick Reaction

E SACQUÉPÉE and P LESBRE (*C R Soc de Biologie*, June 17th, 1927, p 27) bring evidence to show that there is a close similarity between the toxins secreted by haemolytic streptococci. They isolated twenty six strains of these organisms from non scarlatinal suppurative and septicemic affections, and prepared toxins from them according to the method recommended by the Dicks. Intradermal tests on human beings were then made, using as a control the same toxin boiled for one hour. No fewer than nine of these strains proved active in a dilution of 1 in 500 or over, the titre of all of them was not ascertained, but the strongest toxin was active up to a dilution of 1 in 1,200. Of the other strains the majority were active between 1 in 50 and 1 in 500, a few were non toxic. Nine strains of streptococci of scarlatinal origin were similarly tested, six of these were active at 1 in 500 or over, the most active reaching a titre of 1 in 2,000. The reactions evoked by the non scarlatinal toxins were comparable to those seen in the ordinary Dick test, especially in their aspect and in the time of their appearance, duration, and disappearance. The non scarlatinal strains which secreted the most active toxins generally came from severe cases of infection, such as acute mastoiditis, septicæmia, and infectious phlegmons. On the other hand, the strains isolated from two chronic relapsing infections proved to be non toxic. As a general rule the reactions of normal persons to the toxins of the scarlatinal and the non scarlatinal groups were similar—that is to say, a person who reacted to the toxin of one group likewise reacted to the toxin of the other. It was also found that in the Dick reaction it was often possible to replace the specific toxin by the toxin of a non scarlatinal streptococcus. Patients suffering from non scarlatinal streptococcal infections often gave positive intradermal reactions to toxin at the beginning and during the course of the disease, followed by negative reactions during convalescence. In some of these patients the non scarlatinal could be replaced by the scarlatinal toxin without altering the results of the test. The authors conclude that in streptococcal infectious there does not appear to be any essential fundamental difference between the skin reactions evoked by the toxins of streptococci of scarlatinal and those of other origin.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

### 135. Clinical Value of the Dick Test

J C J MCENTEE (*Iris Jour. Child Dis.*, April-June, 1927, p 91) carried out the Dick test in 520 cases, which consisted of 265 cases of definite scarlet fever, 23 cases of clinically doubtful scarlet fever, 193 diphtheria patients who had not had scarlet fever, 13 nurses and 20 medical students. The percentage of positive reactions from the first to the fourth day of scarlet fever was 73.6, from the fifth to the seventh day 40, from the eighth to the seventeenth day 33.1 from the eighteenth to the thirty first day 25.1 and from the thirty second day and later 15.7. The number of positive reactions thus showed a steady fall corresponding to the production of antitoxin during the course of scarlet fever. As many as 50.2 per cent of the diphtheria cases gave a positive reaction, thus confirming the well known susceptibility of diphtheria patients to scarlet fever. McEntee's conclusions are as follows: (1) A Dick negative reaction indicates a high degree of immunity to scarlet fever. (2) A Dick positive reaction is evidence of lack of circulatory antitoxin but does not necessarily denote susceptibility to scarlet fever. (3) A polyvalent toxin would give a more reliable indication of susceptibility. (4) Because it is not reliable the Dick test though helpful, is not alone a guide to diagnosis. (5) The skin reaction is not proportional to the amount of toxin injected. (6) A different and more accurate means of standardizing scarlatinal toxin must be devised.

### 136. Recovery from Addison's Disease

J L A PEUTZ (*Vierteljahrsschr. f. Geneesl.*, June 18th, 1927, p 3295) records a case of Addison's disease in a boy, aged 12, who belonged to a family of eleven children, two of whom had died of tuberculosis and one was in hospital with a pleural effusion, while the mother was the subject of chronic bronchitis. In addition to extensive areas of pigmentation of the trunk, extremities and buccal and rectal mucous membranes, the patient showed a general muscular tonelessness and apathy. The systolic blood pressure taken on several occasions with Riva Rocci's sphygmomanometer, ranged between 70 and 80 mm Hg. The bowels were constipated and only acted after administration of castor oil. Treatment consisted in subcutaneous injections of half a milligram of adrenaline once daily and arsenious acid twice daily, and strychnine and quinine by the mouth. He was also given fresh suprarenal substance twice a day. The patient was kept under observation for eight years and made a complete recovery.

### 137. Infectious Mononucleosis

E T F RICHARDS (*Minnesota Med.* July 1927 p 34) reports four cases of mononucleosis and contrasts the clinical picture of this condition with a case of simple lymphocytosis with adenitis and a case of acute lymphatic leukaemia. He thinks infectious mononucleosis is a distinct clinical entity characterized by adenopathy, splenic enlargement, fever and leucocytosis of pronounced lymphocytic type. The lymphocytes being relatively and absolutely increased in number and associated with the presence in the circulating blood of abnormal mononuclear lymphoid cells. These cells, which are regarded as peculiar to this condition and which do not occur in the healthy blood in the blood of simple lymphocytosis with adenitis, or in the blood of lymphatic leukaemia, are larger than the normal lymphocyte having deeply basophilic often vacuolated, cytoplasm in which a coarsely reticulated usually indented or lobulated nucleus is situated often eccentrically. The finding of these abnormal lymphoid cells, which dominate the blood picture and the fact that in infectious mononucleosis runs a benign course terminating in recovery are regarded by the author as the chief features which distinguish the condition from lymphatic leukaemia, although in the early stages of the illness there are many points of resemblance.

### 138. Epidemic Meningitis in Early Infancy

J B NEAL and H W JACKSON (*Journ. Am. Med. Ass.*, April 23rd 1927 p 1239) record their observations on 5 cases of epidemic meningitis during the first three months of life which they had seen in the course of the last sixteen years in New York City. Of these, 25 were due to the meningococcus 11 to the streptococcus, 7 to the pneumococcus, 5 to the tubercle bacillus, 3 to B. coli and 1 to

*Micrococcus catarrhalis*. The symptoms of meningitis in infancy, whatever the causal organism may be, are quite different from those in older children and in adults. The onset is fully acute, but rarely so sudden as in later life. The disease is practically always ushered in with a disturbance of the gastro intestinal tract and irregular fever. The child is usually irritable and hyperaesthetic. Convulsions may appear early, but are not so severe as those which occur later. The typical symptoms of meningitis, such as rigidity of the neck and Kernig's sign, are usually absent until the disease is far advanced. The reflexes at the beginning are usually normal. A bulging fontanelle is nearly always present. A haemorrhagic rash is very unusual. In the meningococcal cases daily lumbar puncture was performed and as much fluid as possible was removed. If 20 cc or more of fluid was obtained the same quantity of serum was injected, and the injections were repeated daily as long as organisms were present in the spinal fluid. Even after the fluid became sterile the injections were continued if the clinical condition required it. Ventricular or cisternal puncture was performed if there were definite signs of blocking. Of 23 patients treated by serum 11 died, a mortality of 47.8 per cent. This was higher than the mortality among the authors' cases during the first year of life (46 per cent) and far above that during the second year (29.2 per cent). Sequels were very few. Of 11 patients who could be followed up 1 was deaf and the other 10 made a complete recovery.

## Surgery.

### 139. Etiology of Pulmonary Cancer

E FROMMEL (*Rev. de Med.* No 1, 1927 p 31) states that from 1900 to the end of September, 1925, 41 cases of pulmonary cancer in which the diagnosis was verified after death were admitted to the medical clinic of Geneva University. Of these 40 were examples of carcinoma and 1 of sarcoma of the Schneeberger type. 30 occurred in men and 11 in women. The ages of the patients ranged from 27 to 91 years, the average being 58. Frommel concludes therefore that cancer of the lungs is an affection of the second half of life, the male sex being principally affected. Among 40 cases in which the history could be elicited 30 patients had suffered from other lung affections before cancer developed. Pulmonary tuberculosis had been present in 8 cases, in 6 of which it was found in the same lobe as the cancer, thus showing that the two processes are not incompatible with one another, as Pottansky maintained. Frommel adds that there is evidence, on the other hand, that pulmonary tuberculosis acts as a chronic irritant and favours the development of cancer. Chronic bronchitis, bronchiectasis, emphysema was present in 22 patients, so that their lungs were in a condition of diminished resistance. The part played by dust in the precancerous state is illustrated by the fact that out of 29 engaged in a definite occupation 22 were exposed to the inhalation of material or vegetable dust.

### 140. The Dangers of Abdominal Puncture

F PAPTSCH (*Zentralbl. f. Chir.* July 9th, 1927 p 1755), referring to the discussion on diagnostic abdominal puncture at the Berlin Surgical Congress in April when Frangenheim recommended the use of Goetze's needle with safety stilette in order to avoid injury to abdominal viscera, states that its employment is contraindicated in acute inflammatory conditions. Papsch believes that the principal danger lies in abnormal relations of the intestine and he maintains that artificial pneumo-peritoneum should be employed only as a supplementary diagnostic method when all others have failed. He describes the case of a man in whom a hydatid cyst of the liver was suspected. In order to confirm the diagnosis and to determine the position of the cyst and the most suitable operative route, an artificial pneumo-peritoneum was performed. A Goetze's needle being inserted in the mid line between the umbilicus and pubis and the introduction of an being observed under the fluorescent screen. The needle appeared to be freely mobile in the abdominal cavity. After the introduction of a very small quantity of air the patient complained of intense abdominal pain, he became cyanosed and dyspnoic and died suddenly. The necropsy revealed an embolism and an entirely abnormal position of the liver, its greatly thinned and compressed lower border was only three fingerbreadths above the pubis. A most careful abdominal palpation had failed to show this



were the symptoms as severe as the frequently medicated by epinephrine. In his fever it was found that oral administration had advantages over local application to the nose. In asthma the best results were obtained in the allergic and reflex cases (84 and 100 per cent. respectively) and in addition to producing bronchial dilatation the oral administration of epinephrine caused contraction of the nasal mucous membrane.

#### 135. Protein Therapy in General Paralysis

W. B. JENNINGS (*Med. Journ. and Hosp. June 10th 1927* p. 793), from a clinical study of the treatment of general paralysis by intravenous injections of foreign protein in 13 cases, supports Prof. Kunkel's previous findings. In 12 cases treated intravenously with a solution of typhoid vaccine that the method appears to be as variable as the malarial treatment without involving any danger. Colloidal albumin with an initial dose of 2.0 to 3.0 ml. though with each succeeding dose was increased until the patient had had twelve to fourteen injections. A continuous reaction followed in most half an hour with a rise in temperature reaching its maximum about three hours later and accompanied by a chill varying from a slight sensation of cold to a marked rigor. With one exception the temperature became normal in four to eight hours after the fist injection was reached. The average time for the entire reaction being from ten to twelve hours. As in the malarial treatment a favourable serological influence was noted the cell count improved. But the global second Wassermann reaction third and finally the gold reaction but a dissimilarity between the two methods was seen in that a marked leucocytosis occurred in the protein treatment. After three or four injections mental and physical improvement was noted as evidenced by a more normal demeanour, increased interest in surroundings, improved memory, disappearance of tremor, speech defects and grandiose ideas and easily gained weight. Of the 13 patients treated 10 were greatly and 5 slightly improved while 3 showed no improvement. There were no deaths and with the exception of herpes labialis no complications. Jennings considers that with careful selection of patients to exclude cardio-renal disease as a contra-indication the method has many advantages over malarial treatment in which marked anaemic jaundice and a mortality of from 6 to 20 per cent. are serious complications. He advocates further study of the method as possessing distinct advantages over those in which living organisms are used.

## Ophthalmology

#### 137. Familial Maculo-cerebral Degeneration

S. J. BEACH (*Arch. Ophthalmol.*, May 1927 p. 225) describes two cases of the so-called maculo-cerebral degeneration which are unique in that the patients were children of the same mother but of different fathers. Moreover both fathers by other marriages had had normal issue. The cases were also atypical in that the vision began to be defective about the age of puberty, and in each case there were cerebral disturbances. True maculo-cerebral degeneration is divided into two types: (1) at about the period of the second dentition (6 to 7 years) failure of vision and intellect begins; (2) macular changes occurring at puberty (14 to 16 years) without mental deterioration. True maculo-cerebral degeneration is said to be familial but not hereditary. In the two cases mental and retinal deterioration started at puberty.

#### 138. Vaccine Therapy in Ophthalmology

M. TIGLIPES (*Journ. de Med. de Bordeaux* July 10th 1927 p. 569) discusses the different kinds of vaccines suitable for practice in ophthalmology, and their use in prophylaxis and treatment. He suggests that the eye is a suitable area for local immunization and has treated cataract cases in this way before operation with encouraging results. In ophthalmic tuberculosis he approves the use in cases of keratitis scleratitis, and infectious of the anterior part of the eye but not deeper infections especially where there are other tuberculous foci. In gonococcal infection the results were variable but success was obtained in refractory metastatic cases of iritis and iridocyclitis. Considerable benefit followed the employment of vaccines in staphylococcal infection of the lids and lashes. He prefers autogenous vaccine. In infectious due to pneumococci streptococci and staphylococci he has had good results where other means have failed particularly in cases of inflammation and abscess of the lacrimal sac, acute pseudo-membranous conjunctivitis severe keratitis hypopyon and post-operative cataract infection. The local reactions were never violent and in monovalent vaccines almost negligible, even in children. The general reactions

were usually been slight often imperceptible, with monovalent vaccine but with polyvalent vaccines there was much more they were never alarming, however. The author reserves vaccines for very grave cases where the loss of sight in one or both eyes or the organ itself is threatened.

#### 139. Treatment of Scar of the Cornea

S. R. GIFFORD and A. STEINBECK (*Amer. Journ. Ophthalmol.*, April 1927 p. 240) describe a method of colouring corneal scars by gold salt. Opaque white scars of the cornea are very unsightly, and when the scar is not absolutely opaque the light diffused through it will tend to cause a dazzle and in effect with the vision obtainable through the remaining transparent part of the cornea. For these two purposes various methods have been employed the best known being the tattooing of the corneal scars with Indian ink. The authors prefer to apply gold chloride solution to the corneal scar. The eye is anesthetized with 10 per cent. cocaine solution, and the area to be scarred is marked out superficially with a 3 mm. trephine. The epithelium over this area must be completely removed. An applicator dipped into the gold solution is applied to the scar repeatedly until the solution has been in contact with the cornea for four minutes, after which 5 to 10 drops of a 1 in 1,000 solution of adrenalin are dropped into the eye. In twenty-four hours the scar is black or dark brown in colour and the epithelium has grown over the scar in four or five days. The authors add that 4 and 5 per cent. solutions of gold chloride can be used and it is best to keep the solution very slightly acid.

## Obstetrics and Gynaecology

#### 150. Artificial Vagina

G. A. WAGNER (*Zentralbl. f. Gyn.*, May 21st 1927 p. 1300) has had very good end results in seven cases in which he has constructed an artificial vagina by Schuchert's method in which the large intestine is used. In one case described a very rather Wertheim's operation was performed in a patient aged 36 for extensive carcinoma of the cervix and vagina six years later there was no recurrence and the woman wished to marry but coitus was impossible. A small recto-vaginal fistula necessitated intervention nine days after operation but a satisfactory functional result was secured. In a second case a functioning uterus was present. The patient a married woman, aged 28 after a difficult labour three years previously had had incontinence of urine and faeces and cohabitation had been impossible. There was a circular ectoanal stenosis in the vagina with narrowing of the introitus and a recto-vaginal fistula. The patient, an orthodox Jewess demanded operative treatment in spite of its difficulty and danger. The vaginal remnants were excised the fistula was closed and repaired and sexual congress was thereafter accomplished without difficulty or pain. A third patient had a similar operation for vaginal scarring which impeded mensuration. In the second year following operation a living child was delivered by Caesarean section, and in the third and fourth years other living infants were delivered spontaneously *per vias naturales*.

#### 151. Treatment of Foetal Asphyxia

P. CASTAGNA (*Rev. d'Obst. et Gynecol. Prat.* April 1927 p. 14) records five cases of pallid foetal asphyxia treated successfully by subcutaneous injection of lobelin and states that fully by subcutaneous injection of lobelin and states that good results have also been reported at the Gieson, Monaco, and Novara clinics. The doses given have been from 1 to 6 mg. Castagna prescribes a dose of 2 mg. Lobelin is stated to act as a respiratory failure during general anaesthesia by increasing the number and amplitude of respirations. It may be advisable in foetal asphyxia to stimulate the heart by a preliminary intracardiac injection of adrenalin.

#### 152. Treatment of Post partum Haemorrhage

W. M. J. SCHLLENS (*Nederl. Tijdschr. v. Genees.*, May 21st 1927 p. 2851) states that several recent articles especially by German writers have drawn attention to the good effects of intravenous injection of pituitrin in severe post partum haemorrhage. Schellens has employed his method in twenty-two cases during the last three years. His conclusions being as follows:—In atonic haemorrhage following expulsion of the placenta when uterine massage combined with compression of the uterus fails to control the bleeding small doses of pituitrin (1/3 to 1/2 cm.) should be injected intravenously as a result the uterus usually contracts powerfully within half a minute. Directly after the intravenous injection of pituitrin he injects glycogen intramuscularly to prevent subsequent muscular relaxation. If the haemorrhage recurs the intravenous injection of pituitrin should be repeated.



cardiac, or vascular disease, or eclampsia are present the dangers of intravenous injection of pituitin should be borne in mind owing to the sudden rise of blood pressure caused by it. When attempts at intravenous injection fail the pituitin should be injected directly into the uterine muscle, this should also be done in Caesarean section. When intravenous injection of pituitin fails to control the hemorrhage the advisability of plugging the uterus and vagina should be considered.

**153 Intracranial Haemorrhage after Spontaneous Birth**  
VORON and PIGEAUD (*Bull. Soc. d'Obstet. et de Gynecol. de Paris*, April, 1927, p. 273) record three cases in which after spontaneous delivery the infants died within four days, intracranial haemorrhage, which had been diagnosed clinically, was also demonstrated at the necropsies. In one case the birth occurred six weeks before term, and in all delivery was rapid. The view is advanced that the meningeal hemorrhages were due not to birth trauma, but to maternal syphilis. In one case the Wassermann reaction was positive and in the other two the spleen and liver were enlarged and microscopic examination of the latter pointed to congenital lues. TRILLAT and GAUCHERAND (*ibid.*, p. 268) record the case of a puerpera, aged 29, with flattened and generally contracted rachitic pelvis, whose labour ended spontaneously, after seven hours, in the birth of an apparently vigorous infant weighing 7½ lb. On the first day the breast was refused, and on the second day a state of somnolence was noted which necessitated feeding by stomach tube. Cyanosis, contractures, and convulsions were absent, some emphysema followed lumbar puncture, which gave issue to an amber coloured fluid. Erythrocytes were noted in a second sample of cerebrospinal fluid drawn off three days later, after this recovery was swift.

## Pathology.

**154 The Origin of White Blood Cells**  
M. SILBERBERG (*Med. Klin.*, May 27th, 1927, p. 798) produced leucocytosis (granulocytosis) by poisoning rabbits with benzol. The myeloid tissue became aplastic, the capillaries being distended with endothelial cells, the leucocytes in the peripheral blood showed at first basophilic punctations, then broke up and disappeared, the lymphocytes were very few, though in marrow smears they showed a relative differential count of 75 per cent., the monocytes remained constant. Staphylococcal septicaemia was then induced in these rabbits and resulted in the production of numerous abscess-like formations in the heart, peripheral muscles, and kidney, which on microscopic examination were purely necrotic, with no proliferation or exudation, or any trace of cellular defence reaction. These animals died sooner than the control animals, some of which survived with healing of the abscesses. These observations demonstrate the importance of granular leucocytes as inflammatory cells, and that neither lymphocytes, monocytes, nor histiocytes can act as substitutes. The leucocytes are macrophages, the monocytes and histiocytes are macrophages, but the action of the lymphocytes is not as yet known. To determine whether the properties of the blood forming organs were impaired, *in vitro* cultures of myeloid and lymphatic tissue were made from the benzol-treated animals, these tissue cultures showed growth and extensions of lymphocytes, monocytes, histiocytes, and fibroblasts, but no growth of myeloid granular cells. When the cultures of histiocytes and monocytes were treated with charcoal particles vigorous phagocytosis was seen in these cells, demonstrating that their biological character as macrophages was not destroyed. The histiocytes and monocytes can be formed locally, but there was no evidence that this was possible with the granular leucocytes. This research indicates the prominent part taken by the mesenchyme germ layer in the defence against septic infections.

**155 Filterability of the Tubercle Bacillus**  
L. BERNARD and NELIS (*Presse Méd.*, June 8th, 1927, p. 721) discuss the recent work on the filterability of the tubercle bacillus. Lontes in Brazil first filtered dilute caseous pus through a Berkefeld candle, inoculated the filtrate into guinea pigs, and observed tumefaction of the inguinal glands in one of them. The spleen of this animal was inoculated into fresh guinea pigs, some of these developed pulmonary lesions containing typical acid fast bacilli. This observation has been repeated by several French workers. Valis inoculated 5 to 10 c.c. of a Chamberland L3 filtrate of antolysed

at the site of inoculation or in the focal glands, but some grew thicker and died in three or four months. At necropsy some of the lymphatic glands—chiefly the tracheo bronchial group—were swollen, there were also small areas of hepatisation in the lungs. Microscopically in these lesions it was possible to demonstrate a few acid fast bacilli. The conclusion is that tuberculous pus contains, besides the usual acid fast bacilli, certain invisible filterable forms, which on inoculation into guinea pigs give rise to an entirely different type of disease from that caused by the usual form of organism, it is characterized by the production of glandular swellings and the presence in the lesions of an extremely small number of typical acid fast bacilli. If filterable forms of tubercle bacilli are present in the blood of tuberculous women they should be capable of traversing the placenta and giving rise to infection in the foetus. Calmette and his colleagues have stated that by animal inoculation it is possible to demonstrate these filterable forms in the organs of newborn infants of tuberculous mothers dying shortly after birth. He also attributes a large part of the mortality of such infants during the first year of life to infection with this filterable form of bacillus. Boinard and Nelis object to this hypothesis on clinical grounds. They find that infants born of tuberculous mothers invariably give a negative skin reaction to tuberculin, if they were infected with a filterable form of the tubercle bacillus they should react positively for it is possible to sensitize animals to tuberculin by injection with filtrates of tubercle bacilli. They conclude that Calmette's thesis is not proven, and that contagion after birth, especially when familial, plays a preponderant part in the transmission of tuberculosis.

**156 A TOGUONNOIR** (*C. R. Soc. de Biologie*, July 8th, 1927, p. 349) filtered cultures of tubercle bacilli in liquid media through Chamberland L2 and L3 candles. The filtrates were planted on glycine agar and subcultured on Petroff's and Besicovich's egg media. They were also inoculated subcutaneously or intraperitoneally into guinea pigs, a dose of 2 to 10 c.c. being used, the animals which did not die of intercurrent disease were killed as a rule two to six months later. In the first series of experiments she examined the filtrates of eleven strains that grew freely in culture and were of low virulence. From one of the filtrates she obtained a positive culture of tubercle bacilli. None of the injected guinea pigs died. When they were killed they showed no specific lesions of the organs, some of them showed slight glandular enlargement. After a prolonged search she found a few acid fast bacilli in the glands of three of the animals. In the second series of experiments she examined the filtrates of fifteen virulent strains, most of which had been recently isolated from human patients. Cultures of these filtrates proved uniformly sterile. Of the injected guinea pigs four died of intercurrent disease. The remainder, when killed, showed slight glandular enlargement, especially of the tracheo bronchial glands, with increased areas in the lungs containing occasional epithelioid cells. The lungs of one animal contained definite tubercles. A prolonged search revealed the presence of acid fast bacilli, often very short, in the glands of six of the animals. The author concludes that filterable forms of both virulent and avirulent strains of tubercle bacilli may be present in cultures, but that they rarely give rise to specific nodular lesions when injected into guinea pigs.

**157 Experimental Cancer in White Mice**  
G. GULDBERG (*Norsk. Mag. f. Laegevid.*, June, 1927, p. 42) by painting white mice with tar produced epithelial tumours which, according to the duration of the painting, and the survival of the animals, showed a continuous series of development from papillomata with incipient histiocytic growth to fully developed carcinomata which invaded muscles, vessels, and nerves. In a series of experiments on 25 white mice there resulted altogether 1 papilloma, 5 incipient and 17 fully developed carcinomata, of which 6 were associated with metastases in the lymphatic glands and lungs. In addition to the local effect the painting with tar produced general toxic changes in the internal organs, the spleen both myelogenous changes and amyloid degeneration were observed. The myelogenous changes began to develop in the first three or four weeks, and were present to a marked degree after seventy four days' painting. Amyloid degeneration was not definitely found until 250 days. The liver showed a considerable epithelial degeneration with abundant intracellular deposit of pigment as well as multiple infiltrations of lymphocytes and polymorphonuclear cells. All the animals that lived more than 100 days showed chronic interstitial nephritis. The lungs in most of the animals were the seat of bronchitis and sometimes of bronchopneumonia. All the examined showed particles of tar deposited in the



# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

### 158. Etiology of Erythema Nodosum

M. ARBORELLIUS (*Acta Vet Scand*, May 31st/1927 p 337) draws a distinction to the current belief that erythema nodosum is rare in adult males and he quotes A. A. LINDAU (Bj Med Medikal Jotning, 1925 vol 1 p 651) as recording, 17 female and 18 male cases before puberty and 33 female and only 4 male cases after puberty. Arborellus has however observed as many as 40 cases in young male adults, in a military hospital in Stockholm in the five year period 1922-26. The temperature was raised and the rate of sedimentation of the erythrocytes was greatly accelerated in the cases including majority. With two exceptions (these two cases were exceptional in several other respects) a violently positive reaction was obtained to Mantoux's intracutaneous test with 0.05 m. of old tuberculin. The physical examination of the lungs yielded no very definite results, but in as many as 29 cases the x-rays showed definite changes in the hilus on one or both sides. In no case however, was there evidence of active pulmonary tuberculosis. The author concludes that though erythema nodosum may in most cases be the expression of a recently acquired tuberculous infection it may occasionally appear as the result of other morbid conditions.

L. A. LINDAU (*Acta Paediatr* May 23rd 1927 p 402) records observations at a children's hospital in Gothenburg between January 1st 1922 and September 1st 1926. In the case of every child admitted inquiries were made as to a history of erythema nodosum, a special place in the records being reserved for this information. In none of the 129 cases of erythema nodosum treated in hospital in the period under review was there, at the same time, pain in or swelling of the joints. Of a total of 130 cases of erythema nodosum in children between the ages of 1 and 14 only one was reported to have previously suffered from some rheumatic affection. Of the other hand among the cases of acute polyarthritis acute osteoarthritis and chorea minor (a total of 1.6) treated in hospital there were only 4 with a record of erythema nodosum at some earlier date. In all these 4 cases the Piquet reaction was positive and in 3 of them there were signs suggestive of tuberculous pulmonary disease. Most of the cases of erythema nodosum belonged to the age period 3-10 whereas the rheumatic affections did not become frequent till after the age of 6. The seasonal incidence was also different erythema nodosum occurring usually in the spring, while the three rheumatic affections under consideration were most frequent in the winter and spring. The author concludes that his material provides no proof of the assumption that erythema nodosum and the three rheumatic affections studied have any connexion with each other.

### 160. Pyrexia in Congenital Syphilis

G. VERRI (*Il Policlinico Sez Prat*, July 18th 1927, p 1077) publishes ten cases of fever due to congenital syphilis. He finds that this form of pyrexia may appear at any time or life in his series the ages ranged from 5 to 45 years. It may be remittent or continuous in type and persist from one month to three years in the majority of cases it is related to some concomitant lesion. The general health is more affected by the organic lesions present than by the temperature. Concomitant disease may mitigate the fever of congenital syphilis it may disappear under non-specific treatment but yields more surely to mercury or arsenobenzol.

### 161. Bronchial Spirochaetosis

J. GATE and M. BILLA (*Presse Med* April 23rd 1927 p 513) record their observations on 32 cases of this condition which was first described by Castellani in 1905. Eight cases were examples of active pulmonary tuberculosis the sputum was mucopurulent with haemorrhagic striae. It was always found that the discovery of the spirochaetes coincided with an aggravation both in the physical signs and general condition. In 17 cases, 12 of which were acute and 5 chronic the spirochaetes was an independent infection resembling influenza. It was in the acute forms that the expectoration was most characteristic, consisting of mucous and saliva of a brick-red colour. In the chronic forms the sputum was mucopurulent with haemorrhagic striae. In 7 cases in which the sputum was examined no clinical history was available. Treatment consisted in the use of novarsenobenzol three injections of which in doses of 0.15-0.30 and 0.45 gram, were sufficient, or in the administration of stovarsol

by the month in doses of 0.50 gram daily for ten days. The acute forms yielded most readily to treatment, but some improvement also occurred in the chronic forms. In the tuberculous cases the ordinary spirochaetocides were apt to give rise to fibrile attacks and were therefore best avoided, except in chronic cases.

### 162. Pernicious Anaemia in a Boy

D. O'HARA and J. S. GREW (*Boston Med and Surg Journ*, July 28th 1927 p 129) report an unusual case of pernicious anaemia in a boy aged 14 who after being discharged from hospital during a remission, remained well and able to work for two years. He relapsed subsequently and on re-admission had an ashy pallor but no jaundice, for the next five months the white blood cell counts were mostly below normal any fluctuations being due to changes in the number of polymorphonuclear cells. Soon after admission 700 c.c. of whole blood were transfused because of the rapidly decreasing blood values accompanied by epistaxis haematemesis, and melæna. This tide over the crisis and apparently stimulated blood formation for about a week later there appeared a sharp increase in the reticulated red cells (2+ per cent), and one nucleated red cell underwent mitosis was found. In the fourth month a series of small transfusions were given without much effect more with the idea of providing some theoretical hormones in small repeated doses than of supplying blood cells. During the first attack no liver was given, and only very small amounts during the second relapse, because of the difficulty in getting the patient to take it. Achylia gastrica was present and the bone marrow of the tibia was cellular showing the megaloblastic hyperplasia described by Peabody as characteristic of adult patients in a relapse. At the time of reporting a third relapse was anticipated in the near future and the amount of liver in the diet was known to be inadequate the patient could only be persuaded to take it mixed with ice cream.

### 163. Meningeal Haematoma due to Encephalitis

D. LEROUX (*Bull et Mem Soc Med des Hop de Paris* June 9th 1927 p 805) who records an illustrative case state that while formerly many cases of meningeal haemorrhage in young persons were attributed on mere presumptions to tuberculosis at the present time it is generally admitted that epidemic encephalitis is responsible for many cases of meningeal haemorrhage curable or otherwise. Darleguy's patient was a sailor aged 17 in whom the symptoms did not indicate meningeal haemorrhage but encephalitis. The first lumbar puncture showed an aseptic meningeal reaction and the second and third in excess of albumin without an increase of cells. The symptoms consisted of progressive tetraplegia with tonic spasm of the head and left upper limb. Death took place on the tenth day of the disease and the necropsy showed congestion and rupture of the vessels of the cerebral peduncles, lentiform nuclei and optic chiasm with an abundant infiltration of leucocytes which is a very important histological lesion in epidemic encephalitis.

### 164. Agranulocytosis

H. VOS and T. A. STAAL (*Nederl Tydscr Geneesk* May 28th, 1927 p 2933) state that in 1922 Schmitz and Verse gave this name to a series of cases they had observed characterized by severe gangrenous processes especially in the tonsils, and ending fatally in a short time. Examination of the blood of these cases showed that while the haemoglobin value and number of red cells were practically normal there was always a very distinct leucopenia due to the more or less complete disappearance of all the polymorphonuclear cells. On the other hand the number of lymphocytes and large mononuclears were normal and only slightly diminished. The original cases of Schmitz and Verse showed a close resemblance to one another. The disease occurred exclusively in middle aged women who developed gangrenous processes in the tonsils and elsewhere. Glandular enlargement was never generalized at most only localized there was slight jaundice, no anaemia and no haemorrhagic diathesis. The bleeding and coagulation times were quite normal. There were no characteristic urinal findings in the internal organs or in the urine. Death occurred in a few days or weeks of course the result of degenerative pneumonia. *Poet mort* in the most characteristic signs were found in the bone marrow which showed the same changes as in the peripheral blood. Schmitz and Verse's paper was followed by a number of other, almost exclusively by German and a few American writers so that about 40 cases of agranulocytosis have been recorded. It has

been shown that though the great majority occur in women, undoubted examples may also be found in men. Iotens is absent in a considerable number of cases. The gangrenous process is not always confined to the buccal cavity, but may attack any part of the alimentary canal from the oesophagus to the rectum, as well as the intortus vaginae, and the lesions may sometimes be absent in the tonsils and occur elsewhere. The course is not always fatal. The disease may be due to various causes, probably, in most cases, of an infective character. The blood picture and absence of haemorrhagic diathesis serve to distinguish it from septicæmia, aplastic anaemia, and leukaemia.

#### 155 Encephalitis in Measles

J. B. NEAL and D. APPELBAUM (*Journ Amer Med Assoc*, May 14th, 1927, p. 1552) state that while they have seen a few instances of encephalitis following other acute infectious diseases, the largest number—namely, twelve—have been associated with measles. The clinical picture was very variable. The onset was usually sudden during, or a few days after, the attack of measles. Fever and headache were almost constant, but vomiting occurred only occasionally. Convulsions were present in about half the cases, and were sometimes very severe. The most striking symptoms were referable to the mental condition, which was characterized in some by irritability or apathy and in others by profound stupor or delirium. Paralysis of various muscles or groups of muscles occurred in one third of the cases. In two patients there was paralysis of the right rectus externus, associated in one with right facial paralysis. Another patient had spastic paralysis of the left arm, which cleared up in less than a week, and the fourth patient had spastic paralysis of the left arm and paralysis of the left side of the face and left leg. Hyperaesthesia was fairly common. Signs of meningeal irritation, such as nuchal rigidity, Kernig's sign, Brudzinski's sign, a bulging fontanelle, or a positive Macewen sign, were noted in a fair proportion of cases. The reflexes might be exaggerated, normal, or absent. The spinal fluid was usually under increased pressure and showed a slight or moderate increase of mononuclear cells. The sugar content was uniformly normal or high, and smears and cultures were negative for microorganisms. Three patients died and six of the nine who were followed up made a complete recovery.

## Surgery.

#### 166 Orbito-ethmoidal Osteomata

H. CUSHING (*Surg, Gynecol and Obstet*, June, 1927, p. 721) reports four cases of orbito-ethmoidal osteomata with intracranial complications. All four patients were men, and three had scars of old frontal scalp wounds. In one case death was due to infection owing to failure to close off the communication between the meninges and the nasal cavity, and in another to delay in operating. Cushing concludes that these ethmoidal osteomata should be removed as soon as they are diagnosed by the x-rays, since delay may result not only in the occurrence of the familiar intracranial complications, but also of the little understood intracranial variety. In this series of four cases there occurred a cerebrospinal rhinorrhoea communicating with the ventricles, a large intra-cerebral pneumatocele, and an intradural mucocoele. Since the majority of these ethmoidal osteomata may ultimately lead to intracranial complications Cushing considers that they should be approached through an exploratory frontal osteoplastic craniotomy rather than through the nose or the orbit. He thinks it possible that mild frontal injuries may produce a fissured fracture of the thin floor of the anterior cranial fossa or a diastasis of the suture between the orbital plate of the frontal bone and the adjacent edge of the ethmoid bone roofing the ethmoid cells; it was at this point of union that the intracranial projection of the tumour was found in each of the four patients.

#### 167 Diagnosis of Renal Colic

O. A. SCHWARTZ (*Med Welt*, July 16th, 1927, p. 876) refers to the difficulties in diagnosis of renal colic, especially in right-sided pain, where affections of the appendix and gall bladder must be considered, in addition to gynaecological and intestinal disturbances, gastric ulcer, ileus, and the gastric crises of tabes. He advocates examination of the urine, both chemical and microscopic, with the proviso that a negative result does not rule out disease of the urinary tract, and adds that this examination and palpation of the kidneys should be followed by an x-ray examination of the whole urinary tract. This may show abnormality of the kidney shadow, or the presence of a stone and its size and position, the possibility of its passage may thus be estimated. Since certain calculi give rise to no shadow, a negative result in

this respect does not exclude the presence of a stone. Shadows may be caused also by conditions outside the urinary tract, such as calcified mesenteric glands and phleboliths, and further examination is necessary to deduce their position. The renal functions are tested by intravenous injection of indigo carmine, the excretion of the dye is watched through the cystoscope, and the bladder and ureteral orifices are examined at the same time. When x-ray shadows appear an opaque ureteral catheter is passed to determine whether they are due to conditions within the urinary tract or outside. If the catheter shows any suspicious signs in the renal pelvis its outline and that of the calyces should be demonstrated by an x-ray examination after the injection of an opaque fluid, this also defines the exact position of the kidney. The bladder and urethra can be photographed in like manner, with a view to revealing the presence of a diverticulum or stricture.

#### 168 Massive Collapse of the Lungs

H. BERGAMINI and L. A. SHEPARD (*Annals of Surgery*, July, 1927, p. 35) record two cases of sudden death during operation due to massive collapse of the lungs. Post-operative atelectasis or massive collapse is usually a benign unilateral condition which occurs shortly after an operation, the collapse may be bilateral, and then causes sudden death. The condition has been attributed to paralysis of the muscles overlying the lung, and in other cases to obstruction of the bronchi. The authors state that the histological appearances in the lungs in their cases suggested that in the cause of the atelectasis was a vasomotor disturbance of reflex origin, possibly akin to angioneurotic oedema.

#### 169 Malignancy of the Thyroid

N. W. GILLETTE (*Amer Journ Surg*, June, 1927, p. 556) points out that early diagnosis in malignancy of the thyroid is desirable, but is very difficult as the same symptoms are present in other types of goitre, such as adenomatous and colloid goitre. The gland is hard and nodular in malignancy, as it is also with adenomata, loss of weight occurs in malignancy and with toxic goitre. Cancer of the thyroid develops slowly and forms metastases much more slowly than in breast and stomach cases. Early removal of all goitres in which nodules appear seems the only chance of preventing the development of malignancy. Carcinoma apparently does not develop in true Graves's disease, but appears where an early colloid goitre is present or where a nodule can be felt. The ordinary types of malignancy are adenocarcinoma, medullary or sarcomatous carcinoma, and sarcoma. About one sarcoma occurs to ten carcinomas. Metastases are usually seen in the bones or lungs. Carcinoma is present in about 3 per cent of all cases of resection. There appears to be no such thing as benign metastases of the thyroid gland, investigations indicate that there is no doubt that a thyroid which produces metastases is definitely malignant. Patients have a good chance of recovery if the diagnosis of malignancy is only made after operation by the pathologist. The author adds that a nodular gland is surgical, and early removal will save many from death from carcinoma.

#### 170 Abscess of the Spinal Cord following Typhoid Pleurisy

C. I. URECHIA (*Bull et Mem Soc Méd des Hop de Paris*, July 11th, 1927, p. 1137) records the case of a man, aged 23, who after pleurisy occurring at the end of an attack of typhoid fever developed symptoms of myelitis in the region of the lower dorsal segment, corresponding to the level of the pleurisy. On operation a large subdural abscess was found between the eighth and twelfth dorsal vertebrae. The operation undoubtedly saved the patient's life, but did not affect his paraplegia, which was complete and accompanied by slight paresthesia. The author thinks that this is an unusual case of an abscess in the spinal cord arising by direct continuity from a pleurisy.

#### 171 Non-venereal Genital Infection

T. BAKER (*Journ Amer Med Assoc*, June 25th, 1927, p. 2250) describes a number of cases of acute proctitis and epididymitis of non-venereal origin. In the etiology of these a septic focus, often due to *Staphylococcus aureus*, played an important part, and in some cases which were associated with or followed influenza or so-called influenza. He finds that the symptoms of these septic genital conditions may closely resemble those of venereal infections, they may occur in patients who have had gonorrhoea some years previously, without necessarily being gonococcal origin, and may, on subsiding, be followed by chronic septic foci which in turn may give rise to conditions as arthritis, rickets, pericarditis and pyelitis. The treatment of these acute non-venereal genital conditions by Baker is removal of distant septic foci and drainage of the local condition in the event of suppuration. Prolonged unresolved septic epididymitis, which



to 1 in 1,000) Instrumentation is necessary to open up and drain the urethral glands, but this should not exceed the minimum to promote drainage. Prostatic massage, necessary in some cases, should not be forcible, but consist of gentle and sustained pressure on all the palpable surfaces. The author has found aspiration of the urethra with the Mills negative catheter to be beneficial. Sulphur salivarian preparations are useful when given frequently in small doses subcutaneously to suitable cases at appropriate intervals. Protein shock therapy is recommended as the ideal treatment for rheumatism and other gonorrhoeal systemic manifestations, T A B vaccine being often used. The initial dose should be not less than 100 million organisms given in distilled water or saline, and the second 200 to 400 million. Combined with baths as hot as can be tolerated, this treatment has been found to relieve suffering in a remarkable manner.

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**Rational Bromide Therapy**

O WUTH (*Journ Amer Med Assoc*, June 25th, 1927, p 2013) believes that bromide intoxication occurs much more frequently than is generally recognized, it is sometimes characterized by a variety of neurological symptoms and is often difficult to diagnose by the usual clinical methods. The concentration of bromides in the serum of a patient depends mainly on the relative intake of this salt and chlorides, if bromides constitute 25 to 30 per cent of the total haloids toxic symptoms are likely to appear and 40 per cent may be fatal. Except in such conditions of disturbed chloride metabolism as pneumonia and nephritis the excretion of chlorides balances the intake, therefore if the average chloride excretion (and intake) is low the dose of bromide should also be kept low. Wuth considers that for rational adequate dosage, and in order to avoid bromide intoxication, the administration of bromides, whether as a sedative or for epilepsy, should be preceded by an estimation of chlorides in the urine, and should be controlled by a qualitative test for bromides in the urine and their estimation in the serum. For this purpose he has devised a colorimetric method, using gold chloride, he states that it is simpler than the methods used by other workers, and should therefore be useful in controlling bromide medication clinically.

**Neurology and Psychology.****178 Hemiplegia associated with Extensive Naevus and Mental Defect**

T BRUSHFIELD and W WILTT (*Brit Journ Child Dis*, April-June, 1927, p 98) state that during the period 1914 to 1925 there occurred among a total of 2,412 mentally defective children admitted to the Fountain Mental Hospital three cases in which an unusual but characteristic syndrome was present, consisting of mental defect, extensive naevus, and hemiplegia. The mental defect was in each case of marked degree, the children being low grade imbeciles, who were unable to talk or walk, and were quite helpless as regards their bodily needs. The condition in each case had been present since birth, and the children all showed various stigms of degeneration. Extensive involvement of the skin by naevus was a striking feature of these cases. The markings were much more pronounced over the face and neck, but no part of the body was entirely free, the total area of the naevus covering approximately one third of the skin surface. In two cases there was left hemiplegia and in one case right hemiplegia. The usual features of infantile hemiplegia were present, such as contractures, wasting, and underdevelopment. No similar cases appear to have been recorded in the literature except one by E A Cockayne, in which left hemiplegia was associated with extensive naevoid markings, but without mental defect.

**179 Psychological Causes of Relapse in Drug Addiction**

L KOLB (*Journ Nerv and Ment Dis*, July, 1927, p 22) ascribes the relapse of drug addicts who have apparently responded well to treatment to the original cause of the condition—namely, a pathological nervous constitution with a sense of inferiority and unsatisfied cravings, the distress of which is temporarily relieved by narcotics. He finds that most of these patients make sincere efforts to be cured in the early stages, but, later on, undergo treatment only as a matter of expediency, the hope of recovery having waned by then, and additional factors, such as habit, memory associations and increasing physical dependence on drugs have established themselves, intensifying the original craving. Kolb regards the physical element in addiction as of less importance during the first two or three years than subsequently, but he gives the warning that the withdrawal of a drug from a patient who has used it for many years may cause prolonged hysterical symptoms, or even a mild and

transient form of mania. He believes that the apparent increase of cases of relapse in recent years is due to the fact that legislative restrictions have prevented the more psychologically stable persons from becoming addicts. Before these control measures were enacted a larger proportion of relatively healthy people came under the influence of drugs, and benefited by treatment, thus improving relatively the statistics of recovery. The author draws attention to the great danger of allowing the unstable type of patient after treatment to return to the old environment where the tendency started, and he adds that any unsatisfied desire is particularly likely to be transformed into a craving for narcotics. Uncongenial companionship, financial insecurity, and physical defects are common factors in relapse, and such patients require continued observation and careful treatment of the exciting cause.

**180 Centro-lobar Cerebral Sclerosis and Diffuse Periaxial Encephalitis**

C FOIX and J MARIE (*Progr Med*, April 2nd, 1927, p 417) refer to the case of diffuse cerebral sclerosis reported by Schilder in 1912 and describe three cases of this condition and one of encephalitis, giving the pathological findings in each. The lesions in centro lobar sclerosis are symmetrical, they involve the occipital lobe as far as the Rolandic convolutions, and roughly follow the coru of the lateral ventricle. The general characters of the cases conformed with those described by Schilder. The onset was fairly rapid, with sensory and motor disturbances, diminution of vision, hemianopsia, paresthesia of the left arm, and convulsions. The conditions became aggravated, amautosis, quadriplegia, and a congestion at the optic fundus (simulating cerebral tumour) developed, and death supervened in about six months from an intercurrent malady. In diffuse periaxial encephalitis the onset is characterized by a neurological syndrome consisting of visual disturbances, motor troubles, and psychotic phenomena. These become exaggerated with all the symptoms of intracranial hypertension, and death occurs from the disease itself in twelve to eighteen months after the onset. In formal preparations of the brain, a marked characteristic of centro lobar sclerosis is a greyish, hard area in the place of the white matter of the hemispheres. The lesion is symmetrical and the cortex entire. Changes in the meninges are also noted. Both these cerebral conditions have an identity of topography, but in periaxial encephalitis the lesion is yellowish and there is little retraction of the white matter. The fundamental difference between these two lesions lies in the histology of the meninges and vessels, an adult neuroglia rich in fibrils and a sclerosed perivascularitis are evidence of a cicatricial process in cerebral sclerosis, while the young neuroglia rich in cells, the presence of giant cells, sometimes nucleated, and of granular bodies, and perivascularitis with leucocytic infiltration indicate an evolutive process in encephalitis. The authors maintain that these are but two stages and two clinical varieties of one and the same malady. The diagnosis is often difficult, and conditions which may have to be distinguished are cerebral tumour, nervous syphilis, and optic neuro myelitis.

**181 Functional Ocular Spasms in Epidemic Encephalitis**

H ROGER and J REBOUL LACHAUX (*Ann de Med*, June, 1927, p 19) report that among the cardinal symptoms of epidemic encephalitis are proxysmal hypertonicity of the muscles of the eye, and describe eight cases illustrating this condition. The authors state that the frequency of these spasms is not very great, and they ordinarily occur some five or six years after the acute attack. The appearance and importance of these symptoms bear no relation to the intensity of the acute phase, nor are patients who have manifested the ocular signs common to encephalitis more liable to these later attacks. The spasms may be either tonic or clonic. The former are classed as (1) simple, in which the eyes move in one and always the same direction, (2) variable or alternating, the movements being sometimes in one, sometimes in another direction, (3) locking, in which the movements are successively in two directions, and (4) a simultaneous proxysm of the whole musculature of the eye, causing a fixed and staring stare. These spasms may be accompanied by a conjunctival deviation of the head. Clonic spasms displace the eyelids a series of rhythmical convulsive movements. The attacks which follow usually some exertion fatigue, or emotion, may occur sharply without any prodromes, but sometimes they are ushered in with a feeling of malaise, in which case vertigo. During the crisis the head is generally hyperextended, vision is impaired, and there are laryngeal, cardiac, respiratory, and psychic disturbances. The attacks generally last from a few seconds to fifteen or twenty minutes, in rare cases for some hours, they are usually recurrent daily or weekly. In the inter-attack periods patients may suffer from labyrinthine, cardiac, and





## Pathology.

## 187. Thermophilic Bacteria in Milk

MARION O. ECKFORD (*Immun. Journ. of Hygiene*, May, 1927, p 201) has examined a large number of specimens of milk, cream, cheese, and butter for the presence of thermophilic bacteria. No fewer than 312 out of 450 samples of raw and pasteurized milk were found to contain organisms capable of growth at 55°C. These organisms she divides into two groups: (1) the obligatory thermophiles, capable of developing at temperatures between 42°C and 63° or 75°C, with an optimum about 50° to 60°C; (2) the thermo-tolerant organisms, capable of developing between 35°C and 70° or 75°C, with an optimum about 50° to 60°C. The true thermophiles were Gram negative aerobic spore bearing bacilli, producing an alkaline coagulation in milk, sometimes with digestion. Their fermentative powers were very weak, none of them produced gas, and only a few produced acid from carbohydrates, most of them were non proteolytic. The thermo-tolerant bacilli were aerobic spore bearing bacilli, some Gram positive and some Gram negative. They produced no gas from sugars, but most of them produced acid from dextrose. They formed a small amount of acid in milk, and generally coagulated it. Their proteolytic powers were weak. Both groups proved non pathogenic to guinea pigs on injection. Though the thermophiles are able to grow in broth and on agar at a high temperature they did not multiply under experimental conditions in milk kept at 62°C. The thermo-tolerant organisms, on the other hand, multiplied enormously. The thermophilic organisms produced spores that could withstand a temperature of 120°C for fifteen minutes, the heat resistance of the thermo-tolerant group was 115°C for the same time. The interest of these observations lies in their relation to milk analysis. Since the thermo-tolerant organisms are able to multiply at 60°C there may be an actual increase in the number of bacilli during pasteurization, so that a milk which had a low bacterial count before pasteurization may have a high one after it. On plates made from pasteurized milk the organisms develop in the form of pin point colonies. Thermophilic organisms were never found in canned milk, but thermo-tolerant organisms of the *subtilis mesentericus* group were apparently found.

## 188. Local Resistance of the Cornea to Immunization

ELLORD and VILLARD (*Bull. de l'Acad. de Med.*, May 29th, 1927, p 607) report a case of accidental inoculation of the eye with vaccine lymph. Conjunctivitis appeared a few hours later, and in three days was intense, being accompanied by corneal erosion andritis. In eight days there was an intense irido-cyclitis, the cornea was densely infiltrated, opaque, and rapidly ulcerating. At the end of four weeks the eye became glaucomatous and intensely painful. As no relief was afforded by iridectomy, and there was some fear of sympathetic ophthalmia in the other eye, the damaged eye was enucleated after about two months. The authors comment on the extreme rarity of the accident, the early appearance of symptoms, the severe results in iritis, irido-cyclitis, and glaucoma, the fact that it occurred in a patient who had frequently been vaccinated, the last time seven years previously, and the failure of treatment. L. CANUS (*ibid.*, p 610) has found that while the skin of the shoulder or lower limbs remains comparatively refractory to reinfection in a vaccinated person the eyelids continue more or less susceptible and the cornea retains its susceptibility almost completely. Persons engaged in the preparation of lymph easily infected their fingers, though the skin at the ordinary site of vaccination remained immune. Canus reports some experiments in producing local passive immunity by replacing the aqueous humor with serum from an immunized subject. He thinks that the experiments indicate the local application in cases of accidental inoculation of the cornea of the serum from an immunized person.

## 189. Purification of Insulin

F. DICKENS, E. C. DODDS, W. LAWSON, and N. F. MACLAGAN (*Biochem. Journ.*, 1927, vol. xxi, No. 3, p 560) describe a method for the purification of insulin. Three operations are involved. The crude insulin is fractionally precipitated with trichloroacetic acid, the greater part of the active material comes down when the concentration reaches 2 per cent, but there is a further precipitate when the acid is brought up to concentrations of 3 and 5 per cent. The precipitate is collected, dissolved in decinormal hydrochloric acid, and half the volume of saturated sodium chloride solution is added. A precipitate is again thrown down, consisting of the active material, a considerable proportion of the inactive material remains in solution. The precipitate is dissolved in water, the solution adjusted to pH 4.0, and twice the volume of N/3 potassium oxalate solution is run in. This brings down

hydrochloric acid, is converted to the picrate, this is finally reduced to the hydrochloride. The principle of the method, therefore, depends on precipitating the insulin with the protein and metaphosphate fractions, and then making use of the differential solubilities of insulin and its accompanying inactive products in salt solutions at the isoelectric point. By this means it is possible to concentrate the active fraction to such an extent that one unit is contained in 0.02 mg of the finished product.

## 190. Phenol as an Antigen for the Wassermann Test

According to C. NINNI and G. MOLINARI (*Pathologica*, June 15th, 1927, p 279) certain mordants, such as aniline, paratoluidine, and phenol, are capable of functioning in place of the usual lipoidal antigen in the Wassermann test. They report that the best of these substances is a 2 per cent solution of phenol in 96 per cent alcohol, before use the solution is diluted 1 in 9 with saline. Using this antigen in an examination of 600 serums, they obtained almost complete agreement with the results given by three control antigens of the lipoidal type.

## 191. Action of the Pituitary Secretion on Ovarian Function

B. ZONDEK and S. ASCHHEIM (*Arch. f. Gynak.*, April 20th, 1927) have found that implantation into young mice of small grafts of the anterior lobe of the pituitary gland, taken from the cow or other animals or from male or female human subjects, is followed within three to five days by well developed oestrus, with (1) thickening of the vagina and appearance in the vaginal secretion of the microscopic characters typical of rut, (2) notable enlargement of the uterus, and (3) enlargement of the ovaries with sometimes corpus luteum formation. The ovaries show microscopically ripening of the follicle, development of a theca interna, and sometimes passage of an ovum into a fallopian tube. The granulosa cells exhibit partial or complete lutealization. The changes which follow the graft are very similar to those occurring in young mice after injection of ovarian hormones, such as oestrum and folliculin, extracted from the follicle or corpus luteum, with the important difference, however, that the results of anterior lobe hypophyseal grafts are entirely negative in animals which have been castrated, while oestrus is regularly induced by injection of ovarian hormone into castrated mice. Zondek and Aschheim conclude that production of the oestrogenic hormone of the ovary is set in action by endocrine influences derived from the anterior part of the hypophysis, which brings the follicular apparatus into activity, the uterus and vagina are affected secondarily by the ovarian hormone. They have found that no other ductless gland has an action similar to that of the anterior lobe of the pituitary, and they suggest that the ability of inducing oestrus in the non-castrated infantile mouse be adopted as the criterion of activity in extracts of the anterior portion of that gland. The anterior pituitary preparations currently used in therapeutics have been found by them to be devoid of effect.

## 192. The Effect of Ultra-violet Radiation on Resistance to Infection

CLAIRE M. HILL and JAMES H. CLARK (*Immun. Journ. of Hygiene*, July, 1927, p 418) have performed controlled experiments on albino rats to determine whether irradiation with ultra violet rays has any influence in increasing the resistance of the animals to infection with pneumococcus Type 1. The rats were divided into groups similar in weight, age, sex, and family, and one or more groups were treated with ultra violet rays for two and a half weeks, each animal was then injected intraperitoneally with 0.2 c.c. of an eighteen hour culture of pneumococcus diluted 1 in 10,000. The irradiation was performed with a Hanovia quartz mercury arc lamp placed 9½ inches from the shaved backs of the animals. The dose was measured in terms of lithopone units, one unit being equivalent to the amount of energy necessary to darken white lithopone paint to a reflection factor of 50 per cent. The total dose given during the pre-injection period varied in different experiments from 47 to 171.5 units. The animals receiving the larger doses developed severe burns on the back, accompanied by ulceration. There was little or no effect on the red and white cell counts of the blood in the irradiated animals, but there was a consistent rise in the platelet count from an average of about 750,000 in the controls to from 900,000 to 1,200,000 in the irradiated rats. The results of injection with the pneumococcus showed very little difference between the irradiated and the control rats. The more than could be accounted for by chance variation. The authors conclude, therefore, that there is no definite evidence in favour of the beneficial effect of ultra violet irradiation in increasing resistance to infection, and that there is no indication for employing it as a general therapeutic measure in infectious diseases.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

193

### Diabetes in Children

ACCORDING to A. A. LEVY (Jamaica, N. Y.), June 15th 1937 p. 83, though the diabetic children in this hospital are apt to be particularly severe, the prognosis has markedly improved since the introduction of insulin treatment. In his recording sixteen cases of juvenile diabetes he said that the life of such children had been very considerably prolonged by the insulin and Levy reports that all the diabetic children treated in St. Mark's Hospital, New York during the last three years are still alive. In contrast with diabetic children readily respond to preventive treatment hence the importance of periodic health examinations. Excessive weight is rarely seen in diabetic children but they are very susceptible to acidosis and have a poor tolerance for diets rich in fats and poor in carbohydrates. Acidosis is best avoided therefore accumulate rapidly and lead to coma. Moreover children are highly susceptible to intercurrent infections such as measles which intensify and aggravate the diabetic condition. The alimentary particularly the protein requirements of children are high consequently the insulin dosage is higher in proportion to the body weight than in adults. Owing to the small quantity of blood and tissue fluids in children the amount of free glucose available is small and there is a greater likelihood of insulinlike hypoglycaemia. Levy has found it advisable to allow a moderate glycosuria. In uncomplicated cases he recommends a diet controlling 2 grams of carbohydrate and 2 grams of protein for each kilo of weight with an allowance for caloric requirement. Insulin is administered in commencing doses of 3 to 5 units administered before breakfast a watch being kept for hypoglycaemic symptoms. The dose is gradually increased 2 to 3 units at a time, until acidosis is controlled and the glycosuria reduced to a faint trace. Doses of more than 10 units should be divided into two or three parts, the larger one being given before breakfast and the remainder in the early afternoon. Warren has reported that the pancreas in diabetic children may be smaller but the amount of islet tissue is no significantly reduced to account for the disturbed metabolic and there is little of the pathological change in the islands or acini found in adults. When an intercurrent infection occurs the dose should be such as the patient can bear and the potency of the drug may be less in such cases the dose of insulin should be increased to 10 to 20 units. The urine being tested every two or three hours for sugar and diabetic acid. Levy, main aims that diet and proper hygiene can often anchor a the course of diabetes and that much good can be effected by educating parents in maintaining a suitable regime.

194. T. A. CLAWSON JR. and G. A. HAPPOG JR. (*Four -  
Inner Ind. J.*, June 2nd 1947, p. 25) record the case of  
a diabetic negroess aged 11 in which twelve successive  
periods of acidosis or coma occurred followed by death.  
The patient was admitted to hospital during each of these  
periods and though the diabetic condition became gradually  
worse and carbohydrate tolerance progressively less, she  
responded readily to insulin treatment. The attacks of  
acidosis and the fatal termination were due to neglect and  
dietary lapses and the authors consider that under more  
favorable conditions a happier outcome would have resulted.  
They add that when intelligent supervision is not possible  
the patients should be placed in a suitable institution and  
they suggest that public health authorities must conveniently  
assume this responsibility.

195.      Fatal Bullous Gangrenous Varicella.

1. GORDON and J. D. POLLETO (*Arch of Ped* June 1927 p 337) record a case of fatal varicella in a boy aged 2 years and 11 months. On admission to hospital his temperature was 0°, the pulse 144 and the respirations 44 - called over both lumbar regions the left buttock and both thighs and legs were studded with hemorrhagic bullae ranging in size from the ordinary chicken pox vesicle to that of a shilling. Death occurred on the fourth day after admission by which time the bullae had become filled with the excretion of pus from the calves which were studded with a purulent fluid. The rectum was in colour and presented a white necrotic area which invaded and undermined the surrounding tissue. At the necropsy the necrotic areas showed a cone shaped patch of hemorrhage the apex of the cone pointing towards the decubital area which was ulcerated. The bones

of the lungs had reached the stage of red hepatization Commenting on the case Holleston remarks that though varicella is rightly regarded as one of the most trivial disorders a serious epidemicum that no physician had ever seen a child die of the disease apart from a complication entirely unconnected with the exanthem was no longer applicable In all cases of chicken pox however, are extremely rare and usually examples of the gangrenous or haemorrhagic variety In the course of more than twenty five years level hospital practice this was only the third fatal case of chicken pox Holleston had seen the first being one of confluent bullous varicella and the second of the gangrenous type Complicatively few cases of varicella bullous which as first described by Crocq of Novich in 1830 have been recorded, and with one exception none have been particularly severe

## 192 Clinical Duration of Aortic Aneurysm

G. H. COOT (Quart Jour Med April 1927 p 331) reports a statistical examination of 707 cases of aortic aneurysm with a view to determining the duration of life in this condition in British subjects. In 503 cases in men of aneurysm of the ascending, transverse and descending thoracic aorta, the average age of the patients was shown to be 42 years and the average duration of the condition until death just over nine years and nine months. In 72 similar cases in women the average age was 40 years and the duration twenty-two months. Cases of aneurysm of the abdominal aorta numbered 122 in men and 10 in women the average ages in years of the patients being 35.9 and 35.7 respectively, the average durations were 18.1 and 23.6 months. Certain points in prognosis are illustrated by graphs and it is shown that there is a marked fatality in the case of aneurysm of the ascending aorta between the ages of 40 and 45 and a distinct increase of duration with advancing age the expectation of life at 60 being nearly double that at 35. Aneurysms in other parts of the aorta occurring at various ages are considered similarly and a basis is thus obtained for calculating the probable length of life of these patients at different ages.

## 197      Hyperaesthetic Acro asphyxia.

197 Hyperaesthetic Acro asphyxia.  
N. V. BEDVIK (Arch Int Med 1927 p 539) records  
two illustrative cases in men aged 34 and 50 respectively of  
this disease which presents the following clinical features:  
It is a chronic and progressive hyperaesthetic affection occurring  
in younger persons localized in the lower limbs and frequently  
bilateral. The consequences are arterial obliteration,  
ischemia asphyria and spontaneous progressive gangrene  
without a definite line of demarcation. The etiology is  
obscure. The lesions found in the vessels are principally  
an atheroma endarteritis and endophlebitis. In addition  
to hyperplasia of the intima productive of emboli are found  
in the media and adventitia so that the condition can be  
described as a productive arteritis and phlebitis.

## Surgery

### Excision of Ulcer of the Duodenum

199. Excision of Ulcer of the Duodenum  
E S Judd and G W Nixel (Surg Gyn col and Os tot, July 1927 p 17) consider that excision of duodenal ulcers with partial duodenectomy has distinct advantages over gastro-enterostomy in suitable cases. Since recurrence of the bleeding often follows gastro-enterostomy they have so far operated only in those cases in which hemorrhage was a predominant symptom and especially when the patient was young and had a short history. They contend that their procedure offers all the gastro-enterostomy does with the addition of removal of the ulcer. Fresh ulcers may form after excision but they do not appear so frequently as the case after gastro-enterostomy and such a recurrence in the duodenum is no so serious a matter as a jejunal ulcer. Although its application is being gradually extended the procedure has not yet been tried when the duodenum is firmly fixed in cases where long standing inflammation has converted the upper portion of the duodenum into a hard cord and in which there is considerable dilatation of the stomach with marked thickening of its wall. The operation consists in the excision of the anterior half of the pyloric sphincter together with the cap of the duodenum and the ulcer. In most cases the ulcer occurs in the cap of the duodenum and when this portion has been removed and the anterior part of the sphincter excised the opening of the

lower end of the stomach and at the upper end of the duodenum stand out just as the two openings of a gastrotomy after the posterior row of sutures has been inserted. The steps of the operation are not difficult so long as the tissues are well exposed. This is readily obtained if the operation is not attempted for ulcers some distance from the pylorus, or where firm fixation of the duodenum does not permit of its being readily mobilized. The immediate results were very gratifying. Convalescence was uneventful and free from vomiting, retention, and gastric distress, with ordinary precautions against soiling the wounds healed well.

#### 199 Surgical Treatment of Pyorrhoea

J W E GRAHAM (*Journ. Med Assoc S Africa*, June 25th, 1927, p 306) discusses the surgical treatment of pyorrhoea with the object of saving the teeth, the gums being operated upon in sections with ten days' interval between each sitting. Having painted with iodine and under infiltration anaesthesia a transverse incision is made, lingually and labially, around the cervical margins of the teeth down to the bone. From the extremities of the horizontal incision two vertical incisions labially and two lingually are made downwards for about half an inch and the two flaps are reflected with a periosteal elevator. The necks of the teeth are cleaned and polished, and all diseased bone is cut away with flushing burrs, pockets are curetted in the same way. After flushing with saline solution or a mild antiseptic the flaps are trimmed and stitched back in position with fine No 3 silk interdental stitches, which are removed on the fourth day. In selected cases with not too much bone absorption the operation is said to produce very good results, and though there is a certain amount of gum recession in healing the pockets and pus disappear. Treatment with the electric cauterizer, the loop being passed deeply into the pockets and around the tooth, is another effective method, for which it is claimed that all micro organisms are killed and that the healing cicatrization tissue effectively tightens the gum around the tooth.

#### 200

#### Treatment of Colles's Fracture.

V BSKELUND (*Acta Chir Scand*, July 28th, 1927, p 41) reports from the surgical polyclinic of the communal hospital in Copenhagen on the results obtained in the treatment of Colles's fracture during the past five years. As a rule the fracture was reduced immediately and without an anaesthetic, only when there was great deformity, a firm impaction, or the patient was very nervous, was a light ethyl chloride anaesthesia induced. Reduction was effected on the usual principles, and skiagrams were taken in two planes. The plaster splint was removed after six to eight days, when massage was started, it was continued till normal mobility of the limb had been approximately restored. The patients were instructed to move their fingers freely from the first day, frequent movements at the elbow and shoulder were also encouraged. Of the total of 342 patients, 119 were men and 223 women. In 206 cases an after examination was made. The results in these 206 cases were as follows: functional, 60 per cent excellent, 33 per cent good, 6 per cent "mean", and 1 per cent bad; anatomical, 55 per cent excellent, 36 per cent good, 9 per cent "mean" and 0 per cent bad. The author excludes from this material cases in which there was also fracture of the carpal bones or detachment of the epiphysis. The patients in the "mean" class were able to work, but were constantly in pain, and the movements were somewhat restricted. The author adds that these results are better than those published in the literature available, and that the period of treatment was somewhat long, being on the average six to eight weeks.

#### 201

#### Treatment of Endarteritis Obliterans.

E STULZ and P STRICKER (*Rev de Chir*, No 3, 1927, p 196) describe the results of treatment in eight cases of endarteritis obliterans by removal of the suprarenal body. This operation is based on the assumption that the arterial condition is due to hyperfunction of these glands. The patients were in an advanced stage of the disease, and many of them showed actual gangrene of the limbs. Histological examination of the obliterated vessels was more in favour of an organized thrombosis than an endarteritis. Examination of the suprarenal glands has, so far, disclosed little that was abnormal. The blood, after the operation, showed various modifications, including a diminution of the coagulability and alteration in the viscosity. Other operations have frequently failed to relieve the condition. The authors consider that the removal of the left suprarenal capsule by the extraperitoneal route is an operation devoid of risk, the mortality has been nil. The operation results in definite improvement, though its mechanism is at present not understood. The sequelae of this form of treatment are said to be sufficiently encouraging to warrant further trial.

## Therapeutics.

#### 202 Treatment of Whooping-cough by Serum

A STROL and I ANGULESCU (*C R Soc de Biologie*, June 3rd, 1927, p 1446) consider that whooping cough is a very serious disease in infants less than 3 months old, the mortality reaching 98 per cent. The severe paroxysms of coughing are accompanied by cyanosis and vomiting. Two cases in infants, aged 4 and 6 weeks respectively, are reported, in which cures were effected by the use of serum obtained from convalescents from pertussis. In the first case, on the twelfth day of the disease, 6 ccm of serum taken from a convalescent child was injected intramuscularly, and three days later an injection of 10 ccm of whole blood was given. In the second case, on the tenth and twelfth days of the illness, 5 ccm of serum from a child convalescent for a year was subcutaneously injected. The authors believe that this therapy modifies the duration of the disease, and particularly the paroxysmal period, which is shortened, and paroxysms and recurrences are rendered less frequent and severe and the expectoration is diminished. The paroxysmal being the grave period in whooping cough, these injections of convalescent serum have a salutary effect on the prognosis and evolution of the disease.

#### 203

#### Dangers of Intravenous Injection

J H CLARK (*Journ Amer Med Assoc*, July 2nd, 1927, p 21) believes that the intravenous injection of even simple substances, such as sodium chloride and dextrose solutions, may prove disastrous if the cardiac condition is neglected. He records four cases in which death supervened after the injection of a 10 per cent dextrose solution, followed in one case by the injection of physiological salt solution. The cause of these deaths was uncertain. The suggestion of impurities in the dextrose is discarded by the author, who thinks, however, that the possibility of idiosyncrasy to dextrose must be borne in mind. Hanzlik and Karsner, as the result of experiments in anaphylaxis, conclude that hypotonic solutions of sucrose were definitely injurious to the lungs, though the experiments did not include dextrose, the results implicate this sugar also. Hewlett has found that a dilatation of the ventricle may be caused either by a weakening of the muscle with a lessening of the ventricular tone or by intensifying the demand on the heart. Temporary increase of work leads to a further but transient enlargement of the heart. Excessive dilatation lessens the muscular contractile force, and the characterizing acute cardiac failure then supervenes, the dilated ventricle fails to expel the blood coming to it, while the venous pressure rises and favours distension of the ventricular cavity during diastole. If the demands are not reduced below the functional capacity of the weakened muscle the continued collection of blood in the dilated ventricle leads to death. Clark believes that this is what happens when intravenous infusions are administered to patients already showing cardiac impairment, as indicated by a weak, rapid pulse, he concludes that intravenous therapy is not innocuous, and that it is necessary to be careful in the choice of fluids for this treatment, especially if large amounts of fluid are to be given. If the injection is given slowly and close watch is kept on the pulse and heat by frequent blood pressure determinations during the injection, such fatalities should, he thinks, be preventable.

#### 204 Serum Treatment of Gonorrhoeal Rheumatism.

P RAVAUT and DUCOURTIOUX (*Ann de Derm*, May, 1927, p 266) discuss the treatment of gonorrhoeal rheumatism by injections of antigonococcal serum, and report some cases in detail. They believe that in order to get the best results the injections must be given intravenously as a rule, though in the case of the large joints the serum may be injected into the joint. Non specific serums such as the antidiptherial did not give as good results. In the septicemic forms of gonorrhoea the antigenococcal serum proved very beneficial, and in the articular types pain was quickly relieved and the risk of subsequent ankylosis was much lessened. They add that if proper precautions are taken no accidents are likely to occur.

#### Treatment of Vincent's Angina

205 ACCORDING to G BERNAL (*La med Ibera*, May 28th, 1927, p 590) the following five methods have been recommended for the treatment of Vincent's angina: (1) Local application of a concentrated solution of methyl blue, or gentian with a more dilute solution of this substance combined with potassium chlorate. (2) Local application of a concentrated solution of chromic acid to loosen the membrane and bring the acid in contact with the ulcerated surface, removing the excess of acid with a solution of hydrogen peroxide so as to

prevent its caustic effect. (3) Local application of oleic unsaturated preparations, such as castor-oil in distilled water or neutral glycerin combined with intravenous injection of these preparations. (4) Local application of a 10 to 20 per cent potassium tartro-bismuthate solution in oil or glycerin, combined with intramuscular or injection of a bismuth preparation such as metropol succinat or bismuth eto dylate. (5) Local application of preparations of arsenic and bismuth combined with intravenous injections of arsenical preparations. Bernal has obtained the best results by local application twice daily of a 15 per cent solution in oil or glycerin of potassium tartro-bismuthate combined with intravenous injections of neosalvarsan (0.30 gram) every three days and the local application of the same solution. This treatment, which is said to be specific, heals the lesions in less than a week.

## Laryngology and Otology.

### 206. Tuberculosis of the Larynx in Java.

H. MÜLLER and W. F. J. VAN WAREN (Nederl. Tijdschr. v. Geneesk.) May 14th, 1927, p. 2676, review the literature and record their observations on 101 necropsies on Javanese natives who had died of tuberculosis; their conclusions being as follows: Tuberculosis of the larynx is almost as frequent in Java as in Europe. Of the 35 cases which occurred among the 101 tuberculous patients, 27 were in men and 8 in women. In contrast with the incidence in Europe the ulcerative form is the rule and the hypertrophic form the exception. Lupus of the larynx is rare; the site of predilection is the epiglottis, which was affected in about 89 per cent, and involvement of the cartilages is rare. Primary tuberculosis of the larynx is, however, very rare, as in Europe.

### 207. Surgery of the Oesophagus.

ACCORDING TO F. PAPIN (*Reu. de Laryngol.* May 15th, 1927, p. 297) most of the surgery of the oesophagus is directed to neighbouring organs and is only indirect. In certain cases, however, surgery is applied directly to the gullet either in the neck or in the throat. He discusses the various types of gastrostomy and considers the inverted cone type of Fontano or Koder Sen to be better than the superficial cone or valve of Franck or Villar and than the intramuscular type of Hartmann. He remarks that gastrostomy is used not only to enable the patient to receive nutrition but also to allow retrograde dilatation of the stricture in non-malignant cases. In direct surgery in the neck the only condition calling for exposure of the gullet is a pressure diverticulum. It is reached anteriorly to the sternomastoid by passing between the vessels and the thyroid gland. The diverticulum can be removed or invaginated into the oesophagus. To reach the thoracic oesophagus the entrance may be to the right or left of the spinal column. In the former the azygos veins give much trouble, while in the latter the aorta is met with but can be retracted. The easiest route appears to be from the left below the bifurcation of the trachea. The author considers the transpleural route inferior to the mediastinal as the risk of infection of the pleura is considerable and the resulting pneumothorax is undesirable. In cases of obstruction of the oesophagus about the level of the diaphragm anastomosis between the fundus of the stomach and the oesophagus above the stricture has been made. The fundus is brought up through an aperture in the diaphragm and the operation is performed transpleurally. In cases of mega-oesophagus or cardiospasm Greig has devised an operation for cutting the fibres of the diaphragm in the proximity of the oesophagus and at the same time cutting the phrenic nerve. Progressive dilatation is often required in addition to this manoeuvre.

### 208. Chronic Rhino-pharyngeal Disease.

B. R. SHURLEY (*Arch. of Oto-Laryngol.* March 1927, p. 220) considers that a considerable proportion of what patients refer to as tonsillitis, sinusitis and nasal catarrh is really rhino-pharyngitis which is mostly caused by varying degrees of obstruction. The author has found that the experimental occlusion in animals of one or both nostrils has a marked effect on vitality and resistance and in many cases death results. Local disease of the respiratory tract occurs, asthma and emphysema being particularly noticeable, whilst the and emphysema being particularly noticeable whilst the heart is dilated. There are changes in the oxygen-carbon dioxide metabolism in the blood, the silic becomes atrophic and if hair or feathers are present they are shed. Sharply and regards a free air passage of the utmost importance and regards that septal deflection, polypoid adenoids and sinuses disease should be rigorously treated. He thinks that the

turbinals should be respected on account of their function of warming and moistening, the inspired air. Septal deflections are very common in the highly evolved Caucasian type of skull, and disease of the turbinals and sinuses is only to be expected when they are subjected to the dry heat of a modern centrally heated house and to the winter cold out of doors of zero or below.

## Obstetrics and Gynaecology.

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### Painless Childbirth.

A. HARRAN (*Amer. Journ. Obstet. and Gynecol.*, April, 1927, p. 485) states that during the last three years the Gwathmey method of rectal ether analgesia in labour has been used in 5,800 cases with very satisfactory results. A quarter of a grain of morphine is given hypodermically with 2 c.cm. of 50 per cent solution of magnesium sulphate to prolong the action of the morphine. In half the quantity of ether required for rectal anaesthesia is dissolved about 20 grains of quinine alkaloid, and a 4 oz. mixture is instilled into the rectum as a retention enema. After an interval of one to four hours following the injection of morphine and magnesium sulphate when the patient again complains of pain which is usually in from two to three hours a second or even a third rectal instillation of ether may be given at intervals of three hours or more. In 85 per cent of the cases pain was greatly relieved, there was no prolongation of the perineal stage or increase of forceps delivery. The only contraindication to the procedure is uterine inertia and the only restriction is not to start too soon. The patient should be in active labour with pains every four to five minutes, and in a 2 para the cervix should be allowed a dilatation of two or more finger tips. Harran claims that the applicability of this method is much greater than that of scopolamine anaesthesia. It can be used safely and effectively by the practitioner in confinements at home and does not require the service of a trained anaesthetist.

210 M. S. NAIDITSCH (*Zentralbl. f. Gynäkol.*, April 30th, 1927, p. 1123) records his experience of Gwathmey's method of anaesthesia in childbirth. From comparison with groups of cases in which either the morphine and magnesium sulphate injections or those of ether were omitted Naiditsch concludes that there is no special synergism of the ether with the other medicaments; the action of the former is not prolonged by the injection of the latter. Nevertheless by the use of the morphine and magnesium sulphate injections it is possible to defer the use of ether until a later stage of labour and so to secure more satisfactory anaesthesia during the end of the second stage. In primiparae the subcutaneous injection may well be repeated several times. Full analgesia was attained in more than half of the cases and pain was diminished in all although they groaned during uterine contractions the patients declared when questioned that they were free from pain. The anaesthetic effect of the ether lasted five or six hours and Naiditsch prefers to give it in two to three doses at one to two hourly intervals. He considers the method most useful in labours which are not likely to be prolonged and in which the uterine contractions are good.

### 211. Torsion of the Fallopian Tube.

G. BERTONE (*Ann. d. Ostet. e Ginecol.* April 30th 1927, p. 226) refers to three varieties of tubal torsion described in the literature—torsion round a pedicle performed by reason of tubal tumour or tubal pregnancy (15 cases), torsion of normal adnexa (15 cases) and torsion affecting a normal tube only (18 cases). There have been four instances of torsion of the normal tube during pregnancy, in a case described in the present communication the torsion occurred or recurred at the beginning of labour. During the sixth and also during the seventh month of otherwise normal pregnancy a primipara aged 27 had suffered from violent but spontaneously regressing attacks of pain in the left iliac region, slight but recurrent, which had been felt intermittently during the three weeks preceding labour and a violent recurrence led the midwife to summon medical aid about six hours after the commencement of labour when the thinned out cervix allowed introduction of two fingers. Muscular rigidity was well marked over the left iliac fossa. Morphine was given on several occasions, but after forty-eight hours it was found that labour had advanced not at all, pain was still present and the temperature had risen. At laparotomy it was found necessary to exteriorize the uterus before exposing the Fallopian tube, which was axially twisted three and a half times together with the adjacent part of the broad ligament, infiltrated with blood. The left ovary was normal. The



left tube having been excised, a living child was extracted by Caesarian section. Bertone states that torsion of the tube usually takes a clockwise direction, and that it is more common on the right side, being usually taken for acute appendicitis. The ultimate etiological agent is probably increased pressure in the tubal veins, which Payr has experimentally shown to induce axial rotation.

## 212 Extravascular Opening of the Ureter

N. KUDJI (*Zentralbl. f. Gynäk.*, May 7th, 1927, p. 1182) states that fifty cases have been recorded of extravascular opening of the ureter—into the urethra, vagina, or vestibulum. Opening of the ureter into the uterus has not hitherto been reported, except in non-viable foetuses in association with other severe deformities. Kudji records the case of a single woman, aged 21, who complained of urinary incontinence both by day and by night, although micturition was performed at intervals in the ordinary way, the labia majora and the inner sides of the thighs were moist and eczematous. Bimanual examination and an investigation of a catheter specimen of the urine gave normal findings, and no sign of a vaginal fistula was detected, although careful observation showed that the external os uteri was the site of a slight watery discharge. Cystoscopic appearances at first seemed normal, including those of the region of the ureteral openings on both sides, entrance of urine, however, could not be demonstrated on the right, nor could a ureteral catheter be passed on that side. After the intramuscular injection of indigo carmine, blue coloration was visible on the left within three minutes, but not on the right after half an hour; twenty minutes after the injection the urine exuding from the os uteri had not become colored. Catheters introduced into the urethra and in the cervix for seven hours gave issue to 350 and 32 c.c. respectively of urine. The diagnosis was accordingly made of a normal kidney and ureter on the left, and on the right of pronounced hypofunction of the kidney, with opening of the ureter into the uterus. The findings at laparotomy were confirmatory. Near the bladder the right ureter divided into two stems, of which the thicker passed forward and perforated the right wall of the cervix uteri close to the uterine vessels, and a thinner stem ended blindly during its passage towards the vesical trigone. Treatment consisted in division and suture of the ureter 1 cm. above its division and removal of both the branches below the point of section, no trouble in connection with the left kidney followed.

## Pathology.

### 213 Serological Test for Kala-azar

L. E. NAPIER (*Indian Med. Gaz.*, July, 1927, p. 362) describes a test founded on the accidental observation by Major Chopra that when the serum of a kala-azar patient is mixed with certain pentavalent compounds of antimony a heavy precipitate was formed. Trial was made of six such compounds, and the intensity of the reaction appeared to vary directly with the therapeutic efficiency of the drug used, stiburea (urea stibumina) proved the best. The test was performed in a series of sixty clinical cases, the results being compared with those of the aldehyde test and of spleen puncture or other positive test for the presence of Leishman, a small number of control tests on cases other than kala-azar were also made. Napier believes that the reaction is very reliable and equal in diagnostic value to the aldehyde test at least. It requires only a very small quantity of serum and gives a clear cut result, even when the serum is milky. The test is performed by adding two drops of twenty-four hour-old serum to 2 c.c. of a 0.25 per cent solution of stiburea, or two drops of fresh serum to 2 c.c. of a 1 per cent solution of stiburea, agitating and setting aside for ten minutes. If the donor of the serum is suffering from kala-azar a heavy flocculent precipitate will form, and in ten minutes will separate, leaving a clear supernatant fluid.

### 214 The Occurrence of Abnormal Pneumococci in Vivo

H. A. REIMANN (*Journ. Exper. Med.*, May 1st, 1927, p. 807) has tried to ascertain whether pneumococci undergo variation in the animal body. In the test tube under unfavourable cultural environments the smooth or S form of pneumococcus produces variants, which differ from the original type in no longer forming the specific carbohydrate element responsible for type specificity, in being agglutinated by heterologous serums, in being non-virulent for mice, and in being highly susceptible to phagocytosis. These variants are generally spoken of as the R or rough form of pneumococcus. An

intermediate form also occurs, which is less virulent than the original S form, and which shows certain serological differences. By animal passage it is possible to restore the original virulence and type specificity of this form. On the other hand, by placing it under unfavourable cultural conditions this transitional form is converted into the non-virulent R form. So far the only discovery of the R form of pneumococcus in the animal body has been in horses that were undergoing immunization with this organism. Under experimental conditions in the laboratory the author has succeeded in bringing about this change in guinea pigs and rabbits. Liquid agar containing Type 1 pneumococci was injected subcutaneously into guinea pigs that had been actively immunized against Type 1 cocci. Repeated cultures made from the agar focus showed the presence of S forms alone until the fifth day after injection, when a few R colonies appeared. These R forms persisted for about six weeks, they were, however, greatly outnumbered by the S form. In another experiment small phials containing an agar culture of pneumococcus Type 1 were inserted subcutaneously in rabbits. The neck of the phial was closed by a collodion membrane to allow the diffusion of serum but to prevent the passage of leucocytes. Agar was aspirated from the phials at intervals. It was found that the R forms appeared from the third day onwards, and remained demonstrable for periods up to eight weeks. Though they were often present in considerable numbers they never entirely replaced the S forms. Similar phials kept in tubes of normal rabbit serum at 39°C. never showed R forms. The author has therefore shown that R forms may appear *in vivo* in laboratory animals, but has not yet been able to determine what part this transformation plays in the natural recovery of patients from pneumonia.

### 215 Estimation of Antitoxin in Scarletina Serum

R. DEBRÉ, M. LAMY, and H. BOYNET (*C. R. Soc. de Biologie*, July 1st, 1927, p. 214) observed that in Dick negative cases a reaction could be obtained by increasing the dose of toxin. Some persons react to very much smaller quantities than others, who may be very resistant, and require the injection of 20, 50, 100, or even 200 skin doses before reacting positively. The authors, therefore, tried to find out whether there was a quantitative relation between the resistance of the skin and the amount of circulating antibody. They withdrew serum from a number of patients showing different degrees of skin susceptibility, diluted it progressively, mixed these dilutions with streptococcal toxin, and injected them into Dick positive persons. In this way they ascertained the amount of serum necessary to neutralize a given amount of toxin. The neutralizing dose, or that amount of antiserum necessary to neutralize one Dick dose of toxin, as tested on a susceptible subject, they call one antitoxic unit. The serum, for example, which neutralized one Dick dose of toxin in a quantity of 1/100 c.c. would be said to contain 100 antitoxic units. They were thus able to establish the existence of a parallelism between the skin reaction and the amount of antibody in the serum. They calculate that a person who can just resist one Dick dose of toxin intracutaneously contains in his serum about 20 units of antitoxin per cubic centimetre, and add that though this relation is not surprising theoretically, it is likely to be of great value in practice. It affords an indirect method of gauging the activity of the serum of a number of persons in order to find out which is the most suitable for therapeutic injection or for use in the Schultz-Charlton reaction. All that is necessary is to inject a series of Dick negative persons with increasing doses of toxin, and observe which of them are most resistant; it may be concluded that these have the greatest amount of antitoxin in their serum.

### 216 The Blood in Hodgkin's Disease

G. AUBERTIN (*Paris Méd.*, July 2nd, 1927, p. 30), as the result of the study of 100 cases the diagnosis of which was confirmed by *post mortem* examination, concludes that the essential haematological feature of Hodgkin's disease is a neutrophil leucocytosis which is constant, chronic, and persistent, but liable to fluctuations, it is distinguished from the polymorphonucleosis of chronic infections by being constantly associated with a moderate eosinophilia. This change in the blood picture is readily explained anatomically as it appears to be derived directly from the affected glands in which neutrophil polymorphonucleosis and eosinophils predominate. The etiological explanation is more difficult, but the leucocytosis associated with an oscillating fever suggests a glandular reaction of an infective nature, which is probably microbic or possibly parasitic owing to the eosinophilia. In any case the contrast with the lymphomatous hyperplasia of the lymphatic reaction



# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

## 217      Nervous Complications of Variola

R. E. Wilson and F. L. Loun (1914, *Johns Hopkins Hosp. Bull.*, June 19, p. 33) state that the older medical writers described a great variety of nervous complications of variola including delirium, psychosis, local and multiple neuritis and even hemiplegia and aphasia. The conditions are no peculiar to variola but are due to bacterial intoxication and invasion of the blood by secondary organisms. There is reason to believe however that certain neurological syndromes referable to the spinal cord and brain are due to invasion of the nervous system by the virus of variola. The present authors classify the recorded cases in the following groups: (1) Cases of paralysis of the legs without other symptoms. The clinical picture indicates an involvement of the anterior horn cells in the spinal cord; death occurred in all but one case from bed ore urinary infection or respiratory paralysis. (2) Several writers have noted hilar symptoms with dysarthria and disturbances of swallowing, none of these patients died and most recovered completely. (3) This group showed signs of a more diffuse process in the nervous system including spastic weakness, tremor at rest, bulbar disturbances and in some cases mental changes. The early and fairly uniform appearance of nervous symptoms in this group suggests that they are due to the virus of variola and not to secondary infection. Seven autopsies which were performed on cases with spinal symptoms showed either no changes at all, or areas of inflammation and degeneration.

### 2.8. Diagnosis of Arterio sclerosis of the Pulmonary Artery

E. SIGNORELLI (*Pit. Act.* July 4th 1927 1 631) describes in detail the clinical history and post mortem findings of a case of arterio-sclerosis of the pulmonary artery. He concludes that this condition can be diagnosed during life by (1) the intense persistent and diffuse cyanosis which is quite disproportionate to the degree of dyspnoea (2) the well marked hypertrophy and dilatation of the right ventricle and auricle, with insufficiency of the tricuspid valve (3) the occurrence of paroxysmal attacks of *Interdum accessione dolorosa adspueret retrosternal aenlur* during which the cyanosis reaches its maximum intensity (4) systolic diastolic murmurs over the pulmonary area caused by the relative stenosis and insufficiency. The necropsy showed a sclerosis of the pulmonary artery with obliteration and narrowing of the terminal branches and dilatation of the medium and large branches with thrombotic plagues. It was not possible to assign a syphilitic origin to this case. Signorelli reports a case in which the sclerosis of the pulmonary artery presented a pathological symptomatology associated with a syphilitic aetiology. It was definitely syphilitic.

## 219 Spirochaetal Jaundice in North America

H H LOWE and J E WALKER (*Journ Amer Med As* of July 9th 1927 p 86) review the literature and record the first case of spirochaetal jaundice reported in North America. As is the rule in this infection the case was sporadic. They think that spirochaetal jaundice is probably prevalent in the United States though it includes only a small proportion of the cases classified as infectious jaundice of unknown etiology before the discovery of *Leptospira icterohaemorrhagiae*. The disease is usually associated, according to the literature with polluted water or soil possibly being caused by the spirochaetes living free in nature. It is also possible that the part played by rats in the dissemination of the disease has been over emphasized. The authors' patient was a man aged 31, the symptoms were typical and he recovered. Although direct examination of the blood was negative the leptospira was recovered by guinea pig inoculation.

## 220 Aberrant Lymphomata in Chronic Lymphadenoma.

P. FOLTZ (*Il Policlinico Sez. Med.* August 1927 p. 389) records three cases to illustrate the occasional complication of the diagnosis in chronic lymphadenoma by the proliferation of lymphoid tissue in organs which are not usually involved in the hyperplastic process. A man aged 52 suffered from multiple lymphomata in the voluntary muscles but he was anaemic and had no characteristic blood reaction diagnosis during life was almost impossible. Much lymphoid tissue was found at the necropsy and in particular, there was a large mass in the bony pelvis. The

size of a foetal head. The upper limbs presented multiple nodules of a pasty consistence, ranging in size from that of a small nut to a mandarin orange. They were situated in the muscular substance of the biceps and triceps and in the superficial flexors of the forearm. The skin over them was movable, and neither thickened nor infiltrated. On incision the nodules were clearly gelatinous and sometimes reddish or haemorrhagic; their periphery retained some muscular structure. The size of the nodules diminished temporarily during x-ray treatment. Microscopically it was found that leucocytic tissue had invaded the muscular fibres, a condition of great rarity. Another man aged 59 had been a heavy drinker; he was wasted and suffered from loss of appetite, dyspnoea and glycosuria. He had a sense of weight in the abdomen and some epigastric pain but continued to work until he noticed an abdominal swelling. He was admitted to hospital with some fluid in the abdomen and enlargement of the cervical axillary and inguinal glands; a blood examination was negative and percutaneous abdominocentesis revealed a simple transudation. He died of heart failure due to fatty degeneration of the muscular parietes. At the pyloric end of the stomach there was a large oval ulcer extending into the greater curvature; it was two inches long and one and a half inch wide. On incision the bottom and edges were found to be infiltrated with lymphoid tissue; the rest of the stomach being healthy. The presence of ascites might have led to a diagnosis of cirrhosis of the liver. Holtz remarks that lymphomatous must therefore be numbered among the causes of ascites the constrictive action of lymphoid infiltration diminishing the lumen of the veins. Another patient had large polypous vegetations in the cardiac region of the stomach and also in the oesophago-gastric opening, projecting as much as one and a half inch. The author adds that the participation of the stomach in the hyperplastic process of lymphadenoma is somewhat rare and may make diagnosis extremely difficult.

## Surgery

## 224 Congenital Cysts of the Neck in Children

According to R L FAYE (*Inner Town Surg* July 1927,  
p 1) cysts are always surgical conditions and their cure  
depend on the embryonic structures from which they  
arise. The types usually seen are the thyroid gland, the  
hygroma - a lymphocystic branching cyst. The hygroma,  
often termed a lymphocoele is always of lymphatic origin  
and arises from the jugular sinus. It is usually found in the  
posterior triangle and is more common on the right side. It  
appears as a spongy tumour and may suddenly take on rapid  
growth often after trauma or infection. It may become tense  
when the child cries. The treatment is complete removal  
since otherwise recurrence always follows. Thyroglossal  
cysts are connected with the tongue and the thyrolo isthmus.  
Treatment depends upon the removal of the cyst and the  
remaining pituitous part of the thyroglossal tube. These  
cysts always occur in the midline and contain mucus with  
epithelial cells. Bruchigenetic cysts include those grouped  
as ranula submaxillary cysts and cervical cysts. It is prob-  
able that they all arise from embryonic remains of the  
cervical sinns. The persistent sinns may show as a fistula  
discharging on the surface of the neck along the anterior  
border of the sterno mastoid muscle. The cure of these cysts  
is a difficult and delicate surgical undertaking.

## 222 Primary Subungual Malignant Melanoblastoma

K SPECHT (*Deut Zeit f Chir* June 1927 p 390) who records an illustrative case states that this tumour which arises from the pigment cells of the nail bed only occurs on the thumb or great toe. The male sex is usually affected. An injury is followed—on the average in about a year's time—by the development of granulation tissue which resists all forms of treatment and remains stationary from six to twelve months. Pain at first is usually absent or only slight and then spontaneous lancinating pain occurs and the granulations which were formerly blood red assume a greyish hue and become converted into a nodule which is always covered with a thick layer of epidermis and never becomes ulcerated. The nodule rapidly increases in size and involves the whole thumb or great toe, the surrounding area becomes inflamed and within three to six months after formation of the tumour metastases form in the regional glands and later the lungs and brain. An early diagnosis is important, but is no easy

at first Specht thinks that every recurring growth of granulation tissue with chronic inflammatory reaction which shows no tendency to heal should be regarded with suspicion, especially if the granulation tissue becomes converted into a nodule with spontaneous dragging pain. A differential diagnosis must be made from chronic inflammation, tuberculosis, and primary chancic. The prognosis is unfavourable when once metastases in the glands have developed. Treatment should consist in amputation, but if the case is inoperable, rays should be tried. In Specht's case, which occurred in a man aged 43, the tumour developed nine months after he had run a splinter under the thumb nail. Amputation of the terminal phalanx was performed. No recurrence was observed at the end of nine months.

#### 223 Pain in the Heel due to Periostitis of the Os Calcis

L. HUSIED (*Ugeskrift for Læger*, July 28th, 1927, p. 676) has observed in recruits accustomed to a sedentary existence in civil life, and not used to the gymnastics and long marches of military service, a condition characterized by pain in one or—more seldom—both heels while walking or running. This pain became worse till the patients could no longer walk. On examination tenderness was always observed at the site of insertion of the Achilles tendon. In some cases, but not invariably, there was slight swelling of the soft tissues in the neighbourhood, and in no case was discoloration of the parts observed. In uncomplicated cases there was no tenderness of the bursa of the tendon, no swelling, tenderness, or crepitation about the tendon itself. There was no limitation of movement or pain on passive movement of the ankle, but pain could be elicited at the site of insertion of the tendon by walking, standing on the toes, or resisting passive dorsiflexion. Rest in bed for eight to ten days, supplemented by fomentations when the soft parts were swollen, effected a cure, and the author has had only one troublesome case of relapse. He draws attention to the widespread ignorance of this comparatively common cause of pain in the heel.

#### 224 Peritonitis Chronica Fibrosa Incapsulans

L. JOSI (*Centralblatt für Chirurgie*, July 2nd, 1927, p. 1689), who records an illustrative case in a boy, aged 16, on whom a successful operation was performed, states that only a few examples of this condition, which is sometimes known as "iced intestine" (*Zuckergrundstauung*), have been described. Most patients are males and the ages range from 13 to 55. As a rule only isolated parts of the gut are involved. The small intestine is always affected and sometimes the large intestine as well. The liver and spleen are occasionally implicated, but the pelvic organs almost always escape, the bladder and posterior abdominal wall were affected in only one case. The thickness of the covering may be as much as 2 cm., and the colour is an opaque white. Histological examination shows fibrous and granulation tissue undergoing hyaline degeneration. The symptoms of the disease are determined by the extent and position of the affected gut and the quality of the obstruction. As the peritonitis is chronic and develops without any exudation, the diagnosis of peritonitis is rarely made. If the whole of the intestinal tract is not involved, the affected part may be mistaken for a tumour or a cyst. Interference with the passage of the intestinal contents often gives rise to the erroneous diagnosis of organic intestinal obstruction, especially when a ray examination shows the site of the obstruction. Treatment is always surgical. The prognosis is not so unfavourable as might be expected.

## Therapeutics.

#### 225 Treatment of Heart Disease

R. L. LEVI and T. T. MACKIL (*Journal Amer. Med. Assoc.*, August 6th, 1927, p. 432) discuss the treatment of heart disease, and conclude that since digitalis by its direct action on the cardiac muscle increases the amplitude of ventricular contraction its main indication is found to be myocardial insufficiency. It is best administered by the mouth in pills, tablets, or capsules containing 12 grains of a standardized powdered leaf, an average total dose to reduce full therapeutic effect within from twenty-four to forty-eight hours being 22 grains in separate doses. For local administration the tincture is best, and onrham for intravenous or intra-arterial injection. Quinidine is useful in disorders of rhythm, especially auricular fibrillation, but care must be exercised in the choice of patient, suitable cases being those of recent onset with but slight cardiac enlargement and no valvular disease, or of fibrillation associated with a recent infection or hyperthyroidism. Its intravenous administration is said to be dangerous. While digitalis therapy generally causes diuresis

in cases of congestive heart failure the elimination of fluid may sometimes be facilitated by the additional use of such diuretic drugs as theophylline, theobromine, theobromine sodiumsalicylate, and novasurol, though this latter, because of its mercurial content, should only be used after the others have been given a thorough trial. P. D. WHITE (*ibid.*, p. 435) considers that the best results in cardiac treatment are frequently obtained by agents other than drugs—namely, physical and mental rest and recreation, graduated exercises, massage, climate, diet, physical procedures, psychotherapy, venesection, and surgery. Judgement is needed in the application of rest and recreation, since they may be abused by too prolonged or by insufficient use. The same applies to dieting, but, generally, small light meals at frequent intervals with restricted fluid intake, according to circumstances, is desirable. Cervical sympathectomy or paravertebral injection of alcohol into the spinal nerve ganglia for angina, paracentesis for serous or purulent pericardial effusion, and venesection for temporary cardiac relief, are among the surgical procedures which may be of value.

#### 226 Treatment of Enlarged Prostate by Diathermy

J. G. REVINSE (*Nederl. Lydschr. v. Geneesk.*, July 30th, 1927, p. 508) who records ten successful cases in patients aged from 64 to 84, claims the following advantages for diathermy in the treatment of prostatic hypertrophy. The method is by no means drastic and therefore the risk is slight, it can be performed painlessly after the intraurethral injection of novocain or tutocain. No bleeding occurs. The treatment can be controlled by the index finger. All forms of prostatic diseases which give rise to retention of the urine can be dealt with in this way. This procedure would probably obviate a considerable number of prostatectomies which would otherwise be necessary. When an operation cannot be performed owing to the bad general condition of the patient diathermy can be employed with success.

227 O. GRANT and J. R. STITES (*Urol. and Cut. Rev.*, July, 1927, p. 447), who record three illustrative cases, maintain that the treatment of chronic prostatitis by diathermy, though comparatively new and still in the experimental stage, has a very important place in urology, both medically and surgically. The types of patients most suitable for treatment by diathermy are (1) those who show signs of toxic absorption manifested by arthritis of varying intensity, (2) those who have acute exacerbations with chills and fever and no urological symptoms except cloudy urine, and are often treated for influenza, until their real trouble is recognized by examination of the urine at an insurance office, and (3) patients who complain of some urological disturbance such as "acid urine" or morning discharge. The more acute cases do best under palliative measures until the acute stage has subsided. As the result of diathermy the prostatic secretion is more easily and less painfully expressed, and pus is evacuated which has not been discovered by massage.

#### Crystalline Insulin

228 J. J. ABEL, E. M. K. GILLIN, C. A. ROUILLER, T. K. BELL, and O. WINTERSILINER (*Journal Pharm. and Exp. Ther.*, May, 1927, p. 65) report further progress in the elaboration of a simple method for the crystallization of insulin, previous reference to Abel's work in this connection appeared in our issue of April 10th, 1926 (p. 666). Commercial preparations of insulin undergo a process of iso electric precipitation. They are dissolved in dilute acetic acid and barium acetate is added. Impurities are precipitated in part with pyridine, and, on adjustment to the proper pH with ammonia, insulin crystallizes out. The evidence suggests that two different crystalline forms exist, identical in chemical composition, the empirical formula of the dehydrated product is  $C_{24}H_{38}O_{11}N_{14}S$ . Such information as there is relating to their chemical constitution tends to confirm the suggestions of other workers that insulin is a body of peptidic nature, which gives the Farly, Millon, biuret, and murexide reactions, the first two indicate the CO-NH linkage and the presence of free amino groups respectively. The crystalline preparation was shown to contain neither cystine nor cysteine in the free state. The substance is optically active, it is rapidly destroyed by alkali, and loss of activity always follows disturbance of the sulphur atom. The rabbit unit is in the neighbourhood of 40 per mg. (international standard), which indicates that, if the product be in really pure, insulin is far less potent than the oxytocic principle of the pituitary secretion, preparations of which known to be impure show a far greater degree of activity. The unitage of the product was, however, unaltered by two crystallizations from an aqueous medium and by recrystallization from an alcoholic aqueous buffer mixture. In a typical experiment 0.528 gram of crystalline iodine was obtained from 2 grams of a commercial product.

**229 Bismuth in the Treatment of Syphilis**  
O. I. MULLER (*Med. Journ. Ant. Leech*, July 20th, 1927, p. 103), in commenting favourably on the value of bismuth in the treatment of syphilis in adults, however, thinks the best results are not always obtainable by administering this alone. He finds it particularly useful in neurosyphilis and states that this metal is demonstrable in the nerve tissues in larger amounts than either arsenic or mercury. He reports six cases in which skin manifestations appeared while the patients were under intensive treatment with bismuth, in some of these the condition seemed to be definitely a form of bismuth dermatitis, and the substitution of other antisyphilitic remedies caused the disappearance of the skin lesion which included irritative erythematous macules on the arms and legs, eczematous patches on the hands, and soreness in the anal and perianal regions.

## Dermatology.

**220 Poikiloderma Atrophicum Vasculare**  
A. M. BOWMAN and F. C. CLARK (*Arch. Derm. & Syph.*, May 1927, p. 283), give details of a case of poikiloderma atrophicum vasculare and refer to eighteen cases reported previously in the literature. They conclude that three possible causes of this rare disorder deserve serious consideration—namely, exposure, infection, and endocrine disturbance. They add that the condition may possibly be of nervous origin and that the definite evidence of a distinct morbid process in the sympathetic ganglia seems to indicate that the atrophic changes are caused by lack of proper trophic stimuli from the sympathetic nervous system. The lesions of the skin are, however, not so easily explained on this supposition. The case reported by the present authors occurred in a man aged 39, who was weak and stunted from birth. His hands were severely frost-bitten at the age of 23 and soon afterwards the rash broke out on his face. Seven years later it spread to his body and became progressively more noticeable. He suffered much from chilblains. Granuloma appeared first on the fingers and then on the toes. Mental symptoms followed, and the joints became stiff. Thin spots were plum coloured and contained fine capillaries. They were situated in the tissues and not raised above the surface. Over the back there was an irregular distribution of patches. The weakness and stiffness increased and a cataract was removed from the left eye, but the patient died from acute cardiac decompensation after this operation.

**221 Granuloma Inguinale.**  
P. BROCKE BLAND (*Urol. and Cut. Rev.*, May, 1927, p. 293), who records an illustrative case, states that both sexes are almost equally prone to granuloma inguinale which is much commoner in the coloured than in the white race. The average age of the patients is 30. The disease commences by the formation of granules, which may increase and form nodules of the diameter of half an inch or more. These develop in the cutis, and as they increase in size they raise and stretch the overlying epidermis which gives way in places so that superficial ulceration results. The ulcerated surface gives rise to a profuse watery discharge and bleeds readily on the slightest provocation. In course of time the nodule is replaced by dense scar tissue which becomes irregularly pigmented. The disease usually appears in the neighbourhood of the genitals—in the female it invariably develops in the labia or in their immediate vicinity—and travels along the folds of skin until the groin, from one anterior superior iliac spine to the other are implicated. The skin over the pubis being most severely affected. The disease also follows the femoral labial folds finally involving the perineum as far as the coecum and sacrum. Sometimes it invades the urinary as well as the alimentary tract. In cases of long duration various lesions are seen such as papules, some of which are necrotic areas of necrosis and pigmented scars. Cases of pregnancy and labour complicated by granuloma inguinale, of which Bland reports an example are exceedingly rare.

**222 Dermatitis Produced by Balsam of Peru**  
C. L. CLIMPEY (*Arch. Derm. & Syph.*, July 1927, p. 44) reports a case of dermatitis produced by balsam of Peru which is infrequently used both for its stimulating property and as a component of ointment for the treatment of scabies. His patient was a steel worker aged 40 who had been burnt on the right arm and chest on March 22nd, 1925. The burns were of the first degree and since healing did not occur daily the ointment used was suspected. It was found experimentally that ointments containing phenol and balsam of Peru produced irritation the balsam ointment more so than the other. The

patient presented a picture of infectious eczematoid dermatitis. Wet compresses of potassium permanganate were used and the patient left hospital on May 16th greatly improved. The skin finally cleared rapidly after x-ray irradiation. Experiments were then performed to define the irritating ingredient in the ointment previously used. Small amounts of various ointments including one containing balsam of Peru were applied and covered with a gauze square the areas of application being widely separated. On the next day all dressings were in place except the one containing balsam of Peru which was to discomfort the patient had removed it, and the area showed erythema and vesication. The author cites the literature to show that more severe complications occasionally follow the use of this balsam.

**223 Impetigo Herpetiformis**  
F. WALTER (*Ann. de Derm. et de Syph.*, May, 1927, p. 257) reports two cases (one fatal) of this rather rare disease in pregnant women. He has collected about sixty similar cases with thirty one deaths. The disease is often associated with convulsive attacks as in the author's two cases although these sometimes may be slight. Walter thinks that the main cause is some disturbance of the endocrine glands. In the case of pregnancy associated with this affection the serum obtained from the blood of a healthy pregnant woman is said to be beneficial. In the author's second case this treatment caused the herpes to pass into a psoriasis like condition.

## Obstetrics and Gynaecology.

**224 Observational Use of Ergot and Pituitary Extract**  
A. BOURVILL and J. H. BURN (*Journ. Obstet. and Gynaecol. of the British Empire*, Summer Number 1927, p. 249) have investigated the action of drugs on the parturient uterus in the first, second, and third stages of labour. They recorded the intrauterine pressure and the work done by the uterus muscle by introducing a hollow rubber disc connected with a manometer about eight inches within the uterus. With regard to the separate ergot alkaloids—tyramine, histamine, and ergotamine (or ergotoxin)—they find that (1) tyramine in pharmacological doses has little effect and is without value in obstetrics; (2) histamine given subcutaneously in doses of 2 mg. leads to a quick powerful and transient rise of intrauterine pressure; (3) ergotamine in doses of 0.5 to 1 mg. hypodermically gives rise after a latent period of twenty to thirty minutes, to a prolonged increase of tone of myometrium. The practical conclusion drawn is that while none of the ergot alkaloids have a place in therapeutics before delivery of child and placenta it is possible that in post partum haemorrhage a combination of histamine and ergotamine may be of more value than pituitary extract. The liquid extract of ergot of the *British Pharmacopoeia* does not contain ergotamine and can therefore it is stated have no therapeutic effect. The authors are satisfied that an injection of two units of pituitary extract corresponding to 0.2 c.c. of most of the commercial extracts can be given with safety, in the absence of mechanical obstruction at any stage of labour, the least interval at which any dose can be usefully repeated is one hour. Such a small dose produces in the majority of cases an increase of tone and/or of rhythmic uterine contraction and if the dose is at least half diluted a sluggish labour may, with some confidence, be expected to be hastened.

**225 Torsion of the Fallopian Tubes**  
CAPAVEN (*La Gynecol.*, June 1927, p. 356) reports a case of torsion of the Fallopian tube in a woman aged 34 years who after taking some abortifacients suffered from uterine haemorrhage for seven days. A month later she took more abortifacients and sharp abdominal pains and vomiting followed. A slightly tender swelling was found in the lower epigastric region, the uterus was anteverted and a large mass filled Douglas's pouch. A diagnosis of ruptured tubal pregnancy with pelvic haematocoele was made. At the operation three days later the pouch of Douglas was found filled by a haematocoele with adhesions to the posterior uterine wall. A twisted Fallopian tube twisted twice at a point 3 or 4 cm. from the uterus, was removed with the ovary recovery was normal. The tube and ovary were filled with ordinary homogeneous blood clot but the peritoneal covering of the tube was normal without signs of chorionic villi or of old infection. The adnexa of the other side were normal except for slight congestion. CAPAVEN thinks that the formation of a pelvic haematocoele should have been diagnosed and states that in none of the recorded cases of torsion of healthy adnexa was a haematocoele mentioned although in one case blood was withdrawn by aspiration from Douglas's pouch.

and in another 300 c cm of blood stained serum was removed from the peritoneum. He adds that torsion may involve the tube only, or both tube and ovary, it may occur before puberty and in virgins. The condition has been diagnosed clinically as appendicitis, renal colic, ectopic gestation, and torsion of an ovarian pedicle. The etiology remains obscure, though it was possible in Caraven's case that the apical set up violent contractions of the tubo uterine musculature. Abnormal length and sinuosity of the tubes, combined with menstrual congestion, may be predisposing causes, to these may be added violent physical exercises, falls, and strains. Manciano states that by means of laparotomy it is possible to observe these spasmodic longitudinal and circular contractions, which may be subsequent to lesions of neighboring organs, or the patients may be subject to spasmodic philia. C. LEMORMANT (ibid., p 358) also describes a case of torsion of the Fallopian tube. The patient had had an attack of abdominal pain six months previously, which had subsided after a few days. A second sudden attack of pain localized in the hypogastrium without any haemorrhage brought the patient to hospital, where a diagnosis of haematocoele was made. The operation revealed a very swollen tube twisted three times upon itself. The tube was removed, but the ovary was left and recovery was uneventful. Histological examination revealed no pathological change in the tube.

### 236 Pregnancies during Amenorrhoea after X-ray Treatment of the Ovaries

ACCORDING to C. HOLTERMAN (Zentralbl. f. Gynak., August 13th, 1927, p 2091) Zaugemeister was the first to record a case in which after irradiation of the ovaries pregnancy ensued without an intervening return of menstruation. Holtermann describes the case of a woman, aged 35, who had suffered for over twenty years from pulmonary tuberculosis, at the age of 32 indications for unilateral ovarian castration by x-rays were found in an exacerbation of the pulmonary disease, accompanied by severe menorrhagia. To induce amenorrhoea a subsequent application to the other side of half the earlier dose was necessary. Three years later the patient, who had a contracted pelvis, was delivered by forceps of a dead but large and well formed foetus. A second conception followed within twelve months of the first, the new pregnancy terminated after artificial induction of premature labour in the birth of a live, healthy child, free from malformations. The patient had not menstruated since the application of x-rays six years previously.

## Pathology.

### 237 The Bactericidal Action of the Commoner Phenols

WITH the object of selecting germicides likely to be efficient as internal disinfectants, and of correlating chemical constitution with bactericidal power, J. F. CAIUS, B. P. B. NAIDU, and J. S. JANG (Indian Journ. of Med. Res., July, 1927, p 117) conducted a number of experiments, using *B. pestis* as the test organism. They cultivated the organisms in both containing definite amounts of the disinfectant, and determined the exact concentration necessary to prevent development, the four groups of substances so tested were the phenols, derivatives of phenols, compounds obtained by the condensation of two molecules of a phenol with one of phthalic anhydride and, lastly, the derivatives of fluorescein or resorcinolphthalein. It was found that solution in alkali either depressed or intensified the bactericidal power of monohydric phenols without any apparent cause, but generally enhanced that of the polyhydric phenols. A comparatively high activity was manifested by the following: quinol (1 in 432,000), microchlorine 220 soluble (1 in 76,800), catechol (1 in 48,000), alpha nitroso betanaphthol (1 in 25,600), tolhydroquinone (1 in 14,400), 2, 4 diamino phenol (1 in 12,800), carvacrol (1 in 11,200), 2, 4, 6 trichlorophenol (1 in 10,000). The authors state that as a class the phthalein dyes have a relatively small bactericidal value, and that microchlorine owes its activity to the labile mercury in its molecule.

### 238 Internal Secretion of the Ovary

L. BROUHA and H. SIMONNET (Bruxelles Med., August 14th, 1927, p 1317) report on the physiological properties of the liquid-follicular—in the Graafian follicles of the ovary, and state that it exerts a specific anabolic action on the female genital tract and on the mammary gland. The observations were made by injecting the follicular fluid or an extract of this fluid in olive oil into guinea pigs and rats of various sexual ages. It was found that in females before the age of puberty the fluid evokes uterine, vaginal, and mammary phenomena resembling those of puberty, accelerating the maturation and atresia of the follicle. In the adult female

it prolongs the oestral characters and produces a lasting hypertrophy of the uterus. In the adult castrated female the injection restored the phenomena of the physiological oestrus and also the morphological characters of the uterus and mamma. In the female during gestation the effect was found to vary with the period of pregnancy, it was without effect towards the end of the term, but in the initial periods it might bring about abortion. In the female during lactation it determined transient oestral phenomena, but did not influence the secretion of milk. The authors add that the follicular fluid *in vitro* can confer on the uterus removed from an animal, either before or after puberty, at the period of dioestral rest, the functional aspects of a uterus removed during the oestral period. It is also capable of giving to the resting uterus, by washing, a rhythm and power of contraction analogous to those of the uterus during oestrus.

### 239 The Reticular Endothelial System in Tuberculous Infection

ANNA SASSONE (Il Morgagni, July 17th, 1927, p 1121) has continued Goldman's study of the behaviour of the reticulo endothelial tissue in tuberculous infection, employing the method of vital staining by "puirulo" (bino d'isammina), certain cells which become stained are termed "pirophil", and those which do not "pirophobo". Guinea pigs were infected with tubercle bacilli and injected with puirulo (1 c cm of a 1 per cent solution per 100 grams of body weight) on alternate days until the sclerotics and skin became coloured. Later the animals were killed and preparations from the infected tissues were stained with safranin. The endothelial cells and the reticular cells of the mesenchyme are pirophil. In those cases where necrotic changes had not commenced the giant cells were not stained, but when degeneration had set in the infiltration of the stain was readily seen. Caseous substance showed very marked puirulo staining. The author concludes that the mesenchyme in the area attacked by the tubercle bacilli takes an active share in the formation of the tuberculous tissue, which is in part therefore, certainly of histogenic origin, the share taken by the mesenchyme is greater the more attenuated the action of the bacilli, so that in granulation tissue, which is really an anatomical pathological expression of modified bacterial action, almost all the cellular elements are mesenchymatous derivatives. Tuberculous tissue is intensely pirophil. The tuberculous giant cell is certainly not histogenic, only the epithelioid cells are of histogenic origin. The amount of mesenchymatous cells in a tubercle is an index of the activity of the organism in the tissue attacked. The mesenchyme is only able to react strongly to the tuberculous infection when this is attenuated, it is probable that the mesenchyme is important in the production of caseous substance.

### 240 The Pathogenicity of Filterable Forms of Tubercle Bacilli

ACCORDING to J. VALTIS (C. A. Soc. de Biologie, July 15th, 1927, p 477) if a filtrate of tuberculous material or of a culture of tubercle bacilli is injected subcutaneously into guinea pigs it is followed by the development of glandular lesions—particularly in the tracheo bronchial glands—characterized by a greater or less degree of enlargement, the glands never become caseous. On careful examination it is possible to find a few acid fast bacilli arranged singly or in small groups. Animals infected with tuberculous filtrates never develop a local lesion or focal adenitis, occasionally nodular lesions, generally discrete and often limited to the lung or spleen, may be observed. The tuberculin reaction is irregular and often fleeting. Valtis maintains that these findings cannot be explained on the assumption that a few tubercle bacilli succeed in getting through the filter. To test this assumption he inoculated a series of guinea pigs with very small doses of a virulent bovine strain, the actual number of bacilli injected he calculates as 4, 40, and 400. Those animals after a time reacted positively to tuberculin, and continued to do so till their death. At necropsy the typical picture of experimental tuberculosis was found—caseous adenitis and caseous nodular lesions in the organs. Proceeding still further, he tested the virulence of the acid fast bacilli found in the glandular lesions of animals that had been previously injected with tuberculous filtrates. A pregnant guinea pig received three injections of a filtrate of tuberculous ascitic fluid 10 weeks later she gave birth to three young, one of these was killed and was found to have an enlarged portal gland containing numerous acid fast bacilli. A part of this gland was ground up and injected into two fresh guinea pigs. One of these died two and a half months later with slightly enlarged tracheo bronchial glands containing acid fast bacilli, the other died three and a half months later without any lesions. The author therefore concludes that the acid fast bacilli derived from filterable forms of tubercle bacilli have no greater virulence than the forms themselves.

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine.

### 241 Haematological and Clinical Aspects of Human Rabies

D. IONESCO and B. WALTER (Bull. et Mem. Soc. Med. des Hop. 19, 1927, p. 47) state that Babes in 1887 was the first to draw attention to the occurrence of a polymorphous nuclear leucocytosis in mad dogs and to its early development. Courmont and Lesieur confirmed these findings in 1888 and Sabrazes and Grilly saw a case of untreated human rabies with a predominant polymorphonuclear leucocytosis. Ionesco and Walter record their observations in five cases of human rabies in patients aged from 6 to 45. Their conclusions are as follows: (1) There is a shift to the right in respect of Leitch's formula or a general diminution of the peroxidases which increases during the course of the disease. (2) In one case there occurred in the prodromal stage changes in the blood consisting in leucocytosis, increase of the polymorphonuclear cells and absence of eosinophils and a rise in number of the red corpuscles probably due in part to respiratory inefficiency. (3) Pruritus is an early symptom but as the disease progresses it invariably becomes transformed into a feeling of burning or pain. It first localized at the site of the bite and subsequently generalized.

### 242 Anuria in Scarlet Fever

H. L. HIGGINS and W. J. GRAY (Inter. Journ. Dis. Child. June, 1927, p. 925) who record an illustrative case remark that anuria in scarlatinal nephritis is rare. In Dunham's case the anuria lasted fifty-one hours with recovery. Kohn reported a case with recovery after complete suppression of urine for five days. In Pisano's case no urine was excreted for two days but there was abundant sweating, there was no oedema. When urine was passed again it contained blood and albumin. Recovery was rapid. There are several cases of post-scarlatinal anuria on record in which the urine before and after the anuria seemed normal and contained no albumin or blood. In the present case, which occurred in a girl aged 3, nephritis set in on the sixth day of scarlet fever. Anuria which developed at once lasted seven and a quarter days and was not accompanied by any symptoms of uraemia. Treatment consisted in intravenous injections of hypertonic solutions (glucose 90 per cent, magnesium sulphate 2 per cent, and calcium chloride 0.2 per cent) to reduce the oedema presumably present in the kidney. The function of the kidney was in process of restoration when a streptococcus septicemia caused suppurative nephritis, otitis media, empyema and finally death.

### 243 Immunization against Tuberculosis

J. HEIMBECK (Norsk. Mag. f. Laegevid. June, 1927, p. 457) describes investigations since January 1924 into the incidence of positive and negative Pirquet reactions among probationer hospital nurses. From the beginning of 1924 to a date not specified in 1927 as many as 397 nurses were recruited and they were tested with concentrated old tuberculin in most cases during the first week of hospital service. In 189 cases the reaction was positive, in 208 it was negative. If most of the nurses had come from the country, this high proportion of negative reactions might not have seemed surprising but as many as 60 of 116 nurses coming from villages and as many as 66 of 148 coming from towns gave a negative reaction. The author remarks that the common assumptions that hardly any adult town dweller gives a negative reaction and that even as early as the 15th year from 70 to 80 per cent give a positive reaction are chiefly based on examinations in towns and schools and he suggests that between the end of the school age and the years about 20 an old infection contracted in childhood may have died out to such an extent that the Pirquet reaction becomes negative. The subsequent fate of the probationers showed that those whose reaction had been negative were at a grave disadvantage. During the three years since these tests were started as many as 43 of the 397 nurses developed some manifestation of tuberculosis and 40 of them had given a negative reaction on entering the hospital. Among the diseases counted as manifestations of tuberculosis was erythema nodosum of which there were 18 cases and the author justifies his claim that these were cases of tuberculosis by pointing out that in every case the patient gave a violently positive reaction to the Pirquet test when it was repeated after erythema nodosum had been diagnosed. Nearly all the nurses giving a negative

reaction as probationers became positive reactors during their sojourn in hospital. Thus of the 51 who gave a negative reaction in 1924 only one continued negative and only two persisted out of the batch of 72 negative reactors among the probationers of 1925. In 1926 the author began to immunize nurses who gave a negative Pirquet reaction by injecting small quantities of Calmette's BCG culture of attenuated tubercle bacilli under the skin. He preferred the subcutaneous to the peroral route on the assumption that the permeability of the digestive tract of adults was not so great as in infants, whom Calmette vaccinates by the mouth. He did, however, give P.C.G. by the mouth in three cases. Eighteen persons received subcutaneous injections the dose found most satisfactory being 0.05 mg. While a rather violent reaction followed the injection of 0.2 mg. under the skin of a healthy man with a positive reaction the administration of the vaccine to persons who were negative reactors proved on no very troublesome reaction but it made them positive reactors. During the time that had subsequently elapsed—the longest observation period being nine months—these persons have continued to give a positive reaction to the Pirquet test and the author claims accordingly, to have achieved so far what he set out to do.

### 244 Infective Coronary Thrombosis

G. HARCOURT, A. S. MCPHEID and N. B. GUY (Canadian Med. Assoc. Journ. July 1927, p. 750) report a case of infective coronary thrombosis with recovery from prolonged bacteriæmic phlebitis and symptoms of pulmonary embolism. The case presented the unusual features of multiple venous thromboses, involvement of the splenic vein produced a large splenic tumour with hyperleucocytosis together with blockage of the coronary arteries which suggested that the cardiac veins or arteries were also involved to the same general infection. The patient was a married woman subject to biliary attacks from childhood with an interval of freedom for ten years after marriage but with subsequent recurrence. She complained of severe epigastric pain with fever and slight jaundice and a tumour developed in the splenic area. The white blood count reached 40,000 to 60,000 per c.m.m. and a blood culture showed the presence of *Staphylococcus aureus*. At an operation the tumour mass was found to be the spleen limited in its movements by adhesions. The splenic vein was enormously dilated and filled with thrombus which extended upwards to the pancreatic veins. The spleen was removed and for the first three weeks the condition was but little changed, the white blood count remaining high and the blood-cultures of *Staphylococcus aureus*. Thrombosis of the left femoral vein followed and ten days later the right became involved. There were signs of emboli in the lungs which eventually cleared up though the white count remained high. One night she was suddenly awakened by agonizing anginal precordial and substernal pain causing collapse. She was almost pulseless for several hours, the cardiac area being enlarged and the sounds faint and associated with a distinct precordial rub which lasted for twenty-four hours. She rallied gradually from this attack and progressed favourably for several months but eventually died from heart failure two years after the onset of the illness. Examination of the spleen suggested Banti's disease, which the authors consider of the greatest interest in view of the many findings in the case. They suggest that the acute cardiac thrombosis of artery or vein was part of the general infectious process rather than an incident in connection with coronary arterio-sclerosis.

### 245 Gastric Achylia.

F. F. MARTINEZ (Paris Med., July 30, 1927, p. 65) draws attention to two groups of cases of gastric achylia associated with varying degrees of neurosis. The first, he thinks, constitutional or congenital and the second included cases in which the condition is acquired or neurogenic. He thinks that the occurrence of achylia as a congenital deficiency offers a large field for study, and suggests that inherited nervous instability may be the most important factor in its production. As an example of the first group the author cites the case of a woman whose mother and grandmother had died of gastric cancer after suffering for many years from attacks of diarrhoea and abdominal pain. The patient who was very well developed in intellect but of a nervous disposition had suffered all her life from hemicolic diarrhoea, and was found to have achylia. She died eventually of gastric cancer. She had six children two of whom died



young, of the remainder, three female and one male, two inherited to some degree her higher mental qualities, but all had acholohydria, suffered from diarrhoea and dyspepsia, and were neurotic, two in a very marked degree. Seven of the thirteen children of these four persons are in normal physical health, though one has acholohydria without symptoms. Of the remaining six, one is an imbecile and four suffer from various physical abnormalities not associated with the digestive tract, one of the latter has acholohydria, and another has acholohydria associated with severe digestive disturbance. As an example of the second group of gastric rehylla, Martinez describes the case of a married woman aged 56, with acholohydria and severe digestive disturbance, her father had died of gastric cancer, and two uncles had suffered for many years from digestive troubles. Two of her three daughters are hysterical to a marked degree, the third is highly strung and subject to acute crises of digestive discomfort on the slightest variation from a stilet diet. All three are known to have acholohydria. The author suggests that the inefficiency of the gastric mucosa in such groups of familial acholohydria associated in all three cases with diminution of the gastric ferments as well as of hydrochloric acid, may be produced by interference with the normal vagal tones, and emphasizes the need for further consideration of the subject.

#### 246 The Etiology of Cardiac Extrasystoles

ACCORDING to K. T. MICHAELI and M. L. SOLITERNAN (*Arch des Mal du Cœur*, August, 1927, p. 540) cardiac extrasystoles into two types—the functional (toxic or nervous) and the organic—though the lack of an exact pathology, the power of certain toxins to provoke these conditions and the results of animal experiments force him to conclude that organic extrasystoles have probably a functional origin. Vaquez states that extrasystoles should arouse suspicion of alterations in the cardiac structure. Ternovski and Mohilnitsky found no relation between a modification in the vagus and sympathetic systems and the appearance of an extrasystole. By stimulating the peripheral end of the vagus with an inductive current, Pleinow caused a typical extrasystole, and Lewis, employing the same method, noted an increase in the excitability of the muscles with a tendency to fibrillation. François Franck in 1882, and Delio ten years later, paralyse the action of the vagus on the heart by subcutaneous injections of atropine sulphate. Eppinger and Hess, Danilopolin, and others have employed intravenous injections of the drug, thereby avoiding errors resulting from differences in the absorption or possible decomposition of the atropine in the cellular tissue. By the injection of larger doses in ten patients the present authors obtained a more prolonged action on the vagus thus allowing closer study of the rhythm alterations. In all cases the extrasystole disappeared after administration of atropine. Some of the patients suffered from organic cardiac lesions, the others showed no organic trouble of the cardiovascular system. The doses employed were from 15 to 36 mg., and the arrhythmia disappeared not only when the rhythm was rapid, but also when it was insignificant, and even in periods of bradycardia. They add that the question is not yet solved whether the cessation of extrasystoles under the influence of atropine is due to an interruption in the transmission of excitations in the vagus and in the cardiac neuro-muscular time or to the exclusion of the nerve nodes and fibres of the primordium tissue of the heart. From their observations the authors conclude that the only causes of extrasystoles are functional and not anatomical, and that the tone of the vegetative nervous system is a great factor in heterotopic cardiac rhythm.

#### 247 Diagnosis of Epidemic Encephalitis

R. FLOYD and J. F. LONDON (*Med Journ and Record*, July 20th, 1927, p. 68) give notes of cases with autopsy findings to illustrate the difficulty of distinguishing epidemic encephalitis from tuberculous meningitis and ependymitis, solitary tubercles of the brain, dilated lateral ventricles, cerebral softening from general sepsis, meningismus with pneumonia, intracranial pal haemorrhages in status lymphaticus, ruptured cerebral aneurysm within the skull, intracranial bleeding from internal haemorrhagic pachymeningitis, encephalitis in pre-epidemic period, haemorrhagic encephalitis, and polio myelo encephalitis, all of which gave rise to symptoms easily mistaken for epidemic encephalitis. The authors summarize such conditions under the grouping of (1) inflammatory lesions of the brain tissue, pia mater, or ependyma; (2) non-inflammatory primary vascular lesions of haemorrhage or arterio-sclerotic stenosis; (3) intracranial tumours; and (4) conditions causing symptoms without typical lesions such as intoxication, ischaemia from increased intracranial pressure, and epilepsy usually. They discuss the differential diagnosis in such cases, but admit that the nature of the illness is often only made clear at the necropsy.

## Surgery.

#### 248 Spondylolisthesis

ACCORDING to T. H. ALBRE (*Journal Bone and Joint Surg*, July, 1927, p. 427) this condition, usually associated with pregnancy, has been found by radiological examination to be quite as common in men as in women. Spondylolisthesis is a forward displacement of the whole spinal column in relation to the fifth lumbar vertebra and sacrum. There is an acute or subluxation of the fourth or fifth lumbar vertebra in the sacrum. Trauma is the primary cause, although there may be predisposing congenital factors. About two hundred cases have been recorded. The symptoms are mild and usually appear late. Pain is sometimes present, but equilibrium is much disturbed and results in faulty carriage, nerve disturbances of the legs may be present. The only satisfactory treatment is the immobilizing spine operation. Albrec records eight cases in which the results of operation were most gratifying.

#### 249 Acute and Chronic Pancreatitis

T. S. CULLEN and J. FRIDENWALD (*Arch Surg*, July, 1927, p. 1) consider that the difficulty in diagnosing many pancreatic conditions depends on the facts that the pancreas is inaccessible to palpation, its secretion cannot be obtained for examination and the symptoms may be masked by other disorders of the digestive system. In acute pancreatitis the advisability of operation, owing to the great risk entailed, has not yet been definitely estimated. Many surgeons consider it best to delay till the shock has somewhat subsided. When the disease has progressed to the gangrenous and suppurative stages speedy operation is indicated. Chronic pancreatitis is often associated with cholelithiasis and cholecystitis. Chronic dyspepsia with epigastric pain, nausea, vomiting and emaciation are the common symptoms of this disease. The stools are bulky and contain undigested fat and protein. Early removal of gall stones is a wise preventive measure, while in established cases effective drainage of the biliary passage is the essential line of treatment.

#### 250 Association of Tuberculosis and Cancer

T. HARBITZ (*Norsk Mag f Lægevid*, July, 1927, p. 572) records four cases of the association of tuberculosis and cancer in the digestive tract. The first case was that of a man, aged 68, who died with symptoms of cancer of the stomach with metastases in the peritoneum, liver, and spleen. The necropsy showed an ulcer in the pyloric region, the border of which had the structure of an adenocarcinoma, while the base was tuberculous, the nodules in the liver, spleen, and peritoneum were also of a tuberculous nature. The next two patients were a man aged 28 and a woman aged 30 both of whom had tumours in the ileo-caecal region, in which tuberculous and cancerous tissues were intimately mixed, the tuberculosis being primary and the cancer secondary. In the fourth case the association of tuberculosis and cancer in the oesophagus was only a coincidence. Harbitz has also seen cancer associated with tuberculosis in the lymphatic glands of the breast, uterus, and the skin in the form of lupus carcinomata, where tuberculosis was probably the primary process and gave rise to the cancer.

#### 251 Adolescent Gastric Carcinoma

C. HAMMESFAHR (*Zentralbl f Chir*, July 23rd, 1927, p. 1864) describes the case of a youth of 18 who had a retrocolic gastro-enterostomy performed for pyloric ulcer after symptoms of duodenal ulcer with pyloric stenosis lasting a year and a half. At the operation a conical ulcer, measuring 4 cm in diameter and 2 cm in depth, was found, this was adherent to the adjacent gastric wall, which was pressed into the ulcer cavity. The gall bladder and liver appeared to be healthy and no enlarged glands were found. The stomach was large and atonic. The wound healed by first intention, the abdomen was flaccid with slight tenderness on pressure. Eighteen months later the patient was admitted to a medical ward for severe jaundice. He said that from the date of the operation he had felt well and had returned to work, but a sense of weight in the abdomen persisted until the onset of jaundice. He had slight pain and more or less the urine was free from albumin, but contained 1 per cent sugar, bilirubin was present, but the liver and spleen were not enlarged. In the epigastrium there was a hard nodular mass as large as a fist. Radiological investigation showed normal diaphragm movements and normal thoracic viscera. The stomach emptied itself very quickly (two and a half hours), though the uterine opening, but there was very deficient filling along the lesser curvature, while in the large there were numerous sharply defined shadows (metastases). An exploratory incision was made and a large amount of bile stained fluid escaped. The entire stomach and duodenum were found embedded in a hard scirrhous carcinoma with

adenomatous masses. The patient died six days later. The author comments on the rarity of cancer following a history of duodenal ulcer in a patient aged 19. He also describes the case of a man aged 37, on whom he performed a radical pyloric resection of an ulcer in 1924. There was no evidence of suspicion of cancer, but histological examination showed carcinoma degeneration of the edges of the ulcer. The resection was performed through sound tissue, and the lymph glands were apparently healthy. For two years the patient appeared to be cured, but then he complained of nocturnal vomiting and a sense of weight. An exploratory incision showed the stomach wall studded with small metastases with a harder elastic mass in the pyloric region. The peritoneal cavity was also covered with numerous metastatic nodules. Recently the author has been content to perform gastric gastrostomy alone as a preliminary operation in the case of debilitated patients in whom a simultaneous resection would prove too serious an undertaking.

**252. Surgical Treatment of Exophthalmic Goitre**  
H. LINDA (*Brit Med J*, July 23rd 1927, p. 997) advocates early operation in cases of exophthalmic goitre. He believes that severe cases with pronounced nervous symptoms are commoner than before the war, and are often allowed to drift on for months or years under medical or x-ray treatment until by the time they reach the surgeon they are fit from being in the most favourable condition for operation. Cases unsuitable for the surgeon are either the very mild ones or those with a very high pulse rate and marked nervous symptoms. Certain patients also exhibit actual mental disturbance and for them operation is contraindicated. No operation should be undertaken without preliminary preparation of the patient who must remain strictly in bed for at least a fortnight while the pulse is carefully watched. Digitalis is often given, and seems to have a definite effect in slowing the pulse rate; the effect is heightened if sodium phosphate is given with it. Landau thinks that the patient should be kept in ignorance of the approaching operation until the last possible moment. Open ether anaesthesia is preferable to the local method formerly employed. Although the mortality is slightly increased the type of case treated is much more severe than formerly. Of patients treated by operation 61.9 per cent were reckoned completely cured and were able to return to their occupations often far more quickly than where conservative methods had been used in treatment.

## Therapeutics

**253. A Ketogenic Diet in Epilepsy**  
H. F. HELMHOLTZ (*Journ Amer Med Assoc*, June 26th 1927, p. 2023) since 1922 has given children with idiopathic epilepsy a diet sufficiently high in fat to produce ketosis as manifested by diacetic acid in the urine. Originally the diet was tried in order to maintain the ketosis which was possibly responsible for the good therapeutic effect of starvation, but it was soon found to have a more definitely curative effect than starvation. In 91 patients who had been dieted sufficiently long to give a clear idea of the effect of the ketosis on the number and severity of the convulsive seizures the results were as follows: 29 (31 per cent) were freed from attacks and 20 (23 per cent) were considerably improved so that 54 per cent were definitely benefited by the ketogenic diet. Although 42 patients (46 per cent) received no permanent benefit, many of them were improved temporarily.

**254. Thallium Treatment of Ringworm and Favus**  
A. DOSTROVSKY (*Dermatol Woch*, May 28th 1927, p. 729) reports the successful use of thallium in 20 cases of ringworm and 2 cases of favus. Langer's method of administration and dosage was followed: 8 mg of thallium acetate per kilo of body weight being given in warm (boiled) water flavoured with a little syrupus aurantii. The water was free from iodine and contained the normal percentage of chlorides. All the children were examined in the pediatric department before treatment. The majority appeared to be normal but one child had spina bifida ocellita, a second had heart disease and a third had tuberculous peribronchial glands; the last two were quite tolerant of thallium. The children ranged in age from 2½ to 12 years; in 4 cases there had been recurrences after x-ray treatment. As a rule the hair could be removed easily and painlessly seven days after administration of thallium, after about nineteen days the hair fell out painlessly and about the twenty-fifth day came again about eight days after completion of epilation. To promote this active antiparasitic treatment was given at short intervals. Dostrovsky found that it was absolutely necessary to apportion the dose accurately to the body weight and not to the child's age. All the children lost weight and in every case

follicular dermatitis of the scalp occurred. In 5 cases there was some systemic disturbance two or three weeks after the administration of thallium, in 2 cases these symptoms disappeared after ten days, but in 3 others they persisted for six weeks. The author states that children who are below the normal in weight, even if otherwise healthy, should receive minimal doses of thallium. There was no evidence of permanent retention of thallium in the system but in 3 cases it was present in the urine for twenty-five, twenty-six, and twenty-seven days respectively. Thallium was not found in the blood or hair. Dostrovsky concludes that thallium is a valuable remedy for ringworm and favus in children, but it should not be given when renal lesions are present, nor when the patient is definitely under weight.

**255. Parenteral Alcohol Therapy**  
B. PITRIGLI (*L'et and Clin*, June 1927, p. 354) states that one of the principal groups of conditions in which parenteral alcohol therapy is indicated consists of various forms of circumscribed inflammation of an acute or subacute character—namely trichophytia profunda, boils, small phlegmonous infiltrations, infiltration of the sweat glands, mastitis, lymphangitis, hidradenoma, deep-seated nodules in scrofulous and rosacea. Britholmists in general bubo infiltration following intravenous injection of salvarsan or x-ray burn, tonsillar abscess and syngo erysipelas in man. The chief indication for the employment of parenteral alcohol therapy is an acute or subacute inflammatory process occurring more or less deeply in the tissue. Spethoff rarely exceeds a dose of 0.1 c.c. of absolute alcohol. The effects of the injection are shown by a very rapid cessation of pain and usually in a prompt softening which accelerates the healing process. In cases not ending in suppuration accelerated absorption occurs. If a repetition of the injection is necessary, it need not be performed before a week unless the action is insufficient or absent in which case a second injection may be given after three days. In infants injections of 0.02 to 0.03 c.c. of alcohol are given in 0.2 to 0.3 c.c. of sterile water. In adults the dose of alcohol is diluted in the syringe up to 1 c.c. with sterile water. Intraluted injections are borne without any reaction.

**256. Treatment of Pruritus in Children**  
B. DOPNIKOFF (*Monatsschr f Kinderheilk*, July 1927, p. 97) states that while there is no specific suitable for all cases, the best results are to be obtained by a combination of general and local treatment. In severe cases during the first few days the children should be wrapped in bandages and edatives administered especially chloral hydrate and bromurel. Occasionally a good effect is obtained with bromide but this is by no means the rule and relatively large doses are required. The sovereign remedy in acute and chronic infantile eczema is amyl nitrite in large doses which are well borne. In strophulus good effects are sometimes obtained by calcium preparations but more rapid and lasting results are derived from colloidal substances—especially human serum. Atropine has no good effect on the pruritus. The best local results are to be obtained from kamamel oil ointment with the addition of a little anaesthetic and novocain. In strophulus sulphur baths bring relief. In neurotic dermatosis and in strophulus change of environment is indicated and attention should always be given to the hygienic and psychological condition.

**257. Treatment of Hay Fever**  
As the result of a careful study of 980 cases A. VAN DER VEER, J. P. A. COOKE and W. C. SPAIN (*Amer Journ Med Sci*, July 1927, p. 101) distinguish three clinical forms of hay fever: the "pruritic" lasting from early April until early June, the early form from mid-May to the end of July and the late form from mid-August to frost. The last form though prevalent in America is practically unknown in Europe. The specific cause of hay fever is pollen derived either from trees or grasses and if the parent plants are closely related species of the same genus treatment with one pollen will protect against all. Thus the authors use timothy grass pollen for all grass cases. The method of preparation and standardizing the various pollen extracts is described. These extracts keep for a year in an ice box, and are used both for testing and treating. In testing for the specific pollen to which the patient is sensitive the intradermal is preferred to the scratch method and extracts containing 0.001 mg. nitrogen to the cubic centimetre are injected. Six of these tests may be performed at once on the outer surface of the upper arm and three series of such tests may be done at each skin test minutes being allowed to elapse between each series. When the specific pollen or pollens have been determined by positive reactions further skin tests with 0.0001 and 0.001 mg. solutions are made and ophthalmic tests with the 0.001 mg. solution are made to ascertain the degree of sensitiveness upon which dosage depends. Prophylactic treatment is the

method of choice, and should be commenced about ten weeks before the season opens. The maximum dose should be reached just before the season, and repeated at five to seven day intervals until the pollen disappears from the air, twenty injections being usually needed. Phylactic treatment is less satisfactory. In this case the first dose is repeated on three successive days, and larger doses given at gradually lengthened intervals. Local reactions ordinarily cause little discomfort and disappear in twenty-four hours. Constitutional reactions are more serious, and usually occur either from the injection of too large a dose, accidental injection into a vein, or from a change to a fresher and more powerful extract. Immunity, partial or complete, lasts for one or two years. In order to obtain a permanent cure monthly injections are advised throughout the year after the conclusion of the treatment, the maximum dose being administered each time. The authors report great success from this method, and have found it beneficial also in cases of pollen asthma.

### 258 Administration of Intracardial Injections

L. GOHRBRANDT (*Deut. Zeit. f. Chir.*, July, 1927, p. 28) considers that intracardial injection may be valuable in certain cases as a last resort, using 1 to 1½ c.c. of the standard solution of adrenalin diluted with 3 c.c. of physiological salt solution. When the heart is still beating the procedure is not free from danger and may cause injury to the cardiac wall and haemorrhage into the pericardium, intravenous injection, which has a similar but slower action, is therefore more usually employed. He thinks that intra and pericardial injections are too difficult, and, owing to the anatomical relations, more remote in their results. Injection into the auricle is not advised owing to its difficulty and the proximity of the site pierced to the excitatory system, moreover, adrenalin acts most strongly on the nervous apparatus of the heart when injected into the right auricle or right auricular appendix. Injection into the myocardium of the ventricle is considered preferable, since the mechanical stimulus is greater and the adrenalin is more rapidly distributed, but by intraventricular injection the area of the adrenalin stimulation of the nerve endings is wider, and also the site for the operation is easier to select. The result produced is said to be equally effective whether the injection is made into the right or the left ventricle. The influence on the nerve endings by right-sided injection is slightly later, but the injection is easier and its performance is more sure. The point of insertion of the needle is at the left sternal margin in the fourth or fifth costal space. To avoid pneumothorax the puncture should be made with a filled syringe. The injection should be given as soon as possible after cessation of the heart beat, ten to fifteen minutes may elapse before irreparable damage has been caused to the brain.

## Anaesthetics.

### 259 Choice of Anaesthetic in Thyroid Surgery

A. F. RENNEKER (*Amer. Journ. Surg.*, May, 1927, p. 431) reports a series of 4,000 operations on the thyroid gland during the last ten years under various forms of anaesthesia. In about the first 500 cases local anaesthesia was obtained by injecting a solution of 0.5 per cent. novocain, to which adrenalin had been added in the proportion of eight drops to the ounce. Although division of the skin, muscles, and capsule was satisfactorily accomplished, it was found that discomfort, and even faint, accompanied the raising of the gland from its bed and the stripping back of the capsule. Moreover, physical shock was occasioned and the operation was rendered long. Local infiltration associated with nitrous oxide gas and light ether anaesthesia was then tried and found more satisfactory. The induction was rapid, only a small amount of ether was used, the patient was usually conscious before leaving the operating table, and the stage of recovery was seldom more stormy than under local anaesthesia. Renneker has come to the conclusion, however, that a combination of nitrous oxide with oxygen is the most suitable anaesthetic for thyroidectomy. He tried ethylene, but discontinued it owing to the unpleasant odour and tendency to increased haemorrhage and delayed recovery. He recommends the preliminary employment of hypnotics and local anaesthetics, and emphasizes the importance of avoiding cyanosis during induction. He states that in his series of cases only one death occurred on the operating table, in this case the jugular vein was injured and death was due to embolism.

### 260 Spinal Anaesthesia with Cocaine

J. R. WELLS (*Annals of Surgery*, May, 1927, p. 757) reports successful results from the employment of spinal anaesthesia induced by anhydrous cocaine in 557 patients. He withdraws 25 c.c. of spinal fluid and injects a measured amount into an amber glass ampoule containing dried crystals of anhydrous

cocaine. The crystals dissolve instantly and the specific gravity of the fluid is unchanged. Each cubic centimetre of the solution is made to contain 0.01 gram of cocaine, and sufficient is reinjected into the spinal canal to produce anaesthesia for the duration required. Wells states that 0.01 gram of cocaine results in a period of anaesthesia of twenty minutes, 0.015 of forty-five minutes, 0.02 of one hour and fifteen minutes, 0.025 of one hour and fifty minutes, and 0.03 of two hours and thirty minutes. Most of the operations were below the level of the umbilicus, they included seven gall bladder cases, three rib resections, one major thoracoplasty, one compound fracture of the inferior maxilla, one scalp lipoma, and two trophimings. With the exception of thirty-two cases all of the patients, in the opinion of the operating surgeon, were unfit for any other form of anaesthesia, and included chronic alcoholics, drug addicts, advanced cardiac and pulmonary cases, and all types of arterio-sclerosis. The author adds that low blood pressure constitutes the only contraindication for this form of spinal anaesthesia, apart from spinal syphilis, tumours of the brain and cord, and local suppurative processes. Anhydrous cocaine has, however, a sudden profound and depressing effect on the systolic and diastolic pressures, but this was treated by the use of such remedies as caffeine, strychnine, pituitrin, ergot, and adrenalin, a moderate dose of the last being given to every patient immediately after the spinal injection.

### 261 Ethylene and Oxygen Anaesthesia.

G. L. LILLIES (*Med. Journ. of Australia*, April 23rd, 1927, p. 601) strongly recommends the use of a mixture of ethylene and oxygen for anaesthetic purposes. He usually commences with 80 parts of ethylene to 10 parts of oxygen, and increases the oxygen relatively according to the colour of the patient and the depth of the anaesthesia required. In the more robust patients he finds it often necessary to give a little ether with the gas during the early stages of abdominal section, and occasionally for closure of the wound. He finds that a preliminary injection of one-sixth of a grain of morphine is beneficial. Induction is said to be always quick and the odour of the gas is not noticed by the patient. Consciousness is lost after five or six inhalations, but complete saturation is not obtained for ten to fifteen minutes, so that it is inadvisable for the surgeon to commence operating earlier. Recovery is very rapid, and, therefore, the administration must be continued until the last stitch has been inserted. Post-anaesthetic vomiting is rare. Lillies has now given ethylene on 100 occasions, and thinks the only contraindication to its use is inflammability, which prevents its employment when a cautery is to be used. He emphasizes the importance of co-operation between the surgeon and the anaesthetist, and mentions that at first failures may occur in the induction of anaesthesia, this will disappear with increased skill. He has obtained good results in the surgery of the upper abdomen and in genito-urinary conditions. He reports three cases of death occurring during the administration of ethylene, two of the patients being moribund before the operation was commenced, while in the third—a man aged 70—there was regurgitation from the stomach, with inhalation of the gastric contents, causing asphyxia associated with cerebral haemorrhage.

### 262 Ephedrine in Spinal Anaesthesia

ACCORDING to N. F. OCKERBLAD and T. G. DILLON (*Journ. Amer. Med. Assoc.*, April 9th, 1927, p. 1135) ephedrine is of great practical value in spinal anaesthesia, in twenty-four cases uniformly good results were obtained in combating the marked fall in blood pressure which often occurs during and after such anaesthesia. Then procedure was as follows. The blood pressure having been first ascertained 10 c.c. of spinal fluid was withdrawn, 5 c.c. of which was discarded. From 125 to 200 mg. of sterile procaine hydrochloride crystals were dissolved in the remaining 5 c.c., which was then returned to the subdural space. The blood pressure reading was noted every ten minutes, and, when it had fallen by 10 per cent., 0.1 gram of ephedrine was given subcutaneously or orally. No untoward results were noted. The drug was administered before the systolic pressure dropped below 100 mm. Hg, and it was found preferable to endeavour to prevent the drop in pressure rather than let it fall too low, since the rise from levels below a systolic pressure was rather retarded. An increase in the pulse rate was noted, and it was found that the amount of procaine hydrochloride used for anaesthesia bore some relation to the rapidity and seriousness of the fall in pressure, and that in healthy young persons the fall was not so marked as in older and more feeble patients. The authors conclude that although in spinal anaesthesia there is a dangerous fall in both systolic and diastolic pressure the right amount of arterial tension can be restored by either the subcutaneous or oral administration of ephedrine. When given orally its action was found to be delayed, but it markedly increased the blood pressure.

## Obstetrics and Gynaecology.

### 263. Radical Treatment of Advanced Carcinoma of the Cervix

From a consideration of ninety-seven cases of inoperable advanced carcinoma of the cervix G. I. STRICKLAND (*Lancet* 1927 p 231) concludes that radium is a most potent palliative although only in a small proportion of cases a curative agent. Hemorrhages stop usually or are controlled and discharge ceases, as a rule more or less completely for a time. The pain is in most cases, less affected than the bleeding, and discharge. There is no evidence that radium properly applied predisposes to distant formation. The technique recommended is the introduction of 150 to 170 mg. of radium partly in the cervical canal and partly into the external parts of the growth when the needles are left in position by firm packing for twenty-four hours. Further applications depend on the subsequent clinical course. General anesthesia is employed and a preliminary vaginal douche is useful in cleansing the tumour and washing away discharge. The application is preceded by passage of a sound through the cervix and internal os—a small pyrometry (usually unneeded) is occasionally found and contraindicates radiotherapy for the time. The radium is inserted without previous scraping of the growth which interferes with vision and may dislodge the neoplasm. After radiation an x-ray examination of the pelvis ensures that no tube has become displaced into the vagina when a distal might be produced. The patient is instructed to douche the vagina night and morning using the enema three weeks as shown by Hayward Pouch, adhesive vaginalitis is thereby prevented. Contraindications to the use of radium are: (1) severe anaemia with an erythrocyte count below three million; (2) a foul-sloping surface of the carcinoma; (3) pyometra; (4) the presence of inflamed uterine appendages; (5) distant formation. Radium applications may be given later in the first group of cases after treatment by rest administration of iron and salines and, if necessary, blood transfusions in the third group they may follow a course of douching and repeated swabbing with iodized phenol.

### 264. Early Tuberculous Disease Causing Tubal Rupture

R. H. ULLMAN (*Centralblatt für Gynäkologie* August 6th 1927 p 2032) records the case of an apparently healthy woman aged 20 who fifteen months after normal delivery was admitted to hospital with grave signs of acute metapelite haemorrhage. Resistance and tenderness were detected in the left fornix and since abdominal puncture revealed the presence of fluid blood a diagnosis of ruptured tubal pregnancy was made. Microscopical examination of the left tube after its removal at laparotomy showed early tubercles in the wall of the tube near the rupture. The cause of the rupture is ascribed to tuberculous disease directly and not to tubal gestation of which the disease might have been a predisposing cause because (1) the patient had menstruated regularly until seventeen days before her illness; (2) colostrum was absent from both breasts; (3) the uterus was neither enlarged nor soft; (4) a corpus uterini of pregnancy could not be recognized in either ovary; and (5) histologically no sign of chorionic cells or of decidua reaction could be demonstrated in the excised tube. Thorough investigation of the patient's other organs including an x-ray examination of the chest failed to disclose an extra-uterine primary tuberculous focus.

### 265. Pituitrin in Labour

E. HATCH (*Lancet* 1927 p 456) traces historically the development of pituitrin in labour showing how in recent years a very definite movement has been started in favour of banning the drug altogether. The alleged practice of giving pituitrin before it has been ascertained that labour has really begun and without determination of the presentation may be partly responsible for this reaction. Hatch gives details of six cases of uterine rupture in five of which he holds pituitrin responsible. Among about 25,000 consecutive deliveries at the Rigshospitalet in Copenhagen there were ten cases of rupture of the uterus for half of which pituitrin was responsible. Hystero-graphic investigations have shown that the uterus does not completely relax in the intervals between the pains and this lack of complete relaxation entails danger particularly for the infant. In 1912 pituitrin was given in 8 to 9 per cent of all the confinements. From this year to 1917 there was a decline in its use which in both 1917 and 1918 amounted to only just over 2 per cent. In 1922 the percentage rose to be again 7 and 8 as the result of the introduction of much smaller doses but by 1925 it had again fallen below 5. From the latter part of 1911 to the present time pituitrin or some similar preparation was given in 1.05 per cent of 23,750 confinements—that is, in 4 per cent of the

total. In 110 cases the drug was used to hasten labour as the membranes had been ruptured in cases of placenta previa and in 74 cases of induced premature labour after dilatation and rupture of the membranes. It was given in 34 cases of too early detachment of the placenta, and in 475 uncomplicated cases of uterine inertia. A former indication, which the author now regards as a definite contra-indication, is threatened intraventricular asphyxia. Of the 47 cases in which the drug was employed for this condition only about half terminated in spontaneous birth in the remainder labour had to be terminated artificially. In view of the variations in the potency of the various preparations and of different combinations of the same preparation and of the great difference in susceptibility of various patients the author recommends small doses. Only after rupture of the membranes in placenta previa does he employ full doses. He now usually gives 0.2 ccm of pituitrin and in some cases has reduced the dose to 0.1 ccm. It has been demonstrated in this hospital that in most cases 0.2 ccm is as effective as 0.5 ccm. Should it not be so another injection can be given after one or more hours. Even with this cautious dosage accidents may occur and the medical attendant should always have ready at hand a supply of chloroform, ethyl chloride, morphine, or ether to counteract a too stormy labour.

### 266. Retention Cyst of Bartholin's Gland

J. L. HENROTAY (*La Gynécologie* June 1927 p 365) describes the case of a woman, aged 38 who was seven and a half months pregnant and who had a retention cyst of the right Bartholin's gland as large as an orange. On excising the cyst there was very profuse haemorrhage from the injured corpus cavernosum clitoridis and the vaginal bulb necessitating ligatures on mass of the bleeding tissue. The labium majus was reconstructed by approximation of the edges of the incision. Henrotay concluded that in a similar case it would be better to aspirate the cyst at the commencement and to excise it after delivery. Schoelcher has removed a suppurating cyst of the gland without difficulty during the fifth month of pregnancy to prevent puerperal infection. The confinement at term was normal. Pozzi has suggested aspiration of the cyst and subsequent injection of warm paraffin wax on cooling more complete dissection of the cyst is permitted.

### 267. The Heart during Pregnancy

From x-ray observations by the orthodiagraphical method F. CLAUSSER (*Annals of Obstetrics and Gynecology* April 30th 1927 p 173) concludes that in many cases the heart presents an increase of volume during pregnancy so that three out of five women at term have cardiac enlargement. This becomes appreciable clinically during the second half of gestation and augments rapidly during the last months. The lengthening during pregnancy of the longitudinal diameter of the heart shows that its enlargement is not in apparent due to ascent of the diaphragm—but real. The right ventricle participates to a greater extent than the left. Cardiac enlargement is due to two contemporaneous factors varying in intensity from case to case—a dilatation which is a physiological adaptation to the increased blood volume during pregnancy and a secondary myocardial hypertrophy. The changes incidental to pregnancy which are brought about in the lesser circulation and the alterations in arterial venous and capillary systemic circulation are rapidly compensated the only significant factor affecting the heart is the increased mass of the blood. As a rule the heart at term shows greater enlargement in the case of multiparae than in primiparae.

### 268. Pregnancy in Bicornuate Uterus

According to F. CLAUSSER (*Annals of Obstetrics and Gynecology* April 1927 p 157) pregnancy in a well developed and previous cornu of a bicornuate uterus usually continues to term the foetus being expelled naturally at term or less normal labour. Where the accessory cornu is rudimentary and atrophic about one half of the cases terminate in rupture with intraperitoneal haemorrhage. Clinically this is almost indistinguishable from ruptured tubal pregnancy but the rupture (owing to the more ample musculature in the accessory cornu than in the tube and to the pressure in the former situation of a decidua) occurs late usually during the fourth or fifth month of pregnancy. According to F. Hatch the mortality of rupture of a gravid horn in bicornuate uterus is over 50 per cent. If an operation is not performed soon after the rupture the usual sequel which may be late is suppuration or putrefaction of foetal remnants in the haematocele. Some, however, unmodified remarks are found later, or as in a personal case operated on nine months after rupture formation of a lithopædion occurs. In cases in which the cornu does not rupture the foetus dies a few days before term and undergoes auto-lolysis or mummification, or is transformed into a lithopædion.



## 269 Possibility of a Congenital Factor in Ectopic Pregnancy

W L CROWTHER (*Med Journ Australia*, April 23rd, 1927, p 610) reports three cases of ectopic pregnancy occurring in three sisters, and suggests that such an occurrence indicates the possibility of some congenital or familial cause being present. The first patient, aged 23, had given birth to a child two years previously. At the operation for the ectopic pregnancy a rupture of the left Fallopian tube was found at the junction of the middle and outer thirds. Inquiry in this case elicited the fact that the patient's two elder sisters, aged 35 and 41, had each required operative treatment for ruptured ectopic gestation on the right side. Crowther states that the mother of the three women concerned had given birth to eight children without any suggestion of such an occurrence in herself. The three patients were well above the average in general physique and health, and there was no evidence of any disease, the Fallopian tubes did not appear to be infantile, and no diverticula or accessory tubes were found.

## 270 Post-menopausal Bleeding and Cancer of the Ovary

C TILCONI (*Ann di Ostet e Ginecol*, June, 1927, p 381) states that in metrorrhagia after the menopause the practitioner should not content himself with searching for a malignant neoplasm of the cervix or corpus uteri (the most common causes), but should make a careful investigation also of the state of the adnexa. In a series of sixty cases of carcinoma of the ovary in patients who had passed the menopause Tilconi found that one third suffered from irregular bleeding, and in one fifth metrorrhagia was the earliest or a very early symptom. Vaginal bleeding occurred in the same proportion of cases in both solid and cystic carcinoma. Tilconi's conclusions confirm those of Schiffman, who in a brief period of time noted five cases of cancer of the ovary characterized by reappearance of hemorrhage after the menopause. The etiology of the uterine bleeding in cases of cancer of the ovary is uncertain, no menstrual changes were found by histological examination of the endometrium, and hormonal influences, as well as hyperemia, may be supposed to play a part in the neighborhood of the neoplasm.

## Pathology.

## 271 Systematic Immunization against Tetanus

G RAMON and C ZOELLER (*Ann de l'Inst Pasteur*, August, 1927, p 803) have performed a number of experiments on the immunization of human beings with tetanus antitoxin. The antitoxin is prepared from a freshly filtered tetanus toxin, about 2 c cm of formal is added per litre of toxin, and the mixture is incubated at 38° C for a month or so. The resultant product—the antitoxin—is highly antigenic, but quite non-toxic, it is, moreover, resistant to heat at 55° C. The antigenic value can be titrated by the Ramon flocculation test. Before commencing their vaccination experiments, the authors examined about 100 persons, mostly adults, for evidence of natural immunity to tetanus. This was done by mixing 1 c cm of the patient's serum with increasing doses of toxin, and injecting the mixtures into guinea pigs. In not a single person was there any antitoxin detectable. The effect of subcutaneous injections of antitoxin was then tried. They found that if 1 c cm of antitoxin was injected, the serum a month later contained only a trace of antitoxin. If a second dose of antitoxin was given a fortnight after the first, and the serum was tested a week later, it contained from 1 to 10 units of antitoxin. If the interval between the two doses was increased to three weeks, the titre of the serum rose to 10 to 20 units, and if the interval was increased to four weeks the titre rose to 100 units. A third injection of antitoxin given a week after the second raised the titre to 1,000 to 2,000 antitoxic units. When a person has been sensitized by a first dose of antitoxin he will respond rapidly to any subsequent injection. Having shown that it was possible to excite an active immunity by the injection of antitoxin, the authors investigated the possibility of producing a combined active and passive immunity. They found this was possible by the following method. At the first injection 10 c cm of antitoxin and 1 c cm of toxin are given—by separate routes, ten days later a second injection of 10 c cm of antitoxin is given, ten days later a second dose of 2 c cm of antitoxin is given. The antitoxin confers a passive immunity lasting for about three weeks, by which time the active immunity caused by the antitoxin has developed. In practice the authors recommend systematic immunization with three doses of antitoxin of all those who run a risk of contracting tetanus in their work, such as

grooms, farriers, and the cavalry, they think that this method should likewise be used in the army during wartime, a combined injection of tetanus antitoxin and T A B vaccine being given. The second method of antitoxin and antitoxin injections should be used for those who have suffered an injury likely to be followed by tetanus, in cases in which recovery is slow it obviates the necessity of repeated prophylactic injections of serum.

## 272 Pathology of Diphtherial Paralysis

M CINCULISCU and R HIRSCH (*Bull et Mem Soc Med des Hop de Bucarest*, March, 1927, p 39), as the result of the study of a case of diphtherial paralysis, come to the following conclusions: (1) The diphtheria toxin may be propagated from the primary focus in the throat to the nerve centres like tetanus toxin. This explains why the bulbar centres, for which diphtheria toxin has a special affinity, are chiefly affected, the affection of these centres being accompanied by a meningeal reaction of an inflammatory type with increase in the amount of albumin, cells, and fibrinogen, separately or combined. (2) The cardiac symptoms which may occur early or late are due to a lesion of the bulbar nuclei of the vagus or more rarely of the myocardium. The hypovagotonia produced may amount to complete paralysis, the clinical signs of which are obvious and the various biological and pharmacodynamic methods such as injection of atropine or pilocarpine are only required for studying their evolution. (3) It is probable, as the authors' case shows, that the nuclei of the sympathetic are affected as well as those of the vagus, but the symptoms of sympathetic involvement are latent and require a special investigation for their detection. (4) The persistence of the intoxication of the bulbar nuclei, even after the Schick and Zoeller test have become negative, indicates that serum treatment should be continued for a long time after the membrane has disappeared from the throat. It is not, however, necessary to give a large dose at one time, and small doses extending over a longer period are preferable.

## 273 The Bactericidal Activity of Hexylresorcinol in Glycerin

V LEONARD and W A FEIRER (*Bull Johns Hopkins Hosp*, July, 1927, p 21) state that four physical factors (concentration, temperature, pressure, and time) influence chemical disinfection. Billiard and Dieulafe have shown that by lowering the surface tension both osmosis and diffusion are accelerated. Hexylresorcinol, with a phenol coefficient of 72, is a most powerful germicide, and is practically as powerful in reducing surface tension as chemically pure sodium oleate. Owing to its relative lack of toxicity its use as an internal antiseptic has been investigated, but not its value as a general antiseptic for surface tissue disinfection. The present authors have made a number of experiments with a series of solutions (1 in 50 to 1 in 1000) of hexylresorcinol in various concentrations of glycerin and water. Although only slightly soluble in water, 1 mg of this salt reduces the surface tension of the fluid eight times as powerfully as the same concentration in pure glycerin, in which it is readily soluble. The addition of water to glycerin raises the surface tension, but if hexylresorcinol is present in the glycerin the addition of water reduces the surface tension and enhances the bactericidal action of the solution. As a result of these experiments Leonard and Feirer come to the following conclusions: (1) Surface forces play a major part in chemical disinfection. (2) Under equivalent conditions a germicide which depresses the surface tension of water is more efficient than one that does not, because, owing to the greater extensibility of the fluid film of low surface tension, the germicidal solution is more liable to penetrate minute inequalities in the surface, inaccessible to fluids of high surface tension. Moreover, germicides which reduce surface tension are adsorbed by particles in suspension, such as bacteria, and concentrate at the most effective point—namely, on the surface of the organism—while diffusion of the germicide through the cell membrane of the organism is accelerated as the surface tension is lowered. (3) The bactericidal activity of hexylresorcinol in solutions of glycerin and water is inversely proportional to the surface tension of those solutions, the lower the surface tension the greater is their bactericidal activity. (4) A solution containing 30 per cent glycerin and 70 per cent water, in which is dissolved 1 mg of hexylresorcinol per c cm (1 in 1000), appears to represent the optimum composition for clinical application in tissue surface disinfection, since it is non-toxic and non-irritant. The salt is held in perfect solution in all dilutions, the surface tension is very low, all the major pathogenic microorganisms are destroyed in less than fifteen seconds, and its bactericidal activity is retained under all conditions of dilution likely to be encountered in clinical application as well as in the presence of organic matter.



# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

### 274. Metacetaldehyde Poisoning

W H WILLCOX and O AINSWORTH MITCHELL (*Analyst*, September, 1927, p 523) report a case of metacetaldehyde poisoning in a boy, aged 16, who swallowed about 5 grams of a double tablet of the solidified fuel used as a substitute for methylated spirit. About seven hours later the patient became flushed, restless, and delirious, the temperature rose to 100° F, and convulsions occurred at intervals during the following fourteen hours. The boy was semi-comatose in the intervals between the convulsions. The urine was very acid and contained a trace of albumin, there was marked tenderness of the calves of the legs. The temperature remained between 100° and 101° for thirty six hours and then fell to 99°, at which point it persisted for twenty four hours after which it became normal. Large doses of all salts in the form of sodium citrate 60 grains, sodium bicarbonate 30 grains, water 1 oz were given every four hours, by the mouth, and rectal injections of normal saline solution containing sodium bicarbonate were administered every six hours. Chlorid and potassium bromide were given during the convulsion period. The urine remained very acid for three days in spite of large doses of alkali. After the convulsions had ceased potassium bromide in 15 grain doses was given three times a day for four days. The patient made a good recovery, but the albuminuria persisted for four days and there was some loss of memory at first. Examination of the solidified fuel showed that it agreed in its reactions with metacetaldehyde and the authors comment on the fact that this substance should be so much more active than its isomer paraldehyde. It is however, possible that traces of the condensation agent used in its preparation may have been left in the final product. A warning is given that this fuel ought not to be left within reach of children.

### 275. Myositis Ossificans Progressiva

A R KOOTZ (*Amer Journ Med Sci* September 1927 p 400) defines this condition as characterized by multiple if not generalized, ossification of the voluntary muscles without apparent cause, and by a progressive course with periodic exacerbations. Frequently a slight injury is associated with the initial ossification. The disease is congenital or appears early in life, and most cases show an anatomical anomaly of the great toes or thumbs as microdactylia or brachydactylia. There have been reported 133 cases of this disease and the author describes a further case in a girl aged 17½ the disease started when she was 9. Beyond the marked ossification of numerous muscles and ligaments the absence of axillary and pectoral hairs and the maldevelopment of the breasts the patient showed no objective symptoms the thoracic and abdominal organs being normal and the renal basal metabolism and blood calcium and phosphorus falling within normal limits. The age incidence of this malady is noteworthy of 116 cases in which the age of onset is stated 79 occurred during the first five years of life and only one after the twentieth year. Of 126 cases in which the patients sex is stated 75 were males and 51 females. The commonest site of origin is in the cervical and dorsal regions the disease then spreading to the upper and lower extremities. The onset is characterized by fever, and a pasty swelling and redness of the affected part, which gradually hardens as bone is formed. These swellings are sometimes painful owing to spontaneous haemorrhage in the muscles. Defective development of the sexual organs or functions sometimes occurs. Only one case has been reported in which bone has formed in the skin as well as the muscles. Many pathological studies have been made and in one case De Witt reports a microscopic picture of degenerating muscle and leucocytic infiltration with granulation tissue replacing the larger inflammatory areas. In the new granulation tissue, and only in it irregularly branching and anastomosing trabeculae of osteoid tissue are always found. Many theories have been advanced as to the cause of myositis ossificans but none have been proved experimentally. Lewis has suggested that the cause may be an excessive production of sarcolactic acid in the muscles. Diagnosis is easy though the circumscribed form frequently has to be distinguished from sarcoma. The differential points are that sarcoma occurs more often near the epiphyses myositis ossificans along the diaphyses the growth of sarcoma is steadily progressive rather than spasmodic and the tumour never becomes smaller as it frequently does late in myositis ossificans. Sarcoma also gives a more

distinct x-ray picture. The disease progresses steadily but periodically over a number of years. Normal activities, not much affected at first, become more and more curtailed, and death may finally occur from starvation due to ossification of the jaw muscles. Numerous drugs have been used in treatment but without success. Roentgen rays have been tried, but these seem to stimulate rather than retard the disease. Lublich recently advocated a ketogenic diet, and gave his patient food poor in carbohydrates and rich in fats for one and a half years. Acetone bodies were always present in the urine. No more calcareous areas developed, and of these already present some disappeared and others diminished greatly in size.

### 276. Tuberculosis in Java

J L SUTER (*Nederl Tijdschr v Geneesk*, August 13th, 1927, p 726) records his observations on the morbid anatomy of tuberculosis in Java in a paper based on the study of 3155 patients who had died from the disease between September 1913 and December, 1926. As a rule tuberculosis assumed the form of a chronic pulmonary disease but with a much more rapid course than in Europe. The lymphatic glands were affected in most cases, their involvement being apparently secondary to the lung condition. Intestinal tuberculosis was a frequent occurrence in the last stage, and was rarely seen as a primary phenomenon. The larynx was also often affected terminally and primary laryngeal tuberculosis was not seen. Tuberculosis was often found in the spleen, frequently in the form of milary tubercles, and occasionally as numerous large caseous foci, tubercles were frequently found in the liver but extensive lesions were rare. The urogenital system was only rarely affected apart from a few tubercles in the kidneys in the last stage. Tuberculosis of the brain was rare. The heart and endocrine organs were occasionally attacked. It was very unusual to find well marked involvement of the serous membranes. Although the bones and joints were frequently attacked the long bones often escaped. The skin was occasionally affected. Acute generalized tuberculosis was rare. Occasionally the pulmonary disease was masked by process in the serous membranes or lymphatic glands, or on the other hand, the lungs played the most prominent part in the clinical picture by the development of tuberculous pneumonia. In such cases it was not impossible that the acute course was connected with unfavourable external circumstances.

### 277. Serum Prophylaxis of Measles.

R TUNNICLIFF and B WHITE (*Boston Med and Surg Journ*, August 18th, 1927 p 272) immunized a horse by subcutaneous injection of broth cultures of the green producing diplococcus which Tunncliffe regards as the causal agent of measles and when a basal immunity was established injected living diplococci according to the method described by Dochez for producing scarlet fever antitoxic serum. The serum was concentrated and when tested in both concentrated and unconcentrated states was found to contain opsonins and to produce neutralizing and protective effects specific for this diplococcus. Injection of children previously exposed to infection with this serum apparently gave complete protection in a few cases incomplete protection in some, and no protection in others. Further clinical tests are being made with the concentrated serum.

### 278. Bacteraemia in Diphtheria

E MARTNER (*Amer Journ Dis Child* June 1927 p 895) reviews the literature and records his own observations on blood cultures in diphtheria in 40 cases. The patients selected were those who had not had any antitoxin before admission. He withdrew 10 c cm of blood from the elbow veins—in young children from the jugular vein—and placed it immediately in 1 per cent glucose broth. The flasks were incubated for at least twelve hours before examination and if sterile were re-inoculated and examined at the end of twenty four, forty eight and seventy two hours. In cultures presenting growth subcultures were made on Loeffler's blood serum and blood agar plates. Of the forty cases six showed a blood stream infection—namely pure cultures of *B. diphtheriae* in three and a haemolytic streptococcus in three. The cultures were all positive at the end of the first twenty four hour period of incubation. Two of the cases of *B. diphtheriae* infection were true haemorrhagic diphtheria, and the third showed haemorrhages from the nose and mouth before death. The patients with streptococcus infection had the septic type of diphtheria.

## 229 Incidence of Varicella

A G MITCHELL and E G FLETCHER (*Journal Amer Med Assoc*, July 23rd, 1927, p 279) record the data relating to the age seasonal incidence, recurrences, complications, and leucocyte counts in varicella in a paper based on the statistical study of 775 cases admitted to the contagious diseases department of the Cincinnati General Hospital from 1913 to 1926. The writers remark that the number of adults who contract the disease is not sufficiently appreciated. Of the 775 cases 150, or 19.4 per cent, were above 10 years of age, 118 being between 20 and 30, 26 between 30 and 40, and 6 over 40, the oldest being 55. Many of the patients were sent to hospital with a diagnosis of variola, and a few were physicians, nurses, and attendants, who contracted the disease in hospital. The greatest number of cases occurred in the winter months, there being 67 per cent in the six-month period November to April. Only nine patients, aged from 2 to 21, gave a history of a previous attack. Complications were rare and nearly always mild, the commonest being furunculosis and otitis. Only two deaths occurred, one from streptococcus meningitis following furunculosis, the other a child who contracted varicella while suffering from tuberculous broncho-pneumonia. The average leucocyte count was 3,000 per c mm above normal in infants. There was a slight leucocytosis, especially in infants, but no important change in the differential count.

## 230 Nervous Complications of Varicella

M PRUVOST (*These de Paris*, 1927, No 62), who records an illustrative case with a review of the literature, remarks that varicella may be followed by nervous manifestations similar to those complicating other infectious diseases. The virus or toxin of varicella may affect all the segments of the cerebro-spinal axis, so that cases are on record of peripheral neuritis, such as that reported by W GAY (*JOURNAL*, March 31st, 1894, p 673), myelitis, meningitis, acute cerebellar ataxia, and encephalitis. It is not necessary that the attack of varicella should have been remarkably severe to produce these sequelae. Pruvost's patient was a boy, aged 4, who four days after the onset of an ordinary attack of varicella developed symptoms of meningitis (nuchal rigidity, Kernig's sign, and cerebrospinal hypertension) and encephalitis (irritability followed by somnolence). Complete recovery followed.

## 231 Hypotension

ACCORDING TO A FRIEDLANDER (*Medicine*, May, 1927, p 143), though low blood pressure is a symptom or manifestation of an abnormal bodily state rather than a disease itself, in many persons it is certainly compatible with perfect health. In the newborn and in childhood hypotension is a physiological condition, adult levels not being reached until the age of 18. As a morbid phenomenon it may be temporary or persistent. Acute hypotension is a feature of traumatic, anaphylactic, and anaesthetic shock. It occurs in acute infectious diseases, notably typhoid fever and diphtheria, and it may be the result of certain drug intoxications. Persistent hypotension is associated with certain chronic infectious diseases, especially advanced tuberculosis and cachectic states. It is found in such diatheses as infantilism, status lymphaticus, myxoedema, and myasthenia. Lesions of the circulatory system, particularly of the myocardium, may produce either temporary or persistent hypotension. Essential hypotension forms a fairly definite clinical syndrome, the nature of which is still unexplained. Chronic hypotension occurs in endocrine dysfunction, especially of the adrenals, hypophysis, gonads, and thyroid gland. The author adds that progress in the treatment of hypotension must await the carefully planned and united efforts of physiologists, chemists, pharmacologists, pathologists, and clinicians.

## 232 Epidemic Encephalitis in Japan

M TSURUMI (*Bull Office Internat d'Hyg Publ*, June, 1927, p 799) states that epidemic encephalitis appeared in Japan in August, 1924, and rapidly spread through the country, so that by the end of September there had been 6,547 cases, with a mortality of 54.9 per cent. The great majority of the patients were elderly, more than 80 per cent being from 50 to 70 years old. The sexes were equally affected. After a stage of slight fever, headache, pain in the trunk and limbs, and vomiting lasting for a few days, the temperature rose suddenly to 105° and spasmodic movements developed in the extremities, there was loss of consciousness or, in the milder cases, profound somnolence. No disturbance of vision was noted, as is the rule in lethargic encephalitis. In the cases which recovered there were usually no serious sequelae apart from rigidity of the arms and legs. In fatal cases death, as a rule, occurred five to ten days after the onset, sometimes on the very first day. No causal organism was discovered. Necropsies confirmed the diagnosis of encephalitis.

## Surgery.

## 233 Post-Influenzal Pseudo peritonitis

F FRANK (*Zentralbl f Chir*, August 6th, 1927, p 202) comments on W Usadel's report of appendix symptom appearing in a diabetic patient (see *Epitome*, August 13th, 1927, para 114) and agrees that neuralgias of the spinal nerves, such as sciatika and herpes zoster, occur more frequently in diabetics. Frank states also that crises of neuralgia of the spinal, and particularly of the intercostal, nerves have been much more common since the great influenza epidemic of 1889-90, and many more cases followed the pandemic of 1918-19. He insists that the possibility of influenzal neuritis must always be borne in mind, not only in thoracic diseases such as pleurisy, early pneumonia, and heart disease, but also by surgeons and gynaecologists in the presence of symptoms of serious abdominal disease, such as gastric ulcer, biliary colic, appendicitis, peritonitis, and oophoritis, whether febrile or afebrile. The importance of correct diagnosis in such cases is very great, as a large number of diagnostic errors and unnecessary operations have been recorded. Frank reports the case of a man, aged about 40, who was sent to hospital for operation for perforation peritonitis. The patient was febrile, with a haggard expression, tenderness on pressure over the upper abdomen, and muscular rigidity, there was no evidence of free gas in the epigastric region. The pulse was severely accelerated. The patient had had influenza a week earlier. There was hyperaesthesia of the abdominal skin, and the corresponding intercostal nerve were very painful on pressure. Frank diagnosed intercostal neuritis, and prescribed phenacetin, this gave speedy relief. However, the next day symptoms of peritonitis were more definite, but as the patient had been relieved previously by phenacetin the dose was repeated. In twenty minutes the patient was free from pain and his condition improved. Fever persisted for two days, then the pain and all signs of abdominal disease disappeared, and the patient made a rapid recovery.

## 234 Late Results of Operations for Gall Stones

ACCORDING TO E DAHL IVERSEN (*Acta Chir Scand*, August 25th, 1927, p 235) up to the year 1910 cholecystostomy was the most favoured operation for gall stones, since when most surgeons have shown a preference for cholecystectomy. The literature of the subject consulted by the author indicates that the operation mortality is the same for the two methods. True relapses are rare after both, but false or pseudo relapses caused by overlooked calculi, inflammation, or adhesions are a little more frequent after cystostomy. To throw further light on this matter the author has re-examined 196 patients who were operated on by P N Hansen between 1913 and 1925 at the fifth surgical service of the Kommunalt Hospital in Copenhagen. The number of patients undergoing cholecystectomy was 156, and the number treated by cholecystostomy was 40. Only in one case was a true relapse recorded. The patient was a woman, aged 32, who had suffered from several attacks of colic with fever and jaundice between 1915 and 1920. The removal of two calculi at the first operation, which showed free biliary passages, was followed by renewed attacks of colic, fever, and jaundice. The removal of another calculus at a later operation gave freedom from similar attacks. In 75 cases the after examination was made twice, the first occasion being one year after the operation and the second several years later. In these cases it was noticed that most of the patients who were well a year after the operation continued so for many years. The incidence of true and pseudo relapses was the same (19 per cent) for the two kinds of operation. With regard to the pseudo relapses, it was impossible to distinguish between the principal causes thereof—namely, overlooked calculi, inflammation, and adhesions. The author concludes that the available evidence does not justify giving preference to cholecystectomy at the expense of cholecystostomy, and he suggests that the re-examination of a larger number of patients operated on according to one or other of these methods should show which is the better.

## 235 Diverticula of the Duodenum

J W LIVINGE and E A GILHAM (*Surg, Gynecol and Obstet*, September, 1927, p 257) report operations upon three cases of diverticula of the duodenum, and discuss the importance of cholecystitis in the production of symptoms. One patient had a large false diverticulum and two had pseudo-diverticula or redundant duplications of the duodenum within its retroperitoneal sheath. In these the gall bladder was diseased, and cholecystectomy relieved all symptoms, though the duplicature or practical diverticular side pockets of the duodenum persisted. A very demonstration of their presence depends upon the appearance of an

abnormal side pocket, which fills and empties from the duodenum; the majority are on the superior and descending portions and lie within the loop of the duodenum. A gall stone picture may simulate a diverticulum if it is forced out in connection with the barium meal but this possibility can be eliminated by an independent examination. Because of the importance of the gall bladder in clinical symptoms with which duodenal diverticula may be associated cholecystography is advocated as an essential procedure in diagnosis.

### 256. Cervical Dislocation

V. F. MARSHALL and C. C. HALL (*Ann. Surg. Med. Sci.*, July 16th, 1927, p. 191) report a case of displacement forward and to the right of the atlas and axis on the third cervical vertebra with distinct anterior posterior angulation between the third and the second and first cervical vertebrae as the result of a fall from a motor car. Under nitrous oxide oxygen anesthesia the dislocation was reduced by Wilton's method, and a light plaster cast was applied to the shoulders, neck, and head. The condition recurred next day and after reduction a plaster collar was put round the neck over which a fairly heavy cast including the shoulders, neck, and head was applied. Five months later there was no deformity or limitation of movement. In complete unilateral dislocation the articular process of one vertebra slips forward into the intervertebral notch of the one below. In Wilton's method of reduction the depressed process is raised and rotated by extending the head obliquely backward toward the right or left as the case may be using the transverse process on the same side as a fulcrum. Force is not needed thus to elevate and rotate into proper position since the ligaments offer no opposition to the movement. The patient should be thoroughly anesthetized in the sitting position to permit freedom of movement and to prevent any restriction of the procedure of reduction.

### 257. Osteitis Fibrosa.

W. DEGA and J. ZFYLAND (*Lyon Chir.* July-August, 1927, p. 377) remark that the pathology of osteitis fibrosa is still somewhat obscure. Many theories have been advanced to account for the condition but none appear sufficiently convincing up to the present. It is suggested now that osteitis fibrosa is not a disease in itself but is rather a reaction to some affection of the lung tissues. This condition has been found around malignant tumours and near long standing osteomyelitis. The authors report a case where osteitis fibrosa was found in the head of the first metatarsal bone in a case of hallux valgus. Examination of the bone showed there was a marked sclerosis of the blood vessels, possibly the result of repeated small injuries this appeared to induce pathological sequelae similar to those seen in osteitis fibrosa. The changes in this case were purely local but other writers have reported cases where the condition was more general. While not wishing to speak too definitely the present authors think it not unlikely that the disease may be due to the effect of certain changes in the blood vessels, possibly quite localized, and not of a general specific character.

### 258. Multiple Suppurative Osteoperiostitis in Typhoid Fever

E. RIST, A. RAVINA, and B. WARTZ (*Bull. et Mem. Soc. Med. Hop. de Paris* August 4th 1927, p. 1285) record the case of a woman aged 23, who in the course of six months following an attack of typhoid fever presented suppurative osteitis of the tibial cranium humerus, rib and ilium. Unlike Emile Weil who had remarkable success in the treatment of typhoid osteoperiostitis with specific vaccines the authors found that this method had no beneficial effect but caused a local reaction at the site of injection and a sufficiently severe febrile reaction to necessitate discontinuing the treatment. Recovery ultimately occurred.

### 259. Gangrene in Epidemic Meningitis

S. LEVY (*Zeit. f. Kinderheilk.* August 17th 1927, p. 230) records the following case which he thinks must be unique. About a month after a severe attack of meningococcal meningitis in an infant aged 2 months asphyxia of both hands and feet developed. This subsided in the course of a day in the feet and left hand while in the right hand gangrene followed, causing loss of the terminal phalanx of the index finger and small necroses of the other fingers. Necrotic areas also formed simultaneously on the left parietal bone. No fresh necroses ensued in the course of fourteen months but death occurred after signs of increasing hydrocephalus. There was no necropsy. Although the clinical involvement was in favour of thrombosis or endarteritis, there was no evidence of cardiac disturbance and Levy is inclined to regard the case as one of Raynaud's disease.

### 290

### Otitis

G. COLLET (*Arch. Med. Nat.*, June 15th 1927, p. 314) draws attention to the prognostic gravity of those cases of acute otitis which are associated with severe neuralgia of the trigeminal nerve. He describes five cases in illustration of this. Of the three patients died of meningeal complications. He emphasizes the danger that is likely to arise when an acute otitis is accompanied by severe neuralgia in the distribution of the fifth nerve and suggests that the otitis serves as a starting point for an osteomyelitis of the petrous bone. He concludes that it is necessary to operate early in these cases.

## Therapeutics

### 291. Splenic Anaemia Treated by Fresh Calf Liver

N. FILSINGER and R. CASTERAN (*Bull. et Mem. Soc. Med. des Hop. de Paris* August 4th 1927, p. 1253) report the case of a woman aged 53 whose illness commenced in 1923 with general weakness, anaemia, digestive disturbance and later, jaundice. When first seen by the authors in February 1927 her spleen was palpable three fingerbreadths below the costal margin, there was marked anaemia and slight enlargement of the liver with jaundice. Her Wassermann reaction was negative. She was given 250 grams of fresh calf liver daily and a little later heavily intravenous injections of 0.10 gram of novarsenobenzol. Definite improvement was noted in six weeks, and a little later the injections were stopped, a total of 1.4 grams of novarsenobenzol having been administered. She continued to take 250 to 270 grams of fresh calf liver daily and in May was also given iron and arsenic. On July 1st she was reported cured, her spleen was not palpable, the blood picture was normal and the jaundice had disappeared three months previously. She had gained nearly 50 lb in weight and after having been confined to bed for many months was now able to take walks. The authors recommend that the calf liver should be made up in sandwiches with anchovy paste.

### 292. Cocaine Treatment of Ophthalmia Neonatorum

L. WEISS (*Journ. Med. Soc. N. J.* May 1927, p. 250) recommends the instillation of 4 per cent cocaine solution for the prophylaxis and treatment of ophthalmia neonatorum on the ground that it renders the conjunctiva anaemic and unsuitable for bacterial growth. He thinks that the present practice, which aims at destroying the bacteria *in situ* with silver preparations is of little value. As a prophylactic several drops should be instilled into the lower conjunctival sac immediately after birth and once daily during the following week the closed eyelids having been cleansed gently with sterile swabs without eversion of the lids. If ophthalmia commences the drops are instilled every two hours the pus being wiped away after the inflamed lids have been gently separated, no attempt is made to press it out. This treatment requires two attendants working in relays every few minutes for from twenty four to forty eight hours since the formation of pus is continuous as the inflammation begins to subside the frequency of instillation and swabbing is reduced. Weiss considers that cocaine solution by anesthetizing and blanching the conjunctiva increases its resistance to bacterial invasion and combined with gentleness in cleansing the lids to prevent complications he regards it as an ideal remedy in prophylaxis and treatment.

### 293

### The Treatment of Tinea Cruris

H. W. ACTON and C. MCGUIRE (*Indian Med. Gaz.*, August 1927, p. 419) assert that in tinea cruris an acute pyogenic infection is always secondary to ringworm and that the septic condition should be dealt with first, strong parasitocidal remedies can be used only after this infection has subsided and reinfection is very possible. Treatment is therefore divided into three stages. (1) In the acute stage only the mildest remedies can be used since a severe and an acute spreading dermatitis may be caused. In streptococcal infection the best application is calamine lotion to which a marked pruritus carbolic acid or aqua lanocera can be added. When impetigo is present unguentum hydrargyri ammoniacum dilutum should be used at night and the lotion during the day. In staphylococcal infections the pustules should be opened and acridine (1 in 1000) employed. In the stage of resolution the best treatment is calamine to ointment by day and Lasar's paste without salicylic acid at night. If the paste proves too strong an ointment containing zinc oxide and starch is advised. (2) When the acute symptoms have subsided the parasitocidal remedies may be used. Removal of fungal roots should be aided by a rapid surface desquamation effected by the judicious use of pumice stone.

thickening of the skin being prevented by protective applications. The best keratolytic agent is said to be Whitfield's ointment containing benzoic and salicylic acids, which, if irritant should be combined with calamine lotion. When there is great interdigital thickening resorcin, applied every night is the best remedy unless irritant, when a simple ointment should be used. Chrysotolin should never be employed when fissures or the slightest inflammation are present. For chronic cases dry treatment is advised. When secondary pyogenic infection exists care should be exercised in the length of exposure, and treatment stopped on the slightest signs of any reaction. Relapses respond readily to further irradiation. In nail infection, the nail should be removed, the bed scraped, and an ointment, such as Whitfield's, applied. (3) For the prevention of relapses the disease must be eradicated from the skin surface, the interdigital clefts and grooves, where the disease may lurk, being carefully examined. Infected clothing must be boiled and the toes cleansed by swabbing with pure lysol. Skin infection can easily be prevented by the use of a sulphur antiseptic powder, and, after bathing, likely areas of infection should be lightly dusted with a salicylic talcum powder. Friction and moisture play an important part in causing infection. Friction can be prevented by the use of properly fitting footwear and clothes, and moisture by dusting the parts with an absorbent powder and allowing free ventilation by the use of properly fitting clothes.

#### 274 Iodine in Primary Hyperthyroidism

H. M. CLURE and R. L. MASON (*Boston Med and Surg Journ*, August 18th, 1927, p. 247) discuss the use of iodine as a therapeutic aid to surgery in primary hyperthyroidism. They compared 100 selected cases in which a solution of iodine in hydrochloric acid was used with those in which Lugol's solution was administered, and conclude that the particular solution used is immaterial, the important point being the preoperative administration of an excess of iodine. The daily dose of Lugol's solution was 30 minims, and that of the hydrochloric acid iodine solution (1 c.c.m. containing 100 mg of iodine) was 60 minims. The basal metabolic rate was determined on alternate days before the operation and on the sixth day afterwards. An excess of iodine was found to be preferable to long standing continued small doses, and continuation of the iodine therapy for at least three months after operation is recommended. The improvement in subjective symptoms following iodine administration in preparation for operation was striking, restlessness rapidly disappeared and tremor decreased, with recession of the exophthalmos in a few cases. In about 12 per cent of the cases iodine had no apparent effect upon the symptoms. In the treatment of recurrent or persistent hyperthyroidism after thyroidectomy iodine is of value and in some cases will control the recurrence of toxic symptoms, but persistent elevation of the metabolic rate indicates that too large a remnant of active thyroid tissue has been left and that a further operation is needed to remove more of the gland. The authors state that iodine alone will not cure, and an operation should, therefore, be performed at the time of maximum improvement following its administration. Although the treatment is contraindicated in patients who have large single adenomatous goitres with secondary hyperthyroidism, it is suggested that it may be cautiously tried in preoperative preparation for multiple adenomatous goitres with hyperthyroidism.

#### 295 Digitals in Pneumonia

W. S. BURRAGE and P. D. WHITE (*Amer Journ Med Sci*, August 1927, p. 260) comment on the differences of opinion as to the efficacy of digitals in pneumonia. Mackenzie, Hume, Branton, and White, among others, consider that its administration is useless, if not harmful, while Cohn and Jamieson, Brooks and Carroll, Phillips, Bliss, and Stone, hold the contrary opinion. In the hope of obtaining further data the present authors studied a series of 221 cases of lobar pneumonia treated in the Massachusetts General Hospital from January, 1921, to December 1925. A study was made of the type of pneumonia in all the cases, and of complications serious enough to influence prognosis apart from the original pneumonic process. In this group of patients, all of whom were adults, approximately one half received digitals in varying amounts, the other half none at all. The former showed a mortality two and a half times that of the latter. The patients receiving digitals were divided into those who were digitalized and those who were not. Digitalization was computed upon the basis of  $1\frac{1}{2}$  grains for every 10 pounds of body weight, the average dose being 36.5 grains per patient, administered in large part in  $1\frac{1}{2}$  grain pills in the course of two, three, or four days. In the undigitalized group, the drug was administered unsystematically in many instances, being used as a last resort in about one half of the cases when they were very seriously ill. The digitalized patients showed a mortality only five eighths as high as those who

were given no digitals whatever, while those treated by non digitalizing doses showed a mortality three and a half times as high as those who received no digitals. In this series of cases, in which the percentages of complications and dangerous patients are very similar, the lowest mortality rate was found in digitalized patients, and the next in those who received no digitals. The authors think that the definitely higher mortality among non digitalized cases should discourage this type of administration, if the drug is used, full digitalization should be ensured. It appears that systematic administration of digitals in such full doses may have been of benefit, and no untoward toxic effects were observed. While acknowledging that a larger series of cases must be carefully studied before conclusive evidence can be obtained, the authors believe that the data from the present series suggest that digitals is of value in pneumonia when given in sufficiently large doses.

#### 296 Metallic Salts in the Treatment of Infections

L. E. WALBUM (*Ugeskrift for Læger*, July 14th, 21st, and 28th, 1927, pp. 612, 644, and 671) gives a detailed account of experiments on mice, rabbits, and guinea pigs infected with tetanus spores or tubercle bacilli, and treated with small doses of the salts of various metals, such as manganese, cadmium, and cerium. After inoculating mice with virulent tetanus spores and subsequently with a culture of staphylococci he was able, to eradicate these organisms completely by a series of subcutaneous injections of small (optimal) doses of manganese. He publishes a table showing the fates of these mice and of the controls. The tetanus spores in the bodies of the mice lost their virulence some time before they were destroyed. Rabbits infected by the intravenous route with virulent tubercle bacilli were protected from contracting tuberculosis when they were treated, within seven days of the infection, with small doses of manganese, cerium, lanthanum, or cadmium. The tubercle bacilli were either destroyed or lost their virulence, the same observations being made in this respect as those made by Madsen and Moich in their experiments with snocysin. Rabbits already tuberculous were cured by small doses of cadmium, provided it was given within thirty-three days of their intravenous infection with virulent tubercle bacilli, but in no case did small doses of cadmium protect guinea pigs against the subcutaneous injection of virulent tubercle bacilli, though mice infected with these were completely cured by small doses of manganese. The author suggests that Ehrlich's success, with large doses of salts in the treatment of protozoal infections has misled research workers, who have sought to overcome bacterial diseases by massive doses on the assumption that they act directly on the invading microbe. The author ascribes the successes he has achieved to the indirect action of the injected salts, which, he assumes, stimulated the body to defend itself.

#### 297 Treatment of Diabetes

H. SCHWAB (*Paris méd*, August 13th, 1927, p. 135) states that O. von Noorden of Frankfurt has recently published the results obtained by treatment of diabetes with fermented and desiccated powdered pancreas, to which has been given the name of glucorment. It is best suited for mild and moderate cases of diabetes, in which 25 units and more of insulin can be replaced by glucorment. In severe cases two or three injections of insulin may be reduced to only one by its use. Von Noorden, who has treated a hundred cases of diabetes of different degrees of severity, states that one tablet of glucorment should be taken after each of the three meals. If five tablets are required the fourth and fifth should be given at 10 a.m. and 4 p.m. respectively. In eight to ten days the number can be reduced from five to three. The diet should consist of large quantities of protein, little fat, and 100 to 120 grams of bread. The reduction in the glycosuria is noted after the fifth day. The blood sugar diminishes without being affected by the meals. Hypoglycaemia has not been observed. The chemical composition of glucorment has not yet been discovered, but German writers maintain that it is chiefly composed of amides and does not belong to the guanidine group. Von Noorden, whose hypothesis is supported by Schwab, suggests that the substance is already present in the organism and that it is the capacity of reinforcing the action of insulin.

#### 298 Malariotherapy of General Paralysis

A. MARIE and F. M. A. LEGENDRE (*Bull Soc de Med*, June 8th, 1927, p. 200) maintain that the psychiatrist needs the help of the biologist in treating general paralysis by the inoculation of malaria. Most psychiatrists are agreed that ten febrile attacks are sufficient, after which it is desirable to bring about cessation of the fever and disappearance of the malarial parasites from the blood. In benign tertian fever caused by *Plasmodium vivax* the schizonts and gametes disappear after the ingestion of 1 gram of quinine hydrochloride, sulphate, or



stovarsolite for three days, or six to ten tablets of stovarol in doses of two daily. *Stovarsolite malitiae*, the parasite of malarial fever, is usually more resistant, so that it will be necessary to give quinine hydrochloride or sulphate in doses of 1 gram daily for ten days. Stovarsol alone can not cause the *Stovarsolite malitiae* to disappear, but is useful as an adjunct. The ring forms of *Stovarsolite malitiae*, the causal agent of malarial fever, disappear in four days with a daily dose of 1 gram of quinine hydrochloride or sulphate, but a treatment of almost a month is required to cause disappearance of the crescent. The authors add that although injections of quinine should be avoided, owing to the caustic action of the alkaloid, a pernicious attack of malarial infection should be cut short by an intravenous injection, given very slowly, of 0.8 gram basic form of quinine diluted in 20 to 100 c.c. of normal saline solution.

## Ophthalmology.

### Tumours of the Optic Chiasma

CHRISTIANSEN (*Praxelles Med.*, July 31st 1927, p. 1246) discusses the diagnosis of tumours in the region of the chiasma and sella turcica. Among the earliest symptoms is impairment of vision sometimes purely subjective of one eye only, inconstant, and not accompanied by any obvious changes in the fundus detectable by the ophthalmoscope. In other cases there are all grades from this up to complete blindness affecting both eyes, often very rapid in development, and associated with a diminished visual field and varying degrees of papillary atrophy. In the less advanced cases Christiansen urges the necessity for examination with colours, simple achromatopsia of more or less severity is sometimes the only symptom. He has not gained much assistance from x-ray examination because the pictures obtained are difficult to interpret and are frequently misleading, owing to the varying configuration of the sella turcica and ethmoidal and sphenoidal spaces in healthy subjects but he considers that definite increase in the depth of the posterior portion of the sella turcica, and especially of the posterior clinoid processes, are of local diagnostic value, the determination of calcification of the tumour being the most convincing sign. Examination of the cerebrospinal fluid in many cases reveals a very large number of cells up to 21,000 per cubic millimetre (pleocytosis), the cells being chiefly lymphocytes, which are usually accompanied by polymorphs and large mononuclear. The fluid is always sterile and contains no micro-organisms. There are no signs clinically of cerebrospinal meningitis, even in those cases with extreme leucocytosis.

### Optic Neuritis Following Whooping cough

G. H. HOGG (*Med. Journ. of Australia*, June 4th 1927, p. 825) records the case of a boy aged 16 who developed double optic neuritis in the earliest stage of pertussis before the whoop was heard. There was no meningitis or brain compression nor could mechanical factors be advanced as an explanation. The neuritis was apparently due to the toxins of the disease. Complete recovery occurred within three months. Hogg has collected six other cases recorded by Callan (1839), Alexander (1888), Jacobi (1891), Gamble (1905), Wiegmann (1912) and Nacht (quoted by Wiegmann) respectively, in patients aged from 6 to 40. Two of these became affected by optic neuritis two to four weeks after the appearance of whooping cough, two after several weeks and one after some months while in the sixth patient brain trouble occurred in the third month and was followed later by optic neuritis.

### Autohaemotherapy in Ophthalmology

MALLOL DE LA RIVA (*La Med. Ibera*, August 6th 1927, p. 109), who records an illustrative case states that autohaemotherapy in ophthalmology was first introduced by Rohmer of Nancy in 1911, who reported a case of corneal abscess complicated by hypopyon successfully treated by this method. Subsequently his son A. Rohmer published a thesis on the results obtained by autohaemotherapy in various ocular affections. Later Dauter recommended its employment in haemorrhages in the vitreous but it was not until March 1922 when Schachman recorded the brilliant results obtained by subcutaneous injection of 1 c.c. of the patient's debrided and centrifuged blood in five cases of ophthalmia neonatorum and one of gonorrhoeal conjunctivitis in an adult that the method became generally adopted. G. Busch (1926) has used the method with success in particular affections of the eye such as keratitis with hypopyon and severe purulent destruction of the cornea. The present author's case was that of idiopathic iritis in a man, aged 25, in whom the usual treatment failed but rapid recovery followed three intravitreal injections of 3 to 5 c.c. of the patient's blood.

### Parinaud's Conjunctivitis

A. GIFFORD (*Amer. Journ. of Ophthalmol.*, July, 1927, p. 481) describes three cases of this condition, in all of which the differential blood count revealed an eosinophilia and an increase in large mononuclears. Two of the cases were seen in a very early stage, the initial lesion being a small polyoid nodule situated in the lower fornical fold. Subsequently the usual picture appeared of numerous enlarged follicles showing points of necrosis, with a few granulations and with glandular involvement. Gifford thinks a likely mode of infection is from infected foreign bodies becoming embedded in the conjunctiva. He does not believe that the infection is necessarily always of animal origin. Two cases showed a Gram positive thread like organism corresponding with the leptothrix described by Verhoeff as being always found in these cases.

### Excessive Divergence.

J. H. DUNNINGTON (*Arch. of Ophthalmol.*, July, 1927, p. 344) is convinced that the act of divergence is active and not passive. He describes the condition of divergence excess, which may not give rise to symptoms though they usually supervene sooner or later, and include a feeling of strain on looking at distant objects—the so-called panoramic asthenopia—and at moving objects. A later sequel is a convergence insufficiency developing in association with divergence excess which must be distinguished from (1) convergence insufficiency and (2) insufficiency of an adduction. In the first of these two the distant readings are normal, while divergence excess gives normal near findings. When an adductor muscle is concerned there will be definite impairment of movement inward of the affected eye. The treatment is surgical and Dunnington advises complete tenotomy of the external rectus of one or both eyes.

## Obstetrics and Gynaecology

### Cautery Amputation of Cervix

H. P. KERN (*Surg., Gynecol. and Obstet.*, September 1927, p. 387) discusses cauterization of the cervix which he regards as the most efficient method in early malignancy. Even if the morbid process has extended beyond the level of the cauterization no harm results from the procedure because no living cancer cells have been transplanted. The only instruments required are a heat controlled cauterizing knife, an Oatland's vulsell, a weighted speculum and two ordinary right angled retractors. Insulated or water cooled retractors are not necessary since the heat is in the knife. There is no after pain or haemorrhage during the time of healing, but the patient should remain in bed until the small eschar has separated. The operation is indicated after the climacteric for suspected malignancy with a badly eroded cervix in the presence of early or advanced epithelioma. Since the resulting cauterization closes the uterine canal the procedure should not be employed prior to the climacteric unless it is to be followed by a supravaginal hysterectomy. While sharp traction is being made on the cervix the dull red cauterization is carried along the junction of the vesical fold coming upward toward the canal. This line of cauterization is continued round the cervix at least fifteen minutes being required for its completion. The resulting specimen resembles an acorn in shape. Healing follows rapidly, loose gauze packing saturated with hipp paste being used. The operation can be followed immediately or after a fortnight, by radiation.

### Placentoma Benignum

R. PALAZZO and R. PALLI (*Rev. Sud. Amer. de Endocrinol., Immunol., Quimioterapia*, July 15th, 1927, p. 555) who record an illustrative case state that placental polypus or placentoma benignum was first described in 1839 by Velpeau. The size varies from a few millimetres to some centimetres and it may be pedunculated or not. The shape may be round irregularly cylindrical or conical and the surface is rarely smooth but usually irregular lobular or mammillated. Microscopically it appears to be formed of a whitish tissue of fibrous appearance accompanied by another tissue resembling mucous membrane with numerous blood clots between the two. On histological examination the tissue of the polypus is found to be continuous with that of the uterine mucosa. The authors report the case of a woman aged 39 the mother of six children the youngest of whom was 10 years old. The symptoms were frequent metrorrhagia and fetid vaginal discharge. A diagnosis of submucous uterine fibroid was made and a subtotal hysterectomy was performed. A pedunculated tumour the size of a tangerine orange was found on the posterior superior surface of the uterine mucosa and on hisological examination it was seen to be a placental polypus. Recovery followed.



306 Insufflation of Fallopian Tubes in  
Dysmenorrhoea

G L MOENCH (*Journ Amer Med Assoc*, August 20th, 1927, p 598) discusses critically the value of treating dysmenorrhoea by carbon dioxide insufflation of the Fallopian tubes. He has collected fourteen case reports of patients thus treated, with the following results. One patient had been much benefited by insufflation, another was slightly improved, two were better for one or two months and then relapsed, one, after improving for a month, was worse than before, seven were unaltered, and two were definitely worse. It was found that the pressure used in forcing the gas through the tubes bore no relation to the results. Dysmenorrhoea caused by pelvic congestion, salpingitis, perimetritis, parametritis, periophoritis, prolapsed ovaries, and cervicitis were unbenefited, auto intlexion of the uterus was also unimproved. The only patients changed for the better were those in whom the cervical canal was very narrow, so that the cannula acted as a dilator. Moench concludes that in cases of premenstrual dysmenorrhoea the old method of dilating the narrow cervix is not to be deprecated, and he utters a warning against regarding such cases as being hysterical or neurotic, though he does not deny the existence of psychic dysmenorrhoea.

## 307. Control of Haemorrhage in Placenta Praevia

W KERWIN (*Amer Journ Obstet and Gynecol*, August, 1927, p 189) describes a method of controlling haemorrhage in placenta praevia by tying the uterine arteries through the vagina. A vaginal retractor placed anteriorly holds up the bladder, while a lateral one exposes the right lateral vaginal fornix. The cervix, grasped with tenaculum, is pulled down, back, and to the left, with a large curved needle threaded with plain catgut a ligature is passed round the main trunk of the right uterine artery and tied. The needle is inserted in the upper part of the right vaginal vault just anteriorly to the midplane and craned inward as high as possible to include all the lateral parametrium. On a supposititious clock dial the entrance would correspond to 10, the exit to 8, while 9 represents the position of the artery. The same procedure is carried out on the left side, and when this ligature is tied all bleeding stops. No denudation of the vaginal wall is made and the operation can be completed in a few minutes. The artery need not be exposed, and the safety of the uterus is assured by the upward retraction of the bladder and the downward pull on the cervix. By this method haemorrhage is said to be completely controlled. Kerwin adds that Caesarean section may not be necessary in the treatment of placenta praevia, that hysterectomy for bleeding after delivery is unnecessary, and that the maternal mortality from haemorrhage should be greatly lessened.

## Pathology.

## 308 Site of Infection and Localization of Tuberculosis.

A SÄTA (*Udd Klinik*, August 19th, 1927, p 1259) considers that human phthisis is not due to a simple lung infection from the air, but is the ultimate effect of some infection elsewhere. From experiments on young rabbits he has shown that tubercle bacilli pass through the wall of the intestine by a process of absorption and are soon carried by the lymphatics into the general circulation, after a few days no bacilli can be found in the mucous membrane of the bowel, which shows no signs of any local infection. Similar observations were made by locally infecting the conjunctiva, the throat, and the skin. The author thinks that tuberculous infection is hematogenous in origin. He refers also to the question of superinfection and reinfection by tubercle bacilli. A weak primary infection evokes changes in the body which he describes as exudative and fibrous diatheses, these act as a form of immunization in preparing the system against a further later infection. To test this theory he employs an immunizing agent prepared by finely powdering highly virulent human tubercle bacilli which have lost some of their virulence by being exposed to slight heat and thoroughly dried. This powder was repeatedly administered subcutaneously or by the mouth to a number of growing guinea pigs, others received in similar manner dead tubercle bacilli, and control animals received no immunizing agent. All the animals were subsequently inoculated with living tubercle bacilli. The control animals all died within three months, and of those treated with the powder some died within one month, some surviving longer up to a year. Histological examination of the treated animals showed that they had died from an exudative inflammation of the mucous membranes, the organs were mostly free from tuberculous nodules, which were only rarely found in the lungs. The animals which survived longer showed the typical pathological picture of human phthisis. The author concludes that tubercle toxin,

whether as an active immunizing agent or as an infection, produces firstly an "alteration" (exudative stage), and secondly, a "proliferation" (fibrous growth), and can be conceived as an alterogenic and fibrogenic antigen. Superinfection and reinfection play an important part in the setting up of typical phthisis, previous frequent mild infections of tubercle bacilli are the chief influence in the development of phthisis in later life.

309 *Bacillus fragilis* Isolated from the Blood

L BOELZ, R KELLER, and A KEHLSFELD (*Bull et Mem Soc Med des Hop de Paris*, July 21st, 1927, p. 1184) have isolated *B fragilis* from the blood in three cases of septicæmia (one case of puerperal fever and two cases of acute mastoid infection). The organism, which is a small non motile, non sporing, Gram negative, and strictly anaerobic bacillus, appears on Veillon's medium as small round colonies after a week's incubation, but if ascitic fluid is added to the medium growth occurs after three days. When inoculated in a medium with meat turbidity slowly develops and bubbles of gas appear, the fragments of meat remaining unaltered in colour. The organism grows equally well in broth to which pieces of coagulated white of egg have been added, and there is no digestion of the egg albumen. In gelatin round punctiform colonies appear at about the tenth day, there is no liquefaction of the medium. The bacillus is not pathogenic for rabbits and guinea pigs either by subcutaneous or by intravenous inoculation. The septicæmia in each patient was slight, only a few colonies being isolated from 10 c cm of blood. The isolated bacillus was not agglutinated by the serum of the patient.

## 310 The Gasserian Ganglion in Trigeminal Neuralgia

G O E LIGNAC and J VAN DER BRUGGEN (*Nederl Tijdschr v Geneesk*, August 27th, 1927, p 912) examined the Gasserian ganglion in 22 cases, in 21 of these it had been removed by operation and in one after death. In the operation cases the ganglion was fixed immediately after removal in a 10 per cent solution of formalin, so that any post mortem changes were excluded. The ganglion cells showed loss of staining, atrophy, basophilia and vacuolation of the protoplasm, perinuclear pigmentation, pyknosis, chromatolysis, and karyolysis. The nerve fibres were thickened with balloon shaped swelling of the medullary sheaths, fine or coarse granulations, and loss of staining. In the interstitial tissue there were infiltrations of lymphocytes, plasma cells, and eosinophil leucocytes.

## 311. Bacteriological Examination in Tuberculous Meningitis.

F PARADISO (*La Pediatria*, August 15th, 1927, p 881) reports a case of meningitis where, as is so often the case, the diagnosis was difficult, and emphasizes the importance of the presence of tubercle bacilli in the spinal fluid. He appears to have been more than usually fortunate in finding these bacilli, detecting them in sixteen cases, and he attributes his success to his method of examination. After collecting the fluid with all aseptic precautions he centrifugalizes it immediately for at least an hour, and then stains the film by the Ziehl-Neelsen method. If immediate centrifugalization was impossible the liquid was put in sterile tubes containing a few drops of 10 per cent sodium citrate solution. Of his 16 cases the fluid was removed in the first week in 4, in the second week in 9, and in the third week in 3 cases. Since he has used this method the proportion of successes has risen to 90 per cent.

## 312 Ultra-violet Radiation and Metabolism

MARGARET E. FRIES (*Amer Journ Dis Child*, August, 1927, p 159) denies that there is a rise in basal metabolism following ultra violet irradiations. Three children in hospital were selected and their diet and activities were carefully controlled. After having been trained for a month to use the high basal metabolism apparatus they were exposed three times a week for a month to the ultra violet radiation from a quartz mercury lamp. A suberythema dose was sought, but occasionally a moderate erythema was produced. All the children became pigmented during the course of treatment. The basal metabolism was determined three times a week on alternate days, following irradiations lasting twenty to seventy hours. It was seen that there was no greater variation than 9 per cent—a figure which came well within the limit of error. MARGARET FRIES and ANNE TOPPER (*ibid*, p 165) carried the investigation further by determining the basal metabolism of five hospital children preceding and immediately following irradiations, and again one, two, and six hours later. In these cases also there was no greater variation than 10 per cent in the basal metabolism preceding and following irradiations, except where there was some disturbing environmental factor. The blood pressure and the pulse rate remained almost constant throughout.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

**313. Etiology of Headache.**  
G. PERITZ (*Med Klin*, August 5th 1927, p 1169) classifies the causes of headache as organic including cerebral tumours, meningitis, hydrocephalus and syphilis and secondly, functional disturbances such as overwork, fatigue, uterine and endocrine irregularities, obesity, intoxication and reflected pain. In the first group the pain is not localized but distributed over the head, sometimes beginning suddenly with in case severity. It depends on the sudden or gradual (in case of tumours) increase of the intracranial pressure, sooner or later the signs of intracranial disease become manifest and are diagnosed. This form of headache is often relieved by the lumbar puncture performed for mild diagnosis. The headache of syphilitic origin is of two kinds: the one markedly localized in the bones and periosteum and often the result of irritation of the nerves of the meninges; the other form is indistinguishable from functional headache and probably also arises from a slight degree of meningitis. Functional headaches are migrainous and of cerebral or meningeal origin. Myalgia is a partial muscular contraction, and the degree of pain is inversely proportionate to the resistance of the nervous system. The muscular contraction causes a production of lactic acid which if the oxygen supply is insufficient to convert it into glycogen and carbonic acid is not removed from the muscle and myalgia results. Fatigue after walking is due to the excess of lactic acid produced in the muscles. The headache of fatigue and overwork is the result of excessive production of lactic acid in subjects of poor muscular development. In anaemia the diminished haemoglobin content of the blood causes deficiency of the supply of oxygen to the muscle and an accumulation of lactic acid. Similarly in gouty persons the myalgia is caused by uric acid the normal removal of which is interfered with, inciting contraction of the muscular tissues and myalgia.

**314. Orchitis due to Varicella.**  
J. SARRAZIN (*Bull Acad de Med* July 26th 1927 p 122) states that though orchitis is a frequent and well known complication of small pox, no example of its occurrence in varicella has hitherto been recorded to his knowledge. He now reports a case in a man aged 20 in whom all other causes of orchitis could be excluded. The complication which developed during the first few days of the disease attacked first the left and then the right testicle and then the left again. Under treatment by rest and sedatives complete recovery ensued. Remembering the close relation between small pox, vaccinia and varicella it is now surprising that orchitis may occur in each of these diseases as it is a common complication of variola and has also been described in vaccinia. In view of the nuclear inclusions which T. M. Rivers found in the testes of the young monkey inoculated with the products of varicellar lesions it would seem that the glands are very receptive of this virus when it has been obtained within the first twenty-four hours of the onset of the disease and inoculated without delay. These nuclear inclusions were not obtained with any material inoculated apart from the virus of varicella nor did they appear when the varicellar virus had been mixed before inoculation with the serum of a patient convalescent from varicella.

**315. Epidemiology of Paratyphoid A Fever.**  
E. P. SANDERS (*Neerl Tydschr v Genees* July 9th 1927, p 177) who records two undoubted and two probable cases remarks that paratyphoid A fever is apparently very rare in Holland although it is possible that some cases have escaped recognition. His four patients had come from Central America where paratyphoid A fever is endemic. A study of the prevalence of this infection shows that it is associated with typhoid fever, and is an expression of bad faecal hygiene. Paratyphoid A fever therefore, is almost unknown in England and Holland and uncommon in Germany in which it is countries the incidence of typhoid fever is low but it is commoner in France, Italy, the Balkans and South Russia where the incidence of typhoid fever is high. Epidemics of paratyphoid infection however die out sooner than those of typhoid fever partly because the bacillus is less resistant and partly because there are far fewer carriers than in the case of typhoid. Moreover paratyphoid A carriers become free from these bacilli more rapidly than typhoid carriers.

**316. Diagnosis of Subacute Bacterial Endocarditis.**  
L. M. HURTHAL (*Loston Med and Surg Journ* July 14th, 1927 p 41) reviews the histories of 65 consecutive cases of subacute bacterial endocarditis from the point of view of differential diagnosis. He found that pulmonary signs and symptoms occurred in over 75 per cent, and he suggests that this may be due to the lodgment of emboli in the nutrient bronchial arteries and gross infarction of the lung, having its origin in the right side of the heart. Clubbing was rarely found in these cases in the absence of a palpable spleen. Hurthall thinks that although positive heart findings are suggestive, their absence should not rule out the possibility of endocarditis. Acute or chronic pericarditis was found in 25 per cent of cases which came to necropsy. Precordial pain was usually associated with an aortic lesion. In all the cases the cardiac rhythm was normal. In most cases it would appear possible to distinguish between true chronic glomerular nephritis and the embolic nephritis of bacterial endocarditis the excessive hypertension of the former being seldom present in the latter. The presence of fever, embolic manifestations and macrophages in the blood with a valvular lesion, clubbing of the fingers, or splenomegaly warrants a positive diagnosis. The most characteristic finding in the central nervous system was a high white cell count without recovery of bacteria from the cerebrospinal fluid—an aseptic meningitis. Summarizing the blood findings, Hurthall considers the presence of macrophages pathognomonic of bacterial endocarditis, while one or two large mononuclear cells with an ingested red cell and their increase with or without vacuolization on smears as the diagnosis. He adds that failure to relieve the pain in the extremities with abeylates in acute arthritis with a rheumatic heart should lead to a suspicion of bacterial endocarditis. Early clubbing of the fingers associated with the presence of blue net print in spots in round the nail margins and tender finger tips is a very suggestive manifestation.

**317. Post diphtherial Paralysis.**  
F. MAJEON (*Il Policlinico Sez Prat* August 15th 1927 p 1172) describes seven cases of post-diphtherial paralysis of illiterate various types. The commonest time for the paralysis to appear is about twenty days after the cure of the local manifestation of the disease but as his cases show it may appear much earlier or later. The paralysis bears no relation to the severity of the local lesion and is more common after the anginomatous type than the larvageal. The most frequent variety is paralysis of the palate and pharynx next in frequency is a general asthenia and loss of the patellar reflex. The author mentions some of the paralytic due to other causes which may give rise to difficulty in diagnosis. The administration of serum is recommended and the trial of several strains until definite results are obtained.

## Surgery

**318. Gastric Tuberculosis.**  
G. BLANCHI (*Il Morgagni* August 7th 1927 p 124) comments on the rarity of tuberculosis of the stomach both relatively and absolutely in spite of the frequent introduction of the bacilli into the stomach with the food swallowed saliva and expectoration and from the blood and lymphatic channels, the organisms only rarely becoming attached and developing in the wall. This comparative immunity of the gastric wall is variously attributed to the constant movement of the stomach contents to the high contractility of the muscularis mucosae to the inhibitory nature of the gastric juice as a medium for the development of the tubercle bacillus or any micro-organism (though the hydrochloric acid of the gastric juice is not in itself antiseptic and also a proteolytic agent on the mucus secreted by the gastric epithelium). The author considers that primary gastric infection though very rare is not impossible but infection secondary to tuberculous lesions of the lungs and glands is more common being brought by the lymphatics from the neighbouring infected glands. The gastric mucous membrane the serous membrane of the peritoneum, and from the blood. Clinical and therapeutic details are given of two cases in which gastric tuberculosis was confirmed by laparotomy. In one case there were physical signs in the left pulmonary apex a globular swelling on the small curvature of the stomach, and a histologically typical

tuberculous gland in the gastric hepatic ligament close to the gastric tumour. In the other case the symptoms were confined to the stomach, and the condition was diagnosed as ulcer of the smaller curvature. Laparotomy showed a fixed globular swelling infiltrating the smaller curvature, and histological examination of an enlarged gland adjacent to the stomach showed unmistakable tuberculous structure.

### 319 Operative Treatment of Chronic Otitis Media

F. B. GILHESPI (*Journal of Laryngol and Otol*, August, 1927, p. 520) reports a series of thirty-four cases of chronic suppurative otitis media in children under 14 years old, all had failed to yield to long courses of treatment, including irrigation. He therefore resolved to try the effect of operative treatment. In seven cases the Schwartz operation was performed, resulting in six dry ears from nine operations. In ten cases the conservative mastoid operation was employed and was followed by seven dry ears. The indication for operation in another series of seven cases was attic perforation and discharge, in all these the mucus was removed so as to obtain better drainage, and the hearing did not appear to suffer. In seventeen cases the radical mastoid operation was performed with nine successful results. The author is impressed with the desirability of a large meatal opening and the cutting of a flap from the posterior meatal wall, he considers that packing should not be continued too long. During the twelve months previous to this report thirty-seven cases of chronic suppurative otitis media in children were treated surgically. Thirty-one radical mastoid operations resulted in dry ears in twenty-two cases, two conservative mastoid operations were performed successfully, and three Schwartz operations resulted in only one dry ear. The author is disposed to advocate less radical procedures, and finds that his results have been improved thereby. He now restricts the conservative operation to those cases which have attic perforation and suppuration.

### 320 Agranulocytosis Complicating Cholecystitis

EDITH PERITZ (*Zentralbl f. Chir*, August 20th, 1927, p. 2129) refers to the numerous cases of agranulocytosis (diminution of the granular leucocytes) that have been recorded recently and notes that all future cases should be published in view of the difficulty of differential diagnosis. Agranulocytosis comes on suddenly with pyrexia. The essential symptom is tonsillar and palatine necrosis resembling diphtheria, but without bacteriological findings. Ulceration of the vaginal mucosa is always present in female patients. The prognosis is unfavourable. She reports the case of a woman, aged 47, with a history of frequent attacks of pain in the right hypochondrium for seven years. In August, 1926, and February, 1927, she had typical attacks of biliary colic, with pain radiating to the right shoulder, vomiting, rigors, and slight jaundice. On admission to hospital slight tenderness in the right hypochondrium, with resistance, was detected. The urine contained albumin and urobilinogen, but no sugar. The sediment consisted entirely of scattered red corpuscles and granular casts. There was nothing objective to account for the rapid pulse and fever. A diagnosis of cholangitis was made. The hypertrophied tonsils showed punctate folliculitis, there was a yellowish white ulcer on the dorsum of the tongue and numerous whitish ulcers were present on the vulva. A blood count showed 3,000 leucocytes per c mm, which were chiefly lymphocytes, the characteristic picture of agranulocytosis. The patient died next day, the leucocyte count having fallen to 800. The necropsy confirmed the diagnosis as the primary disease was a chronic cholecystitis with gall stones. There were small necroses in the liver which may have accounted for the indefinite pains in that region.

### 321 Surgical Collapse of the Lung

A. A. LAW (*Annals of Surgery*, August, 1927, p. 227) asserts that the cure of unilateral pulmonary tuberculosis can only be accomplished by causing collapse of the organ. In 80 per cent of cases this can be produced by artificial pneumothorax. In the remaining cases collapse is prevented by adhesions, and the operation of paravertebral extrapleural thoracoplasty offers the only possible chance of overcoming this difficulty. In a series of 91 operations complete collapse was not obtained in 8 per cent of the cases. Phrenicotomy is useful in cases where the patient is too ill to permit the longer procedure or where after thoracoplasty the base of the lung has failed to collapse. Avulsion of the phrenic nerve has been tried in later cases and is better, as it tears the accessory branches and assures paralysis of half the diaphragm. X-ray studies show that after these procedures the collapsed lung is at rest and non-functioning, 36 per cent of cases are cured and 24 per cent improved by this operation, which therefore appears worth consideration in the case of patients for whom there is no hope otherwise.

## Therapeutics.

### 322 Medical Treatment of Duodenal Ulcer

D. VANDERHOOF (*Journal Amer Med Assoc*, July 30th, 1927, p. 344), drawing attention to the inefficiency of surgical treatment in chronic peptic ulcer, maintains that practically every case of uncomplicated duodenal ulcer is curable by adequate medical treatment. Peptic ulcer occurs much more frequently in the first portion of the duodenum than in the stomach, and in many instances it is uncomplicated either by periduodenal adhesions or by disease in the appendix or gall bladder. The most important part of treatment is frequent feeding, in patients with severe pain and marked pylorospasm the ideal food is stated as 2 oz each of cream and sweet milk with 10 grains of sodium citrate, given once every hour from 7 a.m. to 9 p.m. In the average case six feedings a day suffice, but no more than three hours should elapse without feeding. Except in acute cases and those with haemorrhages a liberal diet is given with avoidance of all acids, raw fruits, soups and meat extracts, condiments and spices, intense sweets, very coarse foods, and alcohol in any form. Fatty foods, such as cream, butter, and olive oil are best for patients with ulcer, while different forms of albumin, as milk, eggs, and cooked meats, are also recommended. The administration of atropine or holladonna is useful in relieving pylorospasm and hyperperistalsis, and possibly in reducing the total gastric acidity. The author gives ten drops of tincture of holladonna in water three times a day before the regular meals. After these meals a level teaspoonful of lithium subcarbonate is administered, if this proves constipating a small amount of heavy magnesium oxide may be added. This treatment, in order to effect cure, must be continued regularly and persistently for two years, and intelligent co-operation by the patient is necessary. Any physical impairment (tonsillar, sinus, or dental infection) should be corrected, and cases of chronic appendicitis or cholecystitis treated surgically before the ulcer treatment is instituted. At the end of two years all medication is discontinued, and the patient allowed freedom in diet, though the foods already mentioned should still be avoided or only sparingly taken. Vanderhoof emphasizes that successful results depend chiefly on the intelligent co-operation of the patient, and on continuing the treatment daily with regularity and persistence for two years.

### 323 Haemostatic Action of X Rays

L. POPP (*New York*, August 11th, 1927, p. 1029) describes four cases of obstinate epistaxis which were treated by the application of small doses of x-rays (focal distance from the skin 23 cm, flash 30 cm, filter 5 mm aluminium) over the region of the spleen, the haemorrhage being stopped in each case. This effect of x-rays is explained as being the result of an overproduction of thrombocytes other than the reticular endothelium of the spleen or from the destruction of white blood corpuscles. It has long been known that by stimulation of the bone marrow by x-rays the number of the blood platelets is raised with a resulting increased amount of coagulation ferment, and the method has been successfully employed in haemophilia and in cases of severe purpura. The effect of x-rays in haemorrhagic diathesis persists for only a few days, but the arrest of the haemorrhage enables further medical treatment to be applied. The application of x-rays has been used in cases of metrorrhagia and menorrhagia, and it is also recommended twenty-four hours before operations likely to be accompanied by severe haemorrhage. Beneficial results are said to have been obtained by the application of x-rays to the spleen in cases of thrombopenia and icterus haemolyticus.

### 324 Synthalin in Diabetes Mellitus

I. M. RABINOWITCH (*Canadian Med Assoc Journal*, August, 1927, p. 901) refers to the literature and reports some personal cases of diabetes treated with synthalin or butylamine guanidine, a substance capable of aiding carbohydrate metabolism when given by the mouth. In one case it appeared that 10 units of insulin could be replaced by 25 mg of butylamine guanidine. Staring success was obtained in the case of a man, aged 48, who was having 25 units of insulin daily. The insulin was gradually replaced by synthalin till he was taking 50 mg of this daily and kept his sugar free in spite of the insulin having been discontinued altogether. On three occasions he had abdominal cramp and nausea, and the blood sugar once rose above normal when he had a cold. The results of treatment of six carefully selected cases, all requiring an average of 10 units of insulin per day, are recorded. Two were completely successful, one patient is keeping sugar free with occasional relapses, one case was unsuccessful from the start, and two patients became sugar free for one and two months respectively and

then relapsed. In all cases the average body weight was less during the administration of synthalin than with insulin. In one patient, treated so far only for one month 25 units of insulin daily have been gradually replaced by synthalin; the author reports one complete failure in a case where this preparation was given four days after recovery from coma. In three cases where 50-mg. doses were being given daily gastro-intestinal disturbance occurred on the fourth day, and the blood gave an indirectly positive van den Bergh reaction. The author found that such effects were more easily avoided by administering the drug for two days and then allowing two days' rest before the next dose. Liang had suggested that patients might acquire tolerance to the gastro-intestinal disturbances, and had suggested the analogy of the effects of nicotine. Rabinowitch considers synthalin effective in diabetes mellitus, but advises that until more is known about the dose and the optimum time for administration its use should be restricted to hospitals, where its effects can be properly observed.

## Radiology

### 325. Radium Treatment of Oesophageal Cancer

Dr. ABRIUS (*Journ. de l'Incol et de l'Electrol.* June 1927 p 332) describing his special technique for radium applications in oesophageal cancer says that there is a great disproportion between the size of the lesion which is often small and the enormous mass behind and around the oesophagus in the posterior mediastinum and that radium placed merely in the oesophagus is incapable of affecting such a mass. According to him there are four essential points in radium therapy: (1) treatment simultaneously of the lesion and the lymphatic territory; (2) the area involved must be approached from the periphery and not from the centre; (3) application to all points of the region to be treated of the equivalent of 2 mg. of the radium element; (4) maintenance of this dosage for a period corresponding to the intensity of the radioactive activity of the tumour. By his method the radium can be applied either posteriorly or anteriorly. In the former case the oesophagus is close to the posterior wall and the neoplastic mass, extending greatly beyond the vertebrae, can be easily treated by means of two lateral appliances placed vertically on each side of the spine. The electrode should extend for at least the breadth of a vertebra beyond the upper and lower limits of the lesion and contain 10 mg. of radium filtered through 2 mm. of platinum and placed 3 cm. apart and 3 cm. from the skin. The dose is the same in anterior applications and here the appliances should extend beyond the sternum and the lesion and should reach from above the manubrium sterni to the xiphoid cartilage and at least three fingerbreadths from the lateral borders. In this appliance the tubes of radium are placed in series of fives. Anteriorly the vertebral bodies and posteriorly the sternum ribs and cartilages, form screens impenetrable to the rays and to compensate for this loss of radiation it is necessary to insert intra-oesophageally tubes containing 10 mg. of radium which extend for the whole length of the lesion. These tubes need be retained for only five days, and should be applied in the middle of the total treatment, which lasts twenty-five days. A case treated successfully with posterior applications is described.

### 326. Treatment of Burns due to Heliotherapy

In the treatment of lupus vulgaris with Kromayer's lamp the length of exposure without filtration is according to J. M. WYDOOGHE (*Bruzelles Med.* July 17th 1927 p 1191) from five to twenty minutes, while this is sufficient to destroy superficial tumours this short irradiation is inadequate to affect deep lesions. The duration of exposure is limited by the action of the rays upon the skin, an irradiation (with compression and without filtration) of twenty to thirty minutes causing lesions comparable with burns of the second degree. At the site of application intense burning sensations are felt, the skin becomes inflamed and oedematous blisters form the central portion necroses with scar formation and whatever the subsequent application may be cure is tardy and tedious. The author mentions the usual agents used in the treatment of burns and points out that these are either antiseptic, analgesic, or keratoplastic and that a substance combining all three properties is rare. Among the new preparations this tried was scaevoline, a para amino benzoate of butyl. This is a liquid with a peculiar odour a density of 1.050 soluble in all proportions in olive oil acetone ethyl and methyl alcohols, ether chloroform, and acetic acid but only slightly in water and glycerin. It is analgesic markedly antiseptic, and keratoplastic and has been used by Wydooghe with great benefit in the burns caused by Kromayer's lamp. Owing to these properties the repair of the tissues is aided, and a rapid almost painless, scar is obtained. Moreover, by the use of scaevoline longer exposures, even of an hour, can

be made without ill effects thus permitting a more intensive treatment of the lupus. The drug is used in ointment form in a strength of 10 per cent.

### 3-7 Pyelo ureterography

V. J. O'CONNOR and A. REMBERT (*Radiology* August, 1927 p 129) discuss the value of pyelo ureterography as an aid in diagnosis, with a review of 356 cases in which 627 pyelo ureterograms were studied. Complete reduplication of the renal pelvis was found in 48 instances and considerable variation in the outlines of the normal pelvis was seen. This indicated the importance of being thoroughly familiar with the variations in order to interpret accurately the early distortions which may accompany renal neoplasms. A right hydronephrosis occurred in 45 instances, a left in 13 and bilateral in 9. In 110 cases of renal tumour showed typical displacement or contraction of the pelvis with narrowing and elongation of the calyces and the authors think that considerable experience in interpretation is necessary before the possibility of early tumour can be excluded in some cases. In renal and ureteral calculi the pyelo ureterogram was of great assistance in determining treatment and prognosis. Out of 36 cases of renal ptosis no angulation of the ureters and no dilatation of the pelvis or calyces were present in 19 while 15 showed definite ureteral kinking and angulation. In 111 instances a diagnosis of ureteral obstruction or stricture was made on the ureteral outline, and the authors are convinced that definite contraction with dilatation above the narrowing will be made evident by careful ureterography. In 12 cases it was possible to eliminate the kidney as the cause of a palpable mass in the flank or abdomen and such negative evidence was of assistance in the differentiation of abdominal or retroperitoneal masses. The procedure was never followed by anuria, sepsis or severe reaction. While recognizing the diagnostic value of pyelo ureterography as now performed under improved technique the authors emphasize the fact that it is only to be regarded as one of the valuable urological aids to accurate diagnosis and that it should not be used except in conjunction with all the other available investigations.

### 328. Diathermy of the Tonsil

G. A. DILLINGER (*Med. Journ. and Record* May 13th 1927 p 659) reports the results of using electro coagulation of the tonsils in a series of 150 cases necessitating nearly 1,600 separate treatments. He strongly recommends this procedure as a substitute for tonsillectomy. A machine giving 1,750,000 oscillations per second supplied 2-60 milliamperes. It was connected with a piece of black tin 6 in. by 10 in. placed on the skin of the patient's head. The soft palate tonsil inside of cheek and the base of the tongue were anaesthetized by the application of four or five drops of a 10 per cent solution of cocaine repeated five or six times with pledgets of cotton wool each used only once. The needle was then inserted from one eighth to one-quarter of an inch into the tonsil and the current switched on for from one to two seconds until a white ring appeared round the needle indicating that the point of coagulation had been reached. The procedure was repeated until the tonsil had been covered with punctures about a quarter of an inch apart. After painting with acrif violet the patient was able at once to carry on his usual occupation. Dillinger advises that only one tonsil should be treated at a sitting two or three applications to each tonsil being given at intervals of about eight days. He considers this preferable to attempting to remove both tonsils at one sitting. He concludes that by carrying out the proper technique and only treating one tonsil at a time at two or three sittings success is certain without any danger to other structures, or the risk of any of the objectionable features of tonsillectomy. He advocates a similar technique for the treatment by diathermy of chronic tonsillar ulcers, stricture of the larynx, tumours of the throat and tongue, and lupus of the face.

## Obstetrics and Gynaecology.

### 329. Puerperal and Abortion Sepsis.

E. R. WHITE (*Med. Journ. Australia* July 19th 1927 p 33) records observations upon 70 patients suffering from puerperal sepsis and 285 from infection following abortion. Bacteriological examinations of smears and cultures from the cervix and uterine cavity were made in 50 consecutive cases and streptococci were found in 45 per cent both within and without the uterus. In the acute blood infections and in most cases of severe local sepsis haemolytic streptococci were almost invariably present. In 25 mild sapraemic cases organisms usually *Streptococcus viridans* were found within the uterus and on the cervix in 35 per cent. Non haemolytic streptococci were commonly present both before and after



delivery in normal patients, in 28 per cent of the cases these caused local puerperal sepsis as a definitely endogenous infection. The author considers that severe sepsis is generally an exogenous infection, being caused mainly by haemolytic streptococci, which are seldom found before delivery. An endogenous infection by haemolytic streptococci may cause puerperal sepsis in association with gonorrhoea, erosion of the cervix, recent coitus, or a blood borne infection from an extrauterine focus. White believes that by abstaining from intervention and by the prevention of exhaustion and loss of blood much may be done to prevent infection, intrauterine procedures, except for haemorrhage, are contraindicated. General treatment aims at increasing the natural powers of resistance by vaccine or serum administration and blood transfusion. He advocates the intravenous injection of mercurochrome 220 in order to kill any organisms in the blood stream, thus converting a septicaemia into a condition of local sepsis with a more favourable outlook, he claims that this has proved to be of definite value in treatment.

### 330 Uterine Peristalsis and the Ovarian Cycle

DYOFF (*Zentralbl. f. Gynak.*, July 30th, 1927, p 1950, Meeting of German Society of Gynaecologists, No 7) has studied peristalsis in the uterus and Fallopian tubes by taking x-ray photographs after injecting an opaque oil without using pressure, thus ensuring normal physiological conditions in the organs. He finds that the degree of peristalsis in uterus and tubes depends on the ovarian cycle, it is increased toward the end of the interval and the movement of anything within the organ is accelerated. Peristalsis also influences the formation of the peculiar constriction which appears at the uterine end of the tube, and which the author considers as belonging to the uterus and not to the tube. During the first half of the intermenstrual interval the tone of the uterus and tubes is raised and their capacity lowered, there is no evidence of peristalsis, and emptying is much slower. Similar conditions were observed in movements of the tubes. Opportunity was taken of laparotomies to introduce the opaque oil into the abdominal ostium of the tube, and serial photographs were obtained of its progress. During the premenstrual period the oil took only four and a half days to reach the uterus. During the postmenstrual time the oil had not left the tube eight to fourteen days later, indicating that transmission of the ovum depends on the menstrual cycle, and that it is hastened only at the end of the second half. This activity of the tube is directed by the corpus luteum, but other conditions also influence it—in particular, reflex peristalsis during coitus. Dyoff concludes that there is no definite duration for the movements of the ovum, and that it depends on various physiological conditions.

### 331 Lacerations of the Cervix during Accouchement

E COUDERT (*Journ. de Med. et de Chir. Prat.*, July 10th, 1927, p 460) divides cervical lacerations into subvaginal, which are very frequent, benign, and seen in primiparae, and combined sub and supra vaginal, which may extend to the lower uterine segment, are rare and sometimes very serious, and are seen more especially in multiparae. These lacerations may be either spontaneous (maternal or foetal) or traumatic, the latter being much the more frequent. The cervix ruptures spontaneously when there is a disturbed equilibrium between the uterine contractions and the cervical dilatation, due either to excessive contractions or to an abnormal resistance of the cervix to the uterine efforts. A slow labour with a difficult presentation causes oedema of the cervix, which loses its elasticity, becomes less resistant, and facilitates the production of lacerations. Very important causes of cervical tears are cervico vaginal cretations following previous confinements. Traumatic lacerations often follow interventions (dilatations, forceps applications) for foetal extraction before the cervix is completely dilated. Cervical lacerations are linear, occur usually laterally, and generally on the left side only, if extensive the uterine artery may be ruptured, though generally only its cervico vaginal branches are affected, and neighbouring organs, such as the broad ligament, rectum, and bladder, are seldom involved. Diagnosis is said to be easy, a hard, retracted, low uterus, instead of a soft, large organ, together with persistent haemorrhage, indicate a laceration. Prognosis depends on the place and extent of the lesion. Benign lacerations of the lower part of the cervix heal rapidly, supravaginal ones, especially if accompanied by severe haemorrhage, are more serious, and death may supervene. Remote ill effects are cystitis and uterine displacements. Lacerations can be largely avoided by slow conduct of labour, care being taken that the cervix is fully dilated before there is any intervention. If haemorrhage occurs it may be controlled by manual compression, and, failing this, by either introducing tampons into the uterus and vagina or by suturing the bleeding point. If the haemorrhage persists and is severe laparotomy is necessary.

## Pathology.

### 332 The Fixation of Foreign Bodies by the Omentum

PERIOT, ROUSLACROIX, and M ARNAUD (*C. R. Soc. de Biologie*, July 22nd, 1927, p 577) injected Chinese ink or grains of carbon into the peritoneal cavity of guinea pigs, and followed the results by laparotomy at regular intervals. They found that the whole of the foreign matter was fixed by the great omentum, the peritoneal peritoneum, the peritoneum covering the intestines, and the mesenteries were absolutely free. The granules were rapidly taken into the interior of the omentum, where they were absorbed, not by the lymphatics or capillaries, but by the fixed cells. These cells were in fact transformed into masses of black. When very large injections were made, the material that could not be dealt with by the great omentum was taken up by the small omentum and by the serosa on the posterior surface of the stomach, whence it made its way to the pancreas and retroperitoneal glands. The granules remained in the great omentum indefinitely, and even after six months it was still tattooed black, the lesser omentum and the gastric serosa, on the other hand, become progressively decolorized. When ampoules or capillary glass tubes (ibid., p 579) were introduced into the peritoneum, the great omentum sent prolongations into them. Accompanying this there was a rapid proliferation of fixed cells and a formation of new capillaries. This hyperplastic process was so marked as to convert the tubes into veritable cultures of omental tissue.

### 333 The Effect of Heat on Antibodies

T S JONES (*Journ. Exper. Med.*, August 1st, 1927, p 291) finds that certain types of agglutinins respond differently to varying temperatures, and that it is also possible that heat so affects some of the serum proteins that they no longer react in the characteristic manner. Rabbits immunized to various substances were bled and the serums stored. These, containing agglutinins and haemolysins, were diluted with four parts of normal saline and heated at different temperatures. Flagellar and somatic agglutinins were readily separated by exposure to 75°C for twenty minutes, the somatic strain not resisting this heating, whereas after exposure to 80°C and even to 90°C the agglutinins of the flagellar type still persisted. That the agglutinins were no longer present in the inactivated serum was shown by the failure to reactivate on addition of fresh normal rabbit serum. Jones finds that antibody destruction continues gradually as the temperature is raised, heating to 65°C for twenty minutes affects the activity of all antibodies with the exception of red cell agglutinins, and with these, though the end titre was the same, some antibody was inactivated, since the reaction was weaker in higher dilutions, when the temperature is raised to 80°C red cell agglutinin is completely inactivated, but sufficient haemolysin still remains to give a slight reaction at the lowest dilutions, though all haemolysin is destroyed at 85°C. Somatic agglutinin and precipitin are both diminished when heated to 65°C, at 70°C the agglutinin is further diminished though not the precipitin, but at 75°C both are completely inactivated. The author adds that no comparison can be made between similar antibodies in the serum of different species, somatic agglutinins in rabbit serum resisted a temperature of 70°C for twenty minutes, though the same agglutinin in cow serum was destroyed at 65°C.

### 334 Etiology of Chronic Intestinal Auto Infection

In a series of eighty five cases of chronic intestinal infection P DESGEORGES (*Rev. de Med.*, 1927, No 2, p 163) has identified, by culture from the mucus collected with all precautions, *B. coli* sixty nine times, the enterococcus ten times, in five cases both *B. coli* and the enterococcus, and in one case in association of *B. coli* with *B. paratyphosus*. He finds that the organisms pass from the mucosa of the caecum, not by the portal vein, but by the lymphatics to the thoracic duct, and thence into the general circulation. He considers that if the organisms passed by the portal vein directly to the liver they would be eliminated with the bile before entering the circulation and would only rarely appear in the urinary passages, they reach the liver by way of the hepatic artery. He believes that the essential factor in the production of chronic auto infection is the low virulence and slow rate of multiplication of the organisms, which explains the rarity with which cultures can be obtained from the blood in these cases, those which are not destroyed in their temporary passage in the blood are soon eliminated by the liver and kidneys. In a sensitive subject the bacteria, if sufficiently numerous, give rise to symptoms caused partly by their toxins, but also by their bodies acting as a foreign albumin—protein of an anaphylactic nature. The various predisposing causes of auto intoxication are constipation, chronic appendicitis, intestinal worms, abuses of diet, and irregularities of liver and bile secretion. The author discusses the symptoms, sequelae, and treatment of the condition.



# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

### 335 B. coli Infection of the Digestive System

H. MATHIE (*Presse Méd.*, August 17th 1927, p. 617) describes a case of acute infection of the digestive tract simulating typhoid or paratyphoid fever but due to *B. coli*. He suggests that the increased fecundity of this disease may be due to an increased virulence of the *B. coli* bacillus or the triple (LAB) vaccination by diminishing the typho-paratyphoid factor may bring the infection into prominence. Mathie previously reported diseases of this condition in which patients of *B. coli* were obtained from the blood. He now records three further cases in one of which the blood was positive for this organism but was negative in the other two in which the bacillus was recovered from the urine collected under the strictest precautions to avoid contamination. These attacks are characterized by a complete acute picture similar to that in typhoid fever, a rapid pulse, headache, malaise and vomiting. Either diarrhoea or constipation may be present rose-colored spots may be seen and the spleen may be enlarged. The author states that *B. coli* is the cause of infectious rash, from typhoid to a more febrile acute disturbance, and that when blood cultures are negative the urine should be examined for the causative organism. He adds that cases should not be diagnosed as typhoid or paratyphoid fever without this precaution having been taken.

### 336 Haemoptysis in Tuberculosis

L. BAIRD (*Presse Méd.*, August 17th 1927, p. 1003) distinguishes four clinical types of tuberculous haemoptysis: (1) the sequel of an abortive lesion and an index of favourable prognosis; the haemoptysis is unaccompanied by cough, two presymptomatic cases of dry cough, fever or pain. This type was named by Brabantou mechanical haemoptysis. (2) The most common type is characterized by a sputum more or less haemorrhagic in character and associated with the inflammatory exudates of alveolitis. The condition resembles that in lobar pneumonia and is produced in a similar way: there is blood in the sputum but not a true haemoptysis. (3) A type following the rupture of ulcerated arteries: the active focus of the disease or in cavities. (4) Congestive or inflammatory haemoptysis: a rather more complex condition occurring like type (2) in tuberculous alveolitis, the blood comes directly from the capillary net work under the influence of inflammatory vaso-dilatation. The liquid vascular exudation exceeds the catarrhal pericardial proliferation just as the congestive element sometimes outweighs the hepatization in lobar pneumonia. In haemoptysis of the third and fourth classes absolute rest is prescribed in the horizontal position on the back without distinction of the point of origin of the haemorrhage. In the last type however the author advocates lateral decubitus on the side opposite to that in which the bleeding is occurring and quotes a striking instance of cure in a patient treated by him twenty years previously. Since then he has had many cases in which this simple method has proved efficacious. He adds that this treatment suits all congestive cases but especially those due to passive vaso-dilatation.

### 337 Diphtheria in the Federated Malay States

ACCORDING to W. FLETCHER (*Bull. Inst. Med. P. S. Fed. Malay States*, 1927, No. 2) diphtheria was a very rare disease in the Malay States before 1916 and though it is much more common now it does not occupy a prominent place in Government reports as one of the important and serious diseases of the country. Since there have been no severe outbreaks such as might have been expected to follow the introduction of a new disease into a susceptible community. The disease is spread by carriers of whom there are probably more than a thousand in Kuala Lumpur which has a population of 100,000. With one exception all the convalescent carriers have been either Malays or Eurasians such carriers are probably common among Asiatics but it is difficult to trace them after they have left hospital. Schell tests showed that the population was highly immune to diphtheria, the proportion of susceptible children in the schools of Kuala Lumpur being about the same as in the schools of New York. As in America and elsewhere the children of wealthier parents are more susceptible than the children of the poor. The incidence of diphtheria affords additional evidence of its endemicity and consequent im-

munity of the population. In an unprotected community all classes suffer but adult cases are rare in the Asiatic population of the Malay States. The immunity of the population is probably due to the large number of immigrants from China, India, Ceylon and other parts of the world who have been struggling to the country for years and must have brought the diphtheria bacilli with them. The immunity may also have been provided by diphtherial inflammation of other parts of the body than the fauces and nasopharynx. Examination made by Fletcher showed that there was no evidence that the local bacilli strains were less virulent than those isolated in other countries. The recent increase of diphtheria is attributed to the large number of female immigrants and the subsequent increase of the child population.

### 338 Diagnosis of Small pox

A. C. PUIS (*N. Engl. J. Med.*, July 16th 1927, p. 279) has recently employed the following skin reaction in allergic guinea pigs for the diagnosis of small pox as suggested by C. H. J. L. Inche was the first to discover that after vaccination there was allergy—that is an accelerated and weakened reaction notably to vaccine lymph but also to small pox. C. H. J. applied this method to guinea pigs and found that twenty-four hours after vaccination the animals showed a distinct allergic reaction on inoculation both with vaccine lymph and small pox material at various trichloroacetic subcutaneous injection of diluted vaccine lymph from three different sources to eight white mice. After twenty-four days they were inoculated cutaneously with vaccine lymph small pox material and fluid from varicella vesicle control inoculations with glycerine being used in each case. Five guinea pigs reacted to inoculation with vaccine and small pox material but showed no reaction to inoculation with varicella fluid or glycerine. The guinea pigs which showed no reaction were given another subcutaneous injection of vaccine lymph and tested nine days later with vaccine lymph and small pox material when they all showed an allergic reaction. A third test was made a week afterwards when in addition to a distinct allergic reaction caused by inoculation of the vaccine and cow pox material there was slight redness at the site of inoculation of the varicella crusts though there was a distinct difference from the well marked reaction caused by the vaccine lymph and small pox material. It is concluded that this method may be useful for diagnosis in countries where small pox is endemic but PUIS adds that a large series of tests will have to be performed before its value can be established.

## Surgery

### Tuberculosis and Appendicitis

339 PEREPA (*La Méd. Lib.*, August 13th 1927, p. 125) states that the following varieties of tuberculosis of the appendix may occur: (1) The localized form in which the lesions are situated at the base of the appendix or some other point and transform it into a closed cavity. (2) The entero-peritoneal type which is the most common variety and is not infrequently primary. (3) The pseudo-neoplastic form which occurs when the appendix is involved in tuberculous of the caecum. (4) Cold abscess: this is not exceptional, and presents the usual characters of such a lesion. It is very often affected secondarily by pyogenic organisms. (5) The hypertrophic form is due to considerable far-reaching thickening of the walls of the appendix. (6) The atrophic form is very frequent and results from extensive lesions in the neighborhood with or without inflammation and ulceration causing amputation of the appendix. (7) The cystic or hydro-appendicular form is rare since it involves the aspic retrocession of an abscess.

### Diverticulum of Bladder

340 D. M. DAVIS (*Journ. Amer. Med. Assoc.*, July 16th 1927, p. 192) describes an unusual case and method of operation of pre-umbinary diverticulostomy in diverticulum of the bladder in a man aged 75, with symptoms of distension and urinary obstruction due to an enlarged prostate. Catheterization failed owing to arrest in the prostatic urethra. An operation for drainage revealed a very distended organ with thin walls which was thought to be the bladder it contained three

large stones. Cystoscopy later through the suprapubic fistula showed a large diverticular orifice in the right lateral wall, and on passing the cystoscope through it more calculi were found in the second viscus, which proved to be the bladder itself, of which the first cavity was the diverticulum. At a second operation the diverticulum was drawn upward with a Young's prostatic tractor opened out within it, after dissection it was cut off flush with the bladder, the opening into which was enlarged for the removal of two more calculi and the prostate. About seven weeks later the patient was walking about, and he left hospital with perfect control. Davis considers that when the cystogram shows that the diverticulum approaches the mid line it is better to perform diverticulostomy than cystostomy whenever preliminary bladder drainage is indicated, and, further, that the case shows what surprising results can be accomplished in the most unfavourable risks by careful preliminary treatment to render the patient equal to the stages of the procedure contemplated.

### 341 Heart-block after Thyroidectomy

E SIMON (*Zentralbl f Chir*, August 13th, 1927, p 2060) enumerates the heart complications that are associated frequently with goitre, and the effects of surgical intervention on these. He states that although the danger of accidental division of the pneumogastric is small, since it lies normally behind the carotid sheath, this accident may occur in operations on malignant or other deeply seated tumours, but its consequences are usually not so serious as when the nerve is accidentally crushed with forceps or included in a ligature, when fatal syncope may occur. Other signs of vagus irritation are spasmodic cough, with dyspnoea, prolonged alterations in cardiac rhythm, and even fatal apnoea, it may cause bronchial spasm and oedema, while pulmonary congestion is a common sequel. Postoperative pneumonia is not always a result of vagus irritation, but it is due doubtless to the anaesthetic in most cases. When serious heart symptoms occur after the removal of a very large goitre, Simon attributes them to mechanical irritation of one or both vagus nerves during the operation. The patient exhibits characteristic disturbances of the respiratory rhythm which may be followed by bronchitis or pneumonia. Simon concludes that under normal conditions the vagus is not injured in the course of a thyroidectomy even when the anatomical relations are changed. A goitre may displace the vagus considerably, and also the recurrent laryngeal nerve, but the cervical sympathetic is usually unaffected since it lies in a separate fascial sheath. Recurrent laryngeal paralysis is very unusual in ordinary thyroid enlargements, though more common in malignant cases and in inflammatory swellings or haemorrhages in ordinary goitres. The thyroid endocrine secretions are held to be more probably responsible for the occurrence of cardiac disturbances than purely mechanical causes. If serious cardiac symptoms such as bradycardia, arrhythmia, fibrillation, or possibly heart block, occur after a severe and extensive operation, the possibility of vagal injury must be borne in mind, and atropine should be administered at once.

### 342 Subfascial Haemorrhage of Thigh

W R HURLEY (*Boston Med and Surg Journ*, August 18th, 1927, p 261) calls attention to the fact that with only slight external signs of injury traumatism of the thigh may result in a profuse haemorrhage from a torn vessel beneath the deep fascia. The blood may track along muscle and fascial planes and extend in some cases to the extraperitoneal pelvic tissue and the prevesical space. Four cases from the literature are cited, and details are given of a personal case of a boy, aged 8, who was knocked down by a truck. Beyond the discovery of multiple abrasions on the arms and legs and an extensive one on the right thigh the examination was negative, but a few hours later the thigh became swollen, and ten hours after the accident the boy became restless, with marked pallor and pain in the lower mid and right abdomen above Poupart's ligament. At the operation there was no evidence of injury to any viscus, but the peritoneum of the entire right side of the pelvis was raised from its attachment and the prevesical space was distended by blood. In the thigh blood was found spouting from a vessel in the torn semitendinosus with general oozing from injured muscle. The bleeding points were ligatured and the severed ends of the muscles brought together, and though severe shock lasted for several days recovery eventually followed. Hurley points out that in cases of thigh injury the condition of the patient, particularly as regards pulse and respiration, requires careful watching, exploration of the thigh should be undertaken if symptoms of internal haemorrhage supervene with increase in the size of the limb and the presence of tenderness and tension.

## Therapeutics.

### 343 Treatment of Nervous Indigestion

W C ALVAREZ (*Journ Amer Med Assoc*, August 6th, 1927, p 440) considers the treatment of the functional disorders of digestion by psychotherapy with instruction in mental and physical hygiene, physical therapy including exercise and massage, diet, and drugs. He states that a complete physical examination is often the best way to apply psychotherapy, it is essential that the diagnosis should be correct before a patient is treated for nervous indigestion and the assurance is given that there is nothing organically wrong. A thorough understanding must be obtained of everything in the history likely to cause a nervous basis before such measures as physical therapy, dieting, or drugs are considered. Insomnia must be remedied, and carbomel (homodimethylacetoluen) in 5 to 15 grain doses is recommended. The essential in dieting is to avoid salads and coarse foods containing fibre, skins, seeds, or gristle, sweets should be limited. A short course of careful feeding is of value, since its failure will indicate that there is something organically wrong. With the exception of calomel and peppermint, most drugs are considered of doubtful value in the treatment of nervous indigestion.

### 344 Plasmochin in Malaria

B G VAD and G B MOBILE (*Indian Med Gazette*, August, 1927, p 430) have performed a series of investigations on the treatment of malaria by plasmochin, an alkylamino methoxy quinoline salt obtained by synthetic methods. It is a tasteless, light yellow, finely granular powder, fairly easily dissolved by alcohol, and soluble in water to a concentration of 0.03 per cent at 20°C, and rapidly converted into the hydrochloride by the hydrochloric acid of the stomach. In malignant tertian infections striking results were obtained. It was found that the drug began to act within twenty-four hours, the malarial parasites immediately disappeared, and in five or six days the blood was free. The temperature also was generally reduced within one day. The authors believe that plasmochin completely sterilizes the blood of malarial infection and controls the temperature within twenty-four to forty-eight hours, and that the results are both immediate and lasting. Other advantages are that it is administered orally, has no unpleasant taste or odour, and no untoward sequelae occur. An occasional and temporary rise of temperature after twenty-four hours is due to the fact that the drug begins to act at once, and the destruction of plasmodia is so great that the dead parasites, acting as foreign proteins in the blood, bring on a rigor with a rise in temperature. Vad and Mobile believe that plasmochin will supplant quinine and be effective in the treatment and prevention of malaria.

### 345 Treatment of General Paralysis of the Insane

J TUNEL (*Journ de Med et de Chir*, August 10th, 1927, p 546) discusses the treatment of general paralysis and states that while good results have followed prolonged and progressive injections of arsenobenzol and mercuric cyanide, remarkable benefit may be obtained by adjuvant treatment with sodium nucleinate and tuberculin. Intradural injections of mercurial salts or of arsenobenzol have been disappointing, but greater success has attended the intradural injection of salvarsanized serum. Combined bismuth and arsenical treatment has also been very effective. Tunel regards the introduction of pentavalent arsenicals such as stovarsol and trioparsol, and of the malaria treatment, as the most valuable advance made, but trypanamide has proved disappointing. He recommends the daily intravenous administration of 0.5 to 1.5 gram doses of stovarsol, commencing with the smaller dose and rapidly increasing it for fifteen to twenty days until a total quantity of 20 or 22 grams has been given. After an interval of a month, the treatment is repeated, similar doses being given. Hypodermic or intramuscular injections are said to be less efficacious. It may be necessary to give several courses of injections. Usually tolerance is perfect, but there is a danger of arsenical neuritis, especially of optic neuritis, producing partial or total blindness very rapidly, statistics suggest that this occurs in 8 per cent of patients undergoing this treatment. With this procedure 33 per cent of patients showed considerable improvement, though the Wassermann reaction does not become negative in the cerebrospinal fluid—normal in other respects, the blood reaction frequently becomes negative. Tunel finds that arsenical, mercurial, and bismuth treatments do not give permanent results, and their administration must be repeated constantly, few patients can endure suspension of treatment for three or four months without recurrence of symptoms. He recommends that intensive arsenical treatment should be alternated with bismuth or mercurial treatment. A daily quantity of half to one gram of stovarsol or trioparsol may be given by the mouth.

an alternate days with good results, although it may be a chemical dermatitis or severe diarrhoea. In optic neuritis has never been recorded. In fact, it is the only treatment for elderly or debilitated patients, particularly those suffering from tuberculous meningitis or cerebral disease. He recommends a short course of specific treatment before or after the injection of miltoid blood.

### 3-6. Haemostatic Action of Sodium Citrate

I GOTT and I PHILLIPS (*Brit. J. Surg.*, Aug. 20, 1927, p. 137) have confirmed the observations of various authors that sodium citrate has a strong haemostatic action and may be safely employed in cases of haematemesis, melena, haemoptysis and metrorrhagia. They injected intravenously 3 to 6 grams of a 50 per cent solution. They find that immediately after the injection the number of the leucocytes in the peripheral blood is diminished, they are no longer provoked but are collected in the spleen and liver. Fifteen to twenty minutes later these elements in the peripheral blood are increased beyond the figure observed before the injection. The number in the internal organs is diminished. These observations were made on rabbits. In human subjects there was a similar initial fall and later rise in the number of the leucocytes due not to destruction but to altered distribution. It was also that immediately after the injection the coagulability of the blood was diminished but fifteen minutes later it was increased a phase which lasted for twenty-four hours. The bleeding time was unaltered but the bleeding had an arrhythmic character. They regard these results as symptoms of shock following an altered colloidal equilibrium produced by the sudden introduction of sodium citrate into the blood. The mechanism by which the sodium citrate causes haemostasis is believed to be very complex, but is facilitated at the periphery by vasoconstriction and in the splenic area by the recombination of thrombocytes and leucocytes, which in mass are able to accelerate haemostasis.

## Disease in Childhood

### 3-7. The Heart in Early Life

S C SMITH (*Med. Jour. and Hosp.*, July 6th, 1927, p. 23) thinks that the heart in childhood is more easily damaged, it is also more amenable to treatment than at any other period of life. The right auricle and ventricle are normally enlarged during the first few weeks after birth in order to meet the demands of the pulmonary circulation. Slight digestive disturbances in children cause occasional intermittency of the pulse and purratory (sings) arrhythmia is also very common. In the adult when playing actively this arrhythmia is part of the physiological picture of the so-called adolescent heart. It is peculiar when the cardiac development does not appear to keep pace with the general growth. Such physiological conditions must be distinguished from the abnormal heart signs of the acute infections of childhood. Acute rheumatism in the pre-fibric stage may cause slowing of the pulse rate by ten to twenty beats, this is due to delayed conduction, a low grade heart block. In the pre-clinical stage of acute rheumatism complete (transient) heart block may occur the pulse rate being reduced by one third or even one half for a few minutes. Diphtheria may produce sudden fatal heart block. This is certainly prevented by the early use of antitoxin. A scarlet fever seldom attacks the heart in the acute stage. Whooping cough causes temporary dilatation of the right auricle but the author has never seen any conclusive evidence that whooping cough produces permanent abnormalities. Focal infections especially tonsillar and dental are now recognized as potent factors in rheumatic heart lesions, although periapical dental infections are far more rare than tonsillar infections in childhood. Falcidiosis tonsillectomy may prevent serious cardiac lesions. The author concludes that in a child any heart which exhibits a murmur however apparently innocent, should be thoroughly examined periodically in order to detect other possible evidences of later heart involvement.

### 3-8. Purulent Pericarditis in Childhood.

E G WILLIAMSON (*Annals of Surgery*, May 1927, p. 659) thinks that purulent pericarditis is fairly common in children. In 365 cases of pericarditis at Harvard 6 were purulent, and the author has collected from the literature 117 cases of which he has seen 18. In children 50 per cent were cured and discharged from hospital. Williamson states that the infection may reach the pericardium by direct extension of infection or through the blood, in most cases it is secondary to infection elsewhere. The pneumococcus is the organism most frequently found. Purulent pericarditis is diagnosed by the history and recent infection. When the effusion

is moderate palpitation, dyspnoea and quickening of the rate of respiration do not occur. As the effusion increases, emphysema and rapid heart beat become pronounced. X-rays give it resistance in diagnosis, and the physical signs are those of pericarditis with effusion. Liquefactive may be used both for diagnosis and treatment. Two drainage punctures of the sac and one of infecting the pleura. The site of puncture should be in the fifth interspace. Treatment is by incision and drainage. It is said to be wisest to remove one or more costal cartilages. The advantage of a drainage tube is doubtful in most reported cases it was not used and drainage was obtained by suturing the edges of the incised pericardium to the skin opening. Drainage has been used in some cases with decided benefit. It is likely that in all the cases the myocardium is markedly diseased as shown by signs of cardiac failure, energetic medical treatment is also required.

### 3-9. Swollen Breast in the Newly Born

C L ABT (*La Presse Méd.*, May 1st 1927, p. 457) has examined the swollen breasts of 635 newborn children (10 premature births). In 63.64 per cent of the cases secretion was present in the first month, descending to 57.14 per cent in the second, 46.87 per cent in the third and 50.68 per cent in the fourth month. It was more common in the male than in the female, and usually started after the second day, never as late as the fifth month. Labris adds that beyond delaying the onset, prematurity does not affect the constitution of the colostrum. There was no relation between the swelling of the breast and the colostrum fluid and microscopically the colostrum of the child was similar to that of the mother.

### 3-10. Neo-natal Haemorrhage and the Maternal Diet

C L MOORE and J L BRODIE (*Amer. Jour. Dis. Child.*, July 1927, p. 53) report a case of severe post-partum haemorrhage in an 8 part who e previous deliveries had been normal. The mother's diet during pregnancy had been markedly deficient in vitamin B as also in vitamin C. The infant died on the fifth day with haematuria, jaundice and diarrhoea. The autopsy showed the pathological evidences of beriberi. The authors have repeatedly observed similar gross and microscopical changes in the litters of laboratory rats fed on a ration very limited in vitamin B though other wise adequate. They conclude therefore that the chief cause of haemorrhage in this infant was the deficiency in its mother's diet in respect of this vitamin. The treatment suggested in such cases is liberal puncture and the subcutaneous injection of blood 50 c.c. for each kilogram of body weight in a single dose.

## Obstetrics and Gynaecology.

### 3-11. Pituitary Extract in Labour

In their search for a more effective and safer method of administering pituitrin than by subcutaneous injection J HOFBAUER and J K HOERNER (*Amer. Jour. Obstet. and Gynecol.*, August 1927, p. 137) were influenced by the following considerations. Since the best results follow the repeated administration of small doses during a number of hours, they thought that the local application of the extract to some highly vascular mucous membrane might possibly permit its slow and steady absorption. Moreover, inasmuch as patients vary in their reaction to pituitary extract, the drug could be withdrawn from this membrane when desired and thus prevent further absorption. Oral administration was first tried but though this method was efficacious in stimulating uterine contractions in some cases, the results were not quite satisfactory. After a careful consideration of the discovery by Freund that definite changes occurred in the mucous membrane covering the tuberculum septi and inferior turbinate in two thirds of pregnant women of the pregnancy reaction in the interarytoid region of the larynx described by Hofbauer of Vienna's suggestion that some relationship existed between certain areas inside the nose and the female genital tract, of work in Vienna on the relief of labour pains and dysmenorrhoea by the local application of cocaine to the inferior turbinate and of the reports by Abel and others on the beneficial application of pituitary extract to the nose in diabetes insipidus, the authors decided to try the nasal route. After preliminary sensitization of the uterus by hypodermic castor oil and quinine pledgets of cotton soaked in pituitary extract (10 minims to each) were gently inserted between the septum and inferior turbinate and under the anterior edge of the latter. These were fitted closely against the absorbing surfaces and did not lie loosely in the nasal cavity. When the effects caused the pledgets were removed and fresh ones inserted. As the pledgets were always found

heavily coated with mucus, thus impeding the absorption of the drug and causing considerable irritation, a new plan was tried. A pledget soaked with 20 minims of the extract was inserted into one nostril only, and at the end of one or at most two hours was withdrawn and a fresh one applied to the opposite nostril for a similar time. While 26 cases, with 7 failures, were treated by the first method, only one failure resulted in 54 cases when the improved procedure was employed. All the children were born alive. The authors maintained that the nasal application of pituitary extract is efficient both for inducing and for accelerating labour, and that the possibility of withdrawing the drug as soon as the uterus passes into tetanic contraction renders this method the safest yet known.

### Cervical Caesarean Section

352 R. F. ALIX (Nederl. Tijdschr. v. Geneesk., July 23rd, 1927, p. 393) records his observations on 76 cases of cervical Caesarean section in which this operation was indicated for the following reasons: (1) Contracted pelvis, 40 cases, associated with uterine atony in one case, large size of the child, each in one case. (2) Placenta praevia, 17 cases, the position of the placenta was central in 11 and lateral in 6. (3) Eclampsia, 14 cases. In addition to these principal indications there were others—namely, transverse presentation due to the large size of the child's head and cervical myoma, a very large child which could not be born per vias naturales, absence of external os owing to a previous plastic operation, polycystic ovaries, and vesico vaginal fistula. Eight of the 76 mothers died, in 6 cases owing to eclampsia and in 2 cases from unknown causes. The mortality among 77 children was 6, 4 deaths being associated with eclampsia and 2 with placenta praevia. Finally craniotomy was performed in 10 cases. Pfannenstiel's method, the scar becomes invisible in course of time. No rupture of the peritoneum. Median incision or no danger of infection of the peritoneum. Severe haemorrhage in placenta praevia is almost excluded. Median incision of the cervix causes less haemorrhage than incision of any other part of the uterus. Owing to the very slight degree of injury to the uterine musculature a better scar results and usually disappears after a year, with the result that there is no danger of uterine rupture in a subsequent pregnancy. Since the operation can easily be carried out extraperitoneally the occurrence of adhesions is almost excluded.

### Treatment of Placenta Praevia

353 THE two main conclusions drawn by A. P. RAYOS and JULIO B. SAN (Gynecol. et Obstet., July, 1927, p. 15) with regard to the treatment of placenta praevia are that labour should not be hastened artificially, and that improvement both in maternal and foetal mortality will follow more general recourse to Caesarean section. They advise that patients with placenta praevia should be sent at once to hospital, and remark that since nine out of ten cases of haemorrhage during the last months of pregnancy are due to low placental insertion, it is advisable to abstain from vaginal examination before admission to hospital, and to make a clinical examination made to Hirschmann's figures based on 6,000 cases of 20 per cent mortality in then homes showed a mortality of 20 per cent from placenta praevia, 4.5 per cent from placenta praevia, 1.9 per cent from placenta praevia, and those treated in hospital had a mortality of 15 per cent from haemorrhage and 1.9 per cent from infection, and those treated in hospital had a mortality of 6 per cent (4 per cent from haemorrhage and 2 per cent from puerperal infection). Other treatments than Caesarean section are indicated in some cases of marginal or lateral insertion in early stages of pregnancy.

### Pathology.

#### The Blood in Typhoid Fever

354 J. H. HARRIS and M. MOREL (Ann. de Med., July, 1927, p. 189) controvert the classic view that typhoid fever is a disease characterized by leucopenia and mononucleosis. A series of exhaustive examinations was made of 36 patients suffering from various clinical varieties of this disease but without complications. The erythrocytes were practically never increased, and a more or less intense leucopenia existed, especially at the time of defervescence. No alteration in the size or form of these cells and no nucleated varieties were ever seen. The authors found that leucopenia was not the rule, being present in only 20 per cent of cases in the first ten days, 40 per cent in the second, and 23 per cent in the third, it was usual only in cases prolonged to the sixth and seventh decades. More frequently a normal or slightly increased leucocyte count was found, a leucocytosis at the beginning of the attack being a favourable prognostic sign. Other findings were a slight myelocytosis of 1 to 2 per cent, an initial diminution, followed by a progressive increase, in the lymphocytes, the small mononuclears being markedly increased—especially during the febrile period—the large mononuclears remaining normal. A polynucleosis, normal or increased at the commencement of the disease, which rapidly gave place to a sometimes extreme mononucleosis, and an initial disappearance of the eosinophils, which reappeared at defervescence. Chalmers and Morel found that a relation existed between the results of the blood culture and agglutination results with the positive formula and blood culture and agglutination results which characterize uncomplicated typhoid fever, on the disappearance of bacilli from the blood the agglutination reaction, which had now become positive, was accompanied by a mononucleosis, with a greater or less evolution in the agglutinating titre and no parallelism or proportion between the two.

### Pneumococcus Type I in Sputum and the Mouse Test

355 RUTH GILBERT and C. K. DAVENPORT (Journ. Lab. and Clin. Med., July, 1927, p. 944) report an unusual case of apparent failure of the mouse test for pneumococcus Type I. A specimen of pneumococcal sputum inoculated on Avery's medium gave good growth after seven hours' incubation, and when submitted to the precipitation test a faint reaction was detected at the end of half an hour in the tubes with Type I serum, no reaction being obtained in the tubes with Type II and III serums. Type I serum was administered to the patient, whose condition rapidly improved, and he made good recovery. A mouse which had been inoculated with same specimen of sputum died in forty-eight hours, but agglutination, precipitation, and cultural tests demonstrated the presence only of pneumococcus Type III. Examination of the blood agar plates made from the sputum and also from the Avery cultures showed colonies of pneumococci and of *Streptococcus viridans*, suspensions of the growth washed from these plates were agglutinated by Type I serum, both diluted and undiluted, and also by Type III pneumococcus serum. Another mouse was inoculated with another specimen of sputum, it died after forty-eight hours. Agglutination and precipitation tests made with the peritoneal fluid showed reaction only with Type III serum. Following the inoculation of Type III appeared on plates made from the heart blood and from the peritoneal fluid. Two mice, two were killed I c.c. of a twenty-four hours' broth culture of Type I pneumococcus from this case into two mice, one after two days, and within twenty-four hours, one after two days, that the Type I pneumococcus from this case was pathogenic for mice, but the virulence of the culture was low.

### Calcium and Phosphorus Metabolism in Experimental Rickets

356 T. SKAAR (Norsk Mag. f. Laegevidenskab, August, 1927, p. 66) produced rickets in puppies by administering a diet consisting of skimmed milk powder, 20 per cent, and oatmeal, 80 per cent. Two litters of puppies were used, in each of which one served as a control, for the studies on the calcium and phosphorus metabolism. At the beginning of the experiments the puppies in the first litter were seven weeks old and in the second litter eight weeks. The duration of the experiment was three to four weeks. It was found that the calcium and phosphorus content of the blood serum was lowered in the rickets animals. Calcium was decreased 45 per cent (down to 5.38 mg per 100 c.c. serum) and the phosphorus more than 50 per cent (down to 8.5 mg per 100 c.c. serum). Studies of the metabolism showed that there were two forms of the rickets process—namely, one in which the calcium metabolism was affected primarily and another where the phosphorus metabolism was the first to suffer. When cod liver oil was given to a rachitic animal the calcium and phosphorus content in the blood serum rose to the normal value, but when sodium phosphate was given, there was a rise in the amount of 0.1733 gram of phosphorus in the twenty-four hours, the morbid condition was greatly alleviated. The changes became more pronounced, and there was a rise in reduction of the calcium and phosphorus balance. One puppy was given 2 g. of calcium lactate in addition to the rickets diet. The animal died during the experimental period but until its death had not shown such pronounced clinical symptoms of rickets as the others or so much decrease in the calcium and phosphorus content of the serum.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

357 **Classification of Hypertension**  
 N. M. KATH (U. S. Heart Jour. Aug. 1927, p. 597) remarks that it is now recognized that hypertension is not a disease but a symptom of a renal disease. It may be present for many years without impairment of health. The appearance of the renal vessels furnishes a valuable aid to prognosis but in an individual case it is unwise to attempt to predict the length of life. Kath divides the cases into three groups—the mild or benign, the severe or malignant, and an intermediate or severe benign group. Such differentiation is said to be valuable in prognosis. Renal haemorrhage is a most important symptom of the malignant type. It may be present while renal function is adequate. In 14 cases of this type death occurred within from one to four months. This condition may exist even in childhood and may follow general arterio-sclerosis and benign hypertension. The author cites the case of a cashier, aged 45, who had suffered from hypertension for approximately four years. The malignant form had been present for six months but until the first three months of life he was in comparatively good health. Then came rapid cardiac renal and cerebral failure. The majority of cases of this severe type of hypertension occur between the ages of 30 and 40 or 60. Beyond 70 it is infrequent though general arterio-sclerosis is prevalent at that age. Papilloedema is a striking feature and is often out of proportion to the other renal changes. In 81 cases renal tests at the initial examination showed approximately normal values in 21, mild insufficiency in 40, moderate changes in 7, and severe insufficiency in 7 only. In 3 of the latter chronic passive congestion was added. The results suggest that renal changes are more significant and occur earlier than demonstrable renal insufficiency. Many of these patients do not die from failure of one vital organ but rather from simultaneous cerebral, cardiac, and renal failure. The gravity of this condition is shown by the fact that 90 per cent of these 81 patients died within fifty-one months. Only 5 lived two years or longer. The average length of life after the diagnosis was made was eight months. Kath concludes that while the etiology of hypertension is still obscure the facts suggest that its primary cause is interference with the vaso-motor system possibly as a result of the circulation of unknown toxins or attributable to some unknown sympathetic disturbance.

358 **Acute Yellow Atrophy of the Liver**  
 C. P. HOWARD (Canadian Med. Assoc. Jour. September 1927, p. 966) discusses the incidence and clinical diagnosis of acute yellow atrophy of the liver and reports seven cases—two in men and five in women. Two women were in the early stage of pregnancy and two other patients were syphilitic, one a man and one a woman but in the remaining three no cause was indicated for the hepatitis. The cases exemplified the frequency of a gastro-intestinal onset at times so severe as to suggest an acute abdomen. Howard states that the disease picture is first that of a severe catarrhal jaundice lasting from ten to twenty-one days and passes suddenly into a toxic stage with an increase in the gastro-intestinal symptoms or the development of severe nervous symptoms such as delirium, twitchings, and convulsions, or drowsiness and coma. The jaundice usually deepens and the liver rapidly decreases in size and falls away from the chest wall, so that the relative dullness suddenly seems to be diminished. The pulse rate becomes increased to 120 or 140 and there may be hypopycnic just before death. The series of cases did not support the belief that leucem and typhoid are invariably present in the urine as they were searched for on three occasions and only found twice. While the whole illness lasts from five to six weeks the toxic stage averages about a fortnight though in one very severe case it lasted only two days. All the patients died but Howard adds that the disease is not necessarily fatal. In the literature thirty cases of recovery having been reported in the literature. He advises that in prophylaxis chloroform anaesthesia should be avoided in pregnant women who are jaundiced should toxic symptoms arise after salvarsan. 0.6 gram of sodium thiosulphate in 20 c.c. of distilled water should be given intravenously on four successive days. When the condition has arisen treatment can only be symptomatic though the administration of plenty of water by the mouth and intravenous injection of 10 to 20 per cent glucose saline solution

supplemented by insulin have been recommended. The vomit may sometimes be controlled by bismuth, and if vomiting is present all this should be given, either by the mouth, intravenously or by the rectum. In subacute cases kaolin, intravenously, to aid the glycogenic content of the liver has been recommended by Univer, who also advocates in syphilitic treatment, including salvarsan, when indicated.

## 359 Agranulocytic Angina.

C. J. KASTLIN (Inner Jour. Med. Sci. June, 1927, p. 799), who records two cases with a review of forty three other cases in the literature, states that agranulocytic angina occurs at all ages and in both sexes but more commonly in females. It is manifested by sudden rise of temperature, sore throat, dysphagia, chills and malaise followed by severe toxemia and prostration. It usually occurs during good health or may follow various chronic conditions especially oral infection. The symptomatology is not constant. Stomatitis is always present. There may be regional adenopathy and enlargement of the liver and spleen. Jaundice is common, while petechial haemorrhages are rare. Neutrophil leucopenia with relative lymphocytosis is always present. The blood changes being the result of the primary action of an unknown etiological agent on the bone marrow. A slight ordinary anaemia is sometimes seen. Ulcerative processes involving the tonsils, gums, tongue, larynx and oesophagus are secondary to the blood changes due to decrease in the body's resistance to infection. A lack of the cellular response to inflammation is seen in the ulcers as well as the pneumonic process which usually is the cause of death. The disease however is not always fatal. On recovery the blood returns to normal and a second attack of the disease may occur. The diagnosis must be made from conditions produced by certain poisons—such as thorium, arsenic and benzol—which may produce leucopenia, leucocytosis and albinism, leucocytosis, and from cases of crisis with leucopenia.

## 360 Post diphtherial Chorea.

A. A. GARO (La Pediatría July 1st 1927, p. 725) records the case of a girl aged 4 who about three weeks after an attack of diphtheria developed right hemiplegia and aphasia with choreic movements in the right upper limb. The cerebrospinal fluid was normal and the Wassermann reaction negative. Under treatment with large doses of antitoxin the child improved in a little more than a month she regained power of speech with complete use of the right side and recovered from the chorea. Only four other cases of post diphtherial chorea have been reported—by Baginsky, Oulmont, Globus and Critchley respectively. In spite of the absence of a pathological examination Augarano has no doubt that the symptoms were due to action of the diphtheria toxin on the brain, involving particularly the basal ganglia and the upper centres of co-ordination and control in the cortex.

## Surgery.

### 361 Surgical Treatment of Trigeminal Neuralgia.

W. F. SUERMONT (Dtsch. Zeit. f. Chir., September 1927, p. 216) records the results of treatment in 57 cases of trigeminal neuralgia during the last twenty years at the surgical clinic. 27 of the patients were men and 30 women. The disease affected the right side in 42 cases and the left in 13 while in 2 it was bilateral. Five patients were between the ages of 20 and 30, 5 between 30 and 40, 11 between 40 and 50, 14 between 55 and 60, and 22 between 60 and 75. In 3 patients the symptoms were not sufficiently severe to require operation and another 2 showed the value of a regressive operation and another 2 showed the value of a regressive operation and another 2 showed the value of a regressive operation. Since thorough examination of the eyes and nasopharynx, since one was cured by having astigmatism treated by spectacles, and the other by removal of nasal polyp. Four patients were treated with x-rays and all had recurrences. 14 had peripheral injections of alcohol with recurrences in all but 2. 6 had injections in the Gasserian ganglion with 2 recoveries and 2 recurrences while in 2 the results were unknown. Extirpation of the nerve was performed in 18 cases with 13 recoveries—1 recovery and unknown results in 4. Section of the inferior maxillary nerve was performed in 3 cases with recurrences in each. Intracranial operations were performed in 35 cases section of the nerve root being employed in 5, and extirpation of the Gasserian ganglion in 31 with a mortality of 5.2 per cent. The results of root section were 2 recoveries among the 5 cases and



among the 29 surviving patients who underwent extirpation of the Gasserian ganglion 24 were permanently cured and in 5 no information was obtainable. Suermundt concludes that extirpation of the Gasserian ganglion offers much the best prospect of recovery in trigeminal neuralgia. In mild cases an operation should first be performed on the peripheral nerve. If another operation is required later, it says should first be tried, but, if this is unsuccessful, extirpation of the Gasserian ganglion should be performed, unless this operation is contraindicated by the patient's general condition, when injection of the ganglion with alcohol may produce a permanently good result.

### 362 Tumours of the Spermathecal Cord

Z. ROWITZ (*Arch Ital Urol*, August, 1927, p. 531), who reviews the literature and records three personal cases, adopts the following classification of tumours of the spermathecal cord: (1) Connective tissue tumours properly so called, such as lipoblastoma, fibroblastoma, and myxoblastoma. Of these the lipomata are by far the most frequent, being represented by 61 cases, 37 of which have been collected by Patel and Chaher. Next come fibromata (21 cases, of which 12 appear in the statistics of Patel and Chaher), while myxomata are the rarest, and it is doubtful if they appear in a pure form. (2) Sarcomata of various forms, 30 examples of this group are on record, 20 of which have been collected by Patel and Chaher. Fibrosarcoma are the commonest. There are only three cases on record of giant celled sarcoma and one each of cysto sarcoma and peripheral sarcoma. (3) Dermoid cysts (12 cases) and teratoma (2 cases). (4) Mixed sarcomatous tumours (15 cases). Myxomatous tissue is almost always present, sometimes associated with fibromatous (3 cases), lipomatous (2 cases), or chondromatous (1 case) tissue. (5) Spindle blastomata. This group is represented by 8 cases, including examples of leiomyoma, fibroleiomyoma, angioloma, and lymphangioma. (6) Epithelial tumours. Only three cases of this kind are on record—namely, a carcinoma of the remains of the Wolffian body (Tedenat and Vien) and an epithelioma of aberrant seminal vesicles (Pignatti). The present author states that tumours of the spermathecal cord constitute 90 per cent of all extra testicular scrotal tumours, and are much less frequent than testicular tumours, which form 5.8 per 1,000 of all malignant tumours in man, while, unlike the latter, a large percentage of these are benign growths. In Rowitz's first case, which occurred in a man aged 53, the tumour was mainly a lipoma with a few disseminated foci of myxomatous tissue. In the second case, which occurred in a man aged 52, the growth was a myxosarcoma, and the third case, in which there was no clinical history, was an example of fibrosarcoma.

### 363 Acute Osteomyelitis

A. E. NORDHOLT (*Vedn. Tidsskr. v. Geneskl.*, September 10th, 1927, p. 1093) states that 100 cases of acute osteomyelitis were seen in the surgical department of the Coolidge Hospital at Rotterdam during the period 1921-25. Out of 60 cases where the pus was examined *Staphylococcus aureus* was found in 51, *Staphylococcus albus* in 1, *Streptococcus* in 7, and Vincent's organisms in a case of osteomyelitis of the jaw. In 56 cases the portal of entry of infection was not discovered, in 14 it was a boil, in 6 an infected wound, in 4 acute infectious diseases—namely, scarlet fever in 2 cases and measles in 2 cases. In 2 cases of osteomyelitis of the lower jaw dental caries was responsible. In only one case were infected tonsils the portal of entry of infection. In 15 cases there was a previous history of trauma. The localization was as follows: tibia 34 cases, femur 25, humerus 8, lower jaw 6, ilium 4, radius 4, ulna, fibula, and calcaneum 3 each, frontal bone 2, metacarpal 2, no attack, upper jaw, clavicle, scapula, ischium, and pubis 1 each. In 9 cases the process was multiple, several bones being usually affected simultaneously. The ages of the patients ranged from 4 months to 31 years, 71 were males and 29 females. The mortality was 6.4 per cent.

### 364 Ligation of the Femoral Artery in Obliterative Endarteritis of the Leg

T. E. NEILL (*Annals of Surgery*, September, 1927, p. 425) advocates tying the femoral artery below the origin of the profunda femoris in the treatment of obliterative endarteritis, as originally suggested by Dean Lewis of the Johns Hopkins Hospital. Following the operation a good collateral circulation develops, and Neill reports a case in which no inconvenience followed this treatment, but the diseased leg improved in a remarkably short time. Healthy granulations developed in the affected area, the gangrene began to recede, and the foot appeared definitely healthier, when the patient died suddenly, apparently in consequence of pulmonary embolism.

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## Therapeutics.

### 365 Calcium Parathyroid Therapy in Epilepsy

REVIEWING the literature on the calcium parathyroid treatment of epilepsy and its effect on ammonia regulation, J. MADSEN (*Acta Med Scand*, August 31st, 1927, p. 536) quotes the hypothesis of Bisgaard and his co-workers that the disturbance of metabolism in epilepsy (dysregulation ammonia) is more or less connected with a functional disturbance of the parathyroid glands, there are, they state, many points of clinical and physico-chemical resemblance in parathyroidectomized individuals, tetanics, and epileptics. Their experiments showed that the injection of parathyroid extract changed the curve of a dysregulator to that of an orthoregulator, in some cases the curves did not vary more than the normal, while the extracts of other organs, such as the kidney, liver, and suprarenal gland, did not produce any effect. As the inconstancy of some of the results might have been due to an insufficient amount of active hormone in the parathyroid extract Collip devised a special method of preparation and of standardization, using as a unit one hundredth of the amount of extract necessary to raise the blood calcium of a normal dog weighing 20 kg, 5 mg per cent in fifteen hours. Former extracts were administered subcutaneously, but as oral administration of the new extract also influences calcium metabolism this method is now followed. Madsen conducted a series of experiments on epileptics, the patients being kept on ordinary hospital diet, and the first cases receiving no other medication. Later, luminal was given, as the condition of epileptics is aggravated by the discontinuance of all drugs, and the eventual effect of the parathyroid extract proved to be unaffected by this measure. In the regulation investigation fractional excretion of the urine was performed, dysregulation showing itself as soon in these as in twenty-four hour specimens. The pH was determined colorimetrically by Michaelis's method and the NH<sub>4</sub> N by a modified Van Slyke's technique, the aeration time was extended to three or four hours, since half or three quarters of an hour was found insufficient to expel all the ammonia. The total nitrogen was determined by Kjeldahl's method. Discussing his results in five cases Madsen asserts that Collip's parathyroid extract has a regulating effect on the ammonia metabolism of epileptics, the extract by itself has this effect sometimes, while in other cases the addition of calcium is required. Calcium alone is not capable of rescuing dysregulation. Improvement in the patient's clinical condition during treatment was so often noted that the benefits can hardly be attributed to incidental circumstances. In three of the five cases there was a marked reduction in the number of attacks as well as an improvement in the psychic condition. Madsen believes that the effects of the extract afford no evidence of the existence of parathyroid insufficiency in epilepsy.

### 366 Air Injections in the Treatment of Tuberculous Peritonitis

T. LUCHERINI (*Il Polmone*, Sez. Prat., September 5th, 1927, p. 1281) reports nineteen cases of tuberculous peritonitis of the exudative type treated successfully by means of the injection of atmospheric air into the peritoneal cavity. In one case pleurisy and pericarditis were also present, and air was injected into the pericardium as well as into the peritoneum with good results, unfortunately this patient died later from tuberculous meningitis. The author states that the injections should not be given during the acute stage, but only when the temperature is nearly normal and the abdominal pain is not severe. The amount of air injected should be about half the amount of fluid withdrawn, since the air takes up more room and expands. Ordinary air is said to give quite as good results as oxygen or any of the other gases which have been tried. Of the nineteen patients all were clinically cured except two, one of these died some months later from meningitis and the other from peritonitis. No ill effects were noted after the injections in any of the cases. Lucherini thinks that the air probably acts by stimulating the abdominal circulation, producing hypoxaemia in the Bier treatment, and possibly as a sclerogenic stimulus.

### 367 Ephedrine in Urticaria

BEATRICE M. KESTEN (*Arch. Derm. and Syph.*, August, 1927, p. 189) reports the results of using ephedrine in the treatment of six patients with chronic urticaria. Each patient received an initial dose of 50 mg of ephedrine sulphate by the mouth in capsules or in a 3 per cent solution, and the doses were repeated at intervals of two to six hours. The administration was continued until the symptoms were relieved or there was no improvement. In some cases, after failure to respond to the initial dose, the amount of the salt was increased to as much as 120 mg every two hours until benefit resulted. The

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further pain, thus obviating the necessity for a general anaesthetic. The author concludes that pudendal anaesthesia is indicated in numerous conditions unsuitable for a general anaesthetic, such as pulmonary tuberculosis and heart failure.

### 374 Utero-Parietal Fistula

ACCORDING to F. PATTI (*Riv d'Ostet e Ginecol Prat*, July, 1927, p. 289) utero-parietal fistulae are among the rarest abnormal sequels of Caesarean section. Usually they appear within a few days of operation, but they may not become established for some months or even years. Spontaneous closure is unusual, but has been reported as occurring during pregnancy, on the other hand, the fistula is rarely complicated by conditions threatening life, although focal thrombophlebitis and a case of rupture of the uterus at the lower end of the fistulous track have been reported. The production of the fistula is due to infection, and would seem to be specially favoured by inclusion of the mucosa in the uterine sutures. Diagnosis is not always easy, but may be facilitated by the patient's remarking during menstruation a blood stained discharge where the fistula opens on the surface of the abdomen. It is possible to bring about contact between probes introduced into the uterus through the cervix and into the fistula, the opening of which may need to be dilated by a laminaria tent. In treatment medical measures and external applications are often ineffective, and laparotomy is often required, followed as a rule by hysterectomy.

### 375 Diagnosis of Ovarian Tumours

P. BROCC (*La Gynecol*, July, 1927, p. 413) emphasizes the importance of diagnostic accuracy in dealing with ovarian tumours, which may be mistaken eitherwise for fibromata and treated wrongly by radiotherapy. He reports four cases of large cystic or solid ovarian neoplasms in which such a mistake was made. The first patient was a woman, aged 36, who had a tumour (without metrorrhagia) which was diagnosed as fibroma and irradiated on twenty-two occasions. Three years later symptoms of torsion or rupture of an ovarian cyst occurred, and recovery followed its removal, though the patient complained of artificial menopause, due to x-rays. Another woman, aged 47, was irradiated for six weeks for metrorrhagia. After temporary relief the pain and haemorrhage returned, accompanied by abdominal swelling. Laparotomy revealed a large right ovarian fibroma, adherent to the pouch of Douglas, and showing non-malignant degeneration. The third patient, aged 52, had fourteen ineffectual treatments for a nodular tumour extending almost to the umbilicus, this was subsequently shown to be a large right ovarian cyst. The fourth patient, aged 42, had had three months' electric treatment following a diagnosis of metritis, and then thirty-eight irradiations for "fibroma," but laparotomy eventually revealed an adherent left ovarian cyst. A second papillary mass was adherent in Douglas's pouch, and the right ovary was also cystic. Subtotal hysterectomy was followed by complete recovery. Brocc thinks that such diagnostic errors occur frequently, and he adds that careful clinical examination, combined with intrauterine injection of iodolol or the introduction of a leaden sound will assist accurate diagnosis. There is no evidence that irradiation produces malignant changes in a benign tumour, but in doubtful cases exploratory laparotomy is preferable to diagnostic irradiation, since the latter may involve serious delay. The artificial menopause produced by irradiation in young patients is also a serious matter.

## Pathology.

### 376 The Rapidity of the Flocculation Reaction as a Guide to Potency

G. RAMON (*C. R. Soc. de Biologie*, August 26th, 1927, p. 635) states that the more rapidly a diphtheria toxin or antitoxin flocculates with a standard antitoxic serum the higher is its antigenic power, but the rapidity with which an antitoxin flocculates with a given toxin is independent of its antitoxin content. For example, of three serums, each containing 250 units of antitoxin, one may flocculate in two hours, another in five hours, and the third not for eight hours. Ramon thinks that there may be some therapeutic advantage in using a serum which shows rapid flocculation in preference to one which contains the same number of antitoxin units and flocculates slowly. He supposes that the more rapidly the serum flocculates *in vitro*, the more rapidly will it combine with toxin *in vivo*. He therefore endeavoured to find out what is responsible for the production of rapidly flocculating serums. The nature of the toxin or antitoxin injected appears to bear no relation whatever to the flocculation rate of the resulting serum, on the other hand, the

horse used for injection appears to be of importance. Horses with an initial Schick negative reaction not only give rise, as a rule, to serums having a higher antitoxin content than horses with an initial Schick positive reaction, but the flocculation rate of their serums is higher. It would appear that, at the time when a horse acquires a natural immunity to the diphtheria bacillus and a tendency to become hyperimmunized experimentally, its tissue fluids develop likewise a special aptitude to combine rapidly with toxin. For the production, therefore, of serums with a high flocculation rate it is advisable to use horses with an initial Schick negative reaction.

### 377 The Effect on the Thyroid Function of Vitamin B Deficiency

G. PIGHINI (*Biochimica e Terapia Sperimentale*, July 31st, 1927, p. 249) has fed tadpoles on thyroid pulp obtained from pigeons in which beriberi had been induced by the exclusive diet of polished rice. The thyroid glands of five such pigeons were pounded up together and placed in an ice chest. At the same time thyroid glands were collected from normal pigeons and similarly treated. Undifferentiated tadpoles (*Rana esculenta*) of about 40 mm in length and weighing 0.75 to 0.80 gram were distributed in three vessels—six to each—and nourished in pond water and spleen pulp. In the first vessel (controls) the hind limbs were developed by the eleventh day, but none of the tadpoles showed any signs of fore limbs. To the second vessel some thyroid pulp from beriberi pigeons was added daily to the diet, and by the eleventh day all had developed hind limbs but none showed fore limbs. To the third vessel thyroid pulp from normal pigeons was added daily to the diet, by the eighth day all the tadpoles had well developed hind limbs, and by the eleventh day they all showed commencing development of the fore limbs with shortening of the tails. These results show that thyroid pulp from beriberi pigeons is quite without effect on the metamorphosis of tadpoles, whereas the thyroid pulp of normal pigeons provokes marked acceleration in the metamorphosis. Confirmation is thus afforded of the observations that the thyroid gland of pigeons suffering from vitamin B deficiency has more or less lost its labile morphogenetic functions.

### 378 Pathogenicity of *Trichocephalus dispar*

ACCORDING to M. FERNÁN NÚÑEZ (*Arch. Int. Med.*, July 15th, 1927, p. 46) the pathogenic possibilities of *Trichocephalus dispar* have been insufficiently studied, the pathological lesions caused are thought to be more severe and important than has been generally recognized. The parasite is geographically widely distributed, and by experiment it has been shown that subcutaneous injection of the eggs into puppies produces infestation of the intestinal tract and that ova appear in the faeces. The author considers the parasite a definite cause of appendicitis, and that cases of idiopathic peritonitis occurring in tropical countries may be due to it. The tendency of the parasite to perforate the intestinal results in peritonitis, septicæmia, and pychitis. Pupa hæmorrhagia can result from this infestation and also pernicious anaemia, uricæmia, and goitre. By using a modification of Teichman's test Fernán Núñez found that the pigmentation in the intestinal mucosa of these worms was due to ingested human blood. He states that in those infested with this parasite eosinophilia is more constant and of greater severity than in any other nematode infestation, and indicates that the degree of toxin formation is considerable. In the tropics *Trichocephalus dispar* is associated in 33 per cent of patients with hookworm disease, and therefore treatment must be twofold lest the conditions produced by one be mistaken for those of the other. The author thinks it possible that this coexistence with hookworm has caused the harmfulness of *Trichocephalus dispar* invasions to be underrated.

### 379 Soy Bean Seeds as Culture Medium

L. VITALE (*Rassegna int. di elm. e ter.*, August 31st, 1927, p. 474) has found that a decoction of soy bean seeds with out the addition of peptone serves excellently for the preparation of solid and liquid culture media, forming a clear though not perfectly transparent broth of a pale yellow colour. Various substances may be added, such as lactose, agar, or gelatin, for the preparation of differentiating media, or for the cultivation of organisms for which the usual media are unsuitable. Organisms which grow on ordinary media grow equally well on a medium of soy bean seeds, and retain their morphological, cultural, and biological properties for a long period. Vitale suggests that the introduction of the soy bean seeds into bacteriological laboratories would effect a considerable saving in expense, since the bean costs little and 830 grams of broth can be made from only 120 grams of the seeds, which can afterwards be used for feeding the laboratory animals.

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine.

250. Immunization against Scarlat Fever and Diphtheria

**Diphtheria**

11 L. F. D. J. 1937, p. 501. In a letter of 27th 1937, p. 501, advocates Laro's method of the only in certain towns with a percentage of sodium chloride. Such a soap can give local resistance but for all conditions contains no detergent and makes it possible to remove it from the throat and the skin with the same common white. The common sodium chloride used during the past twelve months (1937) was a 3 per cent solution of sodium chloride containing 100 mill on a level for a replacement and their towns and 61 L. F. D. J. in a town to each cubic centimetre. 1 cc of this solution is given sublingually or in the throat and repeated at weekly intervals for three days. In Minneapolis where 10,000 school children were so protected, statistics over a six month period show that the incidence of scarlet fever among the unvaccinated was 1 in 3,400, among the vaccinated was only 1 in 500. Of the 600 cases of diphtheria during the same period only 3 occurred among the vaccinated children.

351 D. E. McDermott (ibid., p. 560) reports the results of two series of scarlatinazations in Minnesota. In the first series of 54 Dick positive children were each given one dose of Larson's sodium ricinoleate scarlet fever vaccine which is equivalent to a 6000-unit test dose. Only in one case was there a local reaction which consisted of a scarlatiniform rash which lasted for about four hours. There was no local reaction in 29 cases and in the other patients it ranged from a small red spot to an area of redness larger than a silver dollar with or without some local induration. Subsequent Dick tests showed that 25 of these children were negative, 14 on 1 or 2 months and 23 were found still to retain their acquired immunity. In the second series 1931 persons aged from 1 month to 75 years—the average being 20 years—were each given three injections at intervals of one week of Larson's diphtheria and scarlet fever vaccine combined. All the reactions were negligible. The author adds that in the insular case concerned scarlet fever had been a very common disease and diphtheria in endemic or epidemic form almost constantly present for the past thirty years. He says, finally, that inoculations there had not been a single case of either disease for six months.

## Letar Pneumonia

L. L. ECHL, H. S. BALDVI and V. P. LARSEN (Arch Int Med September 15th 1927 p 253) record a clinical and bacteriological study of 2600 cases of lobar pneumonia the differentiation into the four types accepted by the Rockefeller Institute being based upon the capacity of the pneumococci to produce specific agglutinins, precipitins and protective bodies. An exact knowledge of the bacterial nature of the infection is considered to be indispensable in treatment and prognosis. A biological classification showed the following percentage of pathogenic organisms: pneumococcus 55.65, haemolytic streptococcus 3.8, Friedländer's bacillus 0.4, influenza bacillus 0.05 and *Staphylococcus aureus* 0.1. Young people appeared to be particularly prone to Type I infections, while elderly people were more liable to Type III. Considerable variation from year to year was noted in the incidence of the various types but the present series showed the incidence to be 33.6 per cent for Type I, 19.2 per cent for Type II, 13.4 per cent for Type III and 33.1 per cent for Type IV. In mixed infections the commonest variety was the association of the pneumococcus with the influenza bacillus, followed in order of frequency by a combination of the pneumococcus and a haemolytic streptococcus. No relation was found to exist between the type of pneumococcus and the lobe involved or the extent of the infection and no differences in the clinical course characterized the various types. 24 per cent of the pneumococcal cases showed the organism in the blood. Termination by crisis occurred most frequently in Type I infections, and Types II and III were the more severe forms. Age was found to be the most important single factor in determining fatality: pneumococcus Type I pneumonia having the lowest death rate presumably because it is the pneumonia of young people, while Type III pneumonia showed a high death rate chiefly because of its prevalence in old age. The relation of bacteremia to the death rate was striking, being 83.1 per cent where blood cultures were positive, and only 18.7 per cent in patients

who a blood remained sterile. Empyema was the most common complication occurring in 51 per cent of all cases. It is found to be much more serious when it developed during the active stage than when it occurred after the crisis, it is most frequent in typhoid infections.

## 283. A Recent Influenza Outbreak in Czechoslovakia

233. A Recent Influenza Outbreak in Czechoslovakia  
H. KRIKORIAN [Jr.] *et al.* *Leibniz* September, 1927,  
p. 1741 reports the clinical and pathological aspects of 70 recent cases of epidemic influenza and of the simultaneous epidemic hiccup. The blood picture in influenza corresponded almost completely with that found in the epidemic of 1918; there was leucopenia with relative lymphocytosis and disappearance of the eosinophilic cells. Influenza complications were similar to those of 1918. Remarkable features were the great susceptibility and the severe course of the influenza in cardiac patients; tuberculous patients were seldom affected, and in them the disease was mild. Animal experiments indicated the presence of a filterable infective virus in the nasal and nasopharyngeal mucus of influenza patients. Typical symptoms of the disease such as fever and loss of weight might have been produced by inoculation of the virus into the brain or peritoneal cavity of a guinea pig; the animals generally recovered. The inoculation was most effective when applied to the mucous membrane of the conjunctiva, nose, and nasopharynx; the resulting disease was of extreme malignancy—of eight guinea pigs six died. In two out of thirty six guinea pigs inoculated with influenza filtrate cerebral symptoms set in; these were shown in the first stage of the disease by somnolence and immobility; in the second stage by hyperaesthesia and rigidity and in the third stage by immobility, atony and transitory monoparesis. The agent appeared to be filterable; it passed through the Chamberland E3 filter and did not render the rabbit's cornea immune against herpes virus. During the epidemic outbreak soon after many cases of this distressing hiccup occurred mostly in young people. Experiments in transmitting this disease to rabbits and guinea pigs failed.

## 381 Streptococcal Septicaemia with Primary Joint Lesions.

P LÉVON and P LILJE (Bull et M m Soc M d Hop de Paris July 28th 1927 p 12-3) state that though the frequency and gravity of articular manifestations of streptococcal infection are well known the following case is of interest in view of the primary character and multiplicity of the joint lesions, which in the absence of blood cultures would have caused the case to be mistaken for acute articular rheumatism. The patient was a man aged 39 who was taken ill with high fever and inflammation of the right shoulder and right elbow. The left knee, ankle and elbow subsequently became affected. Blood cultures showed a haemolytic streptococcus. Death occurred after about a fortnight's illness. This unusual form of streptococcus infection recalls a case, reported by A CAW and P OURLY, of fatal streptococcus septicæmia in which the veins were primarily involved.

## Surgery

## 395      Results of Gastric Resection for Cancer

M. PEPERSON (*Annals of Surgery* September, 1927, p. 321) records the results of forty years' experience in the treatment of cancer of the stomach. The total number of cases was 1150 including 361 of resection, 450 of gastro-entrostomy and 339 cases of exploratory laparotomy. Of the 361 resection cases 101 or 28 per cent died in connexion with the operation while the mortality for gastro-entrostomy was 23 per cent. The mortality after resection increased from 20 to 38 per cent in 1921-25; this is attributed to more extended operations. Of 200 surviving patients, 161 (80 per cent) died within five years while 18 have survived for seven to twenty years after their operations. Scirrhus tumours have shown a greater tendency to relapse than other types of gastric cancer. Peperson thinks that the Billroth II and Polya operations have proved superior to the other types of operation. The employment of x-rays by improving diagnosis and technique has tended to increase the number of successful operations. Many patients have had their existence prolonged by a few years of good health after gastric resection but this form of treatment is still thought to be far from ideal.



### 385 Prevention of Pulmonary Complications in Gastric Surgery

X DELOPE and P JOUVE (*Rev de Chir*, No 5, 1927, p 355) draw attention to the frequency of pulmonary complications after operations on the stomach. The anaesthetic has for a long time been considered to be the chief offender, and it is true that it may tend to pave the way for pneumonia in those patients in a low state of health. But, in addition, it has been found that the same organism may be present in the stomach and the lung, and this suggested the employment of vaccine treatment, which has given excellent results. The vaccine contains pneumococci, staphylococci, enterococci, and *Bacillus tetragenus*. Injections are given on five days prior to operation. In 24 cases good results were obtained, 10 cases of gastric ulcer presented no pulmonary complications after operation, 3 out of 13 patients with gastric cancer died, but only one from chest complications, and this patient was in a very bad condition before operation. The remaining patient, who had pyloric intubation and spasm, recovered without any adverse incident due to the operation. The authors emphasize the importance of gastric lavage before and after operation, and consider the combined method well worth a trial.

### 387 Surgical Treatment of Constipation

M CHARBONNEL (*Journ de Med de Bordeaux*, September 10th, 1927, p 651), discussing surgical procedures for the relief of constipation, maintains that in young patients operating is inadvisable unless there is a strong likelihood of the presence of chronic appendicitis. In such a case the operation should be followed by medical treatment. If during the operation the appendix is found to be healthy it should, nevertheless, be removed, since small and invisible lesions imbedded therein may be the cause of the whole syndrome. Adhesions should be broken down, but, in general, if there is only an atonic dilated cecocolon no local operative measures should be attempted. The operation of Duval-Gregoire is said to be permissible in cases of ptosis and dilatation of the entire large intestine. In chronic cases, on the other hand, if there is more than thirty-six hours retardation, and if medical treatment has proved useless, it is better to perform a right colectomy without waiting for more severe trouble such as a perforating appendix. Charbonnel considers total colectomy a very grave operation, and only justifiable in a few cases of entire megacolon with total stasis. In cases of the functional type—that is, when the right iliac syndrome is only a part of the patient's troubles—he believes that no operation should be performed.

### 388 Cranial Changes in Neurofibromatosis

A WINKELBAUER (*Dent. et Chir*, September, 1927, p 230), who records an illustrative case with a review of the literature, states that in cases of von Recklinghausen's disease accompanied by facial lesions resembling elephantiasis definite bony changes are found in the cranium. The commonest changes comprise well marked asymmetry, thinning and narrowing of the bones, defective development, and deficiency of calcium salts. Less frequently hypotrophy and increased deposit of lime salts are found. It is not only the anterior parts of the facial skeleton which are affected, but the changes also extend to the base and the posterior parts of the skull. One manifestation of this is the dilatation or diminution of the sella turcica. The hypophysis itself is not the cause of these changes, and the attribution of the enlargement of the sella turcica to glandular hypertrophy does not appear to be justified.

## Therapeutics.

### 389 Synthalin in the Treatment of Diabetes

F RATHERY (*Paris Med*, September 24th, 1927, p 217) criticizes the indications and contraindications for the use of the synthetic product known as synthalin in diabetes enumerated by the German investigators Mosler and Foucresen, who stated that indications for its use were slight diabetes, in which the drug causes an increased assimilation of carbohydrates, in the diabetes of old subjects unable to become habituated to a restricted diet, in surgical or other complications which, in slightly glycosuric patients, cause an abrupt increase in the glycosuria and hinder cure, in simple diabetes becoming acidotic by hydrocarbon restriction and in severe diabetic cases in which glycosuric excretion exceeds the hydrocarbon ingestion—that is, fat diabetic patients with marked glycosuria. The drug was said to be contraindicated in severe juvenile diabetes with acidosis, in diabetes with cirrhosis and other hepatic lesions, in emaciated, asthenic diabetes with marked acidosis, and in diabetic coma. RATHERY thinks that the value of synthalin in diabetes has been greatly ex-

aggerated. Discussing its action in lowering hyperglycaemia, he states that this effect is neither marked nor constant, and Strass believes that it intensifies the hyperglycaemia. Many authors admit that the drug has a direct action on the liver, and from the dangerous symptoms produced experimentally in frogs and various animals RATHERY concludes that synthalin possesses a certain toxicity. It acts more slowly than insulin and is often badly tolerated, causing anorexia, vomiting, diarrhoea, sometimes oedema, icterus, and oliguria, and fats are badly assimilated. Anorexia is frequent, and the Germans claim that this is beneficial, since it diminishes polyphagia and facilitates restriction of the diet. In tuberculous diabetes this is rather a contraindication. The sensation of euphoria is not produced by synthalin as it is by insulin. In simple diabetes in whom the coefficient of assimilation is sufficiently raised to render them aglycosuric the use of synthalin, especially owing to its toxicity, is of no advantage. With patients suffering from tuberculosis and diabetes RATHERY has had favourable results from its administration, especially when combined with insulin, the benefit being greater than with insulin alone. He maintains that the use of synthalin is a matter for each individual case, and that it should be tried in subjects with insulin resistance, and in certain cases with the hope of diminishing the dose of insulin, that in the great majority of cases it can never replace insulin, and that it should never be given in diabetic coma. Another substance, glukhormon, obtained by von Noorden by fermentation of the pancreas, is similarly criticized by RATHERY as having no value in severe diabetes.

### 390 Potassium Permanganate in Small-pox

J H THEODORE (*Indian Med Gaz*, September, 1927, p 508) writes a preliminary note on the intravenous administration of potassium permanganate in small-pox. The external use of this drug for the prevention of pitting and scar formation is known, and Gordon has shown that a 1 in 100,000 solution destroys the vaccinia virus *in vitro*. Theodore set out to test the efficiency of the drug to destroy the viruses of vaccinia and variola *in vivo*, and to ascertain the value and the practicability of injecting a solution of potassium permanganate intravenously as a remedial measure in small-pox. The experiments showed that rabbits stood an injection, even repeated on three successive days, of 10 c.c. of a 1 in 500 solution of the drug without any ill effects. The author gave himself a similar dose and found that potassium permanganate did not affect either hepatic or renal efficiency. Further experiments indicated that the salt had a definite tendency to abort successful vaccination in rabbits. Finally, three patients with small-pox (the only ones available) were given single injections of a 1 in 500 solution. The results were eminently satisfactory, and the patients were discharged in sixteen, thirteen, and thirteen days respectively. Theodore states that potassium permanganate, administered to man in the strength and doses mentioned, exhibits no toxic properties, that the maximum dose tolerated is probably much higher than those tried, and that the results he obtained are sufficiently encouraging to warrant further trial.

### 391 Treatment of Rickets

J L GAMBLE (*Boston Med and Surg Journ*, September 8th, 1927, p 373) considers that the important practical result of recent studies of rickets is the rediscovery of the curative value of cod liver oil and sunlight. The administration of the former rapidly brings about an accurate restoration of the normal values for plasma calcium and phosphorus as does also sunlight, deficiency of sunlight and of a certain unidentified food substance which cod liver oil supplies are the chief causative factors in this disease. E T WIMAY (*ibid*, p 376) thinks that the need for anti-rachitic measures should be determined only after careful consideration of the adequacy of diet and the amount of sunshine received by the individual infant. He adds that severe rickets can be prevented with certainty in the majority of cases by giving cod liver oil, the mild form, only discoverable by x-ray examination of rapidly growing breast-fed infants, is probably physiological. In severe active rickets ultra violet irradiation in combination with cod liver oil assists matters, but artificially produced ultra violet rays are scarcely needed in prevention, since cod liver oil and sunshine are all that are necessary, the latter can be sufficiently obtained in winter by the use of quartz glass windows. J L MONSL (*ibid*, p 388) protests against the promiscuous use of ultra violet rays. He states that too prolonged irradiation of babies may inactivate the cholesterol in the skin and prevent it being reactivated by sunlight, by causing an excessive deposition of bone calcium it may also interfere with normal growth. He urges the need of a more thorough and scientific investigation before advocating the general use of ultra violet irradiation, since there is no justification for assuming that because it plays a valuable part in increasing the calcium content of the blood it will be of use in other directions also.



## 332. Calcium Chloride Injections in Pulmonary Tuberculosis

W. BROCKHANS (*Quart. Jour. Med.* July 1927 p 151) has given intravenous injections of calcium chloride to six patients suffering from pulmonary tuberculosis with such encouraging results as to satisfy him that this line of treatment is worth further investigation. The examination of seventy cases of pulmonary tuberculosis is shown that the serum calcium value was decreased when the disease was acute and increased when the patient recovered the difference amounting to as much as 20 per cent. It was not diminished by haemoptysis but individual cases varied so widely that it is not considered that estimation of the serum calcium is a trustworthy guide to the activity of the disease. Brockhans gave intravenous injections of 14 grams of calcium chloride three times a week and he adds that though the effect on the symptoms was good, in no case did tubercle bacilli rapidly disappear from the sputum. The most striking features were the gradual fall of temperature to the normal in patients who had failed to respond to absolute rest, there was progressive gain in weight and improvement in colour. In one case relapse followed discontinuance of the treatment and the injections had to be started again. It was found that when calcium was given by the mouth it failed to alter the serum calcium materially though intravenous injections raised it above the normal for forty-eight hours.

## Anaesthetics

## 333. Dichloroene Ether Narcosis

P. ALBRECHT (*Chir. Zeits. f. Chir.* August 1927 p 505) states that since 1923 he has used a mixture of ether and dichloroene which he has found preferable to a mixture of chloroform and ether. The advantages of dichloroene are that it possesses great resistance to light, is not uremic and alkaline and does not burn. Comparatively small amounts are necessary for deep narcosis. It does no injury to the circulatory, respiratory or central nervous systems or the parenchymatous organs. The blood pressure remains unchanged. Muscular twitching, which may produce can be avoided by preliminary administration of morphine. The use of the liver function by the galactose test before and after narcosis shows that the function is not disturbed at all. With half the patients there is no stage of excitement and in some of the others it is of short duration and ill marked. Vomiting is unusual. Spasms of the glottis occurs in about 5 per cent. Muscular relaxation follows after about ten minutes. The quantity of dichloroene ether mixture used for anaesthesia is not more than an hour's duration amounts to 97 c.c.m. ether and 35 c.c.m. dichloroene. The addition of dichloroene effects a considerable saving in the quantity of ether used. Of the total number of cases in which the mixture was used the results were good in 94 per cent. In 5 per cent there was some difficulty, but not enough to interrupt the operation, and in 1 per cent there were more serious symptoms such as cessation of respiration and asphyxia but no death. The post-anaesthetic effects were much less unpleasant than after chloroform ether narcosis. In two-thirds of the cases there was no vomiting. The addition of dichloroene also caused a great decrease in the number of lung complications.

## 334. After effects of Novocain Adrenaline Lumbar Anaesthesia.

MARGOT FRANK (*Deut. Zeit. f. Chir.* May 1927 p 263) describes two cases in which paralysis of the lower limbs and incontinence of urine and faeces followed a few days after the removal of varicose veins under lumbar anaesthesia with novocain adrenaline solution. The first case which ended fatally on the sixth day after operation was an apparently healthy man aged 26. The necropsy showed general hypertrophy of the lymphatic tissue and swelling of the lumbar portion of the spinal cord with a small area of softening, numerous small haemorrhages into the pia mater and cord particularly the posterior horns and conus medullaris were visible. The second patient a woman was still incontinent a year later and could only walk a short distance unsupported. She was found to be hypersensitive to an intravenous injection of 1 in 20,000 adrenaline as compared with controls and it was also found that some decomposition had occurred in the adrenaline employed during the operation. The author adds that since Heimke and Löwen's experiments showed that spinal anaesthesia was effected by direct contact and diffusion of the drug into the spinal cord and not by the blood vessels the addition of adrenaline can have little value in lumbar anaesthesia. For this reason and because of the possibility of hypersensitivity and the instability and deleterious effects of decomposition products of adrenaline Frank considers that the use of adrenaline for this purpose is useless and unjustifiable.

## 335. Nitrous Oxide Oxygen Anaesthesia

J. A. HINDENK (*Trachstia and Analgesia* June, 1927, p 116) recommends the following process for producing expeditiously an effective anaesthesia comfortable to the patient. It allows time for the sufficient distribution of the anaesthetic whereby the anaesthesia can be readily arrested and maintained on an even plane—i.e., oxygen added at the right time and in proper amount—the symptoms appearing slowly and separately and easy of interpretation. Administration is commenced with nitrous oxide 93 per cent and oxygen 7 per cent in volume to supply breathing—approximately 3 gallons a minute—given through both nose and propped open mouth for one minute. Oxygen is then discontinued until the desired symptoms of anaesthesia appear—in about forty seconds in the majority of cases. Oxygen (7 per cent) is then again introduced and has the effect of arresting the anaesthesia on the established plane and usually maintaining it there throughout the average dental operation. The administration of oxygen from the beginning and during the first minute eliminates the sensation of suffocation, excitement is reduced to a minimum, and the symptoms, which develop slowly, are mild in comparison with those produced by a pure nitrous oxide induction.

## Obstetrics and Gynaecology.

336. Liver Extract in the Toxaemias of Pregnancy  
H. A. MILLER and D. B. MARTINEZ (*Amer. Journ. Obstet. and Gynecol.* August 1927 p 165) report a series of 50 cases of pregnancy toxemia 7 being eclamptic and 43 pre-eclamptic treated with liver extract prepared according to R. H. Major's method. This is practically free from histamine and produces no uterine contractions in virgin guinea pigs. Stouffer has found that liver extract alone does not cause uterine contractions. Major and others have shown that it has a depressor action and from their results the authors deduce that it can act as a detoxicant in the toxemia of pregnancy. The dose varied with the case. In active eclampsia the extract was given intravenously in 20 c.c.m. doses every fifteen to thirty minutes depending on the resulting fall in blood pressure and the state of coma. In mild or moderately severe cases intramuscular injections were used. Hot packs and hydragogue cathartics were not employed the extract being the only drug used in the treatment. No ill effects were noted and only one death occurred the patient being moribund when first seen. In the other cases the symptoms rapidly abated. Headaches, dizziness, spots before the eyes, epigastric pain, nervousness and coma disappeared in a few hours. The oedema of the extremities and face also vanished in a few days and did not return so long as adequate doses were given. The urinary output increased and there was a decrease and sometimes disappearance of the albumin. The authors found that patients with known or suspected pre-conceptional nephritis were only symptomatically improved but all other cases derived marked benefit. Convulsions did not occur in any treated pre-eclamptic cases. They add that eclamptic patients must be kept under constant supervision and the drug given in doses sufficient to neutralize the toxin present in the individual.

## 337. Pregnancy Anaemia.

S. A. MCSWINEY (*Indian Med. Gaz.* September 1927 p 487) records a study of 43 cases of anaemia of pregnancy for which no obvious cause such as malaria or haemorrhage, could be found. The disease seemingly is much more common in India than in England and Hindustan provided most of the cases. The maternal mortality was 34.83 per cent and the foetal 58.1. The anaemia was much more frequent in early pregnancies and there were five times as many patients under the age of 30 as over. As the incidence of twins was more than five times the usual multiple pregnancy must be considered as a possible predisposing cause. The spleen was palpable in 7 patients and the liver in 5. In extreme cases the anaemia was profound and abnormal erythrocytes were seen in the graver cases while the total leucocyte count showed no striking variations. Albumin was present in 21 cases and markedly so in 5. Oedema of the feet and puffiness of the face were common while a general puffiness of the whole body occurred in 14 cases. The patients were markedly prone to miscarriage and premenstrual labour. The labours were noticeably bloodless, and post partum haemorrhage was observed in only one case. The author suggests the following etiological theories: (1) The mother's regenerative power to counterbalance the normal destruction of the red cells is inadequate. (2) The destructive action of the chorion villi on the maternal erythrocytes is excessive and comparable with the destructive action of the syncytium in chorion carcinoma. (3) Concealed syphilis must be considered, the Wassermann reaction being positive in 40 per cent.

cent of the patients tested. McSwiny advocates the use of iron and arsenic, plenty of nourishing food, fresh air, and sunshine, and whole blood injections. Whole blood transfusion is deprecated as being very dangerous, and weekly intramuscular injections of 15 to 20 c.c. instead are recommended. Specific treatment should be given when the Wassermann reaction is positive. As delivery favours recovery, pregnancy should be terminated, advisedly by slow and gentle methods of induction. The patient should also be warned against another pregnancy.

398 MARGARET I. BALFOUR (*Indian Med. Gaz.*, p. 491), who has investigated the histories of 426 cases in various parts of India, states that over 50 per cent gave a history of sudden onset, usually between the fifth and seventh months, and in 6 cases a history of similar symptoms in a previous pregnancy. Pylexia was present in 83.3 per cent of the patients, and diarrhoea, vomiting, and sore tongue occurred in 30 to 40 per cent, the diarrhoeic cases being the most fatal. Weakness, always reported, was not so marked as would be expected. The pulse was invariably rapid. Some times the anaemia persisted after delivery, but the patients usually recovered in six months. The majority of the cases occurred during the second half of the year, owing possibly to the greater prevalence of diarrhoea during that season. The author adds that the pregnancy *per se*, puerperal sepsis, and the common causes of anaemia do not seem to be causative factors. An infective origin is being investigated, and, since all classes of society are affected, a nutritional origin is considered, on the supposition that some necessary element may be lacking from the diet. The theory that the disease is a toxæmia due to the products of conception is discussed, and points of resemblance to eclampsia noted. The indication that women leading sedentary lives while enjoying a good dietary are more liable to suffer from this condition than others supports the toxæmic theory.

### 399 Repeated Cervical Pregnancy

N. MASIERI (*Riv. d'Obstet. e Ginecol. Prat.*, September, 1927, p. 361) records the case of a woman, aged 21, in whom pregnancy occurred in the cervix uteri on two occasions, respectively four and seven months after marriage, a pre-existing purulent cervico-vaginitis had been present. On the first occasion, after fifty days' amenorrhoea, a threatened abortion, complicated by considerable haemorrhage and foul smelling discharge, was diagnosed, pain, however, was almost absent. At the operation removal of the infected ovum from the cervix was attended with considerable difficulty and abundant haemorrhage, the supracervical cavity of the corpus uteri was empty. The second cervical pregnancy became interrupted spontaneously after thirty-five days' amenorrhoea, the removal of the ovum was accompanied by alarming haemorrhage, and the very vascular decidua was 7 to 8 mm. thick. Masieri refers to twenty-four cases of cervical pregnancy, in six of which death occurred from haemorrhage, he is inclined to think that in cases of well developed cervical pregnancy with grave haemorrhage rapid laparotomy and hysterectomy offer the best prospect of saving the patient's life.

## Pathology.

### 400 Variability of the Absorptive Power of the Skin

F. SCHULTZ RHONHOFF (*Zentralbl. f. Gynäk.*, October 1st, 1927, p. 2522) has investigated the absorption power of the skin as regards iodine during menstruation, pregnancy, the puerperium, and the non-pregnant state. Fifteen grains of 25 per cent iodine ointment was spread, without rubbing, on the flexure aspect of the forearm over an area 4 by 2 inches, ten minutes later and thereafter at five minute intervals the saliva was tested for iodine and the time of its first appearance noted. The room temperature was kept uniform, the forearm was neither washed nor disinfected, and was immobilized during the experiment. The results showed wide individual differences in the time of absorption. The average rate was slowest in the puerperium (66.6 minutes), next in pregnancy (54.8 minutes), and shortest in the non-pregnant (48.8 minutes). To eliminate individual differences the author examined the same women first in pregnancy, then in the puerperium, and found an increased delay of fifteen to twenty minutes in the latter. Stillinger's results were obtained by examinations during menstruation the increased time being then from fifteen to twenty minutes. There is less difference between pregnant and non-pregnant women than between the pregnant and puerperal, or the menstruating and the non-menstruating. To determine whether the delay was due to an alteration of the skin functions or of those of the salivary glands the urine was tested for iodine, and similar

results were obtained, thus eliminating the action of the salivary glands. Other observers have reported an increase in the iodine content of the blood during menstruation, towards the end of pregnancy, and during the puerperium, this suggests that the action of the skin is part of a general activity throughout the body. To test this phenomenon the action of the skin was cut out by giving the iodine by the rectum, and, contrary to the previous experiments, no delay was found during menstruation, showing that the skin was responsible for the altered reaction during the period. It was suggested that this delay was due to the increased sebaceous secretion during menstruation and puerperium, the skin was therefore thoroughly cleansed of fat and it was found that while the absorption time was shortened the accustomed delay during menstruation took place, showing that the cause of the delay in absorption lay in the skin itself, and was influenced in some way by the genital organs.

### 401

#### The Etiology of Typhus

P. HAUDUROY (*Arch. de l'Inst. Pasteur de Tunis*, September, 1927, p. 261) recalls the two radically different views of the etiology of typhus. According to some this disease is due to infection with *Rickettsia prowazekii*—a small organism which has been found in infected lice and in the tissues of patients and guinea pigs infected with typhus. The other view, which rests largely on the evidence afforded by the Weil-Felix reaction, is that the infecting organism is a particular variety of *B. proteus*, generally known as X 19, the blood of infected patients agglutinates this organism and, moreover, guinea pigs rendered immune to typhus are able to withstand several lethal doses of *B. proteus*. Recently Mlle Fejgin has endeavoured to reconcile these two views, she puts forward the hypothesis, based on some experimental evidence, that the *Rickettsia* bodies are in reality filterable forms of *B. proteus* generated under the influence of the bacteriophage. Hauduroy has performed some experiments to test the truth of this hypothesis. Starting with an anti-*proteus* X 19 bacteriophage, he found that its action was almost specific to the X 19 strain, there was little, if any, lysis of the *B. proteus* vulgaris strains. If a *proteus* lysate was filtered through a Chamberland L 3 crucible and the filtrate was incubated, it remained clear for about twenty days, then a faint opalescence appeared and increased until eventually a normal culture of *B. proteus* was obtained. Microscopically Gram-negative granules were at first visible, these were replaced, as the turbidity of the fluid increased, by typical *proteus* bacilli. The injection of an anti-*proteus* X 19 bacteriophage was without effect. Eight guinea pigs were injected intra-peritoneally with 5 c.c. of the bacteriophage, they remained perfectly well. Forty-six days later they were injected with the typhus virus, all of them developed typical experimental typhus. The examination of the stools, whole blood, and serum of a number of typhus patients failed to reveal the presence of an anti-*proteus* bacteriophage. The author maintains that, although these results do not support Fejgin's hypothesis, they do not disprove it.

### 402

#### Haematology of the Puerperium

The results of blood examinations on a number of lactating women performed by L. KRAUL (*Wien. klin. Woch.*, August 18th, 1927, p. 1045) during the normal puerperium confirm those of previous workers and show that a leucocytosis of 10,000 is the rule. He also finds that the blood picture is altered during and immediately after suckling, the main features of the change being an increase in the total number of white cells, while there is a relative diminution in polymorphonuclear cells and an increase in the lymphocytes. Kraul ascribes this partly to redistribution of blood consequent on the intermittent hyperaemia of the mammae during the phases of lactation and partly to expulsion of accumulated white cells from the uterus induced by the contractions known to be associated with lactation. The haemoglobin content and colour index of the red cells were found to be unaltered, but the velocity of sedimentation was increased. Intracutaneous and subcutaneous injections of saline solution showed that absorption in the skin was accelerated during suckling. The sensitiveness of vascular nerves to injections of adrenaline as gauged by alterations in blood pressure was, however, diminished. Glycosuria, estimated by fermentation tests, was more readily induced by adrenaline injections after ingestion of glucose in puerperal women in whom lactation had not occurred (on account of stillbirth or for other reasons) than in those who were suckling. He also found that instead of its usual pulse acceleration atropine frequently produced a slowing in the pulse rate of puerperal women, particularly while lactation was in progress. For these reasons, and others, the author concludes that a vagotonic condition of the vegetative nervous system exists during the puerperium in general but particularly during suckling.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine

### 403. Tobacco Smoking and Gastric Disease.

C. W. BARNETT (*Boston Med. and Surg. Jour.*, September 2nd, 1927, p. 457) gives a brief review of evidence obtained during recent years chiefly in Germany, suggesting that tobacco smoking plays a part in the production of peptic ulcer, gastric neurosis and even carcinoma of the stomach. It is generally acknowledged that smoking increases gastric secretion but it is doubtful whether hypersecretion leads to hyperacidity. The author has examined the records of all peptic ulcer histories from 1913 to 1926 at the Peter Bent Brigham Hospital. In about 100 female cases, no history of tobacco was noted and the work was then confined to male cases. As controls 500 general male patients aged 20 to 60 years, were taken. It was found impossible to group the cases according to the amount of tobacco consumed. The statistical methods of bulk were used and the standard errors of the variations were calculated for comparison of the various groups. Tables are given for the control's duodenal ulcers, gastric ulcers and gastric neurosis, and from an examination of them Barnett concludes that there is no proof that smoking is of any importance in the etiology of peptic ulcer or gastric neurosis or has any effect upon the age incidence of gastric or duodenal ulcer.

### 404. Paratyphoid A Meningitis.

G. PANSINI (*Studia*, September 10th 1927, p. 356), who records an illustrative case, states that Caronni and Auricchio isolated the specific organisms from the cerebro-spinal fluid in 14 out of 15 cases of typhoid fever although there was no clinical evidence of meningeal involvement. They are therefore inclined to recommend that a bacteriological examination of the cerebro-spinal fluid should be made in every suspected case of typhoid fever. Their observations however have not been confirmed by other writers. The general opinion, with which Pansini agrees, is that the cerebro-spinal fluid in typhoid fever is usually sterile. The presence of the bacillus in the cerebro-spinal fluid must be regarded as a sign of involvement of the meninges in the typhoid infection. As a rule the bacillus is found at the height of the disease either alone or in association with various cocci or the tubercle bacillus. In Pansini's case which occurred in a girl, aged 4 admitted to hospital with signs of meningitis, lumbar puncture two days before death gave issue to a clear fluid under considerable tension. Cytological examination showed a prevalence of lymphocytes with a few polymorphonuclear cells. The fluid agglutinated *B. paratyphus A* in a 1 in 50 dilution and this organism was recovered from the fluid. The serum agglutination test was positive in 1 in 200. Death occurred after eighteen days illness there was no autopsy.

### 405. Cerebral Venous Haemorrhage in Children.

Z. I. SLOIM (*These de Paris*, 1927, No. 23) who records an illustrative case, states that apart from obstetric haemorrhage in the newborn cerebral haemorrhage is rare in children when it does occur it is usually of arterial origin and due to softening caused by arteritis. In some cases however, as Parrot and Hainzel have shown the haemorrhage is of venous origin and due to an infection though the cause cannot always be discovered. In some cases there is also a history of inherited syphilis. The symptoms are often indefinite and may be those of a cerebral tumour. As a rule the diagnosis is not made before the necropsy. The anatomical lesions are multiple haemorrhagic foci and endophlebitis and periphlebitis of a cerebral vein. Sloim's patient was a child aged 18 months whose illness started with rhino-pharyngitis followed by fever and signs of tracheo-bronchial catarrh. A month after the onset convulsions occurred which at first were generalized and then localized to the right arm and the right side of the face and were followed by vomiting. The Wassermann reaction was negative. Death occurred six weeks after the onset. The necropsy showed haemorrhages beneath the cortex in the Rolandic area and the occipital and temporal lobes.

### 406. Enteric Fever in Malaya.

W. FLETCHER (*Bull. Inst. Med. Research Kuala Lumpur*, No. 4, 1927) states that owing to the increase in number of positive Widal tests at the Institute for Medical Research at Kuala Lumpur a report was made to determine if enteric fevers were common in the Federated Malay States and

if they were becoming more prevalent. There were no epidemics and typhoid lesions were rarely found at autopsies. The carrier rate was less than 0.03 per cent, in contrast with a rate between 0.3 and 1 per cent in the United States. The probable reasons for the low incidence of the disease were the evenly distributed heavy rainfall, the excellent water supply of the towns, the scarcity of flies, the absence of large milk distributing companies and the presence of colloidal clay in the rivers. As the result of repeated Widal tests and examination of the excretion of suspected cases 182 cases of typhoid fever, 9 of paratyphoid A and 5 of paratyphoid B were diagnosed during the years 1925 and 1926. Enteric fever was commoner in the small collections of native houses known as kampongs in which the drinking water is obtained from a shallow well or river and less common in the towns where there are usually excellent public water supplies. The mortality among the cases diagnosed in the locality was 13 per cent.

### 407. Influenzal Pericarditis.

P. L. TAYLOR (*Journ. Amer. Med. Assoc.*, July 30th, 1927, p. 347) who records a sporadic case states that pericarditis complicating pneumonia and empyema was frequently reported during the epidemic of influenza of 1918-19 and 1920. In 300 necropsies of patients who died of influenza pneumonia Stone found pericarditis in 24 per cent usually secondary to suppuraemia the infecting organism being as a rule the pneumococcus or haemolytic streptococcus. In only a few cases such as that reported by Malloch and Rhea has the influenza bacillus been found. Taylor's case occurred in a boy aged 6 who died after two days illness with pneumonia, laryngitis and pericarditis. A pure culture of *B. influenzae* was obtained from the lungs and pericardial fluid.

## Surgery

### 408. Thyroid Adenomata.

L. DALTREBANDE and A. LEMOET (*Bruzelles Medical*, October 9th 1927, p. 1584) define three groups of adenomata of the thyroid gland—namely the non-toxic, the grave toxic and the benign toxic. In the first group are simple adenomas unaccompanied by hyperthyroidism or any definite clinical trouble. The authors however insist that medical supervision is necessary since these growths may acquire the power of hypersecretion and ultimately become toxic adenomas. Descriptions of the toxic adenomas follow, and a table is given showing the differential diagnosis between cases of toxic adenoma and exophthalmic goitre. Estimation of the basal metabolism establishes the diagnosis with certainty, since it is raised 15 to 50 per cent in the grave toxic adenomas and in exophthalmic goitre from 30 to 150 per cent. The authors define grave toxic adenoma as a malady characterized by agitation, loss of flesh, tachycardia, generally arrhythmic, with or without palpable thyroid nodules, and having a metabolism constantly about 30 to 40 per cent above normal. Benign toxic adenoma occurs in patients whose general condition is good, there is no characteristic agitation, but only moderate tachycardia without arrhythmia. There may be palpable thyroid nodules and the basal metabolism is usually about 22 per cent above the normal. As the thyroid tumour may be imperceptible the basal metabolism should be determined in patients presenting tachycardia with or without arrhythmia, loss of flesh and a state of agitation. An adenoma may exist in the absence of a palpable thyroid lesion. In both palpable and non palpable cases the treatment required is subtotal thyroidectomy.

### 409. Anal and Rectal Polyp.

BELIEVING that anal and rectal polyps should be classified as precancerous growths B. H. BEELER (*Amer. Journ. of Surg.*, August 1927, p. 142) reports four cases of carcinoma of the rectum in which the histories plainly revealed its origin from benign polypoid growths. One patient had noticed for nine years a small lump prolapsing with each stool, a second patient had noticed two small hard tumours prolapsing with each defaecation for fourteen years, in the third patient a small, hard tumour had propped at each stool for some years while the fourth patient reported that on some time previous to an operation she had been troubled with the prolapse of a small tumour at each stool. On rectal examination a hard indurated growth was felt in all the patients,

and the microscopical diagnosis of each tumour was a leucocarcinoma. Two of the patients were treated, apparently successfully, by electrocoagulation. In the third case, merely to control haemorrhage, the whole area was sutured with catgut. This contracted the mass to half its size, and controlled the bleeding. The patient has improved, and the growth appears to have been arrested by a very simple procedure. The fourth patient, refusing colostomy, received radium treatment, but died in a few months of carcinoma. Beeler maintains that cancer of the rectum is very frequently the result of long standing polypoid growths, that diarrhoeas and mucous colitis call for very careful examinations, and that all rectal complaints should be investigated digitally at least. He states that electrocoagulation offers a very good method of treating cancers situated posteriorly in the ampulla and within reach of the finger, its success depends upon the stage of the growth. In the first stage of development cure is possible, in the second, only arrest of the growth and control of haemorrhage and pain can be attained, while cancers in the third stage are inoperable, and cannot be cured by any known method.

#### 410 Lithotripsy

M. PAVONE (*Journ. d'Urol.*, September, 1927, p. 193) recalls that the long practised operation of crushing a stone in the bladder underwent its chief modification when Bigelow introduced his evacuator. By this method the operation of crushing and removal of the fragments were completed at one sitting, and the mortality was much reduced. With regard to anaesthesia, some surgeons use chloroform to render the bladder insensible to the manipulations necessary and to avoid reflex contractions. Pavone prefers a local anaesthetic and employs cocaine combined with morphine, by this method the contractions of the bladder are utilized in the later stage to expel the fragments of the calculus. Spinal anaesthesia is said to be excellent for the crushing part, but it persists too long, and the bladder is paralysed also. Cystoscopy is combined with the operation to make certain that all the stone has been evacuated. Lithotomy is the operation of choice as a rule, and cystotomy should only be used in special cases where contraindications prevent the use of the lithotrite.

#### 411. Treatment of Spinal Fracture

S. W. BOORSTEIN (*Amer. Journ. of Surg.*, August, 1927, p. 116) gives statistics of sixty-one cases of spinal fracture treated between 1915 and 1925. He emphasizes the importance of excluding this condition in every case of apparent injury to the spine, immediate rest being enforced until the investigations are complete. A radiogram should be made as soon as possible, but if the indication is negative the radiological examination should be repeated in a few days, as the lesion may then be manifest. Boorstein recommends rest on a Bradford frame, followed by the application of a plaster jacket or of two plaster shells. If the cord is injured and there are positive signs of pressure laminectomy should be considered, and this may be advisable even if there are no such signs. In complete transverse paralysis it is doubtful whether an operation will help. Boorstein adds that in late cases where pain persists a fusion or bone graft operation for the spine should be considered.

## Therapeutics.

#### 412 Treatment of Epilepsy

R. N. SANTOS (*Arch. de med. cir. y esp.*, October 1st, 1927, p. 393) states that Ghitovich and V. K. Chorocho in 1925 introduced a treatment of epilepsy by cerebral emulsion and anti-rabic vaccine. Ghitovich used anti-rabic vaccine exclusively in fourteen cases, but the results were not uniform, as he obtained improvement in only a few, as shown by diminution in the number and severity of the attacks and an attenuation of the psychical symptoms. Chorocho employed an emulsion of a normal rabbit's brain and a 10 per cent rabies virus, and obtained more encouraging results, as there was a considerable diminution, and in some cases a complete disappearance of the attacks. The rationale of the treatment has not yet been exactly explained. It is unknown whether the cerebral emulsion acts as a foreign protein or if it has a specific action. Santos employed an emulsion of cerebral substance in a 20 per cent solution of luminal sodium. The nine patients selected, whose ages ranged from 14 to 32, were all subject to frequent epileptic attacks and in most of them the ordinary treatment had failed. In almost every case he obtained very marked improvement, which persisted after the injections had been discontinued. The usual dose was 2 cc. every other day until ten injections had been given.

#### 413 Action of Lobeline

ACCORDING TO J. MOUZON (*Presse Med.*, October 12th, 1927, p. 1239) the employment of lobelia should be reconsidered in view of the discovery of lobeline, which is obtained from *Lobelia inflata*, a plant well known in North America, during its flowering season, this alkaloid is crystallizable, and appears to have the empirical formula,  $C_{13}H_{21}O_2N$ . In concentrated solutions it forms a clear, yellow, oily liquid. The hydrochlorate is the salt generally used, and its injection, even subcutaneously, is painless. Eckstein, Wichard, and other experimenters state that this product is a very energetic stimulant of the respiratory centre. Injected intravenously in doses of 0.003 gram (about 1/20 grain) lobeline causes, in a few seconds, a very marked change in respiration, the inspirations becoming deeper and often more accelerated. This action is very transitory and lasts only eight to ten minutes, when the drug is either eliminated or destroyed. Larger doses of 0.01 gram (about 1/6 grain) are employed subcutaneously or intramuscularly, and by these methods the action of the drug is delayed, commencing in seven to eight minutes, and lasting for a longer period of about twenty minutes. Subarachnoid injections act as rapidly as intravenous ones, but the dose required is smaller and the action persists longer. Toxic doses paralyze the respiratory centre and produce convulsive symptoms. The intensity of this action has led to the trial of lobeline, especially in Germany, in the apnoeas of bulbar origin. Beneficial effects have resulted from its administration in the apnoea of the newborn, in respiratory failure in general anaesthesia, and in grave intoxications by narcotics. Before administering lobeline it is essential that the air passages be free, and all revulsive procedures eliminated. Dangers attend its use, due to its action on the heart, it excites the cardiac fibres of the pneumo-gastric nerve, diminishing the cardiac contractions, lowering arterial pressure, and loss of rhythm. Owing to this action, many have abandoned its use. Other ill effects have been noted, such as spasms of cough and vomiting. Mouzon thinks that these harmful sequelae may be due to impurities, since the preparation of the alkaloid is a difficult matter. Its antidote is atropine, and Wright and Curtis (see JOURNAL, 1926, vol. II, p. 1225) have recommended its combination with adrenalin or pituitin. In view of the dangers attending its use, and until further studies have been made concerning its action, Mouzon advises that the drug should be used only as a last resort in the conditions mentioned.

#### 414 Therapeutic Measures in Neurosyphilis

J. E. MOORE (*Journ. Amer. Med. Assoc.*, August 20th, 1927, p. 533) summarizes the results of treatment at the Johns Hopkins Hospital of 261 patients with different types of neurosyphilis. He insists that adequate treatment of early syphilis is all important, with the intelligent use of spinal fluid examinations early in the course of the infection. In early or late syphilis with slight spinal fluid changes, or in late syphilis with minor neurological signs and a negative spinal fluid, the routine treatment by injections of an arsenphenamine compound, alternating with courses of mercury or bismuth in large doses of potassium iodide by the mouth, is advocated, while early meningeal and late meningeal vascular cases require an intensified routine treatment by larger doses and longer courses. The author thinks that serologically resistant cases and cases of general paralysis should be treated with triarsenamide, with mercury or bismuth alone, or in combination with an arsenphenamine, or by malin therapy, in some cases, and particularly in optic atrophy, intraspinal treatment appears to offer the only chance of arresting the process. With such procedures it has been possible in an ambulatory clinic to obtain 62 per cent excellent or good combined clinical and serological results in early meningeal neurosyphilis, 59 per cent in late meningeal vascular, and 31 per cent in tabes. Remissions were produced in 57 per cent of a small series of patients with early general paralysis, and 40 per cent satisfactory results were obtained in early primary optic atrophy. Moore adds that treatment must always be individualized, and must often proceed on a system of trial and error.

#### 415 The Use of Mud Baths in Treatment

E. BARRAL (*Journ. de Med. de Lyon*, October, 1927, p. 489) describes the use of the radio-activo vegeto-mineral mud of natural hot springs in various resorts in France and on the Black Sea coast, where mud from the "Limans," or saline salt lakes, is warmed by exposure to the sun or by artificial means to a temperature higher on the average than that of the natural hot springs of France, treatment is augmented by bathing in the water of the "Limans," which contains a very high percentage of salts. The mud acts as a general or local cataplasma, and contact with it can be borne at higher temperatures than in the case of water. After a transient



vaso-constriction there is vaso-dilatation and a gradual rise of general body temperature, these persist, with perspiration and diuresis, for some time after the discontinuance of the bath, and disappear slowly. Respiratory movements become more rapid and shallow. The thermal action of mud is said to have a particularly beneficial effect on chronic rheumatic or inflammatory conditions of joints. Iodine emanations from the radio-active waters and gases are believed to further the elimination of uric acid. Contact with the mud stimulates the cutaneous circulation, and such volatile substances as ammonia and sulphuretted hydrogen are capable of absorption by the skin. Concentrated saline solutions produce a general erythema of the body surface. The changes in electrical potential due to immersion in mud baths are thought to benefit some chronic conditions. The author quotes Borisor's theory as to the action of mud baths—that in general, their effect is to convert chronic into acute conditions, thus increasing the efforts of the body to eliminate the harmful agent. Borisor considers that mud baths are contra-indicated in all acute and febrile conditions, particularly pulmonary tuberculosis, as also in degenerative conditions of the cardiac muscle and blood vessels. The special indications for treatment by mud baths are chronic rheumatoid conditions of the joints, surgical tuberculosis when not acute, persistent palatal inflammatory affections, such as chronic parametritis and tertiary syphilis.

## Neurology and Psychology.

### 416. Myopathy of the Adult.

DUCHENNE in 1861 described a new morbid entity which he termed pseudo-hypertrophic or myo-sclerotic paralysis of infancy, and several authors have brought to light the existence of a rarer form, pseudo-hypertrophic myopathy in adults. According to G. GUILLAIN and A. PÉRO (*Paris Med* October 1st, 1927 p. 239) the topography of the muscular hypertrophies and atrophies in adults and infants is very comparable. Pseudo-hypertrophy manifests a predilection for certain groups of muscles in the lower limbs the soleus, the gastrocnemius and tibialis anticus and in the upper the deltoid. Atrophy often associated with pseudo-hypertrophy involves the muscles at the attachment of the limbs, those of the scapular and pelvic girdles being chiefly attacked, it progresses from the proximal to the distal segment. As a general rule involvement of the small muscles of the hands and feet is very rare and appears only as an atrophy. The authors report a case which illustrates these points. In a man aged 37 the atrophy was very marked in the thoracic and abdominal muscles as well as in those of the scapular and pelvic girdles, the pseudo-hypertrophy involving the muscles of the hands and slightly those of the forearm, the solei, gastrocnemii, and the pedal and plantar muscles. All these lesions were symmetrical. The galvanic and myotonic reactions were markedly increased and showed an analogy between Duchenne's paralysis and Thomsen's disease. There were great variations in the tendon and bone reflexes while the cutaneous were normal. No sensory or sphincter troubles were present. Vasomotor disturbances were very marked in the extremities, the hands and feet being habitually cyanosed and the skin cold and constantly moist with an excessive sweating. The Wassermann reaction of the blood was negative. The heart was normal but the arterial pressure was relatively low. The patient was weakly, of feeble intellect and exhibited marked mental disturbance being obstinate and violent. The muscles showed the following characters: increase of volume, modification of consistency, diminution of muscular force despite the hypertrophy, absence of fibrillary contractions and myotonic reactions and the presence of vasomotor alterations. There were no hereditary antecedents. When 17 years old he had an attack of typhoid fever, and one of the authors insists that this infection plays a part in the production of certain acquired and non-familial myopathies. The authors emphasize the topography of the muscles affected, the association between the clinical and electrical examinations and the late onset of the disease. They add that acquired myopathy is more frequent in only one member of a family than is the familial type.

### 417. Aphasia due to Cerebral Tumour.

M. J. COHEN (*Journ Med Assoc S Africa* July 23rd 1927 p. 358) gives details of speech changes occurring in a case of tumour of the left temporo-sphenoidal lobe in a woman aged 49. She complained of headache, vomiting, nausea, severe, bilateral vision, general weakness, vomiting, nausea and defective memory which proved on examination to be more exactly an inability to use certain words. The head ache was confined to the left side and extended more towards the frontal than the occipital region. It occurred at first

mainly at night, and it was followed two months later by vomiting, of the cerebral type, with inability to use certain words, general asthenia, with fainting attacks, supervened. The patient's mother was said to have died of cerebral tumour and there was a history of an accident sixteen years ago when a fall from a cart rendered the patient unconscious. When first seen by Cohen there was no paralysis, and beyond a trace of sugar in the urine the organs were healthy. The Wassermann reactions of the blood and cerebro-spinal fluid were negative. Papilloedema of both discs more marked in the left than the right was present but there were no haemorrhages or white retinal patches until a month later and there was no hemianopia. The knee jerks were exaggerated, and there was no ankle or patellar clonus. She complained of dizziness on walking, but there was no weakness, ataxia, rigidity, or tremor. She could write down dictated words and repeat sentences, but could not express herself, being unable to find the words to use or name objects (nominal aphasia) and she repeated a name once spoken (perseveration), her condition being suggestive of a lesion involving the third left frontal convolution. She could carry on a conversation usually, but stopped repeatedly for want of a word, usually a noun, when this was repeated to her she would insert it in the right place. On trephining, a month later, no tumour was found but the brain bulged and the vessels of the dura were obliterated from prolonged pressure. There was no fluid in the ventricle but this was found later to be due to its being almost obliterated by the pressure of the growth. The persistence of speech anomalies (paraphasia, agrammatism, and verbiage) after decompression pointed to the portions affected being not so much pressed upon as infiltrated ideas being apparently well formed at the cortex but blocked in transmission owing to the destruction of association fibres by infiltrating growth. At the necropsy a tumour at the tip of the left temporo-sphenoidal lobe was found infiltrating the left third frontal convolution and stretching laterally as far as the left corpora quadrigemina and posteriorly almost to the cerebellum. Histologically it was a vascular gliosarcoma with areas of necrosis and haemorrhage. Cohen states that in cases of cerebral tumour the bone should not be replaced over decompressed areas especially where a large pulsating growth exists.

### 418. Etiology of Disseminated Sclerosis.

L. TOMMASO (*Il Policlinico Sez Med* September 1st 1927 p. 482) discusses the etiology of disseminated sclerosis with special reference to the possibility of its being comparable with syphilitic lesions and of its being treated effectively by malaria therapy. That there is an affinity between disseminated sclerosis and cerebro-spinal syphilis has been affirmed by Dufour and Ganchet, the negative view is held by a larger number of writers including Nonne, Pierre Marie and Sclard, who distinguish the diseases by clinical data and by their pathological anatomy, bacteriology, and serology. In 1917 the experiments of Kuhn and Steiner favoured the hypothesis of a specific infection in disseminated sclerosis, and cited *Spirochaeta argentinensis* an observation supported in 1921 by Siemerburg, who found the same spirochaete in the sclerotic plaques. The possibly spirochaetal nature of disseminated sclerosis has led some authors to treat patients by the induction of malaria. Of forty two cases so dealt with by Grosz a lasting improvement was recorded in eleven. Tommaso reports two cases in both of which the results of experimental inoculation with malaria was negative and he emphasizes the fact that spontaneous amelioration is common in this disease even when malaria treatment has not been employed. He concludes that the spirochaetal origin of disseminated sclerosis cannot, therefore, be accepted as established.

## Obstetrics and Gynaecology.

### Movements of the Ovary.

419. ACCORDING TO T. MICHALITZ (*Zentralbl f Gynäk*, September 17th 1927 p. 2394) the ovum in tubal pregnancy which usually has taken the normal path of entry into the Fallopian tube of the corresponding side may also in rarer instances have adopted either of the following courses: (1) through the abdominal ostium of the Fallopian tube of the other side to become embedded in that tube. (2) through the abdominal ostium of the Fallopian tube of the same side, thence through the uterus to end in nidation after entry through the isthmus tubae in the contralateral tube. To these abnormal courses the names 'external wandering' and 'internal wandering' may be given respectively but it has been denied that the ovum ever takes the second course. Evidence of the occurrence of 'external wandering' is based on the facts that (1) a considerable proportion of tubal gestations the ovum is found on the side opposite to the corpus luteum and



(2) the tube may be absent or occluded on the side corresponding to the corpus luteum, the ovary on the side of the tubal pregnancy containing no corpus luteum. "Internal wandering" of the ovum (into one tube from the other through the uterus) may be assumed to have occurred if the abdominal ostium of the gravid tube is certainly closed and the contralateral tube is pervious. Certain cases of double gestation in one tube, with ova of different ages, can be explained by "internal wandering" of the ovum. In Santer's case a two months' ovum was present in the outer third and a three to four weeks' ovum in the inner third of the same tube, on the corresponding side an old corpus luteum was present. The older ovum was thought to have come from the same, the younger from the opposite, side, nevertheless, the abdominal ostium of the gravid tube was open and the fimbriae were preserved, so that the possibility that the younger ovum had slipped past the older, traveling towards the uterus, cannot be denied. In a case described by Micholitsch the left tube contained in the ampulla a molar connected with a thick walled haematocoele, and at a distance of six centimetres an intact ovum in the uterine end, the ages of the ova were respectively two months at least, and three to four weeks. Since the abdominal ostium was completely filled by the molar and the fimbriae were intimately involved in the capsule of the haematocoele, the conclusion is drawn that the younger ovum could only have gained entry into the tube through the uterus. The right ovary contained a recent corpus luteum.

#### 420 Primary Tubal Cancer

C STANCA (*Gaz des Hop*, August 31st, 1927, p 1155), who records an illustrative case observed by him in the gynaecological clinic at Cluj in 1917, states that cancer of the Fallopian tube is a very rare condition. Barely 180 cases have been recorded, of which only 33 per cent are primary and the rest secondary. Primary tubal cancer arises from the mucous membrane of the Fallopian tube, and may become diffuse or circumscribed, while secondary cancer follows a growth in the uterus or ovary. Histologically tubal cancer has been divided by Singer and Baith into simple papillary carcinoma and alveolar carcinoma. Chronic salpingitis, due to puerperal fever, tuberculosis, and other causes, is regarded as predisposing to tubal cancer. There are no pathognomonic symptoms, and there is no case on record in which the diagnosis has been made before the operation or autopsy. The course of the disease is characterized by early and multiple metastases, which in most cases render surgical intervention of no avail. Only 4 per cent of the cases in which an operation has been performed have been radically cured. In inoperable cases encouraging results may be obtained by deep x-ray treatment. Stanca's case occurred in a multiparous woman, aged 40, who had suffered from general weakness and abdominal pain for seven months. A diagnosis of malignant growth of the adnexa was made and laparotomy performed, when a tumour of the left Fallopian tube and a right hydrosalpinx were found. Owing to haemorrhage and extensive adhesions bilateral removal of the uterine appendages with drainage of Douglas's pouch was performed. Death from peritonitis followed the operation. Histological examination of the growth showed that it was a papillary carcinoma.

#### 421 Retroposition of the Uterus after Labour

A FRUHNHOLZ (*Bull Soc d'Obstet et de Gynecol de Paris*, July, 1927, p 501) observed in thirty nine cases in a series of 200 childbirths a temporary or lasting retrodeviation of the uterus during the puerperium. Forceps delivery was required in twenty cases, but retroposition was noted in only three of these. Retroposition was not appreciably more frequent in multiparae, and permanent backward displacement originated as a rule after the first confinement. Of forty seven cases in which it was possible to decide whether puerperal retroposition was congenital or acquired twenty were congenital and twenty seven acquired. Contrary to expectation it was several times found that a uterus primarily retroverted or even retroflexed became anteplaced during the puerperium and even remained in this position during subsequent pregnancies. In forty eight patients it was possible to note the date on which retroposition was first observed. In 75 per cent it occurred from the sixteenth to the twenty eighth day. The author believes that puerperal retroposition of the uterus is favoured by the patient's quitting her bed early after labour rather than by too prolonged dorsal decubitus. In several cases a uterus which has preserved correct position for a week after the patient's first getting up has become retroverted as a consequence of a fall. Fruhnholz advocates medical supervision of puerperal patients between the third and sixth weeks, and for treatment of the backwardly placed uterus recommends manual reposition and massage rather than mechanical pressure by tampons or pessaries.

## Pathology.

#### 422 Basal Metabolism in Chronic Arthritis

L. T. SWAIN and L. M. SPERAR (*Boston Med and Surg Journ*, September 1st, 1927, p 350) have endeavoured to determine whether there is any change in the basal metabolism in chronic arthritis which would afford some explanation of the long standing employment of thyroid extract in this condition on empirical grounds. They accepted the classification of chronic arthritis which distinguishes three groups—namely, the infective, atrophic, and the hypertrophic. The patients, numbering 200, were of the hospital type, and in most cases the disease had lasted for a considerable time. There were ninety four patients of the infective type, their average age being 37.91, and the average duration of the disease 5.2 years, 62 per cent showed a normal metabolic rate, and there was a slight tendency towards the plus side in a small majority of the remainder. In fifty four atrophic cases the average age was 47.5 and the average duration of disease 6.6 years. In 67 per cent of these cases the metabolic rate was normal, and of the remaining patients there was a minus tendency in about 17 per cent. In the hypertrophic group there were fifty two cases, with an average age of 56.4 years, and a disease duration of 5.1 years. Of these, 54 per cent showed a normal basal metabolism, of the remainder there were far more on the minus than on the positive side. Inasmuch as the study has brought to light the existence of variation from the normal metabolic rate in 39 per cent of cases of chronic arthritis, the authors conclude that the rate should be estimated in all cases of this condition, so that by relieving a hypoboid state, which detected, clinical improvement could be assisted.

#### 423 Experimental Study of Alkalosis

K. SUZUKI (*Japanese Journ Med Sci*, III (vol 1, No 1), 1927, p 67), as the result of experiments on rabbits, comes to the following conclusions: (1) Alkalosis is a disease in which the acid base equilibrium of the body fluids has been disturbed and alkalinity is abnormally increased, with the consequence that the ratio of free and combined  $\text{CO}_2$  in the blood is smaller than normal. (2) The quantitative decrease of blood  $\text{CO}_2$  occurs not only in acidosis but also sometimes in alkalosis. (3) In alkalosis the blood pH shows considerable oscillations, so that the diagnosis must be made by estimation, not only of the blood  $\text{CO}_2$  but also of the blood pH. (4) Introduction of alkaline carbonates into the blood produces an uncompensated alkalosis, but if the disease is of very short duration and not fatal the blood  $\text{CO}_2$  very quickly returns to the normal. (5) The rabbit offers a strong resistance to increase of the blood pH, but not so much resistance to its decrease. (6) The animal is generally very susceptible to acidosis, but is usually very insensitive to alkalosis. (7) The intravenous injection of alkaline carbonate has a specific action on the blood pressure, which falls during the initial stage of the injection and then rises rapidly. (8) Alkalosis is not the immediate cause of tetany. (9) The anatomical findings in a rabbit which has died of alkalosis show no specific features.

#### 424 Bacteriology of Whooping cough

G. M. LAWSON and M. MUELLER (*Journ Amer Med Assoc*, July 23rd, 1927, p 275) examined 1,115 cultures from cases of whooping cough on a modified Bordet Gengou medium at the clinic of the Boston Floating Hospital and in its wards, and found that 259, or 23 per cent, showed *Bacillus pertussis*. Of 533 proved cases of whooping cough in this series 219, or 41 per cent, showed *Bacillus pertussis*, which in three cases they were able to isolate as early as twenty four days before the onset of the whoop. Although the proportion of positive cultures was lower than in the cases reported by Vejer and other Danish workers (87.7 per cent), in both series there was the same fall in the number of positive cultures as the disease progressed. It was noteworthy that in 23 cases the patients never whooped, the disease being either spontaneously mild or rendered so by prophylactic vaccination or serum treatment. Three cases were examples of second attacks of whooping cough which the authors consider are not so rare as is supposed, and usually take a mild form, sometimes without the characteristic whoop. They suggest that the existing quarantine period should be extended to include the catarrhal stage of the disease, and that a quarantine period of thirty days from the onset of the catarrhal symptoms would control 94 per cent of all possible spreaders of the disease as compared with only 62 per cent or less under the present regulations. They add that the mediums for cultivating this organism must be freshly prepared and properly inoculated. Single negative cultures are frequently misleading and repeated cultures on three successive days are advisable.

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine.

### 425. Chronic Myocardial Insufficiency

C. L. GREFF (*Virnesse Med*, September 1927, p. 538) believes that "myocardial insufficiency is a more correct term than chronic myocarditis" that correct conceptions of the size and great variations of the heart are necessary for the detection of morbid enlargement and that a competent knowledge of the myocardial reserve, its peculiarities and therapeutic possibilities is needed for early diagnosis and treatment. Cardiac cases fall into two chief groups. The one covers the first three or four decades of life, includes the congenital abnormalities and shows a great proportion of frank primary endocardial lesions. The second dealt with in this paper, covers the later stages of persistent organic endocardial lesions. Both groups include many cases of myocardial exhaustion or inadequacy which occur in congenitally underpowered and usually toxic hearts. Probably only a few inadequate hearts associated with arterial hypertension owe their insufficiency to the latter condition. Chronic non-endocardial lesions are sequelae of toxicæmia, and decompensation itself tends to heighten arterial pressure. Toxic deficiency is the chief source of cardiac symptoms, apart from the bruits of certain lesions and many conditions affect this point. To diagnose and treat myocardial insufficiency radiography is absolutely necessary. The ratio of the diameter of the heart to the internal chest diameter at the end of inspiration must be determined and if this exceeds 33 to 40 percent an enlarged heart is present. Bilateral and equal peribronchial oedema often only diurnal, is one of the earliest signs. It is manifested first over the upper or middle part of the leg, and is absent at the ankle. Fatigue is an important subjective symptom, and varies from a mere sensation of heaviness in the legs to actual exhaustion. Dyspnoea on exertion is also an important sign, and abnormal inability to hold the breath is of great significance. Gas intolerance, symptoms and precordial pain and distress are common concomitants of myocardial insufficiency. The pain varies in intensity and is relatively common in the adult. Day drowsiness, early waking, nervousness, sleep and disturbing dreams are frequent symptoms in the elderly. Wise counsel and the proper regulation of habits and diet may suffice in treatment. Exercise under proper direction may be effective in minor cases, though absolute rest followed by carefully graduated physical activity may be indispensable. Too abrupt a resumption of exercise after absolute rest is dangerous. Greene concludes that the primary duty of the physician lies in the earlier detection of reserve impairment, the removal of existing sources of myocardial toxicæmia, and the timely rational, and maximal correction of remediable myocardial inadequacy.

### 426. Immunization Against Tuberculosis.

J. VAN BENEDE (*Bruxelles Med*, September 18th 1927, p. 1429) reports the results of the attempted immunization of infants with BCG vaccine at a centre for the preparation and distribution of the vaccine at Liege which was opened in August 1924. By the end of April 1927 the vaccine had been administered to 470 infants but the cases selected for analysis by van Beneden were those in which the vaccine had been given more than six months previously—namely 23 in 1924, 115 in 1925, and 34 in 1926. The actual report therefore, deals only with 172 cases, and in 70 of these no record was obtainable. Of the 16 infants followed since 1924 14 are in good health and of these 11 have been brought up in tuberculous families. Two infants died, one from whooping cough and the other from acute bronchitis. Only 53 of the 115 infants vaccinated in 1925 have been traced. Thirty four brought up in tuberculous surroundings are alive and well, eleven children in healthy families are also well. Three have died of gastro-enteritis, one of convulsions, one of diphtheria, one of acute bronchitis and one of whooping cough and one broncho-pneumonia which terminated in convulsions presumed to be due to tuberculous meningitis, no account is given of the remaining infant. Thirty two of the 1926 infants are in good health, one has died of convulsions. Van Beneden finds that the percentage results in his 100 traced cases work out similarly to those of Calmette. He discusses the various sources of infection through the placenta by a filterable virus of tuberculosis and of segregation of the infants of tuberculous parents but he thinks that pre-immunized children who die of tuberculosis during the early months of life were probably

infected by massive doses before the refractory period due to the vaccine was established. The author regards his results as encouraging, moreover he has not seen any ill effects from the administration of BCG.

### 427. Endemic Typhus in Australia.

I. S. HONE (*Med Journ of Australia*, August 13th, 1927, p. 213) summarizes observations upon endemic typhus in and around Adelaide from notes of over 80 cases during the past four years. The onset is sudden with severe headache which persists until the appearance of the rash from the fifth to the seventh day, commencing on the chest and abdomen and spreading over the body and extremities during the next forty eight hours. At first simulating typhoid the spots become more numerous resembling a scattered macular rash when fully developed. A characteristic of the rash is that at first sight only a few large macules or papules are seen but by continued observation a much more profuse rash is found to be present than was at first thought to be the case. When once the rash has developed and the headache lessened the general condition improves and the majority of patients recover. A well defined rash is characteristic but no case should be diagnosed without a confirmatory positive Weil Felix reaction. It must however be borne in mind that the reaction frequently cannot be obtained until deference has occurred while this lessens the value of the test for early diagnosis it enhances it in post-typhus pneumonia. The incubation period is about fourteen days. The dissemination of the disease appears to be closely associated with rats and mice, these rodents seem to harbour the virus without becoming themselves infected, typhus being spread by some other vector than the body louse. The appearance of cases in widely separated centres in the United States as well as those occurring in Adelaide each resembling mild typhus with a positive Weil Felix reaction seems to show that they are all instances of the same disease appearing in different parts of the world.

### 428. Chancroid in Paris.

M. BERNY (*These de Paris* 1927 No 49) shows by statistics from Professor Jeannel's patients at the Hospital St Louis that of recent years there has been a decided increase in the incidence of soft chancroid in Paris. The maximum number was reached in 1919 with 293 cases, in the following two years there was a fall to 159 and 51 respectively. In 1922, 1923 and 1924 the rise was gradual and in 1925 very rapid (198 cases). This tendency to increase continued in 1926 as during the first nine months of the year there were 183 cases. In some towns and countries on the other hand chancroid is tending to disappear especially in Lyons, Breslau, Austria and Denmark. The principal causes of the increase of the disease are first ignorance on the part of patients who have little notion of the most elementary principles of hygiene and the dangers of venereal infection and secondly the inadequately controlled immigration of large numbers of foreigners and the increase of prostitution due to economic conditions and neglect of proper supervision. The measures which Berny recommends to prevent further spread of the disease are education of the public especially of its younger members by leaflets, notices and lectures and encouragement of athletics, the medical examination of immigrants, stricter supervision of prostitution and early treatment of chancroid, especially by vaccine.

### 429. Prolonged Chorea in Encephalitis Lethargica.

ABADIE and AMIAT (*Journ de Med de Bordeaux et du Sud Ouest*, July 10th 1927, p. 517) record the case of a man aged 27 who in January 1920 developed epidemic encephalitis characterized by disturbance of sleep, and choreic movements which appeared at the onset of the disease and persisted for three years after the acute stage had subsided. They were then progressively replaced by a Parkinsonian syndrome which was at first confined to the left side so that for two years the patient was hemichoreic on the right side and hemiparkinsonian on the left. Subsequently he developed typical Parkinsonism characterized by slow movements, rigidity, tremors and slowness of intellectual operations. The authors think that this is the first case on record of prolonged chorea of encephalitic origin. The substitution of Parkinsonism for chorea of which examples have been recorded by Ramsay, Hunt, Sicard and Lesne and Barak is explained by the extension of the cerebral lesions which were a first predominant in the neo-striatum.

## 430 III Effects from Lumbar Puncture

L M WIEDER (*Amer Med Journ Sci*, June, 1927, p 854), who records an illustrative case states that Schonbeck in 1915 collected 71 cases of death following lumbar puncture. Of these, 37 had intracranial tumours, 13 recent cerebral hemorrhage, 7 various forms of meningitis, 4 were uraemic, 3 presented cysticercosis, and one echinococcus cysts. One patient had acute myelitis and one a cerebellar abscess with rupture into the cranial cavity and localized meningitis, one was a case of ticks and pneumonia in a child, and one of cerebral anaemia and pulmonary oedema following the administration of chloroform. Two others showed elongation of the cerebellar processes producing pressure of the medulla against the foramen magnum, one apparently being due to severe hydrocephalus, the other presenting only a moderate dilatation of the lateral ventricle. In the syphilitic patient routine lumbar puncture is a comparatively safe procedure, as death followed the operation in less than 1 in 13,000 cases at the department of dermatology and syphilology at Ann Arbor during the last fifteen years. In addition to aseptic technique only routine precautions such as subsequent rest with elevation of the foot of the bed are necessary in spinal puncture of the syphilitic patient. Wieder's case occurred in a woman, aged 33, of a thymic lymphatic constitution, who died two days after the lumbar puncture. The necropsy showed considerable leakage of cerebro spinal fluid in the lumbar region and cerebro spinal syphilis.

## 431 Exanthema Subitum

H K FABER and L B DICKEY (*Arch of Ped*, August, 1927, p 491) from observations of 26 cases and a study of about 550 recorded in the literature, come to the conclusion that the view is erroneous that exanthema subitum exhibits no pathological symptoms or signs apart from the fever and eruption. While in the majority of cases the disease runs a benign and relatively uneventful course, symptoms of considerable severity may occur, especially affecting the nervous system, these include malaise, drowsiness, in-omnia, severe headache, vomiting, and even generalized convulsions. In a large proportion of cases definite evidence of a nasopharyngeal infection is present. The disease may be communicable, with an incubation period as short as three or four days. Otitis media, suppurative lymphadenitis, and pyaemia are occasional complications.

## 432 Striae Atrophicae following Varicella

E APERT and MORNET (*Bull et Mem Soc Med des Hop de Paris*, June 16th, 1927, p 859) record the case of a girl, aged 14, the subject of initial disease, who, after a mild attack of varicella, developed a series of horizontal purplish striae on the right side of the thorax extending from the angle of the scapula to the last rib. There were also similar striae on the postero lateral aspect of the pelvis between the iliac crest and the upper margin of the great trochanter. This is thought to be the only case on record of unilateral thoracic striae following varicella. All the other reported cases of unilateral thoracic striae have been associated with pulmonary or pleural lesions.

## Surgery.

## 433 Chronic Epididymitis Simulating Tuberculosis

M BIEBL (*Zentralbl f Chir*, September 10th, 1927, p 2337) describes two cases of chronic epididymitis in which an erroneous diagnosis of tuberculosis was made. The first patient, aged 27, had no family history of tuberculosis and denied having had any venereal or other disease. There had been a painless swelling of the right epididymis for three weeks without any history of injury, an indefinite swelling as large as a walnut was felt in the lower pole of the organ. The skin was not adherent to the tumour, which was slightly tender on pressure. Clinically the diagnosis of tuberculous epididymitis appeared to be so certain that no exploratory operation was performed, but the right testis was removed. Histological examination showed a chronic fibrous epididymitis without any sign of tuberculosis. The second patient was a poorly nourished man, aged 66, who had had pleurisy six years previously. There was a history of tuberculosis in his father's family. The patient had not had any serious illness recently. The right testis had been swollen and slightly tender on pressure for two weeks. In the lower pole of the epididymis there was an elongated tumour as large as a thumb. Apparently the testis was not involved, and the spermatic cord and prostate were normal. The mine was free from sugar and albumin. During the operation an histological examination showed no evidence of tuberculosis, but, nevertheless, the right testis and epididymis were

removed, though the latter contained no caseating nodules there was evidence of abscess formation at the lower pole. The vas contained pus, but the tunica vaginalis was healthy. Histological examination showed a non-specific subacute suppurative epididymitis, involving the subjacent portion of the testis, but no evidence of tuberculous was obtained. Biebl remarks that these cases illustrate the difficulty in diagnosis of chronic non-specific diseases of the epididymis. The relatively short duration of the disease and the local prevalence of tuberculosis, especially of tuberculous epididymitis, led to the refusal to change the diagnosis in spite of the histological findings.

## 434 The Value of Periarterial Sympathectomy

THE value of Leiche's procedure of periarterial sympathectomy is doubted by A W ALLEN (*Boston Med and Surg Journ*, August 25th 1927, p 304), who reviews the results of eight sympathectomies performed since August, 1924, when he described an earlier series of fifteen sympathectomies. He states that the beneficial results of this operation depend on the secondary hyperaemia which follows the primary reaction of vasoconstriction. These reactions are fairly constant, and bring about relief of pain and rapid healing of chronic lesions. In most cases, however, these good results are temporary, the "secondary reaction" disappears in from three to eight weeks, leaving the patient in the same state as before operation. There is said to be a large psychic element in many cases, accounting for the relief of pain and the general improvement in the absence of any apparent local change. Allen's first series included eight cases of thromboangiitis obliterans, in only one of which was there definite improvement, in another case partial gangrene of toes healed without operation. Another patient was cured by diathermy, and sympathectomy failed in two cases of arterio-sclerosis, one with and the other without gangrene, in each of these two cases it was necessary to amputate the leg subsequently. In Allen's second series there was one case of spina bilidin with trophic ulcers and one of symphyomyelia with trophic ulcer, both healed quickly after sympathectomy. An arterio-sclerotic ulcer almost healed after the operation, and a patient with trophic neurosis was relieved of pain for six months. One chronic case of Raynaud's syndrome in a syphilitic patient, one case of thromboangiitis obliterans, one traumatic trophic neurosis, and a case of scleroderma were not relieved. Allen believes that without an adequate collateral circulation the operation is useless, and that periarterial sympathectomy has a very limited field. The temporary hyperaemia is more effective than that induced by other means, but patients benefited by it would heal with a longer period of palliative treatment.

435 B ULRICHS (*Zentralbl f Chir*, September 3rd, 1927, p 2297) describes the case of an ex-soldier who contracted frost bite in both feet in the winter of 1915-16. After removal of several gangrenous toes sympathectomy was performed in 1925, but this did not prevent recurrence of gangrene. In 1926 the left leg was removed below the knee, and seven days later the left thigh was amputated in the upper third. In 1927 Ulrichs decided to amputate the right thigh. There was no evidence that sympathectomy had any beneficial effect. Ulrichs refers to recorded cases of necrosis of the arterial wall and severe secondary haemorrhage, and states that the extensive literature on this subject indicates a marked change of opinion as regards the value of periarterial sympathectomy.

## 436 Otitis in Measles

E URBANTSCHITSCH (*Wien med Woch*, August 20th, 1927, p 1110) remarks that suppurative otitis media is a relatively frequent complication of measles. Its frequency varies from 5.1 to 15.4 per cent of all forms of acute otitis. He records his observations on measles otitis during the fourteen years that he has been otologist to the Kaiser Franz Josef Hofpital in Vienna, which has a large department for infectious diseases. From 1913 to 1919 he did not see a single case of measles which required opening of the mastoid, but during an epidemic which lasted from October, 1919, to March, 1920, he had to perform the operation on twenty mastoids, in eight cases on both sides and in four on one side only. All the patients were under 7 years of age. All the patients but one, in whom staphylococci and Gram positive bacilli were found, showed streptococci. All recovered except one, who died of pneumonia secondary to tuberculosis of the mastoid. Another severe epidemic of measles occurred in October, 1926 and lasted till the following April, 14.5 per cent of the cases developed otorrhoea, which in twelve patients led to operation—in nine on both sides and in three on one side only. All were under 6 years of age except one aged 16. In eleven the operation was performed between the third and eighth weeks of disease, and in one at the end of the first fortnight. From

the last patient *Streptococcus haemolyticus* was recovered, and from the rest *Streptococcus proteogenes*. All made an uneventful recovery except one, who developed pneumonia. Urban's conclusion that in measles mastoiditis on the whole runs a favourable course, though occasionally assumes a tuberculous form, and involvement of the lateral sinus develop

#### 437 Intestinal Obstruction Due to Biliary Calculi

A CHENET (*Revue de Chir.* No 4 1927 p 319) mentions that cases of intestinal obstruction due to biliary calculi are comparatively uncommon. They are usually accompanied by a high mortality, but the cause of death is often somewhat obscure. The author considers that the chief cause of death in intestinal obstruction is in alteration in the vitality of the gut itself. This allows infection of the peritoneum or an auto-intoxication of the whole organism through the peritoneal infection and this may occur even when the gut appears healthy by all ordinary methods of examination. Either the mucus itself and the vessels in the submucous layer become affected above the site of obstruction and the local pressure may produce a necrosis in the submucous layer which may affect the nutrition of the bowel itself. It is therefore suggested that the affected loop of bowel should be brought out-side the abdominal cavity, and after removal of the calculus the loop of gut be left piled off in the wound. The next day if all goes well and the gut appears viable it is returned to the peritoneal cavity and the wound is closed. This method is applicable to all cases and is not necessary in those seen early, further trial is suggested.

#### 438 Surgical Treatment of Pyloric Stenosis in Infants

E. THORPE, M. W. LOOKE and A. BROWN (*Imperial Journal of Child Medicine* 1927 p 180) believe that every case of pyloric stenosis should be submitted to the Rammstedt operation when diagnosed. They emphasize the importance in diagnosis of the four cardinal signs of the disease—namely, projectile vomiting, visible gastric peristalsis, palpable pyloric tumour and constipation. The pyloric tumour, they add, can be felt in almost every case if sufficient time is given to the examination. They record a series of 120 consecutive cases admitted to hospital, the Rammstedt operation was performed in each case with a mortality of 13.2 per cent. The diagnosis was confirmed in every instance at the operation. They believe that a large number of cases of apparent stenosis successfully treated by medical means are really cases of pylorospasm.

## Therapeutics

#### 439 Sanoerysin in Pulmonary Tuberculosis

C. F. FORD (*Indian Medical Gazette* July 1927 p 375) discusses the sanoerysin treatment of pulmonary tuberculosis, with special reference to Indian patients. He finds that the best results have been obtained in early exudative cases of not more than six months duration but benefit has also followed its use in older fibroid cases especially when accompanied by fresh exudative processes. The severe reactions following the earlier dosage have led to its reduction to the present dosage of from 0.10 to 0.25 gram increasing to 1 gram at intervals of from four to seven days for a complete course of ten to twelve doses. Contraindications for treatment are fever, albuminuria or any kidney affection, intestinal or abdominal tuberculosis or advanced cases showing signs of toxæmic cachexia. In favourable cases active symptoms appear to clear up more rapidly than with other forms of treatment. Of 60 Indian patients so treated 4 were early, 25 moderately advanced and 51 very advanced cases. 22 patients improved. The temperature became normal in 48 out of 35 patients confined to bed with pyrexia and improved before sanoerysin was given. Tubercle bacilli disappeared in 19 out of 54 cases with bacilli in the sputum previously. Most of the patients gained in weight and in many cases the physical signs cleared up well. Nine patients were unbenefitted and in 22 cases the treatment had to be suspended owing to intolerance of the "gold salt". The results of treatment in Indian patients were as good as those obtained elsewhere, although smaller doses had to be employed.

440 K. FABER (*Ugeskrift for Læger* August 25th 1927 p 70) publishes two series of cases of pulmonary tuberculosis treated with sanoerysin. In the first series the initial dose was half a gram and the subsequent doses consisted of 1 gram each given once a week. A somewhat smaller amount was given to febrile patients. This comparatively moderate dosage did not provoke the shock or fatalities for which the heroic dosage of the first sanoerysin period was responsible but in most cases there was a violent reaction, with

fever, rashes, loss of weight, albuminuria and occasionally diarrhoea. In the second series, which included the patients treated since July, 1925, the dose was much reduced, an initial dose of 20 or 25 mg being gradually increased to about 150 mg for each kilo of body weight—that is to about 60 to 100 g. Usually a total of six to nine injections was given. Under this cautious dosage the treatment changed its character completely. There was often no reaction and when reactions did occur they were much less severe. In the first series there were 46 cases, in the second there were 39. Only 12 patients were in the first stage of the disease and as many as 46 of the total of 85 patients were in the third stage. The proportion of third stage patients was a little higher in the first than in the second series. In both series tubercle bacilli were found in the sputum of 92 per cent of the patients. But whereas tubercle bacilli disappeared from the sputum of only 47 per cent of the patients in the first series, this sign of improvement was observed in 63.6 per cent of the patients in the second series. The average gain in weight of the patients in the first series was 4.4 kilo whereas it was 9.6 kilos for the patients in the second series. The proportion of patients showing various other signs of improvement was considerably higher in the second series and the author concludes that by reducing the dosage of sanoerysin and thereby avoiding violent reactions, he has obtained considerably better results.

#### 441 Lipase Treatment of Tuberculosis

ACCORDING TO MAPLE ROSE (*Brussels Medical Journal* 1927 p 1456) the tubercle bacillus does not secrete diffusible toxin, but acts by tissue destruction. Treatment should therefore be directed not to non-existent toxins but to the bacillus itself and to neutralizing the very toxic poisons resulting from secondary intercellular disintegration. Roger and Bossau have shown that the pulmonary aluminums are much more toxic than the muscular. The lungs are surrounded and penetrated by a well developed network of blood vessels and lymphatics are the seat of an intense resorption. This accounts for the greater severity of pulmonary than of other forms of tuberculosis. Tubercle bacilli owe their acid and alcohol resisting properties to their fatty waxy capsules and Calmette has stated that neither leucocytes nor lymphocytes alone in their digestive enzymes including lipase having this power. Bord has demonstrated that phagocytes though engulfing do not destroy the bacilli but are killed by them. Metchnikoff, Clerc, and other workers have shown that in animals the greater the amount of lipase present in the organism the greater is the resistance to tuberculous infection. Mayer and Morel have demonstrated in the lung the presence of a lipase similar to that of the pancreas and Bossau has proved that the lipase power of the tuberculous lung is considerably diminished. To increase this power Bord and Balvay have prepared a specific remedy termed Vebeol or V B 2 by placing six weeks old cultures of tubercle bacilli for several weeks in carefully purified vegetable oil. The bacilli killed by heating for an hour at 70° do not lose their biological properties and are dissolved without any modification. Vebeol has been shown to increase the pulmonary lipase power and on its administration the eosinophils increase in number the bacilli become granular less homogeneous and acid resistant and lose their virulence. The medication may be given either intravenously or injected directly into the lung through the trachea. It has been used extensively and many cases of improvement and even of cure have been reported. Its action may be aided by intratracheal only injections, which modify the pulmonary secretion and lessen the cough and fever.

#### 442 Serum Therapy in Pneumonia

H. S. BALDWIN and DOROTHY R. RHOADES (*Imperial Journal of Medical Science* August 1927 p 191) state that despite the characteristic of pneumococcus type II pneumonia the results of specific therapy have not been impressive. This is attributed to the fact that until quite recently it had been impossible to secure a serum of high protective value. Cecil Baldwin, Larsen and others have demonstrated that in type II pneumonia a bacteraemia with a high mortality rate occurs at some stage of the disease in from 33 to 43 per cent of cases and the present authors have found that this bacteraemia develops in the absence of sufficient protective substance which in excess is associated with recovery. W. H. Pitt in the winter of 1925-26 by immunizing a horse with type II pneumococci succeeded in obtaining a serum of 0.2 c.c. of which would protect a mouse against 0.2 c.c. of virulent culture. Twelve cases are reported in which this serum was administered. One of the characteristics of the natural production of a protective substance in the blood prior to and its increase following the administration of the immune serum. Four cases show the first appearance of a protective substance following the administration of the serum, no



bacteraemia being demonstrable before treatment or at any time during the course of the disease, in three cases a positive blood culture became negative after serum treatment, and in 4 cases treatment was of no avail. Baldwin and Rhoades conclude that death in pneumococcus Type II pneumonia usually occurs in patients who develop pneumococcus bacteraemia, and that when the blood remains sterile recovery is usual. With a highly potent Type II antipneumococcus serum it is possible to sterilize the blood in a certain number of cases of this disease. This sterilization is most frequently effected by administering the specific serum early in the disease, when the number of pneumococci in the blood is usually small. In early cases, where the organisms have not yet invaded the blood stream, the administration of the specific serum may establish a balance of protective substances in the blood and thereby lessen the chances of a subsequent bacteraemia.

#### 443 Preparation of Antiscarlatinal Serum

B. S. DZERJGOVSKY, S. E. FAIN, and A. B. PONOMAREV (*Arch. des Sci. Biolog.*, Leningrad, 1927, vol. XXVII, Nos 1-3, p. 121) found by experiment that the therapeutic effect of a serum obtained by treating horses with scarlet fever streptococci together with their toxin was not pronounced, although the antibacterial properties of the serum were very high. As the toxin component was increased the therapeutic effect of the obtained serum improved. At last the authors obtained a toxin giving the positive Dick's test in a dilution of 1 in 1,500. This toxin, freed from the bacterial bodies, was used for the immunization of horses. With the serum thus obtained 207 cases of scarlet fever have been treated, and the clinical results may be summarized as follows. There was visible improvement of the subjective symptoms and of the condition of the vascular and nervous systems. In the majority of cases there was a critical fall of the temperature in the first twenty-four hours following the injection of the serum, occasionally there was a gradual fall, taking two to three days. The injection of the serum on the first day of the disease prevented the appearance of the rash, if the injection was made on the second or third day the rash faded and did not spread. The angina was relieved. The power of the serum to prevent complications had not been definitely established.

### Laryngology and Otology.

#### 444 Morbid Changes in the Middle Ear Muscles

E. TORI (*Arch. Ital. di Otol.*, July 1927, p. 406) has studied microscopic preparations of 66 tensor tympani muscles and 57 stapedius muscles from 46 patients who died from various diseases, most of which were not connected with the ear. He found that when death was due to accidental causes in a healthy person there was a granular degeneration of the tensor tympani muscle fibres without there being any macroscopic changes in the middle ear. These lesions may be due to post mortem change, but in cases where there had been an acute or a chronic infective condition there were additional changes in the muscles, these consisted chiefly in an increase in connective tissue, which in old standing cases had become definitely fibrous. Fat was not noticeably increased except in cases of arterio-sclerosis, where the muscle fibres were comparatively few in number compared with the amount of fibrous and adipose tissue. In the stapedius muscles the degenerative processes were much less marked than in the tensor tympani, even in one ear in which the changes were marked in the latter muscle. The stapedius usually showed a less regular and less clearly marked stiltation than in ordinary muscle. There was as a rule considerable connective tissue, and notably many bundles of nerve fibres, but hardly ever any increase of fat. With suppuration in the middle ear there were often foci of suppuration and other degenerative changes in the muscles of the middle ear.

#### 445 Treatment of Inoperable Laryngeal Cancer by Radium and X Rays

CH. CORNIGLEY (*Rev. Med. de la Suisse Romande*, July 25th, 1927, p. 552) reports the case of a man, aged 77, who was admitted to hospital for a swelling of the neck of two months' duration. For three weeks he had had dysphagia, but could swallow liquids. Beneath and in front of the right sternomastoid there was a hard immobile, slightly tender tumour as large as a Mandarin orange. The muscle and the sub-jacent vessels were displaced by the tumour, and the veins were very congested. The right axillary region was much swollen, and in the right sinus pyramidalis there was an ulcer with slightly granulating margins, which was shown histologically to be a squamous celled carcinoma. In view of the patient's age and debilitated condition, and the presence of the large secondary growth in the neck, surgical treatment

was not advised, as it would have required primary ligature of the common carotid, and hemi or total laryngectomy. It was decided to administer a maximal dose of radium. A special vulcanite applicator, moulded to the right side of the larynx and the secondary growth, was made, charged with 240 mg. of radium bromide, filtered through 1.5 mm. of lead and 0.5 mm. of aluminium. This was applied for 47.5 hours, and very little reaction followed. A few hypodermic injections of 1 in 1,000 adrenaline solution were given as a prophylactic to toxic shock. Six days later the secondary tumour was reduced to the size of a pin. Twelve days after the removal of the applicator a very definite local erythema appeared, and was followed by desquamation and superficial ulceration, this was treated with castor oil. In three weeks the tumour had disappeared, but the dermatitis persisted for two months. A complementary course of treatment with x-rays followed for the purpose of attacking the primary laryngeal tumour, nine exposures, each lasting twenty-four minutes, being given. The laryngeal ulcer healed and the mucous membrane became apparently normal. On the death of the patient five months later from a different cause the necropsy showed that the laryngeal cancer and the secondary tumour had disappeared completely.

#### 446 Tuberculosis and Cartilage Formation in the Nasopharyngeal Tonsil

G. MARTUSCELLI (*Arch. Ital. di Otol.*, June, 1927, p. 363) describes the case of a boy, aged 18, from whom he removed a large pad of adenoids. On microscopic examination he found that the mass had lost all its adenoid structure and had become a large tuberculum with three nodules of hyaline cartilage. Nodules of cartilage are not uncommonly found in the palatine tonsil and have been thought to be remnants of the primitive pharyngeal arches. The author has found that the cartilaginous nodules are always very close to the capsule or along the course of a gland, and, while he agrees that the congenital factor is essential in the great majority of cases, he believes that a chronic inflammatory process is responsible for the growth of the nodule, and that in certain cases, such as the present one, cartilage is formed out of connective tissue by the action of prolonged inflammation. Tuberculosis of the adenoid mass is infrequent—the author states that it occurs in about 4 to 7 per cent of cases—but it may act as a latent focus, as in another case which he has observed, and later light up a widespread pulmonary and laryngeal tuberculosis. The co-existence of cartilage and tubercle in the same mass of adenoid tissue may be explained as the proliferation of cartilage-forming cells stimulated by chronic inflammation.

#### 447 Pneumococcal Oto-Mastoiditis

F. LEMARIE, M. LEVY BRUHL, and A. AUBIN (*Arch. Internat. de Laryngol.*, June, 1927, p. 641) describe the type of inflammation in the middle ear and mastoid process due to the *Pneumococcus mucosus*, or *pneumococcus III*, a Gram positive diplococcus occurring in short chains. The organism has a very special preference for bone and causes marked necrosis, the destruction is so rapid that in two or three days a large area of the meninges may be exposed. Meningitis is a frequent complication of this type of mastoiditis, and facial paralysis is not uncommon. The disease progresses in an insidious manner, without pain, temperature, or physical signs, and often the symptoms of meningitis are the first to call attention to the ear, this is in marked contrast to the more common type of mastoiditis. The treatment is essentially surgical and must be started as soon as a diagnosis is made. The mastoid antrum must be opened freely, all the mastoid cells removed, and all sequestra and inflamed areas of bone excised. If a bacteriological examination is made at the time of operation, auto-vaccinotherapy may be usefully employed as an adjunct to surgery.

### Obstetrics and Gynaecology.

#### 448 Treatment of Impacted Transverse Presentation

F. DEMUTH (*Zentralbl. f. Gynak.*, September 17th, 1927, p. 2403) thinks that, save in very exceptional cases where the foetus survives or where a high degree of pelvic contraction exists, impaction of the transversely presenting foetus demands decapitation. The operation must do as little damage as possible to the lower uterine segment, which, distended by foregoing forceps and repeated uterine contractions, stands in considerable danger of rupture. Decapitating instruments may be classified as blunt cutting or sawing. To the first group belong the single hook of Braun and the jointed double hook of Zweifel, of the former Demuth remarks that although given chief prominence in textbook descriptions and used as a routine in some clinics,



it is a crude and dangerous instrument which has now only an historical interest and should be abandoned. Zschel's instrument avoids the chief drawback of Braun's hook—namely dislocation of the head. Of the cutting decapitator the chief advocates are Friedman and the curved guillotine knife of Fern and Braun. The guillotine flexible saw (Libermont Bone, Doderlein) has been used with good results at Munich and elsewhere. In 1923 Blond introduced his decapitation thumb-still, to which is connected on one side a wire saw and on the other a ring, to be drawn around the fetal neck with the saw attached. In the Prague Clinic reference is made to the Fern Braun and Blond instrument, both of which have been found reliable and free from danger. Occasional cases of very tight impaction and/or contracted pelvis, the application of one of the instruments or its use when applied is found impracticable, the other is then tried, and if this fails recourse is had to decapitation by gradual section by repeated cuts with Skold's scissor. Twelve illustrative cases are described. In a primipara aged 23 the membranes had ruptured five days previously and pains had been present for two days with deeply impacted shoulder and occiput on upper limb protruding through the vulva, the child was still living. Transperitoneal cervical Caesarean section was performed, the foetus still living, was delivered with some difficulty by arm breech, and held in the order named and the mother survived a fibrile puerperium. In similar cases with minute infection Demuth remarks that extraperitoneal Caesarean section is even more risky than the transperitoneal operation, for cellulitis is more easily infected than the peritoneum, and injury to the uterus is more likely to occur in consequence of poor visibility in the operation field. For infected cases of impacted transverse presentation or with living foetus a less dangerous operation than cervical hysterectomy, although still fraught with considerable danger is that of Forster, in which after the classical section the empty uterus is temporarily sutured outside the abdominal wound. According to KCTFEBURG (ibid. p. 221) decapitation in cases of impacted transverse presentation is unnecessary. Instead the protruding arm should be pulled well down and the thorax perforated near the axilla, the thorax should now be eviscerated as also the abdomen after digital perforation of the diaphragm. The foetus can then be delivered with ease, either by the arm by a process of conduplicable corporis or by forcip application to the buttocks. It is claimed that laceration of the over-stretched lower uterine segment is thus avoided as also the difficulty which sometimes occurs in delivering the decapitated head. Delivery on the clunus is said to be safer for the patient, and considerably easier for the accoucheur, than when any mode of instrumental decapitation is employed.

#### 449 Sterility due to Uterine and Tubal Conditions

F. CHATILLON (*Gynecol. Obstet.*, August 1927, p. 81) discusses the various uterine causes of sterility. Congenital malformations are rarely amenable to surgical or other treatment. In the hypoplasia the fetal type of uterus is invariably sterile while the infantile and adolescent forms are amenable to treatment diathermy being the most frequently used and the most satisfactory. Cervical stenosis is probably a much rarer condition than it is usually considered in view of the minute size of the sperm cell. Anteversion the most important uterine displacement, is invariably associated with hypoplasia. Retroversion alone rarely causes sterility to do so it must be associated with disease of the uterus or with retroflexion. Another cause of sterility is atrophy of the uterus, for which no treatment is known. The various forms of endometritis, such as hypertrophy, hyperplasia or fibrosis of the mucosa are all difficult to diagnose with certainty without cauterizing and resist treatment. Ray applications have to the uterus or ovary radium therapy and opotherapy have all been tried in cases of sterility with varying success. Fibroids are a cause of abortion rather than sterility and myomectomy is the treatment of election. Malformations of the cervix, including congenital or pathological elongation and disorders such as cervicitis erosion and ulceration play an important part in the production of sterility they require energetic surgical treatment by amputation or excision.

450 E. DONAY (ibid. p. 126) deals with sterility of tubal origin. He describes the operation of insufflation of the Fallopian tubes with air or oxygen from the uterus in 8 to 10 per cent of cases permeability of the tube is re-established by this method either by the relief of spasm or by the relief of obstruction when the tube is blocked. Similarly injected when the tube is blocked by means of x-rays surgical procedure may then be employed such as salpingostomy or freeing the tube from adhesions. Verification of its permeability by insufflation at the time of operation is Donay's operation of election but salpingostomy, various forms of

salpingoplastic and salpingectomy with implantation of the ovary into the uterine cornua are operations which are practised. Favorable cases for surgical intervention are those due to pelvic adhesions of all kinds post-puerperal cases do well also, provided that medical treatment is also given. Operative measures are contraindicated when the ciliated epithelial lining of the tube has been destroyed (usually gonococcal cases) in old cases of hydrosalpinx and in those in which subacute pelvic peritonitis is still present since the occlusion is reproduced. Donay emphasizes the need for the greatest care and gentleness in operative technique to prevent adhesions being formed. In from 15 to 30 per cent of all cases of sterility the male partner is at fault, and complete examination of him should precede any treatment of the woman.

#### 451 Carcinoma of the Cervix Uteri

A. BONNER (*Israel Journ. Obstet. and Gynecol.*, August 1927, p. 17) reports a case of carcinoma of the cervix in a Jewess, aged 35. Only two cases of cervical carcinoma have been reported in Israel under 35 and this malady is relatively uncommon in Jewish women of all ages. The patient commenced menstruating at the age of 11 and metrorrhagia supervened a year later a thick foul vaginal discharge appeared and this was followed two or three months later by profuse haemorrhages. Vaginal examination showed a small cauliflower growth entirely replacing the cervix. Caustic excision of the growth was performed. Microscopically the tumour proved to be a papillary adenocarcinoma. At the time of reporting, nineteen months after the operation and two years after the onset of symptoms, the patient is well and neither the metrorrhagia nor the menses have reappeared. Ray therapy has been employed since the operation. Bonner adds that, though cervical carcinoma below the age of 25 is extremely rare it is not so between 20 and 30 and that many cases of this disease have been reported in nulliparous women.

#### 452 Irradiation of the Spleen for Metrorrhagia of Puberty

ACCORDING to C. MEPLETT (*J. v. d. Obstet. e. Gynecol. Pract.*, July, 1927, p. 281) the irregular and copious uterine haemorrhages occurring about puberty may be so severe as to lead to grave and dangerous anaemia. The results of treatment whether surgical or symptomatic are often disappointing, and time alone will bring about the re-establishment of the uterine and other hormone equilibrium with restoration of the regular menstrual rhythm and normal quantity. In some cases change of climate is beneficial, and in others diathermic applications to the true pelvis have been followed by good results. Merritt states, however, that in severe cases the most prompt and intense benefit is derived from treating the spleen by x-rays. The way in which these act is obscure, but the author reports twelve cases dealt with successfully by this means. He advises three applications—from the front behind, and the side respectively—given on successive days they are repeated during the fifth and eleventh or twelfth weeks. Diminution of haemorrhage and restoration of general health are brought about with great rapidity, the red blood cell count increases the platelets become more numerous, and the coagulation time is accelerated.

#### 453 Spinal Anaesthesia in Obstetrics

BRINDEAU and LANTUEJOL (*J. v. d. Obstet. e. Gynecol. de Paris*, April 1927, p. 243) in employing spinal anaesthesia during childbirth perform lumbar puncture and receive the cerebrospinal fluid in a tube containing 10 cc. of cocaine, the solution formed is slowly rejected. The puncture is preceded by subcutaneous injection of sparteine. In 25 cases the authors had two deaths both occurring shortly after the injection one patient was an obese alcoholic subject and the other had had seven or eight dry punctures. The authors remark that voluntary curvature of the lumbar vertebrae removal is difficult during advanced pregnancy so that lumbar puncture is not always easy apart from this from 4 to 5 per cent of patients experience incomplete anaesthesia. Nevertheless they are convinced that if devoid of danger spinal anaesthesia would be the ideal method for certain obstetrical purposes. Its most striking benefits are seen in abdominal Caesarean sections where corporal or cervical anaesthesia is described as incomparably more easy than under general anaesthesia. Pain is as a rule absent the fetus does not suffer haemorrhage is almost completely suppressed and after delivery of the child the uterus retracts so forcibly that eversion of the edges of the incision may be noticed. Spinal anaesthesia was used in 1-3 abdominal and in 2 vaginal Caesarean sections the latter were simplified by increased suppleness of the soft parts, but termination by version was necessary. In normal labour spinal anaesthesia is said to be contraindicated, too reflex expulsive pains are almost

abolished, so that extraction by forceps becomes necessary. In 26 cases of breech presentation spinal anaesthesia was found extremely helpful, here, as in 66 cases of forceps application in primiparae, delivery was greatly facilitated by reason of the paralysis of the vulval, perineal, vaginal, and cervical muscles. Spinal anaesthesia is not indicated when version is to be performed, or when in breech delivery a foot has to be pulled down, in these cases, in contrast with other observers, the authors have noted the manoeuvres to be rendered difficult by the increased force of uterine retraction and contraction.

## Pathology.

### 454 Quantitative Estimation of Albumin

LIPOWSKI (*Ued Klinik*, September 2nd, 1927, p 1340) describes a new method for estimating the amount of albumin in urine and cerebro spinal fluid. The fluid to be examined is slowly poured into a funnel lined with filter paper loosely covered with kieselguhr. The water clear filtrate is then roughly tested by the ring method to determine whether the albumin is abundant or only scanty in amount. From exact experiment by weighing it was found that urine containing 1 per 1,000 of albumin when diluted 100 times with water gave a just perceptible clouding on the addition of 1 cmm of a 10 per cent solution of acetic acid and potassium ferro cyanide. If the clouding appears with a dilution of 1 in 200 the urine contains 2 per 1,000 of albumin. With the help of a stand holding a number of graduated test tubes the clear filtered urine can be diluted to any desired dilution, and on addition of the acetic acid ferro cyanide solution it is possible to observe the dilution in which the clouding is just perceptible and to estimate with great accuracy the amount of albumin present in the fluid. The author claims that this dilution procedure is more accurate than Esbach's method, the smallest amount of albumin being precipitated, whereas by Esbach's method traces of albumin are not affected, the reaction of the fluid and its specific gravity need not be considered in Lipowski's test, and the temperature of the room is immaterial so that the dilution method can be used for any specimen of urine. Moreover, whereas Esbach's method takes twenty four hours, the dilution method gives the estimation in a few minutes.

### 455 The Effect of Exercise on the Blood Fat Content

J W T PATTERSON (*Biochem Journ*, vol xvi, No 4, 1927, p 958) has conducted a series of investigations on blood conditions after exercise, the five subjects being healthy medical students. The method of Stewart and White was followed in estimating the blood fat content, at first the blood sugar was determined by Benedict's method, but, as the results proved to be too high, that of Folin and Wu was later adopted. The cholesterol content was found by Blois's modification of the Autenrieth Funk process. Air samples for calculating the respiratory quotient were collected by the Douglas bag and analysed by means of Haldane's apparatus, the percentage of corpuscles was estimated by the haematocrit. In each case the same amount of exercise was performed (1) in the fasting state, and (2) after the oral administration of 100 grams of glucose. Patterson found that a definite and constant increase in the blood fat content occurred after exercise in the fasting individual, but not after the ingestion of glucose. This increase did not result from simple concentration of the blood, and may be due either to a definite response to a demand by the working cells for more fat or to failure to remove the fat from the blood stream. The author inclines to the former hypothesis, and suggests that the working cells only call on the fat when they have insufficient carbohydrate readily available. Certain indications point to a relationship existing between the blood fat and the blood sugar. In one case after the student had taken glucose while at rest the sugar rose in the first half hour and fell in the next, and the fat did exactly the reverse. This apparent relationship during resting, where the peak of the sugar curve coincided with the trough of the fat curve, was not maintained during exercise. Variations in the respiratory quotient were noticed, and these, taken in conjunction with the increase in the blood fat, might indicate that fat was being mobilized for conversion into carbohydrate. Investigation of the blood cholesterol seemed to show that it remained unaffected by exercise and unrelated to the definite blood fat variations.

### 456 Determination of Alcohol in the System

E ZEINER HENRIKSEN (*Norsk Mag f Laegevid*, July, 1927, Supplement) for the quantitative determination of small amounts of ethyl alcohol in the blood and urine employed the Nieloux Widmark potassium bichromate sulphuric acid method with Bang's iodometric reaction. The blood, urine, and other tissue fluids all show about the same concentration

of alcohol shortly after it has been taken by the mouth. For this reason it is concluded that the concentration of alcohol in the system can be determined by establishing that in the blood or urine. It is essential that the intervals between the taking of the various samples of urine should be as short as possible, since the longer the interval the greater is the difference between the amount of alcohol contained in the blood and that in the urine. Individual conditions also play an important part. Some observers have maintained that there is an essential difference between the excretion of alcohol in abstainers and that in persons accustomed to alcohol, on the assumption that the latter possess a more rapid power of combustion as regards alcohol. Zelner, Henriksen's experiments, however, do not bear out these differences. In the case of a confirmed alcoholic he found a high degree of alcohol concentration in the urine and a long period of excretion. Some observers have maintained that intoxication does not become obvious until the alcohol in the urine amounts to 3 per mille. The author, however, found that with an alcohol concentration in the blood of a little over 2 per mille there was a high degree of intoxication. The emise of the excretion of alcohol in the urine of a single individual taken at different times was found to be fairly constant when the conditions of the test were maintained as similar as possible. Increased diuresis after the consumption of alcohol was the rule, but was not found in every case. It is probable that numerous factors in this case are at work, such as the effect upon blood pressure, heart, vessels, kidneys. The author comes to the conclusion that investigations of the concentration of alcohol in the blood and urine are in certain cases of great importance in medical jurisprudence.

### 457

#### The Action of Insulin

G A HARROP (*Arch Int Med*, August 15th, 1927, p 216) compares the toxic symptoms produced by an overdose of insulin with those found in various other conditions, such as prolonged fasting or severe exercise, the cyclic vomiting of children, partial thyroidectomy, Addison's disease, and sclerodermia, in these the only common factor is a lowering of the blood sugar content to anything from 30 to 70 mg in 100 c cm. These symptoms consist chiefly in anger, collapse, sweating, lowered blood pressure, and sometimes syncope. Harrop divides the symptoms of insulin poisoning into the mild—namely, weakness, pallor, feelings of hunger, coldness or numbness of extremities, and occasional diplopia or tinnitus—and the more severe ones, resembling alcoholic intoxication, and often including delusions and subsequent amnesia, the collapse and syncope may pass into coma and death. He remarks that, nevertheless, hypoglycaemia *per se* is not always associated with these or any symptoms, nor is the raising of the blood sugar content to normal by the administration of sugar and orange juice invariably followed by their abatement. He suggests that insulin may have some other action, apart from producing hypoglycaemia, which is responsible for the production of the toxic effects.

### 458

#### The Haematological Response to Adrenaline

G CAREDDU (*Rev di Clin Pediat*, August, 1927, p 543) has studied the effect produced on the blood picture in 32 children by the intramuscular injection of adrenaline ebuloide (dose in proportion of 0.05 mg for each kilo of body weight). The injection was made three hours after a meal to avoid any leucocytosis due to digestion. Blood examinations were made before and fifteen minutes after the injection, and were repeated every quarter of an hour for the first hour. Of the 32 children 10 were in normal health and between the ages of 1½ months and 18 months, 12 suffered from an exudative lymphatic diathesis, their ages ranging from 1 month to 18 months, and 10 children between the ages of 6 and 12 years were scrofulous. With the exception of two patients with an existing leucocytosis of unknown origin, an adrenaleuc leucocytosis was observed in all the cases, this reached its maximum thirty minutes after the injection. The leucocyte formula varied at different intervals after the injection and was not uniform in all the individuals of the same group, in each of which there occurred at least three types of variation in the white cell picture: (1) a pure polynuclear reaction, (2) an initial mononuclear followed by a polynuclear phase, (3) a pure mononuclear reaction. From the varying frequency with which each group presented the different type of reaction it was possible to note the different reactions of the groups. The normal children showed a polynuclear reaction with only slight tendency to the biphasic type, the lymphatic cases showed more uniformly a pronounced mononucleosis, the scrofulous group were biphasic with marked polynuclear phase or else purely polynuclear. From a practical point of view the haematological reaction to adrenaline is not serviceable for the diagnosis of lymphatism, although with lymphatic subjects it gives a mononuclear and biphasic reaction.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

459 Generalized Reflexes Originating in the Viscera  
I. KNOTZ (*Monatsh. f. Med. u. Naturg.*, September 29th, 1927, p. 1231) has found that acute conditions of internal organs, especially such as are associated with rapid increase in tension as well as certain inflammatory conditions of the body coverings in which increased tissue tension is present may call for a widespread viscerotaneous and visceromuscular reflex responses in the corresponding half of the body such as hemic hyperaesthesia and hyperaesthesia, generally of one-sided increase of mucotonic and alterations in temperature. The observed taneous vaso-constriction and pallor of the skin is occasionally associated with a subjective sensation of cold in several cases of hiliary and renal colic but never in inflammatory conditions the response may affect only the cutaneous segment of the skin corresponding to the innervation of the viscera, or in severe cases with sensitive nervous systems it may spread to one whole side of the body. In inflammatory conditions however, the temperature of the affected side of the body is frequently higher than that of the other side, especially in the neighbourhood of the lesion. Cases of flushing of one cheek and one ear, nictal sweating, and difference in the size of the pupils have also been observed in similar circumstances though less frequently. The widespread "more primitive" type of response to stimulation is ascribed to diminished function of the inhibitory mechanism, the readiness with which this occurs depending on the "torpid" or neurotic nature of the individual. The conductivity in afferent nerve paths is, however, altered qualitatively as well as quantitatively, since for example, a stimulus ordinarily producing the sensation of touch is felt as pain when the hyper-irritable nerve is stimulated. The increase in muscle tone affects, apart from the trunk muscles, in the upper extremity mainly the triceps and in the lower the adductors and the gastrocnemius while the increased tension in the muscles of the neck may cause the head to be slightly inclined towards the side of the lesion with increased resistance to passive flexion forward or to the opposite side. The observation that injections—for example of tuberculin—sometimes produce more pain and greater increase of temperature on the side of the lesion than on the other side is also correlated by the author with the phenomena described previously. Knotz considers that mild unilateral hyperaesthesia such as prevents patients without obvious organic disease from sleeping on one side or the other may be helpful in diagnosing obscure or deep seated lesions.

460 Serum Prophylaxis in Measles and Pertussis  
J. T. CHRISTISON (*Minnesota Med.* October 1927, p. 599) reviews the literature and concludes that the most successful method of preventing or modifying the course of measles is to inject the serum of convalescent patients. When this is not available whole blood or adult serum may be used.

461 E. J. HENDERSON (*ibid.* p. 601) has found that a vaccine prepared from the Bordet Gengou bacillus is most effective as a prophylactic, but is also of great value in the early catarrhal stages of whooping cough. The vaccine should be freshly prepared and should be given in three doses of one billion, one and a half billion and two billions on alternate days. Care should be taken that this vaccine contains different strains of the bacillus. He adds that the immunity relative or absolute, lasts for a comparatively short time so that the vaccine should be injected only when there is suspicion of exposure to infection or in the presence of a widespread epidemic.

462 Transudative Epituberculous Pulmonary Infiltration  
G. CAUSSADE and A. TARDIEU (*Rev. de Med.* 1927, No 3, p. 283) report three cases of massive oedematous infiltration in tuberculous lungs which they designate "transudative." This oedema, rarely generalized, is more often localized in one pulmonary lobe, and shows the usual signs of neutrocytic oedema, cardiac, renal, or infective. The nodular or follicular lesions which give rise to it are rarely apparent to the naked eye. Histologically it is characterized by a pure transudation without any inflammatory reaction, fibrin, or leucocytes of varying density and extent there are present some discrete parenchymatous or peribronchial nodules with giant and epithelioid cells. Clinically this transudative oedema is shown by a large number of physical signs ranging from the symptoms of acute or subacute oedema to those of pulmonary

condensation. The most frequent indication is that of simple apical tuberculous infiltration or of softening. The excessive sero albuminous secretion is not always shown by sputa with specific characters, this may be due either to the great quantity of the expectoration or to the alveolar retention of the transudate. In radiograms this transudative type sometimes gives a shadow of extensive necro caseous lesions, but there may be no diminution of pulmonary transparency. This epituberculous transudation appears to be the substratum of areas of curable pulmonary tuberculosis, which explains the resolution which may occur. Differential diagnosis between this form and massive necro caseous infiltration is difficult. The pathogenic cause of this non inflammatory transudation is unknown. The authors believe that it may be due to a bacillary toxin acting at a short distance, or to invisible filterable forms of the tubercle bacillus. They add that Vaudremer has recently drawn attention to the part played by non acid resisting forms of tubercle bacilli in the pathogenesis of tuberculous pulmonary lesions not really productive.

463 Lung Infections due to the Pneumo-bacillus  
CITING Weichselbaum, Netter, and many other workers, A. LEMERIE and J. LEVESQUE (*Arch. Med. Chir. et Appareil Respir.*, April 2nd 1927, p. 97) maintain that the pneumo bacillus of Friedländer is the causal agent in three distinct types of respiratory disease pseudo membranous bronchitis intermediate between a pharyngitis and a pneumopathy, chronic bronchitis and pseudo-pneumonia which often ends in pulmonary necrosis and abscess. In the last form there is a great tendency to septicaemia and for the disease to extend to the pleura. The functional symptoms are much more marked than in pneumococcal pneumonia, and consist of an intense dyspnoea, a spasmodic, incessant cough, pain in the side, adynamia, facial enaciation with cyanosis, abundant sweating, and hyperleucocytosis. The sputum is characteristic being viscid blood stained compact and not frothy, yellowish brown, of a peculiar fetid odor, and very rich in the specific organisms. The authors emphasize the frequency of the following characteristics: the tendency to necrosis with a more or less diffuse suppuration of the lung, rapid cavity formation, the characteristic sputum, and the extreme frequency of septicaemia. The prognosis is extremely grave death supervening in the majority of cases. Ordinary treatment has little or no effect but pneumotomy has given encouraging results in a few cases and the use of vaccines and protein shock therapy appear to be indicated.

## Surgery.

464 Femoral Aneurysm  
D. SASSOWER (*Zentralbl. f. Chir.*, October 1st 1927, p. 223) refers to the difficulty in distinguishing an aneurysm from an abscess when thickening of the sac and thrombus formation have abolished pulsation and thrill. These pathological changes may produce further symptoms—such as pain, fever, and swelling, which, in the absence of the usual symptoms of aneurysm, render differential diagnosis difficult, especially when the swelling is very tense. In these cases an exploratory puncture may assist the diagnosis. Sassower describes a case which simulated a malignant growth. A man aged 32 had a tumour as large as a fist in Scarpa's triangle on the left side, this had commenced twenty years earlier as a painless swelling the size of a pigeon's egg but during the three months previous to his admission to hospital it had increased rapidly. There was no history of injury. The patient was thin, but apparently healthy otherwise. The tumour was rounded, well defined, and in some places was of a cartilaginous hardness. The overlying skin was livid atrophic slightly raised and traversed by numerous dilated veins. The inguinal glands were enlarged and hard and there was a large varicose nodule of the leg. Pulsation and thrill were absent and an exploratory puncture was negative. A diagnosis of malignant tumour was made. An operation was performed under spinal anaesthesia and the tumour was found to be a femoral aneurysm arising below the origin of the profunda femoris. The walls consisted of greatly thickened connective tissue, organized blood clot and scattered calcareous plaques. After ligation of the artery above and below the aneurysm the sac was dissected out. Recovery was uneventful. The author considers this case notable on account of the painless existence of the aneurysm.

for twenty years, and its lteney under the stress of heavy agricultural work and the hardships of war. The rapid growth of the tumour during the last month was due to dilatation of the sac and organization of the blood clot

#### 465 Saline Solution in Acute Intestinal Obstruction

L. P. COLEMAN (*Anesthesia and Analgesia*, October, 1927, p 210) reports observations on the use of hypotonic saline solution in acute intestinal obstruction. From a personal experience of 42 cases in the last six years he compares the first series of 20 cases, seen prior to his adoption of the salt solution in treatment, with the second series of 22 cases in which the patients received the same care and operative technique, but with the addition of a 3 per cent solution of sodium chloride injected subcutaneously, three quarts being given within twelve hours, or, as in one instance, 20 c cm of a 30 per cent solution being given intravenously twice a day. An operation mortality in the first series of 50 per cent contrasted with one of 11.1 per cent in the second series. Coleman suggests, therefore, that the toxæmia in acute intestinal obstruction can be neutralized by the free use of a 3 per cent solution of sodium chloride, which, in conjunction with operative relief, renders it possible to obtain a decided drop in the mortality rate.

#### 466 Varicose Veins

B. B. NICHOLSON (*Archives of Surgery*, September, 1927, p 351) finds that the occurrence of varicose veins is much more frequent than is generally assumed. In a series of 112 cases 70 were in males and 42 in females. Heredity appears to play an important part in the majority of cases, but pregnancy is only a secondary factor in the development of varices. In nearly 70 per cent of his patients the varices developed between the ages of 18 and 30 years, while both legs were affected about equally. The underlying condition in the process of the formation of varicose veins appears to be degenerative, and the later stages represent the results of a combination of deleterious influences. The valves act only in directing the blood stream towards the heart, and not in protecting the venous walls from static pressure. Treatment is often difficult and unsatisfactory, and great care must be taken in selecting cases for operation. In early cases elastic support should be tried. Advanced cases are best treated by surgery, the accepted method being excision. Nicholson recommends small incisions at intervals along the course of the vein and stripping out the vein. Various injecting agents were used with success in a number of cases.

#### 467 Treatment of Varicose Veins by Injections

H. O. MCPHEETERS (*Surg., Gynecol. and Obstet.*, October, 1927, p 541) advocates the injection treatment of varicose veins by the use of sclerosing solutions. The clinical results in 31 cases with 180 separate injections afford, in his opinion, conclusive evidence that the introduction of 20 per cent sodium chloride solution is superior to all other methods of treatment. The chief objection is the theoretical possibility of fatal embolism, but in a search through the literature McPheeters has traced only two deaths following the use of sclerosing solutions, one apparently due to fat embolism and the other to mercurial poisoning. The advantages of this method are that patients can follow their occupations and are spared hospital expense, the treatment can be easily repeated should there be recurrence. The technique is simple and, if care is exercised, all sloughing can be avoided. The main essentials are the use of a type of syringe which affords complete control of the needle point during both the injection of the solution and the aspiration of blood, taking care that the needle point is in the lumen, and immediately on its withdrawal the application of pressure with a gauze pad and bandage for from two to four days. The injection of salt solution may be followed by cramp-like pains in the leg below the site of injection, but these pass off in about a minute and are no more severe than many patients experience daily when on their feet. According to McPheeters the results are so uniformly satisfactory and so easily attained with a minimum of risk that the treatment will eventually supersede the surgical treatment of varicose veins.

#### 468 Typhoid Mastitis

I. SCHIFFMANN (*Deut. med. Woch.*, September 23rd, 1927, p 1643), who records an illustrative case, remarks that inflammation of the breast is one of the rare complications of typhoid fever. In his monograph on the surgical complications of the disease Madelung collected thirty cases from the literature up to 1923. Most of these cases were merely examples of infiltrations occurring during typhoid fever or in convalescence, and subsided spontaneously. In nine of Madelung's cases an abscess formed and a bacteriological examination was made in seven. In three of these typhoid bacilli were found, in two a pure culture, and in one associated with

*Staphylococcus aureus*. Schiffmann's case occurred in a woman, aged 26, who had been twice pregnant, and had had mastitis of both breasts after each of her confinements. Two years after the birth of her last child she contracted typhoid fever complicated by femoral thrombosis. Two months after recovery she developed mastitis, first in the right and then in the left breast, suppuration occurred in both and typhoid bacilli were found in pure culture. Slow recovery ensued.

## Therapeutics.

#### 469 Treatment of Diabetes by Synthaline.

SNAPPER (*Brussels Medical*, September 11th, 1927, p 1455) discusses the advantages and disadvantages of treating diabetes with synthaline, a derivative of guanidine, which is known to provoke hypoglycæmia in rabbits, but which also possesses strong neurotoxic properties. It is claimed for synthaline that it has stronger hypoglycæmic action than guanidine, it is less toxic, and its effects can be produced when administered by the mouth. Snapper was able to demonstrate, by operating on dogs made glycosuric by phloridzin and showing marked acidosis, that the administration of synthaline during starvation removed the acidosis, and that the effect persisted for several days. Whereas the action of insulin is immediate but transitory, the action of synthaline is slow and of longer duration. Insulin can be used in all severe cases of diabetes, but the use of synthaline is limited. It can only be employed in mild cases, when the food has to be greatly restricted in order to cause the disappearance of glucose from the urine, it may enable the diet to be improved. Snapper finds that the dose of synthaline is difficult to adjust. If given in sufficient amount to reduce the blood sugar it is apt to give rise to toxic dyspeptic symptoms, such as vomiting, diarrhoea, and anorexia, which in some cases appear with low insufficient doses, some patients being quite unable to tolerate the drug. Some clinicians have found that these symptoms can be relieved or removed if Riedel's decholin—a salt of sodium and hydrochloric acid—is given simultaneously with the synthaline. Snapper adds that the antidiabetic power of synthaline is limited, it is not possible to reduce the excretion of glucose by more than 30 grams daily, and this can usually be attained by a strict diet regime.

#### 470 Blood Transfusion in Infants

L. L. NUNN (*Minnesota Med.*, September, 1927, p 577) reports the case of an infant upon whom blood transfusion was performed by a method first introduced by Holmholz in 1915. In this procedure a needle, attached to a empty syringe, is inserted into the longitudinal sinus through the anterior fontanelle to the depth of about 1 cm. The needle is directed towards the external occipital protuberance, and it should have a short bevel to avoid puncturing the opposite wall of the sinus. When blood appears in the syringe the needle is firmly held and the syringe is replaced by a 20 c cm one containing the donor's blood, which is slowly injected. Nunn states that great care should be taken during the operation, and the continued presence of the needle within the sinus should be ascertained by frequent back pressure on the plunger. It is best to inject at the rate of 10 c cm a minute, as too rapid an injection is liable to cause intracranial pressure with fatal results. In this manner 60 to 100 c cm of blood can be introduced into the infant's venous system in a few minutes. The author adds that by utilizing the superior longitudinal sinus the problem of transfusion in infants is greatly simplified. This technique is efficacious, and superior to the clirito method, because it is more quickly performed, and the total amount injected is less. The introduction of relatively large amounts of fluid into an infant's vein is not desirable when there is no loss of body fluids.

#### 471 Protein Therapy of Pulmonary Tuberculosis

A. TIRONA (*Giorn. med. dell'osp. civ. di Venezia*, July-August, 1927, p 97) employed a non specific protein therapy in 46 cases in Tirona's third stage of pulmonary tuberculosis. He gave intramuscular injections of calcium caseinate. The first injection consisted of 2.5 c cm and the next of 5 c cm. The injections were given every other day if the reaction following the first injection had subsided. Although the treatment had no bad effects the results were not encouraging. In 25 cases no benefit was derived, but in 2 patients there was a real improvement, as shown by disappearance of fever, increase of weight, loss of cough and expectoration, and diminution of the moist sounds in the chest. In 3 cases, on the other hand, there was a decided aggravation, as shown by increase in the fever and other symptoms. The remaining 16 patients were unaffected.



## 472 Treatment of Ringworm with Thallium

J. H. T. DAVIES (*Brit Journ Child Dis*, July-September 1927, p 219) states that the advantages of thallium epilation over x-ray treatment of ringworm are as follows: There is no danger of a very burn; permanent alopecia, or even of incomplete epilation, provided that the correct dose, which can be weighed and is the same for everybody, is given. The question of damage to the brain does not arise and restless or imbecile children or babies are treated as easily as others. No expensive apparatus is required and the drug is no expensive. Epilation is to a much greater extent than with x-rays only auxiliary to the antipruritic treatment. In most thallium cases the infected stumps have to be extracted with forceps. The hair should be cut to about half an inch in length and the head washed every other day for six days and then daily. The infected areas should not be treated at first but the rest of the scalp should be rubbed with Whitfield's ointment after a shampoo once daily. After the infected areas are depilated they should be pilated with 4 per cent iodine in rectified spirit thrice daily for four days. As soon as the scalp is quite bald the whole of it is pigmented with iodine and then rubbed with non-mercurial ointment for three days. This iodine ointment sequence is continued for a further three weeks the scalp being examined for any stumps a least once a week and then discontinued in favour of daily rubbing with equal parts of oil of eucalyptus and lanoline until the new hair is well established.

## Radiology.

## 473 Serial Pyelography in Renal Surgery

By means of successive fluorium and direct observations after injection, 30 per cent sodium iodide solution through the ureters, R. BROGLIO (*Il Policlinico Sez Chir*, August 15th 1927, p 3-9) has discovered two varieties of movements of the kidney pelvis: (1) small movements in mass, giving the impression of sudden contractions of the whole kidney pelvis; (2) undulatory movements on the margin of the pelvis shade, of unequal rhythm, and directed from the exterior to the interior of the kidney. The normal kidney pelvis has a capacity of 3 to 12 c.c., and the approximate rate of emptying is about 1 c.c. per minute in the absence of pelvic infection. The time of evacuation varies with the amount of pelvic dilatation. In healthy persons it was found that the pelvis was emptied in 5 cases in three to four minutes and in 3 cases from five to six minutes; in 2 cases in 7 minutes and in one case the motility of the pelvis was inhibited for an hour by a too forcible injection of the opaque fluid through the ureter causing lumbar pain. In cases of ureteral stenosis the ureter being permeable to an ordinary catheter and the pelvis uninfected, the contractions of the kidney were violent and unequal in rhythm and duration. Evacuation of the kidney pelvis required as much as twelve minutes. After progressive dilatation of the ureter these symptoms disappeared and the patient has remained well for six months since. In a woman aged 22, with ureteral stenosis accompanied by pyelitis emptying of the pelvis lasted fifteen minutes the capacity being 13 c.c. with slight dilatation. Complete cure followed progressive dilatation of the ureter and washing out the renal pelvis with a solution of silver nitrate. In pyelitis the peristalsis was disordered and violent and the successive shadows appeared with great rapidity the pelvic capacity was usually normal and the evacuation exceedingly rapid. Treatment by washing out the kidney pelvis with a solution of silver nitrate resulted in cure in most cases. Cultures in the kidney pelvis were seen to move in synchronism with the peristaltic contraction. Broglia concludes that pyelography and pyelography should be a routine procedure in the surgical treatment of diseases of the kidney and ureters.

## 474 Utero salpingography

J. JAFCHO (*Surg Gynecol and Obstet* August 1927, p 129) considers utero salpingography—that is the radiological examination of the cavity of the uterus and Fallopian tubes after intruterine injections of iodized oil—to be a valuable method of diagnosis in selected cases. After an enema the night before and one on the morning of the examination the patient is placed in the lithotomy position as though for a vaginal operation on a table equipped with a Potter Bucky diaphragm. The patient is brought to the edge of the screen and a weighted speculum is placed in the vagina the cervix is grasped with a volsella cleared of mucus and swabbed with an applicator dipped in iodine which is washed off with alcohol. The vagina is swabbed with alcohol and dried, and the direction of the uterine cavity is determined with a sound A 20 c.c. Record syringe fitted with a modified Utzman Keyes urethral nozzle and a rubber tip 3 or 4 cm from the end to occlude the cervix and prevent the escape of

the fluid, is filled with warmed lipidol or iodipip up to the 15 c.c. mark and the nozzle is inserted into the uterus up to the rubber tip. The speculum is removed and the patient pushed higher up on the screen with the legs lowered. When rather more than 5 c.c. has been injected an x-ray picture is taken by the operator meanwhile maintaining a steady gentle pull on the cervix, at the same time pressing on the syringe to close the os completely. Care is taken that none of the oil flows out of the vagina on to the screen as its presence would spoil the plate. After two exposures have been made the nozzle is withdrawn and the patient is raised to allow the oil to drain from the uterus. Before removing the volsella a third plate is taken which invariably shows a shadow of the Fallopian tubes, if there are patent an accumulation of oil is seen in the pelvis near and round them. After twenty-four hours another photograph is taken and if no shadow in the pelvis persists another plate is exposed a week later. Jafcho claims that the procedure is entirely safe and harmless and that it has never given rise to iodism but strict aseptic precautions are necessary, with rest afterwards for at least a day.

## 475 Protective Measures in Screen Examinations

Realizing the feeble protection that is necessarily afforded when screening, S. GILBERT SCOTT (*Brit Journ of Radiol*, September 1927, p 327) adds four golden rules to the one laid down by the Protection Committee. These are: (1) work at a maximum distance; (2) use a minimum current; (3) waste no time; (4) use a small field. Distance being a very efficient filter the fluoroscope should be so designed that the face of the operator can never be nearer to the tube than thirty inches. The amount of current used should be the absolute minimum for the case in hand, 3 mm being ample for an average case. Each patient should be submitted to the same strict routine, regardless of any pathological conditions that may be present, the diagnosis not being decided upon until a complete examination has been made. The use of a small radiation field not only provides better protection but incidentally gives sharper definition to the area being investigated. As much as possible of the working apparatus should be enclosed in a cabinet as air tight and noise proof as possible. If these conditions are observed protective gloves need not be of a heavy type light protection is quite effective but should be provided for both the back and front. If the use of heavily protected gloves is deemed necessary the face must also be protected. It is a wise precaution to limit the number of screen examinations by any one person to about six daily.

## 476 Radium Treatment of Cancer of the Tongue.

A. EVANS and S. CLIDE (*Brit Journ of Surg*, July 1927, p 55) record the clinical findings in seventeen patients with cancer of the tongue treated by radium. The local changes were remarkable and the neoplasm disappeared in many cases. It is suggested that when the disease is operable it should be treated by radium rather than by excision but no claim is made as to the permanence of the results obtained. The authors find that the functional type of growth gives the best results and the smaller the size the better the prognosis. The primary growth is treated first and then the glands. Local anaesthesia is used and needles are inserted into the growth and left in position for six or eight days. After three months it is difficult in successful cases to find the site of the original growth, and the motility of the tongue returns to normal. The paramount difficulty is the treatment of the glandular area. A combination of surgical excision and radium therapy appears to be the most satisfactory method. In sixteen out of seventeen recorded cases the primary growth disappeared entirely after treatment.

## Obstetrics and Gynaecology

## 477 Mental Disorders of the Climacteric.

S. E. JONES and S. J. VINOUE (*Med Journ of Australia* August 27th 1927, p 283) have studied 811 case histories of female mental patients between the ages of 40 and 60 to find out which conditions were responsible for the increased incidence in mental disorders at the menopause. They state that the melancholic psychoses predominate in the simple and anxiety forms the prognosis is good in the agitated and stuporose less favourable. The delusional cases make up the greater number of this class and their prospects of recovery are less good. Mania cases formed an unexpectedly small group and here, again, the presence or absence of delusions influenced the prognosis. The paranoid group was also small and the prognosis was grave. Alcoholic psychoses accounted for 10 per cent and recoveries were numerous. In confusional cases the physical state was of great importance and practically decided the issue. Syphilis accounted for some of the



increased incidence, as the onset was usually during this period. Of the psychoneuroses neurasthenia was twice as common as hysteria. The increase in mental disorders was partly accounted for by the metabolic disturbances consequent on the cessation of ovarian function. Other factors were—the conjugal state, the rate being higher in single women, hereditary influences, which appeared to be of little consequence, and previous attacks. In melancholia the first attack was commonly at the climacteric, in mania it usually occurred earlier. Exciting causes fall into two groups—the physical and psychical. The authors add that there is no psychosis peculiar to the climacteric, but melancholia is its characteristic psychosis while neurasthenia is the characteristic neurosis. As regards artificial menopause, contrary to expectation the causal relation between this operation and the breakdown was not always clear. After hysterectomy or double oophorectomy there were a few cases in which mental disorder arose apparently as the direct result, but in the majority other factors came in, such as previous neurotic symptoms and domestic infelicity. In such cases the operation may have aggravated a pre-existing psychopathic tendency.

#### 478 Nitrous Oxide Analgesia in Childbirth

F. R. PASMAN (*Cronica medico qui de la Habana*, August, 1927, p. 421), from experience of nitrous oxide analgesia in twenty cases of delivery, concludes that it causes a remarkable disappearance of pain, there is no obvious diminution in the intensity and duration of the uterine contractions, there is no toxic effect on the mother or the child, and, in view of the absence of any toxic effect and its almost immediate elimination, it is considerably superior to ether, chloroform, and other anaesthetics more or less in vogue, which are known to have toxic effects. The only drawback to the anaesthetic is its high cost. Like other anaesthetics, it is contraindicated in conditions of asphyxia, acute tonsillitis, tumours of the neck, and any other obstructions in the respiratory tract. It should also be avoided in uncompensated heart disease, arterio-sclerosis, and pulmonary emphysema.

#### 479 Gonococcal Endocarditis following Labour

E. KLEIN (*Bull. Soc. d'Obstet. et de Gynéc.*, September, 1927, p. 524) reports a case of endocarditis, probably of gonococcal origin, in a pregnant married woman, aged 25. The patient, following an appendicectomy three years previously, had suffered from a marked leucorrhoea with very troublesome itching. Her recouchement, terminated after a long labour by forceps intervention under chloroform, was uneventful, and the child was well formed. The puerperium was normal for the first few days, excepting for an obstinate diarrhoea. Five days after birth the infant developed a purulent right ophthalmia, which, despite treatment, spread to the other eye. Examination of the pus revealed the presence of numerous gonococci. The husband had an anterior haemorrhagic discharge. Nine days after delivery the patient became slightly pyrexial, and a few days later vague pains were felt in the legs, particularly in the knee joints and calf muscles. There followed violent rigors, profuse sweats, intermittent diarrhoea, and other septicæmic symptoms. Auscultation of the heart revealed signs of infectious endocarditis. Despite all treatment the patient sank into coma, and died forty-eight days after her confinement. As the lochia had ceased when the first symptoms developed no bacteriological examination was possible, but blood cultures proved negative. Owing to the presence of gonococci in the ocular pus of the infant, the haemorrhagia in the husband, and the persistent leucorrhoea in the patient, Klein believes this to be a case of gonococcal septicæmia with cardiac localization.

## Pathology.

#### 480 The Mechanism of Perspiration

In conducting a series of experiments on perspiration Y. KUNO (*Journ. Orient. Med.*, September, 1927, p. 39) measured at the same time the amount of water discharged in five minutes from the skin at two different areas of 20 square centimetres each. Previous experiments had proved that measurements on such small areas satisfactorily revealed the state of sweating over the whole body. The temperatures of these parts of the skin and in the rectum were simultaneously determined. It was found that sweat secretion appeared and disappeared completely over the whole body, it was never local, the only difference at the various parts of the skin being in the absolute amount of sweat. This indicates that sweating is always caused by the action of the sweat centres, and that the excitation of these centres and the intensity of the nervous connections between these and the

sweat glands are the most important factors in sweating. Kuno forms the response of these centres to excitants, such as increased atmospheric temperature, the ability to perspire. The experiments showed that the height of the atmospheric temperature which just caused sweating was remarkably lower in the same individual during summer weather, on the day after a heavy drinking bout, or in a weakened condition after an illness. Sweat secretion appears to depend, therefore, on a variety of causes. Variation in the excitability of the sweat centres is the most important factor in changes in the ability to perspire, and it is probably brought about by alterations of the body temperature or by some chemical processes in the blood, changes of the skin temperature or of the blood supply being also possible contributory factors. With regard to the state of the ability to perspire the author finds that individuals fall into one of three categories: (1) Those who have little ability to perspire even when exposed to high temperatures, the heat consequently accumulating in their bodies. These are unsuited for rest in the tropics, or for any heavy manual labour. (2) Those who perspire in accordance with the necessities of the regulation of body temperature. These are normal. (3) Those who are always liable to sweat. This may be a sign of some abnormal condition, such as illness, and have a wide application for diagnostic purposes.

#### 481 The Effect of Heat on Antibodies

F. S. JONES (*Journ. Exper. Med.*, August, 1927, p. 291) has studied the effect of different temperatures on the destruction of antibodies. He immunized rabbits with various antigens, diluted the serum 1 in 2 to 1 in 5, and exposed it to temperatures of 65° to 90° C. for twenty minutes, the titre of the resulting serum was then compared with that of the unheated control. The experiments showed that antibody destruction increased gradually as the temperature was raised. Jones states that since the destruction is a function both of time and temperature it is unjustifiable to postulate the existence of a critical temperature, the most that can be said is that with the time factor kept constant the proportion of antibody destroyed at one temperature is so much greater than that at a lower temperature. For practical purposes, however, it is convenient to choose certain temperatures at which the destruction is practically complete in a given time, and to regard these temperatures as critical temperatures. Using the term "critical temperature" in this sense the author found striking differences in the reaction of different antibodies to heat. In one experiment an antiserum was prepared to a motile strain of the hog cholera bacillus, this serum had a titre of 1 in 2,560 when tested against a motile strain, and of 1 in 1,280 when tested against a non-motile strain. After the serum had been heated to 75° C. the titre to the motile strain was 1 in 1,280, whereas that to the non-motile strain had fallen to nil. In other words, the flagellar agglutinin was hardly altered, while the somatic agglutinin was completely destroyed by this temperature. Further work showed that the flagellar agglutinin was not completely destroyed even by a temperature of 90° C. He found that somatic agglutinin to the hog cholera bacillus and a precipitin to cow serum were both destroyed completely at 75° C., agglutinin to red cells was destroyed at 80° C., anti-sheep haemolysin at 85° C., and flagellar agglutinin to the hog cholera bacillus not completely even at 90° C. A warning is given that comparisons cannot be made between similar antibodies in the serum of different species of animals, for example, somatic agglutinin in rabbit serum resisted 70° C. for twenty minutes, while the same agglutinin in cow serum was destroyed at 65° C.

#### 482 Microprecipitation Test for Syphilis

M. G. PETERMAN (*Amer. Journ. Dis. Child.*, September, 1927, p. 404) suggests a modification of the precipitation test which is said to be simple and accurate. He uses a pipette graduated in divisions of 0.001 c.c., a hanging drop slide, and a thermometer. The Neumann and Gager antigen is used, this is made by extracting minced ox's heart several times with ether and then with alcohol, cholesterol being added to the final extract, which is then diluted with normal saline solution. After the serum of the patient has been inactivated at 56° C. for half an hour, 0.05 or 0.025 c.c. is placed in the concavity of a hanging drop slide, 0.01 or 0.005 c.c. of diluted antigen is added and stirred thoroughly. For optimal dilution of antigen is used. A glass cover slip is applied and the preparation is placed in an incubator at 37° C. for ten minutes, after which the slide is rotated to mix the solution thoroughly and is examined, preferably with the aid of a microscope. The results are interpreted according to the degree of precipitation, plus one, two, three, and four. In 500 tests the microprecipitation test was positive in 99.4 per cent of the cases in which syphilis was demonstrated, while the Wassermann reaction was positive in 91.9 per cent of these cases.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

### 483. Coincident Typhoid Fever and Malaria

L. H. HIRTZ (Journ. Amer. Med. Assoc., August 20th, 1927, p. 2586) who records an illness in this case states that there are many instances on record of the coexistence of typhoid and malaria in the same patient especially in malarial districts. Typhoid fever more frequently than other infectious appears to light up a latent malaria probably because of the severe strain of a wasting disease on the bodily functions. The first is most frequently the dominant disease, running a dormant malaria into activity. The malarial pyrexia however may alter the typhoid temperature curve at the onset during the course or most frequently in convalescence. Of 543 typhoid patients treated at the University Hospital Philadelphia, in the period 1895-1926 only two gave clinical and laboratory evidence of superimposed malarial infection. His case which occurred in a man aged 35 differed from the great majority of those on record in that the malaria appeared to be dominant. The temperature curve resembled that of double tertian infection and tertian parasites were demonstrated in the blood simultaneously. Cultures of *H. typhosus* were obtained from the faeces and urine and the Widal reaction which was negative on admission, became strongly positive eight and eleven days later. This fact and the rapidity with which the organism disappeared from the excreta under treatment showed that the patient was not merely a typhoid carrier. The course of the illness was mild the patient remaining afebrile after moderate doses of quinine. This case, therefore confirms the view that the course of the double infection is apt to be milder than that of either disease alone.

### 484. Syphilitic Diabetes

F. WOOD DUFRAE (Le Scalpel, September 3rd, 1927, p. 845) in view of the rarity of diabetes as a sequel of syphilis describes the case of a man aged 54 who complained of loss of weight, intense dysphagia without regurgitation and defæcto dyspnoea on exertion. A year previously there had been an increase in the area of aortic dullness and accentuation of the second aortic sound. Skiagrams showed considerable aortic enlargement with a small heart and definite dilatation of the upper third of the oesophagus above a constriction at the level of the transverse arch of the aorta and sufficient to arrest a small portion of the barium test meal. The patient had contracted syphilis at the age of 20, he had been treated and had had no recurrence. The liver was a little larger than normal and there was slight intestinal stasis. All reflexes were normal except that the knee jerks were absent. The urine contained much sugar, no albumin, some bile pigment but no urobilin bile acids or ketone bodies. There was a positive Wassermann blood reaction. When fasting the blood sugar figure was 184 mgms. dietary restriction and the administration of insulin were ineffective. Bismuth treatment was followed by progressive diminution of glycosuria, glycaemia and diuresis. The patient felt better and gained weight. One month after the commencement of the bismuth treatment the glycosuria and diuresis had disappeared permanently. The patient returned to work, the dyspnoea diminished and the weight increased. The dysphagia persisted, but caused little discomfort.

### 485. The Seborrhoeic Facies of Encephalitis

D. KRESTIN (Quart. Journ. Med., October 1927, p. 177) describes the seborrhoeic facies as a manifestation of post-encephalitic Parkinsonism and allied disorders. He emphasizes the importance of the association of organic brain disease with disorders attributable to disturbance of the vegetative nervous system as well as the particular control exercised by this system over cutaneous secretion. His conclusions are based upon 73 patients of whom 52 were suffering from chronic epidemic encephalitis lethargica, mostly with the typical Parkinsonian syndrome. The essential skin condition is an excessive secretion of sebum rendering the skin unusually greasy and shiny, especially on the face and generally associated with Parkinsonian rigidity and excessive salivation, and occasionally with excessive nasal secretion. It affects both sexes equally and is most frequent between the ages of 16 and 30. Other accompanying indications of involvement of the vegetative nervous mechanism are frequently seen, such as hyperidrosis, patchy hyperaemia, blotching of the skin, and coldness and blueness of the extremities.

Krestin suggests that since destructive lesions in the sub-stantia nigra and in the adjoining region of the base of the third ventricle are found in chronic encephalitis lethargica and allied conditions manifesting the Parkinsonian syndrome, and since there is evidence pointing to the existence in these areas of centres connected with the autonomic nervous system, it is possible that the secretory disturbances may depend upon lesions in the neighborhood of the third ventricle involving such centres.

### 486. Intoxication by Methyl Alcohol

ACCORDING to F. RIENDEAU (These de Paris 1927 No 211) prohibition in the United States has given rise to numerous more or less adulterated contraband varieties of alcohol. The principal substitute for ethyl alcohol is methyl alcohol which is commonly used for industrial purposes and is a violent protoplasmic poison with a selective affinity for the delicate structures of the eye. After absorption methyl alcohol becomes transformed by oxidation first into formic aldehyde and then into formic acid which are both corrosive poisons. Vomiting, abdominal pain and sudden blindness are symptoms suggesting methyl alcohol poisoning. Riendeau concludes that prohibition has not yielded the desired effect. Owing to the intense scale on which smuggling is carried out and the absence of control of numerous forms of alcohol contraband, toxic substances—especially methyl alcohol have given rise to a large number of severe and fatal cases of poisoning, which were very rare before the passing of the Volstead law.

### 487. Laryngeal Ictus in Whooping cough

H. BERGMANN (Deut. med. Woch. August 19th, 1927, p. 13) records a case in an otherwise healthy man aged 43 who had attacks of coughing during which he became unconscious for a few seconds. His wife and daughter were suffering from whooping cough at the time. As all other causes could be excluded such as faint epilepsy, asthma and syphilis, Bergmann attributes the ictus to whooping cough, especially as the condition was cured by codeine which he regards as almost a specific for whooping cough. The occurrence of laryngeal ictus in whooping cough seems first to have been described by Heberden.

## Surgery

### 488. Oesophageal Spasm as a Surgical Symptom.

P. R. MICHAEL (Nederl. Tijdschr. v. Genees., October 8th, 1927, p. 1519) states that at the meeting of the German Surgical Society in 1925 Sauerbruch reported a case of oesophageal diverticulum operated on by him in which the initial diagnosis was cardio-spasm. Michael himself has had a similar experience. In one case oesophago-copy was performed on a patient with spasm in the upper part of the oesophagus. In this case an ulcer apparently of a benign nature was found below the site of the spasm. He has also recently seen two cases of spasm of the lower end of the oesophagus or cardiac end of the stomach in one of which the spasm was associated with a large gastric tumour in this neighbourhood, while in the other case the spasm was due to gastric ulcer. Spasm of the oesophagus may therefore be a symptom of far reaching importance and both the clinician and the radiologist will be well advised to regard it as a symptom as long as possible and not as an independent disease until after other possible conditions have been excluded.

### Chronic Subdural Haematoma.

489 F. C. GRANT (Annals of Surgery, October 1927, p. 485) records notes of three cases which illustrate the possible importance of even a trivial cranial trauma in the etiology of obscure intracranial conditions. Pugh and Cushing have defined the microscopical differences in structure between the subdural blood clot resulting from trauma and that consequent upon chronic systemic disease. Whatever be underlying pathology is however the clot whether resulting from chronic inflammation of the dura during a wasting disease or produced by trauma gives rise to one clinical picture. Treatment consists in its removal preferably by decompression or reflection of an osteoplastic flap. Occasionally simple trephining over the lesion with the introduction of a cannula may result in evacuation of the fluid portion of the clot with apparently permanent relief and necessitate no further surgery.

have been reported following lumbar puncture, but this latter method is not better than direct drainage or complete operative exposure and removal of the clot. Since such subdural haemorrhage is often bilateral the contralateral dura should be inspected as a routine through a small trephine opening in order to determine the presence or absence of underlying blood, and this should always be done if the patient does not rally well after removal of the clot from one side. The onset of symptoms of intracranial pressure is insidious with an abrupt development of localizing signs of involvement of a definite cortical area. Grant adds that should there be a post-operative return of intracranial pressure, which may be due to cerebral oedema or an undiscovered contralateral clot, it seems useless to re-elevate the flap or relieve tension by lumbar puncture, the administration of hypertonic solutions by mouth and vein should be given a thorough trial.

#### 490 Operative Treatment of Recurrent Patellar Dislocation

ACCORDING to J VORSCHUTZ (*Zentralbl f Chir*, October 15th, 1927, p 2627) the knee joint should not be opened in the ideal operative treatment of this condition, since the most scrupulous asepsis will not always prevent infection. Having had disappointing results after plastic operations on the capsular ligament, the author has employed successfully the following method in four cases. A crescentic incision, commencing at the level of the upper inner border of the patella, is carried downwards, outwards, and finally upwards, at first concentrically with the patella and then prolonged to the level of the great trochanter. The skin over the patella is reflected, strips of fascia lata measuring 1.5 by 20 cm are dissected out and placed in warm normal saline solution, and the gap in the fascia lata is closed with catgut sutures. The fascial strips are folded lengthwise and threaded through the eyes of packing needles. Commencing at the medial portion of the patellar border the strips are passed at intervals of 1 cm in and out through the patellar margin. The ends are lightly secured with forceps, and then tied separately. At the patellar margin the ends of the strips measuring 4 or 5 cm, are crossed and fixed with catgut and silk to the inner edge of the ilio-tibial band and the periosteum of the internal condyle. When the patella is not in good position in the intercondylar groove, the ilio-tibial band is fixed to the outer patellar border. This operation renders it unnecessary to open the knee joint. Active and passive movements were commenced on the fourteenth day, and in two of the cases the patient had recovered completely in four weeks. Primary healing occurred in all four cases, in one patient a subcutaneous abscess necessitated drainage. The infolded fascia forms a thick band, which subsequently contracts and retains the patella in its normal position.

#### 491 Paget's Disease of the Nipple

J M WAINWRIGHT (*Amer Journ of Surg*, September, 1927, p 218) objects to the term "Paget's disease" being used to indicate many various conditions, some of a trivial character. He considers the condition to be a distinct entity, and that it is due to interference with nutrition where a cancer lies deeper in the breast, such a tumour may not at first be apparent clinically. It is not thought to be a neoplasia of the nipple, nor a squamous epithelioma, though Wainwright agrees that squamous epithelioma of the nipple is frequently associated with carcinoma in deeper portions of the breast. Such an association, in his opinion, can only be explained by Gye's hypothesis. The author describes and illustrates the morbid histology of a case he has investigated in which there were present four distinct varieties of breast carcinoma—namely, squamous epithelioma, comedo types, many separate foci of scirrhous carcinoma, and one nodule of the glandular type. Wainwright suggests that this protean manifestation is due to some change in the breast which resulted in the production of Gye's specific substance in many cells throughout the organ.

#### 492 Glandular Tuberculosis in an Adult

L BERNARD, M SLOMON, and M LELONG (*Ann de Med*, October, 1927, p 249) record the case of a woman, aged 30, who seven years after close and prolonged contact with a tuberculous patient, and one year after similar contact with another tuberculous subject, progressively developed a febrile condition of a typhoid character (typhobacillosis of Landouzy) which lasted three weeks and then subsided by lysis. The Vidal test was negative and the Pirquet test strongly positive. After a remission of three months, during which the temperature remained normal and the appetite excellent, although x-ray examinations showed the persistence of tracheo-bronchial adenopathy, the patient lost flesh, became febrile, sweated profusely, and developed almost simultaneously ulcero-creous peritoneal tuberculosis with enlargement of all the abdominal lymphatic glands and pulmonary tuberculosis starting at the hilum. This second stage lasted eight months, death being due to pericarditis.

## Theapeutics.

### 493 Liver Diet in the Treatment of Pernicious Anaemia

J HUSTON (*Amer Journ Med Sci*, October, 1927, p 520) records observations on thirty cases of pernicious anaemia in which the diet described by Minot and Murphy was given. With one exception the patients were kept in hospital for an average period of one month, and, when remissions were apparent, convalescence and further treatment were continued at home. That the liver was the important item in treatment was impressed on the patients. Personal idiosyncrasies (for which allowance was made) were frequent. Twenty nine of the cases developed remissions on this diet. Subjective improvement was noted within a few days and progressed so rapidly that, at the end of a month or a month and a half, the patients felt relatively well so far as ordinary activity was concerned. The remission persisted for a period as yet undetermined if the diet was continued, but relapses occurred when it was discontinued for very long. Achlorhydria persisted during the remissions. Numerical and other blood changes were usually evident about the first week, evidence of bone marrow regeneration being shown by the increase in reticulated, stippled, polychromatophilic, and nucleated erythrocytes, and of decreased blood destruction by the progressive fall in the amount of blood bilirubin. In view of the relatively high protein content of the diet, and because of the renal changes observed in some cases of pernicious anaemia and in patients at the age at which the disease occurs, Huston thinks that renal conditions should be carefully examined in both primary and secondary anaemias in patients placed on this diet.

494 O HANSEN and O STUB (*Udskrift f d Norske Laegeforening*, October 15th, 1927, p 1045) have treated 11 patients suffering from pernicious anaemia, and several other patients suffering from secondary anaemias, with a liver diet, according to the principles laid down by the American workers, Whipple, Minot, Murphy, and others. In 8 cases the pernicious anaemia was uncomplicated, and in the remaining 3 cases it was complicated by Graves's disease in one case, by syphilis in another, and by sepsis in a third. No marked effect was observed in the cases of secondary anaemia, although some of the patients stated that they felt definitely better. But the reaction to this treatment in the cases of pernicious anaemia was such that it seemed to deserve the title of "specific." In the case of a farmer, aged 57, an average of 388 grams of liver was consumed daily, 61 grams being taken at breakfast, 225 at dinner, and 102 at supper. About 100 grams of kidney were also eaten daily. This treatment was continued for about two months. The haemoglobin, which had been 31 per cent on admission to hospital, was 101 per cent on discharge. The number of red cells changed from 1.14 millions to 5.3 millions, the colour index from 1.40 to 0.95, and the white cells from 5,160 to 9,600. On discharge no nucleated red cells were demonstrable, and no polychromasia. After giving detailed records of some of their cases the authors draw attention to the regularity with which the disease responded to this treatment after the same interval of time. In all their cases improvement began between the fourth and sixth day of the treatment. In two cases practically normal figures were attained with regard to the haemoglobin and the red cells, and the authors ask whether complete arrest or cure of the disease can be claimed in such cases. They are sceptical on this point, and they note that measurements of the size of the red cells by the Buntzen-Gram method showed that though these cells diminished somewhat under this treatment they did not return to the perfectly normal size. The authors did not follow in every detail the directions given by Minot and Murphy, and they limited themselves to giving each patient an average of 200 grams of liver daily in addition to the standard hospital diet, which was supplemented by vegetables and fruit. They were surprised to find how well the patients tolerated the liver (that of calves, huddocks, sheep, and pigs) given both in the raw state and cooked.

### 495 Treatment of Whooping cough

R R STRUTHERS, MARY CHILDS, and W R KENNEDY (*Canadian Med Assoc Journ*, September, 1927, p 1042) emphasize the importance of treating children with whooping cough by rest in bed, combined with moist fresh air and direct sunlight. They think that artificial sunlight may help to shorten the period of cough after the cessation of the spasms, reduce the likelihood of fresh upper respiratory infection, and restore to the normal the enlarged tracheo-bronchial glands and the deranged calcium metabolism. They obtained good results from the rectal injection of a 20 per cent emulsion of ether in oil but do not intramuscular injections of ether as being painful and causing abscesses. Luminal in doses of 1/2 to 1 grain three times a day, for

children aged 6 to 8 years, was found effective in prolonging the intervals of rest and minimizing fear of the spasms. The authors also recommend vaccine treatment and have used cultures of *B. perussii* doses of 2 million to 10 million being given on every second or third day. Patients treated by this did not do so well as in former years, nevertheless this procedure, combined with large doses of a freely prepared vaccine, is the favourite treatment of the authors. They consider a period of four weeks after the onset of the disease sufficient for isolation.

#### 495. Neurovaccine Prophylaxis of Small pox

L. N. ANGLIO and F. V. CALDERON (*Ann. Intern. Med.*, September 10th 1927, p. 256) state that, almost simultaneously with Levaditi in France, Professor Caldeiro commenced his investigations on neurovaccine in the Spanish National Institute of Hygiene. The advantages of neurovaccine is compared with ordinary vaccine are stated as follows: (1) The clinical course of the vaccination. Among 20,000 cases in which it was used Caldeiro did not see a single example of hemorrhagic pustules, ulceration, generalized vaccinia, nervous symptoms, or erysipelas. The Spanish National Institute of Hygiene has distributed three million doses without having received any complaints apart from occasional failures, especially in the summer months. (2) Success of the prophylaxis. The present authors were successful in 95 out of 50 vaccinations with neurovaccine—a percentage not surpassed by the best dermiovaccine. (3) Rapidity of the preparation of lymph. Neurovaccine can be obtained ready for use in six days, whereas dermiovaccine requires at least a month for its preparation. (4) Purity. It hardly needs bacteriological examination as it is very pure. Neurovaccine is about 50 per cent cheaper than dermiovaccine.

## Ophthalmology

#### 497. Ultra violet Rays in Ophthalmology

BIRCH HIRSCHFELD (*Frit. Journ. ophthalmology*, October 19, 1927, p. 122) has found ultra violet rays useful in the treatment of corneal disease especially in cases of ulcus serpens. He uses a carbon arc lamp of 5 lamps with a quartz lens, a glass and a quartz bulb with iron sulphate to absorb the heat rays. He focuses the rays accurately upon the diseased area and gives an exposure lasting from three to six minutes once or twice a day. He does not claim to have obtained a cure in every case but considers that this method is a definite advance in the treatment of severe corneal conditions. The iron sulphate filter is to exclude the infra red rays and the violet glass the greater part of the light rays.

#### 498. Effect of Size of Stimulus in Perimetry

C. E. FERRELL and G. RAND (*Intern. Journ. Ophthalmol.*, June 1927, p. 399) describe their attempts to determine the effect of size or area of the coloured stimulus used in perimetry. They had previously experimented with the intensity of the stimulus and the brightness of pre-exposure and surrounding field on the size and shape of colour fields. They conclude that the size of the stimulus is nearly as important as its intensity in regard to visibility of colour in the peripheral field. By increasing the size of stimulus colour can be made visible in the extreme periphery of the field. The size of the stimulus produced the least effect with a pre-exposure and surrounding field of the brightness of the colour.

#### 499. Seasonal Incidence of Ulcus Serpens Corneae.

E. V. KNAPE (*Finska Läkarsällskapet Handlingar*, September, 1927, p. 780) draws attention to the lack of statistical evidence in support of the teaching that ulcus serpens corneae is more common during the warm seasons of the year than at other times. To check the truth of this teaching, and to investigate the incidence of this disease, he analysed the material available at the University Eye Hospital in Helsingfors making use of the out-patient as well as the in-patient material. In the ten year period 1908 to 1917 there were 34,777 patients and the number of cases of ulcus serpens was 386, or 1.1 per cent. The frequency of this complaint as among patients attending an eye hospital has been put as low as 2 per 1,000 and as high as 7 per cent. The latter figure being obtained from the University Eye Hospital in Oslo. Of the author's 386 patients as many as 272 were males. Thus the ratio of males to females was as 7 to 3, whereas the ratio of the total male to female attendances at the hospital was as 7 to 5. A classification of the patients according as they were town or country dwellers showed that the attendances of town dwellers numbered 22,324 and those of country dwellers 11,953. The cases of ulcus serpens coming from towns numbered 123 or 0.6 per cent, and the cases coming from country districts numbered 258 or 2.2 per

cent. This disease is therefore approximately four times more common among country dwellers than among town dwellers. The incidence of ulcus serpens from year to year during the ten year period was remarkably uniform, but when the cases were classified according to the months in which they occurred it was found that so far as town dwellers were concerned there was practically no difference in the monthly incidence of this disease throughout the year, but in the case of country dwellers it was most frequent from the middle of May till the middle of October, the greatest incidence being in August. Ulcus serpens is thus most frequent at a time when country dwellers are at work in the woods and fields, when the atmospheric temperature is at its highest.

#### 500. Treatment of Progressive Myopia.

M. WIENER (*Intern. Med. Assoc.*, August 20th, 1927, p. 594) suggests that in progressive myopia due to stretching of the sclerotic coat of the eye diet and exercise especially out of doors by producing an increase in the epinephrine output of the suprarenal glands, should help in arresting its progress. Acting on this assumption Wiener treated 1,000 cases with local instillations of epinephrine hydrochloride, 1 in 1,000 three times daily. Reading and close work were not restricted provided they did not interfere with daily regular outdoor exercise and a rational wholesome diet was given. The general improvement was so satisfactory and in some instances so remarkable that Wiener thinks these lines of treatment deserve further trial.

## Obstetrics and Gynaecology

#### 501. Prophylactic External Cephalic Version

G. F. GIBBERD (*Journ. Obstet. and Gynaecol. of the Brit. Sh. Empire*, Autumn No. 1927, p. 509) comments on the high foetal mortality in breech labour and strongly recommends external version as being free from serious risk for mother or foetus and usually effective. He thinks that this procedure should be tried as a routine soon after the thirty second week and if it fails a second attempt should be made after about a fortnight if necessary an anaesthetic should be given before it is decided that version is impossible. Gibberd states that since the difficulty lies in turning the long axis of the foetus past the short axis of the uterus it is most important to promote flexion of the foetus whereby the foetal ovoid shape becomes more spherical. The manipulation varies according as the breech or the head is the more accessible pole. In the first case the breech should receive most of the force applied, in the second case the head. In the left sacro anterior position for example, if the breech is more easily reached and displaced, it is pushed upwards and to the right with the right hand (to increase flexion) while the left hand gently presses the cephalic pole downwards and to the left. In the same position if the head is more easily accessible it is pushed downwards and to the right with the left hand while the right hand lifts the breech upwards and to the left. The most common source of difficulty is engagement of the breech which is often associated with extension of the legs before version is possible it is necessary to lift the breech out of the pelvis which may be facilitated by adopting the Trendelenburg position. After failure success may sometimes be secured by emptying the colon by enemata. In some cases the patient in bed for twenty-four hours and administered chloralhydrate and potassium bromide. In my pregnancy is a possible cause of difficulty in external version. Gibberd quotes figures from the Guy's Hospital maternity district which show that 105 uncomplicated breech deliveries in which show that 105 uncomplicated breech deliveries in which multiparae had a foetal mortality of 14 per cent and a maternal death rate of 1 per cent while 23 similar deliveries in primiparae had a foetal mortality of 23 per cent and a maternal death rate of 3.5 per cent—mortality rates which are considerably higher than those usually quoted and which support his recommendation of external version. This was employed in a series of 204 cases in which the child was ultimately delivered head first the foetal mortality was 2 per cent 14 per cent of live born infants died within ten days, but there was no maternal death. External version failed in 23 per cent of 232 trials it occurred spontaneously after success in about one-third of the cases of failure and was successful at second trial in about half the cases in which it was tried.

502. E. Maise (*Zeitschrift f. Gynäk.*, September 17th 1927, p. 241) advises external cephalic version in all cases of pelvic presentation discovered in routine ante-natal examination during the last few weeks of pregnancy. With the patient laid on her back he presses the foetal head in the direction of the foetal abdomen, at the same time pushing the pelvis



extremity in the direction of the foetal back. He states that the foetus responds to these pressures by active reflex movements, which have the effect of bringing about the desired version. This is usually accomplished with ease, but several trials may be necessary and sometimes the pelvic position is found to recur, so that repetition of the manoeuvre is needed.

### 503 Rupture of the Uterus

KUPFERBERG (*Zentralbl. f. Gynäk.*, September 17th, 1927, p 2421) does not agree that after complete rupture of the uterus, with a dead foetus lying in the abdominal cavity, extraction by the vagina should be performed. He states that the site of the rupture is often effectually plugged, so that bleeding is arrested by a portion of the foetus or by the placenta, by extraction of the foetus through the vagina the tear may be extended, haemorrhage may be renewed, and a fistula or renewed infection of the uterus may be favoured. A case is recorded in which immediately after passage of the foetus through the uterine tear, followed by vaginal delivery, the patient—whose general condition had up to then been good—died from internal haemorrhage before laparotomy could be performed. In such cases the treatment advised is the firm application of an abdominal binder, and admission to hospital for the abdomen to be opened.

### 504 Skene's Ducts in Pregnancy

J B BERNSTEIN and T K MONTGOMERY (*Urol. and Cut. Rev.*, September, 1927, p 577), from study of a large number of patients attending the prenatal clinic at Jefferson Medical College Hospital, have come to the following conclusions: (1) The urethra and Skene's ducts participate in the general pelvic and vaginal congestion incident to pregnancy. (2) As the result of this congestion there is protrusion of the urethra and prominence of Skene's ducts with frequent exposure of the ostia of the ducts. (3) This prominence is non-inflammatory in origin, and is to be distinguished from the inflammation of Skene's ducts, which is usually of gonorrhoeal origin. (4) There is a simple congestion of the ducts, which are of the same general hue as the surrounding vestibular mucosa, do not exude pus, do not present inflamed ostia, and are not associated with dysuria.

## Pathology.

### 505 *Treponema pallidum* in the Cerebro-spinal Fluid in General Paralysis

ACCORDING to A ROVASIO (*Riv. Sud. Amer. de endocrinol., immunol., y quimioter.*, September, 1927, p 716) only a few observers have endeavoured to detect the *Treponema pallidum* in the cerebro spinal fluid of general paralytics. In four cases examined by Wille and Kirchner and seven by Jeanselme, Schulmann, and Martin the results were absolutely negative. Rovasio has made a systematic study of the cerebro spinal fluid of general paralytic patients in the psychiatric hospital at Sassari. The following three methods of examination were used: (1) Direct microscopic examination of the fluid. Several hundred slides were examined without a single *treponema* being found. (2) Injection of the fluid into human subjects. Seven idiots, aged from 16 to 35, in whom the Wassermann, Sachs-Georgi, and Meinicke reactions were negative, were inoculated in the scrotum and the testes with the fluid four times in the course of six months to two years. (3) An equal number of rabbits were treated in the same way. The results in the idiots and the rabbits were completely negative, no lesions being found at the site of injection or in the testes of the rabbits and in one oeduced human testis. Rovasio therefore concludes that *Treponema pallidum* is entirely absent from the cerebro spinal fluid in general paralysis.

### 506 Physiological Variation in the Size of the Spleen

J BARCROFT and J G STEPHENS (*Journ. of Physiol.*, October 5th, 1927, p 1), as the result of experimental investigations, have found that the spleen contracts to about one half to one third of its size during exercise and to an even smaller volume at death or in consequence of severe haemorrhage. The amount of blood squeezed out during exercise is about one fifth of the volume in the circulation, the spleen then becoming pale, this phenomenon depends on the integrity of the splenic nerve supply. Psychological processes, related to culminate in violence may also cause the spleen to become pale and smaller. Its contraction is an early event in both haemorrhage and exercise, rather than a last attempt to increase the blood volume. Discussing the significance of the splenic response to exercise in regard to the relation of the blood volume to the vascular bed, and also to the augmentation of the amount of circulating blood, the authors state that the vascular bed in the region exercised increases, that on exercise the muscles need all the blood available and

that the spleen can produce a considerable quantity before the vital organs are drawn upon. It is unknown whether the amount added to the circulating blood by splenic contraction is sufficient to influence appreciably the circulation rate, a number of undetermined factors are concerned. J BARCROFT and L T POOLE (*ibid.*, p 23) have also made a number of experiments to ascertain the haemoglobin content of the blood of the spleen in contraction as compared with that in the general circulation. The extracutaneous spleen preparation was employed, readings were made with the haemometer and haemoglobinomoter, and blood was taken from the spleen and an ear vein. Immediately after exercise the splenic blood was usually little different from that of the general circulation, while subsequently it had a much higher corpuscle content, it contained a greater amount of haemoglobin, with a tendency for this to rise higher after exercise. Experiments by Binet seem to show that the spleen plays a considerable part in increasing the number of corpuscles both during asphyxia and exercise, though it may not be responsible for the whole phenomenon.

### 507 The Parathyroid Hormone and Callus Calcification

E P LEHMAN and W H COLE (*Journ. Amer. Med. Assoc.*, August 20th, 1927, p 587), disputing the assumption that because parathyroid extract injections increase the blood calcium there will therefore be more available calcium for deposit in fracture callus, conducted experiments upon white rats which show that so far from such injections hastening the calcification of callus their influence may rather tend to delay it. By comparing the breaking strength of callus of a fractured bone and that of the corresponding unfractured bone in normal rats and in rats injected with parathyroid extract the authors found that the average percentage of the strength of the normal bone shown by the healing callus at any age of fracture was less in the animals given parathyroid extract than in those not so treated. The untreated controls showed an average callus strength of 69.6 per cent of the strength of the normal bone as compared with 63.7 per cent in the rats given parathyroid injections. While such a difference is too slight to prove that parathyroid extract has an unfavourable influence on the calcification of callus it is quite sufficient to show that parathyroid extract does not exert any favourable influence in that direction. That parathyroid injections raise the blood calcium was shown by the fact that it was found to be almost 27 per cent higher in injected rats than in the controls killed at the same period after the fracture. The researches of Hunter and Aub indicate that the excess of calcium comes very largely from the bones, thus tending to reduce their calcium content, parathyroid extract injections seem to favour the withdrawal of calcium from callus and thus to delay union of fractures.

### 508 Glycaemia and Thyroid Radiotherapy

A TATTONI (*Il Morgagni*, September 15th, 1927, p 1521) records observations on the behaviour of the blood sugar after irradiation of the thyroid with large and small doses of x rays, his investigations were performed partly on dogs and partly on the subjects of Graves's disease. His conclusions are as follows: (1) Small doses are followed by a transient hyperglycaemia which soon disappears and is to be attributed to an endocrine change probably caused by discharge into the circulation of a large quantity of thyroid secretion. (2) The application of large doses of x rays to any part of the thyroid in dogs causes an upset of the normal equilibrium of carbohydrate metabolism manifested generally by a hyperglycaemia. (3) Irradiation of the thyroid in Graves's disease with the ordinary therapeutic dose also produces hyperglycaemia or has no effect on the amount of the blood sugar. (4) The hyperglycaemia following irradiation of the thyroid must be regarded as one of the ordinary biological reactions to x rays, and is to be explained by the physical, physico-chemical, and cellular changes produced. (5) The study of glycaemia, and especially of the curve of alimentary hyperglycaemia, may be of value in estimating the results of treatment, and therefore is of prognostic importance.

### 509 Sedimentation Rate of Erythrocytes

H B NEWHAM (*Quart. Journ. Med.*, July, 1927, p 371) finds that in a great variety of disease conditions the rate of sedimentation shows marked variations. He considers that little reliance can be placed upon this test as an aid to differential diagnosis. Where rapid sedimentation rates are present in all cases there is also hepatic derangement. This rapid rate is not influenced by the blood group of the person, moreover, rapidly of sedimentation occurs in anemic persons. Newham does not attribute the phenomenon to the presence of an excess of fibrinogen, but the cause would appear to reside in the corpuscles themselves, he believes that both physical and chemical changes are concerned.



# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine

### 510. Fattening Action of Insulin in Pulmonary Tuberculosis.

J MORIN and L BOUASSE (*Bull de Med*, October, 1927, p. 363), record eight cases of pulmonary tuberculosis in various stages in patients aged from 18 to 25 treated by insulin. Subcutaneous injections were given about half an hour before meals. At first 5 units were given for two days, on the next two days two injections each of 5 units were administered, and then the dose was increased by 5 units every two days, so that in about eight days a total of 50 units in two injections was reached. The duration of the treatment was about a month. In some cases a total of 60 units a day in two injections of 30 units or three injections of 20 units was given. None of the patients showed any signs of intolerance attributable to hypoglycaemia such as weakness, tremors, sweats or nervousness, or only in a very slight degree but all had a more or less violent appetite a few hours after food which was immediately satisfied by ingestion of carbohydrate. No marked local reaction, urticarial eruption or gastro-intestinal disturbance was observed in any case nor did any of the patients show the slightest rise of temperature during the treatment. In all but two patients who were suffering from bilateral ulcer-casous tuberculosis there was a more or less progressive and considerable increase of weight which in some instances was maintained after cessation of the treatment. The mode of action of insulin in these cases is still under discussion. Some writers assign to insulin a direct action on the transmutation of carbohydrates into reserve fats while others attribute to it the power of retaining water in the tissues.

### 511. Typhoid Infection of the Joints.

A P H STRELL (*These de Paris* 1927 No 146) whose thesis contains the histories of eleven cases including that recently recorded by Schaeffer and Lhu (*LITOTOM* June 18th 1927 para. 638) remarks that while joint manifestations are by no means common in typhoid fever, cases of typhoid fever accompanied with symptoms of septic arthritis are decidedly exceptional. The clinical picture in such cases consists of two stages. The first which lasts from ten to twenty days on the average is characterized by articular symptoms which may involve all the joints, the large as well as the small. In the second stage the joint symptoms diminish or disappear entirely, and are replaced by the characteristic features of typhoid fever. The case of Gruet and Fortincau was unique in that there was an appreciable interval of six days between the articular manifestations and the typhoid symptoms. Apart from blood cultures, in the early stage and the Widal reaction later arthrotypoid can be diagnosed from the serious forms of acute articular rheumatism by the relative fixity of the joint symptoms, the course of the temperature, the absence of endocardial lesions and the inefficacy of sodium salicylate. The prognosis in arthrotypoid is grave since three of the eleven cases were fatal, death being due to adynamia and haemorrhagic and visceral complications.

### 512. Spinal Fluid Hypertension.

A TZANCK and P RENAU (*Bull et Mem Soc Med des Hôp de Paris*, November 3rd 1927, p. 144) state that hypertension, often considerable, of the cerebrospinal fluid occurs in a number of certain affections of the circulatory system apart from any nervous or meningeal condition. It may also be produced mechanically and be either physiological or experimental. In the first case it may be caused by the bodily position, movements, respiration and emotions, the pressure rising sometimes to five and even ten times the normal figure. The increase of cerebrospinal pressure caused by compression of the jugulars is the best known of the experimental hypertension. Claude Lemaître and Aubry believe that this is due to venous stasis following the compression of the thoracic and a purely mechanical explanation of the choroid plexus—a purely mechanical explanation. Wood and McWhinney have noted variations in cerebrospinal pressure after injections of hyper or hypotonic solutions and think that they are caused partly by changes in the volume of the cerebrum and partly by the mobility of the cerebrospinal fluid which, leaving the subarachnoid space, follows the perivascular sheaths. The present authors doubt this hypothesis and suggest that the change in pressure is due to variations in the blood volume. They state that an abrupt resection will cause an immediate lowering of the

spinal pressure, which is restored to normal by transfusion. Wollheim and Braudt have shown that the injection of hypotonic solutions in the treatment of arterial hypertension produces a diminution of the blood volume. The present authors maintain that it is owing to this diminution a mechanical cause, that the spinal pressure is lowered. In a second paper (ibid p. 1444) Tzanck and Renaud show that there is a direct association between the deep venous and spinal pressures in support of which statement they adduce the following facts. The subarachnoid space in which the cerebrospinal fluid circulates is in immediate contact with very rich venous plexuses, and between the two masses separated by a very supple wall a state of equilibrium exists. Secondly, in diseases causing venous stasis the spinal pressure is raised. A third evidential fact is the effect of venectomy and transfusion. The authors conclude that phenomena modifying cerebrospinal tension act through the blood volume, causing a deep venous hypertension and that spinal tension is an index of the deep venous pressure which can thus be estimated in affections of the circulatory system.

### 513. Pyrexia in Whooping cough.

P CAIRO (*La Pédatrie* October 1st, 1927 p. 1051) as the result of observation in an epidemic of pertussis concludes that there is a rise of temperature in uncomplicated whooping cough and that this is both due and proportionate to the severity of the attack. The pyrexia is only temporary and varies with the intensity of the paroxysm. The younger the child the more pronounced is the febrile reaction after the cough. In the author's opinion this rise in temperature is due to the excessive muscular action involved in the paroxysm and corresponds to the similar phenomena which follows a fit of crying.

### 514. Vaccination during Pregnancy.

B L LIEBERMAN (*Immun Jour Obstet and Gynecol* August, 1927 p. 217) as the result of observations at the Herman Hieffer Hospital, Detroit, on a series of 351 pregnant women vaccinated on admission and their newborn infants came to the following conclusions. Successful vaccination of the mother during pregnancy does not convey any specific immunity to the unborn infant inasmuch as 71 per cent of the infants react to vaccination. The immunity of the remaining 29 per cent is probably due to the general immunity which newborn infants possess and also to errors resulting from defective technique and feeble virus. Previous successful vaccinations in the mother with repeated subsequent failures to take although indicating immunity in the mother do not convey any immunity to the infant. Women may be vaccinated with safety at any period of their pregnancy. Newborn infants may be vaccinated on the first day after birth without any had immediate or remote effects. In clinics routine vaccination of mothers and infants is advisable.

## Surgery.

### 515. Angiobroma of the Tonsil.

G VIDAU (*Arch Ital di Otol* September 1927 p. 583) describes the case of a pedunculated tumour of the tonsil in a man aged 26. The symptoms were very slight and consisted of tickling in the throat, attacks of salivation and a tendency to vomit. On examination a tumour was found the size of a large kidney bean attached by a thin pedicle to the lower and anterior end part of the right tonsil. The pedicle to the lower and anterior end part of the right tonsil which though slightly enlarged appeared quite healthy. The tumour was removed by crushing the pedicle at its origin and separating by traction. Microscopic section revealed a matrix of fibrous connective tissue containing a large quantity of blood spaces cut transversely and longitudinally, the structure being that of an angiobroma. From his study of reports of a large number of cases of benign tumours of the tonsil the author draws the following conclusions. The tonsil has a great tendency to occur in young people and fibroma is more often than not attached by a thin pedicle. It is frequently very vascular and there may be haemorrhages into its interior. It is covered by a layer of epithelium the outer layers of which are keratinized. Most authors merely describe the size of the tumour and note the presence or absence of a pedicle, but have not recorded the minute structure. The prognosis is good except that in the case of

a large tumour with a long pedicle there is danger of impaction in the lumen, causing suffocation. The methods of removing consist in crushing the pedicle, removal with the hot or cold snare, and, in cases where the tumour is small, of morcellation.

### 56 Spontaneous Gangrene of the Extremities

ACCORDING TO D. LEWIS (*Archives of Surgery*, October, 1927, p. 613) lesions affecting the blood vessels of the extremities have been clearly differentiated and the clinical syndromes associated with them are well recognized. The etiology of the changes which lead to spontaneous gangrene are, however, still in a state of uncertainty. The clinical phenomena associated with arterio sclerotic gangrene are known. This condition is only rarely seen in the upper limb, and probably depends on the arrangement of the vessels in the leg and the extent of the thrombus. Amputation through the condyles is the best treatment in these cases. Death is rarely due to the operation, but to extension of the vascular disease or a terminal infection. Diabetic gangrene depends largely on the arterial changes rather than on the hyperglycaemia; it appears about ten years earlier in life than senile gangrene. In the relatively young gangrene is probably due to thrombo angitis obliterans, and a striking feature is the extensive collateral circulation which may develop. Recent thrombi are often found in the vessels after amputation in these cases. Treatment seems to be to force the collateral circulation ahead of the advancing thrombus, and ligation of the femoral artery has been performed with some success, pain is also relieved by this procedure.

### 57 Cancer of the Penis

J. RICAUD (*These de Paris*, 1927, No. 95), who records thirty-six cases in patients aged from 34 to 83, remarks that though cancer of the penis is rare before the age of 40 it is not uncommon disease, as in the course of fifteen years nearly sixty cases were treated in the urological department of the Hôpital Cochin, Paris. The condition was known in antiquity; it was described by Celsus, and later by Aëtius in the sixth century, and by Paulus Aegineta in the seventh. In the great majority of cases cancer of the penis is a primary condition, but occasionally the penis becomes invaded by a new growth arising in the prostate, scrotum, or bladder, or is affected by metastasis from a growth in the testis. Cancer of the penis most commonly arises in the balanopreputial groove, and then in order of frequency on the glans, meatus, prepuce, or body of the organ. Whatever the site of origin, two forms of the disease are described—namely, an ulcerative and a cauliflower-like growth. It is exceptional, however, to find absolutely pure examples of either form, a combination of the two is the rule. The glandular enlargement is often more of an inflammatory than a neoplastic character, and it is difficult to judge of its real nature from the naked eye appearance. Although the diagnosis of cancer of the penis is often easy a biopsy should always be performed, as it is the only means of preventing a needless mutilation. Treatment consists in amputation at a sufficient distance behind the growth, but leaving a stump for micturition. Removal of the glands should not be carried out until at least six weeks after amputation of the penis, when the subsidence of all inflammatory phenomena indicates that the glandular enlargement is really due to a new growth. As regards non-surgical treatment, the use of radium is said to be followed by fairly bad results. In early cases radium might be successful and save much loss of tissue.

### 518 Control of Haemorrhage in Rectal Cancer

J. F. MONTAGUE (*Med. Journ. and Record*, October 19th, 1927, p. 501) advocates the use of the haemostatic wadding "tabo amp" for the control of haemorrhage in cancer of the rectum. Composed essentially of finely shredded catgut, it has the appearance of cotton wadding or wool, and, being sterilizable by steam and completely absorbable by the body tissues, it can be safely left in a wound. Its value as a haemostatic is due to its property of incising; the coagulability of the blood on local application. A relatively small amount is sufficient, since it swells considerably when moistened. Montague's technique in the radium seed implantation treatment of cancer is to push a small tampon of cotton above the carcinoma after implantation in order to prevent, so far as is possible, contamination by liquid effusion above and to limit the fluidity of the content below. The lumen of the carcinoma-bearing bowel is then plugged with the tampon only moderately firmly to allow for the natural swelling when the material becomes wet, and a small plug of cotton is then placed below the carcinomatous area to retain the tampon in position until haemostasis has been obtained. The method is essentially the same as that employed in cases of cancer where bleeding, apart from radium implantation, requires treatment.

## Therapeutics.

### 519 Treatment of Broncho-pneumonia in Children

C. STAMM (*Monatsschrift für Kinderheilkunde*, September, 1927, p. 345), following the method advocated by Pospischill and Schlossmann, submitted a number of infants with primary broncho-pneumonia to continuous (day and night) open air treatment, usually without the aid of drugs, and obtained very satisfactory results, even in the changeable climate of Hamburg, especially when the treatment was combined with such postures as permitted the maximum range of movement to the diaphragm. It was found that dyspnoea was promptly relieved, restlessness diminished, and the children slept well, appetite also was much improved and the mortality rate fell. The results of treatment with a specific serum were inconclusive. In cases with cardiac weakness, general flaccidity of the muscles, low blood pressure, and feeble pulse, intramuscular injections of 20 to 50 c.c. of a 10 to 15 per cent glucose solution at body temperature, as recommended by Nassau, were found useful. Stamm, however, considers that this treatment is not without risk, and describes one case of an infant, aged nine weeks, with numerous patches of broncho-pneumonia in the left lung, a temperature of 100°, a pulse rate of 150 to 170, and a blood pressure of 75/40, in which no good reaction followed a mustard bath. Injections of 20 c.c. of 15 per cent glucose solution were repeated almost daily until a total of 400 c.c. had been given, while the child was unaided in the open air. The temperature fell to normal and the pulse remained good, but after an apyrexial interval of a fortnight a slight induration surrounding the site of injection in the left thigh began to spread until it reached one third of the way down the calf, suppuration occurred, and on incision gas as well as pus was evacuated, erysipelas subsequently developed and the child died. Bacteriological examination of the pus and fragments of tissue revealed staphylococci, *B. proteus*, and streptococci. On the analogy of the diabetic subject, in whom pyogenic organisms may become gas producers, and also because *B. proteus* produces gas when growing on dead tissue, Stamm suggests that the deposits of glucose in the tissues of a debilitated infant may act as a particularly suitable medium for the proliferation of these organisms.

520 According to H. GRENET (*Rev. med. Suisse rom.*, August 25th, 1927, p. 738) the problem of the specific treatment of broncho-pneumonia in children is rendered particularly difficult by the great variety of the bacterial flora. Anti-pneumococcal serum appears to be logically indicated, owing to the almost constant presence of the pneumococcus in broncho-pneumonia. It can act, however, on only one of the organisms concerned, and has proved to be uncertain in its results. The value of anti-streptococcal serum has not yet been established. Numerous successes have been attributed to treatment by vaccines, especially those of Minet, Riquet and Sorez, Weill and Dufont, and Dacheux. D'Oelsnitz's method of combined serum and vaccine treatment is of considerable theoretical interest and deserves a close examination, but it is not certain at present that it shows better results than vaccine therapy alone.

### 521 Cresopirine in Acute Articular Rheumatism

RAGOUNEAU (*Journal de Thérapie Française*, October, 1927, p. 145) reports three cases of acute articular rheumatism treated successfully by cresopirine (acetyl ortho cresothio acid), a derivative of the preparation of this drug appeared in the BRITISH MEDICAL JOURNAL on April 2nd, 1927 (p. 635). Ragouneau's patients had previously been ineffectually treated with sodium salicylate in both average and high doses. On administering cresopirine a rapid cure was effected in all the cases, in eight, four, and five days respectively. The dose for an adult is 10 grains (about 2½ drachms) in the twenty-four hours, and for an infant 4 grains (about 1 drachm). Ragouneau remarks on the rapid action of cresopirine in inducing a state of well-being owing to the subsidence of the fever and pain. He adds that it is always well tolerated, has no action on the heart, kidneys, or alimentary tract, and never causes tinnitus aurium or vertigo. He considers it markedly superior to sodium salicylate.

### 522 Therapeutic Injections of Distilled Water

T. LE BOUTILLIER (*Journal de Médecine de Bordeaux et du Sud-Ouest*, October 25th, 1927, p. 767) describes the striking benefits obtained from the intravenous or intramuscular injection of three distilled water in over 700 cases, the diseases so treated being sciatica, lumbago, arthritis, neuritis, tic douloureux, lobular pneumonia and broncho-pneumonia, chronic diarrhoea from the nose and ears, in convalescent chronic diphtheria and scarlet fever, hay asthma, and in cases of acidosis with or without cyclic vomiting. The

water, distilled three times, is put into ampoules and is then autoclaved to ensure sterility. Triple distillation is performed because certain poisons can be carried over from the first to the second distillate. The use of freshly distilled water is advised in order to avoid the possibility of disintegration of the glass in the water. The initial doses recommended are for infants and children up to 12 years, 0.5 to 1 c.c., from 12 to 50 years, 1 to 1.5 c.c., and after 50 years, 1 c.c. The dose should be increased by only 0.5 c.c. at a time to a maximum of 2 to 3 c.c. By observing these doses a reaction is rarely produced. Repetition should be guided by the result obtained from the first injection, and in acute conditions the doses should be smaller and more frequently repeated than in non acute or chronic cases. Intravenous is preferable to intramuscular injection, since the water reaches the blood immediately and in this latter the pain caused by the injection, though only lasting ten to fifteen minutes, is often extreme. A 25 cc syringe and a 26 gauge needle should be used for the injections. The action of distilled water is of a biochemical nature causing haemolysis. The erythrocytes break down, and their contents (oxy haemoglobin, lecithin, salt, album ferment and enzymes) are set free in the blood plasma. The blood thus assumes antitoxic and haemecidal properties and the action of the water is that of a foreign protein. After the injections there is a very slight increase in the erythrocytes, no change occurs in the leucocytes, the haemoglobin is increased from 2 to 4 per cent, and the coagulation time of the blood is decreased. Le Boulanger adds that the best results from this treatment have been obtained in cases of infantile erythraemia, these being more rapidly cured than by any other method and that though not a panacea, the benefits obtained in other conditions from this therapy warrant its further trial.

## 522                      The Use of Ovarian Extracts.

W P GRAVES (*Journal Amer Med Ass* 1930, October 15th 1927, p. 1603) finds that ovarian substances are almost specific in the treatment of hot flu like and the vasomotor disturbances of the menopause but is of little value in permanent amenorrhoea with hypoplasia or in the treatment of minor rhagia and metrorrhagia. It has proved useful in certain conditions of menstrual inefficiency and occasionally in essential dysmenorrhoea unassociated with marked hypoplasia. It has also proved effective in some cases of deficient ovulation. Graves considers preparations of the whole ovary or of the ovarian residue more efficacious than those of the corpus luteum alone since they contain the more highly potent hormone of the follicles and are free from toxic and inhibitory elements. He emphasizes the importance of using extracts of fresh glands.

## Disease in Childhood

## 524. Addison's Disease in Children

521. Addison's Disease in Children  
F. MORABITO (La Pediatría) September 15th 1927 p 569; in view of the rarity of Addison's disease in young children publishes two cases occurring in a brother and sister aged respectively 7 and 10. Both children had been ill for about nine months, and were wasting. The boy was p<sub>u</sub>nted in the characteristic manner and the girl was generally bronzed. They both suffered from progressive asthenia affecting the psychical as well as the physical functions. The boy complained of giddiness, anorexia and hypotension were marked in both cases. Pharmacodynamic tests in these cases the Wassermann and von Pirquet reactions were strongly positive. There was a slight polycythaemia and the eosinophil content was increased, there was some hypocalcaemia.

## 525. Breast-feeding in Full term Infants

525. **Breast-feeding in Full term infants**  
EDNA M HAYWARD and LOUISE MOWBRAY (*Boston Med and Surg Jour* September 29 b, 1927 p 515) draw conclusions as regards the feeding of full term newborn infants from a series of 651 cases. Under the previous three hour schedule of breast feedings too large a percent age of the babies were being discharged without having regained their birth weight. For the last year under a four hour schedule each breast was used for ten minutes so that the infant obtained a twenty minutes feeding period as before and was less frequently disturbed. The mother enjoyed greater comfort since neither breast became excessively full. Statistics in the charts of 571 breast fed infants during the first four months after the establishment of the four hour schedule compared with those from an equal number during four months under the three hour schedule show the distinct advantage of the former. Of 90 discharged on the ninth tenth and eleventh

days 40 were above birth weight on the four hour schedule as compared with 15 on the three hour schedule. Of 205 discharges on the twelfth and thirteenth days, 99 were above birth weight on the four hour schedule as against 61 on the three hour schedule, and of 76 discharged on the fourteenth and fifteenth days 43 were above birth weight on the four hour schedule as compared with 23 on the three hour schedule.

## 526                      Adenoids in Early Infancy

14. H. CAROLY (*These de Paris*, 1927 No 199), who records 17 personal cases in infants under 6 months of age, states that adenoids are generally due to prolonged infections or intoxications. Though frequent in the young child they are rare in the infant. Below the age of 6 months heredity alone is responsible—syphilis, tuberculosis, alcoholism, arthritis, and various chronic intoxications in the parents being the cause of the condition. Of 1,560 cases of adenoids treated at the Hôpital de la Clinique Despuys, Paris in the course of fifteen months, 89 or 6 percent of the patients were under 6 months of age and 17 of them or 20 per cent were the subject of congenital syphilis. An intensive and prolonged antisyphilitic treatment was adopted, and had a successful result on the enlarged liver and spleen, the specific coryza and the general condition but it had little effect on the adenoids, and surgical treatment was always needed sooner or later. Although adenoids crumbe are compared to the chancre mucosus, tubercles and gumma which all contain the common infecting element the spirochaete they represent one of the dystrophies caused by syphilis.

## Thrush

527  
H. K. ALBER and ESTHER B. CLARK (*Imperial College, London*) describe an epidemic of thrush among the babies nearly all healthy and vigorous in the private ward of a hospital. The source was eventually traced to heavy accumulations of dust in places difficult of access and invisible to casual inspection. Treatment with a freshly prepared 1 per cent aqueous solution of gentian violet is recommended the applications being made at least one hour after feeding. The mouth is gently cleaned with several cotton swabs to remove the adherent mucus and the gentian violet solution is applied freely first to the affected area and then over the tongue and in the bucco-gingival folds. The treatment is repeated once or twice daily for at least three successive days, and on alternate days thereafter for from one to two weeks. The mothers' breasts are carefully cleaned with soap and water before each nursing and the first few drops of milk are discarded to prevent reinfection. The authors add that the lesions should have entirely disappeared by the third day.

## Obstetrics and Gynaecology

523. Treatment of Placenta Praevia.

523. Treatment of Placenta Praevia.  
A H BILL (*Amer Journ Obstet and Gynecol*, October 19-7 p 523) asserts that although the abandonment of accouchement force has brought about an improved prognosis in cases of placenta praevia, the average maternal mortality — 10 percent or more in all cases and about 25 percent in central placenta praevia — has become but little reduced during the last twenty years. He believes that better results will be obtained when (1) recourse is had more frequently to blood transfusion before delivery and (2) Caesarean section is realized to be the least traumatizing way of ending labor in cases in which the os is not dilated. By prophylactic transfusions and by Caesarean sections there is diminution of the risk of severe post partum bleeding from the placenta site. This is the most common cause of death in placenta praevia and occurs in cases in which delivery by bag and forceps or by bag and version has been uncomplicated by hemorrhage and in which the cervix has been proved intact. In the author's practice no vaginal examinations are made in ante partum hemorrhage but the diagnosis is based on the history, the appearance of bleeding, abdominal palpation and auscultation and rectal examination. The detection of marginal as distinct from central placenta praevia is frequently deferred until operation. Blood transfusion is performed in about one fifth of cases, frequently at the same time as the Caesarean section. No patient is delivered who has a red blood cell count of less than three million or a blood pressure of less than 90 mm systolic and 60 mm diastolic until transfusion has been given. Bill publishes a series of 56 cases of placenta praevia with a maternal mortality of one and a fetal mortality of 13, in the case of the patient who died the husband did not consent to transfusion or section until she was moribund.

**529 Premature Rupture of the Membranes**

A. MAYER (*Zentralbl. f. Gynäk.*, September 17th, 1927, p. 2429) states that in recent years it has become increasingly frequent to find the commencement of labour marked by rupture of the membranes instead of painful contractions of the uterus, several days may lapse before pains are felt. He does not approve of the advice, formerly given, to accelerate delivery in cases of premature rupture of the membranes by introduction of a dilating bag and version, such measures facilitate rather than prevent infection, of which the danger from early rupture of the membranes has, he thinks, been exaggerated. In the great majority of cases expectant treatment is followed by spontaneous delivery and a normal puerperium. Mayer advises that after premature rupture of the membranes patients should be admitted without vaginal examination into an obstetric institution, where the labour can be conducted without haste in conditions of asepsis.

530. E. FREY (*ibid.*, September 23rd, 1927, p. 2294) states that the frequency of premature rupture of the membranes is so considerable that this condition should be regarded as a variation of physiological labour. In a series of 500 births he found that in about one in four labours in primiparae and one in three in multiparae early rupture of the membranes occurred, to be followed usually by the appearance of uterine contractions fourteen hours later in primiparae and twenty hours later in multiparae. In contrast with the usual reports the author has found that premature rupture of the membranes is not associated with an increase in the time elapsing between onset of pains and delivery of the foetus, or with increase in the number of pains, on the contrary, he has discovered that both are diminished by about one third. Frey remarks that it would be erroneous to assume from these data that artificial rupture of the membranes exerts any accelerating influence on labour if performed before the end of the first stage. Apart from abnormal rupture of the membranes Frey gives unusually small figures for the average duration of normal labour—namely, thirteen hours in primiparae, and seven and a quarter hours in multiparae with normal pelvic dimensions.

**531 The Menstrual Cycle in Relation to Ovulation and Conception**

S. A. ASDELL (*Journ. Amer. Med. Assoc.*, August 13th, 1927, p. 509), as the result of the investigation of patients at operations and necropsies and of study of the literature, finds that fertility in women is highest in the early part of the menstrual cycle, and that there is a very rapid fall from the sixteenth to the twentieth day. He has obtained no substantial evidence that any period of complete sterility exists. While the time from ovulation to menstruation is relatively invariable, that from menstruation to the next appearance of the ovum shows considerable variation. Consequently the corpus luteum influences markedly the time of onset of menstruation, but the period required for the development of the resting follicle to the stage necessary for ovulation varies considerably with the individual. This explains the variation in menstruation and conception dates. The author believes that the sex ratio is not affected by the date of conception.

## Pathology.

**532 Extramedullary Haematopoiesis in Anaemia**

D. BRANNAN (*Bull. Johns Hopkins Hosp.*, August, 1927, p. 104) reviews the literature concerning extramedullary haematopoiesis in infantile and adult anaemias, and reports a case of large tumours of haematopoietic tissue occurring in an anaemic infant, contrasting it with an adult anaemic case of extramedullary blood formation. The infant, 7½ months old, presented an anaemia with splenomegaly and an enlarged liver associated with rickets and malnutrition. The blood picture showed a great number of normoblasts and an increase in early myeloid cells. The erythrocytic nuclei were very irregularly lobed, and occasional cells were seen in mitosis. Because of the lobed nuclei and the large size and unusual staining of the erythrocytes (diffuse basophilia and pallor being marked) some of these resembled leucocytes. Megakaryoblasts were not abundant, and the platelets were greatly reduced. Lymphocytes were easily identified, and a low percentage of eosinophils and myelocytes was noteworthy. Important post mortem findings were red growths filling the hilus of the kidneys, and abundant red tissue, composed of all the elements of hyperplastic bone marrow with a great predominance of erythrocytic cells, covering the full cochlear. The red lymph nodes and thymus microscopically presented a marked haematopoiesis. The bone marrow also revealed great erythrocytic activity. The red colour found in the renal masses and elsewhere was due to the rich haemoglobin

content of the cells. The spleen was considerably enlarged and fibrosed, and, with the liver, gave little evidence of blood formation. Brannan has also noted haematopoiesis in the broad ligaments of three other infants, and in the breasts of a fourth. In the adult case, a female, in which haemorrhage and sepsis were obvious etiological factors, there was very definite evidence of blood formation in the liver, spleen, broad ligaments, and parametria, the lymph nodes also showing a slight leucopoiesis. Brannan concludes that extramedullary haematopoiesis is fairly common in certain anaemias of infancy and childhood, the growths occurring particularly in the kidneys. Blood formation outside the bone marrow is occasionally seen in the severe anaemias of adults, even in the presence of a hyperplastic marrow, and may be observed in the broad ligaments and in organizing thrombi, as well as in the usual sites. It may also be seen in the broad ligaments and breasts of infants under apparently normal conditions. Extramedullary haematopoiesis is to be regarded as a compensatory reaction, and appears to start in foci of type cells, either erythropoiesis or leucopoiesis, which substantiates previous observations regarding blood formation in the bone marrow.

**533 Phosphorus Metabolism in Mental Disease**

T. KÖRA (*Japanese Journ. of Med. Sci.*, June 30th, 1927, p. 53) estimated the total phosphorus content of the blood serum by Klemm's modification of Bloch's nephelometric method in a number of healthy adults and mental patients suffering from various disorders. The blood was in each case collected before breakfast with the subject fasting, special care being taken to avoid mental or physical overwork. The average (35.634 mg.) total phosphorus per 100 c.c. serum in the healthy female was 4.159 mg. higher than in the male. The effects of night work and of examinations on the blood of some of the nursing staff were also studied, and both these factors were found markedly to increase the phosphorus content in almost every case. In patients with general paralysis the phosphorus content was greatly increased before malaria therapy, less so after, the greater the degree of recovery the more closely did the value approach the normal average. In katatonic stupor and agitation it was also raised, falling again during remissions. In melancholia the phosphorus figures varied greatly, being high during agitation and insomnia and low in cases of absent-mindedness and indifference. In manic and melancholic patients the phosphorus content was also raised, while in epileptics it was much increased for a few hours after an attack. The effect of luminal in a number of mental patients was to lower the average phosphorus content of the blood by 6.379 mg. As a result of his observations on pathological cases Köra considers that the increase in phosphorus content is due to degeneration of brain cells and is to some extent proportional to the severity of the clinical symptoms.

**534 The Resting Minute Volume of the Heart during Fever**

H. BJERLÖW and G. LILJSTRAND (*Acta Med. Scand.*, October 8th, 1927, p. 5) assert that, while the correlation between fever and pulse rate has long been recognized, and also the effect of fever on the heart itself, especially with regard to its functional capacity, little is known concerning the amount of work that the heart has to perform during fever and of the factors determining the work of the heart—that is, the minute volume of the heart. Opinions vary as to whether during fever the general blood flow becomes accelerated or not. Liebermeister refers to the great difference in temperature between the periphery and the interior of the body in cases with high fever, and thinks that this difference may be explained as the result of a slower circulation through the periphery. Stewart found that in fever the blood flow in the feet never exceeded and was usually much below the normal. He suggests that during fever the vasoconstrictor mechanism of the peripheral parts, especially of the skin, is abnormally excited, and that this is a compensatory arrangement securing an increased blood flow for the organs mainly suffering from the infective process. On this hypothesis fever is a secondary phenomenon. The present authors studied the effect of fever on the minute volume of the heart in cases in which fluctuations of recurrent fever had been given for various nervous diseases. It was found that the standard metabolism showed a typical increase with the rise of temperature. The utilization of the oxygen of the blood remained constant during normal and elevated rectal temperatures. There was thus during fever a rise in the minute volume of the heart in direct proportion to the increase in oxygen consumption. The output per beat remained unaltered or was diminished. The blood pressure being somewhat higher during fever than at the normal body temperature, the work of the heart must rise during fever slightly more than in proportion to the standard metabolism.

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine.

### 535. Treatment of Pulmonary Abscess by Artificial Pneumothorax

E. BATTONI (*Il Policlinico*, Ser. Prat. October 10th, 1927) reports a case of pulmonary abscess cured by therapeutic pneumothorax. A brass-worker, aged 54, suffered from frequent shivering and intermittent fever, with copious purulent expectoration and attacks of vomiting. The sputum contained pyogenic bacteria in large quantities, pus cells, and elastic fibres. The physical signs and radioscopic examination indicated the absence of the upper lobe of the right lung. For three weeks the patient was treated with terebene inhalations without any improvement. A pneumothorax was then induced, ultragen being substituted for air with refillings at intervals of ten months. At first the refills were given every fifth day for four injections, the subsequent five injections being given every tenth day after which the patient was sent out of hospital in good condition. He continued to attend as an out-patient having four injections at intervals of ten days between each, then one was given every three weeks, and after six of these three final injections were made with intervening periods of four weeks each. Altogether he had 22 injections of ultragen into the pleural cavity with no mishap. From the 11th day the patient improved and after the 14th injection he had no more fever and had gained 20 lb. in weight. The man was able to resume his employment and remained perfectly well up to the time of reporting. The author discusses in detail the etiology of this condition, and believes that artificial pneumothorax will be found to be a valuable form of treatment.

### 536. Cardiac Disturbance in Thyroid Disease

J. V. READ (*Journal Amer. Med. Assoc.* August 13th, 1927) discusses cardiac disturbances traceable directly to pathological changes in the thyroid gland as those due to hypothyroidism, those secondary to obstructed respiration, and those occurring in hyperthyroidism. Marked congestive failure is occasionally seen in myxoedematous patients who do not respond to rest and digitalis but improve when thyroid extract is given. Read states that this treatment should be applied carefully and attention should be paid to the ability of the heart to meet the demand for the increased blood flow which accompanies the consequent raising of the metabolic rate. He believes that the incidence of cardiac complications in hyperthyroidism is less than is generally assumed; dyspnoea, tachycardia, and palpitation not being necessary evidence of cardiac disease, but rather manifestations of thyrotoxicosis. It has been estimated that over half the patients presenting cardiac symptoms have no demonstrable enlargement of the heart. Read mentions two theories of pathogenesis—namely that a thyrotoxin acts directly on the heart muscle and that cardiac fatigue occurs. He gives reasons for believing that the second is the more probable and emphasizes the importance of rest as a factor in treatment. Sedatives may also be of value and digitalis should be given in decompensation especially if auricular fibrillation is present. He adds that quinine seems to have a special value in the treatment of the cardiac manifestations of hyperthyroidism while quinine frequently reduces the rapid and heavy beating of a regular heart when the pulse rate is out of proportion to the metabolic rate.

### 537. Coincident Diphtheria and Typhoid Fever

According to A. J. P. HAYE (*Th. de Paris* 1927 No. 417) typho-diphtheria or the association of typhoid fever and diphtheria which was first described by Osmond in 1859 and used to be regarded as a rare occurrence was fairly frequent during the war. Among 4,000 typhoid patients under Joltrain's care in the course of eight months during 1915 there were 120 cases of this combination and among 4,197 typhoid patients under Rathery's care in the same year 109 cases. Since the war the disease has been rare but HAYE records a case in a girl aged 14 which occurred in the Hôpital des Enfants Malades, Paris, in January 1927. Typho-diphtheria is essentially a hospital disease and is due to contamination by patients and carriers. It begins with the typhoid fever when this infection is at its height and the patient, months afterwards, is peculiarly characterized by general symptoms caused by the association of diphtherial toxinæmia and typhoid septicæmia. The symptoms and physical signs are often ill marked. The complications are

those of typhoid fever and diphtheria. Sudden death is liable to occur. Two forms of exchyma may be met with—namely, an acute form which is rapidly fatal and a chronic form in which several months may elapse before recovery. The diagnosis is fairly easy if the possibility of the coincidence of the two diseases is borne in mind. The prognosis is grave and depends on the stage at which treatment is started. Early intense and prolonged administration of diphtheria antitoxin is required in addition to the ordinary treatment of typhoid fever.

### 538. Etiology of Influenza in Children

C. LACOSTE (*Il Clin. Pediat.* September 1927, p. 659) states that during an epidemic of influenza at Milan in the autumn and winter of 1925-26 in which a large number of children were attacked he carried out investigations for Pfeiffer's bacillus with the following results. The organism was found in direct smears of the pharyngeal mucus or expectoration in 3 out of 15 children with uncomplicated attacks in 3 out of 10 with lung complications in 1 out of 6 convalescents and in 1 out of 3 cases of suppurative arthritis. It was recovered from cultures in 20 per cent of the specimens of pharyngeal mucus in 4 out of 12 specimens of urine, and in 1 case of suppurative arthritis in association with the pneumococci. Blood cultures were constantly negative for this organism. Among 14 cases examined the pneumococcus being found twice and an organism resembling Pfeiffer's bacillus once. A similar result was obtained from cultivation of the cerebrospinal fluid, the pneumococcus being found in only one case in which well marked changes were present in the fluid. In 13 out of 21 cases tested specific agglutinins were found in dilutions ranging from 1 in 10 to 1 in 2.0 both in the acute stage and in convalescence. Only a very slight disturbance was produced in animals by injection of various strains of Pfeiffer's bacillus. No definite conclusions therefore could be drawn as to the causal agency of Pfeiffer's bacillus in the epidemic.

## Surgery

### 539. Periarterial Sympathectomy

R. LEFICHOIE (*Presse. M. I.* October 19th, 1927, p. 1267) is of the opinion that periarterial sympathectomy does not act by cutting off the excitomotor fibres of the sympathetic nervous system. Its effect depends upon the sensory nerves which bring about a vaso-dilatation more marked in the affected limb. It appears that stripping of the vessel for a considerable distance is necessary for success. When the walls of the artery are degenerated they are exposed to the risk of perforation or even rupture which endangers the vitality of the affected limb or even the life of the patient. The operation therefore is not without risk. The operation of periarterial sympathectomy gives immediate and often beneficial results but good ultimate results are rare. It is doubtful if many of these can be attributed to the operation alone. It has been proved that operations are simple and less risky on the sensory nerves have proved just as satisfactory whilst physiotherapeutic methods have also yielded equally good results without exposing the patient to any risk.

### 540. Rare Precancerous Processes in the Tongue.

S. VOGELER MOER (*An. del Hosp. de la Sta. Cruz y S. Pablo*, September 15th, 1927, p. 254) describes the following rare precancerous processes in the tongue. (1) Acute granular papillitis or sandy tongue. In this condition the whole (or the dorsal aspect) of the tongue appears to be sprinkled over with a large number of small red hemispherical projections ranging in size from a heap of dust to a small pin's head. The process lasts only one or two days and then disappears leaving a condition of redness and irritability of the tongue which persists for about a week. The sudden onset and disappearance and the exclusive localization of the lesions to the lingual mucosa indicate a local infection by streptococci or staphylococci or a virus. In treating the condition care should be taken to avoid all applications which have an irritating or caustic action. The best results were obtained by the use of 1 in 1000 solution of zinc sulphate or 1 in 15 watery solution of neosalvarsan. (2) Chronic granular papillitis. In this condition the dorsal aspect of the tongue shows bright red fine granulations 1 to 2 mm thick which readily bleed on being scraped. Some of



the granulations disappear as the result of exfoliative glossitis, while others become enlarged and unite with one another, forming a mulberry shaped growth resembling an epithelioma. Unless treated vigorously the condition undergoes a malignant change in a few months. Treatment should consist in radium puncture or electro coagulation. (3) Flammiform granular glossitis which is merely a more advanced stage of the second form. The granulations secrete a sero haemorrhagic fluid due to friction against the upper teeth, and an epitheliomatous change is facilitated. The treatment is the same as in the previous form, but should be carried out more energetically.

#### 541 Tuberculosis of the Knee-Joint

M S HENDERSON and H J FORTIN (*Journ Bone and Joint Surg*, October, 1927, p 701) consider that tuberculosis of the knee joint in the adult usually warrants resection. A good result rarely follows conservative treatment in such cases, and much time is wasted. The authors record 211 cases of resection, with end results in 194. There was no operative mortality. In 171 patients firm bony union was secured with good function, union failed in 22 cases. A bone graft was used in four of these, and union then resulted. Seventeen patients have since died from extension of the tuberculosis, these lived an average of four and a half years after the operation, which relieves the patient of a painful and distressing condition and restores him practically to full activity, so that he can again take a place in industrial life. The average age of the patients was 29 years. All these cases appear to be secondary to a focus elsewhere in the body, and the joint infection occurs by the blood stream. A history of trauma was noted in a few cases.

#### 542 Staphylococcal Septicaemia

J ARIS (*Rev med de Barcelona*, September, 1927, p 239), who records five illustrative cases in patients aged from 18 to 40, three of which were fatal, states that boils of the face, especially on the upper lip, alae nasi, cheek, and chin, are the chief cause of septicaemia. This form of septicaemia is due to a superinfection rather than to an auto infection. A careful study of the blood cultures will show whether the staphylococcus is alone responsible or if it is associated with the streptococcus. Early diagnosis is essential, and is founded on the rapid swelling of the tissue surrounding the boil, the lancinating and throbbing character of the pain, shivering, and sudden development of a high temperature. The use of the knife should be avoided, since in the absence of pus it opens up channels to microbial invasion. Deep linear canterizations should be made on one or both sides according to the case. Fixation abscesses have proved useful in treatment.

#### 543 Treatment of Coxa Vara

H JUDET (*Bull et Mem Soc de Chir de Paris*, Tomo XIX, No 12, 1927, p 550) describes the methods he has adopted in treating cases of coxa vara in young adults. In the first place he corrects the malposition of the limb—that is to say, the external rotation and the adduction. This is always possible under general anaesthesia, and he fixes the leg in moderate abduction and slight internal rotation. The limb is best held in this position by means of plaster of Paris, as advocated by Whitmann in fractures of the neck of the femur. This is continued for two months, when the plaster is removed. The second stage of the treatment then consists in fixing the patient with a special type of splint extending from the pelvis to the foot. This is hinged at the hip, knee, and ankle, and the patient is enabled to walk in it. At the age of 18 to 20 years the neck of the femur is firmly consolidated and the ultimate result is satisfactory, and often perfect. In malunited cases a cuneiform osteotomy below the great trochanter, followed by abduction of the limb in plaster, re-establishes the normal angle of the neck of the femur.

## Therapeutics.

#### 544 Milk Injections in Protein Therapy

F H RODIN and R W MCBRIDE (*Amer Journ Med Sci*, October, 1927, p 511) discuss the effects on the leucocytes and the temperature of the use of milk injections as a form of non specific protein therapy. In their experiments the milk was boiled for three minutes, this being long enough to destroy bacterial contamination, and not long enough to inactivate the active component. Amounts of 15 c.c.m. were usually administered, the injections being made deeply into the buttocks. If the treatment was repeated, this was done after forty eight hours, and again after a like interval. Blood counts were made from a few minutes to six hours before the injection, and again from six to twelve hours after it. The temperature was recorded every two hours for three to five

days. A chill of varying intensity, nausea, and vomiting were observed in some cases, but otherwise no ill effects followed the injections. Of 26 patients receiving fifty injections only one patient, who had a normal temperature before an injection, failed to show a rise afterwards, the temperature being 2° F. Leucocytosis occurred in 24 patients and of these 21 showed an increase in the polymorphonuclears and a decrease in the lymphocytes. The leucocytic increase averaged 53 per cent, the polymorphonuclears 13 per cent and the lymphocytic decrease 11.8 per cent. The elevation of temperature, the increase in the leucocytes, and the percentage of the polymorphonuclears were roughly parallel to each other. The authors maintain that the persistence of the pyrexia for about sixty hours and the leucocytosis from three to five days, added to the fact that the reactions to such injections are very mild as compared with other kinds of non specific protein therapy, justifies the use of milk for such treatment. For repeated injections it should be given every third or fourth day.

#### 545 Antitoxin Treatment of Erysipelas

D SYMMERS and K M LEWIS (*Journ Amer Med Assn*, September 10th, 1927, p 830), who record their observations on 131 patients at the Bellevue Hospital, New York state that the results of the antitoxin treatment of erysipelas are commensurate with those obtained in the treatment of diphtheria. In the present series there were only 7 deaths, a mortality of 5.2 per cent, whereas in a series of 107 cases treated without antitoxin in the corresponding season of the previous year the mortality was 11.2 per cent. The antitoxin treatment, however, does not confer immunity, and recurrent attacks occur as often as before, nor does it appear to diminish the frequency of complications, such as abscesses. Facial erysipelas responded more readily to antitoxin treatment than erysipelas of the trunk and extremities. The best method of administering antitoxin was found to be the intramuscular route. Intravenous injection, according to the authors, is dangerous, and should only be used in desperate circumstances.

#### 546 Chaulmoogra Oil in Ozaena

G CILIGERO (*Rassegna Inter di Clin e Terap*, August 1927, p 537) has treated ten typical cases of ozaena by the application of chaulmoogra oil with encouraging results. He uses at first a 30 per cent ointment and continues with a mixture of equal parts of the oil and vaseline. In some cases he has used the pure oil to test the degree of tolerance of the mucosa, and he has also given injections of the oil. No other treatment was used simultaneously. After the second or third application the fetor diminished, and in a couple of months the crusts disappeared, one month later the mucous membrane had lost its dry, atrophic appearance and seemed practically normal. So far the patients have remained free from recurrence, but the author, realizing the temporary nature of the relief which follows various methods of treatment in this disease, is still keeping these patients under observation. He adds that no treatment previously tried has given such excellent results.

#### 547 Nitro-hydrochloric Acid in the Treatment of Hay Fever

ADVOCATING the administration of nitro hydrochloric acid in the treatment of hay fever H BECKMAN (*Amer Journ Med Sci*, October, 1927, p 525) reports 17 cases showing 100 per cent of symptomatic cures. All these patients, who had previously received pollen or topical treatment without benefit, were rendered practically symptomless by the acid, and have obtained relief each year in which it was used. They were of both sexes, and their ages ranged from 8 to 72 years. Beckman prescribes the acid in the following manner. Nitro hydrochloric acid (not the dilute, but the strong form of the United States Pharmacopoeia) 4½ drachms, distilled water to 4 oz., one teaspoonful of this is taken in two thirds of a glass of water, followed by another glass of water, after each meal and again on retiring, as near midnight as possible. This mixture is pleasantly acid and not corrosive to the tissues. Beckman states that even such large doses of the acid can be considered as dangerous. Emphasis is laid on the importance of the midnight dose.

#### 548 Manganese Salts in Hypertension

G L PIOTROWSKI (*Med Journ and Record*, October 19, 1927, p 490) casts doubt on the value of manganese salts as therapeutics. He used a combination of the salts with thyroid extract in ten cases of hypertension. In nine of these there was hypertension with a marked arterio-sclerosis, and diminution of the specific gravity of the urine, in the last of these there was also retention of urea in the blood. Diminution in the excretion of phenolphthalein. The tenth patient had hyperpnea. Piotrowski treated

in the administration of one eighth of a grain of potassium permanganate and 2 grains of thyroid extract in a cyclic. This medication was continued for three weeks without any lowering effect on the blood pressure. The author describes experiments in which guinea pigs were injected with tubercle bacilli of the human type and treated by injections of a chemical compound of iodine and potassium with mannose. No evidence was obtained that in man, as in guinea pigs, the therapeutic value.

#### 549 Exophthalmic Goitre Treated by Increasing Doses of Iodine

L. DUTREBANDI and A. L. MORT (*Bruzelles Medical*, October 16th, 1927 p 1634) report a method of treating Basedow's disease by progressive doses of Lugol's solution of iodine. They state that although it is agreed that iodine administration is valuable during the crises of exophthalmic goitre and in the prevention of post-operative hyperthyroidism, yet up to the present the benefit has been considered to be only transient, and its principal use has been to reduce post-operative mortality. They think that this opinion should be revised. Prolonged treatment by iodine should be limited to cases of pure exophthalmic goitre, excluding all with adenomatous nodules. At the commencement of treatment a daily dose is given of 20 minims of the following solution: iodine 10 grains, potassium iodide 20 grains, water 100 c.c. They progressively increase the dose to the basal metabolic index as an index. They claim that in 80 per cent of their cases a rise in metabolism has been overcome in this way. Although it is impossible to increase the dose of iodine indefinitely, the authors state that certain of their patients have been taking with benefit 100 to 150 drops of the solution daily for several months. Compared with the uncertainty of permanent benefit which follows the use of the thyroid arteries radiotherapy, or thyroidectomy, the authors claim that this intensive medication with iodine is relatively reliable. The explanation offered is that exophthalmic goitre is a local affection determined by general endocrine factors. Iodine lowers the metabolic rate and thus causes disappearance of the symptoms. The method it is added has at least the merit of being an ambulatory treatment and of placing the whole organism in a generally favourable condition for further intervention, should this prove necessary.

### Dermatology.

#### 550 Paronychia due to *Odium albicans*

H. LACOMBE (*Brit. Journ. of Derm. and Syph.* October 1927 p 294) describes two cases of paronychia due to *Odium albicans* and refers to the literature of this rare condition. His first patient was a woman aged 65 in good circumstances for ten years. She had had repeated attacks of inflammation of the nail folds of various fingers, the thumb-nail being involved. The intervals between the attacks varied from weeks to months. At the onset a red spot appeared at the nail fold and yellow pus developed in it. Later there came the characteristic bolster-like swelling of the fold described by Shelmire. The nail as a rule became loose and was shed. The new nail was normal in appearance except for longitudinal striation. The amount of pain varied but was never severe. The pathological examination showed that the discharge was not pus in the strict sense but among the epithelial cells were mycelial threads. *Staphylococcus albus* was also present. The mycelium on culture presented the characters of *Odium albicans*. The second patient was a sister of the first.

#### 551 Actinotherapy in Dermatology

A. BODART (*Bruzelles Medical*, October 2nd 1927 p 1556) asserts that ultra violet rays exert a triple action: (1) bactericidal acting chiefly on the surface and with slight penetrating power; (2) stimulating, exciting the growth bromatopoiesis and cicatrization of tissues; and (3) external resensitization when strong doses are used. Quartz lamps were usually employed by Bodart. Actinotherapy can be applied either simply alone in conjunction with other physical agents or with chemical photosensibilizing agents and the method of application is briefly described. Physical agents notably infra red rays are being more and more used in association with ultra violet ones as they have a moderating action on active erythema and radio dermatitis. The benefits arising from the combination of these two agents are striking, as seen in surgical tuberculosis. The chief indications for the use of ultra violet rays are the pyodermites cutaneous, tuberculous, ulcers cutaneous mycoses, chronic eczemas, certain parakeratosis and alopecias. Their use is contraindicated in acute febrile eczema, radio dermatitis, actinic xeroderma pigmentosum, and in all cases of hyperchromia such as

leucoderma and chloasma. In the last ultra red rays are best employed. The sources of ultra violet rays do not only produce these, but also a series of radiations which in quartz mercury lamps, correspond to the spectrum of mercury vapour. Wood has constructed a screen of very deeply coloured glass with a metal oxide base which is very slightly permeable to blue and violet rays but markedly to ultra violet ones. With this lamp healthy skin has a greenish blue fluorescence, the nails are pearly, ordinary hairs appear black, while those affected with trichophytosis give a greenish blue. The parakeratosis appears very pale and the pruritus premonitory to eczema gives an orange tint. Bodart believes that the use of ultra violet rays will become more and more general, and that Wood's lamp will prove to be an indispensable auxiliary.

#### 552 Dermatoses due to Light Stimulation

S. S. GREENBAUM (*Amer. Journ. Dis. Child* July 1927, p 81) draws attention to the severe reactions which though rare may follow on exposure to the rays at the short end of the visible and at the long end of the ultra violet light. In certain circumstances there may be an increase in the amount of the normal photosensitive substances in the tissues or the development in vivo of a new one. Various workers have suggested that these substances which absorb wave lengths characteristic of them are the porphyrins, the aromatic amino acids of the proteins and bacterial toxins acting on the epidermal cells. The author divides specific cutaneous sunlight reactions into two groups according as they are congenital or acquired. Among the congenital reactions he mentions hydroa vacciniforme (Bazin) a vesicle hallow eruption appearing twelve to twenty four hours after exposure to sunlight. It is first detected when the child is three or four years old and immunity is gradually acquired. Another congenital reaction is xeroderma pigmentosum which begins at the age of 1 or 2 as a dry and rough appearance of the exposed skin. Dark pigmented spots and white atrophic areas develop later together with telangiectases and leucoderma. The latter undergoing malignant degeneration death usually occurs before the twelfth year from metastases. In the acquired group are cases following genuine saturation intravenous injections of mercury bismuth applications of crude coal tar fairly complete saturation with x-rays and mercurial dermatitis. Severe atonic effects have also been observed in lupus erythematosus, some eczema, various and Addison's disease. Baier and his co-workers describe a primary dermatitis in this group where the clinical picture following exposure is an eczema not sunburn. Greenbaum emphasizes the importance particularly in infants of a preliminary test before light treatment in order to determine the degree of tolerance of sensitivity present.

#### 553 Skin Manifestations of Tularemia

E. W. NETHERTON (*Arch. Derm. and Syph.* August 1927 p 170) who reports an illustrative case with a histological report of the lesions, states that the cutaneous lesions of tularemia may be divided into (1) subcutaneous nodules which simulate those seen in sporotrichosis and like them may suppurate and rupture their situation being along the lymphatics which drain the primary lesions; (2) erythematous papules and plaques which follow exacerbation or relapse of the systemic symptoms. Among the rarer skin manifestations of tularemia are herpes and hyperaesthesia which may be either toxic or infectious, jaundice due to damage to the liver and aene. In Netherton's case which occurred in a woman aged 34 the eruption presented the appearance of erythema multiforme.

### Obstetrics and Gynaecology

#### 554 Induction of Labour for Disproportion between Foetus and Pelvis

BROUHA (*Gynecol. et Obstet.*, September 1927 p 205) discusses the induction of premature labour when the foetus and pelvis are of disproportionate size. The great drawback of induction which has the small maternal mortality of 1 per cent or less is the fact that from 5 to 16 per cent of foetuses are born dead and from 6 to 30 per cent of the live born premature foetuses fail to attain the age of 1 year. When the foetus to pelvic disproportion is due to the size of the foetus this drawback is less significant than when it is due to pelvic contraction in cases when one or more abnormally large babies have previously perished during labour, induction is advisable during the last weeks of pregnancy if the state of the cervix and the pre-natal are favourable. In a primipara with large foetus, Brouha prefers the test of labour pain to an induction. In cases of contracted pelvis the one of treatment lies chiefly between premature induction of labour

and Caesarean section. The foetal mortality of the latter is much less, and when allowance is made for the fact that in a large number of cases (70 per cent according to figures from the Tarnier Clinic) in which a probable Caesarean section has been contemplated a "test of labour" leads to spontaneous delivery, the comparable maternal mortalities of the two are about equal. Accordingly the smaller foetal mortality inclines the balance in favour of Caesarean section, of which the maternal mortality will probably be further diminished in the future with improvement of technique. Pelvimetry has improved, but the force of the uterine contractions and the malleability of the foetal head are factors which it is impossible to estimate in advance, so that in the great majority of cases of moderate pelvic contraction Brouha believes that the correct treatment is to watch labour carefully at term, performing Caesarean section by a low uterine incision if it becomes evident that natural forces will not suffice. The low operation, by diminishing the risk of infection, has made the "test of labour" more safe.

#### 555 Inflammation of the Bladder Simulating Neoplasm

J J JOLLSON and W L LOWER (*Surg., Gynecol. and Obstet.*, October, 1927, p 417) report three cases in which inflammatory lesions of the female bladder so closely simulated a true neoplasm as to cause difficulty in diagnosis. In the first, a woman aged 30, a localized tuberculous lesion of the bladder wall at the left ureteral opening resulted from a tuberculous kidney without the usual generalized cystitis, the possible explanation being that the tuberculoma, by occluding the ureteral opening, prevented the entrance of infected urine. This view is supported by the facts that the bladder urine was free from pus until after the removal of the tuberculoma, that the right kidney was hyperactive, and that a fortnight after operation the left kidney was functioning so poorly as not to excrete any indigo carmine. In the other two cases inflammatory reactions were set up in the bladder wall by a primary focus of inflammation in the adnexa uteri. The main symptoms in all three cases were dysuria, frequency, and nocturia, with pyuria in two and a history of haematuria in one. The authors consider that while the diagnosis from a true neoplasm may be difficult, these inflammatory tumours show certain characteristics which aid in differentiation. Instead of having a definite papillary appearance they present fairly large club shaped villi, some of which may appear cystic or translucent, they are usually rosier in colour and show no sign of invasion of the surrounding mucosa. Owing to this difficulty in diagnosis the possibility of such a lesion should always be borne in mind in women, in cases of doubt an exploratory operation may be advisable.

#### 556 Temporary Sterilization by Insulin

E VOGT (*Zentralbl. f. Gynak.*, September 17th, 1927, p 2436) has found that two or three daily injections of insulin spread over four weeks destroyed sexual desire in female rabbits, and microscopic examination of their ovaries showed an abnormal sparseness of ripening and ripened follicles. Riddle, by administration of small doses of insulin, has been able to prevent ovulation in buns. Previous reports have been published on experimental hormonal sterilization by transplantation of ovaries from pregnant animals, by injection of extracts of such ovaries, and by injection of placental extracts. Dittler, by intravenous injection of spermatic fluid, induced temporary sterility lasting four months in rabbits. Vogt thinks that such experiments may find an important practical application in the human subject. Temporary sterilization, for example, in cases of tuberculosis, might be more conveniently and safely induced by insulin treatment than by operation or small x-ray applications. That in the reverse fashion the ovarian internal secretion may influence that of the pancreas is suggested by an observation of KUPFERBLERG (*ibid.*, p 2438), who found that after applications of radium for carcinoma of the uterus a patient became cured of diabetes, and has since treated several cases of diabetes by introduction of radium into the vagina. Diabetes in a male is reported to have been influenced favourably by placing radium within the rectum.

## Pathology.

#### 557 Permeability of the Meninges to Antibodies

M CILCA, I BALTEANU, and L BALLET (*C. R. Soc. de Biologie*, October 21st, 1927, p 1122) have endeavoured to render the meninges permeable to antibodies. Previous work by one of the authors had shown that both complement and antibodies such as agglutinins, precipitins, and lysins were absent from the cerebrospinal fluid of patients whose blood contained them in large quantities, neither the onset of a chronic meningitis nor the artificial injection of physio-

logical saline solution into the spinal canal rendered the meninges permeable to these substances. In meningeal infections, such as tetanus and cerebrospinal fever, it is therefore necessary to introduce the antiserum directly into the spinal fluid. This method, however, is open to objections, if the serum treatment is continued for long, and phylaxis or serious meningitis may be set up. It would be of great advantage in these cases if the serum could be injected into the blood stream, and thence pass into the spinal fluid. The discovery that urotropine altered the permeability of the meninges to the virus of herpes led the authors to think that the intravenous injection of this drug might so affect the meninges as to allow of the passage of antibodies from the blood stream into the spinal fluid. In the first series of experiments they injected 40,000 to 59,000 units of diphtheria antitoxin into the subcutaneous tissue, and withdrew samples of the blood and the cerebrospinal fluid from seven to forty-eight hours later. The presence of antitoxin was tested for by Romei's intracutaneous method on guinea pigs or rabbits. In two general paralytic patients and one convalescent from encephalitis tested in this way they failed to detect the least trace of antitoxin in the spinal fluid, even though 0.025 c.c. of blood serum neutralized completely 160 doses of toxin. In the second series of experiments, performed on three patients with, respectively, dementia praecox, epilepsy, and encephalitis, the antiserum was injected as before, and, in addition, large doses of urotropine—12 to 63.5 grams daily—were given intravenously, but not a trace of antitoxin could be detected in the spinal fluid. If, however, the same antiserum was injected into the spinal fluid, it passed in less than seven hours into the blood, and after thirty-eight hours no trace of antitoxin was left in the spinal fluid. The authors conclude that in man neither chronic meningeal inflammation nor the injection of urotropine renders the meninges permeable to diphtheria antitoxin.

#### 558

#### Isolation of the Bacteriophage

A F DE GROAT (*Journal of Immunol.*, September, 1927, p 175) maintains that for proper study of the bacteriophage it should be employed in a pure condition. To free it from the proteins of the culture medium and from the products of bacterial lysis he has devised a method of adsorbing it on to the bodies of living bacteria, and subsequently liberating it from these by a process of heat, washing, and filtration. Briefly, his technique is as follows. Working with *B. coli* and an anti-*coli* phage he mixes about equal quantities of a thick *coli* suspension and a *B. coli* bacteriophage filtrate, and leaves the mixture in the refrigerator three hours, the organisms are then killed by heat in a 60°C water bath for fifteen minutes. After cooling, the mixture is centrifuged at high speed for twenty minutes, the supernatant fluid is discarded, and the deposited organisms are washed with a large quantity of saline solution and suspended in a smaller quantity of distilled water. After twenty-four hours in the incubator the suspension is filtered through a Berkefeld candle, and the resulting filtrate is preserved as pure bacteriophage. Tests for protein in this purified filtrate are entirely negative. Experiment showed that the bacteriophage could not be adsorbed on to the bodies of dead bacilli. The success of the technique described seems to indicate that the bacteriophage can easily be detached from the bodies of dead bacilli on to which it had been adsorbed while they were still alive.

#### 559

#### The Oxydase Reaction and Menstruation

V COSTABILE (*Il Morgagni*, October 2nd, 1927, p 156), from a study of the oxydase reaction—that is, the formation of dark blue granulations in the leucocytes when treated with alpha naphthol and dimethyl paraphenylenediamine—in 20 cases of menstruation came to the following conclusions. The oxydases on the leucocytes increase during the menstrual flow, especially at its acme. In the premenstrual period of dysmenorrhoeic subjects the oxydase contents of the leucocytes is lower than in healthy women, but it increases at the height of menstruation. The increase of oxydases appears to be due to a greater activity of certain endocrine glands, especially the thyroid and ovary, at the menstrual period.

#### 560

#### Examination of the Cerebrospinal Fluid for Tubercle Bacilli

LANCELIN, BIDEAU, and DUBIFUILL (*C. R. Soc. de Biologie*, October 21st, 1927, p 1056) find that the best method of detecting tubercle bacilli in the cerebrospinal fluid is to allow the fluid to rest till a fibrinous clot forms. This is then removed by a platinum loop and spread on a slide. To free it from excess of fluid it is transferred to two or three moist slides in succession. When it has dried it is fixed and stained, a picric acid solution being used for counterstaining. The bacilli are caught up in the meshes of the clot, and can be found rapidly and in considerable numbers. This method has given nearly 100 per cent of successes.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

### 561 Chicken pox with Extension to Larynx

H M JARR (*Arch of Pediat*, September 1927 p 599) records the case of a girl, aged 11, who during a severe attack of chicken pox began to suffer from dysphagia and hoarseness. There were several vesicles on the anterior pillars and posterior pharyngeal wall. The larynx was generally reddened and congested, and on the left vocal cord remnants of two ruptured vesicles were seen. Both vocal cords were slightly rounded and oedematous. The throat symptoms lasted four days and disappeared on the fifth day. The dysphagia and cough persisted for three days and subsequent recovery was uneventful. Only two similar cases of laryngitis in chicken pox reported by Marfan and Hallé have been recorded one preceding and the other accompanying the eruption. Their first patient was a girl aged 3 who on the fourth day of chicken pox suffered from hoarseness and dyspnoea sufficiently severe to require tracheotomy to save her life. Their second case was in a baby, aged 9 months who showed swelling of the larynx with confluent patches. Death occurred on the seventh day of disease.

### 552 Oesophageal Stenosis of Aortic Origin

J A CANALEJAS (*Lancet* 1927 October 8th 1927 p 292) who records a fatal case, remarks that stenoses of the alimentary canal of aortic origin may be divided into two groups—namely, spasmodic and anatomical. A mild form of aortitis which does not exercise any pressure on the neighbouring organs may readily give rise to spasm of the larynx or oesophagus with all the symptoms of a neurotic condition such as intermittent inability to be induced by psychical factors, greater difficulty in swallowing liquids than solids, and disappearance of the obstruction under an anaesthetic, without however implying a favourable prognosis since it indicates an organic cause. In practice therefore, the spasmodic or functional nature of a dysphagia does not indicate a favourable prognosis in every case as the spasm may simply be the clinical manifestation of an incipient organic lesion. In the present case which occurred in a man aged 60 the dysphagia was no spasmodic but anatomical being due to direct compression of the oesophagus by the dilated aorta, although even in the most pronounced cases of this type the coexistence of a reflex spasmodic factor is possible. Vigorous antisyphilitic treatment is indicated in such cases.

### 553 Treatment of Migraine.

R BLAMONTIER (*Bull Soc de Ther* October 12th, 1927 p 225) inspired by the good results obtained in some cases of migraine in America by Vincent Lyon and in France by Chirry and Triboulet as the result of drainage of the gall bladder after intraductal injection of a concentrated solution of magnesium sulphate adopted this treatment in twenty two cases of typical severe migraine. The principal indications for the method were frequent and profuse vomiting during the attacks the presence of a large quantity of bile in the vomit and tenderness of the gall bladder. The only examples of cure or very marked improvement in Blamontier's series occurred in seven patients who had profuse bilious vomiting and tenderness of the gall bladder which disappeared after duodenal intubation eight patients who had only slight and mostly watery vomiting showed little improvement while the remaining seven who were rarely afflicted by nausea and vomiting were never bilious and had no tenderness of the gall bladder derived no benefit whatever from the treatment. Duodenal intubation was performed once a week and the duration of the treatment was from six weeks to two months on the average. Some showed improvement after the first intubation and others not till the fourth or fifth. Some patients had no recurrence of their symptoms while in others the migraine relapsed at varying intervals after the termination of treatment.

### 563 Striae Patellares following Typhoid Fever

J D ROLLESTON (*Clin Journ* October 25th 1927 p 476) who records an illustrative case, states that the condition of striae patellares which was first described by Reimier in his Paris thesis in 1860, is a localized form of the lesion which has received various names—such as striae atrophice striae cutis distensae striae albae variegates of the French and false Varicella of the Germans. It is met with after many infectious diseases, but is commonest after typhoid

fever. Striae patellares probably have a mechanical causation due partly to rapid growth of the skeleton because most of the cases have been in growing people and the condition may occur apart from any disease. They are commonest, however, after infectious diseases which increase growth, and are probably not due to a trophoecrosis as some writers have maintained. They possess some medico-legal interest as they constitute a means of identification. Rolleston's patient was a girl aged 14 in whom the striae were first noted on the forty third day of a typical attack of typhoid fever, three days before the evening temperature became finally normal. They consisted of symmetrical purplish transverse stripes on the skin about 1½ inches above the upper border of each patella numbering one on the left and three on the right and measuring 1 to 1½ inches in length. The skin was otherwise normal except for a slight degree of livedo reticularis of the lower limbs, and the knee joints were active. Rolleston has also recently seen a similar case of striae patellares in a girl with paratyphoid B fever.

### 565 The Myelitis of Herpes Zoster

M NICOLAS (*Thes de Paris* 1927 No 460) who records an illustrative case maintains that idiopathic herpes zoster is often accompanied by lesions of the spinal cord which on microscopical examination present the threefold lesions of inflammation, exudation and necrosis similar to those found in the spinal ganglion. These lesions involve not only the posterior cornua corresponding to the zones of the skin eruption but also the anterior cornua and the white matter. Up to a certain point these lesions may throw light on certain abnormal forms of sensory motor trophic and even cutaneous disorder. Some of the paralytic in particular can be better explained by spinal change of this kind than by a hypothetical root lesion.

### 566 Cheese Poisoning

P C CLEYNDERT jun (*Ned R. Tijdschr v Geneesl* September 24th 1927 p 1309) who records four personal cases, remarks that only a few examples of cheese poisoning have been published in Dutch literature in spite of the large amount of cheese manufactured in Holland. In the foreign literature at his disposal he could find nothing beyond a mention of cases of poisoning due to consumption of a British cheese. Van der Meer has described cases with symptoms of acute gastro-enteritis which he attributed to the large quantities of tin found in the ash of the cheese. The presence of the metal appears to be due to the use of tin instruments in the preparation of the cheese. Hillema, who has also described cases of cheese poisoning, comes to the conclusion that the symptoms are entirely due to the use of milk derived from cows suffering from foot and mouth disease. Cleyndert's patients were a man aged 40 his wife aged 34 their daughter aged 15 and their son aged 14 who about two hours after eating a Dutch cheese suffered from repeated vomiting, diarrhoea and collapse which was followed by recovery on the following day. Laboratory examination showed that the cheese produced symptoms of poisoning in mice thus indicating an abnormality in the ripening process. On further inquiry it was found that the cheese in question was about eight months old and had been prepared under cleanly conditions in a farm where no foot and mouth disease was present. The etiology of cheese poisoning is therefore still obscure.

## Surgery

### Hodgkin's Disease in Childhood

567 P BOONSANTI (*Arch Ital di Chir* September 1927 p 273), who records four illustrative cases in children aged from 3 to 4 years states that Hodgkin's disease or aleukemic lymphadenitis is not uncommon in childhood and that the small number of recorded cases is due to its being mistaken for inborn lymphadenitis owing to its situation. Histological examination of the affected tissue does not justify the term of lympho-granuloma malignum, proposed by Benda since it has no features that can be identified with any of the known granulomata. Boonsanti's hypothesis that the condition should be regarded as a special form of new growth distinct from those hitherto described is more in accordance with the clinical picture. The reproduction of the lesions in viscera provided with lymphatic tissue can thus be regarded as a true metastasis as is exemplified by the progressive spread of the disease to the internal glands liver,



spleen, intestine, and other organs. The etiology and pathogenesis are still obscure, and experimental observations do not confirm Steinberg's observations as regards the presence of tubercle bacilli or Much's discovery of granulules. The prognosis is decidedly unfavorable, and is in accordance with the hypothesis of a malignant growth. Surgical treatment, though not really efficacious, is not prejudicial, inasmuch as life may be prolonged by removal of toxic foci. Surgical treatment should be accompanied by radiotherapy, which may yield brilliant local results, although it does not justify the hope of a complete recovery. The rapid effect of irradiation of the glands is a good argument in favor of the hypothesis of a new growth, inasmuch as no inflammatory process would be so speedily affected. Although there is no recurrence of glandular enlargement, the disease assumes the form of a progressive cachexia which is invariably fatal.

#### 568 Splenectomy for Chronic Purpura

R LERICHE (*Bull et Mem Soc Nat de Chir*, November 5th, 1927, p 1132) describes the case of a boy, aged 5, who was suffering from severe epistaxis at frequent intervals. The haemorrhage had started when the child was 2½ years old, with a purpuric rash. When admitted to hospital the red cells numbered 1,400,000 per cubic millimeter, white cells 21,000, and platelets 10,000. The coagulation time was twenty minutes. The child appeared to be very thin and pale. Treatment by irradiation of the spleen and transfusions of blood from the father was started and the haemorrhage ceased. Five days later the bleeding recommenced and could not be controlled, so it was decided to remove the spleen at once. This was successfully accomplished and the bleeding stopped. Within a week the platelets numbered 110,000 and the haemorrhage had ceased. The patient, however, became steadily worse and died from intestinal obstruction, which an enterostomy failed to relieve. Leriche adds that this case shows how splenectomy in this condition definitely arrests the bleeding, and that the number of platelets are rapidly increased within a few days. He thinks that if the operation had been performed earlier it would have probably resulted in a cure of the purpura, and that it should be tried in cases of this troublesome and resistant disease.

#### 569 Sympathectomy for Angina Pectoris

M G SHELIG (*Amer Journ of Surg*, October, 1927, p 315) discusses the operative treatment of angina pectoris, and records a case of vocal cord paralysis following sympathectomy. He thinks that such a postoperative complication may check unwarranted surgical enthusiasm and furnish a corrective for assumptions about the simplicity and innocuousness of this operation. A woman, aged 58, suffering from angina pectoris, with chronic myocarditis, auricular fibrillation, and mitral insufficiency, was subjected to two operations which were followed by two types of complications, one relatively unimportant in that the patient did not resent the resultant radiating occipital and shoulder pains in view of the disappearance of the angina, and the other, a grave sequel, since dyspnoea supervened and threatened death, owing to the paralysis of both vocal cords. The literature shows considerable diversity of opinion as to the most suitable type of operation for the relief of the pains of angina pectoris, no less than ten procedures having been devised. In estimating the worth of these it has to be determined whether they do good or harm, or possibly both, to a measurable degree, combined with the fact that many patients not subjected to operation obtain spontaneous and permanent relief from pain owing to weakened heart muscle and lessened pressure. Isikowitz is quoted as affording one of the best clinical studies on which rational indications for operative therapy can be based, his attitude is one of marked conservatism, for he regards operation as a last resort, and only to be undertaken after an exhaustive clinical study of the patient and after careful and persistently applied medicinal treatment and psychotherapy. Such an investigation can only be made by an experienced physician, and Seelig adds that no other surgical procedure calls for closer co-operation between the physician and surgeon.

#### 570 Metastases in Bones following Breast Cancer

D H PATFY (*Brit Journ of Surg*, October, 1927, p 182) recalls that bony deposits secondary to carcinoma of the breast are regarded as an indication that the disease is beyond surgical aid. An account of 18 cases is given, and these are divided into three groups. In the diffuse group the bony deposits are widespread. The pelvic bones appear particularly liable to involvement, likewise the spine and ribs, while the femur was affected in several instances. The peripheral bones of the limbs are rarely involved. The prognosis in these cases is hopeless, and the only treatment is to give sedatives to relieve the pain. In the localized group deposits are found in the sternum or ribs, these cases are

open to attack by radium, and the growth can be made to disappear. The third group consists of mixed cases, where both types are seen. It is probable that the pathology of these cases is distinct. The localized recurrence may arise from the internal mammary chain or glands which have been invaded from the supraclavicular glands. The diffuse type probably results from some diffuse method of spread, either lymphatic or blood borne. The cases are too few, however, to justify conclusions on this point.

## Therapeutics.

#### 571 Whole Blood Transfusion in Pemphigus

L HOLLANDER (*Brit Journ Derm and Syph*, November, 1927, p 450) in a preliminary report records notes of six cases of pemphigus vulgaris treated by matched whole blood transfusion, since the condition was regarded as a chronic toxæmia. The diagnosis having been established, the patient's blood was typed into one of the four groups and one or more corresponding donors were selected, direct blood transfusion of from 500 to 600 c.c. was performed at weekly intervals for from three to six times. Preparation of the patient included a saline laxative the previous night and fasting for twelve hours. As a rule any reactions were negligible, though occasionally a temporary rise in temperature and pulse rate occurred, if alarming symptoms appeared the administration of one tenth of a grain of morphine sulphate, repeated two or three times, exercised a quieting influence. Should tingling or numbness of the extremities, palpitation, air hunger, or cyanosis occur the injection of 10 minims of a heparine chloride, 1 in 1,000, intradermally is advocated. In five of the six cases marked improvement in both the general and skin condition resulted, and in the sixth case the skin condition became markedly better, but death occurred from an intercurrent acute infection. Hollander considers that these results render a wider investigation desirable, even if it should be shown that improvement may only be temporary. He suggests that other serious dermatological conditions, such as exfoliative dermatitis, may derive benefit from blood transfusion.

#### 572 Treatment of Amoebic Infestation

O WILLNER (*Medicine*, September, 1927, p 341) reviews the drugs introduced in recent years for the treatment of amoebiasis. He remarks that the percentages of permanent cures in cases treated with emetine are not high (28 to 70 per cent), and that there has been a constant tendency to give larger doses of the drug, with the result that toxic doses are almost always administered. The period of invalidism after a course of emetine, especially in cases having little impairment of general health and ability to work, appears neither tolerable nor economic. Various adjuvant factors have been used with emetine: bismuth subnitrate with or without Fowler's salts, native plants of local reputation, 40 per cent sugar solutions as enemata, and diets of protein or milk have been tried with sometimes apparently good clinical results. Yatien, a proprietary preparation, was tried first in amoebiasis as a 5 per cent enemata solution, later the strength has been reduced to 1 to 1.5 per cent. It is also given in wafers, gelatin capsules, and pills by the mouth, the total daily dosage being up to 3 grams. Courses of yatien, combining its introduction by the mouth and enema, are given over three weeks, the patient being preferably in hospital for the first week. The results in old chronic cases uncurd by all previous treatment are described as spectacular. Amoebae usually disappeared from the stools by the third day, and in 79 out of 88 cases treated at the Peking Union Medical College Hospital the stools were free after three to six months. Two other drugs, both arsenicals, stovarsol and treparsol, have recently been introduced. The results with stovarsol are said to compare favourably with those of other drugs, but there is an element of uncertainty in its action and perhaps sometimes of danger, of the correct dose is not yet sufficiently established. Treparsol contains more arsenic, but it is more slowly eliminated and is less toxic than stovarsol, it has been found useful with or after a course of emetine, and can be given subcutaneously or, better, intramuscularly. Willner cites the results of the Willmore and Vaindiale with an arsine dye, auramine, the hydrochloride of tetramethyl diamino diphenyl isocyanine, a combination of this with emetine is known as arsenic dye. The advantages claimed for this drug are freedom from the toxic effects, that it is less depressing than emetine, and that treatment in bed is unnecessary. Large doses of bismuth subnitrate are a valuable adjuvant. Courses of treatment are given for acute, chronic or carrier, and hepatic cases. Of 40 cases treated, among them many severe and stubborn—the residue of prisoners infected during the war—7 regained their health and lost all signs of the disease, and the



stools remained free from cysts for at least six months. The drug was used in association with stovarsol and bismuth except where the liver was involved, when emetion hydrochloride was given. The author concludes that yafren is the most generally useful drug, it is the least toxic and most widely applicable of the remedies.

### 573. Hexyl Resorcinol in Infections of the Urinary Tract.

C. W. EBERBACH and R. D. ARN (Journ. Amer. Med. Assoc., August 13, 1927, p. 512) refer to the literature describing the use of hexyl resorcinol in urinary infections (see *Epitome*, 1925, vol. 1, paras. 1-6 and 2-0; vol. 11, para. 245; 1926, vol. 1, paras. 101 and 625). They report the results of using the drug in some 200 cases with rather less benefit than that usually recorded, but they attribute this relative failure to the fact that the pathological conditions were mainly chronic rather than acute. They conclude that hexyl resorcinol will cure about one third of all types of urinary tract infection, when the primary foci have been removed. They found that there was rapid and continued relief of the symptoms, and they add that the earlier in the course of the disease this treatment is begun the greater is the chance of a cure. In mixed infections so treated the cocci often disappear from the urine while colon bacilli remain. They believe that the use of this remedy in conjunction with other therapeutic methods will result in a considerably higher proportion of cures being obtained.

## Neurology and Psychology.

### 574. Home Treatment of Mental Patients.

ACCORDING TO J. RAECKE (*Med. Welt*, October 15th, 1927, p. 1392) the modern tendency in Germany and elsewhere is to limit asylum treatment largely to those mental patients who have acute and violent symptoms and are a danger to themselves or their surroundings. Convalescent patients, also, are discharged from institutions earlier than was formerly customary. The author considers that this benefits the patient by preventing him from becoming unnecessarily alienated from his normal surroundings. In manic depressive states institutional treatment is generally desirable in all but the mildest cases, in which rest, warm packs, and sedatives may be tried. Epileptic psychoses are also not safely treated at home as a rule, but for cases of schizophrenia which are frequently psychically progressive with remissions, Raecke considers that institutional treatment is often definitely detrimental and that exacerbations are frequently due to factors in the environment. He therefore advocates that early cases should be treated at home, and considers that at this stage much can be done by gaining the patient's confidence, suitably organizing his occupations in accordance with a definite daily routine and prescribing stimulating or sedative measures according to the nature of the case, besides eliminating so far as possible irritant factors from the environment and explaining the need for leniency to the patient's friends. On theoretical grounds, glandular therapy may be tried. In paranoia much may also be achieved by patient attention to such matters as delusions of persecution, which will sometimes reveal that they have some small foundation in fact. For the *malaria therapy* of incipient general paralysis institutional treatment is necessary, but during remissions the patients should be carefully watched for recurrence of symptoms, and excessive mental or physical effort be avoided. Cases of senile dementia and arterio-sclerotic psychoses are comparatively easily treated at home though careful supervision of the patient is necessary. In the latter type narcotic drugs are of less value than cardiac. Neuroses do not generally require institutional treatment; it is important in these also to discover and if possible remove external factors producing the particular type of mental reaction and to induce the patient to lead an equable life with adequate rest and avoidance of hurry. For alcoholism and other intoxication psychoses treatment in a suitable home is essential.

### 575. Katatony and Extrapyramidal Syndromes.

P. GUIRAUD (*Paris m. d.*, October 15th, 1927, p. 301) maintains that in the study of katatony it is wise to note the slight symptoms and that the collecting of these, which are of very different value and etiology into such groups as mannerism, negativism, suggestibility and stereotypia only leads to diagnostic errors. He classifies the symptoms as vegetative, extrapyramidal and psychomotor. In the vegetative group are included ocular troubles, muscular and vasomotor disturbances, secretory and trophic derangements, disturbances of the vital activities, troubles probably of tuber cinereal origin, hypo-excitability to pharmacodynamic agents, and

hyalanthine in (or hypo) excitability. This syndrome is due to lesions of the vegetative reflex centres which lie in the pons as far as the infundibular and hypothalamic regions, and are connected with sympathetic ganglia. In early katatonic dementia it is often very accentuated and it is present in many other extrapyramidal syndromes, particularly in post-encephalitic Parkinsonism. In the extrapyramidal group the most important symptom is the conservation of imposed attitudes and Guiraud asserts that this is of extrapyramidal origin and not psychogenic or voluntary. Other symptoms in this group are motor repetitions or frequentative movements, the elastic stereotypia, tonic anomalies of the agonists and antagonists in voluntary movements, abnormal movements, as myoclonus and grimaces and certain motor episodes as apoplectic or epileptic seizures. Further proofs of the extrapyramidal origin of katatony are the tremors present in both early dementia and Parkinsonism, typical katatonic symptoms are not rare in epidemic encephalitis, the immunity of vegetative symptoms manifestly mesocephalic shows a well-known localization of the katatonic and Parkinsonian syndromes, between the locus niger and the anterior extremity of the caudate nucleus, i.e. a mass of grey centres and white bodies which are the seat of very different syndromes and the caudate nucleus appears to play an important part in the abnormal movements and in some exceptional cases the motor symptoms are noticed before any mental trouble and first attract the patient's attention. Psychomotor symptoms are manifested by a defect in starting ordered or desired acts by the ceasing or interrupting of ordered acts by motor diminution, and by ideatory or ideomotor dyspraxias through failure of attention or interest. The author believes that the origin of these symptoms is subcortical and lies in the thalamus rather than in the cortex. In conclusion he states that there is no reason to believe that all psychic disturbance is cortical in many mental conditions the grey nuclei play an important part and influence both the psychic state and its motor expression.

### 576. Pseudo tabetic Ataxia.

G. MARINESCO (*Rev. Neurolog.*, October 1927, p. 337) states that ataxia troubles have long been noted in the course of many infectious diseases and Dejerine has shown that this polyneuritic pseudo ataxia (which he terms *nervo tabes*) is distinguished from true locomotor ataxia in due to an alteration of the roots and columns but to lesions of the peripheral nerves. *Nervo tabes* is characterized by lightning or lacerating pains, acute thesis, anaesthesia, a very pronounced alteration of the deep sensibilities, a peculiarity of the sense of attitudes and inco-ordination in the limbs which is exaggerated by closing the eyes, a certain degree of motor paresis and muscular atrophy, the presence of Ponberg's sign and the abolition of tendon reflexes. It is differentiated from true tabes by its rapid evolution in some weeks or months, absence of the Argyll Robertson pupil and of sphincter troubles, pain on pressure over the nerve trunks and muscles and by its topography. Dejerine in necropsies on two cases found that the marrow, the anterior roots and the spinal ganglia were absolutely healthy, while the nerves of the limbs especially at their distal extremities showed degenerative changes. Marinesco reports a case in a woman aged 73 which proves by its duration, its evolution and the lesions in the nervous system that the problem of *nervo tabes* is really more complex. In this patient the disease had started only one month previously the classical symptoms were noted, the Wassermann reaction was negative but the tabes had been preceded by an attack of pneumonia. At the necropsy the peripheral nerves of the lower limbs showed a degeneration of the fibres and a perivascular and interstitial inflammation. Manifest changes were seen in the nerves of the skin and in the corpuscles of Pacini and Meissner. In the globus pallidus was found a heavy disintegration of iron and the cytoplasm of many of the cells of the microglia contained ferrogranules. No lesions were noted in the cerebellum. The meninges of the cerebral cortex showed a fibrosis of the cells more marked around thickened capillaries, and associated with small areas of softening. In addition particularly in the occipital and frontal lobes were seen numerous so-called senile plaques. Marinesco believes that these commence by the deposit of an acicular substance and as they develop they cause a reaction in the microglia and adjoining neuroglia, their origin is probably in the blood plasma as they are found in great quantities in the perivascular spaces. At first these deposits cause no degeneration of the neuroglia or nerves, but as they enlarge they exercise a destructive action either by their size or their pathogenic properties. When the microglia hypertrophies it sends out fine prolongations which penetrate to the interior of the plaque and form a mesh of rods or filaments on its surface. The nuclei of certain plaques seem to act as necrotic elements. These plaques are not phenomena of normal senescence. While

many pneumococci were found in sections of the lungs none were discovered in those of the neuraxis, and Marinisco believes that the lesions in the latter were caused by a filterable virus which had invaded this system through the pulmonary passages

## Obstetrics and Gynaecology.

577

### Etiology of Puerperal Fever

P. VELASCO (*Arch de med, cu y esp*, October 29th, 1927, p 493), after alluding to the prevalence of puerperal fever in Spain, maintains that cases of puerperal infection can be divided into two clinical types according as the prognosis is favourable or the reverse. The diagnosis of an infection which was formerly based on the clinical symptoms can now be made by bacteriological examination of the blood. Three positive blood cultures suggest that the focus of infection is within the body, and if it cannot be found the possibility of endocarditis should always be considered. In cases of puerperal patients with high fever and repeatedly negative blood cultures the cause of the fever should be sought for in other infections such as tuberculosis, influenza, or typhoid fever. An important factor in the prognosis is the localization of the infecting organism. Infection of the endometrium is of much less gravity than parametritis, the latter is less serious than thrombophlebitis, which in its turn is less deadly than endocarditis. The nature of the organism has also a certain prognostic value, the presence of *B. coli*, for instance, in spite of the high fever accompanying it, allowing a much better prognosis than in the case of the haemolytic streptococcus. Velasco adds that in the treatment of puerperal infection based on etiological principles blood cultures are extremely useful, not only permitting the practitioner to adopt a successful method such as using an antistaphylococcal serum in cases of infection by Fraenkel's *Bacillus pyrogenus*, but also enabling him to test the efficacy of his treatment.

578

### A Method of Preventing Perineal Tears

L. DROSIN (*Med Journ and Record*, September 21st, 1927, p 363) has found a method which he calls "bloodless episiotomy" useful in stretching the perineum immediately before delivery in a large number of cases, particularly in primiparae. When the perineum is bulging and the caput haemorrhoidale visible the distal two thirds of the index and middle fingers of one or both hands are inserted flexed into the vagina with their palmar surfaces in contact with the posterior vaginal wall and eight or ten rapid vibratory movements in an antero-posterior direction are carried out without the use of force, keeping the fingers all the time in contact with the mucous membrane, so that the force actually employed is only gauged by the resilience of the underlying tissues, the second part of the manoeuvre is to stretch the levatores and fourchette by similar vibratory movements up and down with the same fingers nearly extended, while in the third part the fingers are held flexed on either side inside the vaginal orifice with the tips in front of the levatores and the movements are repeated in a downward and outward direction. If the perineum is very rigid the set of movements may be repeated at intervals of three or four minutes. Drosin finds that tears are reduced to a minimum by this method, and that those which do occur are sutured more easily than those produced by deliberately incising the perineum as in lateral episiotomy.

579

### Pituitrin in Labour

J. W. T. WILLINK (*Nederl Tijdschr v Geneesk*, September 3rd, 1927, p 966) during the period 1921-26 used intramuscular injections of pituitrin in 203 out of 500 deliveries, 92 of the patients being primiparae and 111 multiparae. The injection was repeated when necessary. It very rarely had occasion to give more than 0.5 c.c. The results were as follows. In 75 per cent there was a satisfactory strengthening of the pains. Post-partum haemorrhage occurred in only 9 cases, and forceps deliveries in 10 cases with no deaths. The duration of labour in primiparae was, on the average, eighteen hours, and only one child died during birth. The total infant mortality (not including macerated foetuses) was 4, and asphyxia occurred in only one case.

### 580 Treatment of Chronic Gonorrhoea in Women

A. LOESER (*Amst Journ Obstet and Gynecol*, September, 1927, p 329) reports a series of 118 women, suffering from chronic gonorrhoea, treated by subcutaneous injections of a suspension of living gonococci. A twenty-four to forty-eight hours' culture on isotonic blood agar was washed off with sterile saline solution, and a dose of between one and eight thousand million was injected subcutaneously into the

upper arm. Within twenty-four hours the growth can be made to infiltrate. There was also slight local growth can be made to usually headache, but this and the local recurrence may arise never attended with evil after effects. Glands which have been enter the blood stream, and that the method of spread, either were cured with one injection, repeated method of spread, either swabs being negative. Only true chronic are too low, however, for this form of treatment, the patient, struating, and must not have had any local ment during the previous two months.

## Pathology.

581

### Infection with Single Tubercle Bacilli

L. WAMOSCHER and H. STOECKLIN (*Centralbl f Bakt*, 1927, vol 104, Beiheft, p 86) describe how, with the aid of Peteril's micromanipulator, they have been able to perform infection experiments on animals, using single bacilli. Wamoscher and his colleagues had shown that it was possible to produce a fatal disease in white mice by the subcutaneous injection of a single pneumococcus, streptococcus, or anthrax bacillus, the proportion of successful results obtained with these three organisms was 24, 32, and 28 per cent respectively. In the present paper they describe experiments on guinea pigs with the tubercle bacillus, introduced into a subcutaneous pocket in the thigh. In one series of experiments they used a four weeks old culture of the human type in glycerine broth. Thirty-eight animals were each infected with one bacillus, eight animals with two bacilli, and one animal with thirty to forty. The animals were kept on a low diet for eight weeks after injection, with the idea of diminishing their resistance, after that time they were fed freely. Romer tests were performed before injection and eight weeks after. Guinea pigs which gave a positive Romer test eight weeks after injection and had palpable inguinal glands were considered to be suffering from tuberculosis. The results of this experiment were unsatisfactory, none of the animals injected with one bacillus developed tuberculosis, and of the eight animals injected with two bacilli only one was infected, but the guinea pig which received thirty to forty organisms became tuberculous. In another experiment they used a nineteen to twenty day old culture of human type on Lubanau's medium. Thirty-eight animals received one bacillus, of these 40 per cent were infected. Nine animals were injected with two bacilli, of these 67 per cent became tuberculous. The poor results of the first experiment are attributed to the use of an old culture containing too many dead organisms, and the authors conclude that it is possible to infect guinea pigs with a single tubercle bacillus.

### 582 The Action of Sodium Salicylate in Large Doses

D. LIOTTA (*Riv Med*, October 17th, 1927, p 985) publishes the results of a series of experiments performed by him, with a view to ascertain the effects of prolonged administration of full doses of sodium salicylate alone, and in combination with sodium bicarbonate. To one set of rabbits he gave full doses of salicylate alone and to another group a mixture of this salt and sodium bicarbonate. His experiments showed clearly that the salicylate alone might cause serious changes in the kidney, liver, and heart, and to a less degree in the pancreas and suprarenals. The most marked changes were seen in the kidney, and the author gives microphotographs of the appearances. In the animals treated with a mixture of sodium salicylate and bicarbonate none of these changes were noted.

### 583 Estimation of the Diphtheria antitoxin Content of Human Serum

G. RAMON and C. ZOELLER (*C R Soc de Biologie*, October 28th, 1927, p 1153) have applied the flocculation method to estimating the antitoxin content of human serum. Serum was taken from twelve Schick negative persons, who had become immunized to diphtheria by an attack of the disease, by latent infections, or by injections of antitoxin. This serum was tested by Ehrlich's method on guinea pigs, and by the *in vitro* flocculation technique. It was found that the two methods gave closely similar results. The authors conclude that the flocculation method can advantageously be applied to man. Since, however, the precipitate resulting from the mixture of toxin and antitoxin is visible only when these substances are present in sufficient quantities they consider that the flocculation method will not be applicable to human serum unless this contains one or more units of antitoxin, if a lower concentration of antitoxin is present the method will be unsuitable.

stool's remained free from a drug, was used in a case of escape where the liver was chloroform given. The most generally useful and widely applicable of the

## OME OF CURRENT MEDICAL LITERATURE.

### 573. Hexyl Resorcin

### Medicine.

C. W. LEBFACH on *an diphtherial Croup*

August 13th, 1927, p. 1075 (*Le St. 1* September 17th, 1927). A group of cases of acute laryngitis of a non-use of hexyl resorcin in which the clinical picture is identical with the diphtherial croup due to diphtheria bacilli. These cases are extremely embarrassing and from the clinical, prognostic and therapeutic aspects. Moreover, they are relatively frequent, during the last two years 1 out of 10 has observed ten typical cases and he has gained the impression that non diphtherial croup is as frequent as true diphtherial laryngitis. This apparently paradoxical conclusion is explained by the fact that the incidence of diphtheria in Brussels at the present time is low, and that the disease assumes a mild form. These cases of non diphtherial croup may be classified as due to influenza, measles, scarlet fever, infection tuberculosis, syphilis, the *O. tum. albus* and general infections such as typhoid fever, small pox, varicella, erysipelas, and burns. Non diphtherial membranous laryngitis is due to staphylococci, streptococci or diplococci and its diagnosis is impossible without bacteriological examination. The prognosis is not the same in all cases, of non diphtherial croup but depends on the causal agent. In influenza croup which is the most frequent form the mortality of 25 per cent given by Requin corresponds with Fonteyne's observations. Generally speaking the prognosis is aggravated by the following factors: (1) Ulceration or even laceration of the laryngeal mucous membrane owing to the intensity and long duration of the spasm which they produce. (2) The occurrence of broncho pneumonia which indicates a virulent and extensive infection. (3) Necessity of intubation or tracheotomy which favours the onset of the complications mentioned in (1) and (2). As regards treatment while it is the rule to give serum in doubtful cases needless injections should be avoided to prevent the patient being rendered hypersensitive to subsequent injections. The most important indication is to combat the spasm by drugs such as cocaine, morphine, and chloral so as to save the patient from intubation or tracheotomy, which renders the prognosis considerably more gloomy.

### 585

### Writer's Cramp

WHILE granting that muscular overwork and psychic conditions are factors in the etiology of writer's cramp, ANDRE THOMAS and SALVET (Paris med., October 1st 1927, p. 243) assert that the mode of action of these factors has not been elucidated. The number of dystonic syndromes following even slight wounds shows the effect of localized peripheral irritants on muscular motility. The presence of dystonia comparable with writer's cramp in encephalitis and the appearance in this disease of cramp or dystonia on writing have suggested comparison between the lesions observed after death in encephalitic subjects and the physiological pathology of cramp. Lemos believes that the lesions may be either central or peripheral, and that cramp of central origin depends on a lesion of the corpus striatum. The co-occurrence of spasmodic torticollis and writer's cramp has been noted by Duchenne and Souques believes that these diseases, together with certain other spasms, are related to disturbances of the corpus striatum. Lemos has reported a case of a labourer showing the Pulvinar syndrome of encephalitis in which there was progressive rigidity of the arm during writing, and falling of food. The authors state that the cramp seemed to result from a hyper- and a struggle between the antagonistic muscles which enter into the mechanism of writing. They describe in detail four cases of classical writer's cramp which were completely free from all Parkinsonian rigidity and other organic affections of the nervous system. In these the neurological examinations were constantly negative and a hyper-thetia of the antagonistic muscles was found to exist during the tests of passivity and balancing of the limbs segment by segment. This resistance to passive movements is manifested whether the reaction is caused by agitation of the limb or by electric contraction of the antagonistic muscles and the hyperactivity of these is lasting and can be found several months after ceasing to write. The interpretation of this symptom is difficult and the authors advance various hypotheses. It is possible that different sets, by their repetition (simulating overwork) may disturb the functioning of the motor co-ordinating and regulating centres. The fact that cramp does not affect all writers seems to point to pre-

disposition and the ease with which, in some patients, the cramp passes to the left hand when it is used to assist the right supports this view. The unilaterality of the symptom, always localized in the right hand, is against the theory that it is primary and antecedent to the cramp. The authors believe that it is acquired. They also maintain that the psycho-emotive factor plays a great part in causing the cramp, that the cramp is of a complex mechanism in which are associated different elements of the psycho-emotive and motor spheres and that it is dominated by the personal character of the patient.

### 586

### 'Prophylaxis of Varicella

W. W. WADDELL, Jun., and R. ELLI (Brit. Jour. Dis. Child., October, 1927, p. 540) allude to the series of cases reported by Greenhalgh (*Epitome* October 2nd 1925, para. 283), and report 23 cases in which persons exposed to varicella were inoculated against the disease. After a negative Wassermann reaction had been obtained in the donor the contents of a vesicle which had first been cleaved with boric acid and then with saline solution were removed by a small capillary tube and the vaccination was then performed according to the method of vaccinating against small pox. Six gave histories of previous attacks of varicella and in one the history was uncertain. Of the 23 persons vaccinated 8 showed a successful reaction as evidenced by the formation of a papule-vesicle and crust at the site of inoculation. Five cases of trunk varicella subsequently developed. 3 more patients showed so slight an eruption that it was classified as vaccinia and 3 patients appeared to have been rendered immune. As there was difficulty in obtaining positive reactions in a large percentage of cases and several patients developed varicella in spite of successful vaccination it is doubtful if the method can be successfully employed as a means of preventing varicella in hospitals and institutions for children.

### 587

### Influenza and Tuberculosis

R. GAETA (Il Politecnico Sez. Prat., September 12th, 1927, p. 1318) states that many children under his observation who had escaped influenza last year developed an attack towards the end of May and in June of the present year. There was always lobar pneumonia with special predilection for the apices, either the right or left or both consecutively. Examination of the sputum showed the presence of Pfeiffer's bacillus associated with streptococci and other organisms. Gaeta remarks that the influenza bacillus thus shows the same tendency to attack the pulmonary apices as the tubercle bacillus. Influenza, therefore, like measles and whooping cough may be regarded as a pre-eminent tuberculo-genic disease.

## Surgery

### 588 Diagnostic Errors in Extreme Gastric Dilatation

W. MILLS (*Centralblatt f. Chir.* November 12th, 1927, p. 2895) describes two cases of extreme gastric dilatation in which errors of diagnosis were made. A man, aged 47, was admitted to hospital with symptoms of acute gastric perforation. For many years he had suffered from hyperacidity and severe pain. The abdomen was opened under ether anaesthesia and the stomach was found to be enormously dilated. It contained five litres of thick greenish slimy fluid which was removed. Subsequent exploration revealed pyloric stenosis due to scarring. Gastro-enterostomy relieved all symptoms and the patient made an uninterrupted recovery. The second patient was a girl, aged 17, who had drunk a solution of caustic soda four weeks previously. For the first eight days subsequently she was unable to swallow after which she could swallow fluids with much pain and difficulty. She was emaciated and had a 'scaphoid' abdomen but no abnormality could be found. The oesophagus could be dilated temporarily with filiform bougies but was otherwise impermeable. Any attempt at swallowing caused severe retching and hiccup, followed by vomiting of a little mucus. Ten days later the patient complained of gripping abdominal pain. Examination showed in the left hypochondrium a definitely fluctuating dull tender swelling as large as a child's head. It did not move with respiration but was slightly mobile laterally. After inflating the rectum there was a tympanic note over the tumour, and a silencing

**MEDICAL LITERATURE**

which no treatment is given. He is convinced that what ever the underlying cause of this condition may be, prolonged tobacco smoking is the immediate etiological factor, though the vast majority of smokers never develop signs of the disease. He concludes that some additional factor is present, possibly a predisposition to vascular disease, or special susceptibility to the effects of tobacco poison, in patients in whom thrombo angitis obliterans develops. Cessation of smoking is the most important therapeutic measure.

**Arsenobenzol and Quinine in the Treatment of Trigeminal Neuralgia**  
Soc. Prat., October 17th, p. 14

593 **Ethylhydrocupreine in Lobar Pneumonia.** F. B. CROSS (*Med Town and Record*, September 7th, 1927, p 271, and September 21st, p 354) advocates the employment of nunoquin base (ethylhydrocupreine) in the treatment of lobar pneumonia, in view of its action on pneumococci and the clinical improvement following its employment. It is administered with 5 or 6 oz. of milk. It has been found to reduce the temperature, render the patient more comfortable, and decrease the tendency to extension of the lesion. It is probably advisable to use this treatment only in the first three days of lobar pneumonia, the dose suggested is 4 grains every four or five hours up to a total of fifteen doses. In a series of 3,008 cases the death rate was only 5.08 per cent. Cross also finds the remedy valuable as a prophylactic in respiratory influenza, chest traumatism, with or without fracture of the ribs, and in congestion of the lungs, after anaesthesia. Before this quino derivative was employed as an insoluble base, optic neuritis, amblyopia, and permanent blindness were reported in some cases, but the author in his own series has observed no untoward effects other than tinnitus aurium in six cases, nausea and vomiting in four, and profuse diaphoresis and headache, each in one case. He advises the discontinuance of the treatment when ever it becomes clear that it is disagreeing with the patient.

594 **Hexyl Resorcinol as a Tissue Disinfectant.**  
V LEONARD, and W A PEIRER (Surg, Gynecol and Obstet, November, 1927, p 603) consider that hexyl resorcinol, in addition to being a primary antiseptic, can be used with advantage in other conditions where a non-toxic bactericidal agent is required. The solution recommended contains 30 per cent of glycerin and 70 per cent of water, in each cubic centimetre is dissolved 1 mg of crystalline hexylresorcinol. This solution was found to be stable and to destroy most pathogenic micro organisms in less than fifteen seconds. The surface tension is very low, and the hexyl resorcinol remains in perfect solution in all dilutions. It has no smell and is colourless, it is not affected by any of the heavy metals. The authors advocate its employment for irrigation of any tissue surface when a considerable bulk of fluid is required, and also for wet dressings on infected wounds, and denuded surfaces. They add that when diluted with 1:10

590 **Sacro iliac Subluxation and Backache**  
H. H. COX (*Surg., Gynecol. and Obstet.*, November, 1927, p. 637) in considering sacro iliac subluxations as a cause of backache classifies them as mainly acute or traumatic and chronic or postural. He adds that relaxation of the joints occurs during pregnancy, parturition, and menstruation, and as a consequence of arthritic disease. In acute cases the onset is sudden, while in chronic cases it is gradual, insidious and shows marked prominence of the sacrum, spasm of rigidity of the spinal muscles, obliteration of the lumbar curvature, and tenderness over the joint. By fluid Treatment aims at restoring the normal relations between the sacrum and ilium and the application of a suitable support. Cox describes the following therapeutic manipulations. The patient lies face downwards on the table and grasps its edge while supporting his weight by the elbows and abdomen. The surgeon, standing on the table so that it is supported above by the body, clear of the table so that it is supported above by the elbows alone. With the legs in abduction and steady traction on the affected leg the body is lifted up and down for several minutes whilst an assistant firmly presses over the sacrum. As the bones slip into place sudden relief is obtained with restoration of the lumbar curve. By this method the joint is placed in the position of hyperextension which it occupied at the time of displacement. A firm support of strapping is passed behind from below the level of one great trochanter to the other and well down on the buttocks and the patient is kept in bed for a week. Cox states that in the great majority of acute cases this treatment is fully effective, but the patient should be cautioned against slipping, stooping with the knees stiff, and sudden twisting or running, since recurrences are frequent within the first six months.

591 **Treatment of Thrombo-angitis Obliterans**  
S SILBERT (*Journal Amer Med Assoc*, September 17th, 1927, p 964) reports a series of 258 patients with thrombo-angitis obliterans in whom the symptoms began before the age of 45. In 137 patients amputation of one or both lower extremities was performed, and in 120 of these the operation fell within five years of the onset of symptoms. In 121 patients no amputation was performed, and the spontaneous course exceeded five years in only 18 cases. It is concluded, therefore, that 77 per cent of such patients will require amputation within five years from the onset of symptoms, unless treatment is provided. In comparison with these results Silbert reports that 84 patients were treated with intravenous injections of hypertonic salt solution, and so far only 10 patients (12 per cent) have required amputation in 5 of these cases gangrene of the toes was already present when treatment started, so the true percentage is lower still. He thinks that this result suggests the possibility that such therapeutic treatment may be beneficial, but he insists that in assessing the benefit of this and other procedures it is important to compare the results statistically with those in

594 **Hexyl Resorcinol as a Tissue Disinfectant.**  
V LEONARD, and W A PEIRER (Surg, Gynecol and Obstet, November, 1927, p 603) consider that hexyl resorcinol, in addition to being a primary antiseptic, can be used with advantage in other conditions where a non-toxic bactericidal agent is required. The solution recommended contains 30 per cent of glycerin and 70 per cent of water, in each cubic centimetre is dissolved 1 mg of crystalline hexylresorcinol. This solution was found to be stable and to destroy most pathogenic micro organisms in less than fifteen seconds. The surface tension is very low, and the hexyl resorcinol remains in perfect solution in all dilutions. It has no smell and is colourless, it is not affected by any of the heavy metals. The authors advocate its employment for irrigation of any tissue surface when a considerable bulk of fluid is required, and also for wet dressings on infected wounds, and denuded surfaces. They add that when diluted with 1:10



volumes of water it may be instilled in the normal con-  
junctival sac. The undiluted solution may also be used for  
irrigation of the urethra, bladder and kidney, for fresh cuts and  
abrasions, for granululating surfaces and in abscess cavities,  
sinuses, and affections of the ear, nose, throat and mouth.

#### 595 Adrenaline in Infantile Eczema

J. D. PILCHER (*Journ Amer Med Assoc*, July 10th 1927, p. 110) recommends subcutaneous or intramuscular injection of adrenaline for infants from 5 to 14 months old suffering from the irritation of eczematous conditions. Relief followed within two minutes of the administration and persisted for an hour or more, the patient often falling into a restful sleep. The dose given was from 0.1 to 0.3 cc. of the 1 in 1,000 solution and no harmful results ensued. Pilcher thinks that the relatively large dose is necessary for benefit to follow.

## Laryngology and Otology.

#### 596 Papillomata of the Fauces

R. MOTTA (*Arch Ital di Otol*, August 1927 p. 493) has minutely examined a series of papillomata of the uvula, pillars of the fauces, soft palate, palatine and lingual tonsils, and the tongue. The growths were all simple papillomata with in the main typical histological characters. There was a very considerable overgrowth of the epidermis with great multiplication of the basal layer. There was not such a massive overgrowth of the underlying connective tissue but a particular arrangement of this layer and of the blood vessels was found. Long narrow columns of connective tissue with a rich vascular network passed downwards into the thick mass of epidermal cells and in some cases they branched. It appeared that these columns were endeavouring to supply all the cells of the tumour but had difficulty in maintaining an adequate supply. The cells that lay close to the vascular tissue were well formed and took the stain well, those that lay at a distance were irregular and flattened and stained very poorly. Where there was a lack of vascular connective tissue there was a considerable amount of keratinization. The tumours which were white had the least blood supply and the highest degree of hyperkeratosis, the pinker forms had a better blood supply and a lower degree of keratosis. From the study of the sections the author considers it probable that the capillaries are caused to proliferate by some unknown stimulus by their overgrowth the cells of the epidermis are stimulated to multiply to a very considerable extent. This action having been set in motion the epidermis has a great tendency to outgrow its blood supply continually and cell degeneration follows, giving rise to the familiar keratinized surfaces of papillomata of the fauces.

#### 597 Antral Suppuration treated by B. bulgaricus Applications

MESSINGER (*Bratislavské Lekárske Listy* October 1927 p. 429) describes the method of treatment of acute subacute and chronic suppuration of the antrum of *H. influenza* by means of a five days old culture of the Bulgarian bacillus in milk. The antrum was filled with the milk culture every second or third day. In the opinion of the author this method surpasses all others tried up to the present. The best results were achieved in cases where the suppuration was due to an inflammatory condition of the mucous membrane only. Where the bone was also involved the benefit was less and the condition was at the most, only improved by the treatment. The surgical opening of the antrum being the only way of obtaining definite cure.

#### 598 Treatment of Malignant Tumours of the Post-Nasal Space.

ACCORDING to A. BARANGER (*Arch Internat de Laryngol, d'Otol et de Rhinol*, July-August 1927 p. 827) treatment of malignant tumours in the post-nasal space is difficult owing to the very high degree of malignancy and to the site of the growth in a cavity surrounded by masses of bone with very important organs close by. Medical procedures include palliative injections of formalin alcohol or adrenaline and the application of methylene blue, these are designed to reduce sepsis and to cause the tumour to shrink. Injections of copper quinine, and arsenic may be used in an attempt to destroy the tumour but they are not attended with any better results here than in any other part of the body. Surgical treatment consists in removing the tumour through the mouth but it is usually followed by recurrence at an early date. The use of other routes such as the lateral nasal gives better results and a much better chance of eradicating the tumour is provided. The author does not rely on diathermy. He considers it useful for reducing the size of

the growth but it has no selective action and can only be palliative in this region, there is, however, no haemorrhage and no damage to other structures. Radium and x-rays offer the best hope of success. When the growth is limited and circumscribed it is found that the gamma rays of radium are more localized and more selective than x-rays. In cases where the tumour is not circumscribed it is found that x-rays, being less localized in action, give distinctly better results. Lympho-sarcoma which rapidly under this treatment, but reappear in other parts of the body. Lymphoma disappear more slowly, and when they recur they do so locally and with less rapidity.

#### 599

#### Otitis in Influenza.

P. VACHEZ (*These de Paris* 1927 No. 260), who reviews the literature and records seven illustrative cases in patients aged from 9 to 48 years states that influenza otitis is characterized by its sudden onset and violent pain. Two subsequent stages may be described. The first is one of hyperaemia manifested by a diminution of hearing and a sense of fullness in the ear. When the condition becomes worse the patient complains of a more or less dull continuous pain in the ear radiating to the temporal region. On examination the tympanic membrane is seen to be of a uniform dark red colour and sometimes the ossicles cannot be distinguished. Interstitial haemorrhages may develop and give rise to the appearance of haemorrhagic vesicles on the membrane and walls of the external auditory meatus. The stage of hyperaemia is usually followed unless paracentesis is performed by a stage of exudation in which there is an effusion into the middle ear cavity, pressure on the membrane and walls of the tympanum and gromm, rise to severe and continuous pain. On examination the membrane is seen to be oedematous and bulging into the meatus. Paracentesis is followed by a discharge of blood stained pus and relief of the pain. In rare cases influenza otitis is purulent from the first. In addition to the form which runs its course in two stages is one ushered in by severe constitutional disturbance and affection of hearing. On examination haemorrhagic vesicles are seen to cover a more or less considerable extent of the tympanic membrane, the rest of which remains normal. There are also numerous vesicles in the meatus the lumen of which is sometimes completely blocked. The meatus becomes tender on pressure at an early stage. The most characteristic feature however of this form of otitis is the rapid disappearance of the alarming initial signs in the absence of any treatment or after antiseptic applications to the nasal fossae, nasopharynx and external auditory meatus.

## Obstetrics and Gynaecology.

#### 600 Acute Appendicitis Complicating Pregnancy

R. A. WILSON (*Surg Gynecol and Obstet* November 1927, p. 620) reports ten cases of pregnancy complicated by appendicitis and discusses the acute condition when complicating pregnancy labour, and the puerperium from the point of view of frequency, etiology, symptomatology, diagnosis, prognosis and treatment. Primary acute attacks of appendicitis occasionally arise during pregnancy but not more frequently than in the non-pregnant woman and while the symptoms are generally typical in early pregnancy they are more likely to be misleading and obscure during the later months and to be mistaken for an early ectopic gestation, pyelitis, or the pains of commencing labour so that valuable time may be lost. If operated upon before rupture the mortality is practically nil but when once perforation has occurred it rises to from 40 to 60 per cent. As a means of prophylaxis even a normal appendix should be removed when practicable during a laparotomy performed for other conditions and when a married woman is known to have a diseased appendix it should be removed before she becomes pregnant, or if pregnant on the first appearance of symptoms. During the first seven months treatment is essentially the same as for a case in the non-pregnant but during the last two months if perforation has occurred the uterus should be emptied at the time of operation. In the presence of marked peritonitis a rapid Porro operation offers the best chance of free drainage and the complete removal of infected tissue but the choice of procedure depends upon the extent to which the uterine wall is involved in the infectious process.

#### 601

#### Peritoneal Endometriosis

J. A. SAMPSON (*Amer Journ Obstet and Gynecol* October, 1927 p. 422) asserts that peritoneal endometriosis sometimes arises from the implantation of endometrial tissue disseminated by blood escaping into the peritoneal cavity from (1) the menstrual rupture or perforation of an endometrial cavity (cyst), most frequently seen in the ovary, (2) the menstrual



reaction of endometrial tissue growing on the peritoneal surface of the ovary or of other pelvic structures, (3) a back flow, through the Fallopian tubes, from the uterine cavity, and also (4) from the menstrual retraction of the tubal mucosa. Other means of dissemination of endometrium may occur, these include metastatic or embolic spread from fragments of endometrial tissue which at times reach the venous circulation during menstruation from the mucosa lining the corpus uteri and also from ectopic endometrial foci. He is inclined to support the view that differentiation of coelomic epithelium is a source of endometrial tissue in the ovary and peritoneum. Much of Sampson's paper is occupied by criticism of the work of Novak and others who have not agreed with his views on the origin and spread of ectopic endometrium, he admits that sometimes endometrial tissue found microscopically in the lumen of the Fallopian tube has only reached that situation during the preparation of the tissues prior to staining. Proof is adduced that the lumen of the interstitial part of the tube is not too small to allow the passage of endometrial fragments. In two cases coming to operation during a menstrual period, endometrial fragments were found in blood present in the tube, but ingress into the abdominal ostium from pelvic ectopic endometrium could not be excluded. The paper is illustrated by seventy one microphotographs.

#### 602 Transportation of the Ovum along the Fallopian Tubes

F. KOK (*Zentralbl. f. Gynäk.*, October 15th, 1927, p. 2650) believes that peristalsis rather than ciliary movement accounts for the passage of the ovum along the tube and that the tubal movements depend on the ovarian cycle. At ovulation or shortly before it, a definite paralysis of the circular fibres of the whole tube occurs and lasts some days. In spite of this the ovum makes a quick passage to the isthmus portion and considerable difference in activity has been noted in different parts of the tube. This influenced the author to consider the possibility of differences in innervation and sensibility in the ampullary and isthmus portions. Researches as to innervation in small experimental animals led to nothing, and he then tried the reaction of each part to adrenaline and pilocarpine, the latter of which always caused contraction. The effect of adrenaline varied with the time in the ovarian cycle, if fully developed corpora lutea and ripening follicles were present it caused relaxation of the ampulla and a brief relaxation of the isthmus followed by tonic contractions, after extrusion of the ovum the relaxation of the ampulla was transient and quickly followed by tonic contraction, while the isthmus contracted at once. After three or four days the ampulla relaxed, while the isthmus was still contracted. Kok concludes that during these days the tube is ready to contract, especially at the isthmus portion, the ovum probably remains in the isthmus for the days it spends in the tube, and is then propelled into the uterine cavity by strong muscular contractions occurring after the temporary paralysis has passed off. The isthmus contraction may be caused by some adrenaline like substance appearing in the blood during ovulation. It is not known by what means the ovum makes its quick journey through the ampulla. It is not by direct muscular action, as its lumen is too wide for it to act directly on the minute ovum, but it may be by suction.

### Pathology.

#### 603 Action of Bile on the Agglutinating Power of Serum

P. FORMICOLA (*Il Morgagni*, October 16th, 1927, p. 1641), as the result of experiments *in vitro* and on rabbits, found that bile possesses a well marked power to increase the agglutinating capacity of the blood serum. This applies both to the time in which agglutination takes place and the agglutination titre. In the first group of experiments in which immune sera were used agglutination in a hanging drop appeared in the presence of bile in about half the time required when the ordinary saline solution was used. In a second group of experiments the agglutinogenic action of the bile was demonstrated by its increasing by about twenty fold the agglutinating action of certain sera. In a third series of experiments (on rabbits) agglutination in presence of bile always showed the formation of agglutinins in a shorter time than that needed to produce the same phenomenon by using normal saline solution. The difficulty in explaining these results is due to the fact that the mechanisms leading to the agglutination of bacteria flocculation, and subsequent precipitation are not fully understood. The bile, as De Mare has shown, acts on agglutination by its bile salt content—namely, sodium taurocholate and glycocholate. It is probable, therefore, that the action of the bile may be attributed to these salts, but further researches are required to confirm

this hypothesis. As regards the mechanism of the action of the bile salts, two hypotheses may be entertained either they may sensitize the bacteria so as to render them more readily agglutinable, or the physico-chemical changes in the medium may favour the conglomeration of the organisms and their precipitation.

#### 604 A Thermo-resistant Diphtheroid Bacillus in Milk

G. PERONDI (*Lo Sperimentale*, October, 1927, p. 538), in the course of some experiments on the sterilization of milk, encountered a diphtheroid bacillus capable of resisting a temperature of 75° C for three minutes. After being heated, the milk was plated in the usual way, and the resulting colonies studied. Most of them proved to belong to spore bearing organisms of the subtilis or m. sarcinicus groups, but colonies of a heat-resistant staphylococcus—the *Staphylococcus lactis thermophilus* of Patzschke—and of hitherto undescribed diphtheroid bacillus were found. This latter organism was a straight or curved granular bacillus, arranged in V, L, and palisade forms, and presenting clubbed ends. On agar the colonies were punctiform, moist, opaque, and of a bluish colour. On media containing sodium tellurite the colonies were coloured deep brown, due to reduction of the salt. Subcutaneous injection of 2 c.c. of a suspension of an agar culture into a guinea pig was without effect, when the animal was killed ten days later no lesions were found. The thermo resistance of the organism was tested in milk. The author considers that this organism belongs to the pseudo diphtheria group of bacilli, and is similar to those that have been found in the throat, conjunctiva, healthy vagina, skin, normal appendix, faeces of healthy animals, vaccine lymph, milk, cheese, and various pathological products.

#### 605. Non specific Agglutinins in the Blood of Tuberculous Patients

L. SCOLARI (*Giorn. di Batteriol. e Immunol.*, September, 1927, p. 631) has examined the blood serum of 100 patients suffering from pulmonary tuberculosis for the presence of agglutinins to the following organisms: *B. typhosus*, *B. paratyphosus* A and B, *B. dysenteriae* Shiga and Flexner, *V. cholerae*, *B. melitensis*, *B. abortus*, *B. coli*, and *Staphylococcus aureus*. Before use the sera were inactivated by heat at 50° C for half an hour, dilutions were made from 1 in 20 to 1 in 150. Altogether twenty patients were found to have non specific agglutinins in their sera. Eight sera agglutinated Shiga's bacillus, five *B. paratyphosus* B, three *B. paratyphosus* A, two Flexner's bacillus, three the *B. abortus* of Bang, and four the *Staphylococcus aureus*, in five of the twenty patients agglutinins were present to two organisms simultaneously. The author states that agglutinins were more frequent in the blood of febrile than of non febrile patients, and that they occurred more often and were more active in patients whose general condition was good than in those whose general condition was poor. He considers that the frequency of non specific agglutinins in the blood of tuberculous patients is not greater than in that of normal persons, but that when they are present their activation titre was higher than in health. For the practical diagnosis of fevers due to organisms such as those investigated, occurring in the course of tuberculosis, he considers that a higher titre must be reached than is usually considered necessary before the agglutinins can be regarded as specific.

#### 606. Vitamin A Deficiency and Metaplasia

MORI observed metaplasia and other changes in the lining epithelium of the glandular organs in rats fed on a diet deficient in fat soluble vitamins, and these findings were confirmed by Wolbach and Howe. As the diets employed by these experimenters were deficient in several vitamins, H. GOLDBLATT and MARI BENISCHKE (*Journ. Exper. Med.*, November 1st, 1927, p. 699) performed a series of experiments to determine whether a single vitamin deficiency (vitamin A) could induce these changes. In their experiments 63 rats were used which were arranged in three groups, the first received a diet deficient in vitamin A and D, the second one deficient in vitamin A alone, and the third a complete fat deficient diet with cod liver oil added. Of the 26 rats in Group I, 23 showed metaplastic changes in one or more organs, 17 of the 18 Group II animals displayed similar changes, while in the Group III rats none were seen. In the case of 6 rats deprived of food but given adequate amounts of vitamin A, cod liver oil, warmit, and lemon juice, no metaplastic changes occurred. The authors conclude that a dietary deficiency of vitamin A alone is adequate to induce metaplasia of columnar, cuboidal, and transitional epithelia to the squamous, keratinizing type in some organs, and that such metaplasia constitutes a good morphological indicator of the deficiency of this vitamin in the diet. The changes are at least in vitamin A deficiency alone as in deficiency of both vitamins A and D. Inadequate food does not induce metaplasia if the vitamins are supplied.

# EPITOME OF CURRENT MEDICAL LITERATURE.

## Medicine.

### 607 Insulin and Blood Pressure.

R STRISOWER (*Bull Arch f med Med* October 10th, 1927, p 429) has investigated the fall in blood pressure which occurs after injection of insulin but does not correspond with the diminution in blood sugar. He recognizes three classes of patients: those with hypertension associated with diabetes; those with essential hypertension; and cases of hypertension associated with renal disease. Ten observations in six cases of diabetes showed that the fall in pressure was between 48 and 15 mm Hg. Though there is no definite correlation between this fall and the sugar reduction, a high percentage of blood sugar occurred in hypertensive cases. In seven cases of chronic nephritis the effect of injecting insulin was much less than in the other types of hypertension. The greatest fall in blood pressure amounted to only 2 to 5 per cent, and in these cases the difference between the decrease of action of the pancreatic hormone on blood pressure and on the blood sugar content was greatest. In one case the blood sugar was diminished on two occasions by 33 and 36 mg., although the blood pressure fell only 5 mm Hg. Strisower finds it difficult to explain these phenomena, but he suggests that the action of insulin is directly antagonistic to that of adrenaline, stimulating the vaso-dilator and parasympathetic vaso-constrictor fibres. Other authors think that insulin stimulates the pneumogastric. It is also thought possible that insulin may have some action on cholesterol metabolism and that cholesterolæmia is a cause of hypertension. The author concludes that whatever hypothesis is accepted, the fact remains that insulin has but little effect upon nephritic hypertension. In a greater percentage of cases of pure hypertension a distinct fall in blood pressure occurred. It is probable that the pancreatic hormone has a central action comparable with those of the thyroid and pituitary glands.

### 608 Pseudo appendicular Form of Lethargic Encephalitis

G CAUTIERO (*Stadium* October 20th, 1927, p 374) who records an illustrative case in a man aged 29, remarks that lethargic encephalitis was characterized by Leonomo who first described it, as a capricious disease owing to its polymorphous nature and irregular course. Cautiero's patient was a man aged 29 who was admitted to hospital with severe pain in the right lower abdominal quadrant with tenderness at McBurney's point, and a temperature of 100.6. A diagnosis of appendicitis was made and operation advised but two days later symptoms of encephalitis appeared in the form of persistent insomnia, occipital headache, nuchal rigidity, diplopia, ptosis, strabismus, blurred vision, dysarthria, polyphagia, spasmic convulsions and myoclonic movements. The Wassermann reaction was negative in the blood and in the cerebrospinal fluid which was clear and under tension. The symptoms gradually subsided, and at the end of three months the patient appeared to have completely recovered. Cautiero attributes the abdominal symptoms to involvement of the nerve roots and peripheral nerves by the virus of lethargic encephalitis.

### 609 Poisoning by Barbitone Derivatives.

DAPGEN and DORE (*Bull et M Soc Med des Hop de Paris*, October 27th, 1927, p 1332) report a case of acute central poisoning followed by recovery. A man aged 25 was admitted to hospital in a comatose condition with generalized convulsions but no stertor. He had taken approximately 27 grams of diethylal about twelve hours previously. The neck was flexed by contracture of both sterno-mastoids. The corneal reflex was present and the pupils were slightly dilated, reaction well to light. The tendon reflexes were brisk, ankle clonus was greater on the right side, the plantar reflex was flexor. Cutaneous reflexes were absent. There was retention of urine, a catheter specimen was normal. The cerebrospinal fluid was normal. On the following morning, there were contractions of the limbs and trismus followed by convulsions with opisthotonus. The patient then fell into a deep sleep but in the afternoon he awoke for fifteen minutes and answered questions rationally. He then slept for fourteen hours, the retention of urine and trismus persisted. Next morning, he awoke as if from normal sleep and his memory was clear. The improvement continued except for left hemiparesis and earache, there was no sign of labyrinthine disturbance. He was discharged cured a few

days later. The authors refer to another patient who recovered after a large dose of diethylal, and also to a patient who took about 71 grams of the drug with fatal consequences. In a fourth case a man aged 36 swallowed 5 grams of veronal and 1 gram of diethylal. Half an hour later he was deeply comatose, and camphor, strychnine, and oxygen produced no change. Next day all the limbs were flaccid, the temperature rose to 106° and the respirations were 52. All reflexes were absent and the extremities were cyanosed. The pupils were contracted and there was corneal anaesthesia and enuresis. The heart sounds were weak and rapid, the cerebrospinal fluid was normal. The patient died twenty-four hours after taking the drugs. At the necropsy generalized congestion of the central nervous system was found, especially of the meninges with discrete haemorrhages throughout the brain. There was consolidation of the lower lobe of the right lung. Crystals of both drugs were recovered from all the internal organs and veronal from the cerebrospinal fluid. Veronal predominated in all the organs examined, and the authors conclude that diethylal played only a secondary part in the poisoning. They cannot explain the rapid rise of temperature, apart from the extensive consolidation of the lung.

### 610 Epidemiology of Typhoid Fever in Country Districts

D G GILL (*Journ Amer Med Assoc* October 8th, 1927, p 1193) remarks that though typhoid fever has been steadily decreasing throughout the United States it is still a major problem in the Southern States. Most of the cases are found in the small towns and strictly rural districts. The highest rates occur in towns with populations under 1,000, while 80 per cent of the typhoid occurs in rural areas and towns with populations up to 5,000. The causes for the high incidence of the disease are said to be defective sanitation and water supplies, and the large number of typhoid carriers. Gill thinks that approximately 10 per cent of those who have had an attack of typhoid fever become permanent carriers, and are probably the source of most rural typhoid.

## Surgery.

### 611 Acute Haematophorphyria.

H KUTZEN and R BECKER (*Deut Zeit f Chir*, November, 1927, p 332) who record an illustrative case state that haematophorphyria is a form of auto-intoxication by haemato porphyria which is closely allied to blood pigment and may occur normally in small quantities in human excreta. The acute attack of haematophorphyria sets in suddenly with extremely violent colicky pain and vomiting and more or less marked and persistent constipation. The colicky pains are caused by spasms which appear to be chiefly localized in the duodenum and uppermost part of the ileum while the segment of the intestine above and the stomach are dilated. The pain is usually localized in the right hypochondrium or in the middle line between the xiphisternum and the umbilicus but it is frequently found in the right iliac fossa, or radiates diffusely into the hypogastrium, left hypochondrium or back. The diagnosis at this stage is usually colicystitis, gastric disease, appendicitis, pancreatitis, intestinal obstruction, or renal or ureteric disease. The vomit consists of mucus mixed with bile. Fever is absent or very slight. In contrast with acute inflammatory affections of the abdominal organs reflex distension is almost completely absent. On the day following the attack or on the same day the urine assumes a dark porphyria colour with distinct fluorescence and the correct diagnosis is then usually made. The attack may last for several hours or even days. A single attack or a series of attacks may be followed by long intervals of complete health so that the prognosis at this stage is relatively favourable. On the other hand the appearance of nervous symptoms, such as paresthesia, hyperaesthesia, neuralgia and paralysis, is a very grave sign, and in 50 per cent of such cases death ensues with symptoms of rapidly ascending paralysis. In most cases the course of the disease is very protracted but some cases run a fulminating course, death occurring in a few days. The author's patient was a man aged 59 in whom haematophorphyria was associated with haemochromatosis, cirrhosis of the liver and carcinoma of the pancreas, with metastases in the liver. The case was thus closely allied with the group of symptomatic haematophorphyria, but differed from it (1) by

the attacks resembling recto haematemphrynia clinically, (2) by the excretion of haematemphrynia occurring not only in the urine, but also in abnormally large quantities in the faeces, and perhaps also by (3) slight indications of hyper-sensitiveness to light.

#### 612 Avulsion of the Diaphragm

W A BRYAN (*Surg, Gynecol and Obstet*, November, 1927, p 688) reports the case of a man, aged 40, who, as the result of a traffic accident, suffered from avulsion of the diaphragm, followed by the passage of the stomach, omentum, and part of the large and small intestine into the chest. The diaphragm was torn from its attachment to the left chest wall for a distance of about ten inches, the free portion bending round the oesophagus and permitting swallowing, though vomiting was prevented. An anaesthetic was given, the viscera were returned to the abdomen, and the diaphragm was attached to the chest wall by through and through mattress sutures of catgut, but the patient died before removal from the operation table. Bryan discusses this unusual type of injury and doubts whether the artificial union of the diaphragm with the chest wall would have been sufficiently secure to withstand the tension imposed by coughing, sneezing, or heavy straining. He believes that the injury was caused in the following way: the lung were filled with air, and, in anticipation of the impending compression between two vehicles, the man braced himself by tightening all the muscles of the body, including the diaphragm, which was torn from its attachment in consequence of the combination of traction, fixation, and shearing by the lower lobe of the compressed lung.

#### 613 Fistula as a Complication of Peptic Ulcer

R T MONROE (*Amer Journ Med Sci*, November, 1927, p 599) reports a case showing a very rare complication of peptic ulcer—namely, a fistulous tract between the stomach and duodenum caused by the perforation of a chronic gastric ulcer. Only ten similar cases have been recorded, and those, according to Welch, demonstrate that gastro-duodenal fistulae are more frequent with the third part of the duodenum than with the first. In a review of the literature Monroe shows that the most common fistula due to peptic ulcer is the gastro-colic, though the ulcer may perforate other portions of the intestinal tract as the jejunum and ileum. Welch has recorded fistulae between the stomach and gall bladder, and between the stomach and common bile or pancreatic ducts. Cases of perforation into the heart, pericardium, and portal vein, as well as of gastro-cutaneous and gastro-pulmonary fistulae, have also been reported. On the case now reported a cheiro-ectomy had been performed in 1919, and a diagnosis of chronic gastric ulcer then made. For six years the patient was free from distress, but symptoms then arising she returned to hospital for further treatment, when a gastro-intestinal radiological investigation revealed the presence of the fistula. The treatment given was rest in bed, small meals, and small doses of alkali. Cancer was thought improbable, and surgical intervention deemed unnecessary. The patient was discharged with the advice to take five small meals daily, and alkali occasionally for any distress. A month later she was symptom free and gaining weight. Monroe maintains that fistulae between the stomach and other internal organs of the body surface, though rare, are sufficiently common to warrant more notice than they have hitherto received, and calls attention to the increase in gastro-colic fistulae since the introduction of gastro-enterostomy as a treatment for gastric ulcer.

#### 614 Omental Volvulus

E TROJAN (*Zentralbl f Chir*, October 22nd, 1927, p 2705) refers to the rarity of intra-abdominal omental volvulus. Among 158 collected cases, 140 occurred in a hernial sac, while only 18 (8.7 per cent) were intra-abdominal. Trojan's case was of the latter type, and the symptoms resembled those of acute appendicitis. A man, aged 24, was admitted to hospital with a definitely tender resistant swelling, as large as a fist, in the region of McBurney's point. The temperature was 100°, the pulse 120 and the leucocyte count 12,700. The probability of appendicitis was considered, although the extent of the swelling after twenty-four hours' duration was against this, as also was the fact that the patient had never before had symptoms of appendicitis. Two years previously, when engaged in gymnastics, he had discovered a swelling, the size of a hazel nut, in the right groin which disappeared on pressure and did not recur after further exercise. On opening the abdomen a little blood-stained serous fluid appeared. The swollen omentum was deep red, with bluish patches, but did not resemble the appearance of the omentum in a case of appendicular abscess. After slitting off the general peritoneal cavity with swabs, the omentum was brought forward, exposing the appendix, which lay free in the peritoneal

cavity although its apex was loosely adherent to the parietal peritoneum. The swollen inflamed right half of the omentum depended from a pedicle 3 cm in thickness which had been rotated through 360 degrees upon its axis. An incision measuring 20 by 7 cm showed suppurative and necrotic changes. The omental pedicle was clamped and divided and the appendix was removed on account of its typical adhesion. Recovery was uneventful. Trojan states that omental volvulus occurs most frequently in obese patients between the ages of 35 and 55. When it is intra-abdominal it may simulate cholecystitis, or appendicitis as in the present case. If an omental volvulus complicates hernia it may resemble internal herniation or adhesions in the hernial sac, while, when the volvulus is actually in the hernial sac, it may simulate iliac,

## Therapeutics.

#### 615 Quinidine in Ectopic Rhythms

C W BARRIER (*Journ Amer Med Assoc*, September 3rd, 1927, p 742) considers that the dangers of quinidine have been exaggerated and that it is a useful remedy in all cardiac arrhythmias produced by eicetus movement. It acts upon the heart by mildly paralyzing the vagus, lowering the rate of sinus impulse discharge, slightly decreasing auriculo-ventricular conduction, lengthening the refractory period of ventricular muscle, slowing its conduction, and lessening its excitability. Its therapeutic use depends upon its effect on eicetus movement, which it abolishes, and since such movement is the basis of all the arrhythmias quinidine has a theoretical value in their treatment. It is most useful in paroxysmal and transient auricular fibrillation and also in chronic auricular fibrillation, the groups with initial fibrillation usually responding better than those with sclerotic fibrillation, patients with small hearts better than those with large hearts, and those who show coarse auricular waves better than those with fine waves. Idiosyncrasy should be tested by giving two 2-grain doses on the first day, three 6-grain doses on the second day, and increasing one dose a day until five doses of 6 grains are being given. Normal rhythm should ensue on the fifth day. Since the drug is rapidly excreted frequent small doses are better than large doses at longer intervals, and it should be continued at the minimal daily amount found necessary for continuing a normal mechanism for each individual patient. In selecting cases a competent myocardium is the criterion, and its use is contraindicated in the aged and in patients with marked hypertrophy, chronic heart failure, active endocarditis, or significant changes in the T waves or Q R S complexes of the electrocardiogram. The dangers attending its use are respiratory paralysis, embolism, induction of ventricular tachycardia and fibrillation, failure of the sino-auricular node to function when eicetus movement is abolished, and the production of auricular ventricular block with depression of stimulus production below the block. Cases of auricular flutter, premature contraction, and paroxysmal tachycardia have also been benefited by the drug.

#### 616 Treatment of Impotence in the Male

C JUARROS (*Arch de med, cir y esp*, November 5th, 1927, p 539), who remarks that male impotence is very frequent in Spain, probably as the result of masturbation, maintains that the treatment should always be made dependent on the cause of the condition, and that the routine prescription of aphrodisiacs is bound to end in failure. Success in treatment in the most favourable cases merely amounts to an action of reinforcement, even in sexual debility, which constitutes the first stage, the results do not merit any higher qualification. Juarros believes that cases of pure or psychical impotence do not exist: they are always the consequence of other conditions, whether local such as gonorrhoea, or general such as diabetes. Opotherapy is only likely to be of service when the impotence is due to endocrine disturbance such as hypothyroidism, in other cases it is disappointing. Other drugs act only as transient stimuli, they may solve the problem of the moment but do not effect a complete cure. The results obtained from electrical treatment do not justify its employment. Steinach's method seems to have more effect on the patient's general condition than on his potency. Psychotherapy is an excellent adjunct, but nothing more.

#### 617 Treatment of Typhoid Fever

W S MAGILL (*Med Journ and Record*, November 2nd, 1927, p 546) recommends that as soon as the diagnosis of typhoid fever is made an intravenous injection of 10 c cm of a 1 per cent solution of mercurochrome (220 soluble) should be given, preferably in the morning, with an empty stomach. It should be followed in twenty-four hours with a second injection of 20 c cm or less of the same solution if the reaction is severe.

Twenty four hours later a third injection of 30 c cm should be given subject to the previous degree of reaction in each case and provided that there is no evident salivation. Blood should then be transfused up to 300 c cm from a carefully selected donor, who may or may not have been immunized twenty four hours previously with the usual first dose of typhoid vaccine. The injection should be stopped at the first sign of reaction in the patient, since even such small amounts as 20 to 30 c cm of blood often cause considerable improvement. Blood count control is a valuable aid in determining the opportunity and time for successive transfusions, which should be continued until complete convalescence is assured. If immunized blood is used a new donor, vaccinated within the previous twenty four hours, should be taken for each injection.

#### 618. Hexamine in Malaria.

E. OLIVERA (*Arch de med. ex. y. esp.*, November 12th, 1927, p. 566) remarks that though quinine and its salts form the specific treatment of malaria the problem of prophylaxis and treatment of this troublesome disease cannot be regarded as settled. The extraordinary tendency of the benign tertiary infection to relapse, the malignancy and resistance to quinine salts of the parasites of the Laveran type the severe pernicious forms in some of which, such as haemoglobinuric fever, quinine is absolutely contraindicated as well as the not infrequent cases of quinine intolerance and the scarcity and high cost of the drug are all reasons for looking for substitutes or adjuncts for quinine treatment. Since 1925 Olivera has employed hexamine in the treatment of malaria giving 5 to 10 c cm by intravenous injection. Of 47 cases so treated, some recovered after four or six injections. Others, though showing some improvement proved more refractory to this treatment, and some were clinically cured although examination of the blood showed the presence of the parasites after an intensive treatment. Hexamine is said to be especially indicated in the pernicious forms and especially in haemoglobinuric fever in malaria complicated, pregnancy and in cases of intolerance to quinine salts. Moreover, in combination with quinine it has the twofold effect of acting on the parasites and favouring the elimination of toxins.

## Radiology

#### 619. X ray Treatment of Tuberculous Glands.

H. MARKUS (*Deut. Zeit. f. Chir.*, September 1927, p. 209) records his observations on 320 cases of tuberculous glands of the neck treated by x rays. 45.3 per cent were in males and 54.7 per cent in females. The age groups were as follows: first decennium 13.2 per cent, second decennium 36.5 per cent, third decennium 28 per cent, fourth decennium 8.5 per cent, fifth decennium 6 per cent, sixth decennium 2.1 per cent, seventh decennium 0.3 per cent. 46.4 per cent of the patients were between the ages of 15 and 25 years. A cure was effected in 93.9 per cent but a relatively large number of complications were observed. The most frequent was chronic oedema of the skin to which the term "plaques" was applied of this 11 examples occurred. All these cases as well as some others, 19 in all showed more or less marked telangiectases, which appeared from three months to two years after the application of the rays. In one case rapid development of caries of hitherto healthy teeth occurred. Only one other example of this sequel of x ray treatment of tuberculous glands of the neck reported by Gotthardt has been recorded. In another case irradiation was followed by complete aphonia due to paralysis of the left recurrent laryngeal nerve recovery ensued in about a year. The paralysis was probably due to the pressure on the nerve by growth of connective tissue caused by the irradiation.

#### 620. Radium Treatment of Carcinoma of the Rectum.

H. H. BOWING (*Radiology*, September, 1927, p. 179) describes the treatment of carcinoma of the rectum by radium and gives full notes of its use in four typical early and operable cases. Though too few for statistical purposes these cases were representative of the small localized and operable lesions. Bowing states that care must be taken to deliver a therapeutic dose and to avoid the possibility of irradiation proctitis. In one case the interstitial method of placing a uniform dose in the malignant area was employed. Bowing remarks that although colostomy is desirable because it places the field of treatment at rest and allows of greater cleanliness being maintained, thus minimizing the risk of secondary infection, this operation, with the chance of losing sphincter control, terrifies many patients. Adequate exposure for direct vision with the proctoscope is essential, and the use of the endoscopes enables accurate application and maintain-

ance *in situ* of the radium tube, the rectal lumen being packed with vaseline gauze, which is, as a rule well tolerated by the patient. Probably four hours is sufficient for treatment, this depends on the thickness of the lesion and the filters employed. Those indicated are 1 mm of brass and 2 mm of aluminium or Para rubber. By using the broken dose method, with an interval of three or four days between applications, the individual response can be estimated. At each application the normal rectal walls should be packed away from the applicator as much as possible. Repeated proctoscopic examinations are advised during treatment and at frequent intervals afterwards for several years.

#### 621. Ammonium Bromide in Urinary Radiology.

WHILE recognizing with Wedd the efficacy of sodium bromide in urinary radiology, W. E. COULTS (*Journal of Urology*, October, 1927, p. 296) prefers ammonium bromide for this work, as the shadows produced by the latter are much more opaque than those by the bromide of either sodium or strontium. It has been shown that ammonium bromide when injected into the bladder or renal pelvis, absorbs a greater proportion of the x rays than do the sodium or strontium salts, consequently the plate gives a more precise image of the urinary tree. This greater opacity is due to the fact that the ammonium salt contains a greater proportion of bromine (81.6 per cent) than does the sodium salt (57.52 per cent). Ammonium bromide, or ammonia bromhydrate is a white crystalline powder composed of small cubical or prismatic crystals, which is colourless when obtained by slow evaporation. On exposure to the air and on heating, in aqueous solutions, it becomes yellowish and gives an acid reaction. In 15 parts of water the salt dissolves with great heat absorption. The acidity of aqueous solutions is due to a hydrolytic decomposition and these solutions should be kept in dark bottles to prevent the liberation of the bromine. With urine no precipitate is formed. The pharmacological properties of the ammonium compound are greater than those of the sodium and potassium salts, as both the bromine and the ammonium exercise their effects and Gibb has shown that it lessens the sensibility of mucous membrane. Coultis employs this salt in urinary radiology in sterilized 25 per cent aqueous or glycerin solutions. After the injections the ureter pelvis, or bladder is washed with sterile water. The after effects of injections of ammonium bromide are similar to those of the sodium salt noted by Wedd.

#### 622. X ray Examination in Sciatica.

ACCORDING to V. BARTOS (*Bratislavské Lekárske Listy*, August, 1927, p. 82) the clinical symptoms of sciatica, including Lasègue's sign, diminished patellar and Achilles reflexes and wasting, may be present not only in diseases of the lumbar spine in sacralization of the lumbar vertebrae, and in arthritic changes of the sacro-iliac joint, but may also be observed in ossifications of the ilio-lumbar ligament, in arthritic involvement of the superior processes of the ilio-sacral column, and in thoracic spina bifida. These observations indicate how different pathological entities may give rise to the clinical appearance of sciatica and emphasize the importance of x ray examination in this disease.

## Obstetrics and Gynaecology.

#### 623. Puncture of the Pouch of Douglas.

B. ZONDER and W. KNOOR (*Zentralblatt f. Gyna.*, November 5th 1927, p. 2342) summarize as follows the information which may be gained by aspiration with a syringe introduced in the pouch of Douglas through the posterior vaginal fornix. Fluid blood in smaller amounts than 5 c cm may come from a blood vessel (in which case the erythrocytes in the deposit will not show deformity) and has no diagnostic significance when at least 5 to 10 c cm can be drawn off this comes from a haemorrhagic or from a corpus luteum cyst, intact, or ruptured. Admixture of blood with small clots points to extrauterine gestation. Thin comparatively clear reddish brown fluid, of low specific gravity, suggests strongly a twisted ovarian cyst. The authors have verified this by operation in three cases in one of which the history and clinical signs were those of ruptured ectopic pregnancy. A thick mucous fluid is typical of pseudo-mucinous cystoma. Aspiration on account of the consistency of the fluid may be difficult or impossible. The interpretation of a thick or thin serous fluid is more complicated and the protein content should be roughly estimated by Rivalta's method. The contents of the syringe being allowed to fall drop by drop into dilute acetic acid, richness in protein denotes an acute inflammatory process and poverty points to a cyst. Fluid resembling blood serum in appearance and consistency may be drawn off from a chronic inflammatory exudate or from an ovarian follicular cyst. In the



former case the sedimentation time of the erythrocytes is diminished. For the diagnosis of the later follicular cysts the ingenious suggestion is offered of examining by the Allen and Boisy method the ovarian hormone content of the aspirated fluid, oestrius in a castrated mouse injected during the course of forty eight hours with six doses of from 0.1 to 0.3 c.c. denotes the presence of the hormone. In a patient aged 19, whose history and clinical signs suggested ruptured ectopic pregnancy, ovarian hormone was found in the fluid obtained after puncture of the pouch of Douglas, an operation was avoided, and cure followed aspiration. The significance of the presence of pus is obvious. Zondek and Knorr do not recommend diagnostic puncture of the pouch of Douglas except in cases in which, after careful consideration of the history, physical findings, and red blood cell sedimentation time, the diagnosis still remains obscure. It is essential, of course, that previous palpation shall have demonstrated quite clearly a definite tumour, aspiration of which seems feasible. During the last four years they have punctured the pouch of Douglas in 85 cases in which diagnosis was obscure, these constituting 4.6 per cent of the cases seen in that period. No inconvenience or untoward consequences followed the procedure, even when subsequent operation was delayed for twenty one hours. A curved needle of the same lumen as a lumbar puncture needle is used, after disinfection of the vagina with alcohol or tincture of iodine. In cases of ruptured ectopic gestation coming to operation after puncture of the pouch of Douglas, drainage through the posterior fornix is considered advisable. In all save one of the authors' 85 cases correct diagnosis was arrived at after the puncture, and in several instances laparotomy was thereby avoided, among others, 16 cases of supposed ectopic gestation were recognized as cases of inflammatory tumour, and 8 cases of suspected adnexal tumour came to be correctly interpreted as examples of ruptured tubal pregnancy.

#### 624 Indications for Caesarean Section

G. C. MOSHLER (*Surg., Gynecol. and Obstet.*, November, 1927, p. 655) discusses the circumstances under which Caesarean section is justified, and concludes that a positive indication is furnished by a tumour blocking the pelvic outlet, or an ovarian conjugate diameter of less than 17 cm. and a true conjugate of no more than 6 cm. He believes that 75 per cent of all pelvic contractions allow delivery by the natural passages. In the classical conservative operation the maternal mortality should, he thinks, not exceed 2 per cent, but this is increased considerably by rupture of the membranes, attempts to use forceps, induction, version, craniotomy, or even repeated vaginal examinations prior to the section. After any of these have occurred, Mosher states that craniotomy should be selected in the interest of the mother's life. If the operation is to be performed after potential infection it should take the form of Poirs' procedure, or of a low extraperitoneal modification. In caesarean section is limited to the case of the primipara with rigid, long, unyielding cervix, no improvement having followed conservative treatment for six hours. He thinks that placenta praevia is best treated, as a rule, by induction with a Voorhes bag, the exception being severe bleeding without dilatation in the central type of placental attachment.

#### 625 Antisepsis in the Induction of Labour

H. W. MALLS (*Journ. Amer. Med. Assoc.*, November 12th, 1927, p. 1685) refers to the danger of infection when a hydropneumatic bag is used for the induction of labour, and states that the risk is considerably lessened by the routine use of a 4 per cent solution of mercurochrome (220 soluble) as a vaginal antiseptic before the introduction of the bag. In ninety three inductions without the use of mercurochrome the morbidity was 29 per cent, whereas in seventy eight in which this antiseptic was employed the morbidity fell to 11.5 per cent. Similarly, in toxæmic cases it was reduced from 20.5 to 10.3 per cent. Without the bag was in the uterus, whereas increased with the time the bag was in the uterus, whereas in the mercurochrome group the reverse was the case.

### Pathology.

#### The Synergism of Antibodies

626 M. WEINBERG and J. BAROTTE (*C. R. Soc. de Biologie*, November 18th, 1927, p. 1326) have noticed that the agglutination titre of a serum which is both antitoxic and antimicrobial varies according to whether it is tested with a diluted culture or with organisms which have been centrifuged and suspended in saline. Working chiefly with anti-*perfringens* serum they find that when the results are

recorded after four hours' incubation at 37°C the titre with the diluted culture is higher than with the washed suspension of centrifuged organisms—sometimes as much as 1 in 1,000. In looking for the explanation of this phenomenon they observed that the difference between the two antigenic dis- appeared if increasing doses of a serum is higher when 'suspension of centrifuged organisms. From this they con- clude that the agglutinating power of a serum is higher when it is tested against an antigen containing the soluble culture products, the reason being that the agglutinins are reinforced by the precipitins. If precipitins can be able to reinforce the action of precipitins. This they find to be true. Certain samples of antitoxic anti-*perfringens* serum are able to cause flocculation only when large quantities of the corresponding toxin are added, and then only of slight degree. But if a very small amount of centrifuged organisms is added to the mixture—so small that they do not modify the limpidity—good flocculation is obtained, even in mixtures containing only one tenth of the amount of serum. This reinforcing action of one antibody by another they term "synergism". In another paper (*ibid.*, p. 1328) the authors report that it is extremely difficult to distinguish between antitoxic and antimicrobial serums. Working with anti-*perfringens* and anti-septic serum they observed that an antitoxic serum prepared with filtered toxin often had a high agglutinating titre to its homologous organism—as high as 1 in 5,000 or 1 in 10,000. The reverse was also true, an agglutinating serum prepared with dried formalized or with washed living organisms was often antitoxic, neutralizing, for example, a lethal dose of toxin with one two hundredth of serum. It is concluded that there is in fact no sharp distinction between the two classes of serum, the bacterial bodies always contain a small amount of toxin, which gives rise to injection to antitoxin, and filtered toxins contain some of the products of microbial disintegration, which produce agglutinins.

#### 627 Excretion of Chlorides in Hepatic Disease.

B. KRASS and L. POLLAK (*Wien. klin. Woch.*, October 6th, 1927, p. 1251) found as a result of a series of observations on the effect of sodium chloride, potassium chloride, and ammonium chloride on the excretion of chlorides in a number of normal persons and of patients suffering from catarrhal jaundice and other conditions, that the excretion of chloride ion depended to a variable extent on the nature of the given along with it. In healthy persons the excretion of chloride was little affected by the nature of the kation administered, though there was some tendency to chloride retention when the sodium salt was given. In patients with hepatic disturbance or oedema there was marked retention of chlorides when the kation was sodium, but good excretion when potassium chloride or ammonium chloride was administered. The authors state that it is now generally recognized that a diffuse parenchymatous lesion of the liver is present in catarrhal jaundice. In the febrile patients examined marked retention of chlorides occurred irrespective of the kation. As the alterations in chloride excretion were similar in patients with hepatic disease and in those with oedema of renal or hepatic origin, it is suggested that put at least of the effect of the sodium ion is produced through the oedematous or congested liver. The recorded results also indicate that the salt intake of patients with diffuse hepatic disease may be of therapeutic importance and that the administration of potassium salts might be of value, especially as the experimental doses of potassium and ammonium chlorides were in a few cases of jaundice immediately followed by a diminution of the icterus and of pigment excretion in the urine.

628 Diastase in the Blood Serum and in the Urine  
C. K. SCHAANING (*Norsk. Mag. f. Lægevidenskab*, October, 1927, p. 801) investigated the diastase in the blood serum and in the urine of normal individuals and of patients suffering from various kidney diseases. He found that the power of the kidney to concentrate diastase was reduced in cases of enuric kidney, chronic nephritis, hypertension with albuminuria, and diminished renal function, some cases of acute nephritis, and most frequently in the albuminuria of pregnancy. The power to concentrate diastase was also found to be low in two cases of nephrosis with reduced renal function, while in one patient with normal function the concentration power was normal. Some cases of surgical kidney also showed a reduced concentration power. In ten cases the excretion of diastase was lower from the diseased than from the normal kidney. Schaaning concludes that determination of the power of the kidney to concentrate diastase affords a good idea of the renal function in relative agreement with the ordinary kidney function tests.



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# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY JULY 2ND 1927

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## British Medical Association

### CURRENT NOTES

#### Medical Appointments Abroad.

THE head office of the British Medical Association has a good deal of information placed at its disposal by its Branches overseas, which may be very useful to those proposing to accept medical appointments abroad. Practitioners are cordially invited to apply to the Medical Secretary B.M.A. House, Tavistock Square W.C.1 for any information that may be available regarding overseas appointments in which they may be interested.

#### Registration of Stillbirths.

THE Ministry of Health has now issued to local supervising authorities under the Midwives Act a circular (No. 802) with reference to that part of the Births and Deaths Registration Act, 1926, which concerns stillbirths. The circular sets out the requirements of the Act in this connexion and in this respect corresponds to the relevant paragraph of the article published in the JOURNAL of June 18th (p. 1118). There are three points in the circular, however, which are worthy of notice. The first is the slight, but only possible, effort made to lessen the dangers of improper practices to which attention was directed in our article by reason of the definition of a stillbirth and of the fact that in certain circumstances such birth can be registered without a certificate. The Minister points out that it is obviously undesirable that the stillbirth should be registered on the relatives' declaration only and requests the local supervising authority to insist on midwives giving the prescribed certificate in all cases they attend if no such certificate is being given by a registered medical practitioner and requests also the maternity and child welfare authority to assist registrars by making inquiries in cases in which a stillbirth has been reported without any such certificate. Presumably the registrar will ask for such inquiries to be made in all the cases. The other points are (1) that if a child whatever the period of pregnancy (even less than twenty-eight weeks), breathes or shows any other signs of life after complete expulsion from the mother and then dies within however brief a period after birth both the birth and the death must be registered and (2) that the giving of a certificate of a stillbirth does not relieve either the midwife or the medical practitioner of such duties as fall upon them under the Notification of Births Act.

#### Treasurer's Cup Golf Competition

The following are the winners of the first (or Divisional) stage of the Treasurer's Cup golf competition.

Tyrishire—Dr W. B. Wilson  
 Bath—Dr R. Waterhouse  
 Belfast—Dr S. R. Hunter  
 Birmingham Central—Dr J. J. A. Scott  
 Blackpool—Dr G. H. Urquhart  
 Bournemouth—Dr E. K. Le Fleming  
 Bradford—Mr. Peter McEwan  
 Camberwell—Dr J. H. Clatworthy  
 Cardiff—Dr Jeffrey W. Jones  
 Chesterfield—Dr I. F. Wilson  
 City—Dr James Kettes  
 Cleveland—Dr J. E. T. Keck  
 Derbyshire—Dr A. G. S. Broughton  
 Dudley—Dr J. R. Dallow  
 Dundee—Mr. Francis R. Brown OBE  
 East Norfolk—Dr C. C. Gaylor MC  
 East York—Dr J. MacInne  
 Edinburgh and Leith—Dr W. A. Cochran  
 Farnham—Dr L. A. Wilson  
 Glasgow Central—Dr D. McFarlane  
 Glasgow North Western—Dr J. G. McCutcheon  
 Glasgow Southern—Dr W. S. Aitken  
 Gloucestershire—Dr A. Aleck  
 Harrogate—Dr P. A. Steven  
 Harrow—Dr Mungo Park  
 Hartlepool—Dr W. N. Fishworth MC  
 Huddersfield—Dr J. Raffao  
 Kennington—Dr A. J. Crooin  
 Lancaster—Dr E. Dockra  
 Leicester and Rutland—Dr B. M. Collard  
 Liverpool—Dr J. J. Molvneaux  
 Mid Cheshire—Dr R. Reid Duncan  
 Mid Essex—Dr H. G. L. Haynes  
 Newcastle on Tyne—Dr A. Sutcliffe  
 North Lincoln—Dr J. H. Ward  
 North Middlesex—Dr H. Lon dale Gregory  
 North Northumberland—Dr R. E. Moyes  
 North Staffordshire—Dr A. E. Parkes  
 Norwich—Dr E. W. Everett  
 Nottingham—Dr W. T. Williamson  
 Penzance and Tamar—Dr R. Francis Jones  
 Oxford—Dr G. R. Girdlestone  
 Plymouth—Dr D. O. Twining  
 Reading—Dr A. N. Hooper  
 Potherham—Dr H. R. Filhott  
 Sheffield—Dr J. P. Chalmers  
 Shropshire and Mid Wales—Dr J. Lavelle  
 South Essex—Dr F. Pees  
 South Suffolk—Lieut. Colonel H. E. Staddon F.A.M.C. (ret.)  
 South West Essex—Dr R. G. B. Marsh  
 Striford—Dr J. H. Bletsoe  
 Wandsworth—Dr W. D. McMurtry  
 Westminster and Holborn—Dr F. Howard Humphris  
 West Suffolk—Dr E. C. T. Clouston  
 Wiltshire—Dr W. McElroy  
 Winchester—Dr L. W. Oliver

The final stage of the competition will be played at Cullane No. 1, Edinburgh, on Friday, July 22nd, commencing at 2 p.m. during the Annual Meeting of the Association. The handicap allowed for the final stage will be the lowest handicap of the competitor as at July 22nd.

**Some Effects of the Coroners (Amendment) Act 1926**

Several letters have reached the Medical Secretary lately which indicate that the present position of medical officials at hospitals and institutions in regard to their right to receive fees for performing *post-mortem* examinations and attending at inquests, under the provisions of the Coroners (Amendment) Act, 1926, is not quite clear. Under the Coroners Act of 1887, Section 22 provided that where an inquest was held on the body of a person who had died in a county or other lunatic asylum or in a public hospital, infirmary, or other medical institution, whether supported by endowment or by voluntary subscriptions, the medical officer whose duty it might have been to attend the deceased person as medical officer of such institution was not entitled to a fee. Over many years the Association repeatedly tried to remedy this injustice, and finally Section 22 was repealed by the Coroners (Amendment) Act of 1926. The fees are therefore now payable to those doctors who were excluded by the provision of Section 22 of the Act of 1887. A case has, however, been reported in which a coroner refused to pay a fee to a whole-time medical officer in a county institution on the ground that the county council, which is responsible for the payment of fees to medical witnesses under the Coroners Act, should not be expected to pay the medical officer who was in its whole-time employment for work done during his ordinary working hours. This is a matter between the county council and its employees. The county council may demand that any fees received should be refunded, but it is the duty of all officers concerned to demand the payment from the coroner as a matter of principle. Several curious complaints have already reached the Medical Secretary. In one case a doctor was tendered half the usual fee on the grounds that he had not been detained at the inquest for more than half a day. There is no justification whatever for the payment of anything less than the full fee. Again, a county council is reported to have cut down travelling allowances previously paid to medical witnesses on the ground that the inquest fees had been raised. In one case the net result was that the doctor was paid 5s. less than he would have been paid if the fees had never been raised. The Division concerned has been advised to make representations in the proper quarter.

**Association Notices.****NOTICE OF ANNUAL GENERAL MEETING****NOTICE CONVENING MEETING**

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the British Medical Association will be held in the McEwan Hall, The University, Edinburgh, on Tuesday, July 19th, 1927 at 2 p.m. Business: (1) Minutes of last Meeting, (2) Appointment of Auditors, (3) Report of Election of President for 1928-29.

ALFRED COX,  
Medical Secretary

L. FERRIS SCOTT,  
Financial Secretary and  
Business Manager

**LEICESTER AND RUTLAND AND NUNEATON AND TAMWORTH DIVISIONS**

NOTICE is hereby given to all concerned of the following proposal made by the Nuneaton and Tamworth Division:

That the Civil Parish of Appleby Magna, in Ashby de la Zouche Rural District, be transferred from the Leicester and Rutland Division of the Midland Branch to the Nuneaton and Tamworth Division of the Birmingham Branch.

Written notice of the proposal has been given to the Leicester and Rutland Division and to the Birmingham and Midland Branches, and the matter will be determined in due course by the Council of the Association. Any member affected by the proposed change, and objecting thereto, is requested to write, giving reasons, to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1, not later than August 2nd, 1927.

**TABLE OF DATES**

July 15, Fri	Annual Representative Meeting, Edinburgh 10 a.m.
	Nominations for election of 12 members of Council by grouped Representatives must be received (at A.R.M., Edinburgh) by this date, 2 p.m.
July 16, Sat.	A.R.M. (Edinburgh)
July 18, Mon	Council (Edinburgh)
	A.R.M. (Edinburgh)
July 19, Tues.	A.R.M. Annual General Meeting, Edinburgh, President's Address
July 20, Wed	Council (Edinburgh) Conference of Honorary Secretaries (Edinburgh)
	Meetings of Sections etc. Edinburgh
July 21, Thurs	Meeting of Sections etc., Edinburgh
July 22, Fri	Meetings of Sections etc., Edinburgh

ALFRED COX, Medical Secretary.

**BRANCH AND DIVISION MEETINGS TO BE HELD**

**BORDER COUNTIES BRANCH**—The annual meeting of the Border Counties Branch will be held at the Crown and Mitre Hotel, Carlisle, on Friday, July 8th at 4 p.m. The Branch Council will meet at 3.30 p.m. Agenda: Branch Council's report and financial statement, report of the election of office bearers for 1927-28. Dr J. R. Burnett will give his presidential address, entitled "Some notes on the history and work of the St. John Ambulance Association." Tea at the kind invitation of the president.

**CAMBRIDGE AND HUNTINGDON BRANCH**—A meeting of the Cambridge and Huntingdon Branch will be held at Addenbrooke's Hospital on Friday, July 8th at 2.30 p.m. Agenda: The Cambridgeshire Branch Council's report and financial statement, report of the past, by Dr W. M. Palmer, disease, by Dr G. Wolf.

**DORSET AND WEST HANTS BRANCH BOURNEMOUTH DIVISION**—The summer social meeting of the Division will be held on Saturday, July 2nd, at Palace House, Bournemouth by kind permission of Lord Montagu of Beaulieu. Members will arrive at Palace House at about 3.30 p.m., and after being shown over the house and grounds will find tea awaiting them at the Montagu Arms Hotel. Each member may take one guest.

**EAST YORK AND NORTH LINCOLN BRANCH**—The seventy-first annual meeting of the East York and North Lincoln Branch will be held on Friday, July 8th when Dr Frank Eve, the president elect, will be installed as president.

**METROPOLITAN COUNTIES BRANCH CITY DIVISION**—A meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road, E., on Tuesday, July 5th at 9.30 p.m. Dr T. H. G. Shore, curator of the museum St. Bartholomew's Hospital will give a demonstration of pathological specimens with clinical notes. A clinical meeting arranged by the consulting staff will be held at the Children's Hospital, Fickeny Road, on Wednesday, July 6th, at 4 p.m. Tea will be provided. A clinical afternoon will take place at the Metropolitan Hospital on Friday, July 8th, at 4.15, tea at 4 p.m.

**METROPOLITAN COUNTIES BRANCH KENSINGTON DIVISION**—A clinical meeting of the Kensington Division will be held at the Paddington Hospital (Infirmary), Harrow Road, on Thursday, July 7th at 4 p.m. Agenda: Presentation of silver cup to Dr A. I. Cronin, winner of the Kensington Divisional Competition in the Tri-ners Cup golf competition, cases will be shown and demonstrated by Dr Bendle (medical superintendent) and the staff. It is hoped that members will make a special effort to attend. Tea at 4 o'clock.

**MIDLAND BRANCH**—The annual meeting of the Midland Branch will be held at 64, St. James Street, Nottingham on Monday, July 11th, at 3 p.m. Agenda: Correspondence, election of officers, and of public health service representatives on Branch Council, and of Branch Council. An address will be given by the president, Dr W. T. Rowe, M.C., on encephalitis lethargica. The president will entertain members coming from a distance to lunch at 1.30 p.m. at 8, The Rope Walk, Nottingham. Those desiring to avail themselves of this hospitality should signify their intention to Dr Rowe not later than Wednesday, July 6th.

**NORFOLK BRANCH**—The annual meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital on Wednesday, July 6th, at 3 p.m. The president, Dr W. H. Isher will be in the chair. Agenda: Report of the Branch Council on the affairs of the Branch, and the annual financial statement, induction of the new president, Sir Hamilton Ballance, K.B.E., C.B., M.S., by the retiring president, election of a president elect and two vice-presidents, an address by Mr Ernest Miles, F.R.C.S. on rectal fistula.

**NORFOLK BRANCH WEST NORFOLK DIVISION**—The annual meeting of the West Norfolk Division will be held at the King's Lynn at the West Norfolk Hospital, on Thursday, July 7th at 3 p.m. Agenda: Election of chairman, vice-chairman, secretary, clinical secretary, members of the Executive Committee and representative on the Branch Council, annual report and balance sheet.

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—A golf match has been arranged to take place between the South Shields and Tyne-side Divisions on Sunday, July 3rd at Brancepeth. It will be a 18-hole match, 2 p.m. tea, 5 p.m. tournament, 6 p.m. dinner. The object of the meeting is to further social intercourse and to show that all members who have ever wielded a club will do so on the occasion, and that others who do not play will also come.



o Recklinghausen's disease treated b- injection o sodium morrhuate and ultra violet light baths the nrth a case o

auricular fibrillation and mitral disease treated by digitalis, and the last, a case of heart-block, a true Stokes Adams disease, in which rest is the only treatment.

Dr E OFENHEIM showed (1) A girl of 17 years, now looking well, who had had appendicitis with obstruction due to a tumour, which the pathologist described as a spindle celled sarcoma, three years ago (2) A woman who had a psoas abscess at 18 years of age, who wore a spinal jacket for a year, and two years later had an abscess in the thigh, 15 cm of pus was removed through the old scar, no organisms were found (3) A woman who had eczema round the nipples for two years, the skin of both breasts was now adherent and the pathologist's opinion was that this was a case of Paget's disease in the pre-cancerous stage.

Dr T H ROBERTS showed (1) A boy with tuberculous disease of the knee of three years' duration, now cured (2) A woman with a bicornuate uterus from whom he removed an ovarian cyst, the left horn contained a two months' pregnancy, a previous pregnancy had also occurred in the left horn (3) Two cases illustrating pre-operative diagnosis of ectopic pregnancy by the use of 40 per cent iodopine and x rays, believed to be the first case reported in this country. The first case showed a partly ruptured ectopic pregnancy of one and a half to two months on the left side, this was removed. The x ray showed normal patent right tube and a dilated obstructed left tube.

Mr WINSBURY WHITE showed (1) A girl, aged 4½ years, whose left kidney with two dilated ureters had been removed (2) A patient, aged 42 years, with symptoms of six months' duration, from whom a large kidney with stone in ureter had been removed (3) A man, aged 38, from whom a kidney full of stones had been removed (4) A man with fistula, but no urine came from it, right kidney removed full of stones.

Dr GUY NEELY showed a patient (whose Wassermann reaction was positive) with pulsating tumour of the groin.

#### METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION

The annual general meeting of the Lambeth and Southwark Division was held at the British Medical Association House, Tavistock Square, W.C.1, on June 15th.

Dr G STODDART presided over a well attended meeting, at which the following officers were elected for the ensuing year, 1927-28.

Chairman, Dr R G W Saint Cedd. Vice Chairman, Dr A J McNichol. Honorary Secretary and Treasurer, Dr Michael J Fenton. Representative in Representative Body, Dr E Henrietta Jebens. Representative on Branch Council, Dr H Harvey Norton.

The retiring secretary, Dr E L M Rusby, presented the annual report of the Division, which was accepted.

The Annual Report of Council was discussed and instructions given to the representative at the Representative Meeting on many items.

A hearty vote of thanks was unanimously accorded to Dr E L M Rusby for the admirable way he had worked, and the painstaking efforts he had made on behalf of the Division during his eight years of office as honorary secretary.

#### METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION

The Willesden Division held a very instructive clinical meeting on June 21st at the Willesden Municipal Hospital, Brentfield Road, Neasden. The meeting was noteworthy for the large attendance of members. Dr G F Buchan, the medical officer of health for the Willesden District Council, had kindly arranged a demonstration at which Dr A C Troup, superintendent of the hospital, gave an interesting lecture on the control of infectious diseases, with special reference to the Schick test, the Dick test, the Schultz Chariton reaction, and the serum treatment of scarlet fever.

Dr Troup gave a full explanation of the technique of carrying out these tests. His lecture was followed by the exhibition of a number of cases demonstrating both positive and negative reactions to the Schick and Dick tests. A equivaescent case of scarlet fever was shown which, in this instance, had been greatly benefited by the administration of serum. Dr Troup pointed out that, in his experience, the Schultz Chariton blanching reaction, when negative, did not exclude scarlet fever but he found that the serum treatment of the disease was, on the whole, definitely beneficial, though at times it could not be said to come up to expectations.

After the lecture the members were hospitably entertained by the matron of the hospital to tea.

The appreciation and thanks of the meeting were tendered to the superintendent, to the matron and to Dr Buchan by the vice-chairman, Dr RICHARD GILLBARD by Dr W WOODLEY STODDART, and by Dr WILLIAM LOCK.

#### NORTH OF ENGLAND BRANCH CLEVELAND DIVISION

The annual general meeting of the Cleveland Division was held at the Zetland Hotel, Saltburn by the Sea on June 19th, when Dr R H BOTHAM was in the chair, Dr J KEVIN PENNY deputized as secretary for Dr Lowe, who was absent through illness. A letter was read from Dr G H Lowe, the secretary, resigning his resignation of that office after eleven years' service. The meeting expressed its regret that the Division was losing so capable and experienced a secretary as Dr Lowe, and recorded its appreciation of his services and sympathy with him in his illness. It was resolved to make a presentation to Dr Lowe in acknowledgement of his unstinted service to the Division, and a committee consisting of Mrs H M LEVICK, M.D., Mr W S DICKIE, Drs TOWNSEND, PENTON, and BOTHAM was appointed to receive subscriptions and to decide what form the testimonial should take.

The statement of accounts and the annual report of the Executive Committee were read and approved, and the Division placed

on record its appreciation that one of its members, Mr W S DICKIE, was chosen as president of the North of England Branch for the current year.

Votes of sympathy with Dr Burnett on the death of his wife, and with the relatives of the late Dr W SHAND, a former member of the Division, were passed. It was unanimously decided that the Division thank Mr George Watts, secretary superintendent of North Ormesby Hospital, for his courtesy during the past year. The following officers were elected for the ensuing year.

Chairman, Mrs H V LEVICK, M.D. Secretary, Dr JOHN INGLETON. Vice-Chairman, Dr R H BOTHAM.

Representatives on the Branch Council, members of Executive Committee, Ethical and Municipal Maternity and Child Welfare Committees were also elected.

#### SOUTH MIDLAND BRANCH

The annual meeting of the South Midland Branch was held at the Peacock Hotel, Northampton, immediately after the Branch Council meeting on Thursday, June 9th. Following the election of members, Dr LLOYD briefly introduced the president elect, Mr HARRIES-JONES, and vacated the chair in his favour. A hearty vote of thanks was passed to Dr Lloyd for the manner in which he carried out his duties as president for the year 1926-27.

Mr HARRIES-JONES then read a most interesting, suggestive, and helpful paper, entitled "Some points in medical ophthalmology of interest to the general practitioner." It provoked an interesting discussion in which ten members took part. Many questions were asked the president during the discussion, and some experiences in treatment were added. Dr HOPKINS of Byfield drew attention to the difficulty that he had had in sending panel patients to an ophthalmic surgeon owing to the obstructive tactics of some insurance societies, and moved the following motion, which was seconded by Dr HENDRICKSON:

This Branch is opposed to the routine that certain insurance societies have adopted of sending patients to an optician without reference to, or against the advice of the general practitioner. The Branch is of the opinion that it should be decided by the panel practitioner whether a patient should see an ophthalmic surgeon or an optician.

During the considerable discussion which ensued several members gave instances in support of the resolution, which was carried unanimously, every member present voting. Mr HARRIES-JONES replied to the discussion. At his suggestion a copy of the resolution with regard to ophthalmic surgeons in panel practice was directed to be forwarded to the Council of British Ophthalmologists.

Prior to the meeting the members were hospitably entertained to a very excellent and enjoyable lunch by the president-elect, Mr HARRIES-JONES.

#### SOUTH WALES AND MONMOUTHSHIRE BRANCH

A SOCIAL meeting of the South Wales and Monmouthshire Branch was held at the Welsh National Museum, Cathays Park, Cardiff, on June 1st. About seventy members and ladies attended. The party was received by Dr F J NORTH, keeper in geology to the museum, who explained the plans and architectural features of the building, and the general arrangement of the exhibits. Dr North conducted a party to the section of geology, and gave a most instructive address on the development of the South Wales coal fields during the last two centuries, tracing their history from the early part of the seventeenth century, and the effect of geological situation on the chief coal exporting centres. The address was illustrated by a relief map of South Wales, and a case of specimens of coal, arranged in series taken at approximately the same levels, in different areas, from Monmouthshire, passing westward to the anthracite districts of Swansea and Pembroke. The ward to the coal trade was mentioned, and the necessity for future of the coal trade was mentioned, and the necessity for developing the production of by-products of coal, from the point of view of economy, in view of the present wasteful method of burning coal in open grates. Various specimens were exhibited, and the qualities of different types explained. Several cases of fossils were examined, and Dr North gave a short demonstration.

The members and their wives were subsequently entertained to tea at Co's cafe by kind invitation of Dr R PRICHARD (Cardiff), the president. Sir LEWIS MACLEAY proposed a hearty vote of thanks to Dr North and the museum authorities for their kindness in providing such an interesting and instructive afternoon.

During tea the British Medical Association prize and certificate were presented to Mr D R L DAVIES, a student in the Welsh National School of Medicine by Dr T W THOMAS (Caeprifilly), chairman of the Cardiff Division. Mr DAVIES'S essay on gonorrhea had won the prize in competition with final year students of the Universities of Bristol and Birmingham.

#### SOUTH WESTERN BRANCH TORQUAY DIVISION

The annual meeting of the Torquay Division was held in the Torbay Hospital on May 5th. The chair was taken at the commencement by Dr H G and later by Mr E WARD of Paignton. The office bearers for the ensuing year were duly elected as follows:

Chairman, Mr E WARD. Vice Chairman, Dr R G RIDDALL. Honorary Secretary, Dr W CAMERON DAVIDSON. Representative in Representative Body, Dr JEAN MACLENNAN. Deputy Representative in Representative Body, Mr E WARD. Auditor, Dr J M JARVIS.

The annual report of the Executive Committee was read and adopted.

The HONORARY SECRETARY read the draft of a letter regarding the B.M.A. Charities Fund, which the Executive Committee recommended should be sent to every member and non-member of the Association resident in the area of the Division. A brief address

to this was suggested and it was agreed that the letter should be issued in the names of the chairman and honorary secretary of the Division.

After considerable discussion regarding the policy of the Association on the subject of the Dogs Protection Bill it was decided (by the casting vote of the chairman) that the Division should take the action recommended by the Association and the honorary secretary was accordingly instructed to write to the two members of Parliament concerned on the lines suggested.

Some discussion took place on the circular issued by the Association about contributory schemes for hospital benefit, and as to the best way to have the subject thoroughly discussed by the medical men concerned. The honorary secretary was directed to write to the medical staffs of all hospitals concerned in the area of the Division asking for their opinion of the circular, the replies to be considered by the Executive Committee before any further action was taken by the Division.

#### SOUTHERN BRANCH

The fifty-fourth annual meeting of the Southern Branch was held at Osborne House East Cowes Isle of Wight on June 15th. The Branch Council were entertained at lunch by the president elect, Major General Sir S. G. Guise-Moore KCB, after which a meeting was held. Five new members were elected. It was decided to hold meetings at Southampton in October at Portsmouth in February and at Winchester in April. The election of officers was deferred until the next meeting.

At 3 p.m. the annual meeting was held at which twenty-four members were present, when Sir S. G. Guise-Moore took the chair. The financial statement was presented and showed a credit balance of £23 15s.

The President introduced Dr. HERBERT FRENCH CBE FRCP physician to Guy's Hospital and to the Royal Household who gave an address on Venesection by the needle and bottle method and a number of other small points which was listened to by the very appreciative audience. An interesting discussion followed and many questions were asked to which Dr. French replied. A very hearty vote of thanks to Dr. French for his address was on the motion of the President carried by acclamation.

At the end of the meeting members and visitors were conducted over the State apartments by the President and later were entertained to tea by Lady Guise-Moore. Hearty thanks were accorded by all to the president and Lady Guise-Moore for their generous hospitality thus concluding one of the most enjoyable annual meetings in the history of the Branch.

#### SURREY BRANCH

The annual meeting of the Surrey Branch was held in Croydon Town Hall on June 15th with Dr. MORRIS MACLENNAN in the chair. Forty members were present.

The following officers were elected for the ensuing year:

President Mr. G. E. Newby OBE FRCS President Elect Dr. H. R. Craig Vice Presidents Dr. S. Morton MacKenzie and Dr. P. Allan Honorary Secretary and Treasurer Dr. Arnold London OBE Auditor Dr. T. T. Coraill.

Drs. A. E. Porter and H. P. Newsholme were elected to the Branch Council to represent the members holding whole-time posts in the public health service.

#### Presidential Address

At the election of the officers the chair was taken by the new president, Mr. Newby, who delivered his presidential address on research and the general practitioner. He stated that the general practitioner had many opportunities of doing research work, and he asked if the general practitioner utilized these opportunities. Many illustrations were drawn from the life and work of the late Sir James Mackenzie to show the large field which was open to the general practitioner research worker and the valuable results which might be obtained by such work. When Mackenzie started in general practice he discovered that at least 50 per cent. of his patients were suffering from something that he could not diagnose. They complained of symptoms—they had no physical signs. He set to work to investigate symptoms and the early signs of disease and he was so successful in his results in one particular line that in twenty years he was able to write a book from his own personal observation and experience which had revolutionized our ideas on heart disease. Mr. Newby urged the importance of forming local clinical research associations, either within the British Medical Association or as separate societies to do team work on some of the problems which confronted the general practitioner. The general practitioner ought to do this work because he and he only—had the opportunity of seeing patients in the early stage of disease when no physical signs were present. It symptoms were ever to obtain their proper place in research a great deal of spade work had to be done in order that their specific value might be determined. It would be no exaggeration to say that the failure of medicine to detect disease in its early stage was due to the fact that the sensations of patients had never been sufficiently investigated.

There was a large field of research awaiting exploration which could only be done by the general practitioner and that was the investigation of the incidence of disease. In different parts of the country one heard of this or that disease being more prevalent than in other places. Was that so? Did the profession know? If it was, or why was it so? Almost the only statistics available were those provided by the death certificate. The real need was for life certificates and these could only be obtained from the general practitioner. In urging that in a matter of this kind the local health authorities might assist the research

workers by supplying clerical assistance. Mr. Newby stated that the enlightened policy of the Croydon Corporation in appointing a whole-time pathologist bacteriologist and biochemist showed that the corporation was mindful of its duty to the hurgresses and it was not unlikely that it would be willing to co-operate with the local medical men in this direction. The local hospital could be made of more use to the general practitioner in two ways by post-graduate demonstrations on cases of interest and by the institution of consultation days on which general practitioners could bring difficult cases to the hospital for consultation with at least two members of the staff.

Mr. Newby concluded by asking all those interested in this matter to communicate with him and stated that if sufficiently supported he would at a later date call a meeting to consider the best means of carrying out these ideas on research by the general practitioner.

After the meeting the members visited the Croydon Corporation sewage farm and works under the guidance of Dr. OWEN FOWLER, the chairman of the Public Health Committee, who entertained the members to tea at the thorough isolation hospital where Dr. H. P. Newsholme, the medical officer of health, and the resident medical officer showed the members of the hospital.

In the evening the members dined together at the Greyhound Hotel Croydon when Mr. Newby was in the chair.

#### SURREY BRANCH GUILDFORD DIVISION

The annual meeting of the Guildford Division was held at the Royal Surrey County Hospital Guildford on June 2nd. The following officers were elected for the year:

Chairman Mr. H. B. Butler Vice-Chairman Dr. W. L. R. Fleming Honorary Secretary Dr. G. M. Bluet Representative and Deputy Representative in Representative Body Drs. A. Lyndon and T. B. Jobson.

The recommendations of Council for submission to the Annual Representative Meeting at Edinburgh were carried nem con.

#### SUSSEX BRANCH

The fourteenth annual meeting of the Sussex Branch was held at the Dolphin Hotel, Chichester on June 15th. Before the meeting a luncheon was held under the chairmanship of the president-elect, Dr. G. C. GARRATT. The health of the chairman was proposed by Dr. G. MORGAN who referred to the high esteem in which Dr. Garratt was held by his professional brethren. In reply Dr. Garratt called attention to the fact that the luncheon was provided by the Chichester and Worthing Division following the precedent established last year of not allowing the burden of the entertainment to fall upon the president.

In presenting the annual report of the Branch Council Dr. PARRY said that the six Divisions of the Branch were all in a flourishing condition. He said that the Committee on Psycho-analysis at the Annual Meeting of the Association in Nottingham last year had held several meetings and probably in the near future would present its report, which he thought would be satisfactory to the members of the Sussex Branch. The financial statement showed a satisfactory credit balance in favour of the Branch.

Dr. Garratt was formally elected president and Dr. Milbank Smith and Dr. Vernon were elected vice-presidents. Dr. Parry was re-elected for the sixth time honorary secretary of the Branch.

Dr. GARRATT referred to the great loss which the profession had sustained through the death of Dr. David Ewart who was to have filled the office of president of the Branch and to preside at that meeting.

At the termination of the meeting the members accompanied by their wives enjoyed a pleasant excursion by motor to Cowdray Park and Petworth where by the courtesy of Lord Leonfield the famous picture gallery was on view. Tea was subsequently taken at the Swan Hotel Petworth.

#### WILTSHIRE BRANCH TROWBRIDGE DIVISION

A social meeting of the Trowbridge Division was held at Lacock on June 22nd when fifteen members and eighteen guests were present. Places of interest in the village were visited. Tea was taken at the Ped Lion Hotel and afterwards the party were conducted over Lacock Abbey by Mrs. Talbot to whom a hearty vote of thanks was accorded for her kindness.

#### WORCESTERSHIRE AND HEREFORDSHIRE BRANCH

The annual meeting of the Worcestershire and Herefordshire Branch was held at Great Malvern by the kind invitation of Dr. Smyth at his house on June 16th when Mr. AINSLIE, the president, was in the chair.

The Council's report and financial statement were received. Dr. HINES (HAY) was elected president-elect for 1928-29 and Mr. BUTLER (Hereford) re-elected honorary secretary and treasurer.

It was decided to hold the autumn meeting of the Branch at Kidderminster on October 12th.

Mr. AINSLIE, prior to vacating the chair, introduced his secretary, Dr. VAIL, who thereupon succeeded to the chair as president.

Mr. T. BARTON (Worcester) showed three cases of epithelioma of the lower lip treated by Diefenbach's method and a rare case of skull injury.

Mr. AINSLIE read a long and interesting paper on inflammation of bones illustrated by numerous x-ray photographs.

A hearty vote of thanks was accorded to Mr. Ainslie for his paper and to Dr. Smyth for kindly having the meeting at his house and also for inviting the members to tea afterwards in his beautiful garden.

## NOTICES OF MOTION BY DIVISIONS FOR THE ANNUAL REPRESENTATIVE MEETING, EDINBURGH, 1927

### *Report of Royal Commission on Lunacy*

By Dr D ROXBURGH (Mylebone) That the Representative Body direct the Council to appoint a Committee for the further consideration of the Report of the Royal Commission on Lunacy, and further directs the Council to secure on the Committee an adequate number of general practitioners, on whom the responsibility of signing certificates under the Lunacy Acts mainly falls

### *Municipal Maternity Homes*

By SHEFFIELD That (with reference to Min 88 of the Annual Representative Meeting, 1926—Annual Report of Council, para 115) in the case of large towns where there is already in existence a voluntary maternity hospital the municipal maternity home should be primarily for normal cases where the home conditions are unsuitable

### *Orthopaedic Treatment*

By WINDSOR That the first recommendation contained in para 124 of the Annual Report of Council be amended to read as follows

That orthopaedic treatment whether at hospitals or clinics, should be undertaken by those who have special knowledge of the subject, and as the needs of the patient to receive the most experienced handling are paramount no restrictions should be placed on the appointment of full time officers

### *Treatment of Early Stage Mental Disease*

By WINDSOR That the recommendation contained in para 169 of the Annual Report of Council be amended to read as follows

That steps be taken to insure that in every district facilities should be provided for the specialist treatment at hospitals or clinics of patients suffering from early mental disease, that such treatment should be undertaken on a part time voluntary basis by practitioners who have special knowledge of the subject but that as the needs of the patient to receive the most experienced handling are paramount, no restrictions should be placed on the appointment of specialists who already hold full time appointments

### *Remuneration of Practitioners called in on the Advice of Midwives*

By WINCHESTER That the motion by Dartford, published on p 202 of the SUPPLEMENT of May 14th, 1927, be amended to read as follows

That the scale of fees payable by local authorities to medical practitioners called in on the advice of midwives be revised

### *Proceedings of Annual Meeting*

By FORBES and LEITH That the Council be instructed to consider the question of publishing the Proceedings of the Annual Meeting in one volume as soon as possible after the Meeting (papers and discussions being reasonably curtailed) and of making, if necessary, an extra charge for the publication

### *Illustrations in the "British Medical Journal"*

By FORBES and LEITH That the Council be instructed to consider the possibility of improving the general quality of the illustrations appearing in the JOURNAL

## National Insurance.

### LONDON PANEL COMMITTEE

At the meeting of the London Panel Committee on June 21st Dr H J CANNON presiding Dr E M J Higgins was appointed a member of the committee to represent the constituency of Camberwell in place of Dr A J Fearn resigned

### *Ophthalmic Benefit*

A letter was read from the controller of the Insurance Department of the Ministry of Health in reply to the resolution of the committee at its previous meeting in which it had requested the Ministry to receive a deputation to discuss the administration of ophthalmic benefit in relation to the action of an approved society in restricting the free choice of its members in consulting an ophthalmic surgeon. The controller drew attention to the fact that the abiding an applicant to obtain an expert medical the eyes were arrived at by discussion with the representative of the Insurance Acts Committee in conjunction with the Council of British Ophthalmologists and the Ophthalmic Benefit Committee. Any question or general application, therefore with regard to those arrangements would more appropriately in the view of the controller be discussed with those bodies than with representatives of a panel committee for one particular area accordingly he saw little advantage in arranging the meeting suggested by the committee. The secretary

of the committee was directed to draw the attention of the Insurance Acts Committee to the question raised by the action of the approved society in question in restricting the free choice of its members in consulting an ophthalmic surgeon, and the name of the approved society was also sent, at his request to the controller, together with a copy of the notice to which exception was taken by the committee, in order that the Insurance Department of the Ministry might consider whether any action should be taken with the society.

The committee also had before it a complaint from a practitioner that a certain approved society had refused to accept a certificate on a printed form issued by the committee for the use of practitioners in recommending their insured patients to consult an ophthalmic surgeon. The secretary of the society in question had stated that instructions had been issued by the Ministry of Health to refuse such certificates. The Ministry had been communicated with as to the correctness of this statement, and from the reply of the Ministry it would appear that while no instructions had been issued to approved societies that they should refuse to accept such certificates, the Ministry apparently agreed with the society that these ophthalmic certificates were being issued indiscriminately by practitioners to their insured patients. After discussion, the committee agreed to a resolution stating that the communication from the Ministry on this subject was in its factory, and placing on record its disagreement with the Ministry that certificates recommending insured patients to consult an ophthalmic surgeon had been, or were being, issued indiscriminately by practitioners in London.

### *Surrender of Forms of Medical Record*

It has been proposed that the Panel Committee should co-operate with the Insurance Committee in communicating with practitioners who failed to return forms of medical record as required under the regulations. The chairman of the Medical Service Subcommittee, however, expressed the view that the Insurance Committee could not supply the Panel Committee with the names of offending practitioners because, the information being privileged such action would constitute a breach of confidence. The Panel Committee thereupon consulted its solicitors whose opinion was that the subcommittee was bound to investigate any particular case of failure to return the forms that in such investigation it must take reasonable steps to ascertain the facts, and that the co-operation of the Panel Committee in that connection would not involve a breach of confidence or expose the Insurance Committee to any action by a practitioner. It was agreed to forward a copy of this opinion to the Insurance Committee.

### LONDON INSURANCE COMMITTEE

It was reported to the London Insurance Committee, on June 23rd, that the Ministry had reviewed the case of a practitioner whom the committee had already decided to censure severely for breach of the terms of service with regard to attendance on an insured person and the treatment provided and after taking into consideration representations by the practitioner, had decided to withhold the sum of £50 from the money payable with respect to medical benefit with a view to this sum being recovered from the practitioner by deduction from his remuneration. In two cases in which chemists were found to have committed a breach of the terms of service by inaccurate dispensing of prescriptions, the sums of £2 in the one case and of £1 in the other were withheld by the Minister.

The number of prescriptions dispensed personally for their insured patients by practitioners in London during the first quarter of 1927 was 314 the cost being £44 18s. During the same quarter 442 prescriptions for serums and vaccines and 234 prescriptions for insulin were dispensed by chemists for insured persons.

The Insurance Committee and the Panel Committee are at variance over an application by a practitioner with 157 insured persons on her list, for permission to employ an assistant in her insurance practice. The practitioner desires an assistant in order that she may be released from her morning surgery in time to attend to her duties in the afternoon as school medical officer the schools being at some distance. The Panel Committee is of opinion that permission might be given but the Insurance Committee holds that as the terms of service require the practitioner to provide personal service for her insured patients except in certain defined circumstances she should not undertake additional and extraneous duties which prevent the proper fulfilment of the contract, and that permission must be withheld.

## Correspondence.

### *Medical Missionary Breakfast at the Annual Meeting*

SIR—On behalf of the Medical Prayer Union, the Medical Missionary Breakfast held in connexion with the Annual Meeting of the British Medical Association will this year be arranged for under the auspices of the Edinburgh Medical Missionary Society. The date allotted by the British Medical Association Council is Friday, July 22nd, and the hour 8.30 a.m.

May I through your columns draw attention to this engagement, and ask all who may desire to be present to be good enough to let me have a postcard at their early convenience, with their names and addresses, so that invitation cards may be sent to them in due time? A card of invitation is issued to all who are interested in the medical missionary

ROCHFORD L 104—District Medical Officer and Public Vaccinator for the Southend on Sea (1st) District. Salary £120 per annum and usual



**ROTHERHAM UNION**—Resident Assistant Medical Officer at the Union Hospital (unmarried) Salary £125 per annum

**ROBERT RESEARCH INSTITUTE, Aberdeen**—Secretary and Treasurer Salary £350 to £400, according to qualification

**ROYAL COLLEGE OF SURGEONS OF ENGLAND**—Examiner in Dental Surgery

**ROYAL FREE HOSPITAL, Gray's Inn Road, W C 1**—(1) Male Casualty Officer, salary £100 per annum (2) Assistant Physician to the Electro-therapeutic Light and Massage Departments (3) Honorary Anaesthetist

**ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E C 1**—(1) Honorary Physician (2) Second House Surgeon, salary at the rate of £125 per annum

**ROYAL NORTHERN HOSPITAL, Holloway Road N**—(1) Physician (2) Surgeon for Diseases of the Ear, Nose, and Throat

**ST PAUL'S HOSPITAL FOR DISEASES (INCLUDING CANCER) OF THE GENITO-URINARY ORGANS AND SKIN, Endell Street W C 2**—(1) Resident Medical Officer (2) House-Surgeon Salary at the rate of £200 and £150 per annum respectively

**STOCKPORT INFIRMARY**—(1) House Surgeon (2) House Physician Salary £175 per annum each

**STONE AND WOLSTANTON UNION**—Second Assistant Residential Medical Officer (male) at the London Road Institution Salary £200 per annum

**SUDAN GOVERNMENT**—(1) Assistant Bacteriologist at the Wellcome Tropical Research Laboratories, Khartoum pay £1,720 per annum rising to £1,200 (2) Laboratory Assistant (unmarried) pay £1,324 per annum

**SWANSEA COUNTY BOROUGH**—Assistant Medical Officer Salary £600 per annum

**WEST END HOSPITAL FOR NERVOUS DISEASES**—Honorary Registrar (Out-patient Department)

**WEST LONDON HOSPITAL, Hammersmith Road, W 6**—Resident Assistant Surgeon Salary at the rate of £200 per annum

**WILKESDEN GENERAL HOSPITAL, Harlesden Road, N W 10**—(1) Physician in charge of Department for Diseases of the Skin (2) House Surgeon (male, unmarried), salary at the rate of £100 per annum

**CERTIFYING FACTORY SURGEONS**—The appointments at Darlaston, Stiffs, and Warlingham, Surrey are vacant Applications to the Chief Inspector of Factories, Home Office, Whitehall, S W 1

*This list of vacancies is compiled from our advertisement columns, where full particulars will be found To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning*

### APPOINTMENTS

**ADDISON, Vivian H. M.R.C.S. L.R.C.P.**, House Surgeon Queen Mary's Hospital for the East End Stratford

**BIRNATT, Arthur, M.B.**, Ch.B. Leeds Resident Medical Officer, Pontefract Infirmary

**CHAMBERS, Guy O. M.C. F.R.C.S. Eng.** Honorary Surgeon Royal Isle of Wight County Hospital Consulting Surgeon, H.M. Prison Parkhurst and Honorary Consulting Surgeon, Women's and Children's Hostel, Isle of Wight

**GRANT, James, M.B.**, Ch.B. Glas., Assistant Medical Officer for Burton on Trent

**MILLER, T. Mackinlay**, Honorary Anaesthetist to Tunbridge Wells and Counties General Hospital

**BOLINGBROKE HOSPITAL, Wandsworth Common S.W.**—Physician Dermatologist H. Haldin Davis M.D. Oxon. F.R.C.S. Eng. M.R.C.P. Lond. Assistant Physician Neurologist James Purdon Martin M.D. Belf. M.R.C.P. Lond. Assistant Ophthalmic Surgeon Geoffrey Viner, M.D. Lond. F.R.C.S. Eng.

**MONAGHMOY AND SOUTHWICK HOSPITAL**—Surg. on W. A. Hewitson M.B. D.S. Lond. M.S. Durh. F.R.C.S. Assistant Surgeons H. B. L. Levy, M.B. B.S. Durh., T. D. Miller M.B., B.S. Durh.

**QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Manby Road N.W. 1**—Senior Resident Medical Officer J. N. Sankey M.B. Ch.B. F.R.C.S. Eng. Assistant Resident Medical Officer J. R. Tree M.B. D.S.

**CERTIFYING FACTORY SURGEONS**—J. Campbell M.B. Ch.B. Glas. for the Birtley District, co. Durham W. Pomeroy M.R.C.S. L.R.C.P. for the Dursley District Gloucester W. H. Shephard M.R.C.S. L.R.C.P. for the Sheerness District Kent T. C. A. Sweetnam M.D. Dub. for the Hemsworth District, West Riding Yorks

### DIARY OF SOCIETIES AND LECTURES

**ROYAL SOCIETY OF MEDICINE**  
Annual General Meeting of Fellows—Tues 5 p.m. The new Episcopo, forming part of the Memorial to the late Sir John MacAlister, has now been installed in the West Hall. It is proposed to demonstrate its powers from 4.30 to 5 p.m. Tea will be served from 4.30 to 4.55 p.m.

**HARVEY SOCIETY OF LONDON, Star and Garter Hospital, Richmond**—Sat 4.30 p.m.

**OXFORD OPHTHALMOLOGICAL CONGRESS, University Museum, Oxford**—Thurs. and Fri., 10 a.m.

### POST GRADUATE COURSES AND LECTURES

**FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION**—Fellowship of Medicine Demonstrations Royal Chest Hospital Tues, 2 p.m. Central London Throat, Nose, and Ear Hospital Tues 2.30 p.m. Royal Westminster Ophthalmic Hospital, Fri 5 p.m. Lecture Demonstration on Iritis and Cyclitis These demonstrations are free to members of the medical profession City of London Hospital for Diseases of the Heart and Lungs Victoria Park E. Special Course in all branches of Diseases of the Chest National Hospital for Diseases of the Heart Westminster Strand, W. Intensive Course West End Hospital for Nervous Diseases, 73, Welbeck Street W. Lecture Demonstrations at 5 p.m. daily throughout the week. All information as to fees etc. can be obtained from the Fellowship of Medicine, 1 Wimpole Street W. 1

**HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W C 1**—Thurs 4 p.m. Acute Mastoiditis

**NATIONAL HOSPITAL, Queen Square W C 1**—Mon Tues Thurs and Fri, 2 p.m. Out-patient Clinics Mon, 12 noon, Pathology of the Nervous System 3.30 p.m. The Sensory System Tues 3.30 p.m. Cerebral Vascular Disease Thurs 3.30 p.m. The Electrical Relations of the Nerves Fri 12 noon Anatomy and Physiology of the Nervous System 3.30 p.m. Meningitis and the Meningeal Syndrome

**NORTH LONDON POST GRADUATE COLLEGE, Prince of Wales General Hospital Tottenham N 15**—Mon 2.30 to 5 p.m. Medical Surgical and

Gynaecological Clinics, Operations Tues, 2.30 to 5 p.m. Medical, Surgical Throat, Nose, and Ear Clinics Operations Wed 2.30 to 5 p.m. Medical Skin and Eye Clinics Operations Thurs, 11.30 a.m. Dental Clinics 2.30 to 5 p.m. Medical Surgical, and Ear, Nose and Throat Clinics, Operations Fri 10.30 a.m. Throat, Nose and Ear Clinics 2.30 to 5 p.m. Surgical, Medical, and Children's Clinics Operations

**SOUTH WEST LONDON POST GRADUATE ASSOCIATION, St. James's Hospital, Ouseley Road, Balham, S W**—Wed, 4 p.m. Hypertrophic Stenosis of the Pylorus

**WEST LONDON HOSPITAL POST GRADUATE**  
10 a.m. to 1 p.m. Genito-urinary Surgical  
Wards 2 p.m. Gynaecological and Obstetrical  
1 p.m. Lecture on Clinical Methods Demonstration in Venereal Diseases and Chest Cases, 2 p.m. Medical Wards Throat, Nose and Ear Department, Wed, 10 a.m. Out-patient Medical  
Wards, Demonstration 1 p.m. Surgical Wards, 2 p.m. Surgical Department, 2 p.m. Eye Wards, Fri 10 a.m. Medical Clinic  
Demonstration in Genito-urinary 1 p.m. Gynaecological Demonstration 2 to 1 p.m. Obstetrical  
ment, Medical Wards Daily Operations, Medical and Surgical Out-patients 2 p.m.

### British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
21 AVISPOCK SQUARE W C 1

#### Departments

**SUBSCRIPTIONS AND ADVERTISEMENTS** (Financial Secretary and Business Manager) Telegrams Articulate Westcott, London)  
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**EDITOR** British Medical Journal (Telegrams Atiology Westcott, London)

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**SCOTTISH MEDICAL SECRETARY** 6, Drumshugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 4361 Central)  
**IRISH MEDICAL SECRETARY** 16, South Frederick Street Dublin (Telegrams Baellius Dublin Tel 4737 Dublin)

#### Diary of the Association

##### JULY

- 2 Sat Bournemouth Division Social Meeting Palace House, Bournemouth, 3.30 p.m.
- 3 Sun Tyneside Division Golf Match between South Shields and Tyneside Divisions at Brancepeth Lunch 1 p.m. Singles, 2 p.m. Foursomes 6 p.m.
- 5 Tues London Science Committee 2.30 p.m. City Division Metropolitan Hospital, Kingsland Road Demonstration by Dr T. H. G. Shore 9.30 p.m. South Wales and Monmouthshire Branch Annual Meeting New Inn Pontypidd, 3.30 p.m.
- 6 Wed Norfolk Branch Annual Meeting Norfolk and Norwich Hospital Mr W. Ernest Miles on Ano rectal Fistula 3 p.m.
- 7 Thurs Kensington Division Clinical Meeting, Laddington Hospital (Infirmary) Harrow Road 4 p.m. West Norfolk Division Annual Meeting, Kings Lynn and West Norfolk Hospital 3 p.m.
- 8 Fri Border Counties Branch Annual Meeting, Crown and Minto Hotel, Carlisle, 4 p.m. City Division Clinical Meeting, Metropolitan Hospital, Kingsland Road, 4.15 p.m. East York and North Lincoln Branch Annual Meeting North Wales Branch Annual Meeting, Penmaenmawr Address by Medical Secretary
- 11 Mon Midland Branch Annual Meeting 64, St James Street, Nottingham Dr W. T. Rowe on Encephalitis Lethargica, 3 p.m.
- 18 Mon Edinburgh Council, 9 a.m.
- 20 Wed Edinburgh Council, 9 a.m.

### BIRTHS, MARRIAGES, AND DEATHS

*The charge for inserting announcement of Births, Marriages, and Deaths is 7s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue*

#### BIRTH

**HADDOCK**—On June 22nd, at 125 Sussex Road, Southport, to Guendolea, wife of Robert Haddock, M.A. M.B. Ch.B., a son.

#### MARRIAGES

**CROOK—WILLMORE**—On June 27th 1927 at St Bertram Austin Crook M.B. Ch.B. M.R.C.S. Bristol to Kathleen Marjorie Willmore M.B. Engineer Captain and Mrs Willmore The B. Glos.

**McFADDER—SANTOS**—On June 20th, 1927 at Shaw Parish Church, Newbury, by the Rev Kingsley Bedford, assisted by the father of the bridegroom, George Dickson Fisher McFadden, M.Ch., F.R.C.S. Eng. fourth son of the Rev Jackson and Mrs McFadden of Badonsey Mans. Newtown Stewart to Gasparina Amelia, youngest daughter of the late Mr Antonio Luiz dos Santos and Mrs Santos of Rio de Janeiro, Brazil At Home 12 College Gardens Belfast September 12th 1927

**REID—WATSON**—On June 25th 1927 at Holy Trinity Church, Brompton by Rev Prebendary A. W. Jough M.A. listed by Rev P. B. Clayton M.C. Andrew McKie Reid M.C. F.R.C.S. 1 B Liverpool eldest son of Mr and Mrs James Reid of Birkenhead to Clodagh only child of Major Ronald Watson T.D., J.P. and Mrs Watson of Thurloe Square, London

#### DEATHS

**Dawson**—On June 26th at 46, Queen Street Edinburgh, James Walker Dawson, M.D. D.Sc. F.R.C.P. F.R.C.S. Ed. aged 57 years

**Kenny**—On June 20th 1927 at Liverpool, Richard Henry Kennan B.A., M.D. Dublin I.R.C.S.I. D.P.H.I. D.T.M. Medical Adviser to the Colonial Office at Liverpool, late Senior Sanitary Officer, West African Medical Staff

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY JULY 9TH, 1927

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## British Medical Association.

### -NINETY-FIFTH ANNUAL MEETING, EDINBURGH, JULY, 1927.

Patron HIS MAJESTY THE KING

President R G HOCARTH CBE FRCS, Senior Surgeon, General Hospital, Nottingham

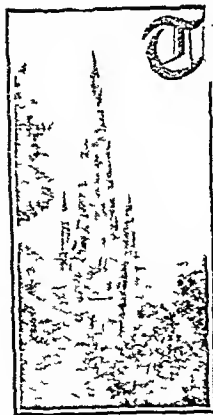
President Elect SIR ROBERT W PHILLIP MD, LL.D., 1 RCP Ed, Consulting Physician Royal Infirmary, Edinburgh

Chairman of Representative Body H B BRACKENBURY, MRCS LRCP

Chairman of Council SIR ROBERT BOLAN, MD LL.D., FRCP

Treasurer \ BISHOP HARLAN MB FRCS

## PROVISIONAL PROGRAMME



Scott Monument

The incoming President Sir ROBERT PHILLIP will deliver his Address to the Association on Tuesday July 19th at 8 p.m.

The ANNUAL REPRESENTATIVE MEETING will begin on Friday July 15th at 10 a.m. and be continued on the three following week days. The Representatives Dinner will take place at the University Union on Friday evening July 15th at 7.30 p.m.

The statutory ANNUAL GENERAL MEETING will be held on Tuesday July 19th at 2 p.m. and the adjourned general meeting at 8 p.m.

The Annual Dinner of the Association will take place on the evening of Thursday July 21st at 7.15 p.m.

The Conference of Honorary Secretaries will be held at 2.30 p.m. on Wednesday July 20th and the Secretaries Dinner at 6.30 the same evening.

The official Religious Service will be held in St. Giles' Cathedral on Tuesday July 19th at 4.30 p.m.

The Annual Exhibition of surgical appliances, foods, drugs and tools to be held in the Waverley Market Princes Street, Edinburgh, will be open for inspection on Monday, July 18th from 2 till 6 p.m. the formal opening by the President will take place on July 19th at 9.30 a.m. The exhibition will remain open on July 20th, 21st and 22nd from 9 a.m. to 6 p.m.

The University of Edinburgh will give a Reception within the Old Quadrangle on Wednesday July 20th at 4.15 p.m. This will follow an Honorary Graduation in the McEwan Hall, which will take place at 3 p.m.

A Centenary Celebration commemorative of the birth of Lord Lister presided over by the Earl of Balfour K.G. will take place on the evening of Wednesday July 20th at 8 o'clock in the McEwan Hall when short addresses will be given by Sir W. Watson Cheyne B. Professor Fether of Paris Professor Harvey Cushing of Harvard University and Dr James Stewart of Halifax Nova Scotia. During the week of the Annual Meeting a museum containing relics of Lister's life and work will be displayed in the Upper Library of the Old University. A Lister Memorial Volume has been prepared and a copy will be given to each member of the Association who registers in the Reception Room.

On Saturday July 23rd there will be an excursion to Fife and St. Andrews.

### THE SECTIONS

The Scientific Sections will meet from 10 a.m. to 1 p.m. for papers and discussions on Wednesday, Thursday and Friday July 20th, 21st and 22nd.

*The following Sections will meet on Three Days*

#### MEDICINE

**President** Professor G. LOVELL GULLAND CMG MD FRCP Ed (Edinburgh)  
**Vice Presidents** Professor J. HILL ABRAM MD FRCP (Liverpool), R. A. FLEMING MD FRCP Ed (Edinburgh), H. MORLEY FLETCHER MD FRCP (London), W. T. PITCHER OBE MD FRCP Ed (Edinburgh)  
**Honorary Secretaries** GEORGE GEHAU MD FRCP, 1 Devonshire Place London W.1, G. D. MATHEWSON MB FRCP Ed 28a Moray Place Edinburgh

The following provisional programme has been arranged  
**Wednesday July 19th**—Discussion The Results of Insulin Therapy in Diabetes Mellitus To be opened by Prof. G. HUGH MACFARLAN (London) followed by Prof. G. PETTER (Sweden) Dr R. D. LAM PRINCE (London) Dr E. I. POLLETON (London) Dr P. J. CAMPBELL (London) Dr O. LEYTO (London) Prof. G. MCCRAY LON (Edinburgh), Dr GEO. GL. C. HAM (London) and Dr C. G. LAMBIE (London)

**Thursday July 20th**—Discussion The Treatment of Acute Bacterial Pneumonia To be opened by Prof. G. HUGH MACFARLAN

10 JULY 9, 1927]

# Annual Meeting, Edinburgh - The Sections

SUPPLEMENT TO THE  
BRITISH MEDICAL JOURNAL

(Liverpool), followed by Professor W H WYNN (Birmingham),  
Dr A KIMBELL (Manchester), Professor R J S McDOWALL  
(London), Dr H MORLEY FLECHER (London), Dr A FERGUS  
HILL (Edinburgh), and Dr A RUTHERFORD (Edinburgh).  
Paper: Dr DAVID H BALLOU (Montreal), The Value of the  
Bronchoscopic Injection of Lipiodol in the Diagnosis and Treat-  
ment of Tuberculosis, Lung Abscess and Bronchiectasis.  
Friday, July 22nd - Discussion: The Pathology and Treatment  
of Pernicious Anaemia. To be opened by Professor G LOVELL  
GULLAND (Edinburgh), followed by Professor W K HUNTLEY  
(Glasgow), Dr L SCHITT (USA), Dr ARTHUR F HURST (Ascot),  
and Mr W E COOKE (Wigan).  
Paper: Dr A BLACKHALL MORISON, Coronary Angina Pectoris

## SURGERY

President Professor D P D WILKIE, OBE, MD, ChM,  
FRCS (Edinburgh).  
Vice Presidents J W DOWDEN CM, FRCS Ed (Edinburgh),  
F J STEWARD MS, FRCS (London), J W STOUTERS,  
FRCS Ed (Edinburgh), H WADE, CMG, DSO, FRCS Ed,  
(Edinburgh), A M WILKIE, MS, FRCS (Nottingham).  
Honorary Secretaries J M GRAHAM, ChM, FRCS Ed,  
8, Manor Place, Edinburgh, E C HUGHES, OBE, MCh,  
FRCGS, 17, Wimpole Street, London W1.

The following provisional programme has been arranged  
Wednesday July 20th - Discussion: Tuberculosis of the Kidney  
To be opened by Sir JOHN THOMSON WALKER (London), followed  
by Dr KOLLIER (Lyon), Professor A FULLER (Leeds), and  
Mr HILARY WADE (Edinburgh).  
Paper: Dr J W RANKIN (Glasgow), The Treatment of Acute  
Osteomyelitis by Primary Amputation.  
Thursday, July 21st - Discussion: The Place of Surgery in the  
Treatment of Toxic Goitre. To be opened by Mr T P DUNHILL  
(London), followed by Professor G R MURRAY (Manchester), Mr  
C THURSTON (Liverpool), Professor P E KILLICK (Liver-  
pool), and Dr JOHN EASON (Edinburgh).  
Paper: Dr ALFRED T WRIGHT (London), The Rational Treat-  
ment of Infected Wounds.  
Friday, July 22nd - Discussion: Chronic Appendicitis. To be  
opened by Mr WILFRED THORP (London), followed by Mr  
J W DOWDEN (Edinburgh), Mr VICTOR BONNY (London), and  
A J WALTON (London) and Mr HERBERT J PATTERSON (London).  
Paper: Mr A MACLENNAN (Glasgow), Burns

## OBSTETRICS AND GYNAECOLOGY

President JAMES HAIG FERGUSON, MD, CM, FRCP Ed,  
FRCS Ed (Edinburgh).  
Vice Presidents T WATTS EDEN, MD, FRCP, FRCS Ed  
(London), GIBSON FITZGIBBON, MD, FRCP (Dublin),  
WILLIAM FORDYCE, MD, FRCP Ed (Edinburgh), Professor  
R W JOHNSON, CBE, MD, FRCS Ed (Edinburgh),  
Miss EMIL VAUGHAN-SWIER, MD (London),  
Honorary Secretaries DANIEL DOUGLAS, MC MD, 11 St John  
Street, Manchester, W T HAULFAY, OBE, MC, MB, ChB,  
FRCS Ed, 6 Wall Street, Edinburgh.

The following provisional programme has been arranged  
Wednesday July 20th - Discussion: The Relation of Pregnancy  
to General Diseases. To be opened by Professor J M MURRO  
KILL (Glasgow), Cardiac Diseases, Dr E RISI (Paris), Tubercu-  
losis and Professor J J BROWN (London), Venereal Diseases,  
followed by Dr G FITZGIBBON (Dublin) and Dr MARY H  
MACVITTIC (Edinburgh).  
Thursday, July 21st - Discussion: The Hygiene of Menstruation  
in Adolescents. To be opened by Professor R W JOHNSON  
(Edinburgh), Dr J HUNTER PATON (St Andrews), and Mrs A E  
SANDLERSON GLOW (Cheltenham), followed by Miss E VAUGHAN  
SAWYER (London).  
Friday, July 22nd - Papers: Dr F A E CREW (Edinburgh),  
The Effect upon the Sex Ratio of Conception Early and Late in  
Relation to the Oestrous Cycle of the Rat. Dr DOUGLAS MILLER  
(Edinburgh), I ruled Forceps Cases, Dr DANIEL DOUGLAS (Man-  
chester), The Clinical Features of Ectopic Pregnancy, Dr BLITHE  
SOLOMONS (Dublin), Some Points in the Technique of the Low  
Segment Caesarean Operation, Professor W FLECHER SHAW  
(Manchester), Uterine Fibroids after the Menopause

## PATHOLOGY AND BACTERIOLOGY

President Professor J LORRYN SMITH, MD, FRS,  
FRCP Ed (Edinburgh).  
Vice Presidents W R LOGAN, MD, FRCP Ed (Edinburgh), H D WRIGHT,  
Professor F J MACKIL (London), DPH (Edinburgh), H D WRIGHT,  
MD, FRCP Ed (London).  
Honorary Secretaries KILS DAVIDSON, MB ChB Pathe-  
logical Department University of Edinburgh, H J PARKIN MD,  
MRCPEd, DPH, Wellcome Physiological Research Labora-  
tories, Langley Court, Beckenham, Kent.

The following provisional programme has been arranged  
Wednesday, July 20th - Discussion: Growth in Its Pathological  
Relations. To be opened by Dr ARCHIBUD LILLY (London),  
followed by Professor R MUR (Glasgow), Dr G W DUFF,  
NICHOLSON (London), Professor J SHAW DUFF, and Professor E H KITTLE  
Professor M J STEWART (Leeds), and Professor E H KITTLE  
(Cardiff).  
12 noon Cinematograph Demonstration on Study of Living  
Tissues in vitro, by Dr CAVI, in the Operetta House, Chambers  
Street

Thursday July 21st - (Joint meeting with Section of Compari-  
tive Medicine) Discussion: Immunity. To be opened by Dr  
R A O'BRIEN (Beckenham) and Professor CARI H BROWNING  
(Glasgow), followed by Professor R MUI (Glasgow), Dr  
HEDLEY D WRIGHT (London), Colonel W F HARVEY (Edinburgh),  
and Professor T J MACKIL (Edinburgh).  
2 p.m. Cinematograph Demonstration on Study of Living  
Tissues in vitro, by Dr CAVI, in the Operetta House, Chambers  
Street.  
Friday, July 22nd - (Joint meeting with Section of Comparative  
Medicine) Discussion: Aspects and Problems of Comparative  
Medicine. To be opened by Professor BASIL BURNETT (Cambridge),  
followed by Major G W DUNN (London), Mr W H ANDREWS  
(Ministry of Agriculture), Dr F A E CREW (Edinburgh), Dr  
H H SCOTT (London), Professor L P LELAND (London), Mr  
J W BRITILLANK, PRCVS (London), Mr ALFRED GORFON  
(Edinburgh), Mr T W M CAMERON (London), and Mr JAMIE  
McALLAN (Aberdeen).

## THERAPEUTICS AND PHARMACOLOGY

President Professor J A GUNN, MD, DSc (Oxford),  
Vice Presidents Professor A J CLARK, MC, MD, FRCP  
(Edinburgh), Professor FRANCIS R FRISLER, MD, FRCP  
(London), D P POULTON, MD, FRCP (London), Mr W H ANDREWS  
(London), L G HOLMES, MB, BChir, Pharmacology,  
Honorary Secretaries L G HOLMES, MB, BChir, Pharmacology,  
logical Laboratory, Cambridge, C G LAMMIE, MC, MB,  
FRCP Ed, 31, Dimsheugh Gardens, Edinburgh.

The following provisional programme has been arranged  
Wednesday, July 20th - 10 a.m. to 12 noon Discussion: Clinical  
Methods of Administration and Therapeutic Uses of Oxygen.  
To be opened by Dr E P POULTON (London), followed by Dr  
H WHITBREAD DAVIS (Leeds) and Dr W T RICHIE (Edinburgh).  
12 noon to 1 p.m. Paper: Professor J A GUNN (Oxford),  
Expectorants.  
Thursday, July 21st - Discussion: The Therapeutic Uses of  
Calcium Salts. To be opened by Professor F R FRISLER (London),  
followed by Dr L G PARSONS (Birmingham), Mr C P STEWART  
(Edinburgh), Biochemical Aspect, Dr G H PEACOCK (Edinburgh),  
Pharmacological and Therapeutic Aspect, Professor L BURN  
(Strasbourg), Dr G C LINDLER (London), Totony, and Dr  
N F C BURGESS (London).  
Friday, July 22nd - Discussion: The Action and Uses of Ovarian  
Extracts. To be opened by Professor W L DIXON (Cambridge),  
followed by Dr KATHLEEN A COWARD (London), Standardiza-  
tion, Mr A S PARKES (London), Physiological, Dr W L  
ADDIS (Manchester), Clinical, and Professor J M MURRO KILL  
(Glasgow), Gynaecological.

## DISEASES OF CHILDREN

President Professor JOHN FRISLER, MC, MD, ChM,  
FRCS Ed (Edinburgh).  
Vice Presidents H CHARLES CAMERON, MD, FRCP (London),  
ALEXANDER DINGWALL FORDYCE, MD, FRCP Ed (Edinburgh),  
CHARLES MCNEIL, MD, FRCP Ed (Edinburgh), Miss HELEN M M MACKAY MD,  
Honorary Secretaries Miss HELEN M M MACKAY MD,  
28, John Street, Bedford Row, London, W.C.1, LEWIS THATCHER,  
MD, FRCP Ed, 8, Melville Crescent, Edinburgh.

The following provisional programme has been arranged  
Wednesday, July 20th - Discussion: Acute Pneumonia in Early  
Childhood. To be opened by Dr CHARLES MCNEIL (Edinburgh),  
and Dr AGNES R MACGREGOR (Edinburgh), Dr J HUGH THUR-  
FIELD (London), Colonel W A ALEXANDER (Edinburgh),  
NORMAN S CARVICHALL (Edinburgh), Mr F C PYBUS (Newcastle),  
Acute Pulmonary Conditions in Childhood, illustrated by spec-  
imens, x ray prints, large sections and microscopic preparations.  
Surgical Demonstration at Royal Edinburgh Hospital for Sick  
Children.  
Thursday, July 21st - Discussion: Acute Intestinal Obstruction  
in Infancy and Childhood. To be opened by Mr ALLY McLENNAN  
(Glasgow), followed by Mr L E BURNINGHAM (Edinburgh),  
Miss G M A HERZELD (Edinburgh), Mr F C PYBUS (Newcastle),  
on Tyne, and Mr NORMAN M DOIR (Edinburgh).  
Hospital for Sick Children.  
Friday, July 22nd - Discussion: Therapeutic Modification of the  
Diet in Infancy: what can be achieved by it? To be opened by  
Dr H G CAMERON (London), followed by Dr A DINGWALL  
FORDYCE (Liverpool), Dr G B LEMING (Glasgow), and Dr LEWIS  
THATCHER (Edinburgh).

## MENTAL DISEASES

President Professor GEORGE M ROBLINSON, MD, FRCP Ed  
(Edinburgh).  
Vice Presidents BERNARD HART MD, FRCP (London),  
JOHN KLAY, CBE, MD, FRCP Ed (Bangor), J R FORD,  
CBE, MD, FRCP Ed (Lpsom), H C MUIR, MD,  
FRIPSGlas (Edinburgh).  
Honorary Secretaries P D GILLISPIE, MD, 152 Harley  
Street, London, W.1, W M McALISSE, MB, ChB, MRCPEd,  
151, Morningside Drive, Edinburgh.  
The following provisional programme has been arranged  
Wednesday, July 20th - Discussion: Chronic Sepsis as a Cause  
of Mental Disorder. To be opened by Dr WILLIAM HUNTER CBE  
(London), followed by Sir BERNARD HART (Edinburgh), Dr L GOODALL  
(Leeds), Dr D CHARLIS WILSON (Brighton), and Dr W L McLENNAN  
(Whitechurch), Dr C H BOND (Brighton), and Dr W L McLENNAN  
(Cheddleton).

**Thursday July 21**—Joint meeting with the Section of Neurology. Discussion Epidemic Encephalitis To be opened by Dr IVY MACKENZIE (Glasgow) Epidemiological Considerations

**Treatment of Post-encephalitic Rigidity**

**Friday July 22**—Discussion Points in the Future Committee on (England) Report: (a) Are the existing safeguards against wrongful detention adequate? (b) How far is judicial intervention necessary in the process of certification? (c) What additional facilities are required for nrv treatment? To be opened by Professor GEORGE M ROBERTSON (Edinburgh)

**The following Sections will meet on Two Days**

**NEUROLOGY**

**President** Professor PDWIN BIRMEWELL M.D. F.R.C.P. (Edinburgh)

**Vice Presidents** ALFRED NIXON BRUCE M.D. D.Sc. F.R.C.P. (Edinburgh) J. GODWIN GREENFIELD M.D. F.R.C.P. (London)

**Honorary Secretaries** E. A. CARMICHAEL M.B. Ch.B. F.R.C.P. (London) National Hospital Queen Square London W.C.1 NORMAN M. DOTT M.B. F.R.C.S. (Edinburgh) Grosvenor Crescent Edinburgh

The following provisional programme has been arranged

**Monday July 24**—Discussion The Tics and Allied Conditions To be opened by Dr S. A. KIRBY WILSON (London) followed by Professor GULLAN (Paris) Dr A. F. HENSTON (London) Dr D. (Bath) Professor

**Thursday July 21**—Joint meeting with Section of Mental Diseases. Discussion Epidemic Encephalitis To be opened by Dr IVY MACKENZIE (Glasgow) Epidemiological Considerations Dr J. GODWIN GREENFIELD (London) Ethelberg Dr C. RUDNICH (London) Chronic Encephalitis and Dr I. M. MURRAY (Glasgow) Men at Aspects followed by Dr F. MAROTTA (London) Dr H. DEANE (Ayr, via Water) Dr W. A. LOTT (Birmingham) Dr J. S. HURST (Edinburgh) and Dr N. D. ROYLE (New South)

**Demonstration on the Effects of Treatment of Post-encephalitic Rigidity**

**Exhibition of Pathology and Surgery of Brain Tumour** by Mr DOTT and others in the Pathological Museum (see Museum Catalogue)

**OPHTHALMOLOGY**

**President** A. H. H. SIVAN M.D. F.R.C.S. (Edinburgh)

**Vice Presidents** WILFRED ALLPORT M.B. F.R.C.S. (Birmingham) Sir ARNOLD LAYTON F.R.C.S. (London) H. M. TRAQUAIR M.D. F.R.C.S. (Edinburgh)

**Honorary Secretaries** R. E. BICKERTON D.S.O. M.B. Ch.B. 35 To and Place London W.1 F. H. CAMERON M.B. Ch.B. F.R.C.S. (Edinburgh) 7 Barnaby Street Edinburgh

The following provisional programme has been arranged

**Monday July 24**—10 a.m. Discussion Optic Neuritis To be opened by Dr J. A. LARSEN (Edinburgh) followed by Dr HENNING RYGG (Copenhagen) and Dr A. J. BALLANTINE (Glasgow)

**Thursday July 21**—10 a.m. Papers Miss I. C. MAX (London) Some Aspects of the Comparison Development of the Retina Sir W. T. LISTER (London) Some Points in Connection with Detachment of the Retina Mr W. (Clark) SOUTER (Aberdeen) Spontaneous Reattachment of Detached Retina Sir ARNOLD LAYTON (London) Value of Antiseptics in Modern Ophthalmic Surgery Mr F. HOLT DIGGIE (Manchester) Relationship between Lacrimal Obstruction and Nasal Disease Mr H. W. TROTTER (Edinburgh) Incidence of Toxic Amblyopia in Edinburgh and District Mr A. H. H. SIVAN (Edinburgh) Remarks on Intracapsular Extraction of Cataract, and Demonstration

**LARYNGOLOGY AND OTOTOLOGY**

**President** A. LOGAN TURNER M.D. F.R.C.S. (Edinburgh)

**Vice Presidents** J. S. FRANK M.B. F.R.C.S. (Edinburgh) W. M. MORRIS C.B.F. M.Chir. F.R.C.S. (London) DONALD P. PATTERSON M.D. F.R.C.L. (Cardiff)

**Honorary Secretaries** A. R. DUNCAN F.R.C.S. 47 Queen Anne Street London W.1 W. F. GARNIER M.C. M.B. Ch.B. F.R.C.S. (Edinburgh) 18 Chester Street Edinburgh

The following provisional programme has been arranged

**Monday July 24**—10 a.m. Discussion The Influence of Internal Secretions on Sex Characters To be opened by Dr F. A. E. LEE (Edinburgh) followed by Mr A. S. PARKES D.Sc. (London) Professor E. E. GLAN (Liverpool) and others

**Friday July 22**—10 a.m. Discussion Chemical Changes accompanying Solar Activity To be opened by Professor E. E. GLAN (Liverpool) and others

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**Friday July 22**—10 a.m. Discussion Chemical Changes accompanying Solar Activity To be opened by Professor E. E. GLAN (Liverpool) and others

**NAGER (Zurich) and Dr A. A. GRAY (Glasgow)** The discussion will be illustrated by microscopical sections showing the changes in the ear in otosclerosis

**11 a.m.** Dr STEPHEN YOUNG (Glasgow) Radiography in Mastoid Disease Dr A. J. WRIGHT (Bristol) To What Extent Does the Removal of Tonsils and Adenoids Prevent Ear Disease?

**2.30 p.m.** Demonstrations Dr J. P. STEWART (Edinburgh) The Pathology of Mastoiditis Dr J. S. FRANK (Edinburgh) and Dr SARAH NELSON Lantern Demonstration of the Microscopic Appearances in the Right Ear and Auditory Nuclei Paths and Centre in a case of Congenital Mutism (Deafmutism?) in a child of four years suffering from Bilateral Chronic Middle Ear Suppuration Dr DOUGLAS J. GUTHRIE (Edinburgh) Clinical and Operative Demonstration of Mastoid Surgery at the Royal Hospital for Sick Children

There will also be an exhibition of microscopic material illustrating the changes in the Ear in Otosclerosis and Preparations and Drawings of various Pathological Conditions of the Ear

**PREVENTIVE MEDICINE**

**President** Professor P. S. LELAND C.B. M.G. F.P.C.S. D.P.H. (Edinburgh)

**Vice Presidents** G. F. BUCHAN M.D. D.Sc. (London) Mrs. H. M. LITTLE (Glasgow) D.Sc. (London) A. M. HAWTHORNE M.D. D.P.H. (London) G. R. LEIGHTON OBE M.D. D.Sc. (Edinburgh)

**Honorary Secretaries** W. T. BENSON B.Sc. M.D. D.P.H. M.R.C.P.L. City Hospital Council Offices 197 High Holborn London W.C.

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**COMPARATIVE MEDICINE**

**President** Principal O CHARNOCK BRADLEY, M.D., D.Sc., F.R.C.V.S. (Edinburgh)  
**Vice Presidents** Professor J.B. BURTON, M.A., F.R.C.V.S. (Cambridge), T.A.E. GRAY, M.D., D.Sc. (Edinburgh), Major G.W. DUNNIN, M.R.C.V.S. (London)  
**Honorary Secretaries** T.W.M. CAMERON, Ph.D., D.Sc., M.R.C.V.S., London School of Hygiene and Tropical Medicine, 23, Endsleigh Gardens, London, W.C.1, J. RUSSELL GILG, M.P.C.V.S., Royal (Dick) Veterinary College, Edinburgh.

The following provisional programme has been arranged

**Thursday, July 21st**—(Joint meeting with Section of Pathology and Bacteriology) Discussion Immunity To be opened by Dr R.A. O'BRIEN (Beckenham) and Professor CARL H. BROWNE (Glasgow), followed by Professor R. MUIR (Glasgow), Dr HEDLEY D. WRIGHT (London), Colonel W.F. HARVEY (Edinburgh), and Professor T.J. MACKIL (Edinburgh)  
**Friday, July 22nd**—(Joint meeting with Section of Pathology and Bacteriology) Discussion Aspects and Problems of Comparative Medicine To be opened by Professor BASIL BURTON (Cambridge), followed by Major G.W. DUNNIN (Edinburgh), Dr ANDREW BARRON (London), Dr W.H. ANDERSON (Edinburgh), Dr H.H. SCOTT (Agriculture), Dr F.A.E. GRAY (Edinburgh), Dr J.W. BRITTELBANK (London), Professor FRIPER (Edinburgh), Mr T.W.M. CAMPION (London), Mr ARTHUR GORTON (Aberdeen), and Mr JAMES MCALLAN (Aberdeen)

**The following Sections will meet on One Day**

**DERMATOLOGY**

**President** ROBERT CRANSON LOW, M.D., F.R.C.P. Ed (Edinburgh)  
**Vice Presidents** W. HIRBLERT BROWN, M.D. (Glasgow), H.D. HALLIDAY, M.D., F.R.C.S. (London)  
**Honorary Secretaries** ROBERT AITKEN, M.D., F.R.C.P. Ed, 8 Palmerston Place, Edinburgh, F.D. HOWITT, M.D., 87, Harley Street, London, W.1

The following provisional programme has been arranged

**Thursday July 21st**—Discussion The Uses and Limitations of Ultra violet Radiations in Dermatology To be opened by Dr S.E. DORE (London)  
**Papers** Dr H.C.G. SEMON (London), The Value of Kravolgan in Lupus Erythematosus, Dr G.B. DOWLING (London), The Treatment of Tinea Capitis with Thallium Acetate

**TROPICAL DISEASES**

**President** ANDREW BALFOUR, C.B., C.M.G., M.D., F.R.C.P. Ed, D.P.H. (London)  
**Vice Presidents** Lieut Colonel E.D.W. GRIGG, M.D., D.Sc., F.R.C.P. Ed (Edinburgh), Lieut Colonel W.F. HARVEY, C.B., M.D., C.M. D.P.H., F.R.C.P. Ed (Edinburgh), Lieut Colonel W.P. MACARTHUR, D.S.O., O.B.L., M.D., F.R.C.P. Ed, D.P.H. (London)  
**Honorary Secretaries** A.R.D. ADAMS, M.B., Ch.B., D.T.M., School of Tropical Medicine, University of Liverpool, J.F.C. HAYMAN, M.C., M.B., F.R.C.P. Ed, D.P.H., Bureau of Hygiene and Tropical Diseases, 23 Endsleigh Gardens, London, W.C.1

The following provisional programme has been arranged

**Wednesday, July 20th**—10 to 11 a.m. Discussions (1) Amoebic Dysentery To be opened by Professor WARRINGTON YORKE (Liverpool), followed by Dr P.H. MAYSON BARR (London) (Treat ment and Epidemic Illustrations of Sigmoidoscopy Appeal ances) Dr J. GORDON THOMSON (London), and Dr N. SWILLLEN GRUBER (Amsterdam)  
 11 a.m. to 1 p.m. (2) Some Problems of Malaria Prophylaxis To be opened by Lieut Colonel S.P. JAMES (Ministry of Health), followed by Sir WILLIAM T. PROUT, C.M.G., O.B.L. (London), Lieut Colonel I.D.W. GRIGG (Edinburgh), Dr L.W. PICKERILL (Rome) and Dr N. SWILLLEN GRUBER (Amsterdam)  
**Afternoon** Venereal Demonstration Professor W. YORKE and Dr A.I.D. ADAMS Amoebic Dysentery There will also be a demonstration of maternal font by Professor W.S. PATTON (Liverpool)

**FORENSIC MEDICINE**

**President** Professor H. HARVEY LITTLEJOHN, M.B., F.R.C.S. Ed (Edinburgh)  
**Vice Presidents** The Right Hon. Earl RUSSELL (London), Sir WILLIAM SCHRODLI, K.B.E. (London), Professor SIDNEY A. SMITH, M.D., D.P.H. (Caro)  
**Honorary Secretaries** D.J.A. KIRK, M.B., Ch.B., D.P.H., M.R.C.P. Ed, Forensic Medicine Department, University, Teviot Place, Edinburgh, Professor J.E.W. MCALLAN, M.D., D.P.H., 65 Green Lane, Stonecroft, Liverpool

The following provisional programme has been arranged

**Thursday July 21st**—Discussions (1) Alcohol and the Motorist Relations To be opened by Dr G. CARTER (Sheffield) followed by Dr E.H. NICHOLSON (London) in connexion with the Section of the museum of the Professor M.J. Wade for a demonstration of the (Criminal) forensic medico-legal interest

**12 noon** Criminal medico-legal interest

**Tissues in vitro, b**

**Street**

**TUBERCULOSIS**

**President** S. VERA PEARSON, M.D. (Mundesley)  
**Vice Presidents** WILLIAM BRAND, M.B., C.M. (London), I. DR W. SNOWDEN, M.D., C.B.E. (Ringwood, Hants), LINESI WAT, M.D., D.Sc., M.R.C.P. Ed (Edinburgh)  
**Honorary Secretaries** J.C. SIMPSON, M.C., M.B., Ch.B., D.P.H., Southfield Sanatorium Colony, Liberton, Edinburgh, R.L. LIND, M.C., M.D., King Edward VII Sanatorium, Midhurst

The following provisional programme has been arranged

**Friday, July 22nd**—10 a.m. Discussions (1) Radiology and Diagnosis of Intrathoracic Tuberculosis from the Point of View of Specialist and Practitioner To be opened by Mr H. MORRISON (Vale of Clwyd Sanatorium, North Wales), followed by Dr DAVIES (Vale of Clwyd Sanatorium, Manchester), and Dr J.M. RIST (Paris) Dr J. LOGAN STRAUAT (Manchester), and Dr J.M. WOODBURN MORISON (Edinburgh) (2) Pathology of the Tuberculosis of Childhood and its Bearing on Clinical Work To be opened by Professor EUGENE L. ORIE (Washington University), followed by Dr R.G. CANN (London) and Dr P.F. ARMA (London) (3) Interrelation of Physician and Surgeon in Regard to Non-pulmonary Tuberculosis To be opened by Dr D.A. POWELL (Cardiff) and Professor JOHN TRISLER (Edinburgh), followed by Mr G.H. GILLIS (Oxford)

**2.30 p.m. Demonstrations, x-rays, etc**

**VENEREAL DISEASES**

**President** DAVID LELS, D.S.O., M.B., F.R.C.S. Ed (Edinburgh)  
**Vice Presidents** ARCHIBALD CAMPBELL, M.B., Ch.B. (London), R. SPOTTS, M.B., Ch.B. (London), F.C. DOBLE, M.R.C.S., L.R.C.P., 93A Harley Street, London, W.1, Miss MARY FORBES LISTON, M.B., Ch.B., 33, Cornhill Bank, Edinburgh

The following provisional programme has been arranged

**Friday, July 22nd**—Morning session Discussion The Value of Routine Examination of the Cervical Fluid with regard to (a) More Accurate Knowledge, (b) Prognosis, (c) Treatment To be opened by Mr C.H. MILLS (London), followed by Prof. or G. G. M. ROBERTSON, F.R.C.P. Ed (Edinburgh), Colonel L.W. HARRISON (London), Dr GEORGE RIDDIOCH (London), Dr J.G. GILLIS (Edinburgh), and Dr D.A. HENDERSON (Glasgow)

Clinical cases illustrating Types of Neuro-syphilis will also be shown

**Afternoon session, 3 p.m.** Discussions (1) The Employment of "Polar Body" Developing strains of the Gonococcus in the Treatment of Gonococcal Infection To be opened by Major L.C. LAMBART, D.S.O., R.A.M.C. followed by Colonel L.W. HARRISON (London) and Dr DAVID WARSON (Glasgow) (2) The Place of Bismuth in the Treatment of Syphilis To be opened by Dr L.T. BURL, D.S.O. (Edinburgh), followed by Dr L.T. BURL, D.S.O. (Manchester) Dr J.C. BUCKLEY (Nottingham) Dr W.L. SNODGRASS (Glasgow), and Dr MURRAY MACNICOL (Edinburgh)

**RADIOLOGY**

**President** J.M. WOODBURN MORISON, M.D., C.M. D.M.R.E. (Edinburgh)  
**Vice Presidents** M.R.J. HAYES, F.R.C.S.I. (Dublin), I. MORRIS, M.D., B.Sc., D.M.R. and E. (Liverpool)  
**Honorary Secretaries** W. CRICHTON FORBES, M.B., Ch.B., D.M.R.E., 5, Hermitage Drive, Edinburgh, JOHN MUIR O'BRYEN, M.B., Ch.B., British Institute of Radiology, 32, Welbeck Street, London, W.1

The following provisional programme has been arranged

**Wednesday, July 20th**—Discussions (1) 10 a.m. X-rays in the Diagnosis of Intrathoracic Growth To be opened by Dr STANLEY MELVILLE (London) followed by Mr C. THURSTON (Liverpool), Dr A. FLETCHER (Edinburgh), Dr HOLLAND (Liverpool), Dr A. FLETCHER (Glasgow) (2) 11.30 a.m. X-rays and Radium in the Treatment of Carcinoma of the Breast To be opened by Dr N.S. IZZAT (London) followed by Dr J.H.D. WEBSTER (London), Dr A.D. BUCKLEY (Manchester), and Dr M.R.J. HAYES (Dublin)

**HISTORY OF MEDICINE**

**President** JOHN D. COHEN, B.Sc., M.D., F.R.C.P. Ed (Edinburgh)  
**Vice Presidents** ALFRED CHURCH, M.D., F.R.C.P. (London), R.W. LIND, M.D., D.Litt., F.R.C.P. (London), Beckenham  
**Honorary Secretaries** WALTER J. DILLING, M.B., Ch.B., D.P.H., M.R.C.P. Ed, 11, Avenue Avenue, Liverpool, ADAM CAMPBELL, M.B., Ch.B. Ed, Pharmacological Department, University of Edinburgh

The following provisional programme has been arranged

**Friday July 22nd**—10 a.m. Discussion The Historic Evolution of Disease To be opened by Sir ALFRED CHURCH (London) followed by Dr G. MUIRSON (Edinburgh) (1) Cause and Effect of Epidemics and their Relationship to the Community Conditions, and Miss M.C. BURL (Edinburgh) (2) The Influence of Industrialism upon the Health of the Community To be opened by Professor A.J. CLARK (Edinburgh) The Historical Aspect of Quackery 12.30 p.m. Professor A.J. DILLING (Liverpool), The Methods of Introduction of Drugs of Old Physicians (1) Dr ALFRED CHURCH (London) (2) The Practice of Surgery in the Early 17th Century, as illustrated in the Writings of Master Peter Lowe





K G, O M, will preside, and that short addresses will be delivered by Sir William Watson Cheyne, Professor Tuffier (Paris), Professor Harvey Cushing (Harvard University), and Professor John Stewart (Halifax, Nova Scotia).

Throughout the week of the Association Meeting a museum of Lister relics will be on view in the Upper Library of the Old University. The relics will be gathered from many sources. The unique interest of the exhibits will be due largely to the co-operation and liberality of the directors of the Wellcome Historical Medical Museum, London.

A *Lister Memorial Volume* has been prepared and will constitute the book of the Edinburgh Meeting of the Association. A copy will be presented to each member of the Association on registration in the reception room. The volume, edited by Dr Logan Turner, will contain sketches and reminiscences by former house-surgeons of Lord Lister, two of his own scientific addresses, and a series of letters. A section of particular interest is included dealing with the lives of Lister's fellow residents in the Edinburgh Royal Infirmary during the summer of 1854. Sir Edward Sharpey-Schaefer contributes a sketch on Lister's work as a physiologist. Mr Miles writes on "Surgery prior to Lister's time," and Professor John Fraser on "The influence of Lister's work on surgery."

Memorial inscriptions have been placed on the walls of the houses which Lister occupied successively in Edinburgh—namely, 11, Rutland Street, and 9, Charlotte Square.

A prize of £25 and a gold medal are to be awarded to the writer of the best essay on "The influence of Lister on surgery." The prize is open to students and graduates of not more than one year's standing in any medical school in the British Empire. The name of the successful essayist will be announced at the public meeting.

#### ANNUAL DINNER

As already intimated, the Annual Dinner of the Association will be held in the Music Hall, George Street, on Thursday, July 21st. The hour of the dinner will be 7.15 p.m. prompt. It is desirable that early application be made for tickets, the price of which has been fixed at 15s., exclusive of wine. Such applications should be made to the local general secretary, Dr Feigus Hewat, 14, Chester Street.

Dinner tickets will be available for members of the Association up to 4 p.m. on Wednesday, July 20th, and will be obtainable at the reception room on presentation of the member's card. A plan of the tables will be on view at the reception room.

If seats are available, members may obtain tickets for ladies or other guests, after 4 p.m. on Wednesday, July 20th.

#### REDUCED RAILWAY FARES TO EDINBURGH

The usual concession to members of the British Medical Association in regard to railway fares will apply to the Annual Meeting in Edinburgh this summer. The railway companies in Great Britain (except the Metropolitan, Metropolitan District, and London Electric Railway Companies) have agreed to issue passenger tickets to Edinburgh, available from July 13th to 25th, at the ordinary single fare and one-third for the double journey, with a minimum adult fare of 1s. A printed voucher filled in by the applicant and signed by the Financial Secretary of the Association, must be given up at the booking office when the ticket is bought. These vouchers will be obtainable in due course from the Finance Department, British Medical Association, Tavistock Square, W.C.1. The cheap fare concession will, in addition to applying from stations in Great Britain, also operate from the Irish ports by railway-owned steamers, and by the boats of the Belfast Steamship, British and Irish Steam Packet, and the City of Cork Steam Packet Companies, and of Messrs Burns and Laird, Ltd.

#### HOTEL ACCOMMODATION

The Hotels and Lodgings Committee has practically completed its arrangements for coping with the large numbers who are expected to visit Edinburgh in July. In order to secure the accommodation which is believed to be

necessary, the Committee has definitely engaged all the available rooms in the city, and will allocate these to applicants in rotation. The Scottish Medical Society (Dr Dwyer) has undertaken to do this work for the Committee, and applications for rooms should be sent to him at 6, Drumsheugh Gardens. A form for the purpose has been prepared for the convenience of members; it was printed in the advertisement pages on June 4th (p. 18). The accommodation is grouped in three classes—namely:

1 Hotels, whose tariff for bed and breakfast ranges between 8s. 6d. and 14s. The number who can be accommodated in these is comparatively limited.

2 Private hotels and boarding houses, at prices from 5s. 6d. to 8s. 6d. for bed and breakfast. Of these there is a large number, all of them comfortable.

3 Hostels where the tariff is 8s. for bed and breakfast. Not many of these are available, but those that are can be recommended.

It will facilitate other arrangements if members who intend to be present at the Annual Meeting will notify their intention whether they have already secured rooms or not. Early application for rooms is earnestly desired.

#### GOLF COMPETITIONS

##### *The Ulster and Childs Cups*

The Ulster and Childs Cups will be played for on Thursday, July 21st, at Muirfield, commencing at 9.30 a.m.

Both cups will be played for during the same round. The Ulster Cup is open to all members of the Association, the maximum handicap allowed being 18, the Childs Cup is open to all members of the Association who have a handicap of 10 or over, 18 again being the maximum allowed. Play in both cases is against bogey. If the Ulster Cup is won by any competitor with a handicap of 10 or over the Childs Cup will be presented to the player (with a handicap of 10 or over) with the next lowest score.

Conditions of play are as follows:

1 One round of eighteen holes to be played on Thursday, July 21st, at Muirfield. In the event of a tie the last nine holes to decide.

2 Competitors are not permitted to put in previous play on the course on the day of the competition.

3 Intending competitors are required to furnish with their entry a certificate signed by their club secretary stating (a) their lowest handicap, (b) the bogey score of their own course, and (c) the length of their course.

4 Entries to be made at the Reception Room, Waverley Park & Hall, before 6 p.m. on Wednesday, July 20th.

5 Competitors may choose their own partners, although partners will be arranged for by the committee on notice being given at the time of entry.

6 Play to commence at 9.30 a.m., no cards to be issued after 3.30 p.m.

##### *Treasurer's Cup Competition*

The final stage of this competition will be played on Friday, July 22nd, at Gullane No. 1, commencing at 2 p.m. The handicap allowed for the final stage will be the lowest handicap of the competitor as at July 22nd. Competitors may choose their own partners. In the event of a tie the last nine holes to decide.

##### *Notts Ladies' Challenge Cup Competition*

This competition will be held on the morning of July 20th at Gullane. The rules governing it are as follows:

The competition to be played under the Ladies' Golf Union Handicap Rules (metal round eighteen holes) during the Annual Meeting. The winner to hold the cup for twelve months. In the event of a tie the last nine holes to decide. Entrance fee 2s., to be paid to the secretary of the Local Ladies' Sports Committee.

The competition will be open to the following: Lady members, wives of members, and daughters of members. Other relatives accompanying members to the meeting may be allowed to compete at the discretion of the Local Ladies' Sports Committee.

Each competitor to give their full name, address, and J.G.U. No. to the secretary of the competition, and to pay the entrance fee to the secretary, of the Ladies' Sports Committee, Mrs. Mercer, 3, Rothesay Place, Edinburgh.

#### GARAGE ACCOMMODATION

Garage accommodation for at least 1,125 cars will be provided; applications should be made to Dr J. R. Dwyer, 6, Drumsheugh Gardens, Edinburgh.



praise will be made at Scott's View on Bemeiside Hill. The road next turns round Bemeiside House, presented by the nation to Earl Haig as a tribute to his services during the war. A halt will be made at Dryburgh Abbey, the seat of the monastic cell of St. Modan from the sixth century, and the burial place of Sir Walter Scott. Crossing the Tweed at St. Boswells, the route now follows the south bank of the river, past the ruins of the old border fortress of Roxburgh. Floors Castle lies on the left—we will hope glistening in the sunshine. Passing through Kelso, the way leads to the north and back to Floors Castle, where the party will be entertained at tea by His Grace the Duke of Roxburgh. The road back to Edinburgh passes over Southa. From the top a view over a wide expanse is obtained. The Lothians lie at our feet. Just across the Firth is the "Kingdom of Fife," with Stirling further to the west. Beyond lie the Ochil Hills, and in the distance are the peaks of the Grampian Mountains. The road we travel has been tried by the feet of many generations. It gave passage to Scottish hosts on their way south and to invading English armies. Descending towards Edinburgh, we pass Southa Aisle, an ancient hospitium, Crichton Castle, and after passing through Dalkeith with its palace we see the ruins of Mary Queen of Scots's residence at Craigmillar Castle. The town above so shortly described embraces over 120 of the best miles in Scotland. It is full of associations with Scott, Stevenson, Andrew Lang, and Crockett, and tradition and story of the Roman occupation, of the perpetual wars along the Border, of the Covenanters, and of monastic life in the abbeys along the Tweed will be constantly recalled by the various features of the beautiful and romantic scenery amid which the excursionists will travel.

#### EXCURSION TO FIFE AND ST ANDREWS.

On Saturday, July 23rd, a party limited to 100 will leave the Waverley Station by special train at 9.22 a.m. and proceed by way of the Forth Bridge, passing the Hawes Inn mentioned in *The Antiquary* and Stevenson's *Kidnapped*. The naval base of Rosyth will be seen on the left. After emerging from a tunnel, St. Margaret's Hope—where "St. Margaret" landed in Scotland—will come into view. Leaving behind Kirkcaldy, with its associations with Adam Smith, the party will arrive at Ladybank, be met by chaperones, and proceed to Falkland Palace. This building has associations with Scottish history from the days of King Robert the Bruce to Charles II, and was the scene of the alleged murder of the young Duke of Perth by his uncle Albany (see *The Fair Maid of Perth*). Here James the Fifth died and Mary was a frequent visitor, fleeing from the exhortations of John Knox. The party will leave Falkland Palace at 11.30 and, by the kind invitation of Mr. and Mrs. Leslie Melville, will visit Melville House, which was built by the first Earl of Melville in 1692. Here are pictures of Mary Queen of Scots, Clara House, Gustavus Adolphus, and an interesting exhibition of letters by most of the Stewart kings. The party will next proceed by the old Royal Road which was followed by the kings of Scotland in passing to and from St. Andrew. Half-way lies Cupar, the county town. Here are the ruins of the castle in which Macbeth murdered Duncan, and from which Wallace drove the English, and here Sir David Lindsay's plays were acted. At Pittscottie the route follows the track of the murderers of Archbishop Shrap over Angus Mun, where he was killed. At St. Andrews lunch will be provided by the courtesy of the Free Burgh. The Cathedral, Castle, and University Buildings will then be visited, after which tea will be provided at the Sir James Mackenzie Chemical Institute by the courtesy of Dr. Martland Ramsay (the Director) and Mrs. Martland Ramsay. The special train will leave St. Andrews at 5.10 p.m., arriving at the Waverley Station, Edinburgh, at 7 p.m. Price of ticket inclusive of rail, motor, and entrance fees, 12s. 6d.

#### IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The annual lunch of the above Association will be held at 1 o'clock sharp, on Wednesday, July 20th, at Messrs. Ferguson and Forsters, 129, Princes Street, Edinburgh. Tickets, 4s. each (exclusive of wines), may be obtained from

the honorary secretary of the Province, Dr. Falkland L. Carr, 67, King's Road, Harrogate. Members of the Association are asked to bear in mind that Wednesday, July 20th, is the date allotted to the Easter Centenary celebrations, and there will be many appointments in the afternoon, so that punctual attendance at the luncheon is essential.

## British Medical Association

### CURRENT NOTES

#### Edinburgh Meeting Travelling Facilities

MEMBERS of the Association who propose to travel to Edinburgh for the Annual Meeting by train are reminded that vouchers may be obtained from the General Secretary which will permit them to travel by rail at the ordinary single fare and one-third for the double journey, with a minimum adult fare of one shilling. The return fares from London to Edinburgh will thus be

	1st Class	3rd Class
Ordinary Return Fare	16s/1	9s/
Tourist Tickets	14s/9	5s/
Voucher Tickets	10s/11	5s/4
Supplementary Charge for Pullman Car	12/-	7/-

The principal trains leaving London for Edinburgh are as follows:

London and North Eastern Railway		London, Midland, and Scottish Railway	
King's Cross	Edinburgh (Waverley)	Euston	Edinburgh (Princes St.)
Depart	Arrive	Depart	Arrive
NR 9.50 a.m.	6.5 p.m.	R 10.0 a.m.	6.15 p.m.
R 10.0 "	6.15 "	R 10.35 "	9.23 "
P 11.20 "	7.35 "	R 1.30 p.m.	10.0 "
R 11.50 "	8.55 "	LS 11.5 "	7.50 a.m.
R 1.15 p.m.	9.40 "	DS 11.5 "	8.0 "
YS 7.40 "	3.50 a.m.	LS 11.45 "	12.28 p.m.
S 10.35 "	7.30 "		

✓ Tuesdays and Wednesdays excepted

D Saturdays only

✓ Saturdays excepted

P Pullman car train

R Refrigerated car

S First class sleeping car

#### Treasurer's Cup Golf Competition

The following additional names of winners of the first (or Division) stage of the Treasurer's Cup golf competition have been received:

Guildford—Dr. L. B. Hartley  
Wimborne—Dr. R. C. Thomas  
South Staffs—Mr. S. W. Misen Jones

## Association Notices.

### CHANGES OF AREAS

THE following changes have been made by the Council, and take effect as from the date of publication of this notice.

#### Exeter and Plymouth Divisions

That the municipal borough and rural district of Launceston be transferred from the Exeter to the Plymouth Division.

#### Bournemouth and Southampton Divisions

That the municipal borough of Lymington, and that portion of the rural district of Lymington containing the civil parishes of Milford, Hordle, and Milton, be transferred from the Southampton Division of the Southern Branch to the Bournemouth Division of the Dorset and West Hants Branch.

### TABLE OF DATES

July 15 Fri	Annual Representative Meeting	Edinburgh 10 a.m.
	Nominations for election of 12 members of Council by	
		must be received (at V.R.A.)
		2 p.m.
July 16 Sat	Address	
July 18 Mon	Council (Edinburgh)	
	4 P.M. (Edinburgh)	
July 19 Tues	1 P.M. Annual General Meeting	Edinburgh President's
	Address	
July 20 Wed	Council (Edinburgh)	Conference of Honorary Secretaries
	(Edinburgh)	
	Meetings of Sections etc.	Edinburgh
July 21 Thurs	Meetings of Sections etc.	Edinburgh
July 22 Fri	Meetings of Sections etc.	Edinburgh

ALFRED COX, Medical Secretary

### Meetings of Branches and Divisions

Where the wife and herfordshire branch Hereford Divis on  
-A meeting of the Hereford Division will be held at 20 East  
St. Hereford on Monday July 11th at 5.15 p.m. Members  
are asked to bring the Settlements of April 23rd and 30th and  
June 20th Agenda Report of social meeting unemployment po  
-graduate leavers in institutions to representative committee.

L. FERRIS SCOTT, Secretary

A discussion on this problem in general practice was opened by Dr. E. A. B. who also made the following remarks on the letters which had appeared recently in the British Medical Journal referred to the need of care in the use of a particular drug to the formation of habit to the detriment of the frequent use of chloroform.



etc., and to the opinions of specialists regarding drug addicts and the value of suggestion exercise, and careful diet. In the subsequent debate DIS HUGGINS, BAILEY, TURNER, ROSE, ASHBY, COVENTON, KEVISH, L W REYNOLDS, and the CHAIRMAN took part. It was evident that the discussion was a very useful one to the general practitioner, and the CHAIRMAN voiced the feeling of the meeting by proposing a hearty vote of thanks to Dr Brasher, which was carried unanimously with acclamation. Tea was served during the discussion.

#### STAFFORDSHIRE BRANCH

The annual general meeting of the Staffordshire Branch was held at the Stork Hotel, Walsall, on June 23rd. The retiring president, Dr W C ALLARDICE, introduced the president-elect, Dr J A M CLARK, who thereupon took the chair. The report and financial statement of the Branch was read and approved. Dr G H SOWRY (Newcastle) was elected president-elect, and Dr Adam WHITE (Newcastle) and Mr Reginald ALEOCK (Hanley) were re-elected honorary secretary and treasurer respectively. The president, Dr J A M CLARK, read a paper on co-ordination and unification in the public health service.

#### SUFFOLK BRANCH

The annual meeting of the Suffolk Branch was held at the Fehr Hotel, Felixstowe, on July 2nd. There were over forty members present. Dr H H BROWN, OBE (Ipswich), was elected president, Dr Mullock (Southwold) president-elect, and Dr Giuseppe was re-elected honorary secretary and treasurer.

Dr BROWN gave his presidential address on infection and trauma and intravenous therapy. Mr R STANLEY LEWIS, MI Meech E, gave an address on the philosophy of useless.

Seventy members and their wives were entertained to lunch by Dr and Mrs Brown at the Fehr Hotel, and over eighty members and their wives were entertained to tea at Trevoe by Dr and Mrs Giuseppe.

#### WEST SOMERSET BRANCH

The annual meeting of the West Somerset Branch was held at Chard on June 24th when the new president, Dr E N JUPP, took the chair. Dr F J GOMEZ was elected honorary secretary and treasurer. The Branch Council was appointed to act also as the Ethical Committee of the Branch. Various questions of local interest, and also the Supplementary Report of Council, were considered. Some discussion took place regarding the new proposal for dealing with insured ophthalmic cases, and the meeting instructed Dr Macdonald to oppose at the Representative Meeting the recommendation of Council with regard to provision of ophthalmic benefit through clinics. Before the meeting the members had lunch at the George Hotel, Chard, and after the meeting they were entertained to tea by Dr and Mrs Jupp at their residence. A tennis party and excursions had been arranged, but owing to the inclemency of the weather these had to be abandoned.

## National Insurance.

### PERIODICAL MEDICAL EXAMINATIONS

#### DEPUTATION TO THE MINISTER OF HEALTH

THE RIGHT HON. NEVILLE CHAMBERLAIN, M.P., Minister of Health, received, on June 28th, a deputation from the People's League of Health (introduced by Viscount Burnham), which submitted the following resolutions:

1. In the opinion of this meeting the establishment of periodical medical and dental examinations of all persons insured under the national insurance laws is urgently called for, as an economic proposition having regard to the return so to be obtained in health and productive efficiency. Every such insured person, when accepted as a patient on a doctor's panel, shall be by that doctor medically examined and the result of that examination placed on record. Preliminary examination should apply also to dental examination when that additional benefit is included and available under the national insurance laws.

2. In view of the fact that there are over 1,643,700 unemployed persons excluding minors at the present time in our country, this meeting is of the opinion that the People's League of Health should urge the Government as it did in May, 1922, to consider: (a) the effect of unemployment and the dole (unemployment insurance benefit) on the health and habit of the nation, both from the psychological and physiological aspects; (b) the necessity for the adoption of an alternative system by the Government in dealing with unemployment, by which the millions now being spent in unemployment insurance benefit shall be directed into a channel of productivity; (c) The establishment of an Unemployment Committee composed of the best brains of the country including medical and other scientists, to deal with unemployment, its cause, treatment, and prevention.

3. That the People's League of Health endorses the Government's action in regard to the new regulations governing food preservatives as set out in Statutory Rules and Orders, 1925, No 775, paragraph 69755, dated August 4th, 1925. That the League's campaign for safeguarding the people's food from adulteration and impurities has helped in no small way to bring about this victory. That in order to meet these new regulations and to prevent the waste and possible shortage of perishable foods during the hot months of the year, this meeting is of opinion that the

proper means of transport for such food and the establishment of adequate cold storage in this country should occupy the immediate attention of railway companies and local authorities.

4. That the above resolutions shall be placed before the Government at the earliest possible moment.

Various speakers addressed the Minister on the advisability, from the point of view of improvement of the people's health, of compulsory examination upon entering national insurance, with repetition at such intervals as might be deemed desirable so that an accurate record might be kept. By this means the earliest symptoms of disease could be detected, and people could be advised as to change of occupation or proper treatment. Every opportunity should be taken of such periodical examinations to educate the people and to give them hints regarding their health.

Professor P S LEEHAN spoke of the enormous saving of life and money consequent on the earliest possible detection of incipient disease. As the result of examination, it had been found that 80 per cent of the children in Glasgow were in need of dental treatment. Of 4,500 children examined in Glasgow only 12 were found to have sound teeth. Even in the better class university population in America there were 91 per cent requiring dental treatment. In cancer, by early consultation and treatment, the number of cases requiring immediate attention had been reduced by 50 per cent, and the proportion of malignant tumours by a similar amount. In Framingham (Massachusetts) periodical examination had been carried on in an industrial centre, with the result that they had reduced the prevalence of tuberculosis by 55 per cent in ten years.

Dr WILLIAM HUNTER, representing the Royal College of Physicians, said that since he had emphasized the importance of eliminating the small septic foci there had been a marvellous improvement in the condition of the teeth, the ears, the nose, and the throat of the people. Consequently he had pleasure in supporting the request of the deputation for periodical medical and dental examination.

Dr PORTS said that a great proportion of mental disease was due to abnormal physical conditions and disturbances which had existed for years unrecognized by the patient. In this country at present more beds were occupied by mental patients than by those suffering from physical disease. By removing various physical illnesses and disabilities the number of cases of insanity had been tremendously reduced, and in many instances cures had been effected by periodical medical and dental examination.

Mr R LINDSAY, representing the British Dental Association, endorsed the programme as set forth by the deputation from the People's League of Health. A great deal was being done at the present time under the additional benefits in connexion with national insurance, but they wanted money to do more. In reality it was an economic proposition, as it saved an enormous amount of after disease, which involved expense.

Mr E LAMING EVANS said many operations could be avoided if the detection of early symptoms of certain diseases were possible.

Dr C S MIERS referred to the taking of electrocardiographs, which provided an early diagnosis in heart trouble, and enabled employers to transfer men from arduous to less arduous labour. In one case he had pointed out that their diagnosis was far ahead of their treatment, and an employer had replied that it gave him a chance of saving men by transferring them to other occupations in heart disease, lung disease, and tuberculosis.

Dr R J LIFWELLYN spoke on the advantage of early diagnosis of heart disease, which was so prevalent in this country.

Dr E E FREMANTLE, M.P., remarked that the question, from a House of Commons point of view, of any proposal such as this, the carrying out of which would involve a very great expenditure, must necessarily be the economic one. It seemed to him that the examination on entrance to employment provided a sufficient precedent for enlarging the field of inquiry.

Viscount BURNHAM asked for the establishment of a special departmental committee to explore the means by which such periodical examinations could best be carried out, as a preliminary inquiry to the carrying out of such an important step towards the improvement of the public health. The deputation did not propose to deal with the second resolution in view

CROYDON COUNTY BOROUGH—Assistant Medical Officer of Health and  
District School Medical Officer. Salary £600 per annum.

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras in the County of London

# SUPPLEMENT

# TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY JULY 16TH 1927

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### Meetings of Branches and Divisions

#### YORKSHIRE BRANCH LEEDS DIVISION

*Welcome to Medical Graduates*

A special meeting of the Leeds Division on July 1st held in the Library of the Medical School took the form of a conversation one to one with the medical student about to graduate.

Mr M. A. Abrams the successful candidate for the British Medical Association prize in the Durham Leeds and Sheffield Group was presented with the parchment certificate the money (£100) had already been handed over to him.

Dr A. HAWKARD J.P. Alderman of the City of Leeds in addressing the meeting gave reminiscences of the Leeds School of Medicine when he started his medical studies in 1899. He said that the school was then much smaller and different the student were a bit rough in manner what in for enjoyment and found it easier to learn and to take no prizes. He mentioned several of the teachers then in quite a humble position who subsequently became eminent. The surgeon of that date as a rule took private practice operated in a tweed suit and rarely touched the abdominal bands using the betterment of medical practice Dr Hawkward pointed out that the Midwives Act had diminished largely the drift of the profession. In club work the remuneration of the medical profession was very inadequate but since the Insurance Acts had been in operation they had been fairly decent and the prosperity of the profession had been much enhanced. Dr Hawkward related in what way the British Medical Association had in the interests of the profession greatly modified the original Insurance Bill and continued on the watch to protect the profession in the matter of insurance and in all other things relevant. It was therefore necessary that the Association should be strong and that position could be fully realized only with the whole profession on had joined its rank. At present the British Medical Association was recognized by the Government department as the only body that could authoritatively speak for the medical profession. Young medical men starting in life should look themselves. Is it to be work or pleasure. Most would decide for work last time could not be recovered. He would suggest that medical men for their own benefit and for that of everyone else should take more interest in public affairs and judging from his own experience he thought no medical man would regret participation in public work and in doing this duty and sticking loyally to his colleagues.

Dr WELSH in proposing a vote of thanks to Dr Hawkward for his address spoke from long experience of the good work that the British Medical Association had done and had in hand for the medical profession and of the great necessity and advantage of being a member of the Association.

A copy of the *Handbook for Recently Qualified Medical Practitioners* was presented to the graduates.

#### BIRMINGHAM BRANCH BROM GROVE DIVISION

The annual meeting of the Brom Grove Division was held at the Smallwood Hospital, Redditch on July 7th. The following officers were elected:

President: Dr E. D. Smith. Vice-President: Dr H. E. C. Dier. Secretary: Dr H. Warburton. Librarian: Dr H. Warburton.

On assuming the chair Dr PROTHMER DUFFY spoke warmly of the work done for the Division by its retiring chairman Dr HAWKIN and proposed a hearty vote of thanks which was carried.

unanimously. A vote of thanks was accorded to the House Committee of the Hospital for the use of the board room. At the close of the annual meeting a general meeting of the Division was held. The resolutions to be submitted to the Annual Representative Meeting were considered. With regard to Section 118 of Annual Report of Council it was considered that the wording of this paragraph was a little vague and the representative was instructed to vote for the recommendation provided that the words "for other administration on whatever the anaesthetic were meant to include the prolonged administration of nitrous oxide." With regard to paragraph (A) of this section of the meeting was of opinion that a fee of 10s. 6d. should be paid regardless of the number of patients dealt with on one occasion.

A discussion ensued on the programme of the Division for the year. The chairman and secretary were instructed to arrange for a course of lectures to be given to the Division during the early part of the month. The secretary was instructed to write to Dr Collier asking for a formal resolution with regard to anti-natal work in the Division.

#### SOUTH WALES AND MONTGOMERIE BRANCH SOUTH WEST WALES DIVISION

The annual meeting of the South West Wales Division was held at the Ivy Bush Hotel, Carmarthen on July 2nd. It was presided over by a luncheon given to the officers and executives by the retiring chairman Sir John Lynn Thomas K.B.E. (C.B. CMG F.P.C.). The work of the Division in its efforts for medical charities was considered highly satisfactory and the honorary secretary was asked to convey the thanks of the Division to Dr T. P. Davies the charity steward.

At the general meeting in the unavoidable absence of the chairman elect Dr D. H. Pennant D.S.O. the retiring Chairman remained in the chair. Dr Pennant was elected chairman and Dr A. H. D. Smith M.C. was re-elected honorary secretary for the year 1927-28.

The honorary secretary was instructed to write to headquarters a list of future year's condensed agenda for the Annual Representative Meeting could be sent to Divisions one month before the date of the Annual Representative Meeting. The representative was asked to pay special attention to the motions at the Annual Representative Meeting re certification of mental cases and methods of safeguarding practitioners in certifying cases. He was instructed to support the British Medical Association motion on appeal tribunals for panel practitioners against his findings of the Ministry of Health. There was a strong feeling at the meeting that the attendance at meetings particularly those at which lectures were given by prominent members of the profession was no satisfactory and the honorary secretary was asked to circulate the Division and ask the members to be more active in their attendances. The difficulty is of course the wideness of the Division which covers three counties.

#### SOUTH WESTERN BRANCH

The eightieth annual meeting of the South Western Branch was held on June 22nd in the Library of the Royal Devon and Exeter Hospital when the president Dr P. H. Wages was in the chair. There was a fairly large attendance.

The annual report of the Branch Council for the year 1926-27 and the annual financial statement for 1926 were presented by the Branch Secretary. The report and financial statement were adopted. It being the turn of the Barnstaple Division to choose the president elect it was with great pleasure that he meeting heard that Dr J. P. Harper O.B.E. had been nominated for the position. On the motion of the Chairman Mr P. D. Warburton was unanimously re-elected Branch honorary secretary and treasurer. Dr P. H. Wages then resigned his chair and introduced Colonel Ransom P.J. as the president-elect who was greeted with acclamation. Colonel Ransom replied conveying his sense of the honour paid him by the Branch and proposed a hearty vote of thanks to the retiring president.

for his services in the interests of the Branch during his year of office and further proposed a resolution that he be created a vice-president of the Branch. The motions were carried by acclamation, and Dr WAGNER thanked the meeting.

Colonel PICKARD delivered his inaugural address on 'Atheroma of the arterial arteries—a comparison between the brain and the eye.' This extremely interesting work was based very largely on the president's own observations. He showed many interesting charts of the field of vision, and pointed out the frequency with which it was possible to draw conclusions as to the condition of the general circulatory apparatus from the observations made by the ophthalmoscope. The address impressed the audience considerably. The paper was illustrated by means of the epidiroscope. A hearty vote of thanks to the president for his address closed the meeting.

In the evening the annual dinner of the Branch was held. The attendance was small but a very enjoyable evening was spent. Ladies as well as medical and non medical guests were present.

#### SUFFOLK BRANCH WEST SUFFOLK DIVISION

A MEETING of the West Suffolk Division was held at the West Suffolk General Hospital, Bury St Edmunds, on June 28th, when Dr GRACE GRIFFITH was in the chair.

Arising out of the minutes, the SECRETARY reported that in regard to the Coroners Act he had been in communication with the coroners for the county and the borough, and that the latter had agreed that 10/- 6d should be paid for a report by a doctor which enabled a coroner to dispense with an inquest, and also that a mileage fee of 3d a mile each way would be paid to doctors in the county attending inquests in the borough. The coroners for the county had not yet been able to find out whether the county council would be prepared to make a similar payment. In regard to registration of maternity homes the county medical officer of health had been communicated with, and had stated that no action had been taken by the county council at present, but that if the matter became a live question he would bear in mind the request of the Division.

The Annual Report of Council was discussed. Dr BARWELL introduced the sections dealing with preliminary, finance, organization and BRITISH MEDICAL JOURNAL. He drew attention to the fact that the Annual Meetings of the Association would be held as follows: 1928 Cardiff, 1929 Manchester, 1930, Winnipeg. In regard to the establishment of a locum bureau, the Division approved the action of the Council, and instructed the representative to oppose the motion criticizing the Council's action which was to be moved by Gateshead. Dr Barwell gave a very good summary of the financial position of the Association, which was generally considered to be satisfactory. The formation of groups in the Association was considered, and the representative was instructed to vote in favour of the recommendation of Council on this heading (SUPPLEMENT, April 23rd, p. 140). Dr Barwell also explained in detail the decisions of Council in regard to local conferences, the organization of the profession in South Africa and the present financial position of the BRITISH MEDICAL JOURNAL.

Dr HINELL, in dealing with the paragraphs on science, medical ethics, medico-political and parliamentary elections, drew attention to the fact that library books may now be retained for twenty-eight days instead of fourteen, as had previously been the case. The position as regards pathologists was discussed at some length, and the representative was instructed to support the resolutions of Council on page 145 of SUPPLEMENT of April 23rd. He was also instructed to vote in favour of the recommendation in regard to professional disputes (SUPPLEMENT June 25th, p. 252). Under the heading of science the proposed scheme for collective investigation was considered and approved, and the representative was instructed to vote in favour of the recommendation of Council appearing on page 252 of SUPPLEMENT of June 25th.

A considerable discussion took place about the coroners law and the new arrangements for death certification. The representative was instructed to vote in favour of the recommendation of Council on page 147 of SUPPLEMENT of April 23rd with regard to practitioners engaged in municipal maternity hospitals, and also the recommendations on page 148 with regard to anaesthetics. The position of medical officers of public schools was considered, and all the recommendations of Council appearing on page 150 were approved. In regard to parliamentary elections, after some discussion it was decided to support the recommendations of Council appearing on page 254 of SUPPLEMENT of June 25th.

Dr GRACE GRIFFITH introduced the sections dealing with public health and Poor Law, Poor Law reform and national health insurance. The question of public education in health matters was discussed at some length, and it was decided finally to instruct the representative to use his own discretion in regard to the recommendation of Council (SUPPLEMENT, June 25th, p. 255). It was felt that the Division was not sufficiently convinced of the benefit to the public of the whole of the programme suggested to pledge itself at this stage to the Council's recommendation. The representative was instructed to vote in favour of the recommendation that health lectures by medical men should be paid for (SUPPLEMENT, April 23rd p. 151). The information given by the Council under the heading of ophthalmic benefit was carefully considered, and the representative was instructed to vote against the recommendation of Council appearing on page 256 of SUPPLEMENT of June 25th as it was felt that the position at present was very chaotic and that it would be unwise for the Association to pledge itself to the support of an arrangement for treatment at clinics. The Division was of opinion that the matter requires further consideration before any decision is made.

Dr SHAW introduced the paragraphs dealing with hospital, naval and military, medical benevolence, and Wales, Ireland and the Overseas Branches. The recommendation on page 155 of SUPPLEMENT of April 23rd in regard to payment of visiting staff was approved, and the representative instructed to vote in favour of it, although it was felt that no action would probably need to be taken on this matter locally at present. The recommendation of Council regarding the treatment of early mental disease (April 23rd, p. 155), was left to the discretion of the representative. The appendix in connection with contributory schemes (SUPPLEMENT, April 30th, p. 184) was considered and approved in principle.

#### ULSTER BRANCH NORTH EAST DIVISION

A MEETING of the North East Division of the Ulster Branch was held in Coleraine on June 6th, when Dr H. S. MORRISON, M.P., was in the chair. It was the largest meeting the Division has ever held. Dr A. F. HUNT of the New Forest Clinic was to have addressed the meeting, but owing to the illness of his daughter he could not be present. Dr R. MARSHALL, visiting physician, Ulster Hospital for Children, Belfast, deputized and read a paper on the prevention and treatment of rheumatic heart disease in children based on his experience at the Ulster Hospital for Children and Women, Belfast. He discussed the importance of minor manifestations of rheumatism, particularly "growing pains," slight inactivity, undue fatigue, loss of weight and twitching of the face and limbs, the value of electro-cardiography and radiography as a guide to diagnosis and prognosis, statistical evidence as to the effects of tonsillectomy in rheumatic cases, and urged the prolonged administration of sodium salicylates in moderate doses, even in the apparently quiescent period. In conclusion he emphasized the need for a vigorous campaign against rheumatism, the provision of recovery hospitals for city children, of supervised education and vocational training, and suggested that Northern Ireland is a suitable area for the closer study of the disease by a period of compulsory notification.

It was unanimously resolved that the name of the Division be "The North East Division, Ulster Branch."

### Association Notices.

#### TABLE OF DATES

July 15, Fri	Annual Representative Meeting Edinburgh 10 a.m.
	Nominations for election of 12 members of Council by grouped Representatives must be received (at 1 P.M., Edinburgh) by this date 2 p.m.
July 16 Sat.	A.R.M. (Edinburgh)
July 18 Mon.	Council (Edinburgh).
	A.R.M. (Edinburgh)
July 19 Tues.	A.R.M. Annual General Meeting, Edinburgh President's Address
July 20, Wed	Council (Edinburgh) Conference of Honorary Secretaries (Edinburgh)
	Meetings of Sections etc Edinburgh
July 21 Thurs	Meetings of Sections etc, Edinburgh
July 22, Fri	Meetings of Sections, etc., Edinburgh
	ALFRED COX, Medical Secretary.

#### BRANCH AND DIVISION MEETINGS TO BE HELD

METROPOLITAN COUNTIES BRANCH HAMPSHIRE DIVISION.—A meeting of the Hampshire Division will be held at Hampshire General Hospital on Thursday, July 14th, at 8.30 p.m. to discuss the Supplementary Report of Council (BRITISH MEDICAL JOURNAL SUPPLEMENT, June 25th, 1927) and to give instructions to the representatives at the Annual Representative Meeting. Members are requested to bring the above mentioned SUPPLEMENT to the meeting. Coffee.

### National Insurance.

#### EXTENSION OF MEDICAL BENEFITS TO INSURED PERSONS (IRISH FREE STATE)

The committee appointed to report on the position of national health insurance and medical services in the Free State has issued its final report. It consisted of nine members, seven of whom signed the majority report, but two of whom signed with reservations. A minority report is signed by two members of the committee who differ from all the essential recommendations of the report or the majority, especially with regard to the provision of medical benefits for uninsured persons. The following is a summary of the main recommendations in the majority report.

#### National Health Insurance

- The termination as from December 31st, 1927 of the National Health Insurance (Prolongation of Insurance) Act 1921.
- The extension of medical benefit to insured persons with an increase of 2d in the existing weekly contribution rates to be borne equally by the employer and the employee.
- The diversion to medical benefit of the monies set free from insurance funds consequent on the abolition of insurance com-



mittees and the transfer to local authorities of responsibility for the treatment of insured persons suffering from tuberculosis.

(2) The payment by the State of compensation to local authorities in view of the additional burden placed on their funds by the transfer to them of responsibility for the treatment of insured persons suffering from tuberculosis.

(3) The provision of four whole time district medical officers on a permanent basis in connexion with the national health insurance scheme.

#### Poor Law Medical Services

(1) The extension of the dispensary nursing service especially in the 3 areas on the western board which are not already covered.

(2) The provision by the State of substantial aid towards the cost of erecting, remodeling and reconstructing central dispensaries as and where required.

(3) The remission or refundment (in whole or in part according to the circumstances) of taxes incident to motor usage in the case of doctor, nurses and midwives engaged in the public service in rural areas.

(4) The extension of the Education (Provision of Meals) (Ireland) Act 1917 to rural districts.

(5) The provision of financial assistance for the construction, modernization and equipment of county and district hospitals and institutions.

(6) The establishment of a national (dispensary and hospital) medical service.

(7) The recompense by the State of one-half of the salaries of the county medical officers of health.

(8) The setting up of a standing council to advise and assist the Minister of Local Government on health matters.

(9) The appointment of a small committee of scientific experts to devise a scheme of medical research suitable for the Irish Free State.

These recommendations are not signed by Mr. J. J. McIlhenny, Assistant Secretary to the Ministry of Finance, and Mr. J. Hurson of the Local Government Department.

Dr. E. F. Stephenson, Chief Medical Officer to the Department of Local Government and Public Health, in a separate memorandum, defines his opposition to the extension of medical benefits for insured persons mainly on the grounds that they are receiving for the most part, medical treatment under the Medical Charities Acts.

Dr. R. J. Rowlett, whilst signing the majority report states in a memorandum that he agrees with his colleagues in all except their decision not to recommend the immediate establishment of a State medical service.

In proposing the solution that they regard as ideal, he says, my colleagues seem to have lost sight of the general principle to which they commit themselves in the closing words of their report—namely that the health of the people is a prime consideration and that economy secured at the expense of the people's health is prodigal waste of a national asset. The almost unique position held by the Irish Free State as regards population makes the danger of subordinating health to pecuniary considerations greater here than in other countries. The Irish Free State is losing its population at a more rapid rate than any country in the world except one.

Emigration does more than deprive the country of a certain number of citizens. It takes away probably the 3 who are the most energetic and healthiest of the people. For equal figures of emigration, therefore, is a more serious loss to the country than death. With a population gradually dwindling long in strength even more than in number, it is necessary to take every possible step to protect the health of those who remain. The failure to take proper measures for the preservation of health in the case of the nation as a whole, or the individual often cost more in actual expenditure than if such measures had been taken. The demand for an efficient health service stands however on higher grounds than can be expressed in pounds, shillings and pence. As the health of a man is his most important asset, so the health of a nation is its most important asset, and the care of health is one of the first duties of Government. Dr. Rowlett concludes by recommending that steps should be taken at once to establish a comprehensive scheme of medical services such scheme to apply both to insured persons and to those who have a claim to treatment under existing legislation.

#### COVENTRY LOCAL MEDICAL AND PANEL COMMITTEE

The report of the Coventry Local Medical and Panel Committee for the year ended May 31st 1927 has lately been issued.

Discussing prospective legislation it says that the prospect of any fulfilment this or next year of the major recommendations of the Royal Commission on National Health Insurance is now doubtful. It is possible however that a bill may be introduced late in the autumn session standardizing ophthalmic and dental benefits which are at present in a most unsatisfactory condition. The Panel Committee has circulated local practitioners recommending that in the statement which is required to be given free on request to a member of a society providing ophthalmic benefit consultation with an ophthalmic surgeon should be prescribed. It does not follow however that the society will act upon such recommendation as under the majority of current schemes they can send their member direct to an optician and merely make a payment towards the cost of glaze.

Negotiations respecting the capitation fee will be in progress towards the end of the year and the Panel Committee, consider

ing, it highly important that the Insurance Acts Committee of the British Medical Association (the officially recognized negotiating body) shall have available the true facts regarding practice expenses and work done has twice circularized local practitioners asking for any available practice statistics, to be furnished to headquarters. The Panel Committee considers that unity and efficient organization is more necessary than ever and it proposes continuing the annual contribution of approximately a halfpenny capitation fee towards the National Insurance Defence Trust.

Under the heading economy in prescribing the report says: The Government have concluded arrangements with the chemists whereunder the whole of the Drug Fund—now a definitely fixed sum of about 2s. 10d. per insured person—shall be administered by the Retail Pharmacists' Union on the chemists' behalf. This means that in the event of the year's bills at current tariff rates being in excess of the fund individual chemists' accounts will be discounted. If through the attainment of economies the Drug Fund is in excess of the bills the chemists will take an extra margin of profit. Whether this arrangement is ethically desirable or even practically expedient will doubtless afford ground for a good deal of debate and the attitude of our leaders is not yet known. But the liability of chemists to have their bills discounted will undoubtedly evoke an economy campaign in the near future. It therefore behoves every practitioner to give fullest consideration to every reasonable step which may tend towards saving unnecessary expenses in prescribing in order that a firm stand may be taken on the principle of the doctor having a free hand in the ordering of any drug or medicine which he considers essential in his patient's interest.

In regard to certification and excessive sickness claims the report notes that the past year has undoubtedly taken an altogether unlooked for toll of the approved societies' funds. While the Panel Committee finds no evidence that laxity in the granting of certificates exists in Coventry it emphasizes the point that the national insurance chemist, based on the actual fact as a criterion for the issue of a certificate is inability for work, and no considerations of difficulty in obtaining suitable work ought to enter into the question seeing that appropriate public provision is made under the Unemployment Insurance Act and Poor Law for cases which are clearly outside the scope of the National Health Insurance Act.

## Correspondence

### Periodical Medical Examination

SIR—Panel practitioners will unite in thanking the Minister of Health for giving a definite quietus to the deputation of the People's League of Health which waited on him on June 28th.

As reported in the SUPPLEMENT of July 9th (p. 18) this group of theorists wants us to examine periodically all persons on our lists. I am certain that no one of the deputation is a panel practitioner and I question if the members ever visualized what such an examination to be of any value must entail. One speaker laid stress on the detection of hidden foci of infection in the teeth, another on the early recognition of heart disease. Assuming that the wish of the League became an order should we be entitled to order an x-ray of the first, or an electrocardiographic examination of the second? Who would pay for them? Without such provision any examination is going to be of little value.

On the other hand, if the order empowered us to have the aids it is safe to assume that there would be a heavy penalty for us if we did not use them and equally the chance of being called to account if we used them too frequently.

I apologize for trespassing on your space to point out these, to us obvious objections. The Minister killed the suggestion. Let us hope the People's League of Health will have the good sense to bury it and forget it—I am, etc.,

Stokeport July 11th

F. J. KITT

## Naval and Military Appointments

### ROYAL NAVAL MEDICAL SERVICE.

Surgeon Vice Admiral Sir Joseph Chamberlain, KCB, CMG, is placed on the retired list.

Surgeon Rear Admiral A. Cassell, CB, OBE, to be Surgeon Vice-Admiral.

Surgeon Rear Admiral A. R. H. Skeel, placed on the retired list.

Surgeon Captain H. C. White, M.D., to be Surgeon Rear Admiral.

Surgeon Captains L. M. Morris, OBE, and A. McCloy, to the Victoria for R.N. Hospital, Ha-lar.

Surgeon Commander P. D. Ramsay, placed on the retired list with the rank of Surgeon Captain.

Surgeon Commanders R. Buddle, OBE, to the Tamar for R.N. Base, Singapore; temporary L. Warren, OBE, to the Columbine for R.N. Hospital, Queen's Ferry.

Surgeon Lieutenant J. G. Holmes, to the Cicala, temporary.

Messrs B. J. Scott, T. S. O. Lorne, J. J. Keen, and P. W. Gayford have entered as Surgeon Lieutenants for short service and been appointed to the Victoria additional for R.N. Hospital, Ha-lar for course of instruction.

The following have entered as Acting Surgeon Lieutenants and been



# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY JULY 23<sup>rd</sup> 1927

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## British Medical Association: Annual Meeting, Edinburgh, 1927.

### ANNUAL REPRESENTATIVE MEETING

*Friday July 15th*

THE Annual Representative Meeting opened in the McEwan Hall of Edinburgh University on Friday, July 15th, 1927 at 10 a.m. Dr H. B. BRACKENBURY (Chairman of the Representative Body) was in the chair supported by Mr R. C. Hogarth (President), Sir Robert Bolam (Chairman of Council), Mr Bishop Harman (Treasurer), Dr Alfred Cox (Medical Secretary) and Mr Ferris-Scott (Financial Secretary), with other officials of the Association.

#### THE ROYAL PATRON

AS SOON as the meeting was fully constituted the CHAIRMAN moved

That the British Medical Association meeting in Edinburgh at the time His Majesty the King is in residence begs to present its humble and loyal duty to the Patron of the Association and to Her Majesty the Queen.

This was carried with cheers, the representatives standing.

#### PRELIMINARY BUSINESS

The returns of representatives and of acting deputy representatives were received and entered on the minutes, and some apologies for absence were read.

The standing orders as adopted at Nottingham 1926 were readopted subject to one amendment moved by the CHAIRMAN, relating to Standing Order 46 governing the election by the meeting of eight members of Council (as distinct from the twelve members elected by grouped representatives). He proposed that the standing order be amended to provide that only

those who had for at least three years been members of the Representative Body—namely appointed representatives, deputy representatives acting and members of Council—should be eligible for election among the eight members of Council. He had consulted the Organization Committee with regard to this change, which involved a slight restriction of the field of nomination. As the matter stood at present there was perhaps too great a likelihood of somebody who had not himself done a great deal of work for the Association being nominated and getting elected more or less by accident. He now brought forward this slight restriction of the field of nomination. On the one hand, it was desired to reserve the eight seats on the Council for those who had done some conspicuous service to the Representative Body; on the other, it was quite possible that the Council might during the year have done something to which the Representative Body had a very strong objection, and the Representative Body might wish to mark that objection by turning out the eight elected representatives and putting in eight others. Therefore he proposed the condition that instead of the three years membership of the Association the necessity of three years membership of the Representative Body—not necessarily the three previous years, should be imposed.

The amended standing order was agreed to.

A new standing order was also agreed to whereby new members of the Representative Body would be formally introduced to their fellow members at the first meeting attended by them and invited to sign the permanent record book of representatives.

The CHAIRMAN in moving this standing order said it was thought that there should be a permanent record of those who had been members of the Council or representatives. Two

books had been prepared, and it was desired that every member of the Representative Body should sign and new members add their signatures from year to year, and be presented by the Chairman to the Representative Meeting.

It was further agreed that the section of the agenda concerning the building extensions at the London headquarters should be considered as first business after lunch, the representatives to meet for that purpose in the Anatomical Theatre in order that a demonstration of the proposed extensions might be given. The section under "Oversers Branches," it was also agreed, should be taken as the first business on Monday afternoon, the remainder of the agenda to be taken in the order in which it was printed.

It was also agreed that the engagement by representatives of seats for the meeting previous to its commencement should be limited to a seat for the representative himself and for the other representatives, if any, of his constituency, this to be operative at the present Representative Meeting.

#### CIVIC WELCOME

At this stage in the proceedings a civic welcome to Edinburgh was given by the Right Hon. the Lord Provost (Mr. Alexander Stevenson), who was accompanied by the Town Clerk (Mr. Andrew Grierison), and the City Chamberlain (Mr. Robert Raton), and by Sir Robert Philip, President-Elect of the Association.

The CHAIRMAN, on behalf of the Representative Meeting, expressed great pleasure at the visit of the Lord Provost.

The LORD PROVOST said Mr. CHAIRMAN, ladies, and gentlemen, on behalf of the corporation and citizens of Edinburgh I desire to accord to you all a very hearty welcome to our city. I may add that I sincerely appreciate the privilege of greeting the members of this distinguished Association. I understand that on three previous occasions you have met in Edinburgh, namely, in 1858, in 1875, and in 1898. After a period of twenty-nine years we are delighted to welcome you back again, not only because you belong to a profession associated with the preservation of the health and well-being of the nation, but because we in Edinburgh have a special regard for, and pride in, the medical school of our city, whose sons have borne the torch of learning to all parts of the world and whose teachers have, by their skill and knowledge, won for themselves the highest places in the ranks of your profession. The meeting has a special significance from the fact that it coincides with the centenary of the birth of Lord Lister, whose epoch-making work was largely accomplished in our city, and to whose genius the world owes so much. In conclusion I would only say that I trust that your meeting will be as successful as former meetings, and that your deliberations will be distinguished by the same breadth of vision and of wisdom as that for which they have been noted in the past.

The CHAIRMAN, on behalf of the members of the meeting, assumed the Lord Provost of their gratitude to him for his kindly words of welcome. His lordship had reminded them of the historic importance and value and influence of the Medical Faculty of the University. They were universally recognized throughout the profession. If it was true that no assembly could altogether escape the subtle influences of its environment, the deliberations of the members would be characterized not only by that breadth of vision and wisdom to which his lordship had made reference, but by all the dignity and the learning and the substantial solidity which Edinburgh exemplified.

The LORD PROVOST briefly acknowledged the remarks of the Chairman, and then withdrew.

#### ANNUAL REPORT OF COUNCIL

##### The Presidency

The Annual and Supplementary Reports of Council having been received, the CHAIRMAN OF COUNCIL moved, and it was unanimously agreed, with applause, that Sir Ewen Macleay, M.D., F.R.C.P., F.R.S.E., be elected President of the Association, 1928-29.

Sir Ewen Macleay, who was cordially received, expressed his grateful thanks to the Council for their nomination. It was a great honour to be made President-Elect. He rather prided himself upon the fact that it was the first time a previous Chairman of the Representative Body had been accorded this high honour. Perhaps it was appro-

priate that this should happen in the case of a representative from Wales, because the Representative Body was born in Wales. It came to light in the Principality in 1903 at the Swansea meeting. (Applause.)

It was also agreed unanimously that Dr. F. G. Thomson, Past President, be elected a Vice-President of the Association in recognition of his presidential services in 1925-26. Dr. Thomson, who was received with applause, briefly expressed his appreciation of the honour done him.

#### Annual Meetings, 1929 and 1930

The recommendation of Council that the Annual Meeting in 1929 be held in Manchester was agreed to.

The further recommendation of Council that the Annual Meeting for 1930 be held in Winnipeg, Canada, was next moved. Sir ROBERT BOLAM explained that the reason for this unusual motion before its time was that if they went to Canada in 1930 the arrangements would take considerably longer to carry through than those for a meeting in Great Britain. Therefore the Representative Body was asked to implement this resolution at an earlier date than usual. The recommendation was agreed to.

#### The Jenner Museum

On the remainder of the Annual and Supplementary Reports under "Preliminary," Sir ROBERT BOLAM said that the Council had been reluctantly compelled to refuse the kind offer of Lord Berkeley in regard to the proposition to set up a Jenner museum in the house at Berkeley, but a member of the Council who held high civic rank in the locality, were taking steps to see if the local profession could not manage what as a Council they had not felt it advisable to undertake. He believed that something might yet be done.

#### Locum Bureau

Sir ROBERT BOLAM went on to speak of what had been done in the matter of locum bureau. The Council had not been able to do exactly what the Representative Body had instructed in 1925. It seemed to the Council that the question of dealing with locumtenents was only a very small part of the service which practitioners required in this direction, and the least remunerative, and, consequently, for Headquarters, the most expensive work came in. The remunerative portion of medical agency work came in with regard to transfer and partnerships. There were certain difficulties in the way of the Association qua Association trading, and it seemed best to the Council that they should seek out one of the reputable agencies and see if they could not, by obtaining an interest therein, exercise an influence on policy which would mean that the agency work would be conducted on lines approved by the profession generally and as a business transaction. They were able to acquire on favourable terms a holding in one of the best known agencies, and one having a very high reputation for integrity and business-like dealing—the Scholastic, Clinical, and Medical Association, Ltd.—and that body had arranged that one half of the directorate should be nominated by the British Medical Association. The members who had been placed on the directorate in consequence of this arrangement were the Treasurer (Mr. Bishop Hamman), the Chairman of the Organization Committee (Dr. Morton Mackenzie), Sir Humphry Rolleston, a very old and valued friend of the Association, and himself (Sir Robert Bolam). The negotiations having only just been completed, they had not yet been able to explore the possibilities of associating the bureau in various parts of the country for local purposes. Preliminary investigations had been made, particularly in the North, and he hoped that by the next Representative Meeting they would have done all that the Representative Body had permitted them to do. By resolution the Council had permitted the name "British Medical Association Bureau" during the time of such association, and henceforth it would be conducted on business lines, give good services, and expect the usual return. The Association held a very large block of shares and would participate in dividends. There were difficulties in accomplishing the work in any other way.

Dr R. Loazes (Gateshead) had a motion on the agenda declaring that the Council had exceeded its instructions with regard to the formation of bureaux for the provision of documents and assistants under the auspices of the Association, these instructions were in the form of resolutions of the Annual Representative Meeting 1925. He said these instructions specifically directed the Council to set up an organization that would be within and under the control of the British Medical Association. Action had been taken and arrangements forwarded about which the Representative Body had not given to the Council specific instructions. Gateshead recognized the insuperable difficulties and that the Council had done in the circumstances the only effective thing possible, but there was an underlying basic principle or power involved that was dear to the Representative Body. The Council was composed of the Association's intelligentsia and very seldom erred but the Representative Body ought to have had a further say in the matter. Before the Association launched out into competitive business before choosing the particular body with which they allied themselves and before they gave to it the name of the British Medical Association and purchased shares the Representative Body should have been consulted and had a voice in so grave and important a matter.

The Chairman of Council said the amendment was something that all members of the Council would deplore more than anything else—a vote of censure by the parliament of the Association. Dr Forbes had acknowledged that the instructions of the Association could not have been fulfilled in any other way in the circumstances, and therefore he felt the Council was in great degree exonerated. Intramural work particularly finance, was committed to the Council during the year and the elected members of the Finance Committee were the watchdogs of the Representative Body. Such transactions as had just been completed could not be canvassed in broad daylight or wait for the Representative Meeting nor were they of such magnitude as to demand a Special Representative Meeting. Having explained the circumstances and Gateshead having registered their protest as good constitutionalists, he hoped the amendment would not be passed.

Dr PETER MACDONALD asked Gateshead to withdraw the amendment.

Dr FORBES asked leave to withdraw his amendment and this was done.

#### *The Solicitor to the Association*

SIR ROBERT BOLAM moved as a recommendation of Council that Mr W. E. Hempson, in recognition of his faithful and devoted service as Solicitor to the Association for twenty-seven years be elected an honorary member of the Association. It gave him much pleasure he said to ask members to voice their recognition of one who for long years had been of great value to the Association in his professional capacity and a friend at the Annual Meetings (Applause). They would all echo the wish that Mr Hempson's striking figure would be seen at meetings for many years and that his complexion would never grow less tanned or his voice less jovial (Applause).

The Chairman said that he was very glad indeed to associate himself with what the Chairman of Council had said and he was sure that he was speaking on behalf of the whole of the Representative Body in saying that they agreed very emphatically with it.

The motion was carried with much enthusiasm by the members rising.

Mr HEMPSON said that every opinion he had given to the Association during the time that it had been his privilege to act for it had been a considered one. It was so in the present case. There was a fineness of time for all things and there was a time of stress for everyone. The latter must be anticipated the former must be acted upon. He had not officially been the Solicitor of the Association for twenty-seven years. It was his privilege to act for it uniformly but at the same time professionally for three years before that. He had therefore completed thirty years' service in the Association. That fact led him to the conclusion that a man was wise to go while he was still wanted and not to reach the time when his departure was

desired. This induced the decision which he had conveyed to the Chairman of Council—namely, that on receiving notice of his reappointment this year he should not ask for his reappointment to be considered next year. He therefore was in the most delicate position that until April or next year he would be a member of the Association and at the same time its Solicitor a dual position which, he thought no man in his profession had been privileged to enjoy. The Representative Body was partly his creation. He was brought in to represent the Association and the Constitution Committee was sitting. There were two brains in that connection that were indelibly fixed on his mind. One was that of Edmund Owen, and the other was that of Sir Victor Horsley. He acknowledged that the Association had done him a high honour not only by electing him but by, perhaps, the highest honour that could be conferred upon him because not only was it conferred upon the recommendation of the Council but it came from the whole body of members in confirmation of that recommendation and as voicing the opinions the views and the wishes of the British Medical Association throughout the world (Applause). Mr Hempson was too much affected to conclude what he had intended to say.

#### ASSOCIATION FINANCE

Mr BRISTOL HUTTON (Treasurer) moved, on behalf of the Council approval of the portion of the Annual Report under Finance. He said he was pleased to be able to present an exceptionally good balance sheet. The expenditure had been heavy but the receipts had been heavy also, which was due to the large increase of the membership this year. This explained an apparent mistake which had been made in the preceding year. A surplus of £4,000 had then been budgeted for. The actual surplus was £8,660. That surplus had been utilized in a fashion which would be seen indicated in the balance sheet. Under Reserve Fund it would be seen that there was carried forward Investments of £23,000 and there had been added to that in the year 1926 £6,000. Of that amount some £3,600 was replacement of investments realized in the preceding year for the payment of the new premises and a sum had been added making £6,000 which was the re-creation of and increase of the reserve fund. In addition a sinking fund had been formed for the redemption of the leasehold premises. The new House stood in the Association's property for 200 years at the end of which time the Association's rights and privileges in it would cease. It was therefore right that the Association should look forward to the future, so that succeeding generations should not be put into a worse position than the present when it had inherited the time and which had been handed over to it. A sum of £1,000 had therefore been allocated for the formation of a sinking fund which sum would be added to year by year so that at a certain date the value of the premises would be returned to the Association in cash.

Referring to the list of investments (the Treasurer continued) the first of those was a new investment a sum of £5,220 which was the purchase price of the shares in the Medical Agency. The actual sum paid was £4,050. The balance was shown on the liability side of £1,170 which would be paid at some future date when the present holder of those shares desired that they should be sold to the Association or actually. The Association held the transfer, but had not paid for the shares. The Association was in possession of all the rights which appertained to those shares with the exception of having paid for them and of the dividend which accrued.

Dealing with Abstract B the members would notice that the item charges on bank loan, which in 1925 was £2,783 had been reduced in 1926 to £657 and at the present time he was pleased to announce that there was no bank loan at all in fact there was a small deposit.

After briefly reviewing the items contained in Abstracts C and D and turning to Abstract G the Treasurer said that last year had been a year of great financial difficulty in all matters of finance and of trading owing to the disturbances caused by the general strike, but despite that formidable attack upon the maintenance of the Journal (which for the first time in its existence had had to suspend publication), there had been a bumper



year in all items except one—sundry sales of the *JOURNAL* had declined by £500. Actually that was a favourable sign, because the greater the increase in the membership of the Association the smaller must be the number of non-members desiring to purchase the *JOURNAL*.

Referring to the deficits mentioned in Abstracts "H" and "I," he pointed out that the expenditure in connexion with those periodicals—*Archives of Disease in Childhood* and *Journal of Neurology and Psychopathology*—was, in a way, expenditure on scientific work, and therefore would never bring in any revenue. It was not anticipated that it should. If it did, it would immediately be expended on improving the quality of these journals. With regard to the Office Staff Superannuation Fund, the balance sheet showed that the total sum now invested in this fund was £16,830, but he was pleased to say that on December 31st the value of the investments stood at £17,622.

That, said the Treasurer in conclusion, completed the account of his stewardship during last year. There were points to which the attention of the members should be directed, such as the budget for the present year. They would see a statement of the estimated receipts, which it was expected would be slightly in excess of those of last year, and the estimated expenditure, which would be about the same as last year. A surplus was estimated for of £2,280, and if again a large increase in membership was experienced that surplus would be greater.

Dr F C MURLEY (Kensington), after congratulating the Treasurer on the very excellent return he had submitted, said no reference had been made to the Exhibition Fund of the Association. The Association ran an exhibition at the Annual Meetings, which must cost money, and in connexion with which there must either be a favourable or an unfavourable balance resulting. He had made inquiries in various quarters and had found that on some occasions there had been a deficit and on other occasions a surplus. He thought it desirable that information should be given with regard to the point.

Mr BISHOP HARRIS, in reply, said that the Annual Exhibition sprang up as a local effort, and although now managed from the head office, technically it did not count as Association work. The exhibition accounts had never been amalgamated with the general finances of the Association. The exhibition was an expensive business, and the Financial Secretary spent a great deal of time and went to considerable trouble in securing a really first-class exhibition, for it was an integral part of the Annual Meeting. The accounts were audited every year, and a statement of the balance was laid before the Finance Committee, but the accounts were not incorporated in the general accounts.

The Annual Report under "Finance" was approved.

## ORGANIZATION

### Formation of Groups in the Association

Dr MORTON MACKENZIE (Chairman of Organization Committee) moved as a recommendation of Council the approval of the scheme for the formation of groups in the Association, as set out in Appendix III to Annual Report (SUPPLEMENT, April 23rd, p. 158), and an instruction to the Council to prepare the necessary amendments to the Articles and By-laws for submission to the next Annual Representative Meeting, immediate provisional effect to be given to the scheme if need arose. He said that while they might be justly proud of the system of organization in the British Medical Association, and believed that it was probably the best model for an organization of its kind, they were only too glad to make it better if they could find a way. In this sense, the groups they thought they had found a way. The constitution of the Association was founded on a large number of local bodies of practitioners, each of which sent one of its members up to the Representative Meeting with resolutions and instructions. The Council, which was largely elected territorially, was charged with carrying out the policy and decisions of the Representative Body, and reported to the Representative Body each year what it had done or proposed to do. This system had

worked quite well in the past, but with increasing membership and the inclusion of a larger percentage of men engaged in various types of medicine, small groups or members occupied in the whole- or part-time practice of some special branch had fancied or had actually found that they could not make their voices heard under the present constitution. Sometimes in the past this had been met by special arrangements, originally with regard to the Services, and recently with regard to the medical officers of health. These special arrangements, however, took some time to organize and to go through the necessary legal procedure. The delay had led to these special members forming organizations of their own, outside the British Medical Association. It was desired now to provide some machinery whereby isolated members in certain classes might feel that they had some means of expressing their views without forming an outside association. The urgency of this question had been demonstrated during the last few months by the pathologists and spa practitioners respectively forming bodies of their own. Dr Mackenzie then went in detail through the scheme for group formation as explained in Appendix III of the Annual Report. The cardinal point of the scheme was that these groups should not be formed unless it was proved that the ordinary machinery of the Association could not be used. It was discussed in the Council whether the petitioners must be required to reach a certain number, but it was eventually decided that the proper criterion was, not the number of members who wished to form a group, but whether they could or could not make their voice heard through the routine organization. It was desired that these men should feel themselves to be a definite part of the Association, and therefore they should have the annual meeting of their group at the same time as the Annual Meeting of the Association. It was proposed to attach each group to its appropriate Standing Committee, the majority of them would probably come under the Medico-Political Committee. He believed that the scheme would work out to the advantage of the Association. Any threat of interference with the existing constitution had been carefully watched and admirably guarded against.

Dr C H MILBURN (Harrigate) moved to substitute for paragraph 4 of the scheme, which provided that a list of those qualified to be members of a group should be made in the central office, a provision that, subject to the approval of the Council, the executive committee of the group should define the qualification for membership. He said that it was felt that the executive committee of every group would be in a better position to realize what should be the qualification of membership than could any committee of the Association. No two groups were like there was a very large number of different branches of the profession, all having different qualifications.

Dr MORTON MACKENZIE said Dr Milburn had not met the difficulty he had mentioned. There must be a list of the group before an executive committee could be formed. The office must make the first list, and would afterwards take the definition of the group committee, subject to the approval of the Council.

Dr MILBURN was willing to modify his amendment so that it became a reference to the Council for consideration, and Dr Mackenzie accepted it in this form, the meeting agreeing.

Dr MILBURN also desired to amend paragraph 5 of the scheme, which provides that the annual meeting of the group shall be held at the time and place of the Annual Meeting of the Association, he wanted to insert the words "or, if found inconvenient, at such other time as the executive committee of the group may think desirable." He said that at the time of year when the Annual Meeting of the Association was being held the spa practitioners were at their busiest. They suggested they should, if possible, be allowed to hold their annual meeting at the same time as the Balneological Section of the Royal Society of Medicine or the International Society of Medical Hydrology. These societies met in October, November, January, and March in London. Provincial meetings were held in April or May. What he had said applied to Buxton and York, and in a less degree to Bath. The Council would always have the power of veto.

Dr MACKENZIE agreed to the insertion of the words proposed with the addition of 'with the approval of the Council' and the meeting concurred.

Dr MINDELTON MARTIN (Gloucestershire) opposed the formation of groups within the Association. There were disadvantages in distinguishing the branches or the profession to which members of the British Medical Association belonged. There were representative bodies for the different branches, and there were not sufficient grounds for the formation of groups. The Chairman of the Organization Committee gave the impression that applications for the formation of groups would be so numerous that they would have to be referred to the Council, not to the Representative Body. If that were so, the proposal would seem to be more unfortunate than was thought. The question of forming groups should have been left to the Representative Body. (Applause)

Dr R G GOLDOY (Bath) said he was asked by the Spa Practitioners' Association to support the motion of the Chairman of the Organization Committee. When it was first suggested to form a Spa Practitioners' Association it was thought by many that the work of looking after their interests in view of the proposed extension of insurance benefits to cover rheumatic diseases and their treatment in the spas could be done by the British Medical Association, but it was found that the only spas directly represented in the Representative Body as Divisions were Bath and Harrogate, and they were by no means the only spas involved. Members practising in many of the smaller spas formed so small a minority that they could hardly hope to make their views heard even in their local Divisions, or to have their case taken up at the Representative Meeting. Still, many of them felt the proposal should not be proceeded with unless it was somehow under the aegis of the British Medical Association, they felt that the Association was the right body to deal with any possible medico-political contingencies that might arise. It was only after the officials of the Spa Federation approached the British Medical Association and had an interview with Sir Robert Bolam and Dr Cox—who assured them that the Association was receptive to the formation of a Spa Practitioners' Association and hoped eventually to bring it under its wing—that they agreed to its formation. It was impossible for them to get their views heard through the ordinary machinery of the British Medical Association and he therefore suggested that the formation of groups for special purposes should be considered favourably. It rested with the Council to determine what the special purposes were, they might be permanent or temporary, but it was very desirable the Association should keep within its own hands all medico-political questions that were exercising the profession.

Mr PRINCE HARMAN, speaking not as an officer of the Association but as a member of a group, supported the motion. Three or four years ago it was found to be exceedingly difficult to collect the views of ophthalmic surgeons on certain matters, and one or two of the members in the Metropolitan Counties area asked him how they could collect their views and express them through the Association. In effort to get together a small committee in the Branch not succeeding, some young ophthalmic surgeons banded themselves together and made an association outside the British Medical Association to bring pressure to bear upon the authorities upon a medico-political affair which the Association should be foremost in advancing. That was what happened when existing arrangements were not sufficiently elastic to meet the group needs of the time. Therefore he wholeheartedly commended the proposal before the meeting. Although not a pathologist he had considerable connexion with pathologists and heard from them of the difficulties they met with as ophthalmic surgeons. If the rules and arrangements of the British Medical Association were expanded in the way proposed they would be able to meet difficulties as they arose and it would not in any way interfere with their general organization.

Dr DAVID CROW (Gloucestershire) said that although his Branch had instructed him to vote against the resolution, he felt there ought to be some sort of liaison

between the Association and the new medical bodies that were coming into existence. At all costs the essential unity of the Association should be preserved. It would be rather unfortunate if the new scheme were successful and a large number of groups were formed within the Association, because the various questions that arose should be looked at from the broadest point of view. The new bodies that were coming into existence were not formed for scientific purposes, but for medico-political purposes, and a small group of that kind would not be of much use without the support of the Association. The experience of the Medical Officers of Health Association brought out very clearly that in any difficulties they had they looked to, and depended upon the support of the Association. He did not think it was desirable actually to form groups or to lay down the machinery by which they could be brought into existence. Another objection was that it might lead to a considerable addition to the Association's expenses.

The CHAIRMAN of Council said that his name had been imported into the matter quite in error as agreeing to the formation of a Spa Practitioners' Association. The Treasurer had suggested that a large body of men like ophthalmic surgeons would be eligible, under such a mechanism to form a special group. If members would look at Appendix III Paragraph 2, they would see that it was not suggested that large bodies were the people for whom the mechanism was specially designed. The Council believed that the scheme would meet the needs of people who were scattered and few in number and perhaps only to be found in certain areas. He had a great deal of sympathy with the Gloucestershire resolution. All sections of the profession should take a hand in the Divisional meetings and should not feel that their particular needs were met quite adequately in some special group meetings. He quite saw that there was need in some few cases for the mechanism suggested.

Dr MONTAGUE MACKENZIE said that he was convinced that there was need for some organization of the kind to meet special circumstances which did not arise very often, but arose urgently when they did arise.

Dr MINDELTON MARTIN moved as an amendment that the matter be referred back to the Council.

The amendment was negatived.

The motion was then carried, with the proviso that the amendments which had been proposed on behalf of the Harrogate Branch should be taken into consideration by the Council.

#### Other Organization Matters

Dr MONTAGUE MACKENZIE moved that the remainder of the Annual Report of Council under "Organization" be approved. In doing so he said that he was happy to state that the total membership had increased by the splendid figure of 1800 in the past year. During the last four years it had increased by over 8000 or more than 30 per cent. Of the 1800 new members it was interesting to see that no fewer than 700 came from overseas. The actual number of new members elected was 2,800. Of the 1100 who had been in arrears no fewer than 814 or 73 per cent had been coaxed by the excellent finance department into paying their arrears. There was gratifying evidence of great activity in the Divisions and the Branches more particularly on the scientific side. With regard to last year's resolution which was proposed by the Brighton Division as to the holding locally of conferences with allied societies the Council was quite sympathetic to the proposal but it felt that it would be better to consider each suggestion on its merits rather than draft a general scheme for such conferences. Small conferences might dissipate the energies of the Association, and also its finances and might take away some of the splendour of the great Annual Meeting. If an allied society happened to be holding a meeting in a town, a town perhaps not quite so large as the towns in which the Annual Meetings of the Association were held, the Council thought that there would be every advantage in the local Branch or Division co-operating as far as its ordinary funds allowed and in very special circumstances the Council would be prepared to consider an application for a supplementary grant.

He had a very satisfactory report to make with regard to the overseas Branches. South Africa's new constitution appeared to be working well. The organization had been incorporated under South African law. The Federal Council had applied itself with great energy to the amalgamation of the medical journals in South Africa and to the provision of an Organizing Secretary. The financial help of the Association in London had enabled it to carry out both those objects. He was sure that members in this country could congratulate their South African colleagues on their progress, and especially on the fact that they had found that all they wanted could be achieved as part of the great medical association of the Empire as a whole. Australia went its very efficient way with a very good figure of membership. Queensland had incorporated itself. The Association in this country kept closely in touch with all the overseas Branches. There were now fifty such Branches.

As to the central activities of the Organization Committee, the great event centrally had been the lecture which Sir Berkeley Moynihan gave last autumn on "Cancer and how to fight it." Experience had shown that such a lecture given by a first-class lecturer in the Association's own Hall, with a kind press, was a very great factor in convincing the public that the Association had the common health at heart, and it could not fail to do the Association great good. The ordinary activities of the Association had been carried on as usual. New Divisions had been formed wherever the need had arisen. Very excellent recruiting work had been done among the newly qualified men. He would like to mention specially Dr Farquhar Murray of Newcastle, Dr Matthews of Liverpool, Dr Barnes of Sheffield, and Dr Storey of Belfast. Glasgow had done exceptionally good work. He had watched its recruiting figures with great interest. They had frequently been over 90 per cent, and even 95 per cent. At the May qualification in Glasgow 100 per cent of the men who qualified joined the Association. (Applause.) In that connexion he would like to mention the work of Dr G. A. Allan and Dr J. G. McCutcheon. Lastly, the *Handbook for Recently Qualified Medical Practitioners* had been of increasing use. It was most valuable as showing the pitfalls to be avoided and the lines to be adopted.

Dr F. C. MANTLEY congratulated Dr Morton Mackenzie on the numerous good points in his speech, but wished to draw attention to some unfortunate things that had occurred. He referred to the membership figures. Dr Mackenzie had rightly emphasized the fact that the membership was increasing, but he had not emphasized that the resignations also had increased. Some unfortunate cases of resignation had come before him (the speaker's) notice. One case was that of a gentleman who was lecturer on bacteriology in the provinces. For three years he had paid to the Association a subscription of two guineas. Last year he came to London on a whole-time research job. He had been informed that he was not eligible at the two guineas rate. He naturally protested. His claim was, "I am a whole-time research worker," and he was told, "No, you are not." No inquiries had been made of him personally. Another case, a similar one, had come to him (Dr Mantley's) notice. There were other men who were doing whole-time research work who had received notice that they must pay three guineas. They were not going to pay it, and they were simply going out. It seemed to him that the Organization Committee was going outside its powers when there was in existence a definite by-law which laid it down that whole-time research workers could be members for a subscription of two guineas.

Dr Morton Mackenzie said that as Dr Mantley had not given the names of the gentlemen concerned he could not make a specific answer to those cases, but the procedure was that all such cases came before the Organization Committee, which then deputed him to deal with them, and afterwards to report back what action he had taken. The Organization Committee then approved or disapproved of his action. They were most difficult cases to deal with. The by-law itself was not very clear, but the way in which he had interpreted it (and the way in which he thought the Organization Committee would wish him to interpret it) had been that if a man was, as his life's

work, engaged in research work he should pay the smaller subscription, but that if a man—and there were many such men—was merely taking up a whole-time research job as part of his training and not as a life work, he was not entitled to the reduced subscription. He agreed that the whole question was in a most unsatisfactory position—so unsatisfactory that the Organization Committee was seriously considering whether the by-law should not be abolished altogether, as it was giving so much trouble and causing so much ill feeling among members. The number of resignations was increasing, but not as rapidly as the number of new members. With an increased membership a slightly increased number of resignations must be expected. The resignations remained proportionately about the same each year. The reasons given for resignations were very often self-contradictory. One man writes resigning because he says the Association is doing too much for insurance practitioners, another man resigns because the Association is not doing enough for insurance practitioners and devotes the whole of its energies to non-insurance practitioners. Many of the reasons given for resignations were not in accordance with the facts, and were unfounded. On the whole the number of resignations received did not disturb him.

The motion was adopted.

Dr Morton Mackenzie then moved that the Supplementary Report of the Council under "Organization" be approved. It contained, he said, the names of the retiring secretaries, to whom the Association was extremely grateful. In making his remarks about the work in the Divisions, he had omitted to say how much the Council and the Organization Committee felt gratitude to those officers of the Divisions who carried out the work at the periphery. A great deal of the Association's success depended on the Division secretaries, Division chairmen, and Branch secretaries and Branch chairmen, and he wished to express the Association's gratitude to them for their work.

The report also contained a list of the Divisions which had not yet passed the organization rules. He made a very special and earnest appeal to those Divisions, especially as they were so few in number, to pass the rules at the earliest possible moment.

The motion to adopt the Supplementary Report under this heading was carried.

Dr J. B. MILLER (Lancashire) moved to instruct the Council to take steps to secure that members attending meetings of Council and central committees were paid reasonable out-of-pocket expenses in addition to railway fares. He said his Division clearly recognized that there had been no difficulty in the past in obtaining the services of members of the very best type both on the Council and on the central committees, nor did they anticipate that there was likely to be any difficulty in the future, but it was clear that a member who had to proceed to headquarters and to leave his practice several times a year suffered to a certain extent pecuniarily, the loss possibly being in inverse proportion to the standard of medical ethics prevailing in the district in which he practised. (Laughter.) There were, of course, compensations, the provincial enjoyed a visit to London, he gathered with professional friends from all over the country, he saw new faces, he might possibly even meet with new ideas—(laughter)—and he returned home refreshed and stimulated mentally, if somewhat jaded bodily. The necessary outlay, however, was considerable. It was not proposed to return all expenses, those naturally varied with the ideas of the representative himself. His Division suggested as a basis a scale somewhat on the same lines as the costs allowed to civil servants. The amount varied with the number of hours of business, which seemed to be quite a sound basis for a scale of expenses. No new principle seemed to be involved in the matter. At present what were termed "light refreshments" were allowed at meetings of the Association. If tea be allowed at an afternoon meeting, why not luncheon for a whole day's meeting, and why not bed and breakfast for a meeting involving absence from home for the night? After quoting anomalies of the present system of payment of expenses, Dr Miller argued that the

additional cost involved would not be very great. In any case, his Division felt that the time had now come when the services of the members who so ungrudgingly gave their time to the general body of the Association in attending to committee work at headquarters ought to be recognized at least to the small extent of returning to them their out-of-pocket expenses.

Dr PETER MACDONALD (York) supported the motion, but thought it should not be mandatory on the Council, but rather referred to them for favourable consideration. He believed the time had come for the Council to consider the matter very earnestly. He agreed that probably the Association had not suffered much up to the present—in fact, the Association's work was being extraordinarily well done, but at the moment the Association was restricted in its choice of the people who were going to do its work by the very worst form of restriction possible—namely, the pockets of the people who were chosen, or who were willing to do it. He thought the extra cost would be more than the sum mentioned by Dr Miller, but there was no need for alarm in that respect, in any case the efficiency of the work of the Association was much more important than the added cost.

Dr MILLER accepted the suggestion that the matter should be referred to the Council for their consideration.

The CHAIRMAN said the motion now took the form "That the Council be instructed to consider the taking of such steps as are necessary to secure that members attending meetings of Council" etc.

The TREASURER pointed out that the draftsman of the motion seemed to have forgotten the chief organ of the Association—namely, the Representative Meeting. If the difficulties and hardships of members of Council and of the central committees were considered why should not the equal difficulties and hardships of the representatives attending the Representative Meeting also be considered? The motion could not be left as it was. In all fairness the words "and Representative Meetings" must be added, and when the matter was looked at from that point of view the cost to the Association would be very serious indeed. The cost of travelling and all legitimate expenses at present came to £5 000 or £6 000 a year. If the proposed additional expenses were added it would not mean a 20 per cent addition but more probably a 100 per cent addition. The finances of the Association could not bear that cost. It would mean crippling the work of the Association and doing away with the opportunities of members of working for the good of the profession. The difficulties of the situation had been met in the past by local effort and it was far better that they should continue to be so met than that the funds of the Association should be saddled with a cost which must be applied equally to all, whether they could afford it or not. The Treasurer added however that he had not the slightest objection to the motion going before the Council and being examined as similar motions had been before the Council about six times during the last fifteen years, though he thought the result would be the same as before.

Dr J. B. MILLER in reply said that there was no comparison between a Representative Meeting attended under the happiest conditions of season and surroundings, and a central committee meeting attended, perhaps in a November fog in London.

The motion was a reference to the Council it was carried, and the meeting adjourned for lunch.

### THE ASSOCIATION BUILDING

The building extensions at headquarters in Tavistock Square were considered as the first business after lunch the Representatives meeting for this purpose in the Anatomical Theatre where the proposed extensions could conveniently be demonstrated.

Sir ROBERT BOLAM (Chairman of the Building Committee) made a long statement on the position with regard to the building and his remarks were illustrated by lantern slides of photographs and plans of the present and proposed buildings. He also made a private statement with regard to the financial considerations attending the scheme. At the close he was accorded an ovation by the meeting.

Those who spoke in warm support of the scheme were Dr J. A. Macdonald, Dr W. Douglas, Dr C. H. Milburn, Mr Bishop Harman, Dr H. P. Frederick, Dr Milner Moore, Dr J. Dewart, Sir Llew. Maclean, Dr Christie Murrell (speaking for women who are a little more cautious financially), Mr W. L. Hempson (the new honorary member), and the Chairman (Dr Braclenbury). In response to an invitation by the Chairman to express any doubts or hesitations, Dr Middleton Martin and Dr David Lawson asked some questions, which were answered by Sir Robert Bolam.

At the close the motion that the report of Council under "Building" be approved was carried certainly without dissent, and apparently unanimously, with loud acclamation.

### "BRITISH MEDICAL JOURNAL"

When the Representative Body resumed its public session,

Dr J. A. MACDONALD (Chairman of the Journal Committee) moved approval of the Report of the Council under "British Medical Journal." He said the Journal was maintaining and strengthening its pre-eminent position as the first journal connected with the profession. The literary portion of the Journal maintained its high standard, the articles the special communications from distinguished men the epitome of foreign medical literature, etc. were quite as good as and possibly better than ever. The Association was to be congratulated on having an editorial staff that showed such taste and discrimination and journalistic flair for what was best for such a publication. In the matter of advertisements it continued to progress in the most extraordinary manner. In 1914 the income from advertisements was only about half what it was now though the number of pages of advertisements then was much greater than now. This was largely due to the way in which the business had been handled by Mr Ferris-Scott. The question of advertisements was one of the most difficult with which the Journal Committee had to do. They sought to allow nothing to appear in the advertisement pages that was incompatible with the position held by the Journal in the medical world. They did not guarantee that the matters and preparations advertised in the Journal could be absolutely relied on for all that was said of them but through a process of careful sifting they allowed very few things to appear in the advertisement pages or the Journal for which they could not stand. The greatest care was exercised at every stage and he did not think more could be done to keep the advertisement pages free from anything objectionable. From advertisements the revenue in 1926 was £45 000. It would be seen how great a asset that was to the income of the Association.

Dr L. A. PARRY (Brighton) moved

That whilst recognizing the responsibility for all that appears in the British Medical Journal and its Supplement as defined in Article 33 of the Association the Representative Body is of opinion that these periodicals should be open to communications from any member commenting favourably or otherwise either on the policy of the Association in regard to the medical and allied sciences, or on a communication inserted by a department of the Association.

Dr PARRY emphasized that this was not a personal matter but one of principle. The resolution had the unanimous support of the Brighton Division. The admiration he had for the Journal's editorial staff and committee was lost when he regarded them in their corporate capacity. In the Journal of February 26th appeared a leading article two leaderettes and two reports of meetings on a certain subject. He wrote to the Editor differing from the opinions expressed in those two articles. His letter was refused publication on the one ground that he held different views from those of one committee. He asked the Editor to submit the matter to the Journal Committee and he asked the committee a specific question. They supported the Editor, and did not reply to his question whether it was a principle or practice of the Association to refuse to allow both sides of controversial questions to be discussed in the Journal and if not, why was his letter refused publication? He

had had no answer to that query, though he had received an answer to another question that he did not ask and which did not interest him. The report of the Journal Committee was submitted to the Council, which, without seeing his letters, approved its action. The *JOURNAL* differed from other periodicals, in that it was not a political organ and belonged to the members of the Association. They had a perfect right to express their views on any medical or allied subject discussed in the *JOURNAL*. To allow only one side to appear was a suppression of freedom of thought. The letter of another member of the Brighton Division was refused publication on the ground that discussion of the subject to which it referred was closed. He knew of other similar cases. The medical profession was often wrongly accused of being bigoted and intolerant, but the Journal Committee, supported by the Council, had definitely refused to permit medical matters on which it was legitimate to hold diverse opinions to be discussed in the *JOURNAL*. The only reason he could suggest for this was that the Council wanted it to be thought that on certain subjects the profession was unanimous, when it was far from being so. The principle at stake was whether the Journal Committee, supported by the Council, had the right, having made up their minds on certain subjects, to refuse the 32,000 members of the Association the right of expressing diverse views.

Dr C O HAWTHORNE advised the Representative Meeting to give no countenance to the Brighton proposal. He fully accepted Dr Parry's assurance that he was not animated by personal motives. He had admitted that the principle at stake was whether it would be possible to obtain a capable editor if one of the conditions of his position was that each of the 32,000 members of the Association had a right for any letter he wrote on a matter engaging the attention of the Association to appear in the *JOURNAL*. Article 38 of the Association put upon the Editor responsibility for what appeared in the *JOURNAL*, not, as Brighton's motion implied, upon the Representative Body. Brighton wished to take this responsibility away from the Editor, and to bind him to insert a letter of communication from any one of the 32,000 members. That would produce a condition of chaos, and no capable editor would accept such a position. An editor must be either trusted or dismissed. Responsibility and authority went together. On certain occasions the Editor had done him, as Chairman of the Science Committee, the honour of asking his opinion, and each time it seemed to him—if it were not impertinence to praise the Editor—he had shown anxiety that to him seemed excessive, and on such matters he regarded him as exercising a degree of charity that he would find it difficult to compass. The rank of the *BRITISH MEDICAL JOURNAL* was second to none, and it was evidence of its value that £6,000 was paid for copies by non-members of the Association. Responsibility and authority could not be divorced, and he asked the meeting to vote against the motion.

Dr J A MACDONALD said that there were several inaccuracies in Dr Parry's speech. One of the statements in it was that the idea seemed to be that a man might not criticize the action of one of the committees. The action which had been taken was not the action of one of the committees, it was the action of the Council itself. The Council had given instructions to the Science Committee to carry out a strong propaganda. That was the question discussed at the time by the Journal Committee. Dr Parry had stated that the Journal Committee was the body that refused the insertion of the communication in the *JOURNAL*, but the committee really had nothing to do with it except that it was asked afterwards to express its opinion as to whether it approved or disapproved of the action taken. But, in fact, the only body to which the Editor was responsible was the Council. Every single letter that was refused was considered by the Editor in view of the circumstances existing at the time, and it was the Editor alone who decided whether or not a letter was suitable for insertion in the *JOURNAL* on any particular occasion.

The CHAIRMAN OF COUNCIL did not think that anybody would quarrel with the resolution as it was framed, but he thought that the Representative Body as a whole would

disagree with the interpretation which Dr Parry asked it to accept. The columns of the *JOURNAL* were open not only to members of the Association, but to anybody outside, subject always to the discretion of the Editor. There were only two exceptions to that statement. One was that the *JOURNAL* should publish certain official announcements, regulations, and by-laws, and alterations therein, from time to time. The other was that if the Editor was instructed by the Council to put something into the *JOURNAL* he must do so. With those two exceptions the Editor was free to exercise his ability and his discretion. No important journal could be conducted on other lines. The *JOURNAL* was a medical journal for the medical profession. It held, in open competition, the premier place in Great Britain. It was one of the most important journals in the world. It had climbed that pinnacle largely by the eminence and the discretion of its present Editor (Applause). The Editor had made one mistake, and that was in endeavouring to give any reason why he refused anybody's letter. There was no need for him to give any reason. There was no need for the Journal Committee to be imported into the matter. It was not possible to have an official valued and respected as Sir Dawson Williams was, hampered by being compelled to allow any member of the Association to have anything that he wished inserted. Imagine what would be the size of the weekly issue! Consider the amount of mutual, scientific and controversial, that was omitted every week. The proposition was impossible and intolerable. He could quite imagine that Dr Parry felt that he had views which he thought it would have been well to put before the profession at the particular moment, but he knew Dr Parry well enough to believe that he would see quite clearly that it would be impossible to conduct a scientific journal on lines such as those he proposed to lay down in his interpretation of the resolution. He hoped that, having ventilated the subject, Dr Parry would see that he might gracefully withdraw his resolution.

Dr Parry said that he had been credited with saying many things that he had not said. Dr Hawthorne had suggested that he had laid it down as a principle that any one of the 32,000 members of the Association should have the right to have a letter inserted in the *JOURNAL* if he wished to do so. He had made no such suggestion. The suggestion he had made was that, a controversial subject having been referred to over and over again in the *JOURNAL*, the other side ought to be heard. That was the only principle that he had laid down. Every fair-minded man must see that it was impossible to get the opinion of the profession unless both sides were represented. He had not attacked the *JOURNAL*. He had not said that it was not one of the best and finest journals in the world. He could not withdraw the resolution, and he must ask for it to be put to the vote. He had made no attack on the Editor. He had the greatest respect and admiration for the editorial staff and for the way in which the *JOURNAL* was conducted.

The motion was negatived by an overwhelming majority, only two or three hands being held up in its favour.

#### Reports of Division and Branch Meetings

The CHAIRMAN, on behalf of the Plymouth representative, who was absent, moved that the reports of Division and Branch meetings should be more extensive and in larger type.

Dr MACDONALD said he hoped the motion would not be passed. The question was whether it was better to disturb the balance of the *JOURNAL* by inserting local matter at greater length and more prominently, or to carry on as at present and make matters of general interest the more important part of the *JOURNAL*.

The motion was lost.

#### PROCEEDINGS OF ANNUAL MEETING

Dr J STEVENS (Edinburgh and Leith) desired to instruct the Council to consider the question of publishing the proceedings of the Annual Meeting in one volume as soon as possible after the meeting, and of making, if necessary, extra charge for the publication. His reasons for doing so,



he said were, first that the appearance of the proceedings had led but in the *JOURNAL* which led to considerable delay in their complete publication, secondly, that owing to the long continuance of such publication the work was blocked to a considerable extent for other matter appearing in the *JOURNAL* during that time, and thirdly, that the course he suggested would be of much more value to the members, and would enable them the better to peruse the transactions.

Mr McLEOD ECCLES inquired whether Dr Stevens meant that the proceedings of the Annual Meeting should be published in a separate volume, and that 35,000 copies of that volume should be sent out, one to every member of the Association. Dr STEVENS replied that that would be a point for the Council to consider.

Dr J. A. McDOUGALL pointed out that the proposal had been considered twice before, in 1896 and in 1908, and on both occasions it had been rejected. A plan of the kind had been tried in connexion with the publication of the proceedings of the special scientific and clinical meeting held in 1919, but the result had not been encouraging. That particular volume had cost £395 to produce; it had been published at the price of 2s., and there had been no sale for it. At the present time, owing to the increased price of paper, overhead charges, etc., a similar publication would cost a very large sum, and he did not think many copies would be sold. Moreover, many papers of great value and interest were contributed to the Sections at the Annual Meetings, and their publication was an advantage to the *JOURNAL* and its readers.

The motion was lost.

#### *Illustrations in the Journal*

Dr STEVENS (Edinburgh and Leith) asked the Council to consider the possibility of improving the general quality of the illustrations. He thought it would be well worth the extra expense involved.

Dr McDOUGALL said the matter had been carefully considered by the Journal Committee and by the Council. After briefly explaining the different modes of reproduction and the difficulty of getting good results on ordinary paper by rapid printing on rotary presses from stereotypes, he stated that the *JOURNAL* was now publishing certain special plates which he thought, were highly creditable to the *JOURNAL* and satisfactory to the members. The cost involved in a more extensive publication of art paper supplements was almost prohibitive. Those in charge of the *JOURNAL* would gladly move in the matter if the Finance Committee could be persuaded to give permission for the money to be spent. He drew attention to the excellence of many of the illustrations now appearing in the *JOURNAL*, especially the coloured portrait of Lord Lister which was appearing in the current number. The Council did not require any urging to do its best in the matter, but the governing consideration was the cost.

The resolution was withdrawn.

### MEDICAL ETHICS

#### *Advertisements of Therapeutic Institutions*

Dr A. LINDON (Chairman of the Ethical Committee) moved on behalf of the Council.

That the Representative Body considers it undesirable that there should be inserted in the medical press or in other publications primarily intended for the medical profession any advertisement of a therapeutic institution which includes any laudatory statement of the form of treatment given, or the private address or the consulting rooms or hours of a member of the medical staff, but that there is no objection to the name and qualifications of medical officers of the institution being given.

In doing so, he said it might be well if he told the representatives the reasons which had actuated the Council in putting forward the motion. In 1924 the Representative Body had passed a resolution relating to the advertisements of institutions professing to provide medical advice and treatment, and it had stated that the practice was free from objection and that such advertisements might include the names of the resident and visiting medical officers. It had been found as a matter of experience by the Council that from week to week advertisements of

those institutions had appeared in the *JOURNAL*, which were open to certain objections. They were open to the objection that they contained laudatory statements of the form of treatment given, and the private addresses of the medical officers, the addresses of their consulting rooms and the hours at which they could be consulted—very often in a different part of England from that in which the institution advertised was situated—and the Council had come to the conclusion that it was undesirable that those statements should be allowed in the *JOURNAL*. Therefore, on behalf of the Council, he moved the resolution.

Dr F. RUDOLPH (Council) said that the resolution was one which had caused him considerable anxiety because the *JOURNAL* had for a long period regularly accepted an advertisement which would be forbidden by the resolution as at present worded. That advertisement stated that there was a certain asylum in existence and that the medical superintendent could be seen at his consulting rooms in such and such a place at which he would interview friends and doctors of patients. He did not want to alter the resolution in such a way that a doctor would be able to take advantage of his professional colleagues, but he would like to see it altered in such a way that the asylum to which he had referred would be able to advertise as it had been advertising hitherto. He moved that the latter part of the resolution should read as follows: "advertisement of a therapeutic institution which includes any laudatory statement of the form of treatment given, or information giving the private address or the consulting rooms or hours of a member of the medical staff which is in any way calculated to promote his private interests, but that there is no objection to the name and qualifications of medical officers of the institution being given." Those words would carry out what Dr Lindon had suggested and would allow a very worthy institution which was valued very much to continue as it had been going on, and it would not be said that what it had done was contrary to anyone's professional interests.

The amendment was seconded by Dr J. D. Ewart.

Mr McLEOD ECCLES (Council) could not see that the amendment really covered the question which members were anxious it should cover. In the previous issue of the *JOURNAL* it would be found that there were no fewer than six advertisements all in connexion with mental disease, in which the actual address of the doctor at his consulting room was totally different from the institution in which he was working.

The CHAIRMAN OF COUNCIL thought that Dr Rudolph's proposal would put upon the office work which would be very difficult and responsible. It would put upon the secretariat a duty which the General Medical Council found it very difficult to discharge in somewhat similar cases. He thought that it would be very ill advised to do that. He imagined that some other form of words might be found which would cover an obviously desirable exception such as that which had been mentioned, but he was perfectly certain that the suggested words would not do that. They would only open the door to fresh difficulties.

After some discussion and consultation.

The CHAIRMAN said that Dr Rudolph had asked him to move the amendment in another form. The words would be as follows: "or the address or the consulting rooms or the hours of a member of the consulting staff at which he sees private patients."

Dr J. D. Ewart as seconder stated that he was prepared to second the amendment in its altered form. The meeting gave leave to the mover and seconder to alter the wording of the amendment.

Dr LINDON said that he was willing to accept the amendment as now proposed.

Dr KARWIA (Bombay) objected to the words "but that there is no objection to the name and qualifications of medical officers of the institution being given." In his opinion those words should be omitted. In Bombay the medical men had decided that the very fact that the name and address of the doctors serving in an institution in any capacity were mentioned gave a sort of advertisement to the persons who were so named. It was the duty of every medical man to raise the standard of medical ethics as much as possible, and never to take a retrograde step by publicly

advertising, either directly or indirectly. He hoped that the resolution would be passed as intended, but with the omission of the words to which he was now objecting. If the name and address of any particular man connected with an institution were advertised the men who were not connected with such institutions were placed in a position of disadvantage. Only merit and qualifications should decide the prestige and earnings of a man, not advertisement. If the words against which he was speaking were adopted, the result would be that many so-called institutions would crop up simply to advertise men who needed advertisement.

The CHAIRMAN pointed out that the omission of the phrase would not accomplish the aim of the mover of the amendment, a positive phrase must be inserted—"That it is objectionable that the name and qualifications of medical officers of the institutions should be given."

The amendment having been moved in that form, Dr ROXBOROUGH seconded it and complimented Dr KAPADIA on his excellent speech.

A REPRESENTATIVE asked whether the amendment was in order, it having been the policy of the Association since 1924 that the names of medical officers should be published in the BRITISH MEDICAL JOURNAL. The CHAIRMAN replied that the amendment was in order, because the proposition was that the time-honoured policy should be varied.

The REPRESENTATIVE: But to do that is it not necessary to give two months' notice in the JOURNAL?

The CHAIRMAN: That part of this resolution would not be the policy of the Association in the technical sense, but an expression of opinion by the meeting.

Dr LONDON-DOWN asked if the mover of the resolution wished to preclude publication of particulars concerning medical men attached to institutions who were not in private practice. He did not think the Association should do that. The CHAIRMAN replied that the amendment is altered did that. The meeting had nothing to do with intentions, except in debate, only with words or propositions put before them.

Dr LONDON-DOWN, while admitting the high aim of the amendment, advised caution. It would bring about such a great and unconsidered change in the attitude as to cause consternation. In all ethical questions they had to consider what had been the agreed custom for a long time. In many places the names of medical staffs of public institutions were always regularly published, and that custom was held to be very desirable.

Dr LONDON was not prepared to accept the amendment, heartily endorsing what Dr LONDON-DOWN had said. The resolution applied not only to medical journals, but to other publications primarily intended for the profession. For many years it had been the custom for the institutions in question to be advertised in the *Medical Directory*, with the names and qualifications of the medical officers. That was quite free from any offence and had not led to personal advertisement.

Dr H G L HAYNES (Mid-Essex) asked, as many public hospitals, general and mental, took private patients, how could the names of part of the staff be excluded?

Dr KAPADIA said that a custom of many years' standing was no justification for continuance. He stressed the injustice to practitioners and consultants who were not in connexion with established institutions and had no opportunities to bring their names and qualifications before the public. His amendment would avoid that divisions distinction. In Bombay it had been agreed among medical men that in no circumstances should names and qualifications of doctors be advertised in any shape. If anyone wanted to know who was the conductor or medical man in charge of an institution the proper method was to write to the institution. What was proposed was a retrograde movement from the point of view of higher medical ethics, he wanted to raise the standard.

The amendment was lost and the original resolution carried.

Dr LONDON, in moving the approval of the remainder of the Annual Report under this heading, called attention to the paragraph in the Report of Council to the effect that they considered it unnecessary and undesirable for the

Association to prepare and issue an ethical code in view of the fact that some thirty pages of the *Handbook for Recently Qualified Medical Practitioners* dealt with the subject.

The report was agreed to.

#### Newly Qualified Practitioners and Medical Ethics

Dr C H MILBURN (Harrowgate) moved to instruct the Council to consider any further steps which might be thought necessary for the instruction of senior students or newly qualified practitioners in medical ethics. He referred to the growth of the habit of writing to the lay press, letters on all subjects, whether medical or not. The practice seemed to be common in all classes of the profession, from the newly qualified to the ranks of knights and baronets. Such letters might have beneficial effects, but in many of them reflected the confused mentality of the writers as to the objects, powers, and responsibilities respectively of the British Medical Association and the General Medical Council. That had been very evident in some of the letters he had read from men who in the past had been looked up to in some respects as trusted leaders of the profession. A few years ago an effort was made by the Chairman of Council to restrict the tendency, but that seemed to him to be beginning at the wrong end, and he thought it desirable that senior students or newly qualified men should have the opportunity of being instructed in medical ethics. Without trenching on the powers and responsibilities of the General Medical Council, there was no reason why the Association should not apply in the proper quarters pressure for giving incoming members of the profession thorough instruction in medical ethics, and so do away to a large extent with the necessity for disciplinary action.

Dr J F WALKER (Southend) said the matter was even more important than the proposer of the resolution seemed to think. The non-observance of common ethical principles had far-reaching effects. For instance, the delicate question of succession produced an enormous amount of irritation between colleagues. The unedifying spectacle of quarrels between medical men lowered the profession in the eyes of the public. Dr Walker added that although instruction was now given to students in almost every branch of medicine, yet on this important matter there was no definite attempt whatever to give instruction. The best remedy would be for every batch of newly qualified men to have a talk from a general practitioner of many years' experience. Practically the only thing one was told on the momentous night of qualification was that one's horses could not be taken for fire engines, and one would not have to serve on a jury!

Sir ROBERT BORLASE thought there was no harm in passing the resolution, but he would not like the Representative Body to feel that nothing was being done systematically to inculcate in the medical schools the principles of ethics, both by the example of teachers and also by systematic lectures. The General Medical Council, in its investigation of the curriculum, had had reports from the various teaching institutions, and there seemed every evidence that care was now being taken in this type of instruction, and that the authorities of the schools were aware of the need. Still, there was no harm in asking the Council to be vigilant in order that this type of instruction might rather increase than diminish.

Dr LONDON said that the General Medical Council it off took action as long ago as 1922, when it passed a resolution, which was sent to all the universities and medical schools, stating that instruction should be given in the courses of forensic medicine and public health or otherwise on the duties which devolved upon practitioners in their relations to the State and on the generally recognized rules of medical ethics. That notice had been carried out, he believed, by all the universities and by a large number of the medical schools. At one of the medical schools in London, the lectures on public health gave at least three lectures on medical ethics every term, and the surgeons and physicians also took every opportunity, when going round the wards with the students, to impress upon them the

Importance of the subject. There were all anxious that anything which could be done to improve the instruction in medical ethics should be done.

The motion was carried.

### Professional Disputes

Dr LYDON then moved as a recommendation of Council

That having reviewed the existing machinery of the Association regarding ethical matters the Representative Body is of opinion that no extension of that machinery is at present necessary or desirable.

He said that the Council had been asked by the Council of the Metropolitan Counties Branch to consider the present machinery for dealing with professional disputes and as a result an appendix to the Supplementary Report would be found dealing with the procedure at present followed and certain suggestions for possible developments, but the Council was of the opinion stated in the recommendation. He appealed to the Divisions, twelve in number, which had not yet adopted the ethical rules to do so without further delay because on several occasions it had very seriously prejudiced the interests of the members in those Divisions that the ethical machinery had not been able to function in the areas.

The motion was carried, and the remainder of this portion of the report was approved.

The meeting adjourned at 6.15 p.m.

Saturday July 16th

### THE CHAIRMAN

The chair was taken by Dr C. O. HAWTHORNE (Deputy Chairman) in the absence of Dr Brackenbury through illness. Sir ROBERT BOLAM announced that Dr Brackenbury who had been seized with temporary illness the previous evening was very much better and indeed had wished to resume his work, but he (Sir Robert Bolam) had persuaded him—indeed had ordered him—to remain in bed. Prof. or Willie had seen him and had stated that he might resume the chair on Monday morning.

As Dr Hawthorne in his capacity as Chairman of the Science Committee had to present the Report of the Council under "Science" the meeting elected on the proposition of the CHAIRMAN of COUNCIL Dr WALLACE HENRY to the chair during this part of the proceedings.

### SCIENCE

#### Pathological Institutes

Dr C. O. HAWTHORNE (Chairman of Science Committee) moved as a recommendation of Council

That the Representative Body disapprove of the establishment by trading firms of laboratories as subsidiary enterprises for the purpose of offering pathological examinations and reports on individual cases and advises members of the Association to avoid any association with such enterprises.

He said that this year there was imposed upon the usual report of the Science Committee a new section headed "Pathology". The Council at various times had received complaints from practitioners engaged in practice as private pathologists that their position was unfairly treated in two respects. First, advertisements of organizations were permitted in the medical journals whereas the private personal efforts of individuals were, in accordance with usual professional custom excluded and secondly there were certain commercial activities which came into competition with the reasonable and ethical standards governing the action of private members of the profession. That position was set forth at length in the Annual Report of Council (SEPTUAGINT April 23rd 1927). It was a matter of common knowledge that certain trading firms who had goods to supply to the profession did conduct pathological laboratories which it was not unfair to say were not motivated by a love of science or research, but by commercial and advertising ambitions, and the Council now wished to put it to the Representative Meeting that that was the type of ambition which the British Medical Association should discourage and it came to that conclusion upon two grounds. First, that this was unfair competition with the

private pathologist, and, secondly, if it was admitted to be a legitimate and proper thing for a commercial firm to cultivate a clinical laboratory and to give reports on specimens obtained from individual patients there was no reason why that class of undertaking should not be extended. One could imagine an enterprising firm setting up, as a subdepartment for advertising purposes an x-ray examination scheme and probably at low fees where there would be both unfair competition and, as they thought, undignified competition. Other and more undesirable extensions were conceivable.

This was agreed to without discussion.

### Pathological Reports

Dr HAWTHORNE further moved

That in the opinion of the Representative Body all institutions undertaking pathological examinations and reports should include in any intimation made for the profession the name of the registered medical practitioner in charge of the laboratory and that each report issued from the laboratory should be guaranteed by the personal signature in writing either of the practitioner or of some other registered medical practitioner approved by him.

Dr Hawthorne said the motion emphasized the character and the possibility of clinical pathological reports made in the investigation of individual cases.

The motion was agreed to.

Dr HAWTHORNE next moved

That in the opinion of the Representative Body public health authorities should neither provide for pathological examinations nor furnish pathological reports on individual cases except (1) in cases which directly involve question of public health or (2) where provision is made for such reports by statutory right or (3) when the patient is stated by the practitioner to be in his opinion unable to pay a fee.

Dr Hawthorne said that the motion recognized that there was a legitimate field for municipal or other public laboratories and that their responsibility extended to the investigation of specimens collected from individual patients. Further, the statutory right of individuals to receive pathological reports should not be interfered with. The intention was to guard the private interest of individual practitioners and to protect them against possible abuse also to secure municipal or public authorities from abuse by persons who could pay but tried to avoid payment.

Dr L. A. PARRY (Brighton) moved to leave out the third of these exceptions—namely when the patient is stated by the practitioner to be in his opinion unable to pay a fee. He said that to agree that a public authority should begin investigating pathological conditions was to put it into competition with the private practitioner. Any individual not able to pay for pathological examination could always get it done in hospital.

Dr HAWTHORNE said he would admit the validity of Dr PARRY'S contention if there were accessible private pathologists and hospitals in all parts of the country but notoriously there were not. He did not see how the profession could consistently take up an absolutely restrictive attitude toward examinations made by public authorities. Time was an essential element and the Association should not take up an attitude that implied that public health authorities in no circumstances should give results of examinations collected from private patients.

Dr C. F. S. LEXELL said that if the Science Committee's motion was passed wherever there was a public pathological authority it would be necessary to set up another laboratory in each area because as Dr Hawthorne had said it was important that in point of time the laboratories should be within easy reach of every practitioner. Instead of there being one large well equipped laboratory there would have to be two which could not be equipped as economically as one. In neither would the man in charge have the large and varied experience which was needed. Where a large amount of work was done smaller fees could be charged and was important from the point of view of the medical practitioner, who often hesitated to refer private patients to have pathological investigations carried out because of the expense. Two institutions involved the employment of two men, and the amount of money available for salary

had thus to be divided. It was much more important to have one institution with a well paid man. Work was not being taken away from private pathological practitioners. It had to be remembered that the greater part of the work was new work, and work which was due to the activities of the public health authorities. Had it not been for the latter, a large amount of the work would never have been done. It had also to be remembered that the large demand which now existed for pathologists, and the consequent supply, was largely due to the activities of the public health authorities in the matter. Medicine generally owed a very considerable debt to the Ministry of Health and to the public health bodies for the facilities they had given. The point could best be met, not by restricting the work they did, but by an active and sympathetic co-operation with them, while at the same time supporting the pathologists.

Dr CLARK TROTTER (Council), in support of the motion, stated that some time ago he had consulted an official of the Ministry of Health in the matter. He found it was very commonly thought by the various practitioners that a local authority was bound to do pathological examinations. That was not the case. He had been told that it was entirely within his own discretion, as medical officer of health, to say whether he thought the examination of any particular specimen was in the interests of public health in the way of preventing the spread of disease in the borough, and it was on those lines that the examination was undertaken. He had even known swabs to be taken from cases as a sort of placebo for the patient. There was also a good deal of indiscriminate swabbing of contacts which was of no use at all, because the patients were not suffering from a disease and they could not be treated as diphtheria cases. In Islington he had very strictly limited the cases in which he did pathological examinations, and if he got half a dozen swabs from one doctor all at once from a family, he very closely inquired into the case before having the examinations done. He would rather spend the money on doing tests for pathogenicity. A great number of supposed diphtheria cases were "pseudo," and not pathogenic, and if one could prove that the supposed carrier was non-toxic one was doing good work and spending the money usefully. His main object in speaking was to point out that it was not the case, as many practitioners thought, that they had only to send in pathological specimens and that they were bound to be done. The control should be kept by the public authority, who should exercise a discretion. It was on those lines that he was strongly in support of the motion, because it stated that it should involve questions of public health, and that was exactly the attitude that the official at the Ministry had taken when he had consulted him on the matter—namely, that if it was considered it did not involve questions of public health and was going to be a useless sort of examination, the local authority was not to be bound to do it. Having obtained that decision, he had thought it as well to place it before the meeting.

Dr H. S. BEADLES (Council) thought Dr Clark Trotter's argument was exactly the argument which should have been brought forward in opposition to the motion. It was found generally that practitioners wanted to have the possibility of getting general work done. As Dr Flemming had pointed out, if it was desired to have all that work done, a large public laboratory was necessary. Very great difficulty would be experienced in a number of cases if the public laboratory was limited only to a few items. It was practically limited now to diphtheria, syphilis, typhoid, and tuberculosis. He was looking forward to the day when the public laboratory would be open to all cases. Personally he was very strongly against the resolution.

Dr J. STEVENS (Edinburgh) took exception to Dr Clark Trotter's remarks. Dr Trotter claimed the right of the medical officer of health, who had not seen the cases, to decide whether or not he should have examinations made of the swabs sent by medical practitioners, who had seen the cases, and who had treated them, and who knew the circumstances of the household. Personally he took exception to that point of view. With regard to Dr Trotter's remarks about the examination of contacts, he did not

know what the experience was elsewhere, but in Edinburgh practitioners were sometimes asked by the medical officer of health to take swabs from contacts in the case of poor children in houses where a case of diphtheria had occurred, and they did so. They were taken on the request of the medical officer of health as a rule, if not always, and not by the practitioners themselves.

Dr S. C. DIXIE (Wolverhampton) traversed the statement made that the increase in pathological work was entirely due to the activities of public health bodies. In the view of a number of speakers, pathology consisted entirely of the examination of diphtheria swabs and sputum for tuberculosis. As a matter of fact, pathology consisted in a great deal more than that, and for the proper pursuit of pathology one was coming to realize more and more the absolute necessity of bringing the pathologist into the closest possible contact with the patient. On that account he very strongly supported the motion. Mention had also been made of the advantages of having one large laboratory instead of two, presumably referring to "two" as a public health laboratory on the one hand and a private laboratory or a laboratory attached to a voluntary hospital on the other. There was no question that better work could be done in one large laboratory, but it was also obvious that the functions of a public health laboratory and the functions of a laboratory attached to a voluntary hospital were two entirely different matters. In the one case specimens had to be dealt with in bulk, in the other, individual specimens had to be dealt with in reference to the individual patient. In all districts there existed an opening for laboratories of both sorts. In most cases private practising pathologists were the pathologists of the voluntary hospitals. In a good many districts the voluntary hospitals had not sufficient funds to pay an adequate retainer fee to a man who could do their pathological work solely. On the other hand, if the voluntary hospitals allowed their pathologists to do private work in their hospital laboratories, then the pathologists could add sufficiently to their income to enable the hospitals to get good men to take their pathological posts. It was most necessary that every hospital should have attached to it a competent pathologist working in a properly equipped laboratory, where there could be the closest contact between patient and pathologist, and where consultations could take place between the pathologist and members, not only of the honorary staff, but also of the practitioners of the surrounding district. That particular type of thing could only be brought about in clinical laboratories attached to voluntary hospitals. The latter could not establish these laboratories unless they got a certain amount of private work coming in to them. That private work they could not get if it was all going to be taken by the public health authorities.

Dr E. W. G. MISTERVIN said what he had to say was only a contribution to knowledge of how things were being worked. In his own borough (Camberwell), there was a very peculiar arrangement, which, perhaps, under the present motion, was carrying matters out exactly according to the proposed policy. There was a large Poor Law hospital, practically a municipal hospital, with a very fully equipped pathological laboratory, and in which all the work for the hospital was done, but that laboratory was also the municipal laboratory, and all the work for the municipal authorities was done there too—an arrangement which was very admirable. Although there were voluntary hospitals in the neighbourhood, they could not possibly undertake the work needed. The last speaker had intimated that it was only in voluntary hospitals that such kind of pathological work could be done. That was quite incorrect. His arrangements which his own borough had were now being made in many of the Poor Law hospitals in London. In addition to that, then, pathologist had his own laboratory with his own assistants, and there he dealt with the private work such as that described. That was a very good example of the carrying out of the policy proposed, but he had to confess that he was not at all satisfied that it was not a very roundabout and cumbrous method of doing things. He joined with Dr Flemming in the opinion that it would be far better for public authorities in many circumstances to allow their pathologists to carry

out the work of private practitioners under a private arrangement.

Mr H S SOUTTAR (Council) had the greatest possible sympathy with the proposition before the meeting but at the same time he quite saw the difficulty of the proposition in general who had only the public laboratory to fall back upon. He therefore proposed an amendment that after the words "That in the opinion of the Representative Body" there should be inserted "wherever other pathological facilities are available." Those words would cover both cases—where the pathologist was working privately, and where he was working in conjunction with a hospital. It seemed to him that they would provide a way of escape from the dilemma.

Dr FLEMING hoped that this amendment would not be accepted. The practitioner might be placed in the dilemma that there was a private laboratory with the work of which he was not satisfied. In that case he would be in an extraordinarily awkward position. The amendment might perhaps be worded differently.

The CHAIRMAN OF COUNCIL thought that Mr Souttar had not appreciated exactly what the full effect of his amendment would be. At the moment the situation that was being dealt with was anything but clarified. It might well be that it would develop so that there would be a new set of consultants, the pathologists. It might, on the other hand, be better for the community that that section of the profession should develop, aided by public health authorities and hospitals. In a short time the national health insurance scheme would undoubtedly take a hand in the work and conditions would be laid down. In the meantime it would be well to leave the whole situation fluid. Therein lay safety in the other way lay danger.

Dr HAWTHORNE said that there were two reasons why he felt unable on behalf of the Council to accept the amendment. The first was that if it was adopted it would be necessary to find some proper authority if he might put it so which would be prepared in every individual case to say when other facilities were or were not available. The second reason was that it challenged the right of public health authorities to have laboratories for any examinations even for examinations made admittedly in the interests of the public health.

Mr SOUTTAR considered that his amendment was a common sense one and that it met the situation and left it extremely fluid. If it were not passed there would result the ludicrous position that members of the medical profession would be forbidden to make use of the only facilities that were available for them.

The amendment proposed by Mr Souttar was carried by a very large majority.

Dr R A LISTER (Public Health Service representative) hoped that the matter would be referred back. If the resolution as amended was carried it would only hold up to ridicule the decisions of the British Medical Association and the Representative Body. In this matter there were three parties to consider—the pathologists the practitioners and the patients. The pathologists at present were not a well established branch of the profession. He was quite sure that their future lay very largely in the development of pathological facilities by public health authorities. As to the practitioners in his area they were more than glad to have facilities for bacteriological and pathological help provided for them within reasonable reach. With regard to the patients if the resolution was passed and was put into effect a very large number of people all over the country would be deprived of adequate pathological help. The division between the provision for poor patients and that for better-class patients was illogical and administratively unsound. The service must be developed as one service. The matter was a complicated one which could not be disposed of very hastily and he hoped that at the present stage the chairman of the committee would take it back and bring it up for consideration at a future time.

The motion to refer back was seconded from four places in the meeting.

Dr C F DOUGLAS (Fife) supported the proposal to

refer back. Locally they had no experience in Scotland or these conditions. In Edinburgh the public health authorities always dealt with this matter of pathology. The whole of Scotland was covered by the same conditions as held good in Edinburgh. Therefore, the position being so fluid it was very suitable that the motion should be referred back.

Dr S C DYER (Wolverhampton) said there was another element to be considered in the matter—namely the progress of medicine. For any proper advance in pathology there must be the closest possible contact between the patient and the pathologist and that contact could best be brought about by placing the pathological work connected with the individual patient in the laboratories attached to the voluntary hospitals. He hoped the motion even as amended would not be referred back. The future of bacteriologists such as experts in the examination of water or milk possibly did lie with the public health authorities but the future of pathologists as a whole certainly did not lie there but in the laboratories attached to the voluntary hospitals to encourage the establishment of a series of centres attached to voluntary hospitals all over the country offered the most hopeful prospect for the real advancement of medicine.

Dr HAWTHORNE agreed to take the motion back for consideration by the Council. It had been modified by the better judgement no doubt of the Representative Meeting and as the Council had to accept the responsibility he felt in duty bound to ascertain the scope and bearing of the words which had been spatch-headed into his proposal. He would make no allusion to the doctrines which had been preached from that platform in the course of the debate, some of them having their origin in Islington and others in Aberdeen. He would not attempt to controvert or challenge any of those doctrines but as far as his own motion went he accepted the reference back.

It was agreed to refer back the motion.

Dr HAWTHORNE finally moved.

That where a pathologist attached to a hospital or medical school undertaking pathological work as a general service does such work for persons able to pay fees the fees paid for such examination (subject to such charge for the use of the laboratory as may be arranged) should be the property of the pathologist and should be a matter of private arrangement between the pathologist and the person for whom the examinations are made.

He said that this related to the arrangement they thought should obtain between a hospital pathologist and the authorities of the hospital and private patients. Clearly the hospital pathologist had to do the pathological work for inpatients and outpatients of the hospital but he might and often did carry on a private pathological practice the specimens being sent to him at the hospital. Whether that was an ideal course or not did not at this moment arise. In these circumstances it was reasonable that the pathologist should by arrangement pay a reasonable contribution for the use of the laboratory for his own private practice and having done that he should himself fix the fees which he regarded as proper for specimens examined from private patients these specimens being sent from persons who were in a position to pay fees and were under the care of private practitioners outside.

Dr J HUDON (Newcastle) opposed the motion. He said that in Newcastle a pathologist was attached to the College of Medicine and no private practitioner really carried out an examination of a cancerous tumour. He sent it to the college which rendered an account. What happened inside the college was beyond the private practitioner. He suggested that the motion be referred back to the Council. It had been brought up in connexion with London not in connexion with the North Country and he believed the same thing applied to Scotland.

Dr F RADCLIFFE (Oldham) was absolutely convinced that in many parts of the country what was proposed would be unworkable. It would put pathologists as officers of institutions in an extremely awkward position. Engaged as whole time officers of various institutions they were to be asked to pay something out of their salaries back to the hospital for the privilege of using its laboratory. Even if the governing body would agree to such an arrangement which was doubtful would they allow their whole time



paid medical officer to charge whatever fees he liked for work done in their hospital? That would be entirely contrary to the whole procedure of voluntary hospitals. If it worked successfully at first, and a pathologist to a voluntary hospital was giving part of his time to the hospital and part to his paid private work, would there not come a time when some member of the committee of management would say "We are paying our pathologist so much a year, he is giving most of his time to private work, we ought to reduce his salary or get rid of him?"

Dr P. MACDONALD (York) said that his hospital had set up a scheme, his own child, upon the basis that the pathologist worked for the hospital and for private patients, and he did both exceedingly well. What was proposed could be done perfectly well in certain circumstances. Probably in large areas, with large hospitals and ample work for the pathologist's whole time, what was proposed would not work, but in other areas it was being done perfectly well.

Dr R. ST. L. BROCKMAN (Sheffield) said it could be done in large areas also. Sheffield had two general hospitals and a women's hospital, with a pathologist appointed to each, at £500 a year—paid partly by the hospital, partly by the university. The rules agreed to by the staff, the university, and the board of management allowed him to do private work, provided the staff were satisfied he was doing the work of the infirmary. He was allowed to charge for his private work, making his own arrangements with the doctors. With regard to the charge for use of the laboratory no charge was made by any hospital in Sheffield.

Dr H. S. BEADLES (Council) said what was proposed could be done in small areas, and might be done in some large areas, but could not be done in a considerable number of large areas. In the greater number of cases the pathologist was paid a full salary, and could not expect to be allowed to take private work as well. At that moment, on behalf of the Insurance Committee of his area, he was supposed to be negotiating with a hospital as to how it could do pathological work. When he met pathologists was he to make a stipulation on behalf of the British Medical Association is opposed to the Insurance Committee? The plan was not workable.

Dr J. STEVENS seconded the motion to refer the proposal back.

Dr HAWTHORNE said representatives must form their own estimates of the statements of previous speakers. Some misunderstood the general proposition contained in the motion. It related to a hospital pathologist or a pathologist in a medical school undertaking pathological work as a general service, examining specimens and giving reports upon them for the service of the general body of practitioners or any practitioner who came to submit specimens to him. They were not dealing with whole-time servants, but those who had a particular appointment which left them free to cultivate individual activities. Fees for that service should be paid by the individual for whom they were done, and a pathologist doing such work in a public laboratory should pay for the facilities afforded. He urged the Representative Body not to get into the habit of referring matters back because the whole position was thoroughly explored before a definite recommendation was made.

The motion was carried by a two-thirds majority.

#### THE ASSOCIATION'S WORK IN SCIENCE

Dr HAWTHORNE then moved that the remainder of the Annual Report under "Science" be approved. He acknowledged the Association's indebtedness to the experts for their reports on work done by the Association's scholars and grantees. The two reports issued on rheumatic heart diseases in children were generally recognized as substantial contributions to a difficult subject which had close relation to the maintenance of the health of the community (Applause). It was hoped to have a report next year from the Rheumatism Survey Centre at Paddington Green Children's Hospital. As regards the Library, although

the loan period had been extended from fourteen to twenty-eight days, some books were retained beyond that period in spite of repeated applications. Such action was anti-social, and he appealed to members to be loyal to others. His Library was increasingly appreciated. He paid tribute to the winner of the Stewart Prize, Sir Malcolm Watson, and to Dr J. S. Minson, "one of our fellow representatives," on the award to him or the Sir Charles Hastings Clinical Prize, and offered congratulations to Dr James Abston (Edinburgh), to whom the Council had awarded the distinction of honourable mention for a clinical study of great merit. He came next to the Council's general statement and argument on pathology, which was based upon the view that the individual practitioner in pathology was like the individual practitioner in any other department of medicine, that he ought to be governed by the same ethical and general considerations, and occupy the status of an expert in his particular sphere. The general proposition underlying the argument was that, there as elsewhere, personal guarantee and personal responsibility were to be desired. An institution might have an imposing name, but its real value depended upon the competence, the accuracy, and the good faith of the individual doing the work. The whole position in clinical pathology was more or less fluid, and time would determine what particular direction it was in the interests of the pathologist and of the community that it should take. Individual pathologists, as individual practitioners in all spheres, relying upon their own competence, were doing highly scientific and valuable work, and it was in the interests of medicine that the Association should do all that was possible to maintain that position.

Dr L. A. PARRY (Brighton) moved to make it clear that in the general propositions which the Council had adopted with regard to pathological institutes and practitioners (Paragraph 89 of Annual Report), dental practitioners were included throughout. After congratulating Dr Hawthorne on his able and eloquent statement, he said he was sure it was the intention of the Science Committee that dental practitioners should be entitled to report in the same way as medical practitioners.

Dr HAWTHORNE accepted the amendment on the understanding that the Science Committee would put it into suitable words, so as to harmonize with the terms of the resolution.

Dr PARRY also moved to add to the last subparagraph, which read, "That in no circumstances should a pathological report be furnished to any person other than a qualified medical practitioner," the words, "except at the request of the practitioner." He said there were conditions under which it might be advisable that at the request of the doctor it should be sent to the patient. It was a common thing for a visitor who left Brighton before the report was ready to ask for it to be sent on to him, so that he could take it to another medical man.

Mr BISHOP HARRIS said that in such a case there was no reason why the Brighton doctor should not arrange for the report to be sent to him, and he could then pass it on to the patient. That would protect the doctor, but in the interests of the patient it might not be desirable to slow the report to him.

Dr HAWTHORNE could not accept the amendment. A rigid standard ought to be maintained. A professional communication between two medical men should not be left to the risk of inspection by the patient. The doctor could communicate to the patient any information he wished. The amendment was lost.

#### Pathological Institutes

Dr R. FORBES (Gateshead) moved an amendment.

That the Representative Body disapproves of the advertisement in relation to the advertisement of pathological institutes such as is referred to in the foregoing recommendation of Council, and instructs the Council to exclude advertisements of such pathological institutes from the pages of the BRITISH MEDICAL JOURNAL.

He drew attention to the fact that Paragraph 91 of the Annual Report stated, "There is here obvious inequality of opportunity, and though not prepared to

advise the summary exclusion of these advertisements, the Council is of opinion that in some respects they require supervision", yet in the first recommendation of Council members were advised to avoid any association with such enterprises. The two statements were not consistent. There were three different types of institutes and pathological laboratories actually in existence—the hospital type, the limited liability company type, and the type which was run under some trading name for advertising purposes. The British Medical Association had definitely set its face against advertising trading firms. There was a sort of transition type between the trading firm and the hospital, or the private pathologist himself with whom practitioners treated and knew in person. This sort of transition type was somewhat indefinite. Sometimes it was a group of practitioners who ran an institute. Sometimes it was run under the name of a limited liability company. Sometimes it was managed in such a way that one was not quite sure how it was run. The Council evidently thought there was something indefinite and undesirable about that particular type of institute, so much so that they had inserted in Paragraph 91 two particular qualifications which applied to any advertisements appearing in the Journal. What his Division feared and what they believed to be true, was that such institutes and laboratories were cutting fees. It was undesirable that the Association should lend the pages of its Journal for the advertising of such bodies. It was more fitting and consistent that such bodies of a transitional type between the trading firms and the private individual should be summarily and entirely excluded from being advertised in the Journal.

Dr H. D. WOODROFFE (East Norfolk, Norwich) supported the amendment. He said that the policy of the Association was to place the pathologist on the same footing as every other consumer. At the same time, if the Gateshead amendment was not passed the private pathologist was being left to compete with what might aptly be described as mass production. Unless it were possible (and it was obviously impossible) to fix the fees which those aptly termed transitional institutes were going to charge for pathological work, then the private pathologist could not possibly compete with them. If the Association was going to insert these advertisements then in all fairness it would have to allow a private pathologist to advertise, and it allowed a private pathologist to advertise why should it not allow every other consultant to advertise? The Association had a reputation for fairness. If it was going to place any one section of the profession under the disadvantage of unfair competition, it would be laying itself open to the accusation of having lost that reputation.

Dr HAWTHORNE asked the Representative Body to reject the amendment, not that he objected to it as an ideal scheme but they had to deal with a situation which was not rectified by a clean piece of paper. Certain things existed which the representatives might wish did not exist but no pious aspirations would cause them to cease to exist. Certain considerations had to be borne in mind. First of all it had been a custom for some considerable time to allow advertisements of pathological institutes in medical journals. It would be somewhat unjust to exclude summarily a practice which had been countenanced at least by the absence of opposition. While there were some undesirable institutions, there were others which had done good service to the profession, and therefore to the public by providing facilities for pathological examinations when such facilities were not provided in any other direction. Even at the present time there were large areas of the country where no facilities offered by private pathologists actually existed, and it was therefore a convenience for sections of the profession who practised in those particular areas to know of institutions where they could get the work done. It would be an injustice to say that the advertisements of these institutions should be abruptly cut off. If the Association had to start all over again all the members would probably be convinced that advertisement, whether of individuals or of institutions in medical journals was inadvisable. But that was not the position.

The CHAIRMAN of COUNCIL appealed to Gateshead to leave the matter in the hands of the Council without summary

direction. It was not easy to conduct the advertisement pages of a journal without a little care in dealing with individual cases. Summary directions were apt to hit deerving people rather hardly. If it were agreed that the Council's recommendation went very far in the direction that Gateshead wished, and also the other resolutions mentioned by Dr Hawthorne in the way of giving guarantee of reputable work by medical practitioners, and which would be a guiding principle in deciding on advertisements, then he should imagine that enough had been done at present. The amendment would cause such an impression that he was rather afraid to contemplate the trial of the Imperial Secretary and the Medical Secretary in dealing with advertisements.

Dr LOUBES said he did not feel justified in withdrawing the amendment, though he was not altogether averse from so amending it as to bring it into line with some of the suggestions that had been made since he had introduced it.

Dr LOUBES'S amendment was lost and the remainder of the Annual Report or Council under Science was approved.

#### *Scheme for Collective Investigation*

Dr HAWTHORNE next moved approval of the Council's proposals for the carrying out by the Association of the scheme submitted for collective investigation by individual medical practitioners. In doing so he said that everybody would agree that there was valuable clinical information in the hands and heads of medical practitioners. The Council had selected two subjects for investigation—namely, varicose ulceration and the natural history of gastro-jejunal tumours. The whole matter had been discussed by a joint committee formed partly by the Insurance Acts Committee and partly by the Science Committee. That body had done the work under the chairmanship of Dr Douglas.

Dr C. E. DOUGLAS (Council) emphasized the importance of the matter. It was no new thing for the Association to try to bring together the collective experience of its members. In the 'sixties' the Association began collective investigation upon such subjects as the treatment of pneumonia and so forth. The investigation was more or less successful. In the early 'eighties' there was another attempt which was very much more successful. It dealt with subjects like pneumonia, the communicability of phthisis, and other matters information upon which by this time had passed into the general body of knowledge of the profession but which at the time were somewhat moot points. Those investigations were carried out by between six and seven thousand of the members. He wanted the present generation to play up to the work of the past and to remember that the men who went before them were interested not only in £ s d, but in the real work of their profession.

Dr C. E. S. FLEMING (Salisbury) congratulated the Council on its proposal but he wanted to ask the Chairman of the Science Committee what was intended to be done with the returns when they were received. The former inquiries failed because the returns were merely a collection of bald facts and statistics. If the same thing were to happen again the full value of the returns would not be obtained. The suggestion had been made—and he thought it a good one—that when the facts had been collected by the Council they should be discussed at meetings of the Branches and at the next Annual Meeting of the Association in the appropriate Section.

Dr E. V. MACLEAN considered that there was no question at all as to the paramount value of such investigations as those now proposed, but he felt bound to say that the returns received by the Puerperal Morbidity Committee in regard to puerperal infection and the diseases and accidents of childbirth were not satisfactory. They were too few, to begin with, and although some of them were of outstanding value others were not documents from which it was possible to extract any useful information. If in connection with the new undertaking even a few members in each Divisional area could be induced to undertake the work of investigation or to organize it, not only for themselves but for their colleagues, a promising beginning would have been made. The present would not be the first occasion on which such a resolution had been adopted with some degree of enthusiasm. There had been occasions when subsequently the

enthusiasm had faded and nothing very much had resulted. He hoped that the new start would be a real one, and that it would be possible to collect, by appropriate committees at headquarters, information which the general practitioners of the country alone possessed. He strongly supported the motion.

Dr HAWTHORNE, in answer to Dr Flemming, said that steps had already been taken to secure that all the information that was obtained would be collected and presented in a useful form. An assurance had been received from the Ministry of Health that the Association should have the services of one or more experts who were accustomed to deal with statistical returns, experts who would aid in the formulation of proper questions and in the analysis of the answers. In addition to that, Dr A. P. Luff, who had considerable experience as one of the advisors of the Home Office in years gone by, had been approached, and he had kindly consented to act with the joint subcommittee which would deal with the whole of the matter, and to give his time and his experience in helping the Association. As to the suggestion that the results might be discussed in the Divisions and even in one of the Sections of the Annual Meeting, it struck him as being useful and helpful, and note would be taken of it. No doubt Dr Douglas would see that what could be done in that direction was done. If the scheme was to be successful, it must not only be carried enthusiastically in the present meeting, but it must be supported by practical work throughout the length and breadth of the country. The proposals of the Council were approved. This concluded the discussions on the report under "Science," and Dr Wallace Henry left the chair, which was resumed by Dr HAWTHORNE.

### MEDICO-POLITICAL

*Municipal Maternity Hospitals*  
Dr J. W. BONE (Chairman of the Medico-Political Committee), with regard to a resolution passed at the last Representative Meeting, providing that where a general practitioner is called upon to render assistance at a confinement in a municipal maternity hospital, the local authority shall be responsible to him for his fees until the patient is removed from the hospital, now moved.

That inasmuch as the liability of local authorities for the payment of a medical practitioner called in on the advice of a midwife extends over a period of four weeks from the birth of the child, it is not desirable to suggest that the period of responsibility of local authorities should be extended.

This was carried.

Dr R. FORBES (Gateshead) moved to amend the resolution passed last year so that, with the addition of certain words which he proposed, it would read:

That where a general practitioner is called upon to render assistance at a confinement or for any condition arising directly out of parturition in a municipal maternity hospital, the fees payable to such practitioner should not be less than the scale of fees approved by the Ministry of Health for the payment of local supervising authorities to medical practitioners called in on the advice of midwives under Section 14 of the Midwives Act 1918 but that the time limit of twenty-eight days should be removed and the local supervising authority be responsible for the fees of medical practitioners under a similar scale until such time as the patient is removed from hospital. [The added words are in italics.]

Dr Forbes said that under Section 14 of the Midwives Act it was permissible for the local health authority to pay the fees of a doctor for attendance on a patient in a maternity hospital until the twenty-eighth day, but if there was any condition arising out of the confinement which necessitated the patient staying longer than twenty-eight days there was no provision for payment beyond that time. If the patient was in a municipal hospital he considered that she should be looked upon as a charge on the municipal authority, and that until she could be removed to her home and be treated as a private patient the authorities should still be wholly responsible for the fees. If some condition such as phlebitis or pelvic cellulitis, which necessitated a longer stay in hospital, arose it was not reasonable that on the twenty-eighth day the fee to the doctor should cease and that from that day she should be looked upon as a private

patient. Provision for payment should extend over the whole period of stay in hospital.

Dr BONE said that Gateshead had brought forward two motions under one. Each of the two newly inserted clauses should be taken separately.

Dr FORBES agreed to the division of his motion into two parts, and the first part, with the insertion of the words "or for any condition arising directly out of parturition" was accepted by Dr BONE and by the meeting.

With regard to the second insertion, that of the fresh words at the end, Dr BONE submitted that the resolution just carried on his motion rendered this out of order.

The DRUGS CHAIRMAN ruled that the addition of these last words to the resolution of last year was out of order in view of the motion just carried.

Dr R. S. L. BROCKMAN (Sheffield) moved, with reference to the resolution passed last year setting out the kind of cases for whose institutional treatment the local authority should make provision, a further resolution as follows:

That in the case of large towns where there is already in existence a voluntary maternity hospital the municipal maternity home should be primarily for normal cases where the home conditions are unsuitable.

He said that he had been asked to bring this forward on the suggestion of the medical officer of health, who had started his local hospital primarily for patients whose home conditions were unsuitable, and had excluded the other types of cases mentioned in last year's resolution—namely, serious cases of ante-natal complications, cases requiring major operations, and cases where isolation and treatment of septic infection were specially indicated—unless in these also the home conditions were unfortunate.

Dr BONE said that Sheffield suggested a limitation of the resolution passed in 1926. There was no reason why Sheffield or any other place should not limit the use of its hospital if the local conditions appeared to render such a course proper, but if such a limiting motion is Sheffield proposed were passed, other places might be put in a difficulty. He suggested that the amendment be withdrawn, and Dr BROCKMAN, by permission of the meeting, withdrew it.

Dr BONE also moved.

That the principle of remuneration on a salaried basis for consultative services to municipal maternity hospitals is not unreasonable but that the actual salary must be governed by the circumstances of each particular case (that is, the amount of work required and the time occupied) and should bear some relation to the remuneration laid down in the resolution of the Representative Meeting in 1926, which provides that where a consultant is called in by the practitioner in charge of the case the fee should be for the consultation not less than three guineas, and for a major operation not less than ten guineas.

He said that in some districts it had been found desirable to pay the consultant by salary, and the question to be considered was the basis for payment of such salaried consultants.

This was agreed to.

### Administration of Anaesthetics by Dentists

Dr BONE moved the following on behalf of the Council:

That the policy of the Association (as contained in the paragraphs relating to the administration of anaesthetics approved by the Representative Body in 1910 as part of the evidence given on behalf of the Association before the Departmental Committee on Coroners Law, etc.) be amended to read as follows:

- 1 That no person other than a registered medical practitioner should administer any anaesthetic for medical or surgical purposes, except that a registered dentist may administer anaesthetics for dental purposes only.
- 2 That where a general anaesthetic is administered it is undesirable that any person should act both as operator and administrator in the same case where this can be avoided, but it must be recognized that cases occur in practice, especially in sparsely populated districts in which this responsibility must occasionally be undertaken.

He said that the old policy, formulated in 1910, set out that dentists might administer nitrous oxide for dental purposes only, and it had been pointed out by the dentists that such a policy was obsolete, and was not a policy which could properly be advanced to day by the British Medical Association. What was here proposed was an amendment of the old policy.

Dr C T T Scott (Willesden) urged the inadvisability of the Representative Body expressing any additional opinion as to the administration of anaesthetics by dentists. His Division thought the General Medical Council did a wrong thing in allowing registered dentists to receive special instruction and to administer anaesthetics other than nitrous oxide for dental purposes. At the present time dentists were giving anaesthetics very generally. Some dentists were doing nothing else but administering anaesthetics of all kinds for dental purposes only. He had heard that in some country districts dentists administered anaesthetics for general surgical purposes.

Dr BOVE asked whether the meeting would like it to go out after that discussion to-day that they still believed that registered dentists should be permitted to administer nitrous oxide and local dental anaesthetics, but no other anaesthetics. Dentists to-day were trained in the administration of anaesthetics, and many of them were freely administering such for their own dental purposes. This was recognized as a proper practice by the authorities, and surely to-day the British Medical Association could not say to the dental profession that it did not approve. The argument that dentists might become anaesthetists for all purposes was outside the scope of the motion he had proposed.

An amendment by Willesden in the sense of Dr Scott's speech was lost.

Dr W A M SWAN (St Pancras) moved to substitute nitrous oxide for "anaesthetics" in the reference to administration for dental purposes. He considered it undesirable that dentists should themselves administer ether or chloroform.

Dr BOVE said that he could not accept this. It would cut out ethyl chloride, which was a common anaesthetic used by dentists.

The amendment was lost.

Dr H G DALL (Birmingham Central) moved to insert the qualifying words after "dentist," "who has received special instruction in the administration of anaesthetics." His Division thoroughly approved the restatement of policy with regard to anaesthetics, but it felt that the Council had overlooked the fact that since 1920 the *Dentists Register* had been extended to include those persons who were practising dentistry without qualifications, and while it was perfectly true that all newly registered dentists would be instructed in anaesthetics, it was not true that a large number of those at present on the *Dentists Register* had not been so instructed. The position should be made perfectly clear to the public as to the responsibility of any individual who administered anaesthetics.

Dr W A MURRIS (Birmingham Central) also pointed out that dentists themselves had recognized in the regulations for dental benefit under national health insurance the differentiation as between those in their profession who were trained and those who were untrained in anaesthetic administration.

Dr BOVE objected to putting the proposed words into the motion. It was no part of the duty of members of the medical profession to separate the sheep from the goats among their confreres the dentists. That was the dentists' own affair. The resolution should be passed in general terms and applied to dentists as a whole.

Dr DALL urged that the present was an interim period. The *Dentists Register* contained the names of thousands of men who had had no training or experience in anaesthetics.

The amendment by Birmingham was carried by a considerable majority.

#### ELECTIONS

Before the representatives rose for lunch the MEDICAL SECRETARY announced that Dr C O Hawthorne had been elected without a contest Chairman of the Representative Body, and Mr Bishop Harman, also without a contest, Treasurer. (Applause.)

For the office of Deputy Chairman of the Representative Body there were four candidates—namely, Dr. J W Bone, E K Le Fleming, Arnold Lyndon and S Morton Mackenzie—and the result would be announced later.

The election of twelve members of Council by grouped representatives had resulted as follows:

- Dr G B HILLMAN (North of England and Yorkshire)
- Dr I W JOHNSON (Lancashire and Cheshire and North Lancashire and South Westmorland)
- Dr J R PATERSON (Birmingham and North Wales Shropshire and Mid Wales South Wales and Monmouthshire and Staffordshire)
- Mr E B TURNER (Metropolitan Counties—Inner Group)
- Dr W PATERSON (Metropolitan Counties—Outer Group)
- Dr H C BRISTOWE (Bath and Bristol Dorset and West Hants Gloucestershire South Western West Somerset Wiltshire and Worestershire and Herefordshire)
- Dr A LYNDON (Kent Oxford and Reading Southern Surrey and Sussex)
- Dr G W MILLER (Aberdeen Dundee Edinburgh Fife Northern Counties and Perth)
- Dr J PATRICK (Border Counties Glasgow and West of Scotland and Stirling)
- Dr R C LEACOCKE (Connaught Leinster Munster and South Eastern of Ireland)
- Dr J ARMSTRONG (Ulster)

In the East York and North Lincoln Cambridge and Huntingdon Essex Midland Norfolk South Midland and Suffolk Group there had been a contest which had resulted in a tie. In accordance with standing orders it was necessary to count the number of constituents in the electing group and on that basis Mr A M WEBER was elected with 949 constituents as against 899 for Dr D G Greenfield.

Dr HAWTHORNE returned thanks for his election, but said that anyone with the history of that chair in his mind must approach its responsibilities with some degree of trepidation.

#### Election of Deputy Chairman

On the resumption of the meeting after lunch, the MEDICAL SECRETARY announced that Dr Arnold Lyndon had been elected Deputy Chairman of the Representative Body.

#### MEDICO-POLITICAL (continued)

##### The Administration of Anaesthetics

The discussion on the motion of the Chairman of the Medico-Political Committee proposing to amend the policy of the Association with regard to the administration of anaesthetics was continued.

Dr H G DALL (Birmingham) moved a further amendment to the last line of the motion, so that instead of reading "this responsibility must occasionally be undertaken" it read, "this responsibility may justifiably be undertaken." The phrase as it stood did not meet the position of the practitioner who gave an anaesthetic in the later stages of a confinement or of a forceps operation. Cases occurred, especially in sparsely populated districts, in which the responsibility might justifiably be undertaken.

Dr BOVE accepted the amendment which was agreed to.

Dr J T D EWART moved to omit the words "especially in sparsely populated districts" and Dr PETER MACDONALD seconded. Dr BOVE said the question of single-handed anaesthetic administration arose more frequently in sparsely populated districts than in those densely populated but as leaving out the words would not affect the proposition he had no objection to their omission.

The amendment was carried.

Dr TEMPLE GREY (Marylebone) proposed that the amended recommendation be referred back to Council. It did not suffice to be specially trained in the administration of anaesthetics. It was necessary to know how to treat a case when something went wrong. In the case of a fatality under an anaesthetic the only person who would be in a reasonable position before a coroner was a duly qualified medical man. Referring to the first part of the resolution, he said the Association had no concern with deciding what dentists had to do.

Dr E A STANLEY (Lunbridge Wells) seconded the reference back, which was not carried.

The CHAIRMAN then put the motion as revised—namely

1 That no person other than a registered medical practitioner should administer any anaesthetic for medical or surgical purpose except that a registered dentist who has received special instruction in the administration of anaesthetics may administer anaesthetics for dental purposes only.

2 That where a general anaesthetic is administered it is undesirable that any person should act both as operator and

administrator in the same case where this can be avoided, but it must be recognized that cases occur in practice in which this responsibility may justifiably be undertaken.

The motion was carried by the necessary two-thirds majority to make it the policy of the Association.

#### *Anaesthetics in Connection with Dental Benefit*

Dr BONE moved as a recommendation of Council

That the fees for medical practitioners administering anaesthetics for dental operations (as an additional benefit under the National Health Insurance Acts) be as follows: (a) For the simple administration of nitrous oxide or a similar anaesthetic, 10s 6d if only one patient is dealt with, but if more than one patient is dealt with at the same time and place the fee should be 7s 6d per patient, and (b) that for other administrations, whatever the anaesthetic, the fee should be one guinea.

Mr McADAM ECCLES asked for an explanation of the words "simple administration." Dr BONE said they were used in comparison with a prolonged nitrous oxide anaesthesia.

Dr J B WILLIAMSON (South Shields and Tyneside) moved to amend the recommendation by the insertion of the word "minimum" ["minimum fees"]. He said Dr BONE assured him this could not be done, but his Division instructed him to move the amendment, and as it was "a very little one" he moved it. (Laughter.) Dr BONE said they were hoping to get the Ministry of Health to adopt this scale, and there must be definite fees for certain services. The amendment was lost.

Dr NRYLL CROWE (Worcester) moved to amend the recommendation by making the fee for administration of an anaesthetic in all cases one guinea. Personally he did not agree that a guinea should be given in every case, but that was the amendment he was instructed to move.

Dr BONE did not think there were many optimists who thought there was a chance of getting more than half a guinea from the Ministry of Health for a simple gas administration.

The amendment was lost.

Dr J MACKINNON (Sheffield) also moved to amend the recommendation by making the fee for the administration of nitrous oxide or similar anaesthetic half a guinea in all cases. He said there was some feeling in his Division that a fee of 10s 6d was too low, and they certainly thought it should not be reduced to 7s 6d, chiefly because fees for the administration of anaesthetics were not fixed on a time basis but on a basis of responsibility. The responsibility did not get less according to the number of cases in which an anaesthetic was given.

Dr BONE said Sheffield had raised a practical point, but it was a point to which great attention had been given in committee, and eventually it had been decided that it would be better to make a reduction to a person "taking a quantity." It was a principle which had been adopted on many occasions. Evidence had been received from men who were in the habit of giving anaesthetics for dental purposes to the effect that they were quite satisfied to accept a fee of 7s 6d. They had stated that perhaps the whole morning was occupied in giving anaesthetics or dental purposes, and that their remuneration for all the morning's work was satisfactory to them at the 7s 6d rate. When men of certain standing who were doing that sort of work were satisfied with the rate of pay, the committee naturally hesitated to suggest anything higher.

The amendment was lost by 52 votes against 47.

Mr McADAM ECCLES (Council) moved the deletion of the word "simple" from the motion ["the simple administration of nitrous oxide"]. All who had given nitrous oxide were aware that it might be simple administration or it might not be.

Dr BUILDON seconded the amendment.

Dr J LIVINGSTON (Furness) said that the amendment would completely alter the intention of the motion. For a simple administration of nitrous oxide a fee of 10s 6d was suggested, but where other administrations, whatever the anaesthetic, including nitrous oxide, were given, the fee was going to be a guinea. Now the position arose that for an administration of nitrous oxide, whether it was

short or long, simple or complicated, a practitioner was only going to get 10s 6d for one case, and if more than one, 7s 6d. If he might suggest it to Mr ECCLES, the addition of the word "short" would have put the matter right, but by leaving out the word "simple" the whole intention of the motion was altered.

Dr BONE agreed with Dr LIVINGSTON. The omission of the word "simple" would alter the whole meaning of the motion, and would reduce the fees payable to practitioners for all long administrations of nitrous oxide, and, more important still, he would direct attention to the other words "or a similar anaesthetic." "Similar anaesthetic" particularly applied to ethyl chloride, which was an anaesthetic commonly used by dentists. The simple administration of ethyl chloride was a matter of seconds, but ethyl chloride might be given continuously by the open method of administration, and the administration might be prolonged almost indefinitely. That second kind of administration of ethyl chloride they would consider to be not a simple administration, and they would expect to get the fee of a guinea for it. The effect of the amendment, however, would be that such administration would come under the 10s 6d or the 7s 6d fee, which would not be at all a satisfactory fee for such administration.

The amendment was lost.

The recommendation of Council was then put and carried by a substantial majority.

#### *Payment for Ante-natal Work*

Dr BONE next moved, as a recommendation of Council, relating to a resolution passed last year.

That it is inadvisable to press for the amendment of the Midwives Act 1918, in order to secure that local authorities be made responsible for ante-natal work to any greater extent than is at present the case.

He said that last year the Representative Meeting instructed the Council to consider the advisability of pressing for the amendment of the Act in order to secure that local authorities should be responsible for payment for ante-natal work. The recommendation of the Council needed a little explanation. At present every insured practitioner was responsible, as part of his contract, for ante-natal work for such of his patients, being women, as were insured persons. Therefore that group was already adequately dealt with. Another group of women was dealt with by way of ante-natal clinics, and the remaining women who needed ante-natal treatment were dealt with under the ordinary conditions of private practice, or under the Poor Law. The Council did not think it would be wise to attempt to get any modification of the Midwives Act that would secure a fresh form of treatment paid for by the local authorities for doing ante-natal work. He would wait for further discussion before developing any arguments in favour of the recommendation.

Dr M W RILSON (Dutford) said he had been instructed by his Division to put it to the Representative Body that the motion be referred to the Council with an instruction to consider the Midwives Act of 1918 in the interests of all concerned in ante-natal work, especially in relation to the responsibilities of the general practitioner. His Division was disappointed that the Council did not take the opportunity of the instruction of the Representative Body last year to go fully into the trouble of the general practitioner in relation to ante-natal work, and was rather concerned at the present somewhat negative motion regarding the Midwives Act. Those he represented were not specially interested in the second part of the motion, because they felt in their part of the world, that local authorities should not be given any greater responsibilities than they had at present; they were taking far too much responsibility upon themselves. His Division was now fighting it very hard though not contentedly, and was making preparations to enable the general practitioner to take up the work. It had had clinics, papers read by gynaecologists, and conferences with the county authorities. The county medical officer of health was in sympathy with their requirements and demands, but suggested that he could not do anything until the Midwives Act, 1918, was amended in some way. What was happening was that the ante-natal work at present



being done by a whole-time outside practitioner, in addition to which the county authorities were educating midwives to do practically the whole of the work which ought to be done by the general practitioner. His Division claimed that it was most difficult for the general practitioner to carry out his duties in emergency midwifery work if he was not given an opportunity of coming in very early in the preventive work which he could do in ante-natal matters. They felt therefore that it was unfortunate that the Council should put the motion forward as if the Midwives Act did not require amending. And his source of legitimate work was being cut away from the general practitioner. The Council would do well to investigate the whole of ante-natal work in relation to the general practitioner. It would be a pity for the recommendation to go forward as then it would look as though the British Medical Association were contented with the Midwives Act or that it was powerless. He hoped it would be referred back to the Council so that they might get into the whole of the difficulties of the general practitioner in regard to the matter.

Dr C F S FLEMING (Salisbury) supported the amendment. He considered that if there was one point in which the general practitioner required protection it was in regard to the question of ante-natal examination and the necessary treatment. He hoped the Council would consider this very carefully. The amount of work proposed to be done by local authorities through their health visitors was he thought more than was generally recognized. The form of report by the health visitor was really ridiculous. The gynaecous health visitor was expected to answer included to example question about pelvic measurement. The only remedy he could see at present was for the general practitioner himself to do the work whether he was asked to do it or not. Medical men ought to do everything they could to keep the matter in their own hands.

Dr H M RAYN (Ipswich) also supported the amendment. In Kent, he said, all the midwives were sent for to the central town or the district where they were to be trained in ante-natal work on a three day course.

Mr H M STURTEON (Kennington) thought that the case was now an opportunity for general practitioners to keep a very important part of medical practice in their own hands. If it was allowed to slip into the hands of whole-time officials and nurses, gradually the whole midwifery practice would be done by the latter people.

Dr J MIDDLETON MARTIN (Gloucester) said that ante-natal work would be one of the most important branches of medical work in the future, and doctors ought to do everything they possibly could to develop it. The persons in whose hands it lay most effectively were the general medical practitioners. He would not for a moment oppose the reference back or the motion to the Council although he did not know that there was much to be gained by that course, but he thought it most important that the Council should have the matter constantly in mind.

Dr BOVE said that he should be quite content to support a reference back to the Council of the whole question of ante-natal treatment and the method of carrying out ante-natal treatment *qua* the private practitioner. What was wanted was a thorough inquiry into the methods by which women might get the proper ante-natal treatment which they ought to have and which it was the duty of the medical profession to give them. It was necessary to find out how the private practitioner might be best used to secure such treatment. He suggested to Dr RENTON that his amendment should ask the Council to consider the whole question of ante-natal treatment and the best way in which it might be carried out by the private practitioner.

Dr RENTON and he was willing to accept this suggestion. Sir EWEN MACLEAN thought that the word "financially" should be inserted in the resolution before the word "responsible."

Dr RENTON asked whether his amendment could be put as a separate motion. The CHAIRMAN ruled that it could be moved as an amendment to the motion that the remainder of the Report or the Medico-Political Committee be approved, but that it could not now be moved as a separate motion.

With the leave of the meeting, Dr RENTON withdrew his amendment on the understanding that he would be able to propose it at the stage indicated by the Chairman.

The motion as moved by Dr BOVE was then agreed to.

### Orthopaedic Treatment

Dr BOVE moved on behalf of the Council

That the specialist work of orthopaedic treatment whether at hospitals or clinics should not be done by whole-time officers but on a part-time basis by surgeons who need not necessarily be devoting all their attention to orthopaedic work.

He pointed out that the orthopaedic clinics were springing up in the country and in many instances the general practitioner was being completely shut out from taking any share whatever in orthopaedic work. The Council had produced a very elaborate report on the subject, which appeared as an appendix to the Annual Report of Council, and he commended it strongly to the notice of the representatives. It was on the basis of that memorandum that certain motions which the Council was bringing before the Representative Body that day had been framed. The basic principle of these motions was that the general practitioner should be allowed to take an important part in orthopaedic treatment in the hospitals and clinics. This first recommendation brought orthopaedic work into line with the Association's policy in other directions.

Dr F J HARTLEY (Windsor) moved to amend the recommendation so that it would read

That orthopaedic treatment whether at hospitals or clinics should be undertaken by those who have special knowledge of the subject and as the needs of the patient to receive the most experienced handling are paramount no restrictions should be placed on the appointment of full-time officers.

His Division considered that orthopaedic treatment should be undertaken by those who had special knowledge, and that no restriction should be placed on the appointment of full-time officers. Orthopaedics was highly skilled work and not a work of emergency. Tendon transplantation in infantile paralysis for example could be carried out by an orthopaedic surgeon. Mr Girdlestone of Oxford was attached to their hospital at Windsor and came once a month to see each orthopaedic case—it was not necessary for him to come oftener—and every week he had a clinic to which he sent his assistant and his head nurse. Why should hospitals not be allowed to have the best advice they could get?

Dr HENRIETTA JEFFES (Lambeth and Southwark) supported the amendment. Her Division was unanimously of opinion that orthopaedic work was specialist work, and could not be adequately performed except by those who were doing orthopaedics and nothing but orthopaedics.

Dr C F OLDENBROW (Liverpool) also spoke in favour of the Windsor amendment. He would be sorry to see the official policy of the Association take the direction indicated in the Council's recommendation.

Dr E R POTTEINGILL (Brighton) said that there were one or two fallacies in the Windsor amendment. Nobody denied that the interests of the patient were paramount, but when policies had to be settled two points had to be considered—the interest of the patient and the interest of the doctor. It might be in the interest of the patient that the specialist alone should see him—though he questioned it—but it was certainly not in the interest of the general practitioner. The medical student of to-day who was joining the ranks of general practice was more competent to do this class of work than the general practitioner of an older generation and if all this work was going to be relegated to a whole-time service where was the coming practitioner to get his experience. The dangers of these schemes for orthopaedic treatment as was pointed out in the appendix were (1) the establishment or yet another segregated public health service (2) the withdrawal of a large number of cases or a special type from hospitals in which medical education was carried on, and (3) the ignoring of the general practitioner altogether, or his perfunctory use in connexion with the work. Was it to the interest of the patient that these three conditions should exist? They would come about in specialist intrusion on private medical practice were unchecked and it watertight compartments in medicine continued to be made. The general practitioner would cease to exist. On the other

hand, a specialist who dealt with nothing but his own specialism was of no use in comparison with the general practitioner.

Dr R G GORDON (Bath) also spoke in favour of the motion and against the Windsor amendment. They had to distinguish, he said, between theory and practice. What actually happened in practice was that if whole-time officials were appointed, especially to clinics, the general practitioner in the district was very apt to lose his interest in simple cases, and anyone who was crippled or who seemed to be suffering from anything like an orthopaedic condition was sent to the clinic. The whole-time specialist looked upon these cases with a "single eye," and one constantly found that these children were brought up and treated as orthopaedic cases only, with no consideration for other conditions. Therefore it was essential that the general practitioner should be brought into the scheme as much as possible, so that he could check the work of the whole-time specialist, if it was absolutely necessary that such a person should be appointed.

Mr McADAM ECCLES (Council) described himself as a general surgeon who had perforce to take orthopaedic cases. Orthopaedic surgery seemed to have got into a very anomalous position, because there was a considerable difference of opinion as to what particular class of cases did not fall within its limits. A great deal of glamour had been thrown over the question of orthopaedic surgery. It was not such a wide specialism as it was now made out to be, but he was quite convinced that in the proper treatment of early orthopaedic cases it was essential that there should be co-ordinated work. The people who should be co-ordinated were (1) the general practitioner first and foremost, (2) the specialist, who understood a good deal about anatomy as well as about operative treatment, (3) the mother or nurse of the child, and (4), by no means least important, the child himself. In these orthopaedic centres or clinics all this could be done. Therefore he felt that a whole-time orthopaedic surgeon was wanted—whole-time in the sense that he was doing orthopaedic surgery as a specialty, but there must also be the general practitioner, and there must be co-ordinated work with those in domestic charge of the child. He was in favour of the motion, with the proviso that there should be specialist orthopaedic surgery.

Dr S C DYKE (South Staffordshire) supported the Windsor amendment. Orthopaedic surgery demanded such a specialized technique as hardly to fall within the province of the general surgeon at the present time, but it was to be hoped there would be the closest co-operation between the orthopaedic surgeon and the patient's own doctor.

Dr BONE said the point of the motion was that they should turn up men in each locality who were capable of doing the work on a part-time basis, and that it should not be put in the hands of whole-time specialists who were flying about the country in motor cars and lived miles away from the area in which the work was done.

Dr HIRSHWY, replying, said that sentiment did not enter into the question, which was, "What is the right thing to do, not only for the patient, but for the profession?" The general practitioner could always see his cases at the clinic and, if he wished, attend to them. Mr McAdam Eccles struck the nail on the head when he spoke of co-ordinating the work. It should be the aim of the British Medical Association to co-ordinate every branch, from the general practitioner to the specialist. No general practitioner could keep up to date in every branch; they must have specialists. It was best, not only for the profession, but for the general public.

The Windsor amendment was lost by a large majority.

Sir RICHARD LUCE said that to pass a recommendation so general and sweeping as that proposed by Dr Bone seemed to him to be dangerous. Admiration in surgery was might not be specialization, though it was.

Dr BUILDON seconded the motion along any particular line.

Dr J LIVINGSTON (Furness) said that whole-time officers would completely alter the intention of using their skill in a simple administration of nitrous oxide, an advantage of which was suggested, but where other administration of the anesthetic, including nitrous oxide, question whether fee was going to be a guinea. Now the patient "operating for an administration of nitrous oxide,"

surgeons," declined to be an interpreter of terms, but said that if as a private individual he were asked what he meant by "surgeon" he would say "a qualified medical practitioner who practised surgery."

Mr E W G MASTERMAN (Camberwell) thought there was a general feeling that the motion went a little too far, and he proposed an amendment (which was seconded from more than one place in the meeting) whereby it would read:

That the specialist work of orthopaedic treatment, whether at hospitals or clinics should not usually be done by whole-time officers, but may be undertaken, on a part-time basis, by surgeons who need not necessarily be devoting all their attention to orthopaedic work.

Mr H S SOUTER (Council) hoped the motion would not be watered down by the passing of the amendment. The meeting should understand clearly that they were gradually coming to a definite pass in practice. Was practice going to be carried out in general by whole-time men or by men who were in general work? There was a strong tendency at present—partly with a view to economy and partly because they hoped to obtain greater efficiency (as he thought wrongly)—towards the employment of whole-time men in the strict sense of the word. Personally he thought it was a mistake. The man who was engaged in a general practice, whether he were a surgical specialist, a physician, or what was commonly known as a general practitioner, could deal with any specialty which he chose to take up in a far better way than could the man who was simply employed as a whole-time man on one job. He could take a much broader view of the whole subject, he came into more intimate contact with a larger body of people, he was not simply confined within the four walls of one small subject, and he did better work. Therefore, Mr Souter objected very strongly to the Windsor amendment, which suggested that it was against the interests of the patient that the general practitioner should be employed. One or two of those who had been mentioned as excellent orthopaedic surgeons, personal friends of his own, were by no means whole-time men. They were engaged in orthopaedics as a specialty, but they were not, within the meaning of the phrase used, whole-time officers. They were engaged in orthopaedics as their whole specialty perhaps, but that was a very different matter from being a whole-time paid officer of some concern. He hoped the representatives would take a strong line against limiting work to the whole-time men, whether it was in orthopaedics or in pathology, or in any other subject. The matter should be left open to the widest possible field. Though there was a group of very eminent men who were devoting the whole of their time to orthopaedic surgery, the vast mass of orthopaedic surgery in this country was being done, and being done very well, by general surgeons. He hoped the motion would be passed in its original form.

The amendment by Mr Masterman was then put and lost. A REPRESENTATIVE asked if the motion as it now stood prohibited Mr Masterman, who was a whole-time officer, from ever touching an orthopaedic case. The Drury CHAIRMAN replied that that was a question for Mr Masterman; it certainly did not concern him as chairman.

Dr HENRIETTA JENES moved the omission of the words after the word "basis." Her Division felt that in orthopaedic clinics run by a man who possibly was doing general work all the week and spent half a day or some such time doing orthopaedic work was "not good enough." The orthopaedic work should be really first rate, and the results could without doubt be immeasurably improved if the work was done by people engaged in the particular branch of surgery concerned.

This amendment was not seconded, and therefore fell to the ground.

The motion proposed by Dr Bone as it originally stood was carried.

Dr BONE next moved "That existing local institutions should be utilized to their fullest extent," and this motion was adopted.

Dr BONE further moved

That the private practitioner should have free access to work at hospitals and clinics for the purpose of education and training, and that his services should be fully utilized, giving him a definite position in the scheme both at the clinic and in the domiciliary care of cases.

In answer to a question with reference to the meaning of the words "free access," Dr Bono said that it was the Chairman who had already remarked, the words must have a little common sense read into them. They meant that every practitioner should have reasonably free access to every clinic and every patient. They meant something more than that practitioners should have access to see, and consult about, their own patients.

Dr H M RIVEN (Thurton) said that in Kent there was not free access. The county council had a scheme run by a specialist, who consulted at the hospitals and managed the clinics, but would very soon be overpressed with the work at the clinics, and as it was he left a good deal of the work to nurses, massagers, and such people. The medical men in Kent were tied up and they did not quite know how they were going to fight the matter, but his Division had suggested to its members that any of those practitioners who felt keen on orthopaedics should send in their names and that they should be offered to the county council as clinical assistants. They realized that not all general practitioners were capable of taking on or willing to take on all the orthopaedic work of the county council but at the same time there were people who were quite capable and who should take part in that work. Division might very well get together those people who were keen and offer them as clinical assistants in connexion with those county schemes which were at present run on a whole-time basis.

Dr LEWIS LLOYD (Council) dissented from the definition of "free access" given by the Chairman of the Medico-Political Committee. The difficulty involved was not a hypothetical one. Surgeons were very chary of discussing a case with another practitioner when they knew that the practitioner in charge of the case was in the room. There ought to be a very authoritative definition of "free access" given so that representatives would be able to advise the members of their Divisions when they returned to their constituencies.

The motion was carried.

The final recommendation of Council moved by Dr BOVE, was as follows:

That the arrangements laid down in the British Medical Association's scheme for school children and maternity and child welfare clinics should apply equally in regard to orthopaedic clinics (vide *Handbook* p 192).

He said this meant so far as the arrangements were applicable.

Dr H D WOODROFFE (East Norfolk) moved to add the following words to the recommendation:

but that efforts should be made to secure that a more stringent scrutiny be exercised in deciding which cases are or are not necessary than has been done under comparable schemes for medical examination and treatment by education authorities.

He said his Division felt that the conduct of the various clinics run by local education authorities should be tightened up. There was a tendency for school medical officers to send cases direct to the general hospitals without consulting or notifying the patient's family doctor. Also in rural districts parents sent their children to elementary schools only because there were no others. Many of them could afford and would be willing to pay for private treatment but all cases were lumped together by the education medical authorities as people who could not afford to pay for treatment and were told to go to the hospital. This was victimization of the general practitioner and possibly even more so of the honorary staff of hospitals.

Dr E R FOTHERGILL submitted that the words proposed to be added were really in order to the motion.

The DEPUTY CHAIRMAN ruled that they were an amendment and were in order.

Dr BOVE said he had no special objection to steps being taken to do what was suggested in the additional words, though they were hardly the sort of words to add to a formal motion.

No amendment was carried, and also the motion as amended.

#### MEDICAL OFFICERS OF PUBLIC SCHOOLS.

A series of recommendations were next moved by Dr BOVE relating to the conditions of remuneration and employment of medical officers of public schools. The memorandum and consequent recommendations relating both to whole-time and part-time officers appeared in the Annual Report of Council (SUPPLEMENT, April 23rd, p 149).

By such recommendations, he said, the Association was leaving its ordinary routine detailed work and opening up a wholly new class of work. The Association had been asked by some of the representatives of the whole-time medical officers of public schools to consider the question of establishing such a policy, and that request had been met by the formation of a subcommittee of the Medico-Political Committee, called the Medical Officers of Public Schools' Subcommittee, which had elaborated a policy and had submitted it to the Council. After emendation by the Council the policy was now submitted to the Representative Body. The first motion to the effect that the whole-time medical officer of a public school should be appointed by be directly responsible to and have direct access to the governing body of the school was perhaps the most important of the whole number at any rate it was the motion to which he believed the greatest importance was attached by the group of medical officers concerned.

Dr PETER MACDONALD moved the reference back of all the recommendations on the ground that he desired the conditions which were implied in the series of motions to have a chance of being workable. There had been no preliminary discussion with the headmasters of public schools or with the governing bodies. What would happen if the meeting passed the motions and held them up as a sort of pistol to the school authorities and to the headmasters? He felt certain that the headmasters and governing bodies would have nothing to do with the matter and that both the medical officers of public schools and the British Medical Association would run the risk, to use an Old Testament term of being told to "go to." He thought a proper preliminary would be to get into touch with the headmasters by means of the headmasters' conferences, learn what they had to say about the policy, and get into liaison in that way. There could not be any urgency about the matter.

Mr E W G MASTERMAN seconded the amendment.

Dr BOVE said he quite agreed that sooner or later consultations must take place with other bodies, but surely there was time enough for consultation when the representatives had decided among themselves what they wanted. He suggested that Dr Macdonald's motion should properly come after the meeting had learned something about the proposals—namely, at the end of the series of motions referring to public schools. It would not be wise to confer with the headmasters until the meeting had agreed to a policy.

Mr E B TURNER (Kensington) hoped the meeting would not carry the amendment to refer back. The matter was one which had been brought before the Association as a very urgent demand. It had been remitted to a committee consisting of picked men together with men who knew a great deal about and had a good deal to do with, the management and the amenities of public schools. The matter had been thoroughly thrashed out by that committee, and had been submitted again to the Medico-Political Committee which had sifted it thoroughly. It had then gone before the Council, which again had thoroughly resited and reconsidered it, and had finally passed it for consideration by the Representative Body. He associated himself with every word Dr Bove had said about the inadvisability of referring the matter back before the meeting had considered it—before, even, it was known whether the meeting had any policy in the matter, whether it wished to lay down a policy, or whether it desired to interfere at all in the matter.

Mr JENNER VERRILL who was received with cheers, entirely supported the view that the representatives should proceed to discuss the matter and not refer it back. If a conference at the present stage was sought with the head-

mastics, they would say, "What is this matter which you are bringing before us?" and they would have to be told that when the question, in a consecutive series of well discussed and considered motions, had been brought before the Representative Meeting, that meeting had been afraid to crystallize its views until the views of the headmasters had been heard. In his opinion it was necessary to go to the headmasters and the governing bodies and to say to them, "These are the distinct views of the Representative Meeting."

Dr F RADCLIFFE (Oldham) asked the meeting to consider one point. If it discussed the matter at once and decided upon it, it would probably decide by a bare majority. If, after that, the Association went to the headmasters and to the governing bodies, it would require a two-thirds majority before it could change its views. The representatives were handicapping themselves considerably by deciding upon anything at the moment before they knew what the other side would want, because they would be putting themselves in the awkward position that they could not reverse their policy, even if they thought it necessary, without a very much bigger majority than they could get now.

Dr FOTHERGILL (Brighton) asked if it was a fact that if now the meeting adopted the motion it necessarily involved a policy?

The DEPUTY CHAIRMAN replied that unless the motion was carried by a two-thirds majority it would not have the status of a declared policy of the Association. It might be expressed as the opinion of the meeting, but not as a declared policy of the Association.

Dr F W GOODBODY (Marylebone) desired to ask Dr Radcliffe one question. If the representatives followed Dr Peter Macdonald's proposal, on what were they going to the headmasters? They could only go to them on a decision of the Council, and they could not give them the slightest authorization to think that the Representative Body would not turn down the results of the conferences. It would be wise for the meeting to formulate some kind of policy which could be discussed with the headmasters and governing bodies.

Dr H M RIVER (Thurton) said he had not heard mentioned the Medical Officers of Schools' Association, which had sent up the matter for the consideration of the meeting. Could not the meeting give the proposals general approval? No doubt the medical officers had already discussed the matter with their headmasters to a certain extent.

The CHAIRMAN OF COUNCIL said that there was here a new deprivation—and he believed a useful deprivation—in regard to health policy, and it was essential that it should be launched under the best possible auspices. In his short experience of the Association he had seen two or three admirable decisions in regard to policy seriously prejudiced by the fact that the meeting had passed resolutions (they had been decisions of the Representative Body), and the first knowledge received by the people who had had to pay the bill and suffer such consequences as might accrue, was through the launching of the information in the public press. That had produced a feeling of resentment on more than one occasion, and had created an unfavourable atmosphere, and sometimes a passive or even a very active resistance which had postponed for a long period what might have come into operation in a very short time if the matter had been dealt with in a different way. He wanted members to discover a method by which they could discuss the propositions and alter them if necessary, and not tie their hands by making the decisions operative decisions until they had had the opportunity at the end of the discussion, of deciding whether they would remit to the Council the task of obtaining the opinions of headmasters, and, it might be, of parents and of governing bodies, before the proposals were put into their ultimate form. He was sure that along those lines lay the true path of statesmanship in regard to a project which they all had at heart.

After some private conference,

The DEPUTY CHAIRMAN said that the position had been considered at the table, and the simplest way out of the difficulty would seem to be to ask the press not to report

the discussion. The matter was in a tentative state and was not yet in a very definitely formal position. What was wanted was to get the opinion of the representatives broadly upon the different propositions. After that opinion had once been declared, the whole matter might, if the representatives so decided, go back to the Council, and the Council would conduct any negotiations with the advantage of having had an expression of the opinion of the Representative Body, such opinion not being declared as the formal policy of the Association. In conclusion, he asked whether the meeting would authorize him to invite the press to recognize the position which he had just stated and to abstain from making public the discussion upon the matter.

It was decided that the general press should be requested not to report the discussion.

Dr RADCLIFFE asked how the Representative Meeting could pass a resolution upon a matter, in regard to which two months' notice had been given in the JOURNAL without its becoming the policy of the Association.

The DEPUTY CHAIRMAN replied that it could do so by abstaining from carrying it by a two-thirds majority. The meeting, he was sure, would be able to devise some means of protecting itself from restricting its liberty in future. He would take the responsibility of seeing that that was done.

Dr FOTHERGILL drew attention to Article 33, and said that under it, if the Representative Meeting did not go into committee, if it adopted a resolution that resolution would *ipso facto* become the decision of the Association. He therefore urged that the meeting should go into committee.

Dr MORISON MACKENZIE then proposed, and Dr WALLACE HENRY seconded, that the meeting should go into committee.

The CHAIRMAN OF COUNCIL thought that the proposition was a very excellent way of dealing with the situation, but he considered that one safeguard should be set up—namely, that the rules of debate and procedure should be those of the standing orders and not those of an ordinary committee.

Dr PETER MACDONALD said that he had not wished in any way to brake discussion upon the proposals, which he considered to be very excellent, but he wished them to be considered in the best atmosphere. He was quite willing to withdraw his resolution, on the understanding that at the end of the discussion it would be competent for himself or someone else to move that the matter be referred to the Council.

#### Proceedings in Committee

The Representative Meeting then agreed to go into committee, and the representatives of the lay press withdrew.

Dr BONE moved afresh the motion that the whole time medical officer of a public school should be appointed by the governing body of the school. He said that, in drawing up this and subsequent recommendations the Medical Officers of Schools' Association had been consulted, and representatives of school medical officers were on the committee which originally formulated the proposals. The first recommendation, which was very important, challenged at once the methods of election and of responsibility which were at present in vogue, at all events in some of the public schools.

The recommendation was supported by Dr E H LE FLEMING, who spoke from his own experience as a part-time officer.

The recommendation was carried unanimously and without further discussion, as were other recommendations—namely that the medical officer should be a medical practitioner who had had experience in practice, including experience in special branches of medical work, that the possession of a qualification in public health work should be an additional advantage, that the minimum commencing salary for a maximum of 500 resident pupils should be £600 a year, plus £1 per head per annum for

each resident pupil in excess of 500, and that, in addition, the medical officer should be provided by the school authorities with a suitable house or an adequate allowance in lieu thereof that the initial salary should be subject to periodical increments, to be determined between the officer and the governing body at the time of appointment, and that the medical officer should not be responsible during the intervals between school terms, for any medical attendance given to pupils other than those remaining at the school owing to illness. Dr BONE remarked, in moving this list that present practice and custom had to be considered.

The next recommendation set out the list of duties of a whole-time medical officer of a public school. The list appeared in Paragraph 131 of the Annual Report of Council (SUPPLEMENT April 23rd). Dr BONE said that the list had been arranged with great deliberation and had been subjected to much criticism before appearing in its final form.

Dr MIDDLETON MARTIN asked whether there was a distinction between new pupils and resident pupils for he noted that the first duties were "examination of all new pupils on admission to the school," and "periodical examination of resident pupils."

Dr I. W. COODBOO, a member of the committee which had formulated the proposals said that the committee considered that all boys entering the school should be examined for grubs, but that periodical examination should be limited to resident pupils. If periodical examination of day boys were done the result would be to take them out of the care of their ordinary family doctor.

Dr MIDDLETON MARTIN moved that periodical examination should apply to all pupils day or resident.

The time of adjournment (6.30 p.m.) having arrived the discussion was left at this point, it being understood that the matter would be resumed as first business still in session on Monday morning.

#### Monday July 18th

The chair was taken at 10.15 a.m. by Dr BRACKENBURY, who was welcomed back after his brief illness with long continued applause. In reply to the greeting he said how sorry he had been to cause any interruption of the ordinary course of business of the Representative Body and how much he appreciated all the kind inquiries and expressions of sympathy he had received.

#### WHOLE-TIME MEDICAL OFFICERS OF PUBLIC SCHOOLS

The Representative Meeting immediately went into committee to consider the remainder of the report on medical officers of public schools and the representatives of the lay press withdrew.

Dr MIDDLETON MARTIN moved the amendment of which he had given notice at the previous sitting with regard to the duties of the whole-time medical officer of a public school. The recommendation of Council was that these duties should include "examination of all new pupils on admission to the school" and "periodical examination of resident pupils." Dr Martin's amendment was that the word "resident" should be replaced by the word "all." Dr Martin said that the object of the examinations was to detect conditions at an early stage and there was as much reason for the examination of non-resident as of resident pupils. Mentioning concrete instances he said that a young girl known to him was a day pupil at one of the large public schools and only in the course of the second examination was it found that her eyes were weak and that she needed glasses. Exactly the same thing happened with another girl at the same school. The nephew or a representative present would have taken part in a strenuous rowing race if he had not been re-examined.

Dr BONE said the committee had adopted the policy framed in the motion after very careful consideration. Some schools consisted mainly or almost entirely of resident pupils but a school might have few resident and a very large number of day pupils. The latter would be attended by their own doctors. The committee decided

that it would be quite wrong to take away from the private practitioner the duty of looking after his own patients. The point of policy involved had often been considered by the Association in other connexions and it had always decided that the private doctor should not be disturbed.

Dr MARTIN said in reply, that the committee's argument applied equally to re-examinations and examinations. The amendment did not relate to treatment. Cases of eye defect detected by the examining doctor would be referred to the usual medical attendant.

The amendment was lost by a narrow majority.

Dr COWELL (Croydon) proposed that "re-examination" be substituted for "examination" and that "keeping of medical records of resident pupils" should follow immediately, instead of appearing further down in the list of duties.

Dr BONE thought there was no sufficient reason for changing "examination" to "re-examination" and he preferred that the phrase about keeping records should remain where it was.

The amendment was lost.

Dr G. W. MILLER (Dundee) moved that the recommendation setting out the duties of the whole-time officer should be amended by the deletion of the words "dispensing of medicine, but not the provision of drugs." He said that it was fifty years since the dispensing of medicines ceased to be part of the routine duty of medical practitioners in Dundee and many other parts of Scotland. There should be no occasion for it if a qualified pharmacist was anywhere available. Medicine dispensing was in a different category. Furthermore, such dispensing was no part of the duty of an insurance practitioner.

Dr BONE replied that it was the custom in public schools for the medical officers to dispense. For the most part the schools were isolated and no qualified pharmacist was available. He saw no reason why the Association should suggest an alteration of a duty which was customary and to which none of those who were performing it raised any objection. They were not dealing with insurance practitioners.

Dr MILLER added that if a qualified dispenser was not available there was no objection to the medical officer dispensing and it was not necessary to specify it as one of his routine duties.

The amendment was lost and the recommendation setting out what the duties should include was then agreed to, as were further recommendations setting out the duties which should not be demanded and the requirement that a whole-time officer should not be allowed to enter into private practice or undertake consultative work outside the school community but that he might make certain private arrangements for attendance on masters and their families and on school servants. It was also agreed that in the case of a preparatory or junior branch school under the same governing body as the principal school it should be open to the medical officer to the principal school to act as medical officer to such preparatory or junior branch, though not to such a school which was not under the same governing body.

#### PART TIME MEDICAL OFFICERS OF PUBLIC SCHOOLS

The meeting then turned to the consideration of the part-time officer. On the motion of Dr BONE it was agreed that a part-time medical officer should be appointed by the governing body of the school. He next proposed that the usual duties of such a school medical officer should include attendance on sick resident pupils, reports to masters on such pupils, correspondence with parents with regard to the health of resident pupils, and accessibility when school games were in progress.

Dr ROXBOROUGH asked what was a public school. Did it mean Eton or Harrow? Dr BONE replied in the affirmative. Eton and Harrow were public schools. There were a good many more, of course.

The word "accessibility" was taken objection to by Dr R. W. LESLIE (Belfast), who expressed the gratitude



of part-time medical officers of public schools to the committee for their labours and efforts on behalf of a hard-  
working and worthy body of men. He said  
that the committee was not to be competent to undertake any duty which would take him out of telephonic communication with the school. He suggested the difficulty would be met by the phrase "reasonable accessibility," and this was accepted by the meeting.

Dr WALLACE HENRY pointed out that the duties of a whole-time officer included "special reports to the headmaster and house masters re patients," whereas the wording of the present motion relating to part-time officers was "reports to masters on sick resident pupils." He asked why there was a difference in the wordings, and suggested that they were intended to mean the same thing.

Dr BONE said the difference was intentional. It was considered that the duties of a part-time officer differed to a considerable extent from those of a whole-time officer, and that this was one of the ways in which they differed. In one case there was a whole-time man whose whole life was devoted to the particular job, and it was thought that the duties in the one case were, and ought to be, more elaborate than in the other. The original motions contemplated advising the Representative Body that whole-time men ought to be appointed wherever possible. It was considered that the whole-time men were an improvement on the part-time men. It was not thought right or proper to lay down the same very elaborate set of duties for the part-time medical officers as were laid down for the whole-time men.

The motion was then carried.

Dr BONE next moved a recommendation with regard to the remuneration of a part-time officer—namely, that it should be either

(a) By a capitation fee of not less than 10s 6d per resident pupil per term, or £1 11s 6d per resident pupil per year,

(b) By salary of such amount as shall be equivalent to the remuneration of the whole-time officer, or  
graph (a), or

(c) By arrangement with the parents of the pupils where the parents are directly responsible to the medical officer for the payment of his fees.

This was agreed to.

Dr BONE then moved that the duties of the part-time officer might also include

Examination of new pupils on admission to the school  
Periodical examination of pupils  
Keeping of medical records of resident pupils  
Supervision and inspection of dietary of resident pupils  
Supervision and inspection of physical training of pupils  
Simple vision and colour vision testing  
Advice on all hygienic measures in connexion with school work

Mr E W G MASTERMAN asked why there had been an objection to Dr Martin's motion, and yet here the part-time officers were to make periodical examinations of pupils.

Dr F W GOODBODY (Manselton) said one reason for the alteration in the wording between the previous motion and the present was that the committee had had the advantage of the counsel of two members of the Association who were doing part-time work at schools. Their duties were very different, and they had pointed out that some schools preferred the medical officer to examine all pupils, and some only resident pupils, but that in several cases, like Eton, where there were half a dozen doctors concerned with the treatment of the boys, the customs among those doctors varied very much. Some thought they should examine, and some thought they should not examine. That was why the word "resident" was left out in the present motion.

Dr D McKIN (Glasgow Eastern) moved as an amendment the insertion of the word "resident" so that the second line in the list of duties would read "Periodical examination of resident pupils."

Dr J A MACDONALD seconded the amendment.

Dr DAVID CLOW (Gloucestershire) supported the recommendation of the Council as it stood. The present afforded

a unique opportunity for the investigation of the normal. The proper study of disease should begin with the investigation of the normal. Valuable work had been done in the last few years in this connexion. If the work was spread among several medical officers, no doubt the scheme could be followed by them, but the same attention would not be given by the man outside—to whom the work was not part of his day's work, as it were—as would be given by the medical officer whose special interest it was to examine the pupils. He would like to see it adopted as the policy of the Association that all pupils should be examined and re-examined by the same medical officer.

Mr BISHOP HARRIS supported the recommendation as it stood. In the interests of the pupils it was far better that the examination should be as wide as possible. He had yet to learn that in the elementary schools there was the least difficulty in the matter.

Dr H S BEADLES considered that the word "resident" should be inserted, and Dr EUSTACE HILL (Public Health Service) opposed the insertion.

Dr BONE left it to the meeting to say whether or not the word should be inserted. He was quite prepared to accept the amendment.

The amendment was carried, as was also the recommendation as amended.

Dr BONE further moved

That where the additional duties enumerated in the foregoing recommendation are required of a part-time medical officer of a public school the remuneration should be increased by higher capitation rate or retainer fee.

The motion was carried.

The final recommendation repeated what had already been agreed to in the case of the whole-time officers, that satisfactory arrangements should be made in school curricula for giving instruction to the pupils on questions of health and hygiene. It was adopted without further discussion.

The minutes of the proceedings in committee were read to the committee by the MEDICAL SECRETARY, and were confirmed.

#### PROCEDURE ON THE PUBLIC SCHOOL RESOLUTIONS

##### Resumption of Plenary Session

Dr BONE moved that the committee of the Representative Body report to the Representative Body that it approved of the amended resolutions on the position, duties, and salaries of public school medical officers proposed by the Council.

This was agreed to, and the Representative Body then resumed its normal session. After Dr BONE had moved that the report of the committee (as above) be adopted, Dr MIDDLETON MARTIN desired to move again, as he was entitled to do under the rules of procedure, the amendment he had moved in committee, which had then been lost, but he now modified it so that it became a reference to Council to consider whether the word "all" should not be substituted for the word "resident" in the statement as to one of the duties to be expected of the whole-time medical officer—"periodical examination of all pupils"—not merely resident pupils—but he added that an exception should be made where a certificate from the pupil's private attendant was presented.

The vote on this amendment was so close that it had to be recounted. The final figures were

For the amendment	81
Against	80

The report of the representatives in committee to the Representative Body was then approved, with the request that the Council should consider what had just been embodied in the amendment.

Dr WALLACE HENRY moved that it be an instruction to the Council to enter into communication with the governing bodies of public schools on the position, duties, and remuneration of their medical officers, in accordance with the recommendations of the Council as amended, which had been approved by the Representative Body in committee. He said they had given the chairman of the Medical-Political Committee the backing he desired, but they had not yet made the resolutions which had been proposed.

forward the policy of the Association because they had not been formally approved by the Representative Body in session. Several members were anxious that the Association should not, as it were, hold a pistol to the heads of governing bodies or public schools. Now the Association would be able to approach them and discuss in a friendly way the general views that had been adopted.

Dr PETER McDONALD seconded the resolution.

Mr McINAM ECCLES Does that include conference with the Headmasters' Association?

The CHAIRMAN If they are willing to have one.

Dr WALLACE HENRY had no objection to the suggested addition.

The CHAIRMAN We must not forget the headmistresses.

It was agreed that the resolution read "governing bodies of public schools and other bodies concerned."

The resolution was carried.

#### Periodic Physical Examination of Pupils

Dr E. K. LE FLEMING moved on the remainder of the Report.

That the Representative Body is emphatically of opinion that provision for periodical examination of and report on the physical development of pupils at public schools should be established by every such school.

He thought it would be unfortunate if they did not take this the first opportunity they had had to emphasize the need for the periodical examination of all pupils. Every medical officer associated with a public school knew that large numbers of boys and girls suffered from all kinds of physical defects that were allowed to pass unnoticed until they brought about a complete breakdown in the pupil as a scholar. Parents seemed to assume that it was logical to pay a large sum of money for the mental education of their children and that the physical side of their development should proceed on perfectly normal lines and require no attention. They were very much to blame in that respect. The school was the place where children could be safeguarded from developing physical defects by attention at an early stage, and it was practically only at public schools that this necessity was not recognized. In the forefront of its policy the Association should emphasize the necessity for the periodical examination of pupils.

Dr JOHN-ON SMITH seconded the resolution.

Dr BOYE said that the Medico-Political Committee recognized the very great need for the periodical examination of all pupils. It was of vital importance that boys and girls at the age of growth and development should be examined and re-examined, so that at the earliest possible moment signs of physical disease could be detected and vigorous exercises adjusted accordingly. He agreed with everything Dr Le Fleming had said.

Mr BISHOP HANMAN said they were asking that the immense benefit that children in elementary schools had derived from periodic examinations by medical officers should be extended to pupils in public schools. He was often shocked to find that defects that had been present for many years had not been discovered in the family or the school until some unfortunate incident arose out of it.

The resolution was carried without dissent.

(To be continued)

### ANNUAL GENERAL MEETING

THE ninety-fifth Annual General Meeting of the British Medical Association took place in the McWan Hall of Edinburgh University on Tuesday July 19th 1927 at 2 p.m. The PRESIDENT (Mr Robert G. Hogarth, C.B.E.) was in the chair.

The Notice convening the meeting was read by the FINANCIAL SECRETARY and the Minutes of the Annual General Meeting held in Nottingham on July 20th 1926, which had appeared in the SUPPLEMENT were taken as read and confirmed.

#### INDUCTION OF PRESIDENT 1927-28

Mr HOGARTH then inducted as President, 1927-28, Sir Robert W. Philip, M.A., M.D. F.R.C.P. L.D., Hon. F.R.C.S. Ed. Honorary Physician to the King in Scotland, professor of tuberculosis in the University of

Edinburgh, physician consultant, Royal Infirmary, Edinburgh, and invested him with the presidential badge of office. After doing so, he said that it was a good rule that formal speeches should be brief, and that he did not intend to break the rule, but even the briefest utterance might be aglow with warmth, and as he now vacated the presidency and invited his successor to take it from him, he wished to offer his most cordial congratulations to one who had added new lustre to a city long famed throughout the wide world for the learning, for the skill and for the character of its medical men (Applause). He could not hope to tell the medical profession in Edinburgh anything that was not already known about Sir Robert Philip and his brilliant work. It would also ill become him to praise one whose great merits had received such general and such signal recognition. He hoped that Sir Robert would enjoy his year of office as much as he (the speaker) had enjoyed his own. He was sure that at its close Sir Robert would agree that there was no office that fell to a doctor's lot which was more honourable or more desirable than that of the presidency of the British Medical Association.

The PRESIDENT said that to succeed to the long list of distinguished men who had been Presidents of that mighty Association was a significant event. That was not the moment for him to say very much. He would have an opportunity later on of expressing at greater length his appreciation of the high honour to which the members, in their goodness, had called him. The present was a very proud moment in his life but it was one at which he felt weighted with a sense of responsibility. He begged the members to receive his sincere and respectful thanks for a fresh expression of their kind confidence (Applause).

#### APPOINTMENT OF AUDITORS

Dr E. A. STAMMING proposed that Messrs Price, Waterhouse, and Co. be appointed auditors to the British Medical Association until the next Annual General Meeting, at a remuneration of 200 guineas.

Dr MIDDLETON MARTIN seconded, and this was carried unanimously.

#### PRESIDENT ELECT

The CHAIRMAN of the REPRESENTATIVE BODY (Dr Brackenbury) reported to the meeting that Sir Ewen Maclean M.D., F.R.C.P., F.R.S.E., senior gynaecologist, Cardiff Infirmary, had been elected by the Representative Body as President of the Association for the year 1928-29.

Sir EWEN MACLEAN said that he was grateful for a further opportunity of expressing his very warm thanks for the high honour which had been conferred upon him. It was especially gratifying to him that it should have come in the city or his old and much loved alma mater an institution which enshrined within her walls all the lasting affection of her sons and daughters. It would be a very difficult thing for him to follow in the footsteps of one with the personal charm and the high distinction of Sir Robert Philip and difficult also to follow in the wake—the fading wake—of their friend Mr Hogarth who had done such faithful work for the Association in the past year. It would not be easy for Cardiff to follow Edinburgh with all her great traditions and achievements, but there were attractions in the Principality, and it only remained for him to assure the Association, on behalf of the profession in Wales North and South together with the civic and collegiate authorities, that they would do their best to give the Association a warm Welsh welcome (Applause).

#### NOTE OF THANKS TO PAST-PRESIDENT

The CHAIRMAN of COUNCIL (Sir Robert Bolam) proposed that the hearty thanks of the Annual General Meeting be given to the retiring President, Mr R. G. Hogarth, for his services as President 1926-27. He said that of the various Presidents he had encountered as an executive officer of the Association during the past seven years none had been quite so unexpected as Mr Hogarth (Laughter). Throughout the term of his office, as titular head of the Association, in his public appearances, in his address at Nottingham—(applause)—which deserved and received universal commendation and notice, and in his subsequent public appearances during a year in which there had been

many functions and ceremonies, he had done work of the very greatest value in forwarding the interests of the profession and the Association (Applause)

The new President (Sir Robert Philip), adding a personal expression of gratitude, said that during the past year he had been in a kind of helpless chrysalis stage, of rest, insensibility, and inactivity, and Mr Hogarth had been like a master gardener, indicating what might come in the future, and tending him as a father or elder brother.

Mr HOGARTH said that if his year of office had been of service to the British Medical Association he should feel far more than repaid for its cares. He had received such cordial and unsparring assistance on every side, especially from the permanent officials of the Association, that what might have been a burden had been so lightened as to be almost unfelt. Friendly hands and faces had made the way easy for him over the whole course. The well-being and advancement of the British Medical Association and the strengthening of its effectual influence in the great part it played in the medical profession would always command his active sympathy and the best that he had to give.

The Meeting then adjourned until the evening

### ADJOURNED ANNUAL GENERAL MEETING

THE adjourned Annual General Meeting was held at 8 o'clock in the Usher Hall, Lothian Road, Edinburgh. The spacious hall, with its two galleries, was filled in almost every part when Sir ROBERT PHILIP, President of the Association, took the chair. He was accompanied on the platform by Lord Sands, Sir Alfred Ewing (Principal and Vice-Chancellor, Edinburgh University), Professor George M. Robertson, P.R.C.P. Ed., the Right Rev. Dr. Norman Maclean, the Very Rev. W. P. Paterson, Sir David Wallace, Dr. Drummond Shiels, M.P., Sir Leslie Mackenzie, and many other representatives of the civic and university life of Edinburgh and of Scotland.

Others more closely identified with Association activities also on the platform were Mr. R. G. Hogarth (Past President), Sir Fwen Maclean (President-Elect), Sir David Drummond (a former President), Dr. C. O. Hawthorne (Chairman of the Representative Body), Dr. H. B. Brackenbury (Past Chairman), Sir Robert Bolam (Chairman of Council), Mr. Bishop Hamman (Treasurer), Dr. J. A. MacDonald, Sir Jenner Verrall, Sir William Macpherson, and many other members of Council.

### INTRODUCTIONS

Sir ROBERT BOLAM opened the proceedings by asking Dr. Feigus Hewat, the honorary local general secretary, to present to the President a large number of delegates from kindred associations, foreign guests, and representatives and delegates from Overseer Dominions. Each of these visitors received a greeting from the audience, in some cases, particularly that of Professor Harvey Cushing, a specially cordial one.

The following were the delegates presented from kindred associations:

*Canadian Medical Association* Dr. H. S. Bukett, Dr. J. T. Lotheringham, Dr. James Miller, Dr. F. N. G. Starr  
*American Medical Association* Dr. G. H. Simmons (Editor Emeritus), Dr. W. S. Thayer (President Elect)  
*China Medical Association* Mr. Dugald Christie

The following were the foreign guests:

*Denmark* Professor Knud Leber  
*France* Dr. P. F. Aimand Delille, Professor L. Blum, Professor R. Cruchet, Professor Georges Guillaum, Dr. E. Rist, Dr. René Tugowla  
*Germany* Professor Gustav Embden, Dr. E. Martini  
*Holland* Professor Jan van der Hoeve, Professor E. C. van Leeuwen  
*Hungary* Professor Emile de Grosz  
*Italy* Professor Vittorio Ascoli  
*Sweden* Professor K. A. Petron  
*Switzerland* Professor F. R. Nager  
*United States* Professor Harvey Cushing, Dr. Theodore Diller, Professor E. L. Opie

The representatives and delegates from Overseer Dominions presented were as follows:

Dr. F. E. Whitehead (Nyasaland), Dr. T. D. Greenless (Cape Eastern and Orange Free State and Basutoland), Dr. J. I. Rubidge (Cape Midland), Mr. T. Lindsay Sunda (Cape Western), Dr. Spencer Wicks (Griqualand West), Mr. G. V. Huggins (Natal), Dr. J. J. Boyd and Dr. A. G. (Pretoria), Dr. W. T. F. Davies, Mr. Max Greenberg, and Mr. H. Temple Munsell (Witwatersrand).

Dr. W. H. Percock (Sierra Leone)  
Dr. Sinclair Gillies, Dr. W. L. Kirkwood, and Mr. E. T. Thing (N.S.W.), Dr. C. E. A. Coldicutt, Dr. A. Donohue, and Dr. W. Young (New Zealand), Mr. E. A. Lahan (Queensland), Dr. L. J. Balfour, Professor R. J. A. Berry, Dr. B. Stewart Cowen, Dr. Konrad Hiller, Dr. L. S. Latham, Dr. Felix H. Meyer, Dr. J. H. Nuttall, Dr. J. E. Nicholl, and Dr. T. W. Sinclair (Victoria), Dr. A. W. Farmer (Western Australia).

Dr. S. Segun Strahin (Hong Kong and China)  
Mr. F. C. Madden (Egyptian)  
Dr. S. P. Kapadia (Bombay), Dr. L. D. Parsons and Dr. Lucian de Zilva (Ceylon), Major M. G. Naidu (Hyderabad), Lieut. Colonel R. E. Wright, I.M.S. (South Indian and Madras).

The Hon. Sir David J. Galloway (Malaya)  
Dr. W. Dunlop (Mesopotamia)  
Dr. E. H. Bannister (Barbados), Dr. Q. B. de Freitas (British Guiana).

A cablegram was read from Dr. Orenstein of Johannesburg conveying, on behalf of several councils and professions of South Africa, best wishes to the Annual Meeting.

### THE SIR CHARLES HASTINGS CLINICAL PRIZE

The CHAIRMAN OF COUNCIL said that the Sir Charles Hastings Prize was a clinical prize which had been instituted to encourage systematic observation, research, and record in general practice. This year it had been obtained by one who, practising in Lancashire, had been a worker for the British Medical Association in medico-political circles. Dr. J. S. Manson had sent in an essay of extraordinary merit and had been awarded what was regarded as one of the prizes of the general practitioner the Sir Charles Hastings clinical prize.

The PRESIDENT, in presenting the prize, which consisted of an illuminated certificate and a cheque for fifty guineas to John Sinclair Munson, M.D., Warrington, for his clinical study entitled "Observations on human behaviour," said: "On behalf of the British Medical Association I have very great pleasure in awarding you this prize, and at the same time congratulating you on having found, in the midst of your ordinary daily work, opportunity for such able observation."

### PRESIDENT'S ADDRESS

The PRESIDENT then delivered from the chair the address which is printed at page 123.

### VOTE OF THANKS TO THE PRESIDENT

At the close of the presidential address, which was received with long-continued applause, Dr. C. O. Hawthorne (Chairman of the Representative Body) proposed a vote of thanks to the President. He said that to praise Sir Robert Philip in Edinburgh was of all things a superfluous proceeding, and to commend him and his distinction and his work to his colleagues in the medical profession was equally unnecessary. In the British Medical Association it was considered scarcely to leave the presidential address for careful study and contemplative reflection, and thus it did not fall upon him (Dr. Hawthorne) to undertake the formidable task of analysis or comment. It was sufficient to say that the scientific value of the address, its economic implications, and its bold advent into the field of optimistic prophecy would all receive the most careful consideration, while its literary charm would appeal to every reader, even as it had to those who had been fortunate enough to listen to its delivery. In Edinburgh medicine was cultivated with a structure of philosophy and this address strikingly illustrated the truth of the proposition (Applause).

Sir ALFRED EWING (Principal and Vice-Chancellor of the University of Edinburgh), in seconding the vote of thanks, said there could be no two opinions as to the suitability

of their choice of a President nor as to the distinction, the literary charm, the philosophic grasp, and the immense suggestiveness of the address they had just heard. As a layman he had been brought into intimate contact with Sir Robert Philip in matters of administrative detail regarding the University, details sometimes medical, sometimes non-medical, and there was no occasion when Sir Robert Philip's opinion had not been of the greatest value. Sir Alfred Ling did not remember ever to have seen the President's serenity ruffled or his judgement other than calm and balanced. The tremendous work which Sir Robert Philip had described that night illustrated a striking characteristic of the profession—that it had achieved its own greatness by its humanity.

The vote of thanks was heartily accorded, and Sir ROBERT PHILIP briefly expressed his thanks and asked his hearers to meet him a little later at the reception by himself and the local executive, at the McEwan Hall.

### OPENING OF THE ANNUAL EXHIBITION

THERE was a strong muster of members of the Association and visitors in Waverley Market Hall, Princes Street, on Tuesday morning for the official opening of the exhibition of surgical instruments, appliances, drugs, foods, etc. Dr BRACKENBURY, Chairman of the Representative Body, presided, and others present on the improvised platform were Sir Robert Philip, Sir Ewen Mackenzie and Sir Robert Bolam, Chairman of Council.

Dr BRACKENBURY said that the British Medical Association always desired to give as much publicity as it could to the Exhibition, and, following a very advantageous custom, he would ask the President-Elect who would become President in the course of that meeting, to commend the Exhibition and declare it open.

Sir ROBERT PHILIP said:

The Chairman has just told us that it is a happy custom that the President-Elect should declare this Exhibition open. I am not quite sure that it is quite a satisfactory custom so far as the Exhibition is concerned, but for this I am certain that no duty could be more grateful, more acceptable to the man who occupies the position I do for the moment than the opening of this Exhibition. Looking round and knowing the Waverley Market as I do, I feel that there has been a transformation or a somewhat dubious building into a world of beauty. (Hear, hear.) That world of beauty is not everything that we see for the moment from this platform because as you pass from stall to stall revelations emerge of a most astonishing and interesting character. This Exhibition I take it, stands for the union of brain or thought, the vision of the doctor, the experimenter, the man who is feeling his way and the ingenuity of the technician without which mirror you all our fine thoughts would carry us a very short distance. The medical profession owes a great deal to our fellow-workers whether they are the manufacturing chemists, the pharmacists, the scientific instrument makers, or the publishers and I desire as getting to be an oldish member in the profession here and now to express to all the representatives all these fellow-workers our sense of this indebtedness. (Applause.) It is particularly significant to realize that happy union in this city because in Edinburgh during the past centuries there have been two very notable examples of the value of the combination to which I have alluded. In the first place in the earlier time not very far separated the one from the other you had Sir James Simpson feeling his way following the example of men in America and elsewhere to realize the great principle and practice of anaesthesia. Sir James Simpson in all his observations was assisted—more than assisted, notably assisted—by his association with a leading firm of chemists in the city of Edinburgh. (Hear, hear.) Then, coming to another point in history which is very much in our minds just now when we are out to commemorate the life of that great man Lord Lister, it must be known to many Edinburgh men here how very closely related—I was going to say how dependent—Lord Lister was and he would have been the first to have expressed this view himself on his association with fellow-workers on the technical side. The firm of Messrs. Macfarlan in Edinburgh, an old historic firm, were in most intimate touch with Lister

at every point in the development of his technique, more particularly his technique in relation to the refinement of catgut and so on. On the other side of his work, another firm of instrument makers Messrs. Gardner, were closely associated with him in relation to the technique shall I call it or the old-fashioned sprag—the technique or his delicate apparatus. I am very happy that it should have fallen to me in this city, not merely to refer to the old associations, and to the gratitude that those great men who have since left us would have felt, but in the widest way once more to express the feeling of the profession towards our colleagues the technicians, and of the general public in the will allow me to say so to those men without whom the work of us doctors however desirous we might be of relieving others, might fail in its attainment. I have very much pleasure in now formally declaring this Exhibition open. (Loud applause.)

Dr BRACKENBURY said it was very gratifying to see so large an assembly, and on behalf of the exhibitors, the members of the British Medical Association and members of the public he thanked Sir Robert Philip, not merely for declaring the Exhibition open but for his charming, illuminating, and enlightening address. (Applause.)

### THE REPRESENTATIVES' DINNER

At the conclusion of the first day of the Annual Representative Meeting the representatives dined together in the debating hall of the University Union. Unfortunately Dr Brackenbury, soon after his arrival to preside over the dinner, was seized with indisposition and his place in the chair was taken by Dr C. O. Hawthorne. The shadow which the temporary illness of Dr Brackenbury cast upon the assembly was in part dissipated later in the evening when the CHAIRMAN of COUNCIL announced that Dr Brackenbury, who had returned to his hotel, was very much better.

Dr E. J. TOYE of Barnstaple who had been selected to propose the toast of Chairman of the Representative Body, found himself as he said, taking part in a performance of *Hamlet* without the Prince. But he proceeded with the speech he had prepared which dwelt upon Dr Brackenbury's name, qualifications, and offices, and even extracted some oratorical capital out of his telephone number! Dr Brackenbury, he said, derived thoroughly well of the medical profession and the British Medical Association, in whose interests he had laboured with such ability and devotion.

The toast to the absent Chairman was pledged with great heartiness, and to the singing of "For he's a jolly good fellow."

Dr HAWTHORNE took advantage of the occasion to apply some familiar quotations to Dr Brackenbury among them that passage of Scripture concerning the one who waxed valiant in fight, put to flight the armies of the alien, stopped the mouths of lions—and sometimes of other members of the animal kingdom who had nothing of the lion about them except the skin! Dr Hawthorne also referred to some of the lighter sides of the Representative Meeting, its relaxations and hesitations and pointed his remarks with some timely illustrations of the more delicate sides of the relationship of host and guest. He concluded by expressing the regret of all those present that at that particular moment Dr Brackenbury after his labours as chairman, should have been prevented by what they all hoped was only a passing indisposition from spending an agreeable evening among his friends.

Professor LOVELL GULLAND related some reminiscences of the visit of the Association to Edinburgh in 1893 when Sir Thomas Granger Stewart was President and Sir Robert Philip Honorary Secretary and he obliged the company with a song specially composed for the occasion nearly thirty years ago. In these days, he said, the local people had nothing like the help they now enjoyed from headquarters but they got a great deal of fun out of the meeting and put in an immense amount of hard work. The song which was of many verses included one which ran:

We chose the committees with thought and with care  
With infinite constabulation  
While the Sections were picked so that all had a share  
And none could complain of the Association

The lines also bewailed the ease of

Poor Philip who had the life of a dog,  
His days were a long tribulation,

while

Sir Thomas who acted the President's part,  
Is deserving of high commendation

Further poetic gifts were revealed by Dr WILLIAM FORDYCE, who gave a recitation of many verses, the theme of which was a rather remarkable (and, to those who know him, unbelievable) episode in the career of Sir Harold Stiles, but as the poem concluded by stating that it was all a dream it need not be taken too seriously. The recitation was delivered with much dramatic vigour, and received immense applause.

The company broke up after singing 'Auld Lang Syne'. The attendance was very large, and the Chairman was supported by the President, Mr R G Hogarth, and the President Elect, Sir Robert Philip.

## THE REPRESENTATIVES' EXCURSION

### A VISIT TO THE SCOTT COUNTRY

ON Sunday the representatives and their wives spent a delightful day in the Scott country, more than 500 of them journeying by car and charabanc to the Border. The weather was everything that could be desired.

The party started from the Royal College of Physicians at 9.30 a.m., and proceeded to Rullion Green, where a most impressive service was conducted by the Revs I Ratcliffe Barnett and George F Macleod. On the actual site of the old Covenanters' battlefield, in a dip in the hillside, a short and interesting address was delivered, in the course of which it was pointed out that some 250 years ago a band of 900 Covenanters, from Dumfriesshire, half starved and badly armed, took their stand. Their homes had been destroyed and they were endeavouring to reach Edinburgh. At Rullion Green they were attacked by 3,000 well armed Government troops under Dalziel of Binns. Retreating south, the Covenanters took up a position on the actual spot where the service was held. On Dalziel's first attack he was routed, but a later attack in the evening ended in the defeat and flight of the Covenanters. The dead and wounded were left lying in the snow (the battle was fought on November 8th, 1666), and were stripped and robbed. In the night the godly women of Edinburgh came out and clothed the naked dead in white shrouds. They were buried on the battlefield, where a monument has been erected to commemorate their heroism. About 150 prisoners were taken to Edinburgh, and either put to death or shipped to the plantations. So ended one of the most celebrated battles of 'the Killing Time,' during which over 15,000 Covenanters perished in support of the Presbyterian form of worship. The minister claimed that, largely as the result of the magnificent action of the Covenanters, freedom of thought in religion had been secured in Scotland for all time.

The representatives then proceeded to Penmonk, Peebles, and Gilshields. Here an excellent lunch was served. The Provost showed the party the beautiful war memorial of the town. Of a population of some 15,000, over 3,000 had proceeded overseas during the great war, and of these some 600 had given their lives for their country. After passing Abbotsford, the later home of Sir Walter Scott, the ruins of Melrose Abbey, beneath the slope of the Eildon Hills, were seen. Here, in the remains of the Abbey, founded in 1136, and endowed by David I for the Cistercian Order, near the eastern end, is buried the heart of Robert Bruce, many border chieftains, including Michael Scott, the Wizard, lie here.

Bemerside House was passed—the house presented by the nation to Field Marshal Earl Haig as a tribute to his services in the war, and which fulfilled the ancient prophecy—

"Tide—tide—white er betide  
There'll aye be a Hug in Bemerside."

During a halt at Dryburgh the visitors inspected the Abbey, founded by David I of Scotland in 1150. It was a brotherhood of Premonstratensian monks from Alnwick, and was four times destroyed by English armies. Here is buried Sir Walter Scott, his wife, and members of his family. After a drive along Tweedside Kelso was reached. There, at Floors Castle the representatives were entertained to tea by His Grace the Duke of Roxburghe. In a large marquee in the beautiful grounds of the Castle a very refreshing meal was served, after which the gardens and hot houses were inspected. The delightful weather enhanced the natural beauty of the grounds of Floors Castle, which were in perfect condition. The drive home through most glorious Border scenery terminated a very delightful and

memorable excursion, very much appreciated by the large and distinguished party, which included most of the officers, officials, and members of the Representative Body.

A slight accident occurred during the journey. A small child, through no fault of the driver, was knocked down by one of the charabancs. She was immediately examined by two distinguished surgeons who were in the vehicle. It was explained to the mother that two well known surgeons had satisfied themselves that no serious harm had overtaken the child, and that she had nothing more than a few slight bruises. The mother remarked, "Thanks, but I'll have my own doctor," a remark very much appreciated by everyone in the charabanc, and not least by the two surgeons.

## ENTERTAINMENT BY THE EDINBURGH AND LEITH DIVISION

ON Saturday evening the Edinburgh and Leith Division gave a smoking concert to the representatives in the Debutin Hall of the Union Society. Dr William Guy in the chair, and Dr Fordyce acting as deputy chairman.

Dr Guy, in a welcome to the visitors, recited with his well known sonorous eloquence the following poem, composed by himself.

All hail! you representatives from far and near  
We bid you welcome, offer you good cheer,  
Furnished your task, solved each momentous question,  
No mental strain inhibits good digestion,  
So east aside the cares of class or practice  
With thankful hearts admitting that the fact is  
Though bugs of all kinds, oecous or braillous  
Or even spirochaeta may try to kill us,  
The wise practitioner who would slay these bugs  
Puts not his trust in vaccines or in drugs,  
But rather in the microbes deadliest foe—  
Tobacco smoke + C<sub>2</sub>H<sub>5</sub>O  
To this prescription it is never wrong  
To add a dose of music and of song,  
Lift up your voices then, and swell the chorus,  
Bass, tenor, baritone, in tones sonorous!  
And if perchance the effort makes you pant,  
Restore the rhythm with a stimulant  
Of stimulants the one without a peer  
All will agree is good old British beer!  
Now must I stop and come to the agenda,  
The order of the night "Nunc est bibendum!"

The concert was a very successful one, among those contributing to the entertainment being the chairman and vice chairman and many of the students.

A great feature was some good community singing of old Scottish songs, such as "John Peel," "Billy Boy," "Loch Lomond" and well known students' verses, "What shall we do with the drunken sailor?" "Solomon Levi," "A roving," being rendered with great gusto by the large audience assembled.

Dr J A Macdonald, in a few well chosen phrases, expressed the thanks of the guests for the excellent entertainment provided, and the concert concluded with the singing by the audience, in true Scottish fashion, of "Auld Lang Syne."

As was anticipated, the number of members attending the Annual Meeting in Edinburgh is large, down to 2 p.m. on Wednesday, July 20th, 2,000 had registered their names.

## British Medical Association

### CURRENT NOTES

**Handbook for Recently Qualified Medical Practitioners**  
THE second edition of the Association's *Handbook for Recently Qualified Medical Practitioners* was issued in April of last year. The demand for this guide to the intricacies of medical practice has been so great as to necessitate a reprint, and it is evidently not confined to newly qualified, for whom the handbook was primarily intended. A special feature of the present edition is the amount of space devoted to the practical aspects of medical work, including the legal and social obligations of the practitioner. The appendices include the Warnings Notice issued by the General Medical Council, the rules of the Body of medical consultation approved by the Representative Body of the British Medical Association, and the *Prætorian* on the duties of doctors and dentists.



Dangerous Drugs Acts, 1920-23, issued by the Home Office. The handbook can be obtained on application to the Financial Secretary and Business Manager, price 3s 8½d post free. Copies are presented to newly qualified practitioners through the Divisions and Branches.

#### Medical Appointments Abroad.

The head office of the British Medical Association has a good deal of information placed at its disposal by its Branches overseas, which may be very useful to those proposing to accept medical appointments abroad. Practitioners are cordially invited to apply to the Medical Secretary, B.M.A. House, Tavistock Square, W.C.1, for any information that may be available regarding overseas appointments in which they may be interested.

#### The Half Yearly Indexes

The usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been prepared and will be published shortly, they will, however, not be issued with all copies of the JOURNAL, but only to the readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

### Association Notices

#### ULSTER BRANCH NORTH EAST DIVISION

The Council has changed the name of the Ballymoney, North Antrim, and South Derry Division to "North East" Division.

### Meetings of Branches and Divisions

#### CAMBRIDGE AND HUNTINGDOY BRANCH

The eighty third annual general meeting of the Cambridge and Huntingdon Branch was held at Harston Cambridge on July 12th. The following were elected officers for the ensuing year:

President: Dr W. J. Young. President-Elect: Mr W. H. Bowen. Vice-President: Dr Robt. Ellis and Dr H. Macdwyer. Honorary Secretary: Dr G. S. Haynes.

Dr Young generously entertained fifty two members and visitors to luncheon in the village hall and afterwards delivered his presidential address entitled "Then and now in midwifery." His array of facts, eloquence and wit delighted his audience and he was warmly thanked for his hospitality and entertainment.

#### DORSET AND WEST HANTS BRANCH

The summer meeting of the Dorset and West Hants Branch was held at the Weymouth and District Hospital on July 6th. The president, Dr G. Edwards, took the chair and there were forty-one members present. Mr W. A. Merrifield read a paper on acute dilatation of the stomach and Dr A. E. Blackburn opened a discussion on disease of the urinary tract. The Weymouth members provided lunch and tea for the visitors. The Branch approved the proposal that the municipal borough of Lynton and that portion of the rural district of Lynton containing the civil parishes of Milford Hordle and Milton be transferred from the Southampton Division of the Southern Branch to the Bournemouth Division of the Dorset and West Hants Branch. A Council meeting attended by sixteen members preceded the general meeting. A letter was read from the Medical Secretary as regards candidates for election to the Branch.

#### EDINBURGH BRANCH EDINBURGH AND LEITH DIVISION

A meeting of the Division was held in the Hall of the University Union on Wednesday July 13th from 4 to 6 p.m. when the graduands in medicine were entertained and welcomed into the ranks of the profession. The Chairman of the Division presided. There were present about 150 of whom 70 were graduands. Some fifty members of the Division attended, a number of whom were accompanied by ladies.

Professor D. P. D. Walker delivered to the graduands an address which was very cordially received by them and by the members. The Chairman, Dr Walker, stated the more outstanding advantages of a membership of the Association.

During the course of the proceedings the certificate from Miss Georgina Somerville for the Association prize essay was presented by the chairman. To each graduate was given a copy of the

#### British Medical Association Handbook for Recently Qualified Medical Practitioners

An enjoyable medical programme was rendered and at its close Mr MITCHELL, F.R.S. thanked the chairman and members on behalf of the graduands.

#### METROPOLITAN COUNTIES BRANCH CITY DIVISION

A meeting of the City Division was held on July 5th at the Metropolitan Hospital when Dr T. H. G. Shore, curator of the museum of St. Bartholomew's Hospital gave a demonstration of pathological specimens. This included a specimen of adamantinoma from a girl aged 17 who on admission to hospital was paralysed and deeply comatose. The urine contained albumin, sugar, and acetone. She did not respond to insulin and at the necropsy a large tumour mostly composed of blood clot was found in the brain. Dr Shore also showed an appendix containing thirty-six small shot removed from a man who was very fond of eating rabbits.

A clinical meeting of the Division was held on July 6th at the Queen's Hospital for Children when medical cases were shown by Drs E. BELLINGHAM, SMITH, SIMON, OVER, HELL, M. MACRAE, ALICE KING and D. W. WINNICOFT. Surgical cases were shown by Messrs B. WHITCHURCH, HOWELL, L. R. BROSTER, E. CROOK, R. COLE, M. VLASTO, V. NEFIELD, N. BURGESS, Dr ELIZABETH O'FLYNN and Dr W. P. TINDAL, AINSWORTH.

Another clinical meeting was held on July 8th at the Metropolitan Hospital when Dr P. HAMILL demonstrated cases in the wards.

#### METROPOLITAN COUNTIES BRANCH HARROW DIVISION

A meeting of the Division was held on June 28th. A letter about the Dogs Protection Bill written by the secretary to members of Parliament was read together with the replies of members thereto. The question whether dental anaesthetic fees under national insurance practice enabled doctors to ask for the balance of the usual fee from the patient without incurring a penalty was answered to the doctors' advantage after inquiry at the Panel Committee. As regards fees for puerperal postnatal scheme, Dr Tait of Middlesex County Council stated the fees agreed by him with the Ministry of Health and it was resolved that the secretary should write to medical officers of health of the district as to this. The Charities Subcommittee hopes to be able to report shortly. Notice of an orthopaedic clinic at Northwood was given by Dr MAYNE. Dr BERTWISTLE gave a short lecture on the libouette radiogram in the interpretation of physical signs.

#### NORTH OF ENGLAND BRANCH TYNESIDE DIVISION

On July 3rd members of the South Shields and Tyneside Divisions had a very enjoyable golfing day at Brancepeth South Shields winning the match. At a meeting of the Tyneside Division held on July 8th, Dr C. Nelson was elected to the Ethical Committee in place of Dr J. Sparks resigned. Dr S. C. Stoner and Dr J. A. Hilop were elected to the Executive Committee in the stead of Drs J. G. Nicholson and J. Forrest resigned. It was resolved that in the opinion of the Division the funds of the National Defence Fund should be used for purposes of defence in times of emergency only and that a grant of £1,000 to the Parliamentary Fund was not advisable. It was decided to stimulate the social activity of the Division by arranging a golf meeting in September and two clinical evenings and a dinner in the winter. A vote of sympathy with Mrs. Kirkland in her recent bereavement was passed and the secretary was asked to write to her. It was decided to approach again the non-members resident in the area.

#### NORTH LINCS HIRE AND SOUTH WESTLORLAND BRANCH

##### President's Address

At the annual meeting of the North Lancashire and South Westmorland Branch to which we returned briefly on July 9th (SUPPLEMENT p. 17) Dr E. Jackson in his presidential address gave an account of the improvements in medical treatment which he had witnessed during the last fifty years. He mentioned that when he started to practise it was the custom to attend a midwifery case with no equipment other than a pair of short forceps in one pocket and a bottle of ergot in the other. He described the great strides made by surgery as the result of the application of Lister's antiseptic measure, the introduction of anaesthetics and the use of x-rays. In medicine the discovery of vaccines and serums had enabled many diseases to be attacked successfully with a great resulting reduction in the mortality. Dr Jackson's reminiscences included also the change in therapeutics which followed the elucidation of the functions of the endocrine glands and an appreciation of the benefits gained by improved methods of clinical examination and diagnosis.

#### NORTHERN COUNTIES OF SCOTLAND BRANCH CAITHNESS AND SUTHERLAND DIVISION

A meeting of the Caithness and Sutherland Division was held in Thurso on July 6th with Dr D. DUNNAN in the chair. The Secretary submitted the Annual Report of Council and the Supplementary Report and the meeting discussed matters coming before the Peppercorn Body with the deputy representative (Dr A. Asher) who had agreed to act in the unavoidable absence of Dr J. B. Simpson. The following offices were elected:

Chairman: Dr D. DUNNAN (Thurso). Vice-Chairman: Dr W. E. Johnstone (Brora). Honorary Secretary: Dr A. Asher (Thurso). Executive Committee: Dr G. A. MacDonald, Dr H. Mackay, Dr A. W. Mackie, Dr A. MacLennan and Dr J. B. Simpson. Peppercorn Body: Dr A. D. Kennedy.

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been much keener than in previous years. The secretary made an appeal to all the members to try and get in many of the 47 or so non members residing in the Divisional area. Among the social activities the Division held a dance, the annual dinner was a great success, and recently its annual golf competition was taken place for prizes presented by the church. Following the ordinary business, Professor LEON VOIGT, LL D, LL B, read an address on the conditioned response. This was followed by a tea on the invitation of the newly appointed chairman.

YORKSHIRE BRANCH HUDDERSFIELD DIVISION

**LOXESHIRE BRICK HUDDERSFIELD DIVISION**  
During the past year there have been held four meetings of the Huddersfield Division and six meetings of the Executive Committee. No special questions of local interest have been discussed during the year. In March the first British Medical Association Lecture in Huddersfield was given by Professor Miles Phillips, on some obstetrical emergencies, this was very instructive and was much appreciated by those present. The social functions have again been successful, although the dance showed a deficit of £1 15 and the picnic and golf competitions were successful. The Irving Cup was won by Dr. Dickson. The Divisional round in the competition for the Treasurer's Cup has been won by Dr. Riffin. On the social functions account there is a balance in hand of about £19, in the general fund there is a balance in hand of about £8 10s.

BOOKS ADDED TO THE LIBRARY

The following books were received by the Library of the Brit. Med. Assoc. during April and May, 1927

- Anderson W K Malerial Ischias and Dentis 1927  
 Billings W L Diseases of the Throat Nose Ear Fifth edition 1925  
 Barker J Ellis Good Health and Happiness 1927  
 Blumenthal H Handbuch der Tuberkulose Fur Aerzte II 1926  
 Bousfield P Sex and Civilisation 1925  
 Butler T Harrison An Illustrated Guide to the Silt Pump 1927  
 Cawthra A P Diseases of the Intestines 1927  
 Crawford A J, and Chalmers B S Mosquito Reduction 1926  
 Crichton Brown Sir J Victorian Jotting 1926  
 Dawson J W The Malaria 1925  
 Delbet P Les Caners du Sein 1927  
 Denker A and Kahler O Handbuch der Hals Nasen Ohrenheilkunde  
 7 Bd 1926 8 Bd 1927  
 Doel L I and Quimby J C Materia Medica for Nurses Fifth  
 edition 1927  
 Dole W K Allergic Asthma Hay Fever and Eczema Second edition.  
 1927  
 Duke Elder W S Nature of the Intracranial Fluids 1927  
 Elkington J S C Notes on Quarantine Practice 1926  
 Fremantle L L The Housing of the Nation 1927  
 Giltner W Microbiology Third edition 1926  
 Griffith E C Studies in Tuberculous Tuberculosis 1911  
 Grubb Isabel Quakers in Ireland 1854-1900 1927  
 Guy's Hospital Reports Volume 47 Part I 1927  
 Hammond J The Physiology of Reproduction in the Cow 1927  
 Hanzlik P J The Action and Uses of Salicylates and Cinchona 1927  
 Harrower H R The Hepatic Principle Anabolin Detoxication by the  
 Liver and the Control of Functional Hypertension 1927  
 Hartmann H Diagnostik des primären Caners 1927  
 Henke-Lubarsch Handbuch der Speziellen Pathologischen Anatomie  
 Bde. VI, VII, and XII 1926  
 Hoffmann E Wie kann die Menschheit von der Gefahr der Syphilis  
 befreit werden? 1927  
 Hollingworth H L The Psychology of Thought 1926  
 Howard Russell Surgical Nursing Fifth edition 1926  
 Howell A B Anatomy of the Wood Rat 1926  
 International Clinics Thirty sixth series Volumes 3 and 4 1926  
 Kantor J R Principles of Pathology Volume 2 1926  
 Kirchberg F Handbuch der Massage und Hydrotherapie II 1926  
 Kolbe W and Wernmann A von Handbuch der Pathogenen Mikro-  
 organismen I, II, III 1927  
 Kolmer J A Chemotherapy 1926  
 Lacey J R Literature for a New Man 1927  
 Leighton G Principles and Practice of Vent Inspection 1927  
 Leck E Der Arzt und seine Sendung 1926  
 Life Insurance Medicine by Members of the Medical Department of  
 England Insurance Company 1926  
 Lister and the Lister Ward of the Royal Infirmary Glasgow 1927  
 Lord J R The Clinical Study of Mental Disorders 1926  
 Ludovics A M The Indictment 1927  
 Marie J Trauvant et Memoires I 1926  
 Medical Annual The 1927  
 Merrill H Pertinence to Disease Revised edition 1927  
 Mouchet Tavernier Pathologie du Menstruel du Con 1927  
 Muir R Pathological Atlas 1927  
 National Association for the Prevention of Consumption The 1926  
 1926  
 Newman Sir George Interpreters of Nature 1927  
 National Convention 1926 Proceedings of the Twentieth  
 National Sir J H Introduction to the Theory of Cancers 1927  
 O'Connell C Textbook of the Radio Nursing 1927  
 O'Connell M I Cancers and their Complications 1927  
 O'Connell C The Natural History of a Saver 1927  
 O'Connell E A New Diet 1926  
 O'Connell J Trauvant et la Dysurie Annals 1926  
 1926  
 O'Connell J A Crystalline 1927  
 O'Connell J A Notes on Medical Culture 1926  
 O'Connell R H The Medical History of the Hospital 1927  
 O'Connell A A The Practice of Medicine Second Edition 1926

SOUTH WALES AND MONMOUTHSHIRE BRANCH

**SOUTH WALES AND MONMOUTHSHIRE BRANCH**  
The fifty seventh annual meeting of the South Wales and Monmouthshire Branch was held at Pontypridd on Tuesday July 5th. Members of the Council, etc. entertained to lunch by the president-elect, Dr J. Morgan Rees. The Annual Report of Council for 1926 and the financial statement were approved. The officers for the coming session were elected as follows.

Dr R. PRICHARD (Chairman), President Elect Dr J W  
Treasurer Dr D Naunton Morgan (Bridgend)  
A A Prichard and Dr A W Owen

Dr R Prichard (Cardiff) the retiring president, then treated the club and mistitled Dr Rees as president for the year 1927-28. A hearty vote of thanks was accorded Dr Prichard for the efficient manner in which he had performed the duties of his office. Dr Rees read his presidential address on Pontypridd and its cottage hospital giving, first a short history of the town and its chief features. The famous bridge, built in 1755 was considered a remarkable engineering feat for the time having a single span of 140 feet. Mention was made of the building of a road to Cardiff during the American war in 1767, of the development of the iron trade and of the manufacture of cannon for the war. In 1795 a canal was built to Cardiff. This had a rise of 600 feet between Cardiff and Merthyr with 40 locks. The administration of the town in modern times was dealt with with special reference to its clinics and cottage hospital. The operative work had increased considerably since the opening, in 1913 the number of operations being 1913-14 102 1923-24 412 the majority being abdominal. A memorial park had been opened lately and afforded facilities for the workers for games of every sort. Pontypridd also possessed the only crematorium in Wales. At the conclusion of the meeting which was well attended, Dr Rees entertained the members and their friends to tea.

SUBSEA BRANCH HASTINGS DIVISION

The annual general meeting of the Hastings Division was held at the Queens Hotel on July 5th. The following officers were appointed for 1927-28:

Chairman Mr. Charnock Smith Vice Chairman Dr. E. C. Mackay  
Honorary Secretary and Treasurer Dr. T. Reed

The Honorary Secretary in presenting his annual report noted the continued prosperity of the Division. Ten ordinary meetings had been held with an average attendance of twenty three. Many interesting papers had been read, and the discussions thereof had

Sullivan, J. and Singer, Charles. The Earliest Printed Literature on  
Thyroid Gland. 1925.  
Thomson, R. H. and Ford, A. P. Tuberculo is of the Lung. 1927  
Thorrope, E. de. Les Nouvelles Methodes par les Reactions du Liquide  
Cytologique-Rachidien. 1927  
Treves, Sir T. and Clarke, C. C. Surgical Applied Anatomy. Eighth  
edition. 1926.  
Walman, S. A. and Davison, W. C. Enzyme. 1925  
Wason, J. A. Handbook for Senior Nurses. 1926  
Wellcome III. Historical Medical Museum. Opening and Re-opening Cere-  
monies. 1913 and 1926.  
Wellcome III. Historical Medical Museum. Later Centenary Exhibition. 1927  
Wheeler Handbook of Medicine by W. R. Jack. Eighth edition. 1927  
White, C. S. Aids to Sanitary Science and Law. 1916  
William, G. Minor Surgery and Bandaging. Ninth edition. 1927

## MEDICAL CONFIDENCES

### THE MINISTRY OF HEALTH REGULATIONS OVERRULED

THE medical profession is aware that the confidences of a patient to his medical adviser are not in law privileged from disclosure upon oath in the witness box, but a somewhat novel point arose at the Birmingham Assizes in the course of the hearing before Mr Justice McCordie of a wife's petition for divorce. It would appear that the husband had attended a special department of the Birmingham General Hospital in 1924, and the medical head of that department, who was first called, stated that he was not the head of the department in that year, that a number of other doctors were engaged in the work, each with his own papers, which were the doctors' own personal property, and that he (the witness) had no authority to produce the papers of other doctors. The counsel for the petitioner maintained that the doctor had been called and sworn, and was bound to give evidence and Mr Justice McCordie, whilst recognizing the doctors' loyalty to his profession said that communications of a patient to his medical adviser were not privileged from disclosure in a court of law and it is information which should be given were withheld or it documents which should be produced were not forthcoming he would enforce the law and send to prison a doctor who refused to obey the order of the court. The case was adjourned until July 18th for the production of further evidence and then Mr B. T. Rose, surgeon to the hospital, after a further protest complied with the judge's direction. Another question than that of privilege arose in this case. The judge asked counsel for the petitioner if he had considered the question whether or no a doctor was bound to disclose to the court information obtained by him whilst acting confidentially in the special treatment of a particular disease. Counsel replied that there was no such protection in spite of the terms of the special regulations governing the treatment of certain diseases which were issued by the Local Government Board to local authorities in 1916. Mr Justice McCordie then ruled as follows:

The medical profession normally was under the duty of keeping inviolate the secret knowledge that they might gain from treating their patient, and indeed might become liable to a civil action for damages if without lawful excuse the duty of confidence was broken, but in a court of law a doctor had no privilege similar to that held by a solicitor or other legal adviser, and he was not privileged from compulsory disclosures or communications, however confidential. A further point arose in the present case as to whether the doctors were in a specially privileged position owing to the fact that they were acting in a department under the control of the Ministry of Health through the local health committee. In his view there was nothing in the regulations or in any regulation he had heard of which saved a doctor from the obligation of disclosure ordered to do so by the court, all the information he might have or the facts he had gained whilst acting under regulation.

Mr Justice McCordie's ruling is very clearly expressed and he no doubt had in mind Paragraph (2) of Article II of the Venereal Diseases Regulations, issued by the Local Government Board in 1916 as follows:

All information obtained with regard to any person treated under a scheme approved in pursuance of this Article shall be regarded as confidential.

So far as we are aware this paragraph has not been varied by the Ministry of Health and has been taken by the medical profession, and no doubt by patients in what appeared to be its plain sense. And that this was the sense in which the Local Government Board intended it to be taken would appear from the following paragraph in a circular issued by it with the Regulations:

By Article II (2) of the Regulations all information obtained in regard to any person treated under a scheme approved in pursuance of the Regulations must be regarded as confidential and it is essential for the success of any measures designed to deal with venereal diseases that patients should be fully assured as to the secrecy of the arrangements.

Meanwhile Mr Justice McCordie's ruling stands. In it we appear to have another instance of the uncertainty which surrounds the effect of a departmental regulation—especially when it happens to clash with an accepted rule of law. It would seem that the only way in which the Ministry of Health can implement its promise of secrecy to patients attending venereal disease centres will be by direct legislation stating in clear terms that communications by patients are protected from disclosure in a court of law.

## National Insurance

### INCREASED CLAIMS FOR SICKNESS BENEFIT

At the Scottish Conference of Approved and Friendly Societies, held on June 25th in the Central Hall, Glasgow, Mr E. Forrester, in his presidential address, referred to the serious effects produced on all societies by last year's coal dispute owing to reduced contributions and increased claims for benefit. After making due allowance for the effects of under-nourishment and worry brought about by unemployment, he thought there was still a large percentage due to a certain slackness in medical certification. Although no general charge could be made against the medical profession, he thought that a number of doctors were not exercising the care which they generally showed. A Joint Dental Benefit Committee had been set up by the Ministry of Health to consider the demands of the dental profession for increased payment, which societies were not willing to grant. The scale of fees, now known as the 1926 scale, was drawn up by the Joint Committee, and the Ministry of Health had done its best to impose this scale on societies by offering to allow any society which could not pay on this scale to contribute only 75 per cent of the treatment. At a later stage in the proceedings the conference resolved that the adequacy of the scale or charges for dental treatment be reaffirmed. Among the other resolutions passed was one requesting the Board of Health to enforce more rigidly the rules for medical certification. Sir James Leishman, in the course of an address to the conference, remarked that in the first four months of 1926 the contribution income of many societies had decreased, while the actual claims in Scotland had gone up £81,000, as compared with those for the same period in 1925. He feared that the next valuation would not show the same highly satisfactory result. The Scottish income for the previous year had been nearly four million sterling, and the payments had been almost as much. The last valuation had shown that the funds invested by or on behalf of approved societies amounted to about 13½ million sterling, a result which proved conclusively the stability, solidity, and solvency of the Scottish societies.

## Naval and Military Appointments

### ROYAL NAVAL MEDICAL SERVICE.

Surgeon Lieutenant Commanders to be Surgeon Commanders J. F. I. Campbell and R. Lyon.  
Surgeon Lieutenant Commander E. G. Adams to the Pembroke for R. Hospital Chatham on relief.

### ROYAL NAVAL VOLUNTEER RESERVE.

Probationary Surgeon Sublieutenant D. R. Goodfellow to the Clampton to complete training.  
Surgeon Lieutenants F. J. D. Allen to the Victory for R.N. Hospital Haslar for fourteen days training. W. Cathness to the Victory for fourteen days training. J. E. Purves to the Victory for R.N. Hospital Haslar additional or twenty-eight days training. R. Hall to the Victory for R.N. Hospital Haslar for fourteen days training.  
Surgeon Lieutenant Commander W. F. W. Benson transferred from L. H. to L. T. J. B. of Division.

### ROYAL ARMY MEDICAL CORPS.

Captain F. R. S. Shaw M.C. to be Major.  
The following Captains to be Majors (pro) J. H. Bayley M.C. with precedence next below R. R. Thompson M.C. W. J. Rowe, com.  
R. J. Monahan to be temporary Lieutenant.  
Captain H. D. L. E. range O.B.E. half pay. Late R.A.M.C. on completion of a period of five years on the half pay list retires on retired pay on account of ill health.

### ROYAL AIR FORCE MEDICAL SERVICE.

J. Hill is granted a short service commission as a Flying Officer for three years on the active list with effect from June 27th 1927 and with seniority of June 27th 1925.  
D. Loebelin (late Captain R.A.M.C. S.R.) is granted a short service

**CIVIL & FACTORY SURGEON.**—The following vacant appointments are announced: Bredo (Northamptonshire) Okehampton (Devon) Inthorpe (Salop) Tunbridge Wells (Kent) Applications to the Chief Inspector of Factories, Home Office Whitehall S.W.1

*This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.*

## APPOINTMENTS

BLACKSTOCK, W. P. M.B. Ch.B. Glas. Certifying Factory Surgeon for the  
Coltongham District, co. Northampton

CLIVEN, B. J., M.B., B.S. Lond. Anaesthetist to Charing Cross Hospital  
HMSF. OF. G. O. M.R.C.S. L.R.C.P., D.P.H. Medical Superintendent of  
the Royal National Hospital for Consumption Ventnor

McLAREN, J., M.B. Ch.B. Glas. Certifying Factory Surgeon for the  
Canterbury District, co. Kent.

British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
TAVISTOCK SQUARE W.C.1

### Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams: Articulate Westcent (London)  
MEDICAL SECRETARY (Telegrams: Medisera Westcent, London)  
EDITOR *British Medical Journal* (Telegrams: Vitalogy Westcent, London)

Telephone numbers of British Medical Association and British Medical Journal Museum 6861, 9862 9863, and 9864 (internal exchange, four lines)

SCOTTISH MEDICAL SECRETARY 6 Drumsheugh Gardens Edinburgh (Telegrams Associate, Edinburgh Tel 4361 Central)  
IRISH MEDICAL SECRETARY 16, South Frederick Street, Dublin (Telegrams Baecillus Dublin Tel 4737 Dublin)

## DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE.

Combined Meeting of the Section of Neurology and the American Neurological Association—Monday, July 25th 3 p.m., Reception by the President, followed by a Lecture by Sir James Currie Stewart, President of the Section of Neurology, on Mount Athos a Survival of the Middle Ages. Tuesday, July 26th Morning and afternoon, Short Papers. Wednesday, July 27th 9:30 a.m. Discussion on the Cerebellum 2:00 p.m. Clinical Meeting. Thursday, July 28th 9:30 a.m. Discussion on Memory Disorders in Organic Disease of the Nervous System 2 p.m. Short Papers and Demonstrations 5 p.m., Houghlings Jackson Lecture by Dr. Charles L. Dana.

### POST GRADUATE COURSES AND LECTURES

**FELLOWSHIP OF MEDICAL AND POST GRADUATE MEDICAL SOCIETY** -  
**Fellowship of Medicine Lecture Demonstration** Royal Westminster  
 Ophthalmic Hospital, Tues. 5 p.m. Glaucoma. Open to all members  
 of the medical profession without fee. *West End Hospital for Nervous  
 Diseases* Lecture Demonstrations daily at 5 p.m. Last week of course.

**NORTH EAST LONDON POST GRADUATE COLLEGE**, Prince of Wales (Central)  
 Hospital Tottenham - Tues. 15 - Mon. 23 to 5 p.m. Medical Surgical  
 Gynaecological Clinics Operations Tues. 23 to 5 p.m. Medical  
 Surgical Throat Nose and Ear Clinics Operations Wed. 23 to  
 5 p.m. Medical Skin and Eye Clinics Operations Thurs. 11.0 a.m. to  
 Dental Clinics 2.0 to 5 p.m. Medical Surgical and Ear Nose and  
 Throat Clinics Operations Fri. 10.0 a.m. Throat Nose and Ear  
 Clinics 2.30 to 5 p.m. Surgical, Medical, and Children's  
 Clinics Operations

WEST LONDON HOSPITAL, POST GRADUATE COLLEGE, Hainam Smith - W-14  
 10 a.m. (Urology) Operative - Sur 1  
 Ward Visit 2 p.m. Surgical - Sur 1  
 Tues. Medical Wards Dental - e 1  
 Ear Department Wed 10 - hili  
 12.15 p.m. Medical Pathology - 10 1  
 Neurological Department 11 a.m. - 10 1  
 ment 2 p.m. (Urology) Department, Eye Department 3 p.m. - 10 1  
 Gynaecological Ward Visit Fri 10 a.m. Gynaecological & 10 1  
 Dental Department Slim Department, 11 a.m. Lecture at St 10 1  
 Methods in Medicine 2 p.m. Throat No. and Ear Department 10 1  
 9.30 a.m. Bacterial Therapy 10 a.m. Medical Wards Medical D 10 1  
 of Children Daily at 2 p.m., Operations, Medical and Surgical 10 1  
 patients

## BIRTHS, MARRIAGES, AND DEATHS

*The charge for inserting announcement of Births, Marriages, & Deaths is 2s which sum should be forwarded with the notice, not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS

CHANDLER - On July 14th 1927 at 1 Park Square West 14th Fl  
NY 1 to Margorie wife of F G Chandler & MD F G Chandler  
Mrs. 1st Ballathan Grammer 1400 14th St New York  
1927 the wife of Chas Grammer 1400 14th St New York

DEATH

Vivo - On July 15th 1927 after in operation Home  
MD of Queens Road, Bath Funeral on Monday July  
at 2 pm

a 10521 31 2 1744

\_\_\_\_\_

THE ... Square, in the Parish of St. ... in the County of ...

1341 JEN S JUAN, 121 ST. ST. 250 - 1

DATE \_\_\_\_\_ TIME \_\_\_\_\_

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY JULY 30th, 1927

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## British Medical Association: Annual Meeting, Edinburgh, 1927.

### ANNUAL REPRESENTATIVE MEETING

Monday, July 1st

#### MEDICO-POLITICAL (continued)

Dr J W BONE (Chairman of the Medico-Political Committee) in moving general approval of the Annual Report of Council under 'Medico-Political' called attention to the Association's very successful action in connection with the Coroners Amendment Act. Most of those present must already have had practical experience of the very substantial increase in fees which the Association had obtained. Previously they had been working on fees laid down about forty years ago.

#### The Midwives Act 1918

Dr M W RISTON (Dartford) moved

That it be an instruction to the Council to consider the Midwives Act 1918 in the interests of all concerned in ante-natal work.

That work he said ought to be well ventilated at the Representative Meeting. Enough attention had not been given to it. Putting the parties concerned in ante-natal work in the order of their importance—the unborn child, the expectant mother, the general practitioner, the midwife—he said the first had no opportunity of saying anything and the last even opportunity of saying a great deal all day long. He agreed with Dr Martin that if the general practitioner made himself efficient he had the solution of ante-natal work in his own hands. He believed he had done that, and was well qualified in

many of the minor specialisms so predominant to-day, but he was barred and passed over in favour of the medical official. In his own area the question was an active one. Medical officers were doing clinic work and the general practitioner was not allowed to approach the clinics or the mothers in them while midwives were being trained with a rapid intensive three-days course to undertake the whole of the ante-natal work. Their country medical officer was not unsympathetic with their difficulties but he had said that it was impossible for him to do anything as the Midwives Act stood and that it required amendment before the general practitioner could be fully recognized, while meantime he must go on training midwives and allow medical officers to do the work in the clinics. He (the speaker) hoped the younger men in the Representative Body whose future would be much identified with that work would ventilate their opinions and convince the Council that it would be behind the times if it did not deal with the matter. It was not right to say that the general practitioner could not undertake the whole or the work. In his area in close co-operation with certificated midwives in a maternity hospital they got practically 100 per cent of successes and nothing like that out of de

Dr H M RAYN (Thames) seconded the motion.

Sir EWEN MACLEAN was very glad of the opportunity of commenting on what he regarded as one of the most important references of the Representative Body to the Council. By common consent ante-natal work was the



principal avenue to the betterment of maternity mortality and morbidity. The matter should be plainly faced. The principal people who had it in their hands were the general practitioners, and he thought that would continue to be the case, notwithstanding other developments in the direction of setting up ante-natal clinics or further advance in the education and experience of midwives. His personal investigations showed that general practitioners were not only willing but anxious to take part under the best possible circumstances in that life-saving work. As chairman of the Welsh Consultative Council, he visited eight or nine different centres and conferred with all the bodies and people concerned in the matter. In no centre was any element in the situation more alive or keen to undertake any responsibility in order to secure this end than was the general practitioner. A good deal would depend upon the response which the representatives made to the appeal the Council would make to them in due course, not only individually to do what they could in regard to making efficient returns which might be asked of them by headquarters, but also to use all their efforts to influence their colleagues in each of their centres to do something in this way. He desired to say, as chairman of the Puerperal Morbidity and Mortality Committee, that returns had been received from some Divisions which contained statements and facts of the highest possible value. Other Divisions had said they could not afford any information, and the committee had had to be content, in the case of far too many areas in the country, with mere washings and sittings. He begged the representatives to use their influence in regard to that matter in the future. He did not know what the Council would do with the reference, but in due course it might be his duty to point out that there was in existence a duly constituted Puerperal Morbidity and Mortality Committee. Some had suggested that that committee was dead. It was not dead, it was not even hibernating. It was gestating, and in due course it would spontaneously produce something worthy of the Association. He strongly supported the motion.

Dr D. ROBERTS also supported the motion, from the point of view of the efficiency of the man in general practice. No greater mistake could be made, he said, than to separate the general practitioner from any part of the clinical work with which he might have to do. If the attitude of some members, who were agitating for ante-natal clinics was generally adopted, then the man in general practice would be separated from the work. That was the point he desired to emphasize.

Dr BOVE said that everyone present believed in ante-natal work. The problem was a practical medico-political one, how could the general practitioner be got to do ante-natal work? That was a difficult problem, and it had to be solved through the Association's committees and sub-committees eventually. He put it to those areas in which an interest was being taken in the subject that they should send up some of their energetic men to the subcommittees. The points with regard to all these new forms of work were: How far were they to be allowed to get into the hands of whole-time officers and midwives? How far were they to come under the regis of the county medical officer of health, and so on, and how far were they to be kept in the hands of practitioners? Those were the practical problems which the committees had to solve. They could not be discussed in a big meeting such as the present. He agreed to take over the reference.

The motion was carried.

#### *Puerperal Pyrexia Regulations*

Dr W. A. M. SWAN (St Pancras), on the reference in the Annual Report to the inadvisability of laying down a uniform fee for services of consultants rendered under the Puerperal Fever and Puerperal Pyrexia Regulations, moved

- (1) That the minimum fee payable to a recognized obstetric specialist for each consultation under the puerperal pyrexia scheme be £3 3s. (excluding operative treatment), with reasonable additions for mileage to be mutually arranged with the local authorities,

- (2) That the Representative Body is of opinion that the local authority should be empowered by the Ministry of Health to pay a reasonable fee to the general practitioner who acts in consultation in expert called in under the Puerperal Fever Regulations, and

- (3) That it be an instruction to the Council to take all possible steps to secure that these resolutions be made a reality.

Mr E. W. G. MASTERMAN moved as an amendment that paragraphs (1) and (3) be omitted. Paragraph (1) he said, was not really the work of St Pancras. It was the result of a subcommittee appointed by the Metropolitan Counties Branch. The medical officers of health for London had requested guidance from the Metropolitan Counties Branch with regard to what fee they were to ask from the local authorities for the proffered consultant advice to be given in the case of poor people who were unable to pay, and a committee had been appointed which had put forward what was included in paragraph (1), which was a minimum fee, and a fee which did not include any operative work, and mileage had to be added. That put him back to the Metropolitan Counties Branch, and would have come forward to the Representative Meeting, but unfortunately at the time of its birth there had been annexed to it a very grotesque tail, which appeared in paragraphs (2) and (3). For that reason paragraph (1) could not come to the meeting, as it would have done from the Medical Political Committee itself, with the recommendation of the Council. He desired to move that paragraphs (2) and (3) be omitted for the reason that it was asking the Ministry of Health to pay fees in addition to giving a privilege to medical officers who were paid by local authorities to attend certain poor persons. They were giving a great privilege and opportunity to the medical man. There were not cases where, happily, many practitioners would have gained experience. There were cases where it was of the utmost importance that a decision should be come to with the least possible delay. The cases had to be notified, and immediate treatment, if it was a genuine case of puerperal fever, was necessary. They were cases where friends were very apt to make it extremely difficult for the medical man if the patients were not rightly treated from the first. They were cases where, if the medical man did not receive expert advice, he might have very disagreeable experiences, and fatal results occur. Genuine cases would, for the most part, be sent into a hospital. In short, it was a privilege paid for by the local authority, and to ask that the medical man, who was already paid for doing the work, should get another fee for having this gratuitous help, was unreasonable. At any rate the local authorities would think it unreasonable, and to put such a thing forward would be very bad policy. If paragraph (2) fell to the ground, paragraph (3) was better left out. They did not wish directly to tell the local authorities of the decision, but they left it with the medical officer of health to make their negotiations, unhampered by any opinion coming from the Association. He therefore moved the omission of paragraphs (2) and (3).

Dr D. ROBERTS (Manchester) expressed the hope that the amendment would not be adopted.

Dr BOVE supported the amendment. He considered that the original motion was the most unreasonable that had been put before the Representative Body in his time. When it was suggested that there should be consultation regarding the notification of puerperal pyrexia a conference took place on the matter, and at that conference the representatives of the profession agreed to accept notification of puerperal pyrexia on certain conditions. One of the conditions was that something should be done to help medical men in regard to puerperal pyrexia, and that they should have consultants provided, and that if necessary, the cases should be treated in institutions which were to be provided by the authorities. That condition was agreed to. But now that the consultants had been provided it was proposed that the medical man was getting the help of the consultant should if he could. He hoped that the two clauses would be omitted.

Dr C. O. HARRISON (Marylebone) said that he was present when the question was discussed by the Metropolitan Counties Branch. He asked to see the attitude which had been taken up by Dr B. I.

position, he took it, was as follows. A general practitioner in attendance on a case of confinement thought that his patient would be helped if he could have the advantage of a discussion with a practitioner specially experienced in the subject. Upon application he could get a second opinion without any charge either to himself or to his patient. It was in the interest of his patient that that course should be adopted. He had a perfect right to the payment of a fee by the patient in whose interests he was acting, but to ask the local authority also to pay a fee was surely to prefer a demand which was altogether unreasonable. It had been said that no harm could come from asking for the fee, because if the worst the request would be refused, but that was quite a mistaken position to take up. The British Medical Association was constantly in negotiation with Government departments, and it was of the utmost importance to its prestige and credit and influence that it should not advance any demand which the Government might consider unreasonable and improper. It put forward the demand now suggested it would prejudice its whole position as a negotiating body, not only on the present occasion but on all future occasions.

Dr I. W. JOHNSON considered that in asking for extra remuneration for a consultation the general practitioner was only asking for what was his just due.

Mr MASTERSMAN emphasized the fact that those concerned were primarily poor people who could not pay fees, and that the medical man engaged was approaching the local authority to give him a free consultation because his patient could not pay for it. If a patient were able to pay the fee the medical man would call in his own consultant and arrange his own terms. A somewhat parallel matter was that of small pox. If a doctor had a doubtful case he could get the Ministry of Health to send someone down to consult, but he had never heard of anyone supposing that he could demand from the Ministry a fee for having had the advice that was given.

The amendment for the omission of paragraphs (ii) and (iii) was carried by a very large majority.

The CHAIRMAN pointed out that the motion now before the meeting was the first section of the resolution.

Dr BOVE opposed the proposal. He said that if the Metropolitan Counties Branch Council desired to set up the suggested minimum fee for the members of its own Branch it was perfectly at liberty to do so, but he hoped the meeting would reject it as applicable to the whole country and would accept the suggestion of the Council that the matter should be left in a fluid condition.

Mr BURNOR HARMAN proposed, and it was agreed, that the meeting should proceed to the next business.

Dr R. G. GORDON (Bath) moved

That it is desirable owing to the fact that puerperal pyrexia may be due to causes other than obstetric that the panel of consultants to be instituted under the Regulations should include competent physicians, surgeons and pathologists in addition to consulting obstetricians, further that some standard of competence should be adopted such as membership of the staff of a local general or obstetric hospital or the possession of special qualifications or experience.

Dr BOVE, as a point of order, asked whether it was a fact that the panel of consultants was to be instituted under the Regulations.

The CHAIRMAN said that there were authorities who had instituted a panel of consultants, but to make the motion strictly in order it should be altered so as to read "that the panel of consultants which may be instituted."

Dr GORDON said that according to the definition of puerperal pyrexia a temperature of over 100° F was accepted as such. It was felt by the Bath Division that such a temperature might mean that the patient was not only suffering from some condition which came under the purview of the obstetric specialist, but from pneumonia or any other general medical or surgical illness, and that therefore it was fair to the general practitioner to allow him to call in consultants other than obstetricians. The suggestion had been placed before the Ministry of Health, but the Ministry had replied that the panel should consist of obstetricians only. It had been suggested to him that the motion would be improved by the insertion of the words "general practitioners possessing special qualifications," so that it would not be implied that the panel of consultants

need necessarily consist of a whole-time specialists. He was certain that the Bath Division would agree to the modification if it was the wish of the meeting.

Dr R. BOYD (Manchester) supported the motion, especially the last clause of it which seemed to him to be the most important. The general practitioner was credited with being the greatest sinner in many cases of puerperal pyrexia. If that was so he ought to have the greatest knowledge as to how to treat the cases. Equally the gynaecological consultant ought to have very little knowledge of such cases, especially as the patients were removed from the hospital immediately they became cases of puerperal pyrexia. The speaker concluded by requesting a ruling from the Chairman as to whether the words "competent physicians, surgeons" included general practitioners.

The CHAIRMAN replied that it was not his business to interpret motions.

Dr BOYD then moved as an amendment that the words "physicians, surgeons" should be deleted and the word "practitioners" inserted in their place.

Dr W. T. DEMPSEY seconded this amendment. There seemed to be some doubt as to the definition of a practitioner. He had always understood that a medical practitioner was one who practised all branches of medicine and surgery. It was a very convenient term because of its wideness. "Physicians and surgeons" was not so wide a term; it was subject, probably, to several interpretations and might lead to complications in defining the resolution if it was ultimately passed.

The amendment was lost.

Dr GORDON thought that the difficulty might be cleared up by altering the last clause to read "or by private practitioners possessing special qualifications and experience."

The CHAIRMAN said that it was certainly desirable to make it clear in this motion that general practitioners were not excluded.

Leave was given for the motion to be amended in this sense, and the motion was then adopted.

#### Workmen's Compensation

Dr R. P. GARRON (Chesterfield) moved to express the strong opposition of the Association to the practice of some inspectors, not being medical men acting on behalf of employers' liability insurance companies of requiring or suggesting the removal of properly applied dressings when visiting injured workpeople in order that they may see the injury, and to instruct the Council to enter a vigorous protest.

Dr BOVE suggested that the Council should be asked to consider the matter. He had no personal knowledge that the kind of thing alleged was done to any considerable extent, and it was a matter which should be investigated before entering upon any protest.

Dr GARRON concurred with this suggestion and in that form, as a reference to Council the motion was carried.

#### Remuneration of Assistant in General Practice

Dr J. S. MUIR (Selkirk) moved to substitute the following for the opening sentence of a resolution passed by the Representative Body in 1925 regarding the remuneration of assistants:

That in view of the fact that an assistantship is commonly to a young practitioner a continuation of his medical education and training the value of which is variable and impossible to estimate, no definite figure can in these circumstances be fixed as a minimum salary, but in cases where the above consideration does not prevail and where the practices can afford it the minimum commencing salary for a whole-time indoor assistant to a practitioner should be £240 per annum etc (as set out in the 1925 resolution).

The 1925 resolution had it down that the minimum commencing salary should be £240, with the addition of board and lodging, the value of the board and lodging to be estimated at from £120 to £160 per annum, according to the circumstances of the case when such a practitioner was employed on an outdoor basis. Dr MUIR said that he spoke for a Division (the Southern Counties, Edinburgh), and in passing the resolution of 1925 his Division thought the Representative Body had failed to recognize the tremendous divergence in the financial position between rural practitioners and those in urban and thickly populated

districts. If this resolution was persisted in it would become a practical impossibility for many men in his Division to obtain assistants at all. He read a letter from a fellow country practitioner, who wrote "Country work is not remunerative. The country doctor works under serious disadvantages, at great expense, and for poor fees. He requires assistance even more than the town doctor, who has neighbours to help him, but he cannot afford to pay for it." When it was said that the commencing salary for the newly qualified, inexperienced practitioner should be such and such a figure, he thought it should be the other way about, and that the newly fledged man from college should rather pay the experienced principal to instruct him! In particular he had to learn, what few of them knew at first, a good bedside manner.

Dr BONE hoped the meeting would not tamper with the policy adopted two years ago in this direction. It was not a compulsory policy, but merely tentative, for the guidance of the office. The Council, by putting a paragraph on the subject in the annual report, had signified its wish that this should be discussed by the Representative Meeting. The Council was not convinced that the moment had come to strengthen the policy, as a subsequent amendment urged, but it was sure that this was not the time to go back on the policy.

Dr Muir's amendment was lost.

Dr W. A. M. SWAN (St Pancras) moved to rescind the following part of the same resolution of the Representative Meeting, 1925:

That no steps should be taken for the present to make the foregoing expressions of opinion the policy of the Association, but they should be used for the assistance of the office in advising on points connected with the terms and conditions of the work of assistants. While an advertisement is offered for insertion in the *British Medical Journal* in connexion with an assistantship not in accordance with the foregoing opinions, the attention of the advertiser should be drawn to them in the hope that the advertisement will be amended, but the advertisement should not, if otherwise eligible, be refused.

He moved this from the opposite point of view to that of the mover of the last amendment—namely, that the policy should be strengthened.

The CHAIRMAN (Dr Brackenbury) said that the Council had wished to get from the Representative Body some guidance with regard to this matter. It had felt that an opinion as to the proper remuneration of an assistant to a general practitioner could better be obtained from the Representative Body than from any other source, therefore it did not itself make any addition to the recommendations made two years ago, but it hoped to receive enlightenment at that meeting.

The MEDICAL SECRETARY said that the difficulty at headquarters was that, although the Representative Meeting seemed enthusiastically in favour of a standard of remuneration for assistants, yet advertisements from members of the Association were constantly being received in which an endeavour was made to get assistants for less than the sum stated, and not only so, but there were young qualified men and women who were ready to do the work for less. What he wanted to know was whether this policy of a minimum salary for assistants was getting stabilized.

Dr BONE said that they were always being twitted with setting up scales of remuneration, especially for whole-time officers, while leaving their own assistants unprovided in this respect. The matter should be left as it was. The economic position in the medical profession to day was a little worse, and not better, than it was when the scale was passed. He believed that there were more unemployed in the profession at the present time, particularly among women, than was the case two years ago.

Dr SWAN withdrew the amendment.

#### Coroners (Amendment) Act

Dr J. G. MACQUEEN (Hyde, Stockport, etc.) drew attention to the position of the doctor reporting a death to the coroner, the coroner asking for a report, and calling upon someone else to make the post-mortem examination. The report of the doctor did not receive a fee, and Dr Macqueen moved that a fee should be paid for a report in the case

of a practitioner who did not perform the necropsy and was not called to give evidence.

Dr BONE said that this point was pressed at the time the Coroners (Amendment) Bill was before Parliament. It was not secured, and there would be no opportunity of securing anything of that kind for probably half a century. The only remedy was to refuse to give a report or to agitate locally for payment for such reports which in some areas were paid for. Nothing could be done centrally.

The CHAIRMAN said that the motion expressed what was the policy of the Association, and there could be no objection to it being reiterated.

#### Medical Certification of the Blind

Dr E. I. CLAYTON (Liverpool) asked that representations should be made to the Ministry of Health to secure that medical certification should be required for all entrants in any grant-aided service for the blind, and that for such certificates there should be a uniform fee. He said that the responsibility of furnishing certificates for the blind rested with the local authority. In some cases the local authority stood down, and the ophthalmic surgeons were asked to furnish these certificates by charitable societies, who sent these cases to the eye hospitals.

Mr BISNOR HARMON asked that this might be referred to the Council for consideration and report. He pointed out certain difficulties, and said that it would be unsafe for the Representative Body to pass a mandatory resolution on a subject which clearly called for further investigation.

This course was agreed to.

#### Nursing Homes Bill

Sir RICHARD LUCE, M.P., made a statement on the Nursing Homes (Registration) Bill. The Select Committee, after the evidence it received, could not agree that it was advisable for doctors to be exempted in respect to their premises used as a nursing home. The Council had now come to the same conclusion, and in the bill at present before Parliament no steps were being taken to provide for any special exemption of medical men who were owners or administrators of nursing homes. An important matter was now before Parliament. The bill as it stood laid it down that the registering authority should be either the county or county borough council. There was a strong movement in Parliament from a certain section to get that authority very much widened and to make it include any body having control over maternity welfare. This would throw it open to very much smaller bodies than county or county borough councils. Those who spoke for the profession maintained that it was essential that the inspecting officer should be a person of the status of medical officer of health for the county or county borough. An amendment was being put down to ensure, if possible, that the inspection should be kept at the higher standard. The amendment, as it stood at present, was to the effect that the man who had access to these homes should be the medical officer of health of a county or county borough or such of his assistants as might be duly authorized by him. The medical men in Parliament would do their best to see that the position was safeguarded.

#### OVERSEA BRANCHES

The discussion on the report under "Medico-Political" was interrupted, after lunch on Monday, to permit of the business under "Overseas Branches" being taken, as decided on Friday when considering the agenda.

Sir JENNER VERRALL, Chairman of the Dominions Committee, moved approval of this part of the Annual Report of Council. He said the parts of the world they had had to deal with were very much the same as on other occasions. On the whole, the things they had tried to effect had been successful. For instance, in the East African Medical Service there certainly were improvements. The only dubious point was the position of the man entering the service, which was not quite as certain good as that of the man already in. That made it more difficult to recommend a man to go into the service. The future was uncertain, they had applied for information which the department had not been able to supply, they would keep their eyes open and act accordingly. In Malaya,

also there had been an improvement, though a unification of the service was at present impossible, quite as much for political as for medical reasons. In the Windward Islands the conditions were nothing like satisfactory. The ordinances to which the Association objected had not been repealed hence there remained in force the "Important Notice" to people who thought of entering the service that they should apply to the Association for information as to the probable conditions under which they would have to work. The bill to regulate medical education in India was practically dead and not likely to give more trouble. In Hong Kong there was an improvement in the conditions of medical practice in regard to fees paid by patients in Government hospitals. Sir Jenner Veirall added that the old poisonous still needed attention, and they would do their best to deal with any further needs that arose. He echoed in imitation previous by given by the Chairman to over his officials and members of the Association to give the Representative Body the benefit of their experience and advice. The Australian Branches afforded a splendid example of the working of the Association. They were doing good work and maintained a high percentage of the "valuable practitioners" within them. With regard to South Africa they understood list item that the visit of Dr Cox had placed things on a satisfactory footing and they were not disappointed in that respect. He invited representatives from South Africa to tell the meeting distinctly and boldly how the arrangements then made were working. He believed they would make for peace and progress.

Mr T LINDSAY SINDES (Cape Western) officially presented the thanks of his Branch and of the South African Federal Council of which he was Vice-President, for all that the British Medical Association had done in helping to place the organization in South Africa on a much more satisfactory basis. There was now only one medical organization in the Union—the Medical Association of South Africa (British Medical Association) (Applause). He doubted if the efforts that had been made to co-ordinate societies would have succeeded but for the visit of Dr Cox who by his marvellous abilities and intuition brought the matter to a successful termination (Applause). The first Medical Congress under the new regime would meet in March, 1928. When in the United States recently he heard that there was a possibility of some American surgeons visiting South Africa so he personally invited the President of the American College of Surgeons in Chicago to attend the Congress and he had since heard that 200 people had chartered a special boat and would pay them a visit. Later he went to Holland which had close racial association with a large proportion of the population in South Africa and invited some of the leading practitioners there to visit South Africa. He extended the same invitation to members of the Representative Body. A visitor from overseas was struck by the number of Englishmen who spent all their holidays wandering about Europe. He suggested that they should spend a little extra time in going further south and seeing some of their own overseas Dominions. ("Hear hear.") A two months' holiday would give them four weeks in which to see the Union. There was a strong desire that the President of the British Medical Association should attend the March Congress. Although co-ordination of the profession in South Africa had taken place difficulties remained that would require careful attention for years to come. The Empire now was held together by sympathy and affection, and personal contact did far more than volumes of correspondence. (Applause.)

Dr J L REIDICE (Cape Midland) endorsed what Dr Sinde had said, and emphasized the points he had raised. The young Association in South Africa was making wonderful progress. At Dr Cox's suggestion they had formed divisions, because of the distances between outlying stations were so great as to make attendance at meetings difficult. By splitting up into smaller Branches they could keep in contact with one another and discuss medical and other subjects more mutually and make the Association a real thing. Dr Cox did wonderful work. He went not merely to the towns and centres, but to the little dorps—country villages almost—to farms and hamlets getting into personal touch with people, and as a result there was a considerable accession to the membership of the Association. Unfor-

tunately there were still difficulties, and he urged the Representative Body to persuade the President of the British Medical Association to visit South Africa and attend the Congress.

Dr A GOW (Pretoria) remarked that the Branch in South Africa had its local difficulties, which required the greatest sympathy and support from the parent body and he desired heartily to support the plea that the President should attend the forthcoming Congress to be held in Bloemfontein. He wished also to pay a high tribute to the fine work done by Dr Cox in bringing together the profession in South Africa and in securing a cohesion of medical policy there. As an instance of this he mentioned that whereas prior to the visit of Dr Cox the Pretoria Branch had consisted of 60 members, it now had 110. (Applause.)

Dr L D PAINSON (Ceylon) said that he desired to thank on behalf of his Branch all those in the Association who had so much interested themselves in and had assisted those who practised in Ceylon. He mentioned that an attempt had been made in India to pass a bill to register native practitioners of medicine. That bill had been dropped but in Ceylon a very determined effort had been made by a large number of influential natives many of them members of the Legislative Council to get a similar bill passed in Ceylon and to ask the Government to spend a large sum of money in educating those people in what was termed indigenous medicine. The local Branch had taken a very keen interest in the matter as a result of which the secretary had gone to Madras, Bombay and Calcutta, and had made a special report to the Branch. Personally he had no doubt that the central Council in London would very carefully watch the interests of practitioners in Ceylon in the matter. It was not only their own interests they were thinking of but of His Majesty's subjects in Ceylon. There were quite enough practitioners in Ceylon to provide modern medical treatment for the people there. There were from 500 to 600 hospitals and dispensaries in Ceylon for a population of five million people.

Dr S P KAPADIA (Bombay) said he wished to enlighten the meeting on the bill to regulate medical education in India. In India there were many persons who, from religious or other reasons held faith in indigenous medicine and indigenous treatment. That sort of treatment was meted out to suffering humanity there by vaidas and hakims who had no knowledge of Western methods or treatment. The idea of the bill had been to educate those vaidas and hakims on Western lines and to give them a practical idea of treating poor persons who had faith in indigenous medicine on safe methods. In order to do that it had been desired to raise an independent class of persons who would give medicines according to the indigenous pharmacopoeia but based on Western ideas. However, the bill had been dropped on account of the death of the member of the legislative assembly who had taken a very keen interest in bringing the matter forward. His object in addressing the meeting was to remove any bad impression which might have been created by the paragraph in the report relating to a bill which had been negatived by the council of Hyderabad. Dr Kapadia offered his best thanks to all the secretaries of the Association who had helped him at every stage whenever he had required assistance.

The report under "Overseas Branches" was approved.

#### MEDICO-POLITICAL (resumed)

##### Trade Disputes and Trade Unions Bill

In calling upon Dr Bone to bring forward the Supplementary Report of Council under "Medico-Political" the CHAIRMAN reminded representatives of the many important motions which had still to come forward and the shortness of the remaining time available.

Dr BONE in moving approval of this part of the report, drew attention, in connexion with the item "Bills under discussion in Parliament" to the Trade Disputes and Trade Unions Bill. The representatives would see set out in what way the Council thought that that bill might interfere with the work of the medical profession. He did not propose to enter into details but he thought the Council had succeeded in protecting the profession, in so far as they might do so, in connexion with

the matter. They had received the utmost help from Sir Richard Luce, who had always been a great standby when the Association sought to do anything in the way of amending a bill before Parliament (Applause). With regard to the Laidlaw and Tenant Bill, that bill did not include the medical profession, and the Council had thought it would be advisable to get the House to do that. Unfortunately the Government had met the request with a flat refusal. However, Sir Richard Luce, who never knew when he was beaten, had gone about the matter in another way and had secured amendments which would, at all events, carry out a part of the Council's purpose, and which would provide that the bill would give members of the profession compensation for improvements. No doubt Sir Richard Luce would address the meeting on the matter.

Sir Richard Luce said that in regard to the Trade Disputes and Trade Unions Bill the position had been one of some anxiety because it was not quite certain from the original form of the bill whether, if medical men took part in a strike against the Government, they would not be *ipso facto* carrying out what would be an illegal strike. There must be two things in any strike for it to be an illegal strike. It must first of all be a strike which had not to do with the trade or industry concerned, and secondly, it must be aimed against the Government. He tried hard to get a decision as to whether or not the medical profession was a trade or industry. Some of the legal people said one thing and some another. That question had been left upon, but it had been quite definitely decided that if a strike was within a trade or industry it could not be illegal. One of the clauses of the bill laid it down that civil servants could not belong to any institution which had for its main object bargaining in matters of rates of pay and status. The British Medical Association had always laid it down that that was not its main object, but the point might some day have to be decided in a court of law. If it were decided that the Association was chiefly occupied in dealing with the terms of service of the profession, medical members of the civil service would not be able to belong to it. Again, if it was so decided, it was not unlikely that there might be in extension to other servants of the Crown, such as members of the army or navy or of the colonial services. With regard to the Laidlaw and Tenant Bill, after very considerable difficulty had been experienced in offer was received from the Home Secretary to make the clause in the bill which dealt with improvements apply to the medical profession. The clause with regard to goodwill was not now applicable to the professions. It had been very difficult to persuade the committee that there was any definite goodwill connected with the houses of medical men. The members of it seemed to think in terms, perhaps, of the consultant who lived in Harley Street. They thought that it did not make much difference to a man whether he lived at one number in Harley Street or at another. He tried to persuade them that in country districts the house meant very much to the general practitioner. When it came to a compromise being offered he found that it was extremely doubtful whether he should get anything at all if he did not accept it, and he agreed to take half a loaf as being worth something. The Home Secretary himself would move an amendment and the Government was going to support it.

Mr Bishop HARRIS said that when all other means of action had failed a letter signed by a dozen members of the Marylebone Division and sent privately to the member for Marylebone (the Attorney General) secured what was wanted, and the member thanked them for calling his attention to a point of great importance.

#### Remuneration of Doctors called in by Midwives

Dr W M RENTON (Dartford) had a motion To instruct the Council to take steps to secure a fee of £3 3s in place of the existing fee of £2 2s payable by local authorities to medical practitioners called in on the advice of midwives "for all attendances of a doctor at parturition (that is from the commencement of labour until the child is born) whether operative assistance or not is involved including all subsequent visits during the first ten days, inclusive of the day of birth."

He said that he was perfectly willing to withdraw the motion, being convinced that the Council would consider the whole matter as they had promised to do in connexion with ante-natal work.

The CHAIRMAN pointed out that if the motion was withdrawn it would involve the disappearance of the amendments to it which appeared on the agenda in the names of Winchester and East Norfolk. Those amendments could be moved, and then Dr Renton could withdraw his motion in favour of one of them.

Dr RENTON said that he would be willing to adopt the course suggested by the Chairman.

Dr BOVEY, as a point of order, observed that the Representative Body had already passed a resolution instructing the Council to consider the whole of the questions raised by the motion and the two suggested amendments to it.

The CHAIRMAN ruled that the point of order was a good one, and that the motion was out of order.

#### The General Medical Council

Dr C G H MORSE (Bournemouth) moved That the question of the need for revision of the existing representation, power, and procedure of the General Medical Council in order that they may more precisely comply with the changed conditions of medical practice be remitted to the Council for consideration and report.

He said that he wanted to put the matter in the form of an allegory. They had an old friend who was becoming a little senile, and who perhaps required a surgical operation or something of the sort. They were rather doubtful as to the right way of dealing with the matter. Therefore he suggested to the relatives—namely, the Representative Body—that they should have a consultation with the experts—namely, the Council—in order to see whether anything could be done for the patient. There were three main points involved. The first was in regard to representation on the General Medical Council. On the Register, over which the General Medical Council had autocratic control, there were 50,000 practitioners. Of that number probably half were general medical practitioners, but only six of them were direct representatives on the General Medical Council. As to the power of the General Medical Council, it consisted in considering allegations and delivering verdicts. The only crime which could be committed professionally was that of infamous conduct. Seventy years ago the accusation might possibly have been a perfectly good and sound one to bring, but nowadays it was nothing like wide enough. There should be some other form of accusation. The word "infamous" stuck, whether the General Medical Council found in favour of the medical man or inflicted the full penalty. Lately the General Medical Council had inflicted a curious form of punishment which was very much like telling a naughty boy that he must go back to his parents and bring a letter to say that he was behaving himself nicely. That was an undignified way of treating a medical man. Another method was for the President to inform the accused that the General Medical Council did not find the case proved, and so a penalty was inflicted, but as the press in the man's district attaching to the man, though he was let off. There was no such decision as "Not guilty." With regard to procedure, no court should be able to formulate a charge of misconduct in the absence of any complaint. Finally, the General Medical Council, which had the power practically to wreck a man's career, should be able to compel the attendance of witnesses, to administer the oath, and to call for documentary evidence. The possession of such power would bring it much more into line with the ordinary courts of law. He was not asking the meeting to do more than request the Council to consider the matter and to report.

Dr J S MASON (Warrington) moved to amend the motion by the addition, after the word "report," of the words "as to the requisite amendments to the Medical Acts." Dr Mason had said that he would like to see something like a rejuvenescence of the General Medical Council. The speaker did not know that the General Medical Council had ever shown any sign of juvenility. Bournemouth was to be congratulated on bringing forward this subject again.



Last year he himself proposed a motion asking the Representative Body to assert its confidence in the General Medical Council under circumstances peculiar to the time. That motion was rejected, and he thought it was a legitimate inference that the Representative Body did not itself think that the General Medical Council was all that it might be, therefore to be consistent, it ought to pass the Bournemouth motion, which he wished to add the words stated. It was now nearly twenty years since the Medical Act of 1858 was passed, and he thought it was safe to say that there had been greater changes in the practice of medicine and surgery in those twenty years than there were in the seven hundred years before them. The progress of medicine and surgery had outstripped legislative enactment. In reading over the 1858 Act he was always intrigued by Section 23, dealing with erasure from the *Medical Register*, and especially with the provision "that no name shall be erased from the Register on the ground of having adopted any theory of medicine or surgery." This clause offered a legal shelter for practices which might occur within the profession, but which would be wholly objectionable to and condemned by the bulk of the profession. He thought that clause should be deleted (Dr Mansou was prevented from completing his argument by cries of "Time!")

The Chairman said that the amendment was of a restrictive, not of a widening, nature.

The Warrington amendment was not carried.

Dr C O HAWTHORNE said that underneath the proposal for reform of the General Medical Council there was he believed a dangerous and even sinister design. It was impossible to believe that any attempt to revise the constitution of the General Medical Council would be governed solely by consideration of the wishes of the medical profession, and it might be that as a result of the demand for investigation and inquiry into the whole matter a Council would emerge much less welcome to the medical profession than the one at present existing. If the Council existed for the protection of the interests of the profession it would be a different matter but what they wanted and what they had was a body which was constituted with the object of getting an impartial tribunal to third the profession of medicine in this country could be relied upon by the public as having been subjected to proper training and examination. He dissented from an inquiry into the constitution of the General Medical Council, which might have different results from those anticipated in the balmy air of Bournemouth.

Dr WILLIE HENRY moved, and it was agreed to proceed to the next business.

#### The State and Medical Practice

Dr E R FOTHERGILL (Brighton) moved

That the Representative Body viewing with considerable concern the invidious inroads continually being made on private medical practice under the auspices of the State voluntary bodies and others and being of opinion that this is not only detrimental to the interests of the individual members of the medical profession but ultimately to all classes in the community instructs the Council to watch all such developments and actively to interest itself in safeguarding private practice amongst all groups in the medical profession and to develop through the Branches and Divisions closer co-operation with the local medical profession for that purpose.

Dr Fothergill said that the inroads on medical practice justified the Representative Body in stopping to see where they were going. Instances of such inroads were known to them all. Those made by the State included work in respect to the following: national health insurance, treatment of children for minor ailments—"school nurses can do this"—tonsils and adenoids, ear disease, and so on, notifiable diseases, venereal diseases, tuberculosis, rheumatism and heart disease in children, mental deficiency and insanity, orthopaedic clinics (175 local authorities had schemes for school children 129 for those under school age), regulations under the Midwives and Maternity Homes Act, consultations for puerperal pyrexia, pathological facilities, and so forth. Then there were the inroads made by voluntary bodies in the first place the

hospitals, with their contributory schemes, additional insurance benefits, ophthalmic benefit, and others. Again, there were the officers claiming recognition as equally skilled in sight testing and capable of giving adequate certificates, the provisions for ante-natal work—"midwives can do this"—and infant welfare the dentists were enabled to give anaesthetics for most requirements, and finally there was ultra-violet radiation, which could be given by anybody, including the hairdresser! This was a very serious situation. What was going to be the consequence? The young practitioner set out to do special work in private practice, and found that most of those who could pay him small fees were going into the hospitals. The non-insurance practitioner would shortly cease to exist, there would be nothing for him. The State was calling for a team of whole-time officers to act under medical officers of health. The only body which cared for the private practitioner was the British Medical Association, which required occasional pats on the back and a certain gingering up. This encroachment on private practice ought to be stopped. The private practitioner must be retained and secured in a position of freedom. The silent but ceaseless and plausible encroachment on private medical practice or a highly efficient and safely entrenched bureaucracy should be opposed. The advice of these bureaucrats on technical questions was extremely valuable but they had not the broad outlook or the wide experience necessary for viewing matters of health as a whole. It was no question of guineas that the private doctor was after, it was his ideal which was in danger—the ideal namely, to prevent and cure, and restore. He had a great trust placed in his hands. Was medicine going to be dragged, regularized and controlled, with reports innumerable and with no freedom of action or practice? Dr Fothergill said that he would be glad if the press could in some way loosely co-operate with the profession so that they could work together for the public health on rational and sensible lines. (Applause.)

Mr E B TURNER (Council) hoped the Representative Body would carry the motion. He had engaged in a good many extra Association activities and had been mixed up with many bodies, voluntary and otherwise. Acting on the committees of those bodies he had been sensible of the demand that all this work should be done by whole-time men and not by general practitioners. He had had a hard task sometimes in keeping up to the end of the British Medical Association. It was said that the general practitioner could not do the work as well as the whole-time man. To him it seemed absurd to claim that the whole-time man could run a school clinic or a maternity and child welfare centre even as well as—let alone better than—the experienced men in general practice. In the latter chose to set about it. The general practitioners could do it infinitely better. Of course it was administratively more easy to the authorities concerned to have whole-time men who were likely to be more "tame." Students were being brought up to envisage as part of their career that a large proportion of them would have to take on a very large amount of contract work. But the policy of the British Medical Association still insisted on the ideal—the relation between the medical practitioner and his patient in private practice, subject only to the law of the land, free from regulations, restrictions, and limitations. The men who were coming on would not have the same outlook on those matters as the men who qualified on the old lines. Should they go further and take on those jobs, the medical profession was sliding on a very slippery slope and at the bottom there was nothing but a cemetery, in which would be buried everything that the older men considered made their profession and work worth while and the only possible resurrection from that cemetery was the incarnated spectre of a whole-time medical State service. That was no bogey, the question was being put forward by the Labour party in his Division and elsewhere. Every one of the whole-time medical things which cut into their private individual work, which they could do so much better, was an obstacle removed from the way or those who wanted to start whole-time State service. It once that were instituted it would take all the human element out of the profession. (Applause.)

Dr C E DOUGLAS (Council) emphasized what had been so well said by Dr Fothergill. The situation had long been gathering. Many years ago one of the young lions of the *Saturday Review* delivered the dictum that when a medical case had gone beyond the stage of castor oil and quinine the best doctor was he who could send it to the appropriate specialist. If that were right, the man in general practice, instead of being the skilled adviser of his patient, would be merely a medical shopwalker directing the customer to the appropriate department (Laughter.) If they carried on the traditions of the profession, every man being well equipped in medicine, surgery, and midwifery, and if he saw to it that his patients regarded him with the respect due to an expert adviser, all would be well, but if they permitted themselves to be harried and harassed by public health authorities, by school medical officers, *et hoc genus omne*, then the end of the profession was near and they would be relegated to the dust-heap of might-have-beens (Applause.)

Dr H D WOODROFFE (East Norfolk), supporting Dr Fothergill's motion, said it was only too evident they were getting overidden by whole-time medical officers, but up to that point the motion had been approached from what might be called an altruistic standpoint. The material one was of great importance in a large number of rural areas. The previous day a medical officer of health had said that from 60 to 70 per cent of the midwifery in his district was being done by midwives under district nursing or other schemes. In thousands of rural areas the general work of the practice supplied the bread-and-butter, but the midwifery was looked to to put the jam on it. The "jam" was becoming less and less. In his district men had complained to him that the continual sliding away of midwifery work was causing serious damage to their practices. He was continually coming across cases of work being taken, first, out of the hands of the general practitioner, and secondly, out of the hands of the consulting staff. They were told that the general practitioner, with from ten to twenty years' experience or even more, was unfit to carry out what was ordinary general medical work. How many of them were not continually coming across, not the extraordinarily good work that the upholders of the present tendency would have them believe was being done, but cases of ghastly mistakes made through inexperienced junior public health medical officers of one type or another?

The CHAIRMAN remarked that probably every member would like to speak upon the resolution, as he would if he were not in the chair.

The motion was carried without dissent.

Dr E A STURLING (Tunbridge Wells) moved

That the Representative Body views with anxiety the increasing tendency to transfer the treatment of many diseases and conditions to whole-time medical officers as detrimental to the public health, that in the opinion of the Representative Body the general adoption of the following principles would result in benefit both to the public and the profession: (1) The function of the health authority should be confined as much as possible to the prevention of disease. (2) The work of the whole-time officer should be confined to administration, inspection, institutional, or consultative work. (3) Health visitors should be definitely responsible for treatment to a local practitioner for all cases treated by them, including expectant mothers.

The motion was not intended as an attack on the public health service. They all realized that they did not exist for their own benefit but for the public good. Some of the moves made on the old-time general practitioner were made under the aegis of whole-time public health officers. If those alterations and moves were for the benefit of the general public they would have nothing to say against them, if they were not, they should see if they could not amend matters. He called attention to the report of a conference between the British Medical Association and the Society of Medical Officers of Health. The gist of it was that there should be gradual co-operation and consultation between the different sections of the profession, so that they should work together. He suggested that the representatives of the public health medical service should consider the principles which the Association had put forward as worthy of discussion and consideration, and make alterations and amending proposals.

Dr RAVEN, in supporting the motion, said that general practitioners in Kent viewed the position with considerable apprehension. Those who worked under the Ministry of Health said they knew that they must co-operate with general practitioners, and yet the public services in Kent seemed to be developing without much reference to the general practitioner. His Division would like to know how those public services were developing in other counties. There seemed to be no set of principles on which public bodies acted, at all events with regard to the matter under discussion.

Dr D WARD (Public Health Service) said it was a matter not so much for rhetoric as for goodwill. One difficulty was to get a general practitioner to undertake these part-time jobs, and another was that if he did so there came a time when the work was less efficiently carried out, the reason being—and it was a very sound one—that he had not time to do it properly. Personally Dr Ward thought matters could be adjusted, and that there was no need for all will on either side. It seemed to him that the conferences already arranged between the Association and the Society of Medical Officers of Health to settle such questions as the salary scale might also take up the problem of how to bring the general practitioner more and more into the public health service.

Dr D ROXBURGH (Marlborough) remarked that in no country in the world was the standard of the man in general practice so high as it was in Britain, but a further improvement was permitted on his experience by the increase of whole-time men, it would make a definite contribution to his inefficiency.

Dr F RADCLIFFE said he was sure that if Dr Stirling looked at the third paragraph of his resolution he would realize there was considerable danger in it as it presently worded. It might well be thought that sooner or later it would lead to practitioners being called upon to attend before the General Medical Council. He therefore suggested that it should be made to read "Health visitors and nurses should be definitely responsible to a local practitioner for patients dealt with by them, including expectant mothers."

Dr J STEVENS (Edinburgh) seconded.

Dr J A MCDONALD (West Somerset) said he had been watching for some years the insidious creeping in of public health departments on the domain of treatment, and he warned the younger members of the profession that, if it were allowed to continue in the way in which it was going at present, in a very few years there would be a State medical service. It was high time that some definite steps should be taken in the matter.

Mr BISHOP HARRIS asked if it would be agreeable, when the motion became the substantive motion, for him to suggest that the matter should go to the Council for consideration and report, as there were certain very definite terms in it which, if action were taken upon them at once, would have consequences that might not be desirable. For instance, it was said that the function of the health authority should be the prevention of disease, and presumably under that definition would come the whole of vaccination against small-pox. Again, it was suggested that the work of the whole-time officer should be confined, among other things, to institutional work and to consultative work—that was to say, that he might have a free field to seize all the hospital work of the country and consultation work of all kinds.

The amendment to the third paragraph, "Health visitors and nurses should be definitely responsible to a local practitioner for patients dealt with by them, including expectant mothers," was then put and carried, Dr STURLING agreeing to the amendment.

Mr BISHOP HARRIS's suggestion to the effect "That the Representative Body views with anxiety the increasing tendency to transfer the treatment of many diseases and conditions to whole-time medical officers as detrimental to the public health, and refers to the Council the consideration of the general adoption of the following principles" (that is, the three paragraphs in Dr Stirling's resolution, the third of them as amended), was also put and agreed to.

## Street accidents

Dr SPARKING further asked the Council to take steps to ensure that a fee was guaranteed by the county council or other authority when medical men were called to street accidents. His Division desired also that the fee payable should be in accordance with the police tariff, which was already accepted by some authorities when a constable called a medical man to an accident. He said his Division quite appreciated that many county councils and boroughs paid police fees on the scale put forward but there were instances in which the policeman at an accident did not send for a doctor, but some spectator sent for him, and the doctor was unable to obtain any fee at all.

Dr BOVE could not agree to accept the motion. The Association had already secured everything which he thought it could secure centrally. It was purely a local question, and it was the fault of Tunbridge Wells if they had not got a proper system in their area. In 1920 the Representative Body had considered the matter, had laid down certain rules and had asked the Council to do its best to get things adjusted. A deputation from the Association had been received by the Home Office and as a result the Home Office had sent a circular letter to every chief constable in the country, asking him to make arrangements in his area for paying for attendance upon these accident cases. The final paragraph of that letter read: "In settling the amount of the fee and other necessary local arrangements the Secretary of State thinks that it may be found useful to adopt the course which has already been taken in some places of consulting with local representatives of the British Medical Association." What could be got more than that? Why did not Tunbridge Wells go and do it?

Mr HOWARD STRATFORD (Kensington) said that local authorities could not be expected to pay fees because someone had sent for a doctor. He believed that if the police sent for a doctor the fee was almost invariably paid.

Dr R. M. MANNING-WHITE (Mid Cheshire) said that the police were given instructions from headquarters that they were not to send for a medical man. They were told that if they could get one of the crowd to send for a doctor that was the correct thing to do. The county were supposed to pay it the policeman, disobeying the rules, sent for a doctor. The difficulty in the way of getting the remuneration when the doctor had been sent for by the police was extremely great. The Association ought to insist that county councils should be responsible for every street accident which required medical or surgical assistance.

Dr DUNN moved that the meeting now pass to the next business. The motion was seconded and carried.

## Married Medical Women

Dr S. FARMER (Bishop Auckland) moved a resolution seriously deprecating the recent action of the Durham County Council in dismissing one of its women medical officers from its staff on the ground of her recent marriage. His resolution continued: "Marriage is to be a cause for dismissal if this should be stated at the time of appointment." He said that when the medical officer concerned was appointed she gave up an appointment in London to go to Durham and there was not a word either in the advertisement or in any agreement made that marriage would be a bar to the holding of the appointment. His Division contended that the fact should have been plainly stated either in the advertisement or in the agreement. The reason given—namely, that the husband was in receipt of an adequate income—was not a sound reason for such a drastic step. For dealing with women and children at the welfare centres it was a positive advantage to have a married medical officer. A woman having been appointed, the same conditions should apply to her as applied to men.

Dr CHRISTINE MURRELL (Council) said that while agreeing with the general tendency of the motion she found difficulty in supporting it because it appeared to her that in two of its phrases it faced two ways to a certain extent. She therefore proposed as an amendment the deletion of the words "and is of opinion that if marriage is to be a cause for dismissal this should be stated at the time of appointment" and the substitution for them of the words "and reaffirms the Association's policy of equality

of status and salary for medical men and women." The latter phrase was the phrase embodied in one of the previous decisions of the Representative Meeting. In 1926 it decided to take every step to enforce the policy of equality of status and salary. She concluded that it would be generally accepted that the question of single blessedness or marriage would be a question of status. If the resolution as originally worded were passed, public authorities would not be slow to take the hint which it contained. The motion did not deal with the question of whether women should continue their medical work after marriage. That main issue was left untouched. The question the meeting was asked to decide was whether they should be debarred from doing it, which was a different thing. It was a question whether they were to be legislated for or whether it was possible to trust that the instincts and the wisdom of medical women were sufficient to enable them to come to a decision themselves. It was certainly a very serious step to sanction—or, by a lack of comment to acquiesce tacitly in—a tendency to debar whole groups of medical practitioners from the right to continue to practice in medicine.

Dr E. K. LE FLEMING said that the policy of the medical profession and of the Association had always been that of equality between men and women. The only grounds on which they recognized that there should be a distinction was in regard to capacity for doing the work for which payment was made. The proposer of the amendment made no claim that one of her sex who by reason of marriage, might be unable to do her work to the full capacity should have any special consideration, but contended that in the case of equal work there should be equality of status for men and women. Dr MURRELL's amendment was carried but on being put as a substantive motion.

Mr BISTON HARRIS moved the deletion of the reference to the action of the Durham County Council. As it stood the motion said that the Representative Body deprecated certain action taken by a responsible statutory body. The meeting was sitting in judgement upon a body in regard to a matter of which it had no cognizance.

The amendment was seconded from the meeting and carried.

The CHAIRMAN said that what remained of the resolution was the following—

That the Representative Body reaffirms the Association's policy of equality of status and salary for medical men and women.

Dr CHRISTINE MURRELL protested against the side-tracking and torpedoing of the motion, and she moved as an amendment that this motion carry in front of it the words

"That the Representative Body seriously deprecates the action of any local authority in dismissing one of its women medical officers from its staff on the ground of her marriage."

This amendment was carried, and was combined with the reaffirmation set out above, which was carried also.

## Other Medico-Political Resolutions

Dr JOHNSON SMITH (Bournemouth) moved to instruct the Council to approach the authorities concerned with a view to obtaining an increase in the fees paid to doctors for casual cases among the Post Office telegraphic survey department. He said some of his colleagues in his Division were very anxious the Council should inquire into the matter because the rules and regulations governing the scale of fees were very much pre-war and they considered that the present terms of remuneration were altogether inadequate for the work done.

Dr BOVE said the best way to deal with the proposal was to refer it to the Council from which it would get to the Post Office Medical Officers Subcommittee. He accepted the motion.

Dr MORSE (Bournemouth) also moved to instruct the Council to approach the authorities with a view to obtaining an increase in the fees paid to doctors for examining recruits for the Territorial Army.

Dr LE FLEMING said they were asked to examine recruits for the Territorial Army at 2s a head and for many years they had done it for the sake of patriotism.

SIR RICHARD LUCE said that until this year the money for payment of the fees came direct out of the Estimates. One of the economies sanctioned by the War Office was to reduce the Estimates by the sum granted to the county associations for that specific purpose. He raised the question at the time with certain county associations, and they told him the fees would still be paid at the present rate by individuals. It was for county associations to decide whether they would pay them, they had no specific funds for the purpose. It was not an opportune time to ask them to pay higher fees when they had lost the whole of the money granted for the purpose directly out of the Estimates.

DR E. M. COWELL (Croydon) spoke of the extreme difficulty of getting hold of any fund at all, even for general Territorial purposes.

DR BONE argued that the proposition was futile. The Association had spent a good deal of time and money in going to the Territorial Force Associations and the War Office, each asserted the fault lay with the other. Any number of doctors were willing as a matter of patriotism to make the examinations for nothing. There was not the slightest enthusiasm in the Divisions for any such movement, and complaints were negligible. The fact that the movement started in a public health resort discounted its value. It Bournemouth was wise it would do what Devonshire had done—refuse to do the work for less than 5s. and see what happened.

DR MONSE expressed his willingness to withdraw his amendment, and it was accordingly withdrawn.

This concluded the Report of Council under "Medico-Political," and the Chairman, remarking that Dr Bone had been advocating the Council's policy at the Representative Meeting for a longer time on that occasion than any Chairman of Committee within his recollection, congratulated him on the manner in which he had presented his lengthy report. (Applause.)

### ELECTIONS

The MEDICAL SECRETARY announced the result of the election of eight members of Council under By-laws 47 and 53 (d). The successful candidates were as follows:

DR F. J. BUILDON	MR McADAM EECLES
DR J. W. BONE	DR R. LANGDON-DOWN
DR H. G. DUM	SIR RICHARD LUCE, M.P.
DR C. E. DOUGLAS	DR J. A. MACDONALD

It was also agreed by the meeting, on the motion of Sir Richard Luce (Chairman of the Naval and Military Committee), that Lieut.-Colonel F. O'Kineely, I.M.S. (ret.), be reappointed the representative of the Indian Medical Service on the Council for the period 1927-30.

### LUNACY LAW AND MENTAL DISORDER

DR LANGDON-DOWN (Chairman of the Lunacy Law and Mental Disorder Committee) brought forward a memorandum presented by his committee (see Paragraph 213 of Supplementary Report of Council, SUPPLEMENT, June 25th, p. 252) dealing with the Report of the Royal Commission on Lunacy and Mental Disorder and the resolution of the last Annual Representative Meeting relating to the Hunnett v. Fisher case. He moved that the memorandum be approved and referred to the Council. There were, in the memorandum, two main topics—the protection of the practitioner and the extension of facilities for the treatment of patients suffering from mental disorders. In the course of the discussions in committee it came out very clearly that any proposal with regard to the one had its inevitable reflex on the other. Fortunately, there was general agreement as to the ends in view. It was desired to improve and make efficient the protection of the doctor and to give greater freedom of proceeding in bringing patients under treatment. At the present time the atmosphere generally was very favourable to both these propositions. The Royal Commission had quite clearly expressed its sympathy with both points of view. A recent leading article in the *Times* had shown that that journal also was on the side of the medical practitioner in this matter. The *Times* insisted that protection must be

increased, though it declined to countenance the idea that the profession should not be held responsible for reasonable care. There was general unanimity in the profession in regard to the objects in view, it was only as to the method of securing those objects that differences arose. Such differences were natural, because matters at present were in the melting-pot. At the moment there was a great chance of loosening the shackles which had hampered procedure in regard to mental disease. What they wanted to do was to get rid, as far as this might properly be done, of the intervention of the judicial authority, and, instead, to look to those methods of inspection, registration, and control which the Board of Control so well could carry out. As a result of the Royal Commission the Board of Control had gained increased prestige but it was also proposed that the Board should be somewhat reorganized in its structure and strengthened, and therefore made more fit to carry out such duties as these. Any step which recentrated judicial interference in the matter, such as establishing a court to decide what treatment was necessary for the patient and to issue a verdict, seemed to him to be retrograde and likely to revive the rigid forms of the past—unsatisfactory to the patient and derogatory to the profession.

With regard to the protection of the doctor, there were various possible methods. One was the claim on behalf of the doctor who signed a certificate for the same immunity as was accorded to a witness in a court of law. Another was the strengthening of the present provisions of the Lunacy Acts for the purpose of widening off actions. The Royal Commission had proposed an alteration with regard to this which was fully set out in the memorandum, with certain additional strengthening elements suggested by his committee. What about the claim for witness-status? This postulated at once the idea of a court. The only justification for it was that in a certain sense it might be claimed that the judicial authority was holding a court. Dr Langdon-Down did not think that this claim was in the interests of the patient, certainly it was contrary to their general idea of progress in the treatment of mental disorders, and, above all things, it meant a repudiation by the profession of the duty of care for the patient. It was made clear, when the British Medical Association gave evidence before the Royal Commission, that to grant complete immunity to the doctor who signed a certificate would mean that he was not to be held to account even if he had shown lack of reasonable care. The claim for "witness-status" was urged upon the Royal Commission by all the eloquence that Dr Hawthorne and others could muster, but the Commission reported against this concession and advised Parliament not to grant it. But it also advised Parliament to strengthen the protection afforded to the doctor by placing the *onus probandi* in regard to reasonable care on the shoulders of the plaintiff and removing it from the shoulders of the doctor. Was there any reasonable prospect of going to Parliament and obtaining a modification of the law of the land in such a way that the medical profession would be relieved of the duty of exercising reasonable care of the patient? And how far would such immunity, even if conferred, meet the case? The whole idea of this immunity of a witness rested upon the intervention of a judicial authority, and therefore it would involve, obviously, no protection in regard to those actions in which the judicial authority had not been called in. There were various actions which had to be taken by doctors who had care of insane patients in which no judicial authority was called in, and in such circumstances the doctor would still be open to attack, even though the protection of witness-status were given. It was obvious, therefore, that it was insufficient to have such protection, and that protection must be secured and strengthened with regard to all actions taken under the Lunacy Acts, no matter whether a judicial authority was called in or not.

Coming to the mode of strengthening the present law as suggested by the Royal Commission, coupled with the Association's additions, Dr Langdon-Down said that Parliament would probably be willing to concede such additions, as the atmosphere was very favourable. The proposal of assessors had precedents already in the courts.

It would cover everything done in pursuance of the Act as it was at present, and it would go as far as possible without abrogating the duty of care. He need not go far to discuss the question of a body of official certifying doctors. He felt convinced that the Representative Body would not wish to have that. Similarly he did not believe they would wish, in any fresh legislation, that before a doctor dealt with his patient he should always have to go to a relieving officer or public official to authorize him to do so. That was a move in the wrong direction, and they ought to look for protection in some more straightforward way than that.

The suggestion in one of the amendments was that a threat might be used in order to enforce the Association's views. It would be unfortunate to use threats in order to force a particular solution of the problem especially when the public attitude was so favourable, and it might lead to results very different from those desired. There was some reason to expect that in the new position that had arisen since the Report of the Royal Commission, and in a still further new position which he pictured coming when fresh legislation came about, that legal actions would be less frequent or cease, because the public would be much more satisfied and those actions would be received with much less sympathy. In any case the representatives would agree that the Harnett case was a very exceptional one. It was accompanied by very substantial damages which was a great temptation to other malcontents to "try their luck." A case like the Harnett case, which in some of its details was unfortunate for the profession, had tended to produce a crop of cases which was causing much anxiety in all ranks of the profession. The memorandum was in harmony with all the views he had expressed, and it was reasonable to think that the profession would secure the protection it desired if the plans therein set out were put into effect. He therefore asked the representatives to approve the memorandum and to refer it to the Council, partly because he did not claim any moral inspiration for it or any absolute completeness for it, and in particular because the legal aspect of the matter was extremely complicated. There was also the fact that at least one case might still come before the Appeal Court. When that had happened or if there was no appeal, then when the Representative Body met again they would have, in the Council deemed fit counsel's opinion on the legal position, in particular regarding the matter of the duty of care. If there was no duty of care imposed upon doctors in signing certificates under the common law then the question fell, but he did not think they ought to repudiate the duty of reasonable care as that appeared to him to cut right across the best professional traditions. Let them not sacrifice their general aim for medical advance by concentrating obstinately on one particular solution which might be unattainable, and, if attained, might be imperfect in its results. (Applause.)

Dr C. O. HAWTHORNE (Marylebone) moved as an amendment

That the representatives thank the Lunacy Law and Mental Disorder Committee for the memorandum on the Report of the Royal Commission on Lunacy Law and Mental Disorder refer it to the Council and request the Council to re-appoint the committee with instructions to take whatever steps are possible to secure what the Report of the Royal Commission declares to be fair—namely that the medical profession should not be asked to perform their essential part under the menace of litigation which even if unsuccessful may spell financial or professional ruin.

He desired to enter a protest against the suggestion that there was a body of opinion in the medical profession anxious to avoid responsibility for professional action duly taken. When Dr Langdon Down had been speaking on that particular subject it would not have been inappropriate on his part to have put forward from the findings of the Royal Commission the statement that in spite of long and intimate investigations they had not been able to discover a single case in which a patient had been improperly certified and deprived of his liberty. (Applause.) Such a statement constituted most emphatic and important testimony to the degree of good faith and care with which members of the medical profession exercised their responsible duties in the administration of the Lunacy Act. He expressed his regret that that emphatic statement by the

Royal Commission found no place in the memorandum ("Hear, hear"). Dr Langdon Down had invited the Representative Body to approve this comprehensive document generally and without limitation or restriction or amendment. Personally he was nervous about giving approval generally to any document, for the general assent which he was invited to give to-day was very likely to be thrown in his teeth to-morrow as a personal guarantee and as a pledged word. The memorandum contained a very large number of propositions which in his judgement ought to be fully debated, yet it was presented in such a form that only a single discussion could take place upon it, and every critic of it was restricted to five or ten minutes' speech. He submitted that this presentation to the representatives of the memorandum en bloc was excessive and oppressive. What was the exact status of that document? It was not approved by the Council. It did not come with any recommendation from the Council. It had not been discussed or even seen by the Divisions. Again, there was in the memorandum a flat contradiction to the resolution of the Representative Body in 1924 claiming a certain form of protection for medical practitioners who were involved in individual cases in the administration of the Lunacy Act. The memorandum therefore could look for countenance and support neither to the Council, nor to the Divisions, nor to the standing orders. Possibly the chairman would consider carefully whether as a matter of constitutional procedure, the motion could actually be presented to the meeting. In any event, if it was presented, he would ask the representatives to note exactly what it asked them to do. It asked them to give an unqualified and unlimited endorsement to a complex series of propositions when even the existence of those propositions was unknown to the constituents whose views representatives were here to present. The object of the amendment was to save the Association from a premature entanglement in the complexities of the memorandum, and to urge that, until the document had been debated properly, it was a rash thing to sign it formally with the approval of the Representative Body. The amendment kept alive the possibility of pressing upon the legislature and upon public attention the claim that when a medical practitioner took part in an individual case in the administration of the Lunacy Act he pronounced a technical opinion, and that the responsible decision to restrict or not to restrict the patient's liberty was a decision which was taken by a judicial officer who was appointed by the law expressly for that purpose ("Hear, hear"). If the representatives approved of the document, that claim so far as the British Medical Association was concerned finally and formally fell to the ground for they would have endorsed and supported one of the propositions which said that to that claim there was an insuperable objection—and an insuperable objection was one which no one could remove. This was now stated upon the authority of a committee which had formulated and presented to the Royal Commission the very claim which the representatives were now told it was impossible to support. The committee, having got rid in the memorandum of the claim originally sustained by the Representative Body, offered a measure of protection, as it believed which it provided under three different headings every one of which might itself be the subject of a debate. He must pass from them owing to limited time in order to say generally that in his judgement the Representative Body was entitled to a very different document from that presented to them. In particular, he should have thought in view of the anxiety so widely existent in the profession, that the representatives would have had a brief lucid readable attractive statement of the position which existed at the present moment, in so far as that could be gathered from a knowledge of the Lunacy Acts and from the interpretation given to those Acts recently in courts of law. The committee owed it to themselves to have put as strongly as possible the claim which they had originally supported before the Royal Commission and having presented all the reasons in support of that claim they should have proceeded to show how they had all disappeared before what was now alleged to be an insuperable objection. Still more that explanation and



justification of the original claim might have been supported, and could have been supported, by copious extracts from the medical press, from certain lay journals, and from statements made by the judges. Again, it might have been supported by the quotation with which he had commenced his remarks, and also by the statement by the Royal Commission that the medical profession ought to be protected, not only from litigation, but from the menace of litigation. He would like to ask Dr. Langdon-Down if he was prepared to engage from the platform and to the meeting that the three findings which he had put forward as being sufficient fairly to protect the practitioner did actually satisfy the ideal which the Royal Commission said ought to be satisfied—namely the protection of the medical practitioner from the menace of litigation. In deciding the question they must not only be moved by general arguments either for or against the memorandum, but they must be moved by the facts of history. The facts of history had been carefully put forward by Mr. Justice McCutcheon, who had said from the judicial bench that during the past seven years a number of medical men who had acted in perfect good faith had been exposed to the most prolonged, harassing, and costly litigation on the allegation that they had acted without reasonable care in a matter which was the most difficult, delicate, and indefinite in the whole range of medical practice. This chapter of history must not be allowed to repeat itself. It was no doubt competent to the State to say that the diagnosis of mental disorder and the treatment of mental disorder were matters to be decided by the medical profession and if, acting upon that proposition, any medical practitioner proceeded to interfere with the liberty of his patient, he must take the responsibility for that action just as he took the responsibility for any other form of medical treatment. But if the State said, "When a question of the liberty of the subject arises we will not allow your medical treatment to be applied until such treatment has received the formal approval of our officers" the responsibility from that moment rested on the judicial authorities, and could not be passed on to the medical practitioner. (Applause.)

Dr. JAMES NEIL (Hendon) seconded the amendment. He said that his Division viewed with great concern the position of any doctor who was called upon to certify under the Lunacy Acts. They felt it was essential that they should have greater protection than the law at present gave them but they did not want absolute immunity. If a medical practitioner was deliberately negligent in the matter of medical certification they did not claim that he should be immune from legal action. What they claimed was that no action should be possible against a medical certifier without reasonable cause. The Royal Commission shifted the onus of proof from the defendant to the plaintiff. That was excellent so far as it went. The memorandum suggested, in addition, the appointment of medical assessors. They might be very valuable, but the system would be a pure experiment, and it would be necessary to wait to see whether there would be derived from it the benefit that was hoped for. There was one respect in which it would not help. However much Section 330 of the Lunacy Act was strengthened, there would still remain the very great danger to the medical profession that a doctor who had signed a lunacy certificate might be attacked, but not under the Lunacy Act at all. He might be proceeded against by way of an action for libel in respect of the reasons he had stated on his certificate. That had been found in experience to be a great danger. A certificate given by a medical practitioner under the Lunacy Act was really medical evidence. If the evidence it contained were given in a court of law on oath he would be protected from an action for libel, and he should be similarly protected in regard to the written statements in the certificate. If the Council would press for immunity in that respect, and would press for the strengthening of Section 330 in every possible way, the Hendon Division would be satisfied. Then practitioners would not be subjected to a living nightmare as they were at present.

Dr. W. GRANT (Mablethorpe) supported the amendment. He said that the Mablethorpe Division had some very special qualifications for expressing an opinion on the

matter. In the first place it was the largest Division of the Association. In the second place many of the leading London mental specialists practised in the area. It contained members who, in addition to their medical qualifications, were qualified by their experience as parliamentary candidates, as medical journalists, as members of the legal profession, and as mental experts. Further, some of the more prominent figures in the recent notorious cases in the law courts resided in the district. The Division was not satisfied with the present position. The menace which the Royal Commission rightly described as one which ought not to exist had not been removed. His Division asked that it should be. They wanted the matter referred back to the Council, and they hoped that the Council would not throw up the sponge at the end of the first round.

The CHAIRMAN OF COUNCIL said that the matter was not one which had been considered fully by the Council. The Council, owing to stress of time and circumstances, had not been able to deliberate fully on the very valuable report which Dr. Langdon-Down's committee had put before it, and it therefore asked Dr. Langdon-Down to bring forward the memorandum on behalf of his committee so that the Representative Meeting could discuss it. It was not a case of referring back to the Council a matter in regard to which it had expressed a considered opinion.

Dr. J. W. BONE asked the meeting not to accept the amendment. It would be remembered that the policy of the Association, a policy deliberately adopted by the Representative Body, was that of asking for protection, and the particular kind of protection asked for was what was now called, in a way of describing it shortly, witness status. If the meeting did what Dr. Hawthorne asked them to do—namely, send the memorandum back without comment—they would leave the Council without any indication of its mind in the matter. Now that the representatives from all parts were met they should say what they wanted. All medical men wanted proper protection. They all felt it was necessary. They had said so, and had gone on saying so. They had almost persuaded everybody that they ought to have it. But that was not the point. That fight was won long ago. The question was, how proper protection was to be secured, and that was the question that the Representative Meeting ought to answer. If they passed Dr. Hawthorne's amendment they would Burke that question. The witnesses of the Association had faithfully carried out its orders to put forward the best case they could for witness status. The matter had been discussed at length by the Commission by way of question and answer. Dr. Langdon-Down and Dr. Hawthorne were the people who bore the brunt of the examination. In its report the Commission in effect said "On grounds of public policy you may not have witness status. The interests of your profession are subsidiary to the general interest." It was for the Representative Body to say whether it was going to withdraw from the position it had taken up or whether it was going to stand with its back to the wall, and say, "Witness status or nothing." If it passed the amendment proposed by Dr. Hawthorne it would be shirking the issue, and asking the Council to decide it. There were other ways of getting protection. First, there was the offer of the Commission, shifting the onus of proof. The committee did not think that was enough, and had made some additional suggestions. One was the question of discipline, another was that of disciplining some members of the profession. How was it possible for an honest medical opinion to be given ten or fifteen years after the occurrence of the events about which the opinion was given? Yet such opinions were given. The committee suggested that a possible method of attacking the problem was by preventing the profession giving such evidence. The Representative Body should decide, though not in detail, in what way it sought protection, and the first stage was to turn down Dr. Hawthorne's amendment and put up something that they could really discuss. Was it possible that were exaggerating the trouble? There had been three notorious cases in the last year or so. Not 2 per cent of all the cases in which medical men were in trouble arose in that way. He believed an insurance policy of 5s a year would cover all the risks that any ordinary medical man ran.

in connection with signing lunacy certificates. I really did not wish to keep this class of work in the hands of the practitioner. If they said they were not going to sign lunacy certificates except on impossible terms, the Government might say they would make other arrangements, and the general practitioner would be a source of income.

The hour of adjournment (6.30) having arrived, the Chairman stated that unless the meeting consented to some extension of time it would not be able to complete the agenda on the morrow. After discussion it was decided that the meeting should be resumed at 8.30 the following morning.

#### A Medical King's Prison

Sir RICHARD LUCE proposed and Dr COOMBES seconded and it was agreed that congratulations be sent to Captain C. H. VERNON, a member of the Association, on winning the King's Prize at Bilev for 1927.

#### Tuesday July 11th

The Annual Representative Meeting opened at 8.30 a.m., and adjourned at 9.30 for three-quarters of an hour in order that representatives might attend the opening of the Annual Exhibition. Dr BRICKENBURY was again in the chair.

### LUNACY LAW AND MENTAL DISORDER

(continued)

The discussion was continued by

Dr H. G. L. HAYES (Mid Sussex) who said that since the Representative Body gave its sanction to the Council the report of the Commission had been issued, and the Commission turned down the claim of witness-status. Possibly before the next Representative Meeting legislation might be forthcoming on the subject and it was highly desirable that the Council should be in a position to give an authoritative opinion. The protection of the medical practitioner of course was not the only important thing in the Report. Then first duty after all was to the patient. He hoped the Council would also take into account the points to be presented in the discussion on this subject in the Section of Mental Diseases later in the week.

Dr H. C. BRISTOWE (Bristol) said that when the Act of 1890 was 'in the boiling' the bill was sent to Bethlem Royal Hospital or whose staff he was a member at that time for observations and he remembered that it is then stated that the protection of the medical man was as nearly complete as possible. It had since become evident that that protection was far from complete. The suggestions of the Royal Commission no doubt represented a great advance in this respect but they did not forestall all that the profession required. The one thing they should be granted was witness-status. He had already said to the magistrate: "It is for you to decide not whether the patient is insane but whether the patient should or should not be restrained." They might have to be content with the recommendations of the Royal Commission for the time, but they should seriously consider keeping the question of witness-status definitely in the forefront.

Dr E. R. FORREGER (Brighton) said with regard to the committee's suggestion that medical assessors should be appointed to assist the judge that judges largely ignored the opportunities they had at present of having medical assessors in other cases, and if this proposal were carried the position would be the same, therefore what was the good of pressing for it? He considered very dangerous another suggestion of the committee, pressing for the introduction into the form of any judicial detention order words indicating that before signing the order the judicial authority had satisfied himself that the medical practitioner concerned had exercised reasonable care. What they should urge was that the patient wanted treatment—that was the first thing—and the doctor was there to determine the whole thing, the State, if necessary, coming in later. According to this suggestion the magistrate was to hold, in effect, a "court of first instance"

in order to determine whether in an entirely medical question the doctor had exercised reasonable care. Where would such a magistrate stand in any other proceedings? Would he be subpoenaed by the medical certificate?

Dr A. NODD (Windsor) thought the weak spot in the procedure was in the early stage when the two doctors had to hand the certificate to someone in authority. He himself had been signing certificates for over thirty years and had never yet encountered a justice of the peace with regard to any of them. It was a matter largely of common sense. He would have supported Dr Hawthorne more enthusiastically if there had been more promise of expedition in his proposal.

Dr D. ROXBOROUGH (Macclesfield) said that Dr Langdon-Down, to whom they all owed a debt of gratitude, and the members of his committee had done their best to secure a complete immunity as they conceived to be possible, but they had failed and in the present memorandum had thrown up the sponge saying that it was impossible to get complete immunity. But in this question which is one as between the medical profession and the lawyers the profession was winning its case and if they were only determined they would gain a complete triumph. They could get it they were resolute on the subject complete immunity from all civil actions because public opinion which really in the end decided this matter was swinging round tremendously in their favour. The public were realising the danger of what the *Times* had called 'the lunatic at large'. He felt that the outcome of the present discussion might well be to give public opinion a further stimulus in that direction.

Dr T. RADCLIFFE (Oldham) indicated certain defects in the law as it stood particularly in the procedure for taking action in the case of persons judged to be insane who, there was reason to believe were improperly treated by their relatives or by those in whose charge they were. He brought forward also that important class or class known as cases in single care—cases which were bound to be certified but which could be treated with perfect safety in their own home under their own general practitioner. He disapproved of the memorandum as it stood holding that it should be amended and strengthened in the direction of calling attention to certain patient anomalies which the recommendations of the Royal Commission did not cover.

Dr LANGDON-DOWN said that he quite realized that the document before the meeting had come to it without previous full consideration by the Council. The purpose of the Council and of the committee in sending it to the meeting was that they might receive such additional help as it could give. In several respects the discussions had been advantageous. Dr Hawthorne's suggestion that the memorandum ought to have gone to the Divisions seemed to be going unnecessary far because in the objects it had in view the committee were absolutely at one with the previous action of the Divisions. He was prepared to accept the amendment which Dr Hawthorne had moved, because he did not wish the meeting to give their assent and then a final and definite approval to the proposals contained in the memorandum. He suggested that they should be referred back to the Council, which no doubt would take account of what had been said in the course of this discussion. It went back to the Council with the thanks and instructions of the Representative Meeting as Dr Hawthorne proposed he would convey to the committee the feeling of the Representative Body. Dr Hawthorne had every opportunity on the Committee of moulding the memorandum in the direction he desired. The committee had had the privilege of hearing on several occasions the arguments which Dr Hawthorne had addressed to the meeting. The committee which was about equally composed of general practitioners and others had felt—he thought he might say unanimously—that the sort of discussion that was possible in a committee but which was so difficult in a large meeting, unable to accept those arguments. He must take up the challenge which Dr Hawthorne had thrown down in regard to the menace of litigation. Dr Hawthorne took a paragraph from the report of the Royal Commission, but he did not take all

the cognato passages. He had rather led them to suppose that the Royal Commission, having placed that paragraph in the body of its Report, endorsed Dr Hawthorne's conclusions in its recommendations. Who would suppose that in fact the Royal Commission turned down witness-status and recommended a strengthening of Section 330 as providing the protection which he demanded from the menace? The support which Dr Hawthorne had received even from his secondor was at complete variance with the main object in view. Dr Neal turned down the idea of complete immunity and made a suggestion which might result in a useful addition to the memorandum—namely, that the committee should deal with the question of possible libel. But he (Dr Langdon-Down) understood that hitherto there had been only one case of libel. He was prepared to accept the amendment moved by Dr Hawthorne because it had the effect that he (the speaker) desired of sending the memorandum to the Council for further consideration so that it might be extended and improved if possible in accordance with the discussion that had taken place. But he would accept it only on the understanding that the last paragraph, in which the quotation from the Report of the Commission occurred, was not to tie their hands so that the protection from the menace of litigation was to be interpreted in the sense of complete immunity.

Dr C O HAWTHORNE, also in reply, said he was more than content with the position which had been realized by the decision of Dr Langdon-Down to withdraw his motion in favour of the amendment. Though he had been a member of the committee responsible for the memorandum and had not been so fortunate as to agree with his colleagues, this did not absolve him from the duty of carrying the argument to the representatives as the supreme court of the Association. The effect of the amendment was to preserve freedom for the Association in relation to future developments relative to the amendment of the lunacy laws. Had the memorandum been adopted the Association would have been firmly held to certain propositions which everybody must admit had been inadequately debated in the Association ("Hear, hear"). On the other hand, by adopting the amendment the Council was left free to consider contributions from all sources. It was peculiarly important that the British Medical Association should have a free hand at the present time, because the law itself, as it existed to-day, had a cloud of uncertainty attaching to it. He ventured one more quotation from Mr Justice McCardie's judgement in the de Freville case—namely "If he had been freed from authority he would have thought that the effective cause of the detention was the order of the justice and not the certificate of Dr Dill. The justice could decide as he pleased, whatever the certificate stated. The doctor's certificate, although an essential requirement, was a mere opinion which possessed of itself no operative force." Could the case for the profession be better stated than that? Admittedly it was not the final voice of the law, which could only be pronounced by the House of Lords, but when the Association found that such a view of the law could be taken by one of His Majesty's judges, surely there was little reason indeed why they should depart from a position which some of them had been careful to urge from the very outset. Another reason for preserving the Association's freedom was that legislation was sure to come comparatively soon. Why, therefore, should they leave aside the opportunity which any proposed legislation would afford of pressing their views upon the legislature, and of pressing those views after they had been reconsidered in the light of the present meeting?

The amendment was then put and carried without dissent.

At this point Dr J A MACDONALD moved that the standing orders be varied so that speeches of openers of any motion or amendment should be allowed five minutes and other speakers three minutes. Sir JENNER VERRALL seconded the proposal, which was agreed to.

Dr TEMPLE GREY (Marylebone) moved

That it be referred to the Council to consider the desirability of urging upon the legislature that the judicial authority under the Lunacy Act, 1890, must assume full responsibility

for the commitment of a person alleged to be of unsound mind, and that such judicial authority be either a county court judge or a magistrate with special qualifications such as a medical barrister.

Dr W GRIFFITH seconded the motion.

Dr L D PARSONS (Ceylon) pointed out that in Ceylon every lunatic was put in an asylum under detention by process of the court. Lunatics were sent first to a house of observation, they were kept under observation there, a medical officer was summoned, and he gave his opinion to the effect that the person ought to be put in an asylum. The magistrate thereupon might or might not issue an order. He himself remembered one case in which the magistrate had disagreed with him, and had refused to issue an order.

The motion was then put and carried.

Dr D ROXBURGH (Marylebone) moved to direct the Council to appoint a committee for the further consideration of the Royal Commission's report, and to secure on the committee "an adequate number of general practitioners on whom the responsibility of signing certificates under the Lunacy Act mainly falls."

The motion was seconded and carried, Dr LANGDON-DOWN saying that he saw no objection to its acceptance.

Dr STARLING (Tunbridge Wells) moved to refer to the Council the urgent need for the provision of observation wards to which patients can be compulsorily sent where conditions, whilst doubtfully justifying certification, are such as to make them a nuisance or danger to themselves or others.

This motion was agreed to.

#### PARLIAMENTARY ELECTIONS

Dr E KAYE LE FLEMING, having secured approval of the Annual Report of Council under "Parliamentary Elections," went on to move that the Council be authorized to accept the offer of the trustees of the National Insurance Defence Trust (SUPPLEMENT, June 25th, p 254) and to adjust the composition and procedure of the Parliamentary Elections Committee accordingly. In doing so he said he desired to make a few general statements on the position of the matter. The British Medical Association represented the medical profession of the country. Very great pains were taken at its conferences and elsewhere to try to formulate a general policy which was in effect the general, sober, and sane view of the profession. It was extremely valuable that that policy should be known and understood, and if there was one place where it was more necessary than any other that that opinion should find expression it was in the House of Commons. Their position with the Ministry of Health was increasingly satisfactory. The Ministry recognized that the Association could speak with authority for the profession, but the Ministry was not the House of Commons. In the House of Commons there was an extraordinarily wide group of people. Very few of them, indeed, even knew what the British Medical Association was or what it stood for. A good many of them had the most extraordinary views of the Association's constitution. The Association was looked upon in some quarters as a very powerful trade union. That was a great compliment to a body that had never been a trade union, and never would be. (Applause.) It was a compliment in that it showed that the Association, as a collection of perfectly free agents, was able, by the soundness of its views, to take more effective action than such a powerful body as a trade union. The medical profession, by reason of its work, was very seldom able to have representatives in the House of Commons. If a medical man reached that distinction he, as a rule, very rapidly developed into a politician rather than a medical man, and his views seldom represented the general view of the profession at large. If he might intervene in his argument for one moment, he would like to emphasize again how fortunate the Association was at the present moment to have in the House of Commons a member of the profession like Sir Richard Luce. (Applause.) When Sir Richard Luce spoke in the House of Commons he lost no authority and he abandoned none of his personal views in order to speak his mind on medical matters. Knowing, as he did, the feeling of the profession at large, it was

perfectly certain that the expressions he put forward were in conformity with the general views of the profession. The Parliamentary Elections Fund (Dr L Fleming concluded) had been instituted a good many years ago and he had often told the representatives that they had allowed it to languish for lack of support. At Bath and Nottingham suggestions had been put forward that the fund might be supported and augmented by some assistance from the Medical Defence Fund or another kind. This had been discussed by the trustees of that fund, and the result of that discussion would be seen in the recommendations now before the meeting.

The motion was then put and carried.

Dr L. FLEMING further moved the following:

That the Representative Body express the opinion that in view of the offer of the trustees of the National Insurance Defence Trust members be urged to contribute to the Medical Representation in Parliament Fund, so that the volume of individual contributions to that fund shall reach a total at least equal to the promised contribution of the trustees of the National Insurance Defence Trust.

Dr W. JOHNSON SMITH (Bournemouth) said that he had had the honour of bringing up the resolution which established the principle of medical representation in Parliament so that there should be in Parliament members who could be depended upon to express and support the views of the British Medical Association. It was not possible to get very far without money and he would appeal most earnestly to members of the Association to send regular contributions to the Medical Representation in Parliament Fund. If each member subscribed five shillings a year there would be produced about £8,000 a year. The original aim was to raise £10,000 a year and he hoped that that aim would be attained.

The motion was carried.

Dr L. FLEMING further moved to instruct the Parliamentary Elections Committee to pay special attention to the possibility of securing the election to Parliament of medical candidates to University seats. In doing so he said that difficulties were caused by what he would call "the political die-hards who were pained to think that a penny or their money went in support of any man, however sound his medical views might be with whose political conviction they disagreed. It was therefore thought wise to concentrate on university constituencies."

The motion was carried.

## PUBLIC HEALTH AND POOR LAW

### Health Lectures

Dr L. LEWIS-LOYD (Chairman of the Public Health Committee) moved as a recommendation of Council:

- (i) That medical practitioners should not give health lectures under the auspices of local authorities gratuitously and
- (ii) that although the lecturer must in every case necessarily be approved by the local authority there is no reason why any particular class of practitioner should be excluded from delivering such lectures.

He said that the question had been raised as to whether general practitioners should be debarred from delivering health lectures in their own area. It might very well be that they should not deliver them in their own locality but on the other hand, it might also very well be that people would prefer to have lectures by their own doctors rather than by strangers. The Council saw no reason for any differentiation being made. As to the question of payment for the work the Council was of the opinion that the work should not be done gratuitously but that the amount of the payment should be governed by the status of the practitioners giving the lectures.

The motion was carried.

Dr LEWIS-LOYD moved that the remainder of the Annual Report of Council under 'Public Health and Poor Law' be approved. He pointed out that in Paragraph 142 of the report it was stated that all action to be taken locally must be by Divisions of the British Medical Association. If members would turn to Paragraph 229 of the report issued in the SUPPLEMENT of June 25th they would find there that that statement was amplified and defined. He was perfectly certain that the Representative Body would endorse the statement. In the report there was a reference to the status of medical

officers of health in local administration. The paragraph contained a quotation from the annual report of the Ministry of Health for 1923-24. The Council took the very strongest exception to the suggestion contained in that report that the medical officer of health should be under the control of the town clerk or the clerk of the council, as the case might be. In its report the Council regularized the position of deputations from the central office to local authorities in regard to public health matters.

The motion was adopted.

### Public Education in Health

Dr LEWIS-LOYD also moved on behalf of the Council:

That the Representative Body approves the proposals of the Council for action by the Divisions and Branches in assisting in the education of the public in health matters and instructs the Council to take all necessary steps with a view to putting the proposal into operation.

He said this important matter arose from an instruction of the Representative Body at the Nottingham Meeting and the Council submitted it to a special subcommittee under the chairmanship of Dr Hillman. Its report to the Public Health Committee was submitted to the Society of Medical Officers of Health who were considering the subject from a different point of view and who replied that they considered their scheme should be regarded as supplementary to that of the British Medical Association. The Council was of opinion that a Hastings-Lee scheme similar to that delivered by Sir Berkeley Moubray should be given from time to time to the public and that good work could be done by Divisions and Branches carrying on active propaganda amongst the people. In view of recent legislation it was suggested that each Division should call the attention of the local authority of its area to the provisions of the Public Health Act of 1925 either by deputation or memorandum, and offer to assist in the work. In the meantime the Division must have consulted the public health officer of the authority.

Mr HOWARD STANTON considered that the matter should have been very carefully considered in consultation with local secretaries. In the past nine months the Dogs' Protection Bill, medical charities, the interviewing of Members of Parliament, the question of economic commencing salaries, and other things had given them an enormous amount of extra work and if more was added some things would be left undone. A thing like inaugurating public lectures would have to be done very well. The Chairman or the Public Health Committee said that the work would be done in consultation with medical officers of health, but it was the public health people's job to lecture the public. Further expenses were piling up in the Divisions. Treasurers of Branches would have a good deal to say if the suggestion was carried into effect.

Mr E. B. TURNER was most thoroughly in favour of the motion. It was essential they should have lectures at intervals such as the excellent one given by Sir Berkeley Moubray this year. They would have great effect in spreading the light among the more educated and intelligent portions of the community. Out of a fairly large experience he offered hints to those who would put the resolutions into effect. They must "go down into the pit and speak to the man and woman in the street where they found them. It was important that the man who went could be heard and that his hearers understood what he said. There was no difficulty in getting audiences or women because they wanted to know and women would bring men to mixed gatherings, but men alone needed the "prim of a film before or after the powder of the address. The Association's action in this matter would do a great deal to restate the profession in public estimation and raise it to the eminent position in which it stood in the eyes of those who really knew about it.

Dr J. F. WALKER (Southend) said his Division was one of the earliest to realize the importance of this kind of work. For the last six or seven years they had instituted an annual Civic Lecture and among the lecturers had been Professor Leonard Hill, Sir Arthur Newsholme, Sir Thomas Horder and others. The results were a little disappointing. The audiences numbered between 200 and 300 but they did not come from what Mr Turner had

called "the pit" Professional people, school teachers, clergymen, members of health authorities and education committees, and others who could be influenced attended. The pill must be coated with sugar—such as a social function or civic affair. Crudely put, what was proposed would act as an advertisement for the British Medical Association and would counteract the idea that the Association existed only for financial interests and was a selfish trade union.

Dr LEWIS-LLOYD, replying, said that as himself secretary of a Branch and a Division he knew that in many secretaries were overburdened. He suggested they should form an *ad hoc* committee for the work and appoint a special secretary. Questions of cost and payment must be left to each area. The lectures by local authorities must, of course, be paid, what was now proposed was a totally different class of work. The idea was not exactly to advertise the British Medical Association, but rather to reaffirm the position of general practitioners and members of the Association, and make clear that they were not always out for £ s d, but for the public health of the nation, and to help to build it up from a C3 to an A1 community.

The motion was carried.

Dr LEWIS-LLOYD, in moving the remainder of the report under "Public Health," mentioned that from June, 1926, to June, 1927, the Association had dealt with 180 appointments under the scale of minimum commencing salaries, and in 151 of these the scale salary had either been offered or secured after negotiation. (Applause.)

Dr BAILDON (Southport) asked the Council to arrange with the Society of Medical Officers of Health that, in areas where cases of small-pox were known to exist, special propaganda work for vaccination should be organized. Anti-vaccination propaganda in Southport had been very active, and it seemed to them in Southport that some counter-measures should be taken. One method would be to arrange for the circulation of the late Dr McVail's pamphlet.

Dr LEWIS-LLOYD accepted this suggestion, and said that the Association had recently brought Dr McVail's pamphlet up to date.

### POOR LAW REFORM

Dr BRACKENBURY, the Chairman of the Poor Law Reform Committee, on behalf of the Council, moved approval of the Annual Report under "Poor Law Reform," Dr Hawthorne meanwhile taking the chair.

Dr Brackenbury said that since this matter was set out in the Annual Report events had moved forward. The Minister of Health had withdrawn the original proposals and substituted others, and he would refer representatives to two recent articles in the *BRITISH MEDICAL JOURNAL* in which the new proposals were sufficiently expounded. The proposals were tentative—not cast in the form of a parliamentary bill—and it was important they should be regarded in that light. The cardinal point with which the Association was concerned was the unification of all forms of health administration under the local authority. The first proposals were welcomed as affording an opportunity of this, but the new proposals did not give that same opportunity in any areas except county boroughs, where it might be possible to relieve the unification of administration. Instead of boards of guardians being abolished, as they were under the old proposals, the boards, in more convenient areas, and with more convenient methods of election, would be preserved, and therefore the opportunity of distributing the health and educational functions of the guardians amongst the appropriate committees of county or urban district councils would not be so easily available. Under the Association's policy they had always insisted on the desirability that on committees concerned with health administration there should be co-opted members of the medical profession and others interested in health administration. That was not given under the new proposals. What was given was the power of certain county councils or boards of guardians to co-opt persons who were experienced in the administration of the Poor Law. He felt that it was much more important to get on to the committee of management persons experienced in health

administration, and he hoped that pressure would be brought to bear to secure at least that alteration.

The report was approved.

### NATIONAL HEALTH INSURANCE

Dr H G DAVY, Chairman of the Insurance Acts Committee, said that the report under "National Health Insurance" dealt with a number of important matters which had advanced further since the report was prepared. On the question of certification and the extraordinarily increased claims for sickness benefit last year, which caused so much anxiety, the matter had been dealt with, and it had been arranged with the Ministry that, while maintaining the right of free choice of doctor, a patient would have to give a fortnight's notice of intention to change and to submit his medical card to the Insurance Committee to be stamped to that effect. This prevented a patient changing in a huff, and also had other advantages. With regard to disciplinary procedure, he hoped to be in a position to make a statement to the Panel Conference in October, and to submit a detailed scheme of modifications of the present procedure which, he hoped, would appeal to insurance practitioners as likely to be so satisfactory that they would be willing to forego making an appeal to the courts.

Dr H D WOODROFFE (East Norfolk) moved, with reference to a paragraph in a letter of the Medical Secretary to the Ministry of Health, contained in the Annual Report, a resolution expressing the view that the widespread custom of individuals insured under the National Health Insurance Acts being, in addition, members of other sick benefit societies actually led in many cases to patients drawing a larger income while sick than while at work, and that the Representative Body considered this state of affairs to have a considerable bearing on the merits of certification, and instructed the Council to make representations to the Ministry accordingly. He had been told by the president of one of the largest of the approved societies that in agricultural districts like the speaker's own there were an enormous number of men working on a maximum weekly wage of 30s who, by various side insurances, were drawing anything from 35s a week from that source.

The motion, however, was withdrawn on the strength of Dr Davy's statement about the new conditions with regard to change of doctor.

### Ophthalmic Benefit

Dr DAVY moved the following as a recommendation of Council:

That the Representative Body approves the principle of providing ophthalmic benefit through clinics in large centres as an arrangement auxiliary to the existing scheme of attendance by ophthalmic surgeons privately, subject to the arrangements under which such clinics are established being approved by the Council.

Dr DAVY said that this was an important matter of principle. The Representative Body had on many occasions strongly expressed the opinion that extended services of consultants, as of general practitioners, should be run on the lines of private practice. The principle at stake here was the establishment of clinics for a particular service, and he wanted to warn the Representative Body that this was the first special service which had become part of national health insurance. As at present administered, it was an additional benefit and not applicable to all insured persons. But considerable weight was likely to be given to this particular benefit in the organization of future extensions of specialist service. The question of ophthalmic benefit had been dealt with by a special committee of the Association, of which Dr Wallace Henry was chairman, and he would like Dr Henry to put before the meeting the reasons for accepting this resolution.

Dr WALLACE HENRY stated that at the present time the method of dealing with so-called ophthalmic benefit was that a patient who felt he or she had something wrong with the eye went to the panel doctor. The panel doctor gave a certificate that the patient was in need of ophthalmic treatment, that certificate was forwarded to the approved society, and the society settled whether the patient was to go to an ophthalmic surgeon or whether they would take



the responsibility upon themselves or sending the patient direct to an optician. A very large number of societies adopted the latter course, and when the optician found he was unable to satisfy the needs of the case he sent a certificate to the society, and those few cases selected by the opticians were sent to the ophthalmic surgeon. There were a very large number of cases which were dealt with by the opticians which did not derive the full benefit which they might very well expect if they received them direct through a method which was carried out on a systematic basis. Those societies which sent the patients direct to the optician all frankly said that if the financial circumstances made it possible to do so they would prefer to send them to an ophthalmic surgeon, but they said that the numbers had been so great especially in large industrial centres that it was quite impossible for them to find the money to pay even the guinea fee which had been agreed upon between the British Medical Association and the Ministry of Health and certain of the societies. As a result of that practically 80 per cent of the insured people were at present sent direct to opticians. A certain combination of societies had formed themelves into an additional charitable society known as the National Insurance Benefit Society and had in certain areas set up ophthalmic clinics of their own. The exact conditions under which these clinics were being set up were not known. Pending a decision of the Representative Body the committee had tried to discourage ophthalmic surgeons from taking positions in those clinics, but those positions had been taken in several cases by young men to whom, he supposed, the financial emoluments offered were a matter of considerable importance. The committee felt it was very desirable that the Association should take the matter in hand itself, that it should be empowered to go into the whole question as to whether ophthalmic clinics could be set up satisfactorily and if so how they could best be organized, but until permission was obtained from the Representative Body to do so it was useless exploring the matter very closely. A scheme had been submitted to the committee which appeared to present reasonable probability of being carried out successfully. It was quite appreciated that as that scheme stood there were grave difficulties associated with it, but if permission were given to go into the matter it was thought that the difficulties might be eliminated and that a really satisfactory scheme for providing ophthalmic benefit through medical men to practically all the insured population might be carried out. He had been informally told in conversation with members of one or two leading societies that if the scheme were carried through the whole weight which was at present given to sending patients to opticians would be turned the other way and that those societies would as far as possible try to induce their members first of all to consult an ophthalmic surgeon prior to going to an optician. They said quite reasonably that it was impossible for them to say that all cases should go to an ophthalmic surgeon because it was the inherent right of every Englishman to say he would not go to a doctor but to someone else if he so preferred. Consequently the committee felt it was impossible to make it a definite condition that everybody should be sent, but it hoped that the vast majority of the people concerned in a clinic system was set up—as an auxiliary to the present system—would receive better attention and that the result would be satisfactory, not merely to the medical man concerned but to the insured patients as a whole.

Dr G. W. KENDALL (City of London) supported the recommendation. The change of policy was a matter of great importance not only to ophthalmic surgeons but to the whole profession. It might interest the meeting to hear something of the views of the ophthalmic surgeons who had to carry out the service. He had an opportunity recently at a meeting held in Oxford of learning their views. The suggestion that clinics should be formed was considered at the meeting, and after a lengthy discussion and a good deal of explanation it was agreed that the recommendation of the Council should be supported. Ophthalmic surgeons from all parts of the country were present, as were several members of the British Medical Association Ophthalmic Committee. The recommendation would receive the support of ophthalmic surgeons.

Dr E. J. PRIMROSE (Clasgow, North-Western) said that he had the feeling that the motion as now worded would give rise to the impression that there was to be a change of principle. That was not, he understood, the intention of the recommendation. He thought that the motion should be so amended as to make the matter quite clear. The principle that was at stake was that of giving private attendance to insured persons at a modified fee. He suggested that the motion should read, "That the Representative Body while not approving of the principle, yet recognises the expediency under certain circumstances or agreeing to the temporary provision of ophthalmic benefit." If the motion was carried as it stood, all the societies would be wanting to come in under the new principle of having all their cases seen in clinics with the exception of a few who maintained their right to be seen individually.

The Chairman suggested that the motion might be moved with the word "suggestion" in place of the word "principle" and with the words "in certain circumstances" inserted after the word "centres" and Dr Dain agreeing the motion in this altered form was carried.

Dr PETER MACDONALD (York) wanted the Representative Body not to blink the fact that clinics so far as ophthalmic benefit was concerned had come to stay and that they would be extended. He was quite in agreement with the amended motion but he considered that in giving assent to it the meeting had done one of the most important things of its present session.

Dr DUNN then moved that the remainder of the Supplementary Report or Council under 'National Health Insurance' be approved.

Dr L. D. BRIERLEY (Cardiff) said that when the ophthalmic surgeons of Cardiff considered the Supplementary Report of the Council they expressed the opinion that not all the ophthalmic cases were going to be brought to the clinics but only certain selected cases which had probably passed through the hands of opticians in the first place. They considered that to examine ten new cases in two hours would be quite impossible in the circumstances. They also considered that their already reduced fee of one guinea was being still further reduced when they were expected to see eight or ten serious cases at 8s 6d per head. He had been asked to move an amendment somewhat in the following terms. That in reference to Paragraph 253 of the Supplementary Report of Council the Representative Body is of opinion that the number of new cases seen at the clinics mentioned in Paragraph 253 should be eight and not ten.

Dr O. WILLIAMS (South West Wales) seconded the amendment.

Dr WALLACE HENRY said that the recommendation was not put forward for adoption by the Representative Meeting. It was simply the outline of a scheme which had been submitted as one which was worth discussing. The whole question of numbers and fees and all the details would have to come up for complete discussion by the Ophthalmic Committee and the Council at a later date.

The Chairman said that the meeting was asked to give leave to the amendment to be moved in the following form: "That in reference to Paragraph 253 of the Supplementary Report of Council the Council be asked to consider whether the number of cases should be eight rather than ten."

Leave was given, and the motion was carried in its altered form.

The remainder of the Supplementary Report of Council was approved.

#### Extended Benefits under the National Health Insurance Act

Dr GRIFFITH (Marplebone) moved to request the Council to urge the Ministry of Health to provide for extended benefits under the National Health Insurance Act. He said that the subject was not a new one. The proposal had received the sympathy and the support of the Representative Body on previous occasions.

Dr DUNN said that he could only assure the meeting that from the beginning of the insurance system what was proposed in the resolution had been urged upon the Ministry. The Ministry was as anxious as anybody to do what was

desired. The question was one of money and money only. He believed that as soon as there was enough money available an extension of benefits would be provided for the whole insured population. If the motion was adopted the Council would be pleased to pass it on to the Ministry. The motion was carried.

### HOSPITALS

Mr H S SOUTTAR (Chairman of the Hospitals Committee) moved on behalf of the Council

That where the remuneration of a consultant for regular periodic visits to a Poor Law hospital is on a salary basis, the amount of that salary should be a matter of arrangement between representatives of the local medical profession and the appointing authority, but regard should be had to the maximum fees laid down in Minute 66 of the Annual Representative Meeting, 1926, and/or to the basis of £2 12s 6d for consultant sessions of not more than two hours, with an allowance for mileage where necessary.

This was agreed to without discussion.

Mr SOUTTAR further moved, on behalf of the Council, the deletion of the following paragraphs of the Voluntary Hospital Policy

34 The honorary medical staffs may find the following suggestions valuable in connexion with the disposal of the moneys in the special fund, and accordingly the Association suggests to the hospital staffs concerned that one or more of the following methods of distribution of any moneys in the special fund may be found suitable

- (a) To the members of the honorary medical staffs for their own personal disposal,
- (b) for the assistance of members of the medical staff in connexion with research work,
- (c) for the purchase of instruments, books, etc., for the use of the medical staff, or for lending to other members of the profession,
- (d) for the initiation or development of post graduate teaching in the institution,
- (e) the institution of a local medical benevolent fund administered by the members of the honorary medical staff for dealing with necessitous cases (for example widows and children of former colleagues),
- (f) grants to any recognized medical benevolent fund or institution, or
- (g) otherwise as the medical staff may decide.

36 Any concession of a nominal recognition of the services of the visiting medical staff by a percentage of honorarium should be accepted without prejudice and on account of the existing general economic conditions.

He said that the object of the deletion was simply to unload the policy, making it a little simpler and it was felt that these two paragraphs rather weakened their contention that payments made by a patient were essentially payments for treatment.

The deletion was agreed to.

Mr SOUTTAR moved the further recommendation

That the visiting medical staffs of hospitals should seek to secure arrangements with boards of hospitals for the satisfactory recognition of their services in accordance with Section XII of the Voluntary Hospital (United Kingdom) Policy of the Association since any failure in securing such recognition is detrimental to medical work of all kinds and ultimately to the general public.

Mr SOUTTAR said that they had a fairly complete policy with regard to hospitals, but until it was adopted by staffs of hospitals all over the country it was simply inert. The Council wished to impress upon visiting staffs the importance of adopting the policy.

This was agreed to.

### Treatment of Early Stages of Mental Disease

Mr SOUTTAR also moved, as a recommendation of Council

That specialist work in connexion with the treatment of patients suffering from mental disease in its early stages, whether at hospitals or clinics, should not be carried out by whole-time medical officers of public health or local government authorities, but on a part-time basis by medical practitioners who have special knowledge of the subject but who need not necessarily be devoting their whole time to such special work.

Thus, he said, referred to specialist work which was now being taken up so largely in clinics and hospitals with regard to the treatment of early mental disease. It had led to a certain amount of misunderstanding, and a letter had been received from the President of the Royal Medical-Psychological Association (Dr J R Lord) expressing his feelings on the subject in the strongest terms. Dr Lord wrote "This is one of those vulgar errors which owe

continued currency to the unthinking and the uninformed—lugeurs in the last century—and to the timorous practitioners of pretence." Mr SOUTTAR said that there was no desire to exclude any group of medical men from their proper work, but he held that, as far as possible, medical work should be carried out by private practitioners—that it should not be transferred to those holding whole-time appointments under public authorities. That was the policy of the Association, but, on the other hand, they did not wish it to be thought that they desired to exclude whole-time men from these appointments.

Mr E W G MASTERTON said that a member in his own Division, who was medical superintendent of a very large hospital for early mental cases, had explained to him how much offence the resolution as it stood had given, and he hoped that by inserting a few words it might be made more acceptable. He proposed that it should read "That specialist work should not necessarily be carried out by whole-time medical officers," and that the words "where such are available" should be added after "practitioners."

Dr J R GILLISIE (Belfast) said that in Belfast quite recently the board of a hospital, on the suggestion of the staff, invited the medical superintendent of the mental hospital, which was under the Belfast Corporation, to undertake to conduct a clinic for early mental cases in connexion with the voluntary hospital, and he had consented to do so. His Division desired this whole question to be referred back to the Council.

Mr Masterton's amendment was accepted by Mr SOUTTAR, and the amended resolution was carried.

In moving approval of the remainder of the report Mr SOUTTAR called attention to the admirable resume on contributory schemes which had been drawn up by the Deputy Medical Secretary (Dr G C Anderson) and published as an appendix to the Annual Report. It was a masterly exposition of a somewhat complicated subject. He also referred to the amicable relations which now existed between themselves and the Hospital Saving Association. The British Medical Association had insisted that patients should take letters from their practitioners, and also that the method should be used as far as possible on consultative lines. The Hospital Saving Association had met them admirably on both those points, and was doing all that it could to carry them out.

The report was approved.

### Middle-class Hospital Policy

The CHAIRMAN, in the absence of the representative of Salisbury, formally moved a resolution in the name of that Division that the Representative Body instruct the Council to consider the formation of a middle-class hospital policy.

Mr SOUTTAR said he was very happy to accept the resolution, as the proposal was one to which they might very well direct their attention.

### Contributory Schemes for Hospital Benefit

Dr E R FOTHERCILL (Brighton) moved

That in view of the inroads being made into private medical practice by the contributory schemes which are springing up all over the country, the Representative Body is of opinion

(a) That members of a contributory scheme should be regarded no longer as objects of charity, and therefore that the full cost of benefits offered should be covered by the premiums with or without supplementary payment, paid by or for the members, and

(b) That the time has come to express the policy of the Association concisely in certain cardinal principles as set out below and instructs the Council actively to engage itself during the coming year by means of conferences with committees of such schemes, hospital authorities, staffs of hospitals, Branches and Divisions, and otherwise with a view to securing their general adoption.

(i) That the income limit for membership of a contributory scheme should not exceed the maximum scale as it appears in the hospital policy of the Association.

(ii) That so far as is possible and consistent with the best interests of the members arrangements for consultative or specialist services should be made with private practitioners rather than with a voluntary or cottage hospital.

(iii) That for this purpose (a) there should be free choice of private practitioner by member and of member by private practitioner and (b) the method and amount of remuneration should be determined by the local medical profession.

(iv) That except in emergency a member should be admitted to benefit only upon the introduction of the attending practitioner

(v) That recognition should be made of the services of the medical staff of the hospital attending members not by a percentage of the money received by the hospital from a contributory scheme, but by a method and amount determined by the local medical profession

[In order to assist in determining the method and amount of remuneration to be asked for the respective specialist services the local medical profession should consider (i) payment for work done on a tariff of fees (ii) payment on a session basis (iii) payment by an amount to be determined annually or for a period of years (iv) payment by a combination of two or more of the above ways]

Dr Fothergill said that club practice began with the benevolent neutrality of the doctor. He became the servant of the society—overworked, harried, underpaid. He was told to look to the women and children for his money. The income limit was totally unsatisfactory. He was not represented on the club committee. There was no legal medical organization to assist him, no free choice of doctor or of patient. Club practice was now developed in hospitals. The staff doctor was the servant of the club. He was told to make his money out of the "kudos" of being on the staff. There was no income limit, or one which was not satisfactory, in many of the schemes. He was not represented on the club scheme in any way. There was no free choice of specialist by the patient. The local medical organization was available, but it was quite ineffective to assist him. In fact, they now had the old 1910 domiciliary club practice in the hospitals. There were over 120 of those organizations in existence, 90 of them had definite contracts with the hospitals, totally against the British Medical Association policy. Not one embraced the whole of their policy. When it was put up to one club, the reply was that it would ruin the club. Was it not time the British Medical Association did something? The Association had in sections or parts of sections the whole policy outlined by Brighton. When the Association dealt with club practice in 1910 they outlined six cardinal principles, and they met with success in every one because they were united. Would hospital staffs in order to stop the club practices to which they objected, resign? It would probably come to that. The six points were an income limit, free choice, administration not by the societies, the method of remuneration and its amount to be determined by the professional representation—he considered that it was not necessary—on the clubs, in addition, the arrangements to be with private practitioners to admission to benefits only on the recommendation of their doctor. To take one point—free choice of doctor. Clubs were making contracts alone with hospitals and practitioners who were quite as competent as the physicians and surgeons attached to the hospitals who treated the patients, were losing a source of income which they would earn if the club made a direct contract with them. In accordance with the British Medical Association policy, why should not the club arrange to pay the consultant and for him to see the patient in his own house? Why should he go to the hospital at all? The London Hospital had put its foot down on the insured patient, who had been pouring by thousands into the out-patients' department. Another point was that the ordinary private practitioner not the consultant, could do a large amount of the detailed work which did not require the high skill of a surgeon if paid a fee by the clubs. Yet a patient went into the hospital, and nothing was paid to the doctor of the hospital and nothing to the general practitioner who could do the work. Brighton proposed that they should outline the whole question of club practice run by the so-called contributory societies, and hoped the Council would put it through. People who joined the clubs that were established and efficient were no longer objects of charity; they received great benefits that no firm would offer for a premium. When the clubs shared out the money among the hospitals they paid only 80 per cent of what was due to them for administration and accommodation, and nothing whatever to the staff. The whole question was in the hands of the hospital staffs, who were becoming club doctors.

Mr SOUTER said he had very great sympathy with many of the Brighton proposals. It was difficult to get hospital staffs to take interest in the matter. The proposals were complicated and covered a great deal of ground, and if Brighton would agree to their being referred to the Council they would have a most sympathetic hearing, both from it and the Hospitals Committee.

Dr FOTHERGILL assented, and the meeting agreed to refer the proposals to the Council.

## NAVAL AND MILITARY

Sir RICHARD LUCE, M.P., moved approval of the report under "Naval and Military." He said that a further gain had been obtained for the Royal Army Medical Corps—the marriage allowance to officers serving in India. Efforts to make it retrospective were not successful. There was still considerable difficulty in getting a sufficient number of recruits. There was no reason why young men recently qualified should not join the services. The present was an advantageous moment for them. Although there was a considerable block in the ranks of majors in the Royal Army Medical Corps, there was such a shortage of the junior ranks that there must be very rapid promotion. One point that had been conceded, that men might take one year of their service doing hospital work, was bearing some good fruit.

The report was approved.

## MEDICAL CHARITIES

Dr J. F. WALKER (Chairman of the Charities Committee of the Association) moved that the report under "Benevolence" be approved. He thought there was no need to emphasize the straits to which some members of the profession or their dependants had been reduced. Last year the Royal Medical Benevolent Fund received over 600 applications for relief. The Charities Committee felt strongly that the only way to meet the position was by local appeal. Between thirty and forty Divisions had already signified that they were instituting such a local appeal, and he knew that steps in the same direction were being taken by many others. If each member would subscribe one guinea a year all the money required would be forthcoming. He suggested that the committee of each Division should set up a subcommittee to go through the names of members, and that each member of the subcommittee should undertake to approach a certain number of them with a view to obtaining their subscriptions. It could not be said that the members of a profession like the medical profession were unable to subscribe one guinea a year for their poorer brethren—about the equivalent of a new golf ball once every six weeks. The reputation of the British Medical Association was at stake in this matter. There were signs that before long the reproach would be removed from the profession, and in a few years' time they would be able to look back with pride on one of the finest pieces of constructive work to which the Association had ever put its hand.

Dr E. K. LE FLEMING said that in his area practically every member was an insurance practitioner. There was a voluntary levy which provided more than was actually needed for administrative purposes, and they had a standing resolution that at least £50 out of the surplus should go to the Charities Fund. Last year doubtless that amount was sent, and this year it was likely that the £50 would be largely exceeded. There must be many Panel Committees which, having fulfilled their obligation to the Defence Fund, were considering a reduction of their voluntary levy. The voluntary levy was felt by no individual, and he begged them to consider whether, having fulfilled their obligations in the one direction, they could not turn their attention to building up the Benevolent Fund to a similar figure.

Dr C. E. DOUGLAS begged the members to bear in mind that there was a vast body of suffering and distress amongst the profession, and that every man, according to his means, was called upon to help in its alleviation.

The report was approved including a proposed reconstitution of the Charities Committee whereby four

SCOTLAND  
(C)

Dr. HUGH MILLER (Chairman of the Scottish Committee) moved the approval of the report under "Scotland." He said that the main business with which the committee had been concerned during the year had been the scale of salaries in the public health service in Scotland, and on this matter they owed much to the skilful guidance of the Chairman of Council. Now that the Association had a house in Edinburgh it was proposed to develop the social side rather more, especially as it was hoped that the house would be suitably enlarged. It was hoped, in particular, to have reading-room facilities and so on, so that members visiting Scotland might find a suitable place in which to meet their fellows.

[The Chairman of Council, at an earlier meeting, when the general body was absent, had made a statement to the effect that the management of the Royal Epse- become ex officio members of the

The CHAIRMAN of COURSE, at an earlier stage in the meeting, when the general body of press reporters were absent, had made a statement on the position with regard to the scale of salaries in Scotland. He pointed out the difficulties of the position in Scotland, and said that in order to pave the way to a final settlement there were certain concessions which it seemed desirable to make. The principal of these was in the case of medical officers employed in departments. Here the figure in the scale as originally fixed for the whole country was not less than £600 per annum, though a year of probation at £500 per annum was allowed. Scotland had put forward a proposition that the commencing salary should be lower, but that there should be a graded rise so that the average over a certain number of years would not be less than £600. Certain modifications had also been agreed to with regard to the scale of commencing salaries for chief medical officers of health. The figures recommended in the case of Scotland were for populations not exceeding 50,000, £800 to £900, not exceeding 100,000, £900 to £1,100, not exceeding 250,000, £1,100 to £1,400, over 250,000, £1,400 to £1,600. These and certain other modifications in respect to other classes were recommended for twelve months, and in the meantime the Society of Medical Officers of Health would be asked to co-operate with the British Medical Association in running at some general arrangement which might suffice for both England and Scotland. He asked for informal assent from the meeting for the course taken. The assent was given without discussion.]

## WALES

W A L E S

Sir EWIN MACLEAN, in the absence of Dr W E Thomas, the Chairman of the Welsh Committee moved, on behalf of the Council, that the Annual Report of Council under "Wales" be approved. He said that he knew from personal experience that the Council Practice Subcommittee of the Welsh Committee had had many strenuous and anxious times and had had very important work to do. Its methods of managing the various phases of the work had excited a certain amount of favourable report and much had that been the ease that it had had visits and correspondence from representatives of other parts of the country who wished to inquire into its work and copy it. Perhaps there was no part of the country in which the defensive machinery of the Association had proved so valuable as the part in which the subcommittee was working. That applied more particularly to South Wales. The subcommittee had, he thought, earned the respect of its opponents. Medical men in Wales were profoundly grateful for the help they had received from headquarters and for the guidance they had had from their friend Dr Cox in all their cases.

I R E L A N D

Dr J MILES (Chairman)

IRELAND

Dr J MILES (Chairman of the Irish Committee) moved that the Annual Report of Council under "Ireland" be approved. In doing so, he said that the Irish Committee was at a disadvantage at present owing to the illness of

[SUPPLEMENT TO THE  
BRITISH MEDICAL JOURNAL]

Dr Darling one of its most effective members. Dr Darling had worked very hard, not only for his own local committee, but for the interests of the Association as a whole. The state of affairs in Ireland was very satisfactory at the present time. The Branches were all alive and vigorous. The membership was maintained. The recruitment was perhaps very much more satisfactory than the membership, for a great many of the recruits drifted away to less happy and less favoured lands. During the past year the profession in Ireland had had the advantage of the improving and energizing presence of Dr Cox. He arrived at the northern end of the country, and traversed it "welcomed by laurels as he went along." He thought that it would be difficult for Dr Cox to say whether his reception was more satisfactory at the northern or the southern end of the country. At any rate, they all agreed that they were very fortunate indeed in securing his visit, and they vied with each other as to who would give him the most hearty welcome. They would be very glad to see him at any future time. (Applause)

CONCLUDING

The CHURCH

CONCLUDING BUSINESS

**CONCLUDING BUSINESS**

The CHAIRMAN OF COUNCIL moved, and it was agreed, that subject to the amendments and other resolutions, the Annual and Supplementary Reports of Council be approved.

The MEDICAL SECRETARY announced that Mr. Lyndon, who had been elected representative of Council for the year 1905-1906, had been elected.

The Medical Secretary announced that in place of Dr Lyndon, who had been elected Deputy Chairman of the Representative Body and also one of the twelve members of Council elected by grouped representatives, Dr E. I. Stirling of Cambridge Wells had been elected a group representative, Dr Lyndon becoming *ex officio* a member of Council.

The Chairman moved  
That the best thanks  
given to the

That the best thanks of the Representative Meeting be  
given to the following ladies and gentlemen who have con-  
tributed to the comfort, pleasure, and convenience of the  
Representative Body  
The President, Sir Robert Phyllips  
The local General Secretaries  
Mr Alexander

The President, Sir Robert Philip  
The local General Secretary, Dr Fergus Hewitt  
Mr Alexander Miles, Treasurer of the Meeting  
The Principal of the University Dr Logan Turner, Mr  
J J M Shan, Dr W A Alexander (in connection  
with meeting room facilities)  
The President and Secretary of the University Union  
Professor G M Robertson, Dr George Gibson, and Dr D  
Gunn (Excursions)  
The Deputy Chairman of the Local  
Committee, Mrs. G. B. Brimwell

Members would notice that he said "Deputy Chairman of the Ladies' Committee" As they had heard sympathetic ally, Lady Philip, who was the Chairman of the Committee, had, unfortunately, not been well enough to take the part which she would have wished to take

The motion was carried by acclamation

The CHAIRMAN also moved a resolution

of the Head Office and

an

The motion was carried by acclamation  
The Chairman also moved a vote of thanks to the staff  
of the Head Office and the Scottish Office for the work done  
in connexion with the Edinburgh Meeting, and this was  
also carried with acclamation  
Dr BRICKENBURY then invested  
Hewthorne, with the help of the  
of the Board.

Dr BRACKENBURY then invested his successor, Dr C D HURTHORNE, with the badge of office worn by the Chairman of the Representative Body.

Dr J A MacDONALD seconded the motion.

Dr J A Mendenhall seconded the vote of thanks as the second man to hold the office which Dr Brickenbury had just vacated. Dr Brickenbury had well sustained the dignity of the Chair of the Representative Meeting. The motion was carried by the representative and applauding Dr Brickenbury.

Dr. BRICKBURN said that he greatly appreciated their kindness and indulgence to him, and if he could in any small degree repay it by any services he might render in the future it would always be his happiness to do so.

The Annual Representative of

The Annual Representative Meeting concluded at 3 p.m.

## THE ANNUAL DINNER

THE Annual Dinner of the British Medical Association took place in Edinburgh on July 21st when more than three hundred members and guests assembled. Scottish custom and hospitality introduced several distinctive features, such as the placing in of the principal guests to the sound of the bagpipes and the ceremonial appearance of the haggis. The menu card was a delightful production, bearing on the cover a sketch of Holyrood. The officers of the Association and the chief guests were seated at round tables, where the President (Sir Robert Philip) acted as host. Among the guests were the following: The Lord Provost of Edinburgh, the Sheriff of Edinburgh and the Lothians, Principal Sir Alfred Craig, the Presidents of the Royal Colleges of Physicians and Surgeons of Edinburgh (Professor George M. Robertson and Mr. Logan Turner), Earl Russell Lord Sinds, Professor Flaver and several of the other medical men from abroad attending the meeting, three past Presidents of the Association (Dr. T. G. Thomson, Sir David Drummond, and Sir James Britton), Lord Dawson of Penn, Sir George Newman, Sir Norman Waller, Sir Leslie Mackenzie, Sir Humphry Rolleston, the Right Rev. Bishop Graham, the Very Rev. C. L. Warr, Professor Osler, Sir George Barry, M.P., Dr. Drummond Shiel, M.P. and other representatives of political and academic life. The toast of 'The King' was heartily pledged.

## "THE IMPERIAL FORCE"

Lord Dawson of Penn proposed 'The Imperial Force'. From the very earliest times, he said, war and medicine had had a close association but never closer than in the ordeal through which the nations had but lately passed. The system of co-operation with the civil profession which that emergency brought about should not be allowed to drop for in any future war, if unhappily such came about, the forces of the Crown would be not less but more dependent upon the assistance of civilians. Should the need arise again, the response to the summons on the part of all callings and all classes would be as eager as it was in 1914. He associated the toast with a distinguished member of the senior Service, Rear Admiral H. C. Bowring, Commanding Officer Coast of Scotland, and spoke in fitting terms of his part in that great adventure, the Dover Patrol, which was one of the triumphs of the war.

Admiral Bowring, in the course of his reply, paid tribute to the enormous advances which had been made in the Services through medical science. He had been looking up the medical statistics for two or three years in the Royal Navy, and he found that the average number of men sick during the last three years had been only 8 per 1,000. He could remember the heavy toll which Mediterranean fever exacted, and the large number of deaths as well as the vast amount of ineffectiveness which resulted. But last year or thereabouts there was one death only from that cause. This was very largely due to improvements in hygiene and methods of prophylaxis, and now in the Services the men

started healthy and were kept healthy. He would not say that this was all due to the medical profession, some of it was due to the education of the men themselves, but the improvement was most remarkable.

## "THE CITY OF EDINBURGH"

Professor Tuffier, K.B.E., of Paris, proposed the toast of 'The City of Edinburgh'. Speaking in French, he said that it was with pleasure he rose, as a foreign visitor, to ask the company to honour the toast of one of the fairest of cities. He was the more glad to do this because of the age-long association between Scotland and his own country, and in particular the association between the Universities of Paris and of Edinburgh. Edinburgh was famed far and wide for the splendour of her buildings and the beauty of her situation, also for the history and legend with which the older portions of the city were saturated. But Edinburgh

had modern as well as ancient glories, in particular her continuing and increasing greatness as a University, and, especially to be mentioned in that company, the greatness of the names which adorned her medical school. Of those names that of Lister was the most prominent, and it had been his special happiness during that meeting to have taken part in the Later Commemoration in view of his own recollection of Lister himself in Paris on the occasion of the Pasteur jubilee. Professor Tuffier also expressed his sense of the honour done to him in the conferment on the previous day of the Degree or Doctor of Laws by Edinburgh University. He wished all prosperity to the city and University of Edinburgh.

The Lord Provost (the Right Hon. Alexander Stevenson), in his response, spoke of the long and close connexion between the city of Edinburgh and the art of healing. The Edinburgh Council records of the fifteenth and sixteenth centuries contained instances of many licences granted in favour of surgeon-apothecaries to practise within the gates of Edinburgh. But they had travelled far since then, and now they were holding in Edinburgh what he believed was the largest Annual Meeting of the British Medical Association. The present conference was more than a gathering of professional colleagues; it was an occasion of meeting of physicians and surgeons from all parts of the world. The Scottish capital had always prided itself on its medical school and as representing the corporation, he would wish to pay his respect to the memory of those men who had created and maintained the reputation now world-wide of Edinburgh for medical training. He then spoke of what had been accomplished in respect to the public health of Edinburgh. Twenty-five years ago when he entered the town council the death rate for the city was 17.7 per 1,000; now it was 13.5 per 1,000. In 1901 out of every 1,000 children born in Edinburgh 145 died in the first year of life; last year the number was 80 per 1,000. He was glad that the proposer of this toast should be a representative of French learning in view of the alliance made 600 years ago between France and Scotland—in alliance which had left its influence on the peoples



[Photograph by]

SIR ROBERT W. PHILIP

[Lafayette Ltd]



and the policies of those two great nations. It was not for him to say why Edinburgh cast such a spell upon its thousands of visitors, but probably it was because for many centuries the history of Edinburgh was in brief the history of Scotland.

#### "THE BRITISH MEDICAL ASSOCIATION"

LORD SANDS proposed the toast of the British Medical Association, coupled with the name of Sir Robert Bolam. He said that a rather obvious theme for him would be the glories of the medical school of Edinburgh, but he recalled the remark of an old Scottish judge to a counsel who was repeatedly making the same statement, "Mr A—, if you say that again I shall forget it." Moreover, a large number of those attending the meeting must be Edinburgh graduates before whom there was no need to praise their *Alma Mater*. He had once himself visited the island of Cos in the Aegean. One of the party was a Liverpool doctor distinguished alike in medicine and in archaeology, Dr. Caton, who explained to them the origin of the medical school there. It appeared that on Cos a base hospital was established during the siege of Troy, and as a medical school it continued to flourish, and became one of the most favoured visiting places of the "Hellenic Medical Association" in the palmiest days of Greece. Lord Sands's own recollection of the medical school of Edinburgh went back further than the recollection of most of those present, for he could recall the time when Lister was still a living presence and Simpson a very near memory. The British Medical Association, he said in conclusion, discharged many useful functions, but the greatest function it discharged was to preserve the traditions of the profession. Those in the medical profession were surrounded by an unpeeling tradition which had for them the force of law. He knew that medical men in these days were somewhat anxious about their position in respect to the certification of the insane, but he was quite sure that no medical man, when he had acted according to his traditions and had certified a patient as suffering from insane delusions, need be afraid, if necessary, to face a British jury. The profession was hedged about by a standard of honour and conduct and *esprit de corps* which was a most valuable protection. The profession had a great reputation for unselfish humanity. There was in history the name of one physician more familiar than the name of Hippocrates, or Galen, or Harvey, or Jenner, or Simpson, or Lister. Nothing was known of his medical qualifications, but of his unselfish humanity every reader of the New Testament was aware. When the Apostle Paul was in Rome, afflicted with incurable maladies, desolate, forsaken, he wrote an epistle in which were the words, shining with letters of gold, "Only Luke is with me." In those five words were enshrined the noblest traditions of the medical profession.

SIR ROBERT BOLAM, in responding to the toast, after thanking Lord Sands for his tribute, said that gathering in Edinburgh was larger than at any Annual Meeting the Association had ever known in its ninety-five years of history. There were 25 per cent more medical men attending the meeting than any previous one, and about 10 per cent of the active profession in these islands were gathered in Edinburgh during that week. Visitors had come from all parts of the kingdom, as well as from the Continent and overseas. No more representative medical meeting had been held in this country. His response to that toast that evening was his last official act as Chairman of Council, an office which he had held for seven years. He had remarked to the Lord Provost during the dinner that after that night he would be as a man with no occupation, and the Lord Provost had replied, "Make no mistake, you will only find another one." He was emboldened by those words to say to them all that, in whatever capacity any of them might serve the Association they all loved, their watchword might well be, when they reached such a point as he had reached at that moment, "Seek ye something more yet to do to serve the members of your profession." For the success of a meeting such as the present they were greatly indebted to the beauty and historic surroundings of the city in which they were met, also to the University and the several Colleges. As the years passed the Association went from one town

or city to another. Next year they would go to Cardiff, in the year following to Manchester, and in 1930 they would answer the insistent call of brotherhood from the Dominions and visit their friends in Canada. In 1932 the centenary of the Association would be held, possibly in London, or, it might be, in the birthplace of the Association, Worcester—the matter rested with those in executive authority at the time. He was sure that the work of the Association would prosper in the coming years as it had done in the past, and that its officers and members would continue to serve and maintain the honour and interests of the profession.

#### "THE PRESIDENT"

DR H. S. BIRKETT, of the Canadian Medical Association, in the room of the President of that body, Dr F. N. G. Starr, proposed the last toast, that of "The President." The name of Sir Robert Philip, he said, was known far beyond the confines of the city of Edinburgh. That night they thanked him for what he had done for this meeting in particular. It had been the speaker's privilege to have attended no fewer than twenty meetings of the British Medical Association, and he could say in all sincerity that he had never attended any meeting, either in Great Britain or overseas, which had been so successful as the present one in Edinburgh. He felt at that moment just as much at home as he did in Montreal. The hospitality which had originated from the President had been most wonderful, and he could speak at least for the visitors from the Dominions when he said that they were very grateful. There was a link between the far-off Dominion of Canada, particularly Montreal, and Edinburgh, because the University of Montreal was founded by four Edinburgh graduates. It was with the greatest pleasure that the profession in Canada looked forward to the meeting, three years hence, of the Association in the Dominion, and he extended to all who had come to Edinburgh, as well as to all the members of the Association, a most cordial welcome.

The toast of the President was pledged with much heartiness.

SIR ROBERT PHILIP, in replying, said how greatly touched he was by the kind words of Dr Birkett. The present gathering, as Sir Robert Bolam had said, was a very representative one, and there were many men gathered for that Annual Meeting whose names were household words in this country. It was representative of a huge number of overseas delegates, some of whom were his own very dear friends. It was representative also of a number of kindred associations—the Canadian Medical Association and the American Medical Association were represented. It was also representative of the rank and file of the British Medical Association, of which he was very proud at this moment to be the official head. Their presence at that meeting was an indication of their loyalty and love for the Association. He specially desired to recall the names of some leading workers on behalf of the Association who, in their several ways, had done much to ensure the success of the Edinburgh meeting, notably Sir Robert Bolam, Dr Blackenbury, Mr Bishop Harman, Dr Hawthorne, and, among the permanent officers one very dear friend of his own whom he wished could have been present on that occasion, Sir Dawson Williams. He was also much indebted to Dr Cox and Mr Ferris Scott. If this meeting had been a success—and he said it with all humility—it had been with his entire concurrence. "Concurrence" was the right word because he himself had been only the titular head of a magnificent army of co-operators. First on the list of helpers he should place the authorities of Edinburgh, represented on the civic side by the Lord Provost, and on the academic side by the Vice-Chancellor, Sir Alfred Ewing, also the Royal Colleges of Physicians and Surgeons, represented respectively by Professor Robertson and Mr Logan Turner. A big gathering like this did not go automatically. All concerned had had a delightful time in Edinburgh during the last eighteen months looking forward to this visit. Days and nights of laborious preparation had been necessary, and the utmost harmony had prevailed throughout. He desired specially to thank two or three individuals, if he might mention their names without seeming to depreciate so many other

willing helpers. The first was the Honorary Treasurer, Mr Alexander Miles, a man very much looked up to in Scotland. The second was a man whom every visitor had got to know during the week—Dr Fergus Howat, the Honorary Secretary—a man of most ubiquitous habits, whose hand had been felt in every part of the organization. Much was due also to the Ladies' Committee. Practically all the women doctors and the wives of medical men in Edinburgh had co-operated, and they were specially grateful to Miss Edwina Bramwell, Mrs Gulland, and Mrs Arthur Sinclair, the Deputy Chairmen of that Committee. His one regret was that one who would have dearly loved to be present and had been his companion for forty years had been unable, through illness, to take her part. He asked those present to accept Lady Philip's excuses and his own thanks.

During the dinner it was announced that the Ulster golf cup had been won by Dr J. A. Cromie and the Childs cup by Dr R. R. Duncan.

The proceedings concluded with the toast "*Florat res medica*."

### GRADUATION CEREMONY AT EDINBURGH

In connection with the Annual Meeting of the British Medical Association in Edinburgh the University of Edinburgh held a special graduation ceremony in the McEwan Hall on July 20th when the honorary degree of Doctor of Laws was conferred upon twenty-two distinguished medical men, of whom thirteen are British, six Continental and three American.

The EARL OF BALFOUR, Chancellor of the University presided and conferred the degrees. Others on the platform were the Lord Provost of Edinburgh (the Right Hon. Alexander Stevenson), the Vice-Chancellor of the University (Sir Alfred Ewing), the President of the British Medical Association (Sir Robert Philip), and Sir Robert Bohn, Dr C. O. Hawthorne, and many other representatives of the British Medical Association as well as members and past members of the Senate and members of the University Court.

The Dean of the Faculty of Divinity (The Very Rev. Professor W. P. Paterson) opened the proceedings with prayer.

Professor JAMES MACINTOSH, B.C., Dean of the Faculty of Law in presenting the honorary graduate to the Chancellor referred to them as follows:

#### VITTORIO ASCOLI M.D.

Professor of Clinical Medicine University of Rome.

Dr Vittorio Ascoli, an *alumnus* of the University of Rome on whose worthy shoulders has fallen the mantle of his great master Baccelli, was first Professor of Pathology and of Clinical Medicine at Pavia and now for ten years he has adorned the Chair of Clinical Medicine at Rome. For four years he has been President of the Royal Academy of Medicine at Rome. Interesting himself in many departments of medical science and administration he is recognized throughout Italy as the finest type of citizen. Recently he has been appointed Director of the new School of Malariology established by his Excellency Benito Mussolini. Among his many important contributions to medicine special mention should be made of his classic treatise on malaria. Professor Ascoli possesses in conspicuous measure the spirit of international fellowship and is full with pride that Edinburgh toges this fresh link with the famous Italian school.

#### HARVEY CUSHING M.D.

Professor of Surgery Harvard University

Dr Harvey Cushing, Professor of Surgery in the University of Harvard and Surgeon in Chief to the Peter Bent Brigham Hospital has devoted himself to the urgency of the brain and nervous system. He has overcome the baffling difficulties which the worker in this field encounters by a combination of the highest technical skill with a profound knowledge of physiology and pathology. Disciples from medical schools all over the world flock to sit at his feet. Nor can we forget that he is a collector of rare medical books who unrolls from the records of the past the origins of education, which have subsequently ripened with the development of knowledge. By his invaluable contribution to the history of contemporary medicine in his *Bibliography of Sir William Osler* if it stood alone, Professor Cushing has amply earned Apollo's bay

#### CHARLES L. DANA M.D. LL.D.

Professor of Nervous Diseases Cornell University

Professor Dana is a neurologist of international celebrity highly esteemed for his authoritative treatise upon nervous diseases which has passed through many editions and for many valuable scientific papers. He has also enriched the annals of medicine by a charming book entitled *Peaks of Medical History* which inspires the hope that he will one day use the materials he has collected to tell the story of the old Scots worthies who made the name of Edinburgh as a medical centre. Dr Dana is the 11th in succession of a brilliant galaxy of talent to hold the Huxtings Jackson Lectureship—the blue ribbon of British neurology. We gladly add our laurel to the many bouquets of which Professor Dana has been the recipient.

#### LORD DAWSON OF PENN G.C.I.O. K.C.B.

Physician in Ordinary to His Majesty the King

The pre-eminent position which Lord Dawson won for himself as a physician and the great reputation he gained as a teacher of clinical medicine at London Hospital have brought him many well-merited honours and have led to his appointment as Physician in Ordinary to the King. Fought through the war he gave invaluable help in the military hospitals in France and he is now the only doctor in the House of Lords where he has done admirable work in educating opinion with regard to the proper place and influence of medicine in public life. He should be a specially helpful adviser at the moment when the House itself is threatened with a rather serious operation of some sort for he has written with unique authority on the effects of high blood pressure and on disorders of the digestive system. The University gladly awards its laurel to a doubtless a champion of the medical art.

#### ARCHIBALD DONALD M.D. CH.M. F.R.C.P.

Emeritus Professor of Clinical Obstetrics and Gynaecology University of Manchester

After graduating in Edinburgh Professor Donald went to Manchester where he specialized in obstetric and gynaecology and has held all the important clinical and teaching appointments in connexion with the specialties and is now Professor Emeritus in the department in the University. At a time when gynaecological surgery was undergoing its most rapid expansion he was in the vanguard of the movement. A bold and skilful operator original in his ideas and quick to recognize and adopt any new and sound suggestion he has done more than any one man to raise the Manchester School of Gynaecology to its present eminence. Edinburgh is proud to recognize the sterling value of the work which this *alumnus* of hers has done.

#### CHARLES EDWARD DOUGLAS M.D.

Cupar

This year Dr Douglas celebrates the jubilee of his graduation in Edinburgh and also of his entry on general practice and we congratulate him on an honourable record which has maintained the highest tradition of professional life. His medical colleagues in the kingdom of Fife owe him a debt of gratitude for his influential support of the work of the Fife Medical Association and he has won the respect and goodwill of the community at large by his unflinching exertions in the cause of public health and public welfare. Dr Douglas has filled his life with varied interests and experiences. At college he won the mile in later life he served in two wars the South African and the European though in the last he was far beyond military age and he has indulged his literary tastes to some purpose, as his *Two Medical Humors* and other sketches prove. I present Dr Douglas as a typical example of the wonderful efficiency and intense loyalty of the great mass of general practitioners.

#### KNUD FABER M.D.

Professor of Clinical Medicine University of Copenhagen.

Dr Knud Faber, Doctor of Medicine of the University of Copenhagen and member of the Royal Swedish Academy of Science has been for over thirty years Professor of Clinical Medicine in his old University and Librarian in Chief to the University Hospital. For many years he has occupied an honoured place in the elaboration and administration of public health measures in Denmark. His original investigations on tetanus, anaemia, tuberculosis and diseases of the digestive tract have earned him fame to other lands. His *Yotograph*—a well illustrated account of the evolution of modern internal medicine—has enjoyed a wide popularity. Professor Faber's relations with British medicine have been intimate and sympathetic and in admitting him to the degree of Doctor of Laws Edinburgh University welcomes not only a fellow worker but a friend.

#### SIR WILLIAM HALE-WHITE K.B.E. M.D. F.R.C.P.

Physician to Guy's Hospital.

Sir William Hale-White was a brilliant pupil of Guy's Hospital and has since served on its staff as full physician for thirty-one years. As befits the son of Mark Rutherford his work has been

## Graduation Ceremony at Edinburgh.

[SUPPLEMENT TO THE  
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Distinguished by the prominence given to the scientific and wider aspects of clinical medicine. In his Croonian Lectures he demonstrated convincingly the correlation between the physiology of normal temperature and the clinical departures from the normal, and in all his papers—notably those on exophthalmic goitre and ulcerative colitis—the scientific has been the dominant note. His exertions in founding the Association of Physicians and the *Quarterly Journal of Medicine* have enhanced the prestige of British Medicine, while his *Lives* of some of the great masters of the past constitute a valuable contribution to the history of medicine. The University rejoices to recognize Sir William's signal services to his profession.

JAN VAN DER HOEVE, M.D.,  
Professor of Ophthalmology University of Leyden

After studying medicine at Leyden and Berne, Dr van der Hoeve devoted himself to researches in the physiology of vision with such success that he was appointed to the Chair of Ophthalmology, first at Groningen and then at Leyden. The fruits of this great authority on the eye extends far beyond his own University and his own country as is shown by the many dignified offices to which he has been elected by learned societies in all parts of the world. He has done work of high scientific value in nearly every department of his subject and in the connected branches of medical science, and has introduced into practice several original methods of treatment. So great a benefactor of those stricken in their noblest sense is well worthy of the honour which we now bestow upon him.

ROBERT GEORGE HOGARTH, C.B.E., F.R.C.S.,  
President of the British Medical Association

Mr Hogarth has long held a very high place in the realm of surgery. A Scotsman, born in the Border country, he early displayed the ancestral tendency to raid the South by attaching himself to St Bartholomew's Hospital for his medical training. Thence he passed to Nottingham, where he quickly won recognition as a cultured and skilful surgeon. For many years he has served on the staff of the General Hospital, the Children's Hospital, and other medical institutions in the Nottingham area. His important contributions to surgical literature extend over a wide field. When the British Medical Association accepted the invitation to hold its annual meeting at Nottingham last year Mr Hogarth was unanimously invited to occupy the presidential chair. At the moment when he deems that responsible office distinguished services he has rendered in that as in other capacities.

WILLIAM HUNTER, C.B. M.D., F.R.C.P.,  
Consulting Physician to the Eastern Command and to Charing Cross Hospital London

Colonel William Hunter was the most distinguished student of his year, when he graduated here in 1883. He has devoted his life to preventive medicine and in particular to the investigation of diseases of the blood. In the search for the cause of pernicious anaemia he directed attention to the effects of pernicious infection. In the wide field of inquiry thus opened up he has made many fruitful contributions to medical knowledge, and has been the source of inspiration to many subsequent workers. The prevention of sepsis has been the triumph of modern surgery, and his researches on medical sepsis have won him a high place among the disciples of Lister. The University highly appreciates the excellent work he has done for Charing Cross Hospital and its medical school, and she recalls with pride the splendid campaign he conducted during the war against typhus and other scourges on many of the allied fronts.

## OTTO MEYERHOF

Kaiser Wilhelm Institute of Biology, Berlin  
Professor Otto Meyerhof, formerly of Kiel, now of the Kaiser-Wilhelm Institut für Biologie in Berlin is one of the most distinguished biological chemists of the present day. He has produced a remarkable series of papers on the chemical changes occurring within cells—especially those concerned with cell respiration—and on the influence of ferments in the production of these changes. Within recent years Professor Meyerhof has devoted his attention mainly to the chemical and thermal changes accompanying muscular contraction. For this work he was awarded the Nobel Prize for Medicine on the same occasion as our own distinguished countryman Professor A. V. Hill who had been working independently upon the same problem. The University gladly endorses the favourable verdict of the adjudicators.

THOMAS HUGH MILROY M.D.,  
Professor of Physiology, Queen's University, Belfast

Professor Thomas Hugh Milroy, a distinguished *alumnus* of this University, and formerly first assistant in the Department of

Physiology, has since 1903 occupied the Chair of Physiology in Queen's University, Belfast. Professor Milroy has directed his attention chiefly to the chemical aspects of his subject, and has produced valuable work in this connexion—lately more especially upon the chemical changes which occur in muscle as the result of its activity, a subject upon which he has undertaken to open a discussion at the present meeting of the Association. The success he has achieved reflects no little lustre upon the institution where he received his early training, and he is eminently one *laurea donandus*.

SIR BERKELEY GEORGE ANDREW MOYNIHAN, BART.,  
K.C.V.G.  
President of the Royal College of Surgeons of England

The estimation in which Sir Berkeley Moynihan is held may be inferred from the long list of high offices which he has occupied at different times. He has been Professor of Clinical Surgery in the University of Leeds, surgeon to Leeds General Infirmary, and is the present President of the Royal College of Surgeons in England. He is universally recognized as one of the foremost abdominal surgeons of to-day, a leader in the present campaign, an erudite contributor to surgical literature, and a standard bearer in modern aseptic surgery. During the war he acquitted himself in the Army Medical Service with the distinction that might be expected of the son of a holder of the Victoria Cross. Sir Berkeley to our highest degree we are honouring also the great sister College of which he is the titular head.

SIR JOHN HERBERT PARSONS, C.B.F., F.R.C.S.,  
Ophthalmic Surgeon, University College Hospital London

In all his varied activities, whether as ophthalmic surgeon to two London hospitals, adviser of Government departments, or consultant to the Forces, Sir John Parsons has shown a singularly broad and imaginative outlook. His valuable investigations into sight tests for the Board of Trade prepared the way for his wonderful book on colour vision. He has served on numerous Commissions—on factory lighting, glass workers' entreaties, strains in cinemas and similar problems—and has done much useful work in correlating ophthalmology with the modern developments of industry. It was a tribute to once to his professional eminence and his organizing capacity that he was appointed ophthalmic consultant for the home troops during the war. So great a master of optical theory and of its practical applications is eminently deserving of academic recognition.

SIR HUMPHRY DAVY ROLLESTON, BART., A.C.B., M.D.  
Regius Professor of Physic in the University of Cambridge

The Regius Professor at Cambridge holds a distinguished position in medicine in virtue of his brilliant attainments as a physician and the outstanding services he has rendered to the country as consulting physician to the Royal Navy during the war, as a member of the General Medical Council, and as President of the Royal College of Physicians of London. His lengthened experience in hospital and in private practice imparts a very high degree of authority to his numerous writings on medical subjects. Sir Humphry enjoys in the fullest measure the confidence of his medical colleagues, and his ready been the recipient of many academic honours. It is a sincere pleasure for the University of Edinburgh to add his name to her roll of honorary graduates.

GEORGE FREDERIC STILL, M.D., F.R.C.P.,  
Professor of Diseases of Children King's College, London

Dr Still is in the unique position of being the first and only Professor of Diseases of Children in this country just as he was a pioneer in confining his private practice to children only, surely one of the most sensible forms of specialization. He is already world famous for his investigations in this new department, notably those relating to coeliac disease, and he will go down to posterity as the eponymous hero of another ailment of childhood—Still's disease. An acute observer and a severe critic of his own work, he is more concerned about proof than publicity. We gladly place Dr Still's name on our roll of honour which already includes his lifelong friend, the late Dr John Thomson of Edinburgh an equally sympathetic and gifted worker in the same department.

WILLIAM SYDNEY THAYER M.D.,  
Professor Emeritus of Medicine Johns Hopkins University  
President Elect American Medical Association

Professor Thayer may be described as the doyen of clinical medicine in the United States. His distinguished scholarly career, begun at Harvard, culminated fittingly in his occupancy of the Chair of Medicine in the Johns Hopkins University, Baltimore, where successive groups of American graduates have been proud to call him master. Among his numerous original contributions to medical science I may signalize his researches on malarial fever, and diseases of the circulation. During the war he conducted a Red Cross mission to Russia and was subsequently appointed chief

consultant of medical services to the American Expeditionary Forces in France. Outside his own country he has received the homage of London, Dublin, Paris, and other places. Edinburgh gladly seizes the occasion of his present visit to add the illustrious physician to its roll of Doctors of Laws.

#### WILFRED TROTTER F.R.C.S.

Surgeon to University College Hospital

Mr Wilfred Trotter is known throughout the world as one of the most brilliant and erudite surgeons of the day distinguished alike for his skill as an operator and his insight as an investigator on the scientific frontier. He received his training in University College London and he has repaid the debt by long service as surgeon to its hospital and lecturer in its medical school. He holds an outstanding position in connection with the urgent of the brain, the throat, and the gut. Mr Trotter pays successful court to other divinities than Hygieia and his thoughtful and incisive book on *Herd Instincts in Peace and War* would alone entitle him to academic honour.

#### THEODORE MARTIN TUFFIER

Academy of Medicine Paris

Dr Theodore M. Tuffier has for long been known as one of the most distinguished of French surgeons. His clinic in Paris has long been a Mecca to which surgeons from all parts of the world resort. The many daring and original operations which he has carried out demonstrate in the most unmistakable fashion how very safe—how almost seductive—surgery has become in the hands of an expert with a perfected technique founded on the principles laid down by Lister. We are delighted to offer an illustrious representative of French surgical science the highest honour in our gift.

#### SIR ALMROTH EDWARD WRIGHT K.B.E. C.B. M.D. F.R.S.

Professor of Experimental Pathology, University of London

The name of Almroth Wright will always be identified in the history of medical science with applied immunity. Following the lines laid down by Pasteur he is the real initiator of present-day methods of prophylactic immunisation against typhoid and paratyphoid fevers, cholera, plague, and other bacterial infections. In the great war antityphoid vaccination was put to the test on a truly colossal scale with the most brilliant success. Millions of troops from all the combatant nations were vaccinated and typhoid fever, which in previous wars had often taken a heavier toll of life than shot and shell, was reduced to a negligible quantity. Sir Almroth has also adapted the bacterial vaccine to the treatment of infective diseases, turning the protection with a therapeutic agent conforming to the old adage—*arsula amilibus curantur*. The University's laurel is most worthily bestowed on so great a benefactor of mankind.

#### OTTO NAEGLI

Professor of Medicine, University of Zurich (Degree conferred *in absentia*)

The University is happy to pay her tribute to the distinguished abilities of Professor Naegeli while she expresses her sincere sympathy with him in the bereavement which has prevented his presence at to-day's ceremony. A Professor of Medicine and Director of the Medical Clinic at Zurich he has been for years one of the outstanding figures in pathology and medicine on the Continent. His skill in diagnosis and treatment has established his reputation as a practitioner and his valuable treatises on tuberculosis and diseases of the blood have given him a foremost position as a scientific exponent of medicine.

The ceremony concluded with the benediction, pronounced by the Dean of the Faculty of Divinity.

## Notes on the Edinburgh Meeting.

### EVENING ENTERTAINMENTS



Scott Monument.

THE weather, which had been delightful in Edinburgh during the Annual Representative Meeting, kept fine throughout Tuesday, July 19th—the opening day of the Annual Meeting proper. It is believed locally that the presence of the King and Queen at Holyrood had something to do with this happy circumstance. After Sir Robert Philip's presidential address in the Usher Hall on Tuesday evening an immense number of members and ladies proceeded to the McEwan Hall and the adjoining University buildings for a reception given by the President and members of the Local Executive Committee. Many of those present wore academic costume and provided amusement for a critical group of bare-legged children from

Cowgate seated in a row on the kerb opposite the main entrance. The guests were received by Sir Robert Philip in the McEwan Hall where an organ recital was given by Mr Ralph T. Landon, Mus. Bac., and the bard of the Queen's Own Cameron Highlanders gave a performance, ending appropriately with the "March of the Cameron Men." In the Music Classroom there were two excellent vocal recitals by Miss Catherine Mentiply and Mr Philip Malcolm, accompanied on the piano by Mr T. Paterson Lamb. In the main quadrangle the pipe band of the Second Scottish General Hospital played stirring air, and refreshments were served in the smaller quadrangle.

The principal event on the evening of Wednesday, July 20th, was a commemorative meeting in the McEwan Hall to celebrate the centenary of Lord Lister's birth. The Earl of Balfour, K.G., Chancellor of the University of Edinburgh, presided, and short addresses on Lister were

delivered by Sir William Watson Cherne, Professor Tuffier, Professor Harvey Cushing and Professor John Stewart. This the main part of the Lister centenary celebration in Edinburgh was attended by a very large audience, many of whom wore academic robes. A full account of the addresses will be found in the JOURNAL this week at page 185. On the same evening a concert of chamber music was performed at the Freemasons' Hall in George Street, and at a later hour members of the Association were entertained at the Royal College of Surgeons of Edinburgh where they were received by the President, Mr Logan Turner.

On Thursday evening as reported fully elsewhere in the SUPPLEMENT the Annual Dinner of the Association took place at the Music Hall in George Street. In the neighbouring Freemasons' Hall there was a concert of Hebridean music, and the Royal Scottish Academy courteously gave members of the Association a private view of its 101st annual exhibition at the familiar building with its classical façade near the middle of Princes Street. A very enjoyable function, held on the same evening, was the reception given by the President and members of the Edinburgh Branch of the British Medical Association. The guests were received at the Palais de Dance by Dr John Stevens and dancing went on from 10 p.m. till 2 a.m.

The last evening event of the Annual Meeting was a reception on Friday, July 22nd by the Lord Provost and magistrates of the city of Edinburgh in the Zoological Park, Corstorphine. The weather, after sulking for two days, had improved and this out-of-door function was very largely attended. Members of the Association and their friends were received by Lord Provost Stevenson and members of the town council wearing ceremonial robes. The Zoological Gardens looked charming in the evening light but what their regular inhabitants thought about it all is not yet known though the largest lion's lawn was perhaps significant. The newly opened aquarium, with its ingenious lighting devices, was a continual source of interest to the visitors. In front of the central buildings a programme of music was provided by the pipe band of the 475th Royal Scots and refreshments were served in marquees.

EXCURSIONS AND AFTERNOON  
ENTERTAINMENTS

SEVERAL pages of the SUPPLEMENT might well be given up to an account of the innumerable tours and conducted visits arranged by the local Excursions and Transport Committee. The whole-day excursion by the members of the Representative Body to the Scott country on Sunday, July 17th, was recorded in our last issue. Throughout the period of the Annual Meeting a great variety of interesting places were visited, and to some of them, such as Edinburgh Castle and Holyrood Palace, parties were taken almost every day.

We can only name here a few of the places of special interest to which parties went by charabanc, car, or train: Craigmillar Castle, Melrose Abbey, Abbotsford, Newbattle Abbey and Dalhousie Castle, Bothwick Castle, Roslin Chapel and Castle, Linlithgow Palace, and Dundas Castle (where a garden party was given by Lady Stewart Clark on July 21st). On three afternoons a large number of members and ladies went to Dunfermline as the guests of the Carnegie Trust, and inspected the Peebles Hydro. The Forth Bridge and the Island of Inchcolm, with its ancient monastery, proved a great attraction. The ladies accompanying representatives who went to Tantallon Castle on July 16th were entertained to tea at Gosford House by the Earl of Wemyss, and on July 20th the Marquis of Linlithgow gave a garden party at Hopetoun House, near South Queensferry and the Forth Bridge.

Other interesting excursions included those to the Port Edgry Naval Base, to the Fenton Barns Scientific Farm as the guests of Dr and Mrs Chalmers Watson, to the Lubert Institute for Defective Children, under the guidance of Dr A. D. Clarkson, to the Children's Village at Humble, to the Saughton Prison, and to the Borstal Institution at Polmont. Visits were paid also to a coal pit at Newtongrange, to the *Scottsman* offices and the printing works of R. and R. Clark, Ltd., to twoed mills and hosiery workshops, to McVittie and Price's biscuit factory, to Younger's, Usher's and McEwen's breweries, to Dobbin's rose gardens, to the North British Rubber Company's mills, to Ruthven's Geographical Institute, to the Edinburgh and Leith Flint Glass Works, to the Portobello Electricity Station, and the Granton Gas Works.

The University of Edinburgh, following upon the honorary graduation ceremony in the McEwen Hall, gave a reception to the members of the British Medical Association in the Old College in South Bridge Street on the afternoon of Wednesday, July 20th. The noted his received on the terrace of the quadrangle the investigation of the cause of pernicious the University, and Lady Ewing. Dr. As of insidious septic opportunity was given to visit the real knowledge and has a collection of portraits, manuscript, subsequent workers. The quatern medical interest was on triumph of modern surgery, its portraits by Raeburn and from the physician's point Room, where portraits by Sir John H. Lister. The University John H. Lister, and other of her alumnus has done for the members of the Association a medical school, and she recalls the Royal Scottish Museum, which was conducted during the war. During the afternoon the band of Highlanders played from a balcony.

On Thursday afternoon the Annual Meeting gave a Biology, Berlin the Botanic Gardens, Inverleith Hotel Kiel, now of the Kaiser noon there was a reception by present day. He has produced at its house in Melbourne Place chemical changes occurring of ladies, were taken every day with cell respiration—and Edinburgh, to Parliament Hall production of these changes the National and Signet Library of has devoted his attention museums, and to social and education accompanying muscular The last day of the Annual awarded the Nobel Prize for party of 100 went by special distinguished country Ladybank, whence they travelled on working independently Palace. After inspecting the city gladly endorses the Melville House, with its famous OY, M.D., other works of art. At St. Andrews University. Be first at lunch in the Grand Hotel by distinguished alumnus of this British Medical Association, and in the Department of Castle and Cathedral, and the for Chemical Research. Tea was

Director of the Institute and Mrs. Maitland Ramsay. After a most enjoyable and instructive day the party returned to Edinburgh by special train from St. Andrews.

## THE TEMPERANCE BREAKFAST

THE fifty-seventh annual breakfast of the National Temperance League with the British Medical Association was held in the University Union at Edinburgh on July 21st, when Sir Thomas Henderson acted as host. The chair was taken by Professor D. P. D. WILKIE, who remarked that the Temperance Breakfast gave an opportunity for dispassionate consideration of what was, after all, one of the greatest social problems of this country. The subject of temperance always aroused keen controversy. On the one hand, there was the intensely earnest total abstainer, who believed that alcohol in any shape or form was the root of all human ills, and on the other hand, a very strongly entrenched body of opposite opinion, part of which was prejudiced at the very outset by direct or indirect financial interest in the manufacture or distribution of alcoholic beverages. It was the great feature of the National Temperance League that it represented the educated and, he thought, unbiased opinion of those who took a really scientific interest in this question from the point of view of the health, happiness, and economic prosperity of the nation. As medical practitioners they were all aware of the deleterious bodily effects of intemperance, and knew how often in the case of critical illness or severe operation the whole outlook was darkened by the previous intemperate habits of the patient. Professor Wilkie mentioned his recent visit to America, where he found the prohibition experiment arousing deep interest. He had heard from many people gloomy reports about the breakdown in moral, the habits of intemperance among adolescents, and the awful physical consequences which the drinking of wood spirit and other impure forms of alcohol produced, he was surprised to find these effects apparent, at least to a visit to them. On the contrary, what struck him, BART, KCB, MD, University of Cambridge, prosperity on every hand, part of the prohibition legis- lation holds a distinguished position in the middle ages he has rendered to the country as a member of the General Medical Council and as President of the Royal College of Physicians of London. His lengthened experience in hospital and in private practice imparts a very high degree of authority to his numerous writings on medical subjects. Sir Humphry enjoys in the fullest measure the confidence of his medical colleagues, and has already been the recipient of many academic honours. It is a sincere pleasure for the University of Edinburgh to add his name to her roll of honorary graduates.

## GEORGE FREDERIC STILL, M.D. FRCP,

Professor of Diseases of Children, King's College London. Dr. Still is in the unique position of being the first and only Professor of Diseases of Children in this country just as he was a pioneer in confining his private practice to children only, surely one of the most sensible forms of specialization. He is already world famous for his investigations in this new department, notably those relating to coeliac disease, and he will go down to posterity as the eponymous hero of another ailment of childhood—Still's disease. An acute observer and a severe critic of his own work, he is more concerned about proof than publicity. We gladly place Dr. Still's name on our roll of honour which already includes his lifelong friend, the late Dr. John Thomson of Edinburgh, an equally sympathetic and gifted worker in the same department.

## WILLIAM SYDNEY THAYER, M.D.,

Professor Emeritus of Medicine, Johns Hopkins University. President Elect American Medical Association. Professor Thayer may be described as the doyen of clinical medicine in the United States. His distinguished scholarly career, begun at Harvard culminated fittingly in his occupancy of the Chair of Medicine in the Johns Hopkins University, Baltimore. Nine successive groups of American graduates have been proud to call him master. Among his numerous original contributions to medical science, I may single out his researches on malarial fevers and diseases of the circulation. During the war he conducted a Red Cross mission to Russia and was subsequently appointed cl



National Temperance League, at whose breakfasts he had been a regular attendant. He was glad that the League not only advocated temperance, but was temperate in advocacy. Forceful methods would not commend themselves to the profession, nor indeed to the British people, and he considered it too early to prophesy that British temper and genius would acquiesce cheerfully in the enforcement here of the position which now obtained among the conglomeration of peoples on the other side of the Atlantic.

### MEDICAL MISSIONARY BREAKFAST

Under the auspices of the Medical Prayer Union and the Edinburgh Medical Missionary Society a breakfast was held in Edinburgh, on July 22nd which was attended by about sixty persons. Dr R. A. FLEMING, the president of the Edinburgh Society, was in the chair and an address was given by Mr. CLAYTON GROSVENOR, F.R.C.S. (Ed.), late of the Hunan-Tsao Medical School Changsha, Central China. Mr. Grosvenor said that in China there existed all stages of evolution and progress, though a few districts remained untouched and continued entirely in their ancient ways. The reaction or the civil disturbances upon the hospital situation in China was very acute. There were districts along the coast where every hospital was closed, and where no foreigner was allowed to reside. The hospitals, like the churches, had in some cases been plundered by the Chinese with legends expressing hatred of the Christian religion. With those who saw their work thus tragically interrupted he was sure that those present felt deep sympathy. Nevertheless, the kingdom of God was not bricks and mortar, nor even hospitals and churches, but the spirit of Christ in the hearts of men and women, and that was imperishable. He begged the meeting to think of the position of Chinese Christians. They were more or less isolated in many districts, and they had to serve seven or eight hundred Christian hospitals or dispensaries in China. The Chinese Christians had declared that the medical and surgical work must be of a high standard, that the one-man hospital in China must, as soon as possible disappear, and that wherever the Christian Church had anything to do with providing medical facilities that provision must be of the best. The nationalist movement which was adopting, with certain limitations, Western knowledge and civilization, was in itself to be welcomed, but unfortunately, it was complicated by the appearance of a number of so-called 'unions' one of them, for example called the "Anti Christian Union" and another the "Big Sword Society." They could only hope that out of all this turmoil and bloodshed something better would emerge. Whatever Government went into power the help or medical missions would be needed. It was impossible of course, for a foreign agency to spread medical education among 400 millions of people. The first duty was to man efficiently the Christian medical schools. British missions had done comparatively little for medical education in China, though there were most honourable exceptions, the speaker named particularly Dr. Dugald Christie and Dr. Duncan Mann. Whatever was taken to China in the way of medical aid must be of the best, it was unchristian to go to the Chinese with something that was third rate. The hospital, further, must have Chinese committees which would take over the responsibility for administration. The Chinese Christian Church must be stimulated to help the medical missionary work. The new China would be one in which the standard of living would be greatly raised. It would also be a country with new restrictions on foreigners, but Mr. Grosvenor believed that communism of the Russian type would pass away, and that the Christian policy of patience, conciliation, and friendship would win through.

### THE IRISH GRADUATES' LUNCHEON

The summer meeting and luncheon of the Irish Medical Schools' and Graduates' Association formed, as usual, an unofficial part of the annual Meeting. It was held on Wednesday, July 20th, at Ferguson and Forrester's Restaurant in Princes Street, Edinburgh, with the President, Sir William de Courcy Wheeler, in the chair. The

large room was quite full, and many guests were present among those who entertained parties were Dr. J. A. Macdonald and Dr. E. A. Starling. Owing to the fullness of Wednesday's programme, which included the Edinburgh Lister Centenary celebrations, the speeches were brief. The toast of "The British Medical Association" was proposed in very warm terms by Sir James Barr, and Dr. H. B. Brackenbury, the newly elected Chairman of Council, in his cordial response, spoke of the help that the two friendly associations could and did give each other. Dr. A. Fergus Hewat, Honorary Local General Secretary of the Annual Meeting, who proposed prosperity to the Irish Graduates' Association, expressed Sir Robert Philip's regret at his absence from the gathering, and recalled his own happy memories of Dublin and the Rotunda Hospital. Another personal link between the two capitals was mentioned by the President in his reply, Sir William Wheeler having been married in Edinburgh. A most successful luncheon party ended with compliments to the Honorary Secretary of the Irish Graduates' Association, Dr. Falkland L. Carr.

### THE ANNUAL EXHIBITION

What Emerson said of Nature, that she is "always and never the same," applies to the Annual Exhibition of surgical instruments and appliances, drugs, foods, and other requisites for the medical profession, which is held in connexion with each Annual Meeting of the British Medical Association.

Year by year the same well known names are seen on the various stands, the same well thought-out display of apparatus and material, the same attractive legend. So that one is tempted to think that the description, laboriously compiled, or one year's exhibition will answer with a few retouchings for the next, and perhaps for several succeeding years.

But a closer examination spoils this lazy illusion. At almost every stand one can find some new thing, some fresh preparation which has been mentioned in the medical journals, some new surgical contrivance associated with a familiar name, some patent food which, it not new in itself, is new in its style of package or the way in which it is presented, some new convenience for the consulting room or the laboratory or the operating theatre or the hospital ward, on the bookstalls some fascinating new volumes, and at the stands advertising the merits of different spas posters more artistic and pleasing than ever. There are no revolutions, but there is constant refinement and fresh adaptation. This year also a number of Scottish firms exhibited whom one does not usually see at exhibitions in the south. The exhibition was well supported by local manufacturers of medical and surgical goods, and two of the Edinburgh firms exhibiting, as mentioned by the President in his speech at the opening reported last week (SUPPLEMENT, p. 51) were associated with Lister, one of them displayed a letter written by Lister about some work in which he and the firm were collaborating.

The Waverley Market Hall was a very interesting place during the five days for which the exhibition was open. The only disadvantage was that it was ten minutes' walk away from the University, where the sectional and other meetings were held, but the reception office and registration counters occupied the whole of one side of the exhibition building, so that all members had to go there once or oftener, and the main entrance was half-way down the steps which lead from Princes Street to the Waverley station, perhaps the most thronged spot in all Edinburgh. Although the stands numbered well over a hundred—about twenty more than last year at Nottingham—there was never any crowding even during the busiest hours, and there was ample accommodation for writing or rest. The scrutiny of visitors was rather more rigorous than usual, which was much to the satisfaction of the exhibitors. Admission was virtually restricted to members of the medical profession. Several of the exhibitors declared the exhibition to have been the best from the business point of view that they had ever experienced.

Our usual account of the outstanding objects of interest at the different stands will begin in an early issue.

# LUNACY AND MENTAL DISORDER.

## MEMORANDUM BY THE LUNACY COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION ON THE REPORT OF THE ROYAL COMMISSION

*Lunacy and Mental Disorder.*

[SUPPLEMENT TO THE  
BRITISH MEDICAL JOURNAL]

### INTRODUCTORY

(Throughout the Memorandum the references given are to the page of the Report of the Royal Commission)

1 In many important respects the Report of the Royal Commission on Lunacy and Mental Disorder (as regards England and Wales) is in harmony with the principles advocated by the Association in the evidence which it tendered to the Commission and must therefore commend the assent and support of the Association

2 The Commission fully recognises the basic principles —

- (a) that the treatment of mental disorder should approximate as nearly to the treatment of physical ailments as is consistent with the special safeguards which are indispensable when the liberty of the subject is infringed, (R, p 157)
- (b) that certification should be the last resort and not a necessary preliminary to treatment and that the procedure for certification should be simplified made uniform for private and rate aided cases alike and dissociated from the Poor Law, (R p 157)
- (c) that adequate provision should be made for the treatment of voluntary boarders in public mental hospitals, registered hospitals, licensed houses, general hospitals, nursing homes or single case (R p 157)
- (d) that it is not fair to ask medical practitioners to perform their essential functions in connection with the Lunacy Act under the menace of litigation which, even if unsuccessful may spell financial or professional ruin, and that further protection should be given to medical men in the discharge of their professional duties in relation to insanity (R p 24)
- (e) that a considerable extension of after care work is urgently needed and that in this connection adequate collaboration between the medical staff of mental institutions and the general practitioners attending patients after discharge is an important factor (R p 164) and should be strengthened and provision made for continuity of direction and that sustained consideration of the problems of the lunacy service necessary for the proper evolution of policy the Board of Control (modified in certain respects) should be charged with the duty of supervising and directing the system subject to the general control of the Minister of Health (R, pp 150 and 176)

3 Comparison of these fundamental points with the principal objects favoured in the Memorandum of Evidence presented to the Royal Commission by the Association will show how great is the measure of agreement as to the object to be pursued. Detailed study of the text of the Report shows how close a consideration has been given to the proposals submitted by the Association even where the ultimate recommendations of the Commission do not embody those proposals. Unfortunately the methods advocated by the Commission do not in every case appear to be those best calculated to secure the object in view. For this reason there are certain questions on which the Committee is unable to recommend them for the approval of the Association

4 In this connection the Committee desires to draw the attention of the Association to two matters of prime importance in these respects the recommendations of the Royal Commission appear to be unsatisfactory from the point of view of the Association. They are —

- (1) The protection recommended for medical practitioners who sign certificates under the Lunacy Acts
- (2) the facilities recommended for treating patients suffering from mental disorder in a manner approximately equivalent to that adopted for other forms of illness

### PROTECTION OF THE PRACTITIONER

5 Recent cases in the Courts notably the Harnett case (see paras 54-63 below) and the later cases of Hume-Spry and de Freville, have served to direct attention to the liability of practitioners who have given certificates under the Lunacy Acts to the risk of legal action by a patient on discharge or recovery. Anxiety in this connection has become so acute that in the words of the Royal Commission practitioners 'are

\* The discussion of this memorandum in the Representative Body is reported at page 66

at present performing these duties with increasing hesitation and reluctance and the position revealed by the evidence leaves little room for doubt that unless some relief is found for the situation without delay a breakdown in the system is inevitable' (R, p 39) To meet this position the Representative Body proposed —

'That the provision of a certificate under the Lunacy Acts by a qualified medical practitioner should be an act having the legal status of testimony given by a witness in a court of law, and should not render the practitioner liable either to any civil action or to any criminal charge, except in so far as the certificate may be shown to contain statements of essential importance which are proved to be inaccurate and to have been made with a wilful and deliberate intention to deceive (A R M 1924 Min 51)

6 This proposal, which may for brevity be termed the concession of Witness Status was urged upon the Royal Commission by the Association and was the subject of long and full discussion on more than one occasion between the members of the Commission and the Association's witnesses. It was held by the Commission that the adoption of the proposal would entail the concession of the highest possible privilege involving complete immunity even for a medical practitioner who had given a certificate negligently or in bad faith. It was apparently on this ground among others that the Commission whilst it appeared to appreciate to the full the sense of insecurity at present prevailing in the profession and the need for removing this feeling in the interests of the proper working of the Acts was unable to endorse the proposal for the concession of Witness Status to the certifying practitioner

7 In addition to the insuperable objection to extending personal immunity to any practitioner who has actually been negligent in the discharge of his professional duties, it may be pointed out that the suggested Witness Status would involve an undesirable emphasis upon that aspect of the relationship between the certifying practitioner and his patient which is the main obstacle to the approximation of the treatment of mental disorders to that of physical ailments. To deny the practitioner's liability to his patient for the careful and deliberate exercise of his skill would be to emphasise the legal as opposed to the medical aspect of the relationship and thus to defeat one of the main objects of the Association

8 Moreover such a course must strengthen the tendency to transfer the duty of certification from the ordinary medical attendant of the patient to an expert appointed for the purpose a tendency not favoured by the Association (see para. 45 below)

9 Apart from these considerations, it is clear that it would be difficult to persuade Parliament to adopt the proposal rejected by the Commission after such full and sympathetic discussion

10 The recommendation of the Royal Commission in this connection reads as follows —

'In our view the provision of absolute privilege could not be defended, but we consider that the certifying doctor should not be exposed to an action in respect of anything done under the Act unless the plaintiff can first satisfy a judge in chambers that there is *prima facie* ground for an allegation of want of good faith or *malice* able care

We therefore suggest, in order to place it beyond doubt that the onus of proof shall be upon the plaintiff that Section 330 (1) of the Act should be amended so as to provide that the persons indicated therein shall not be liable to any civil or criminal proceedings 'unless such person has acted in bad faith or without reasonable care

Section 330 (2) should be amended so as to enact that proceedings shall upon summary application to the High Court or a Judge thereof be stayed upon such terms as to costs and otherwise as the Court or Judge may think fit unless the Court or Judge is satisfied that there is substantial ground for alleging that such act was done in bad faith or without reasonable care

11 To understand the effect of this recommendation it is necessary to recall the existing position under Section 330, Sub-sections (1) and (2) of the Act of 1890. Under the existing proceedings taken against any person for signing a certificate under the Act may be stayed if on application to the High Court the Court is satisfied that there is no reasonable ground for alleging want of good faith or *malice* able care. This means that to succeed in such an application the practitioner must prove to the Court not only that there was in fact no carelessness or want of good faith but also that nothing in the statement of claim even suggests the defects. The legislation recommended by the Association would provide that proceedings shall be stayed unless the Court is satisfied that there is substantial ground for alleging

that the certificate was given in bad faith or without reasonable care. In short while at present the onus of proof rests upon the doctor the new proposal would transfer it to the plaintiff. The change involved in such legislation was evidently considered by the legal members of the Commission to be material. The Committee is of opinion that while it would constitute a distinct advance on the present position it would not in itself be sufficient to secure the object in view.

12 Examination of the procedure involved in any action taken by a patient in connection with lunacy proceedings suggests, however, a means of increasing the efficacy of the change recommended by the Commission.

13 When the Court has before it an application to stay proceedings the evidence submitted by the plaintiff in support of his plea of negligence in general includes affidavits from expert witnesses. In the absence of any provision for the scrutiny of these affidavits by an authority competent to form a scientific estimate of the validity of the conclusions they set forth the mere production of such a statement of medical opinions must go far towards establishing a *prima facie* case of negligence, however slight its value may be from the professional point of view. It is clearly improper to seek to impose any check upon the right of the plaintiff to call such witnesses as he may think fit. But there can be no similar objection to providing that such evidence, which may possibly from the technical point of view be of no substance, should be subjected to impartial medical criticism at the hearing so that the Court may not be misled and the purpose of the legal protection be so frustrated.

14 With this end in view the Committee considers that as a corollary to the proposal of the Royal Commission the Association should press that when an application is made to the Courts by or on behalf of a person who has been certified alleging want of care or lack of good faith on the part of the medical practitioner who signed the certificate the Judge should have the assistance of a medical assessor in considering the case and the same principle should hold in the Court of Appeal.

15 If this can be secured it seems reasonable to hope that in future the protection which on principle both the Legislature and the Royal Commission deem right and necessary will be made effective instead of illusory as it has proved to be under the present mode of procedure and that such legal actions as it is on all hands sought to prevent from proceeding to trial will in fact be stayed at the outset.

16 Beyond this the Committee is of opinion that the recommendations of the Commission with regard to the part taken by the magistrate in proceedings under the Act are of value from this point of view. The main points in the Commission's recommendations under this head are as follows:—Whilst under the present practice the magistrate in a private case may or may not see the patient he shall in future be compelled to see the patient and also wherever possible the relatives or the patient and in any case of doubt one or other of the certifying practitioners (R p 38).

17 The Commission also recommends that for the proper discharge of the grave responsibilities devolving on the magistracy under the Lunacy Code there should be an effective selection of magistrates most suited to undertake these duties (R p 56). The Justice should be entitled to call for the assistance of the clerk to the Justices (R p 55) he should be required to exercise a directed discretion that he should be required to consider whether it is necessary to see the medical practitioner or practitioners, whether further investigation is necessary in regard to any delusions alleged in the certificates, and whether the patient should be informed of the allegations (R p 56) and a formal record of the proceedings should be made.

18 Whilst the Committee is anxious to eliminate the judicial authority from the machinery for the early treatment of mental disorder (see paras 30, 41 and 42 below) it considers that every possible step should be taken to ensure that his intervention once it is invoked is effective.

The Committee therefore is of opinion that the Association should press for the introduction into the form of any judicial detention order of words indicating that before signing the order the judicial authority has satisfied himself that the medical practitioner concerned has exercised reasonable care.

In any subsequent proceedings such a statement should establish a presumption in favour of the practitioner whose conduct may be impugned.

19 In connection with its recommendations for safeguarding the interests of the practitioner the Committee wishes to emphasise the necessity for the adoption by the practitioner of all due precautions in dealing with cases falling under the provisions of the Lunacy Acts. The practitioner should keep in mind not only the necessity for the

exercise of due care at every point in his treatment of the patient but also the possible need for demonstrating to a jury at a later date that such care has actually been taken. This point is discussed in detail in paras 61 and 62 below.

## EXTENSION OF FACILITIES FOR THE TREATMENT OF PATIENTS SUFFERING FROM MENTAL DISORDERS

20 The Royal Commission appears to have fully realised the necessity for dealing with mental disorder on a medical basis as essentially comparable to other forms of disease and to this end sets out to ensure that procedure shall be simplified and the hindrance to treatment involved in the general fear of the stigma of certification be removed so far as possible whether by the provision of alternative methods of procedure or by the dissociation of mental treatment from the machinery of the Poor Law.

21 The policy indicated above corresponds with that set out in the following statement of the main objects favoured by the Association—

(a) to meet as far as possible the susceptibilities of the public with a view to minimising the objections which prevent patients from accepting proper treatment at the earliest possible moment

(b) to avoid the need for a formal reception order for mental patients whose symptoms though acute are likely to be shortlived in the hope that the recovery of the patient may render such an order unnecessary.

22 Unfortunately when the Commission passes from its general statement of aim to the elaboration of machinery it seems to allow the necessity for the special safeguards requisite when the liberty of the subject is infringed to obscure the main object in view namely the provision of adequate facilities for the treatment of mental disorder on a purely medical basis.

23 The Association recommended in its original Memorandum of Evidence the extension of provision for the treatment of temporary boarders without judicial intervention (on the lines laid down in the Mental Treatment Bill of 1923) to suitable non-volitional cases and the institution of a provisional treatment order which would replace the existing urgency order and serve either to obviate full certification or as a preliminary step to the procedure necessary for a reception order in cases where full certification ultimately becomes necessary.

24 Under the recommendations of the Royal Commission it is only those who are definitely capable of volition that will obtain relief from the need for legal formalities directing detention. Those early and hopeful cases which cannot be said to be capable of volition fall under the procedure of the Royal Commission's provisional treatment order which as will be shown is hedged about with legal formalities and perpetuates some of the very defects and objectionable features of the existing system of certification that it was sought to eliminate. It is only in name that this order corresponds with the provisional order suggested by the Association and further there is nothing in the procedure proposed by the Royal Commission to correspond with the proposal under the heading 'Temporary Boarders' proposed by the Association to facilitate the treatment of this class of patient in harmony with the provisions of the Mental Treatment Bill. Hence the provisional treatment order of the Royal Commission is not only very different in substance from that proposed by the Association but what is even more important the class or cases of illness to which it would apply is a totally different one.

## PROVISIONAL TREATMENT ORDER PROPOSED BY THE ROYAL COMMISSION

25 As explained in paras 23 and 24 above the provisional treatment order proposed by the Royal Commission is entirely different from the provisional order suggested by the Association in its original Memorandum of Evidence. The similarity of phraseology however makes it particularly difficult to avoid confusion in discussing the effect of the recommendations of the Royal Commission and it is essential to remember that throughout the following paras the term 'Provisional Treatment Order' is applied exclusively to the Order suggested by the Royal Commission. The question of the adoption of a procedure similar to that recommended by the Association in its Memorandum of Evidence under the description of provisional order in substitution for the existing urgency order or the emergency provision recommended by the Royal Commission is a distinct issue which is not further discussed. The problem now to be considered is that of the best provision for the treatment of early cases of mental disorder without certification.

26 Under the provisional treatment order proposed by the Royal Commission the judicial authority has to be called in from the start at the end of one month he has again to be called in and must see the patient.

27 Further, the continuation of the treatment is only authorised for a period of five months after which the judicial authority has again to be invoked if further treatment is deemed necessary, and such treatment would be under a reception order after full certification.

28 Moreover, this provisional treatment order involves the retention of an additional method of procedure without any compensating advantage.

29 From the patient's point of view the only practical difference from the present procedure is that the legal aspect of the question will be still more emphasised than it is at present. He will be placed under detention under legal authority, with even more legal formality than under the present law, and the knowledge of his position is soon as he is able to appreciate the facts must have as prejudicial an effect upon the development of treatment and hope of recovery as has the present system of certification. Against all this the change of terminology effected by the order can hardly be considered of any appreciable value.

30 The procedure proposed permits of delay up to 7 days after receipt by the judicial authority of the documents. It seems likely that a procedure involving delays of this kind in the early and recoverable cases for which it is apparently intended would be useless and become a dead letter and the emergency procedure which allows of detention for 7 days prior to obtaining a provisional treatment order or reception order would again become the ordinary one.

31 From the point of view of the administration and medical treatment of the case the provisional treatment procedure is unduly complicated and if as seems inevitable, it becomes general in the first instance in place of the reception order the disabilities under which treatment is now carried out will be accentuated. The more complicated the administration the less time there is to devote to the essential needs of treatment and the larger the hospital the more serious is this aspect of the question.

32 From the point of view of public opinion detention under a provisional treatment order so overweighted with legal safeguards must inevitably carry the same stigma as the present system of certification.

33 In the opinion of the Committee, therefore, the specific recommendations of the Royal Commission in regard to the provisional treatment order would do nothing to make early treatment more accessible in non-volitional cases and would inevitably add greatly to the work and difficulties both of doctors and justices. If the provisional treatment order is to operate in such a way as to bring about the results desired both by the Royal Commission and the Association it is essential if the judicial authority is not eliminated altogether as far as provisional orders are concerned that he should at least be relegated to a far less prominent position and that his appearance should be less frequently recurrent than is proposed by the Commission. The Committee is still of opinion that provision should be made for some procedure on the lines of the Mental Treatment Bill for hopeful but non-volitional cases.

34 In this way the handling of the relatively transient and recoverable cases could be approximated more closely to the treatment of physical ailments an object sought alike by the Royal Commission and the Association.

35 In support of this suggestion it may be pointed out that the intervention of the judicial authority has in fact afforded but little protection to the patient, and if that intervention is so elaborated as to be effective there is the certain prospect of its deterring the friends of the patient from seeking treatment for him whilst increasing the obstacles when treatment is agreed to in the very cases where delay and difficulties of this kind are so great a disadvantage.

36 On the other hand the proposals of the Royal Commission for the enlargement and readjustment of the duties of the Board of Control make the protection of the liberty of the patient feasible and practicable by the supervision and inspection of the Board and such protection is likely to be more thorough and based on wider experience than any which could be exercised by an ordinary judicial authority. Indeed, in the opinion of the Committee the special safeguards necessary in the circumstances can best be secured through the medium of the Board of Control.

37 Again, the Royal Commission expressly recognises (R. p. 20) that when all is said and done reliance must inevitably be placed at some point on the skill and integrity of the medical man. If confidence is not reposed on the medical profession no system of protection can be devised which will not ultimately break down. The Committee is in complete accordance with these views.

38 In so far as the doctor's personal position is a matter of interest, it may fairly be said that his safety does not

appear to be increased by the proposals of the Commission with regard to the provisional treatment order, inasmuch as there is to be only one medical certificate. The doctor will certainly not be protected by styling his certificate a "recommendation." If on the other hand, the order were made by a relative or friend of the patient supported by two medical certificates, as suggested by the Association, the doctor would be much less exposed to attack and in attack would be more easily rebutted.

39 In view of the above considerations the expedient now recommended by the Committee is the simplification and formalisation of the procedure, to bring it into more harmony with that laid down in the Mental Treatment Bill of 1923. It should be possible in a non-volitional case in which an early recovery under treatment is hoped for to enable a "relative friend or public official" on the certificates of two medical practitioners to give the necessary authority for treatment and control for a period of six months, subject only to the knowledge and observation of the Board of Control.

40 An extension of the period of treatment for a further six months should be possible and for this a notification to the Board of Control in a statutory statement should be sufficient authority. Without such modifications it seems inevitable that the new powers sought by the Royal Commission for local authorities as regards the provision of clinics for out-patient and in-patient treatment of incipient cases, and the arrangements suggested for the treatment of cases falling within the scope of the provisional treatment order in general hospitals, nursing homes or under single care as well as in public mental hospitals registered hospitals licensed houses and other special accommodation must fail of the desired effect (R., pp. 141 and 159). With such modifications the procedure would hold out prospects of a real and essential reform in the treatment of mental disorders.

41 The Committee believes that the freedom for which it asks is both safe and practicable and will ensure that the early treatment of mental illness will become effective and is of opinion that the Association should press for the legislation necessary to secure this object.

#### PROCEDURE PROPOSED BY THE ROYAL COMMISSION IN CONNECTION WITH THE RECEPTION ORDER

42 The Committee invites attention to certain aspects of the recommendations with regard to the full certificate required for a reception order in respect of a person of unsound mind. The Royal Commission proposes that if the patient has not already been the subject of a provisional treatment order, this certificate should include a statement that he is not likely to recover within the period available under such an order (i.e. six months) (R., p. 159). This seems a particularly undesirable addition to the certificate. Doctors will be very unwilling to commit themselves to a forecast of this nature and the requirement would tend to discourage the use of this mode of certification at the start, even in suitable cases and would thus increase the administrative labours of all concerned to no useful end. It would seem better to leave the unfettered judgment of the medical practitioner to decide which method of placing under treatment is appropriate to the individual case.

43 Accordingly, the Committee recommends that, with reference to Recommendation VI (a) (R., p. 159) of the Royal Commission, the words "the patient is not likely to recover within the period available under a provisional treatment order" (i.e., six months) should not be included in the certificates required for a reception order.

44 The Commission recommends that in cases where full certification is necessary one of the medical certificates should preferably be given by the usual medical attendant, if any, of the patient or by a public certifying medical officer if such an official has been appointed in the area. If the proceedings are being taken in respect of a patient already under a provisional treatment order, the certificate should be given by two independent medical practitioners, except that one may be under the hand of the medical superintendent of a public mental hospital or other medical officer in the public service. The two medical men given the certificates should be entitled to consult together (R., p. 159).

45 The Committee desires to emphasise the fact that the Association did not, in its evidence support the suggestion that such medical certificates should be signed by specially selected and approved practitioners and cannot recommend any modification of the Association's attitude in this connection.

46 The Committee further draws attention to the fact that the reference to "two independent medical practitioners" does not make clear the meaning of the word "independent" whilst the reference to the superintendent of a public mental hospital or other medical officer in the

public service does not indicate whether the permission to certify accorded to a practitioner falling within the categories does or does not extend to the case of a patient already in his own charge.

47 The Committee welcomes the recommendation in favour of enabling the certifying practitioners to consult together.

48 The Commission suggests (R. p. 159) in connection with the procedure in the case of an involuntary patient who requires to be dealt with by reception order after full certification is a person of an unsound mind that the petition should be accompanied by a statement of particulars including a disclosure of the patient's property if any. The Committee assumes that this provision has reference to the requirement (R. p. 160) proposed by the Commission that the Board of Control should forthwith notify the Master in Lunacy if the patient has property exceeding £100. It seems to the Committee to be unfortunate to load the procedure with such matters as this and it is suggested that if such a statement is necessary on grounds of public policy it might be supplied at any time within seven days of the patient's certification.

#### POINTS OF DETAIL

49 In the opinion of the Committee the following points in the Report of the Royal Commission call for some further comment.

##### VOLUNTARY BOARDERS

50 While welcoming the main recommendations of the Royal Commission in connection with the extension of facilities for the reception of voluntary boarders, the Committee wishes to draw attention to certain points which seem to require explanation or modification.

51 The Commission states (R. p. 157) that written application should be made for treatment as a voluntary boarder but the authority to whom this application is to be made is nowhere specified. This is a matter of some importance.

52 The Commission recommends (R. p. 155) that in the voluntary boarder cases to have volition he should within one month be dealt with as an involuntary patient. The Committee wishes to emphasise in this connection the necessity for introducing into any legislation concerning voluntary boarders some special provision for dealing with those cases in which transfer from one institution to another would in the absence of such provision be bound to occur by reason of chargeability and would be detrimental to the patient.

##### BOARD OF CONTROL

53 The Committee regrets that the suggestions of the Royal Commission (R. p. 176) for the reconstruction of the Board of Control do not ensure the appointment of a medical woman on the Board of Commissioners, and that the scale of salaries proposed for Assistant Commissioners is not calculated to attract practitioners of sufficient standing to apply for the posts.

##### HARNETT v FISHER

54 The Committee has kept in mind throughout its deliberations the following resolution of the Representative Body 1926—

Minute 115—Resolved That the following motion be referred to the Council—

That the Council be requested to take all necessary steps as soon as possible to deal with the situation which has arisen as a result of the findings of the jury in the Harnett v Fisher case with a view to protecting the interests of the medical profession.

55 In this connection the Committee has not taken careful note of the points of interest emerging in the course of two actions of a later date than that of Harnett v Fisher, namely Hume-Spry v Smith and Another and De Freville v Dill. Unfortunately the final decision in the Harnett case was not delivered until May 27th a delay which has made it impossible for the Committee to deal adequately with these points. The judgment in the case of De Freville v Dill has been deferred to permit of legal argument and it seems desirable to defer consideration of the Hume-Spry case until it can be taken in connection with the other two.

56 Pending the opportunity to formulate a detailed report on the points arising out of the three cases mentioned above the Committee has directed its attention to finding some immediate method or increasing the admittedly inadequate safeguards at present available for the practitioner who is called upon to take any share in procedure under the Lunacy Acts. The conclusions and recommendations of the Committee in this connection are set out in paras. 10-20 above. In putting forward these recommendations the Committee has not lost sight of the probability that the adoption of the recommendations of the Royal Commission in regard to treatment more especially in the modifications suggested by the Association in paras. 55-58 above are incorporated in the suggested final

adopted will tend so to modify the general state of opinion with regard to the treatment of mental disorders as to minimise the risk of the actions.

57 In the course of deliberations the Committee has examined a suggestion that the decision given in 1921 in the case of Everett v Griffiths and Another is authority for the statement that a practitioner giving a certificate under the conditions laid down in Section 13 of the Lunacy Act 1890 is not liable to an action for negligence on the part of the patient so certified. The effect of the decision of the House of Lords in the case cited is as follows—

Where a chairman of a Board of Guardian under an authority given by the Lord Chancellor in pursuance of Section 25 of the Lunacy Act 1891 makes a reception order under Section 16 of the Lunacy Act 1890 against a person alleged to be a lunatic and a medical practitioner having been called in signs a certificate that the alleged lunatic is a person of unsound mind the chairman if he has actually satisfied himself acting honestly and bona fide in arriving at his conclusion and proceeding upon it is not liable on the ground of want of reasonable care to an action at the suit of the alleged lunatic for civil imprisonment and the medical practitioner is not liable to such an action if he has acted with reasonable care.

58 It will be seen that the medical certificate given in this case was obtained under Section 16 of the Act and not under Section 13. The procedure under Section 13 is however analogous to that under Section 16 in so far as both Sections provide for medical examination and certification on the order of a judicial authority. The case was actually decided however not on the ground that the medical practitioner concerned owed no duty of care to his patient but on the ground that he had not in fact been guilty of negligence. On the question of liability various conflicting views were expressed by the several judges. Such being the facts with regard to the decision the Committee was forced to reject the conclusion that it established any immunity from liability in the case of the certifying practitioner whether under Section 16 or under Section 13.

59 Beyond this the Committee is of opinion that the procedure defined in Section 13 which involves the subjection of the patient to treatment as a pauper is unsuitable in many cases in which a practitioner may be called upon to grant a certificate under the Lunacy Acts.

60 Consideration of the evidence given in the three important cases mentioned above suggests to the Committee the desirability of impressing upon members of the Association the necessity for the exercise of the utmost caution in any case where proceedings under the Lunacy Acts are or may become necessary. The practitioner should remember that in addition to taking all suitable precautions at the time of examination and certification he must provide that in the event of his conduct being impugned at a time when he will presumably have forgotten the details of the case he will still be in a position to satisfy a court as to the adequacy of the precautions taken. To this end it is essential that he should (1) distinguish carefully in the certificate between facts reported to him and facts he has himself observed (2) make careful notes of the nature of the examination made and the points which determined his diagnosis (3) preserve the notes indefinitely in view of the possibility of a long delayed action for negligence (4) consider carefully the possibility of interested action on the part of relatives or friends (5) accept or reject their statements deliberately and preserve some record of the fact that he has done so.

61 In the course of the actions under consideration an attempt has been made to base a case of negligence on one or all of the following grounds—

(a) The omission of a complete physical examination of the patient prior to certification.

(b) The omission to confront the patient whatever his condition at the time with any persons who may have made statements to the practitioner concerned as to the patient's aberrations of mind or conduct.

(c) The omission to delay certification in every case pending reference to an alienist.

(d) The omission to prosecute an exhaustive inquiry into the accuracy of all statements made by relatives.

62 The Committee cannot admit the contention that the procedure indicated above is an appropriate general preliminary to certification and desires emphatically to protest against the implications therein conveyed.

63 The Committee is of opinion that the adoption of the recommendations of the Royal Commission together with the additional safeguards set out in paras. 14 and 15 above would adequately protect the practitioner who has exercised due care in abstention from vexatious and ill-founded actions and may prove to be the best practicable policy.



## Naval and Military Appointments.

## ROYAL NAVAL MEDICAL SERVICE

Surgeon Commander W J Morris to the *Conquest*  
Surgeon Lieutenant Commander T N D Vroly to the *Castor* (Temporary)  
Surgeon Lieutenants J D Sayers to the *Beaufort* J C Currie to the  
*Cicada* J C Holmes to the *Lamia* for HM Hospital Ship *Yaine* on  
relief, L A I Wiles to the *Ilizroy* T Pruntice to the *Cockchafer*,  
C T Hyatt to the *Flinders* E C Downer to the *Cyclamen*  
Surgeon Lieutenant (Short Service) D M Berton transferred to  
Permanent List, with original seniority of August 13th, 1927  
Surgeon Lieutenant R B McVicker transferred to Permanent List, with  
original seniority, January 23rd 1925

## ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenants H Parry Price to the *Tiger* for fourteen days  
training W P Lifford to RN Hospital *Haslar*, for fourteen days  
training  
Probationary Surgeon Lieutenants R L Simbs and L C Rogers to  
RN Hospital *Haslar* for twenty eight and fourteen days training  
respectively  
Probationary Surgeon Lieutenants J A R Thomas to the *Victory* for  
twenty eight days and J O Clark to the *Carysforth*

## ROYAL ARMY MEDICAL CORPS

Major A L Olway retires on retired pay on account of ill health and  
is granted the rank of Lieutenant Colonel  
The following Lieutenants on probation are confirmed in their rank  
R A Franklin G Anderson E H Hill G A Wabush A Sachs  
R A M Humphreys, R T P Tweedy and T E Moles

## ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leader J R Crolius is placed on the retired list at his own  
request  
Flight Lieutenant T W Wilson to Aircraft Depot *Finha*

## INDIAN MEDICAL SERVICE

Lieut Colonel H Hay Thoburn CIE an Agence Surgeon is granted  
leave on average pay for six months under the Fundamental Rule, with  
effect from April 26th 1927  
Captain N B Mehta to be Major

## TERRITORIAL ARMY

## ROYAL ARMY MEDICAL CORPS

Major W D Watson TD from RAMC (TA) to be Colonel and  
A D M S 54th (East Anglian) Division TA Vice Colonel C A Troup  
TD, who vacates that appointment  
Major A A Hingston TD, having attained the age limit is retired  
and retains his rank with permission to wear the prescribed uniform  
Major D M C Church resigns his commission  
Captain I M Pirrie MC, to be Major

## TERRITORIAL ARMY RESERVE OF OFFICERS

## ROYAL ARMY MEDICAL CORPS

Lieut Colonel C W Eames DSO TD having attained the age limit,  
relinquishes his commission and retains his rank  
Major F Hauwell, from the Active List to be Major

## VACANCIES

BURBIDOS B W I PARISH OF ST ANDREW—Medical Officer Salary £300  
per annum  
BIRMINGHAM URBAN DISTRICT—Medical Officer of Health and School Medical  
Officer Salary £900 per annum, rising to £1,200  
BIRMINGHAM GENERAL HOSPITAL—Medical Registrar and Resident Medical  
Officer Salary £155 per annum  
BIRMINGHAM UNION S Superintendent Salary  
£1,000 per annum  
BOLINGBROKE HOSPITAL—House Surgeon S W II—House Surgeon  
(male) Salary £120 per annum  
BRIDFORD MUNICIPAL GENERAL HOSPITAL St Luke's—House Physicians and  
Surgeons Salary at the rate of £200 per annum each  
BRIGHTON ROYAL SUSSEX COUNTY HOSPITAL—Honorary Dermatologist  
CHAMBERLAIN JOINT COUNTIES MENTAL HOSPITAL—Senior Assistant Medical  
Officer (male, unmarried) Salary £450 per annum  
CRANING CROSS HOSPITAL W C—Resident Medical Officer Salary £400 per  
annum  
CHURCH OF SCOTLAND FOREIGN MISSION COMMITTEE—Two Medical  
Missionaries  
COVENTRY AND WARWICKSHIRE HOSPITAL—Two Resident House Surgeons  
(male) Salary £125 per annum  
FIJI GOVERNMENT—District Medical Officer Salary £500 per annum  
rising to £725  
GERMANIA SANATORIUM, Kingussie—Resident Medical Officer  
CHEROKEE CORPORATION—Medical Officer of Health Salary £1,000 per  
annum  
HARROGATE INFIRMARY—Honorary Assistant Ophthalmic Surgeon  
HEREFORDSHIRE GENERAL HOSPITAL Hereford—House Surgeon Salary £150  
per annum  
HOLY HOSPITAL—Resident Medical Officer (male unmarried) Salary £150  
per annum  
HULL ROYAL INFIRMARY—(1) Casualty House Surgeon (2) Assistant  
House Surgeon (male) Salary at the rate of £150 per annum each  
KENSINGTON TUBERCULOSIS AND CHEST GENERAL HOSPITAL—Senior and Junior  
Resident Medical Officers Salaries at the rate of £125 and £100 per  
annum respectively  
LIVERPOOL LANE AND EAR INFIRMARY—House Surgeon (male) Salary £100  
per annum

LOVDOX COUNTY COUNCIL—Assistant Architect part-time Salary £180 per  
annum, with temporary additions on Civil Service scale  
MANCHESTER ACCOUNTS OFFICE—Resident Surgical Officer (male) Salary  
£200 per annum  
MANCHESTER CAN HOSPITAL—House Surgeon  
MANCHESTER HOUSE HOSPITAL Colders Green N W II—House Surgeon (male,  
unmarried) Salary at the rate of £200 per annum  
METROPOLITAN ASYLUMS BOARD—Junior Assistant Medical Officer at  
Colindale Hospital Hendon Salary £500 per annum  
NORTHAMPTONSHIRE COUNTY COUNCIL—Tuberculosis Officer Salary at the  
rate of £750 per annum  
PLYMOUTH HOMOEPATHIC AND GENERAL HOSPITAL—House Surgeon (male),  
Salary £100 per annum  
QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E 2—Casualty Officer  
Salary £100 per annum  
ROYAL FREE HOSPITAL, Gray's Inn Road W C I—Male Casualty Officer  
Salary at the rate of £150 per annum  
ST MARK'S HOSPITAL W 2—Senior Radiographer (male) Salary £5 a week  
SCARBOROUGH HOSPITAL AND DISPENSARY—Two House Surgeons, Salary £15  
per annum  
SHARPSHAW PARISH, Orkney—Parochial Vaccinator Salary £355 per annum  
SHEFFIELD ROYAL HOSPITAL—Resident Surgical Officer (male) Salary £200  
per annum  
SOUTHAMPTON ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL—Senior  
House Surgeon (male, unmarried) Salary £200 per annum  
STAFFORDSHIRE COUNTY COUNCIL—Bacteriologist for one month as Locum  
tenent at County Laboratory Salary at the rate of £10 10s per week  
SWANSEA HOSPITAL—House Surgeon (male) Salary £150  
WEST HAM UNION—Two District Medical Officers Salary £800 per annum  
each

CERTIFYING FACTORY announced Morley  
Applications to the  
S W I  
vacant appointments are  
eal (Kent) Holt (Norfolk)  
factories, Home Office, Whit hall,  
S W I

This list of vacancies is compiled from our advertisement columns,  
where a full particulars will be found To ensure notice in this  
column advertisements must be received not later than the first  
post on Tuesday morning

## British Medical Association.

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE,  
TAVISTOCK SQUARE, W C I

## Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business  
Manager) Telegrams Articulate Westcent, London)  
MEDICAL SECRETARY (Telegrams Medisera Westcent, London)  
EDITOR *British Medical Journal* (Telegrams Antology Westcent,  
London)  
Telephone numbers of British Medical Association and British Medical  
Journal Museum 9861, 9862, 9863 and 9864 (internal exchange  
four lines)  
SCOTTISH MEDICAL SECRETARY 6, Drumsheugh Gardens, Edinburgh (Tele-  
grams Associate Edinburgh Tel 4561 Central)  
IRISH MEDICAL SECRETARY 16 South Frederick Street, Dublin (Tele-  
grams Bacillus Dublin Tel 4737 Dublin)

## Medical Department Holiday Arrangements

The Medical Secretary asks us to announce that he will  
be absent from the office from the end of this week until  
Monday, August 22nd Members are requested during  
that period not to send letters to Dr Cox marked  
"Personal" or "Private and Confidential" The Deputy  
Medical Secretary will be in charge

## APPOINTMENTS

APPOINTMENT OF MEDICAL REFEREE under the Workmen's Compensa-  
tion Act, 1925, for Dumfries County, vice T Ferguson, MB, Ed  
resigned  
WILLIAM J DOUGLAS R, FRCS Resident Medical Officer, Bolingbroke  
Hospital Wandsworth Common  
RUSSELL A T MD BS Lond Obstetrician to the Elizabeth Garrett  
Anderson Hospital, Euston Road NW  
WILLIAM ELIZABETH M B Sc Lond MB, BS Lond, Assistant Path-  
ologist Chemist to St Mary's Hospital London  
WESTMINSTER HOSPITAL—House Physician R C Hodges MB BChd  
House Surgeon E C Evans FRCS, LRCP Lond, and R Stan-  
ley FRCS LRCP Lond

## POST GRADUATE COURSES AND LECTURES

ROYAL NORTHERN HOSPITAL Holloway Road, N—Tues, 3.15 p.m., Abdominal  
Pain in Pregnancy

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and  
Deaths is 9s, which sum should be forwarded with the notice  
not later than the first post on Tuesday morning, in order to  
ensure insertion in the current issue

## MARRIAGES

BUTLER-LANE—On July 19th, at Bridge of Allan, A J M Butler MA  
MD of Highgate, London, to Ena M Lane, MB, ChD of  
Scotland

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY AUGUST 6TH 1927

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## British Medical Association.

### PROCEEDINGS OF COUNCIL

Monday, July 13th

The final meeting of the 1926-27 Council of the Association was held in the Robing Room of the McEwan Hall, Edinburgh University, on Monday July 13th. Sir Robert Bolam presided, and the following members were present:

Mr R G Hogarth (President) Dr H B Brackenbury (Chairman of Representative Body) Mr A Bishop Harman (Treasurer) Dr C O Hawthorne (Deputy Chairman of Representative Body) Dr J Banroft Anderson Dr H S Blades Sir Alfred Blenkinsop Dr J W Bone Dr H C Brastow Dr H G Dain Dr C E Douglas Mr W McAdam Eccle Dr E P Fothergill Dr I J Gomez Dr R Wallace Henry Dr G B Hullman Dr J Hudon Dr I W John Dr J Langdon Down Dr David Law Dr E A Le Fleming Dr R W Leslie Dr R A Lester Dr J G McCutcheon Dr J A Macdonald Dr S Morton McKenzie Dr A Vaneveld Dr O Marriott Dr J C Pather Dr G W Miller DSO Dr Hugh Miller Dr J Mill Dr Christine Murrell Lieut Colonel F O'Keefe Dr W Pater Dr J Dods Price Dr F Padcliffe Mr H S Souttar Dr John Stevens Dr Lockhart Stephens Dr W E Thomas Dr G Clark Trotter Mr E B Turner Sir Jenner Verrall Dr J F Walser and Dr D Walshe

The Chairman said that it would be a great grief to his fellow members and to all who knew him to learn that Dr J S Darling was seriously ill. The Council requested its Chairman to send Dr Darling a message of sympathy and affection.

#### International Union of Medical Organizations

The Medical Secretary presented a report on the International Union of Medical Organizations—a body to which the British Medical Association had not given adhesion—and the comparative success it had met with during the first year of its existence. It had enlisted support from bodies of medical men in nearly twenty European and several South American countries. Dr Decourt, the secretary, had invited him to attend the next general meeting in September in Paris as an observer.

Mr Bishop Harman (Treasurer) hoped the Council would not retreat from the position it had taken up despite the warnings of Dr Decourt, a very energetic man who saw the importance of launching something which in medicine was very much the equivalent of the League of Nations. He thought that all information might be afforded to the organization but that the Association should not enter into covenants.

Dr Fothergill moved that Sir Robert Bolam and the Medical Secretary be asked to attend the general meeting as observers. He felt that good work might be done by getting into touch with the representatives of the medical profession in other countries. Sir Robert Bolam and Dr Cox would combine action and sympathy in the appropriate degree.

Dr Douglas hoped that at all events the Medical Secretary would attend and would attend as a sympathetic visitor. He thought the Treasurer too much afraid of entanglements. The

Association was not a damsel whose head might be turned by flattery but almost a centenarian. It argued wisdom—but he did not see that it argued subtlety—on the part of the organizers of this international movement to endeavour to secure the interest of one of the most important organizations in the world.

The Chairman said that it would be very inconvenient for him personally to go and he thought Dr Cox would suffice as an observer.

Mr Souttar supported the proposal that Dr Cox, at all events, should attend. The speaker had seen at close quarters the solidarity of the profession in Switzerland, the whole of the Swiss doctors worked together in one organization. As for a Medical League of Nations, was it desired that the profession in Britain should stand outside like the United States outside Geneva?

The Medical Secretary said that he had certainly been impressed by the way in which the International Association had developed. Among the countries adhering was Germany, where 87 per cent of the profession were inside their Association. He thought it would be well to send an observer, partly on of courtesy and partly to watch the development of events.

Dr Walker said that the position had evidently altered since the Council in October last decided against adhesion, and the movement which was thought likely to be a failure, now seemed to be shaping for success.

The motion that the Medical Secretary attend the general meeting as an observer was carried.

#### Reports from Delegates

Written reports were received from Dr Helen Ingleby and from Dr H M Cohen who were delegates appointed by the Council to represent the Association at the annual session of the American Medical Association in May. The Chairman said that Dr Ingleby's report was particularly interesting, racy, and valuable. Dr Cohen was, unfortunately, prevented by illness in his family from taking as active a part as he had wished to do.

The thanks of the Council were accorded to both delegates.

A report was also read by Dr C Hubert Bond, who attended, on behalf of the Association, the Pinel and Vulpian centenary celebration in Paris. A vote of thanks was accorded to Dr Bond.

#### Science Committee

Dr Hawthorne, for the Science Committee, submitted a report on the work done by the Association's scholars and grantees for 1926-27 and a number of recommendations were agreed to concerning the appointment for one year of the Ernest Har Scholar and three Ordinary Research Scholars, and the distribution of grants to ten laboratory and other

research workers in aid of expense incurred. The Ernest Hart Scholar appointed was Claude Howard Whittle, M.A., M.D., M.R.C.P. (Cambridge), second year, and the Ordinary Research Scholars were Gordon Roy Cameron, M.B., B.S. Melb., William Combe Wilson, M.D., F.R.C.S. Ed., second year, and Dugald Brind, B.Sc., M.B., Ch.B., D.P.H. Glasg.

#### National Health Insurance

Dr. Dun, for the Insurance Acts Committee, reported that a number of very important negotiations had been carried on with the Ministry of Health, and, in some cases, brought to a satisfactory conclusion. One of these was with regard to machinery to prevent wholesale canvassing consequent upon the facilities for free and immediate change of doctor, and to safeguard the discretion of the doctor in giving certificates in view of those same facilities. With regard to disciplinary procedure, he believed that the committee had evolved, with the help of the Ministry, a series of alterations which would provide for fair play and would do away with the feeling amongst insurance practitioners that some sort of appeal to the courts was necessary.

#### Scale of Salaries for Scottish Appointments

Sir Robert Bolam brought forward the report of a conference between representatives of the Association and the Society of Medical Officers of Health, which dealt with the application of the agreed scale of salaries to Scottish public health appointments. His statement was of the same character as that which was addressed to the Representative Meeting. Its effect was that in view of the admittedly difficult circumstances in Scotland there should be, for a limited period, a special scale for that country, and that, in the meantime, the Society and the Association should confer with a view to making certain modifications which would render the whole position for Great Britain homogeneous.

Other matters considered briefly by the Council (for it was time for the Representative Meeting to begin) included a proposed amendment of the model memorandum of association of an Oversea Branch which the Australian Federal Committee desired but which the Central Ethical Committee considered to be unnecessary, and a proposal that certain enlargements be made at the house of the Association in Edinburgh, a matter which was remitted to the Building Committee for investigation.

#### Wednesday, July 20th

The first meeting of the new Council was held in Edinburgh on July 20th, Sir Robert Bolam again presiding. The following members were present:

Sir Ewen Macleay (President Elect), Dr. Hawthorne (Chairman of Representative Body), Mr. Bishop Harman (Treasurer), Dr. Lyndon (Deputy Chairman of Representative Body), Dr. Baicoff Anderson, Dr. J. Armstrong, Dr. F. J. Baildon, Sir A. Blenkinsop, Dr. Bone, Dr. Bustowe, Dr. Dain, Dr. Douglas, Mr. T. P. Dunhill, Mr. McAdam Eccles, Dr. T. Fraser, Dr. Gomez, Dr. F. W. Goodbody, Dr. Wallace Henry, Dr. Hillman, Dr. Hudson, Dr. Johnson, Dr. Langdon-Down, Dr. Le Fleming, Dr. Leslie, Dr. Lewis Lloyd, Dr. J. Livingston London, Dr. McCutcheon, Dr. McDonald, Dr. Mouton Mackenzie, Dr. Mauchell, Dr. Matthews, Dr. Muirrell, Lieut. Colonel O'Kinerly, Dr. Paterson, Dr. R. C. Peacocke, Dr. J. R. Pytheich, Dr. Radcliffe, Dr. E. H. Snell, Mr. Souttar, Dr. E. A. Starling, Dr. Lockhart Stephens, Dr. J. Stevens, Dr. A. Street, Dr. Thomas, Dr. Carl Thottel, Mr. Turner, Sir Jenner Verrall, Dr. Walker, Dr. Wilshe, Mr. A. M. Webber, Sir W. de C. Wheeler, Dr. W. E. A. Worley, and Dr. Brackenbury (who succeeded Sir Robert Bolam in the chair).

#### The Chairmanship of the Council

Dr. Wallace Henry, in moving that Dr. H. B. Brackenbury be elected Chairman of Council for the ensuing three years, said that it was a matter of the deepest regret to them all that it should be necessary to say good-bye to Sir Robert Bolam as Chairman of Council. They had all hoped that it might have been possible to induce Sir Robert to remain until he had brought the Association into full enjoyment of the glories of the promised land. His intention however to relinquish his office at the end of seven years was quite immovable, and therefore they had to elect a successor. There were various things, obvious to them all, which might be said in commending Dr. Brackenbury's name. One might dilate upon his great services to the Association, the sacrifices he had made on its behalf, and the eminence of his public career. But there were other reasons. The Association was committed to a great building scheme—a scheme which of necessity must to some extent tax its resources—and the Chairman of Council would

have to take a leading part in the furtherance of that scheme. Therefore it was a great advantage that Dr. Brackenbury had been in touch with the scheme from the beginning. There would be many calls upon his time in that and in other respects, and here again they were fortunate in the circumstance that Dr. Brackenbury had virtually retired from practice, having wholly given up his insurance work and a large portion of his private work. Then the profession was likely to be faced during the coming years with many more encroachments upon private practice, it would be necessary to uphold the principles of the Association before Government departments and various bodies, and no man was better fitted to do so than Dr. Brackenbury. His shrewd wisdom, something like that of a Presbyterian elder, would appeal to the Scot, his persuasive eloquence would sound good to Celtic ears, and his quick and able mind would be the admiration of them all. Dr. Brackenbury had not only had a wide experience of private practice but of public affairs. In a large Association like theirs it was very desirable that one at least of the chief officers should himself be a general practitioner.

Sir Jenner Verrall, in seconding, said that service to the Association *per se* was not the main ground on which a chairman should be appointed. So far as that service connoted capacity for conducting the work of the Council it was important, but there was no vested interest in the chairmanship, and it must not be considered as a reward for long or much service. The Council would appoint the man it thought best fitted to guide its deliberations and speak for the Association. He hoped Dr. Brackenbury would be elected by general acclamation.

Dr. Langdon Down desired to add his voice in favour of the proposal.

There was no other nomination, and the proposal was carried unanimously, whereupon Sir Robert Bolam invested his successor with the badge of office amid acclamation.

Dr. Brackenbury, in taking the chair, said that his colleagues had paid him a very high compliment, and had imposed upon him a great responsibility. He was old enough to recognize his faults of character and behaviour as well as anybody else, and he regarded each of them as a convincing reason why he should not be placed in that position and a complete justification for those hesitations which were natural in making such a choice as this. When he recalled the only two of his predecessors whom he had known—Dr. Macdonald and Sir Robert Bolam—he was conscious again that he could not attempt to repeat the success with which they had held the office, but he would do the best he could, and he was sure he would have their support and indulgence. He was somewhat alarmed at the picture painted by the mover of the resolution, which seemed to envisage a series of contests, in which relative strength would be a matter of great importance. He was sure that the business of the Association was not going to be conducted, whether in the Council chamber or outside, in the fear or in the spirit of combat. Dr. Brackenbury added that it happened that he had been Chairman of his Division, President of his Branch, President of a Section, and Chairman of the Representative Body, and now by their kindness he became Chairman of Council. He thought that must be a record, though it might have been equalled by Dr. Macdonald. It was a record of which he was proud—he hoped not unduly—and whatever the faults of which he had spoken there were certain compensating qualities by which they had been good enough to recognize and which he hoped to place at the service of the Council and of the Association. (Applause)

#### The Retiring Chairman

Mr. Bishop Harman said that the Council was glad to see Dr. Brackenbury in the chair, but regretful that Sir Robert Bolam was out of it, and if the latter feeling predominated at the moment he was sure Dr. Brackenbury would understand it. He remembered that when he (the speaker) first came into the Association and saw the mighty men on the dais, he wondered eventually whether they would seem quite so big if he ever came close to them. Since that time he had been very close to Sir Robert Bolam, and he had not diminished one jot in his stature. His force of character, the kindness of his disposition, were just as evident, just as constant on a near approach as they had been from a distance. It had been the greatest pleasure and a great honour to serve under him, and he desired to voice the wishes of the Council that he might have yet many days of great service to his city and his University, and still more

the Association and the profession at large. Many words would not add to the weight of such a proposition, and he left it at that.

Dr Macdonald also wished to join in the general expression of thanks and good wishes. He could remember Sir Robert Bolam from his entrance into Association affairs and from the beginning he was marked out as a man to look to.

Dr Wallace Henry said that every member of the Council would wish to add a word to this resolution. During his own tenure of office as Chairman of the Representative Meeting he had been in close touch with the Past Chairman of Council in all the business affairs of the Association. He knew the work which Sir Robert Bolam had put in in connexion with the new building long before anything was made public. Indeed his anxieties as to the matter almost caused him to break down. He had sacrificed a great deal for the Association, and no thanks there could accord him were too great.

Sir Ewen Maclean as a link with the shadowy past said that he too remembered Dr Bolam (as he then was) when his first came into prominence in the work of the Association. He likened his personal qualities to the parts of a good prescription—the basis, the adjuvants, the corrigens, and the constituents.

Dr C. E. Douglas also added a word of thanks. He rejoiced to think that Sir Robert Bolam's services would still be available to the Council and the Association.

Sir Robert Bolam was greeted with very hearty applause on rising to respond. He said that he had had seven very full and continuous years, but happy years because he had been helped by so many colleagues and friends. In the beginning he was specially helped by Macdonald and later on by one who was no longer with them—Heslop—and then Wallace Henry. In the last three years the triumvirate Brackenbury, Harman and himself had done what they could for the Association. It was a great wrench to lay down work of this kind, but he was happy in the thought that the scheme which was dear to his heart would go forward with the support of the Council and the Representative Body, and he might yet take a hand in it. There was only one other word he wanted to say, and that was to express the hope that his successor would find the same happiness and receive the same good fellowship. (Applause.)

#### South African Medical Congress

The Council proceeded to consider an invitation from the executive council of the South African Medical Congress arranged for March 1928 in Bloemfontein and the first congress of its kind to be held in South Africa under the auspices of the Medical Association of South Africa (British Medical Association), to send delegates.

The Medical Secretary said that Dr Alice Cox the very energetic secretary of the executive council who recently visited this country had said that it would break the hearts of some of them out there if they found a large number of Americans attending, as seemed likely and the home country and Association unrepresented.

The Chairman thought it would be the desire of the Council that the President Sir Robert Philip should be asked to attend if he could possibly arrange to do so. Sir Robert Bolam and Sir Jenner Verrill also strongly urged that the President was the right man to go out to represent the Association in this matter and it was unanimously agreed by the Council that Sir Robert Philip be officially approached on the subject.

Dr Dain desired that Sir Robert Bolam should also be asked to attend and Dr MacKenzie supported this plea, urging that to have in South Africa both the President and the Past Chairman of Council would put the coping stone on the work already done there. The Council signified its desire that Sir Robert Bolam should if possible attend in addition to the President, but Sir Robert said that he could not decide offhand and if he were compelled to give an answer at the moment it would be a regretful negative. But he promised to consider the matter.

#### Child Guidance Council

An invitation from the Child Guidance Council that the Association should appoint a representative to serve there was considered. The Chairman said that this was evidently going to be an important body because it had substantial financial backing from the other side of the Atlantic. It was proposing to establish a demonstration clinic in London mainly for children of disorderly mentality. In America work of a

like character had been carried on for a considerable number of years with great success. In reply to a remark, he said he was quite certain there would be no attempt to impose American methods.

Mr Turner hoped the Council would accept this invitation. He believed the body was likely to do good work. Dr Langdon Down and Mr Bishop Harman also supported, and Sir Ewen Maclean said that participation would not necessarily result in the adoption over here of American methods. After visiting parts of Canada and the United States he thought it very likely that a deputation going from the Association and other bodies in this country was likely to come back with useful information as to how not to do things as well as how to do them. There could not be too much mutual study of common problems.

It was agreed that a representative should be nominated, and Dr Langdon Down was asked to serve.

#### Place of Annual Meeting 1931

An invitation from the Esplanade Division to hold the Annual Meeting in 1931 at L. Stourne where no meeting has previously been held was received by the Council.

Sir William Wheeler said that an invitation for 1931 was sent as was from Dublin. The delay had not been at all on the part of those who spoke for the profession there but it had been due to the necessity of getting the invitation countersigned by the Executive Council of the Irish Free State Government in lieu of local bodies as in Great Britain. The Government had recently passed through a general election and still more recently there had been the tragedy of an assassination and this matter had therefore turned. But it was the unanimous desire of the members of the medical profession that the British Medical Association should meet in Dublin in 1931.

The Chairman expressed the thanks of the Council to Esplanade and said that an expression of thanks would be sent to Dublin when the invitation duly arrived. The decision could be left to a subsequent meeting.

#### Election of Committees

The remaining business before the Council was the choice of dates for Council and committee meetings during the ensuing year, the election of members to standing committee and the continuation or fresh appointment of special committees. The Arrangements Committee was set up with six members representing the Council and six the Cardiff Local Committee. The Parliamentary Elections Committee was reconstituted. Dr Graham Little M.P. and Dr Morton Mackenzie being appointed as fresh members to fill vacancies.

Sir Ewen Maclean moved the reappointment of the Committee on Caustion or Puerperal Forbidity and Mortality, saying that it was of real importance that this committee should be kept in being and should have matter referred to it which were appropriate to its work. The committee was reappointed, and Dr C. E. S. Flemming and Dr Colston Williams were invited to fill vacancies. The Ophthalmic Committee, the Pharmacopoeia Committee and the Psycho Analysis Committee were also reappointed the last named with some widening of its membership so as to include representatives of different schools of thought. On the motion to reappoint the Committee on Lunacy Law and Mental Disorder the question was raised whether the general practitioner element on the committee was sufficient in view of the desire of the Representative Body that general practitioners should be adequately represented, and it was agreed to add the name of Dr F. Palfrey. Other committees reappointed were the Building Committee, the committee concerned with recruitment or medical practitioners in case of war, the Poor Law Reform Committee (on which Sir Richard Luce took the place of the late Dr Padesley Bailey), and the Committee on the Royal Commission on National Health Insurance. With regard to the Pathological Committee, Dr Hawthorne said that the one recommendation received back by the Representative Body was one which came within the compass of the Public Health Committee. He suggested that it be referred to that committee and that some representative of the old Pathological Committee and of the newly formed Association of Clinical Pathologists be asked to attend. This was agreed to.

Dr Brackenbury and Dr Paterson were again nominated as representatives on the Council of the Society of Medical Officers of Health.

## British Medical Association.

## COUNCIL AND COMMITTEES FOR 1927-28

## COUNCIL

## EX OFFICIO

- Dr H B Brackenbury, Hendon, *Chairman of Council*  
 Sir Robert Philip, Edinburgh, *President*  
 Dr C O Hawthorne, London, *Chairman of Representative Body*  
 Mr N Bishop Harman, London, *Treasurer*  
 Mr R G Hogarth, Nottingham, *Past President*  
 Sir Ewen Maclean, Cardiff, *President Elect*  
 Dr A Lyndon, Hindhead, *Deputy Chairman of Representative Body*  
 Sir Robert Polson, Newcastle upon Tyne, *Immediate Past Chairman of Council*

## TWENTY FOUR ELECTED BY BRANCHES IN UNITED KINGDOM

## England and Wales

- Dr D E Finlay, Gloucester  
 Dr F W Goodbody, London  
 Dr R Wallace Henry, Leicester  
 Dr J Hindson, Newcastle upon Tyne  
 Dr E K Le Fleming, Wimbome  
 Dr E L  
 Dr S M  
 Dr A Manknell, Bradford  
 Dr J C Matthews, Liverpool  
 Dr Christine Murrell, London  
 Dr A W Nuthall, Birmingham  
 Dr F Radcliffe, Oldham  
 Mr H S Souttar, London  
 Dr Lockhart E W Stephens, Emsworth  
 Dr W D Thomas, Ystrad Rhondda  
 Dr J F Walker, Southend on Sea.  
 Dr W E A Worley, London

## Scotland

- Dr T Fraser, Aberdeen  
 Dr J Livingstone, London, Hamilton.  
 Dr J G McCutcheon, Glasgow  
 Dr John Stevens, Edinburgh

## Ireland

- Dr R W Leslie, Belfast  
 Dr Denis Walshe, Graigueanamanagh  
 Sir William de Courcy Wheeler, Dublin.

## SLAVY ELECTED BY BRANCHES OUTSIDE UNITED KINGDOM

- Mr T P Dunhill, London (*New South Wales and Queensland Branches*)  
 Lieut Colonel Ashton Street, London (*Grouped Indian Branches*)  
 Dr G Clark Trotter, London (*New Zealand and Fiji Branches*)  
 Sir Jenner Verrall, Leatherhead (*South Australian, Tasmanian, Victorian, and Western Australian Branches*)  
 Dr J Barcroft Anderson, London (*African Branches*)  
 Dr F J Gomez, South Pertherton (*West Indies Branches*)  
 Dr O Marriott, Haywards Heath (*Hong Kong and China, and Malaya Branches*)

## TWELVE ELECTED BY GROUPED REPRESENTATIVES

## England and Wales

- Dr H C Bristowe, Wington  
 Dr G B Hillman, Wakefield  
 Dr I W Johnson, Bury  
 Dr W Paterson, Willesden  
 Dr J R Pythorich, Llangefni  
 Dr E A Stirling, Tunbridge Wells  
 Mr E B Thirner, London  
 Mr A M Webber, Nottingham

## Scotland

- Dr G W Miller, Dundee  
 Dr J Pitlick, Glasgow

## Ireland

- Dr J Armstrong, Ballymena  
 Dr R C Peacocke, Blackrock

## EIGHT ELECTED BY REPRESENTATIVE BODY

- Dr I J Baildon, Southport  
 Dr J W Bone, Luton  
 Dr H Guy Dain, Birmingham  
 Dr C L Douglas, Cupar  
 Mr W McAdam Eccles, London  
 Dr R Langdon Down, Teddington  
 Sir Richard Luce, M P, London  
 Dr J A Macdonald, Trunton

## TWO ELECTED BY THE PUBLIC HEALTH SERVICE MEMBERS

- Dr G F Buchan, London  
 Dr L H Snell, Coventry

## SERVICE REPRESENTATIVES

- Sir Percy Bassett Smith, London (*Royal Naval Medical Service*)  
 Group Captain N J Roche, Southsea (*Royal Air Force Medical Service*)  
 Sir Alfred Blenkinsop, Farnham (*Army Medical Service*)  
 Lieut Colonel F O Kinealy, London (*Indian Medical Service*)

## COMMITTEES

*Note*—The President, the Chairman of the Representative Body, the Chairman of Council, and the Treasurer are members *ex officio* of all Committees

## ARRANGEMENTS COMMITTEE

- Mr H G Cook, Cardiff  
 Professor W E Dixon, Cambridge  
 Professor G E Gask, London  
 Dr A Fergus Hewat, Edinburgh  
 Sir Thomas Horder, London  
 Sir Ewen Maclean, Cardiff  
 Dr J M Morris, Neith  
 Dr J Morgan Rees, Pontypool  
 Sir Humphry Rolleston, Cambridge  
 Mr A W Sheen, Cardiff  
 Dr G I Stachan, Cardiff  
 Dr W E Thomas, Ystrad Rhondda

## BRITISH PHARMACOPOEIA WATCHING COMMITTEE

- Dr J W Bone, Luton  
 Professor W E Dixon, Cambridge  
 Mr E Lewis Lilley, Leicester  
 Chairman of Science Committee  
 (With power to co-opt)

## CHARITIES COMMITTEE

- Dr E E Brierley, Cardiff  
 Dr W E Dearden, Manchester  
 Dr C E Douglas, Cupar  
 Dr H J M Milbank Smith, Worthing  
 Dr Lockhart E W Stephens, Emsworth  
 Dr J F Walker, Southend on Sea

## DOMINIONS COMMITTEE

- Dr J Barcroft Anderson, London  
 Mr T P Dunhill, London  
 Dr F J Gomez, South Pertherton  
 Dr I W Johnson, Bury  
 Professor R T Leiper, London  
 Dr O Marriott, Haywards Heath  
 Dr W Paterson, Willesden  
 Lieut Colonel Ashton Street, London  
 Dr G Clark Trotter, London  
 Dr J Dodds Price, London  
 Sir Jenner Verrall, Leatherhead

## CENTRAL ETHICAL COMMITTEE

- Dr H C Bristowe, Wington  
 Dr I W Johnson, Bury  
 Dr R Langdon Down, Teddington  
 Dr A Lyndon, Hindhead  
 Dr Peter Macdonald, York  
 Mr E W G Masterman, London  
 Dr C H Milburn, Harrogate  
 Dr Christine Murrell, London  
 Dr James Neal, London  
 Dr L A  
 Dr John  
 Dr J I



## FINANCE COMMITTEE

The Chairmen of the following Committees Organization  
 Journal Science Medico Political Ethical, and Insurance Acts  
 Dr E J Baildon Southport  
 Sir Robert Bolam Newcastle upon Tyne  
 Dr W John-on Smyth Bournemouth  
 Dr W A West Watson Bradford

## HOSPITALS COMMITTEE

Dr A V Clarke Leicester  
 Dr J D Comrie Edinburgh  
 Mr W McAdam Eccles London  
 Dr E L Tobergill Hove  
 Sir Richard Luce M.P. London  
 Mr L W G Masterman London  
 Dr J C Matthews Liverpool  
 Mr F C Tyburn Newcastle upon Tyne  
 Dr F Radcliffe, Oldham  
 Mr H S Souttar London  
 Mr A M Webber Nottingham  
 (One vacante)

## INSURANCE ACTS COMMITTEE

Dr E K Le Fleming Wimborne (ex officio as Chairman of  
 Panel Conference)  
*Fire & Life Representative Body*  
 Sir Robert Bolam Newcastle upon Tyne  
 Dr J W Bone Luton  
 Dr L W Craig Edinburgh  
 Dr H Gny Dun Birmingham  
 Dr Peter Macdonald, York  
 With twenty three direct representatives of Local Medical and  
 Panel Committees, one representative of the Hospitals Com-  
 mittee one representative of the Medical Women's Federa-  
 tion one representative of the Society of Medical Officers of  
 Health and one representative of the Poor Law Medical  
 Officers Association

COMMITTEE OF ROYAL COMMISSION ON INSURANCE  
ACTS

Dr A E Barnes Sheffield  
 Dr H J Cardale London  
 Dr W E Carnegie Dickson London  
 Dr P H Dix Sunderland  
 Dr E K Le Fleming Wimborne  
 Dr J G McCutcheon Glasgow  
 Dr Leir Macdonald, York  
 Dr Ewen Maclean Cardiff  
 Dr John Muir London  
 Mr H S Souttar London  
 Dr J P Williams Freeman and Jover  
 Chairmen of the Insurance Acts, Medico Political Public  
 Health Hospitals Ophthalmic Scottish and Welsh  
 Committees.

One member to be nominated by the Society of Medical  
 Officers of Health

Two members to be nominated by the Medical Women's  
 Federation (one consultant and one general practitioner)  
 One member to be nominated by the British Dental  
 Association

Two members to be nominated by the Poor Law Medical  
 Officers Association.

## IRISH COMMITTEE

*Members of Council who represent Irish Branches*

Dr J Armstrong Ballymena  
 Dr R W Leslie Belfast  
 Dr R C Peacocke Blackrock  
 Dr Denis Walshe Graignemavanagh  
 Sir William de Convey Wheeler Dublin

*Secretaries of Irish Branches*

Dr Pierce Grace, Maryborough  
 Dr Philip G Lee Cork  
 Dr J Mills Ballinasloe  
 Dr J P Shanley Dublin  
 Dr C J A Woodside Belfast

One member to be appointed by each Irish Branch

## JOURNAL COMMITTEE

Sir Robert Bolam Newcastle upon Tyne  
 Dr J D Ewart Manchester  
 Dr C E Douglas Cnpar  
 Dr F W Goodbody London  
 Dr A M H Gray London  
 Dr W Griffiths London  
 Dr G G Macdonald London  
 Dr J A Macdonald Tynnton

Chairman Central Ethical Committee  
 One member to be appointed by the Organization Committee

## COMMITTEE OF LANCY LAW AND MENTAL

DISORDER

Dr G F Larham Woodford Bridge  
 Dr J W Bone Luton  
 Dr I H Edwards Leigate  
 Dr Barnard Har London  
 Dr R Laugdon Down Teddington  
 Dr J A Macdonald Tynnton  
 Mr E W G Masterman London

Dr Christine Murrell London  
 Dr F Radcliffe Oldham  
 Sir Alfred Rice Oxley London  
 Dr A F Tredgold Gaudford  
 Mr E B Turner London  
 Sir Jenner Verrall, Leatherhead.

## MEDICO POLITICAL COMMITTEE

Dr H S Beadles Romford  
 Dr J W Bone Luton  
 Dr H C Britton Wington  
 Dr E R Iothergill Hove  
 Dr R Wallace Henry Leicester  
 Dr G W Miller Dundee  
 Dr Christine Murrell London  
 Dr W Paterson Wille den  
 Dr John Stevens Edinburgh  
 Mr E B Turner London  
 Sir Jenner Verrall Leatherhead  
 Mr A M Webber Nottingham

## NAVAL AND MILITARY COMMITTEE

Sir Percy Basset Smith London  
 Sir Alfred Blenkinsop Farnham  
 Mr E M Cowell Croxford  
 Dr F W Goodbody London  
 Sir Richard Luce M.P. London  
 Dr G W Miller Dundee  
 Lient Colonel F O Kinsale London  
 Group Captain N J Locke South ea.

## OFFICE COMMITTEE

The Office Committee is constituted as follows.

Dr H B Brackenbury Hendon Chairman of Council  
 Dr C O Hawthorne London Chairman of Representative Body  
 Mr A Bishop Harman London Treasurer  
 Sir Dawson Williams Editor  
 Dr Alfred Cox Medical Secretary  
 Mr L Ferris Scott Financial Secretary and Business Manager

## OPHTHALMIC COMMITTEE

Dr H P Bickerton Liverpool  
 Dr T Harron Butler Birmingham  
 Mr J G Clegg Manchester  
 Mr R J Coulter Newport Mon.  
 Mr H L Ea on London  
 Dr R Wallace Henry Leicester  
 Dr G B Hillman Wakefield  
 Dr G W Kendall London  
 Dr Peter Macdonald York (nominated by Section of Ophthal-  
 mology)  
 Mr A W Ormond London  
 Colonel Ramsden Pickard Exeter  
 Mr G H P Poole Sheffield  
 One member to be nominated by Insurance Acts Committee  
 One member to be nominated by Scottish Committee  
 One member to be nominated by Council of British Ophthal-  
 mologists

## ORGANIZATION COMMITTEE

Dr F J Baildon Southport  
 Dr H S Beadles Romford  
 Mr Russell Coombe Exeter  
 Dr J D Ewart Manchester  
 Dr P Wallace Henry Leicester  
 Dr A Lyndon Hindhead  
 Dr S Morton Mackenzie Dorking  
 Sir Jenner Verrall Leatherhead

## POOR LAW REFORM COMMITTEE

Dr H S Beadles Romford  
 Dr J W Bone Luton  
 Dr H Gny Dun Birmingham  
 Dr H C Jonas Barnstaple  
 Dr E Lewis Lloyd Fowyn  
 Sir Richard Luce M.P. London  
 Mr E W G Masterman London  
 Dr F Radcliffe Oldham  
 Two members to be nominated by the Society of Medical  
 Officers of Health  
 Two members to be nominated by Poor Law Medical Officers  
 Association

## PSYCHO ANALYSIS COMMITTEE

Dr H Godwin Baynes London  
 Dr R C Bristowe Wington  
 Dr William Brown London  
 Dr P G Gordon Bath  
 Dr Isabel E Hunt on London  
 Dr Ernest Jones London  
 Dr L P Lempriere Hertford  
 Dr Peter Macdonald York  
 Dr J S Man-on Warrington  
 Dr R Laugdon Down Teddington  
 Dr Christine Murrell London  
 Dr L A Parry Hove  
 Dr J P Rees London  
 Dr T A Ross Pen-hryn  
 Dr C Worsler Drought London

## PARLIAMENTARY ELECTIONS COMMITTEE

Dr H Guy Darr, Birmingham  
 Dr C E Douglas Cypar  
 Mr W McAdam Eccles, London  
 Sir Thomas Plateroff, Bolton  
 Dr R Wallace Henry, Leicester  
 Dr E K Le Fleming, Wimborne  
 Dr E Graham Little, M P, London  
 Sir Richard Luce M P, London  
 Dr J A Macdonald, Taunton  
 Dr S Morison Mackenzie, Dorking  
 Dr Christine Murrell (nominated by Medical Women's Federation)  
 Mr F B Turner London  
 Sir Jenner Verrall, Leatherhead  
 Four members to be nominated by the National Insurance Defence Trust  
 A medical representative from the Local Election Committee formed in any area in which an approved medical candidate is standing for election

## PUBLIC HEALTH COMMITTEE.

Dr W F Dearden, Manchester  
 Dr T Eustace Hill, Darlington  
 Dr G B Hillman, Wakefield  
 Dr E Lewis Lloyd, Towyn  
 Dr J B Miller, Bishopbriggs  
 Dr F Radcliffe Oldham  
 Dr C F T Scott, Willesden  
 Dr G Clark Trotter, London  
 Dr G F Buchan, London, } Two members of Council elected  
 Dr E H Snell, Coventry } by the Public Health Service members  
 Two members to be nominated by the Society of Medical Officers of Health  
 One member to be elected by Medico Political Committee

## PUERPERAL MORBIDITY AND MORTALITY COMMITTEE.

Lady Barnett, London  
 Mr G H A Comyns Berkeley, London  
 Dr J W Bone, Luton  
 Dr G F Buchan, London  
 Dr H J Cardale, London  
 Dr C E Douglas, Cypar  
 Dr T Watts Eden, London  
 Dr C E S Flemming, Bradford or Atton  
 Sir Ewen Maclean, Cardiff  
 Dr Christine Murrell, London  
 Dr Mabel Ramsay, Plymouth  
 Dr W E Thomas, Ystrad Rhondda  
 Mr E B Turner, London  
 Sir Jenner Verrall, Leatherhead  
 Mr E Colston Williams, Cardiff  
 Dr Edward Williams, London  
 Chairman, Medico Political Committee

## SCIENCE COMMITTEE

Dr G A Allan, Glasgow  
 Professor W E Dixon Cambridge  
 Professor G E Gask, London  
 Dr R G Gordon Bath  
 Dr H J M Milbank Smith, Worthing  
 Dr Ronald Miller, London  
 Sir Humphry Rolleston, Cambridge  
 Mr H S Souttar, London  
 Mr E B Turner, London  
 Mr R J Willan, Newcastle upon Tyne  
 Mr W G Spencer, London (Honorary, Irishman).

## SCOTTISH COMMITTEE

Members of Council who represent Scottish Branches  
 Dr T Fraser, Aberdeen  
 Dr J Livingstone, London, Hamilton  
 Dr J G McCutcheon, Glasgow  
 Dr G W Miller, Dundee  
 Dr J Patrick, Glasgow  
 Dr John Stevens, Edinburgh

Direct Representatives of Scottish Divisions  
 The names appear in the next column  
 remain to be co-opted

Four members

## WELSH COMMITTEE

Members of Council who represent Welsh Branches  
 Dr E Lewis Lloyd, Fowyn  
 Dr J R Prytherch, Llangynni  
 Dr W E Thomas, Ystrad Rhondda

Secretaries of Welsh Branches

Dr E Lewis Lloyd (see also above)  
 Dr A A Prichard, Cardiff

One member to be appointed by each Division situated wholly in Wales, including Monmouthshire  
 The Chairman and Secretaries of the Welsh Practice Subcommittee

## CONFERENCE WITH REPRESENTATIVES OF SOCIETY OF MEDICAL OFFICERS OF HEALTH

Dr C O Hawthorne, London,  
 Dr H B Blackenbury, Hendon,  
 Sir Robert Bolam Newistle upon Tyne,  
 Dr R Langdon Down, Teddington,  
 Dr J B Miller, Bishopbriggs  
 Representatives of the Society of Medical Officers of Health

Representatives of  
the British Medical  
Association

## SCOTTISH COMMITTEE

## ELECTION OF DIRECT REPRESENTATIVES

The following have been elected members of the Scottish Committee for the ensuing session

GROUP I—Aberdeen, Orkney, Shetland, Banff, Meivay, and Nairn, Caithness and Sutherland, Inverness, Islands Ross and Cromarty Dr J E SKINNER, Skene, and Dr G SMITH, Soudy, Elgin

GROUP II—Dundee, Fife, Perth, and Stirling Dr D FIORI DICKSON, Lochzelly, and Dr G W MILLER, DSO, Dundee

GROUP III—Edinburgh, Lothians, South Eastern Counties, Dumfries and Galloway Dr NORMAN P FAIRFAX, Inverleithen, Dr C MOWBRAY PEARSON, Edinburgh, and Dr J D COVRIE, Edinburgh

GROUP IV—Glasgow Central, Eastern, North Western, and Southern Dr G A ALLAN, Glasgow, Dr A K CHILMERS, Glasgow, and Dr JOHN PATRICK, Glasgow

GROUP V—Argyllshire, Ayrshire, Dumbartonshire, Lanarkshire, and Renfrew and Bute Dr W DOUGLAS FRAEY, Kilmarnock, Dr J LAURIE, Greenock, and Dr JAMES B MITLER, Bishopbriggs

The members of Council representing Scottish constituencies are also members of the Scottish Committee, and four additional members may be co-opted

## THE SECRETARIES' CONFERENCE

The Secretaries' Conference was held on the afternoon of July 20th at the Scottish House of the Association, Drumshough Gardens, Edinburgh. There was a large gathering of honorary secretaries, who inspected the House with much interest. Dr J G McCUTCHEON (Glasgow North-Western) was voted to the chair.

## Secretarial Problems

Dr J C LYNN (York) read a short paper on secretarial problems connected with the organization of an urban Division. He recited the recent history of his own Division, which had formerly languished, but now had entered upon a more prosperous period. The membership in 1924 was 65, at present it was just over 100, but there were still over 50 non-members. One of the first things which the resuscitated Division set out to do was to fix private fees, and these had been loyally accepted. It had been found useful to call general meetings of the profession in the area, without the backing of the whole of the local profession it was not possible to carry through any serious ethical procedure. Such meetings also furnished an opportunity of increasing the membership. With regard to the relations with the Local Medical and Panel Committee, care had been taken to ensure that that body worked with the Division, but each organization had its separate functions, and there was no overlapping. The relations with the local authorities, and in particular with the medical officer of health, were very happy, and it was understood by the city council that the Division was entitled to express medical opinion in the district. The local press was utilized as occasion offered to influence public opinion.

Dr E LEWIS LLOYD (South Carnarvon and Merioneth Division and North Wales Branch) dealt with the same subject, but in connexion with a rural Division. In such largely extended areas as his own, he said, it was difficult to get any large attendance at a meeting. For a business meeting, pure and simple next to nobody would turn up, and the field of medico-political discussion had altered considerably since the creation of Local Medical and Panel Committees. He had never been discouraged by an attendance of only eight or nine at a meeting, because he knew what it cost those eight or nine to come. He was bound to say, however, that the documents sent occasionally by the Medical Secretary to the Divisional

secretaries discouraged him more than anything he received because of their account of the big and brisk things which were being done by more favoured Divisions, whereas his own Division on paper could only put up a poor showing. But to those who were aware of the conditions in rural areas, especially in such an area as his own—97 miles long, with three trains a day—very modest numbers and results would not appear insignificant.

Dr H ROSE (Buckinghamshire) described certain efforts made in his Division to increase the membership by canvassing those on the non-member list. A good attendance—15 or 16—was usually secured at his Divisional meetings because they were arranged to take place immediately after the Panel Committee meetings. Dr J KENNISH (Windsor) found it possible to get good attendances when anything very striking was on the programme but at a lecture of the ordinary type, even when given by a first rate man the attendance was sometimes apt to be very disappointing. Dr H D POOLER (Cheshire) who came from an area which might be described as both rural and urban, said that it was very discouraging to the officers to see a small attendance at purely business meetings, and yet at all times to them, because they ought to be assured that when they acted they had the members behind them. He found difficulty in getting good attendances at meetings when medico-political discussions were arranged but members would come to clinical meetings. Propaganda and non-members seemed rather hopeless so far as the whole had been long in the profession were concerned more was to be gained by concentrating on the newly qualified.

Dr P I DUTTON (St Pancras) said that his Division had lately been recited and the average attendance at sectional meetings was between 40 and 50. The membership had risen from 146 to 210 during the last two and a half years. One thing they had ought to be arranging, the programme was first rate, speakers with well known names. The Division also kept in touch with the three members of Parliament for St Pancras constituencies whom he always reminded that the average medical practitioner was worth fifty votes. Dr R E MOISE (North Northumberland) thought that the thing to do in order to get members to turn up at clinical meetings was to choose a subject of interest to the general practitioner. Dr W D MACARTHUR (Islands of Scotland) said that in his Division which included Lewis, Skye and parts of the coast of Ross-shire, an attendance of eight or ten was secured and it took some of the members two days to come.

Dr H S BEALES (Stratford) said that one of the serious reasons why the Divisions were not going in for medico-political work was that such work was being left to the Panel Committees. It had no business to be so left. Dr C G C SCRIVANER (Croydon) stressed the importance of business meetings, while admitting that attendances at such meetings were poor. Dr GOSWAMI (Darlington) emphasized the value of the B.M.A. Lectures and said that on one occasion in his own Division when a British Medical Association lecturer came down they had an attendance of at least 100 per cent. Dr A J LEWIS (Southport) reported good attendances in his Division. Dr LOCKHART STEPHENS (Portsmouth) said that the time of meeting was important from the point of view of attendance. In his Division the attendance had increased since the meetings were fixed for 9 p.m. For the benefit of members living in the Isle of Wight who could not get a return boat he pointed out that the night was provided by members of the Portsmouth Division. The Medical Secretary said that the discussion illustrated once again the fact that it was the personality of the secretary which counted for very much. He congratulated the secretaries of the York and St Pancras and other Divisions which had lately gone towards a markedly and praised also such attendances as eight or ten in Skye which had a value, the journey considered equal to far more impressive numbers elsewhere.

The two operators were accorded a vote of thanks.

#### Local Bills in Parliament

The Medical Secretary said that on one or two occasions lately complaints had been received from areas to the effect that they had found certain matters embodied in local legislation in Parliament affecting the medical profession and that nothing had been done in the matter at headquarters. He would suggest that in these matters the earliest action could be taken locally before the parliamentary bill stage was reached for it was not easy to upset the local bills when they had once reached Parliament. The people at the periphery must be aware that a bill was being promoted, and it was a very easy matter for them to see the proposed bill at the office of the town clerk and to make their representations before the bill went up. This was a thing to be looked after locally.

#### The Subscription to the Association

Dr W STOBIE (Oxford) brought up a discussion on the subscription to the Association. He said that for some country doctors three guineas represented a considerable sum of money. A lower subscription would result in a larger membership and if there was a certain diminution of total income it might be met by economies in various directions. Dr L A PARRY (Brighton) said that the Association, to be strong must have large financial resources, and as a member of the Finance Committee he protested against the suggestion that the subscription was too large.

Dr H ROSE and one or two other secretaries thought that the question of the subscription should be examined with a view to its possible diminution in order to meet cases of real hardship on the part of some struggling practitioners. Dr F J BIRNBY however pointed out that hard cases made bad law. Although one had every sympathy for those members of the profession who were in financial stress, the welfare of the profession and of the Association as a whole had to be considered. It would be a disaster if the energies and activities of the Association as a result of which every medical man in the country benefited were hampered or hindered in any way.

Dr STOBIE moved and Dr ROSE seconded that the Council be asked to consider very carefully the possibility of a reduction of the subscription to the Association.

An amendment was proposed by Dr MURRAY to add the words "owing to the poverty of a number of members of the profession in some districts" but Dr Stobie would not accept this amendment and in the absence of a seconder it fell to the ground. Dr POOLER wished to add at the beginning of the motion the words "This without committing this meeting to any expression of opinion for or against the Council he asked, etc." but the Council declined to accept this amendment.

Dr W P TRENKLE (Willesden) said that he had now been on the Council for five years and he could assure his fellow secretaries that the work of the Association was conducted in the most economical fashion and that it was absolutely impossible at the present moment to reduce the subscription. He hoped the meeting would not ask the Council to consider such a reduction.

Dr Stobie's resolution was then put to the meeting and negatived by a very large majority, only five voting in its favour in a meeting of fifty or sixty.

#### Other Business

The membership and non-membership figures of the Divisions and Branches and a classified analysis of the non-members were considered. Dr MURRAY (Eastbourne) said that the figures would look less unsatisfactory for such Divisions as his own if members of the profession who were in practice elsewhere as whole time officers or otherwise and were merely in residence in his Division could be separately shown.

Suggestions were as usual called for to improve the Association's Annual Handbook but once again none were forthcoming. Dr Mair Smith declaring it to be unimprovable. The Medical Secretary said that the book was the product of a good many minds but the editor was the Assistant Medical Secretary Dr Macpherson to whom they were much indebted.

A committee to determine the regulations for the Treasurer's Cup golf competition 1928 was appointed, consisting of Dr L Fleming, Dr McCutcheon and Dr G H Lowe with Dr G C Anderson (secretary).

Dr C F T SCOTT (Middlesbrough) voiced the claim of the Association charities and pointed out how the benevolent funds of the profession could be incidentally helped by taking out policies with the Medical Insurance Agency.

#### THE SECRETARIES' DINNER

The honorary secretaries and their ladies afterwards dined together at the University Union under the chairmanship of Dr J G McCutcheon. The necessity of getting away in time to attend the Lister centenary commemoration had the effect of reducing speeches to a minimum but possibly the enjoyment of the eighty or so who were present was not cut down in corresponding degrees. Dr GOSWAMI or Darlington proposed the health of the Chairman and expressed his gratification at seeing a fellow Scot preside over the Secretaries' Conference. The toast of "The Officers of the Association" was proposed by Dr L A PARRY of Brighton who had to compress the virtues of three nations into two minutes. But in the two minutes he managed to pay a tribute to Dr Cox and his fellow secretaries in London, Dr Drever in Edinburgh and Dr Humes in Dublin. To Dr Drever he said the words "specially grateful" for all that he had done to name the Edinburgh meeting as pleasurable. Dr DREVER responded for his colleagues and expressed his great pleasure at seeing so large a gathering of workers for the Association in Edinburgh.

## THE ANNUAL EXHIBITION OF SURGICAL INSTRUMENTS, APPLIANCES, DRUGS, FOODS, ETC

### *Surgical Instruments*

Surgical instruments and operating room equipment were to be seen at some twelve stands at the exhibition in the Waverley Market Hall.

Edinburgh has a great history of its own in connection with surgical manufacture, and several Edinburgh firms contributed to this side of the Exhibition. Archibald Young and Son, whose house dates back nearly two centuries, a period during which it has continued the work of many generations of cutlers, showed some of the obstetric instruments for which Edinburgh is well known. Another feature of theirs was orthopedic appliances, and they also showed instruments of the type used in the ear, nose and throat department of Edinburgh Royal Infirmary.

Another Edinburgh firm with a very large range of instruments was J. Gardner and Son, who were associated with Lister, as mentioned by the President of the Association when opening the exhibition. Their exhibit included a "universal" operating table on an oil-pump base, which possessed some original features, also many instruments in rustless and stainless steel, and an apparatus for testing the patency of the Fallopian tubes. A third Edinburgh firm—Smith, Hurford, and Dysdale—showed several of the latest instruments made to the design or suggestion of Edinburgh surgeons, including those by Professor D. P. D. Wilkie, Mr. N. M. Dott, and Mr. C. W. Cathart.

Several London firms also had stalls, on most of which was an abundant display of the smaller instruments in many designs and for all manner of purposes, showing what a vast range of specialized cutlery the modern surgeon has at his command. Most of the firms also included in their exhibit in operation table embodying the latest improvements, but the operation table appears now to be fairly stabilized, and the improvements are of a minor character. The "St. Bartholomew's" operation table of Allen and Hanbury, Limited, was improved this year by the addition of a new adjustable skull clamp. Other interesting articles in the same firm's exhibit were syringes of various patterns for hipodermic injection, new models of focusing lamps, various types of anesthetic apparatus, and gynecological instruments. The ligatures and dressings and the hospital furniture shown by this firm are separately noted.

An operation table was also shown at one of the two stands occupied by Down Brothers, Limited. It had the oil pressure pump for raising and lowering. By its side was an orthopedic table sponsored by Professor Putti, very elaborate and remarkably easy of adjustment. The second exhibit of this firm was a collection of smaller instruments, including the scalpels associated with the names of Mayo and of Cile, and instruments for intestinal surgery. Among the newer appliances was Ivan McGill's portable intratracheal apparatus. A large selection of instruments were made in stainless steel.

The Holborn Surgical Instrument Company, in addition to another large selection of surgical instruments in stainless steel, had also a new pattern of pedestal operation table. This firm showed some of the most recent models of diathermy electrodes, one of them specially designed for treating the prostate. A range of lamps for examination purposes, French's blood aspiration apparatus and needle, and a posterior urethral tube for Harrison's retro-methioscope were among the other exhibits to which special attention was drawn.

The exhibit of the Genito-Urinary Manufacturing Company was devoted chiefly to a large selection of cystoscopes with various attachments, including one for diathermy, also a cysto-methioscope designed to meet the demand for an instrument to enable both examination and operation in the bladder and posterior urethra. The diathermy apparatus exhibited included one large model designed for both surgical and medical applications, with dry spark gap.

Mayor and Phelps exhibited their "Chloron" chloroform inhaler, designed to eliminate all possibility of pumping out liquid chloroform either by wrongful attachment of bellows or by overfilling. Another anesthetic outfit of this firm was designed to supply a warmed atmosphere of oxygen, nitrous oxide, or carbon dioxide, or of these gases in combination of any degree, and with or without chloroform vapour of definite strength. Other instruments pointed out were a pyloric forceps, a bladder retractor for use in Caesarean section, and perioral endoscopic instruments made to the instructions of various laryngologists. A tonsil suturing forceps to tie up tonsils from outside the patient's mouth was noted.

Another pedestal operation table on an oil pump base was the largest exhibit at the stand of Arnold and Sons (John Bell and Croyden, Limited), but here also was to be seen a special selection of gynecological and obstetric instruments, and a portable anesthetic apparatus intended for the administration of nitrous oxide, oxygen, and ether. Instruments made of stainless steel were shown, and a metal pocket-case, containing hypodermic syringe, needles, and a sterilized solution, and fitted with swing-out racks for ampoules, found considerable favour at Edinburgh.

### *Ligatures and Dressings*

Two or three stands were devoted principally to ligatures. Among these was that of the Edinburgh firm of G. F. Meison, Limited, who made a point of the fact that the manufacture of sterile surgical ligatures was important enough to be considered their main business and not a mere side-line. This firm claimed to be actual manufacturers of surgical catgut from start to finish. The raw material in the shape of sheep intestine, the finished catgut strings in dry coils, and the standard hermetically sealed glass tubes containing the sterile ligatures made an interesting exhibit. The ligatures were put up in various styles of packing suitable for use by the surgeon, the general practitioner, and in the hospital.

A similar display was made by Johnson and Johnson (Great Britain), Limited, who have been for many years concerned in the business of the preparation of ligatures and sutures. Other exhibits at this stand were rubber adhesive plasters, "red chain" cotton, a long fibre cotton, highly absorbent, and packed in a special way, sponges of uniform size and absorption, and a protective dressing and adhesive strapping combined, for minor cuts and bruises. Allen and Hanbury, Limited, showed their "London Hospital" catgut, every batch of which was stated to be passed by a consulting bacteriologist before issue, and the "Marilybena" sterilized ligatures and sutures were shown by Arnold and Sons.

An old established Edinburgh firm of manufacturing chemists, J. F. Macfarlan and Company, showed catgut ligatures prepared according to Lord Lister's and several other formulae, as well as antiseptic dressings as originally made under Lister's direct supervision. This firm exhibited a letter written by Lister in 1906, entirely with his own hand, regarding some experiments with double cyanide gauze in which the firm was co-operating with him. The firm claimed to be the first to make medicated dressings, which it did in 1871, also at the direction of Lord Lister.

Frassett and Johnson, Limited, showed the well known Seabury and Johnson preparations, including a rubber adhesive plaster made in four different widths, ranging from 1/4 in. to 1 1/2 in. on the same roll, also a vaccination shield of this material. Other exhibits here were absorbent cotton of exceptionally long staple, surgical ligatures, medicated plasters, and other things of this order.

The Thermogeno Company, Limited, again showed their medicated wadding, consisting of cotton wool, the fibres of which are stated to be impregnated with stimulating medicinal essences, and another stand was as usual devoted to the hygroscopic poultice, "Antiphlogistine."

### *Hospital Furniture*

Every year we look for some new ideas in bedsteads from Hoskins and Sewell, Limited. This year a special bed supplied to the Sunderland Royal Infirmary was on view. It was fitted with a castor-ped action, adaptable to either

the head or the foot or the bedstead, enabling it to be wheeled easily, when the desired place was reached the pad was lowered while the castors were raised from the ground, and thus the bed was enabled to stand firm. Another device was a wheeling ward screen, made of welded tube, with no nuts or screws and yet another hospital convenience was a wheel locker with a driver cupboard, pull-out seat, and extending table attachment.

Whitfields Bedsteads, Limited, showed several arrangements bearing the name of Law or Pat including the new eardiac bed tent specially designed for University College Hospital, London—a very interesting improvement—also a double wheeling bedstead with ball bearing castors, a maternity bedstead with cot attachment and a head and knee-rest bedstead for obtaining the Fowler position.

Archibald Young and Son showed the Mori on (Knox) Edinburgh bed frame and Allen and Hinchey. Included in their exhibit some hospital furniture in various sizes.

#### Light and Heat Treatment Apparatus

Two stands were occupied by the British Hanover Quartz Lamp Company, Limited, where it was stated that 100,000 of the Hanover quartz lamp outfits are now in use. The models shown included the Johnson quartz lamp for the irradiation of several patients together the "Alpino Sun" intended for the general irradiation of individual patients and the Kromayer lamp, designed only for intensive local treatment. The firm also showed a large "Sollux" lamp for ultraviolet radiation. Most of the lamps have been noted in our columns upon their introduction.

The large exhibit of the Medical Supply Association included in addition to the x-ray equipment separately noted the "Trinity" ultra-violet radiation apparatus designed to furnish radiation from the carbon arc, the mercury arc and the mercury vapour burner. This again has been recently described.

An interesting exhibit in connexion with ultra-violet was that of the Thermal Syndicate Limited in addition to mercury vapour lamps designed for use on direct or alternating current it included a number of articles in various sizes, which is pure fused quartz or silica. Chemical and other laboratory apparatus were shown here.

The radiant heat bed of the Downing Radiant Heat Company, Limited, was again to be seen—the bed is for treating the whole body and various local devices for treating any part. A new Downing appliance consisted of four radiant heat lamps and one ultra-violet lamp for treatment. The ultra-violet lamp is a tungsten lamp with a filament enclosed in a quartz glass globe, it is less powerful than the arc or mercury vapour lamp. It was shown in stand and suspended models.

Perhaps this is the place to mention the exhibit of the "Radiocool" Electro-Magnetic Blanket Company, Limited, which is fairly well described in the name of the firm itself. It consists of an electrically warmed quilt or blanket the idea being to apply electricity in wave currents at a temperature to conform with that of the body and with induction pads for intensive local application. Ultra-violet radiation apparatus was also shown subsidiary to their x-ray exhibit by the Victor X-Ray Corporation and by Philip Creswick of Glasgow.

#### X-Ray and Electro-Medical Apparatus

More x-ray apparatus was shown than usual. The Medical Supply Association exhibited the "Metath" x-ray tube already noticed in our columns in that the x-rays are generated within a metal cylinder the only radiation emerging being that which passes through an aperture provided for the purpose. The tube thus embodies its own protection focusing arrangements are provided to secure the requisite definition. This tube was shown in patterns both for radiography and for therapy and they were also at this stand x-ray installations for general practitioners and for small hospitals with which the "Metath" tube might be connected.

Coolidge x-ray tubes of various types were shown by the Victor X-Ray Corporation, Limited. These included a 100 milliamperes radiographic tube and a water-cooled therapy tube operating at 50 milliamperes.

With these was shown an instrument to stabilize and predetermine the output from any Coolidge tube regardless of line voltage fluctuations.

The firm of Philip Creswick showed a 30 milliamperes x-ray set manufactured by the Solus Electrical Company; it comprised a high tension transformer and Coolidge filament transformer, oil immersed, and contained in one unit, it could be mounted either as a permanent or movable unit. Here also was an apparatus for taking a rapid series of small pictures of the action of the duodenum.

The manufacturers of X-Rays, Limited, of London, were shown by their Scottish agent, Mr G. D. L. Rororth. Here again was an outfit designed to utilize the 30 milliamperes self rectifying Coolidge tube at an equivalent spark gap of 5 m. This outfit was recommended for routine radiography, while for work demanding more powerful equipment or involving more difficult conditions there was a 20 m. induction coil outfit, for use with either gas or hot cathode tubes. The set comprised coil, mercury break, mechanical rectifier and switch table. Both a time switch and a foot switch, affording distance control, were included. There was at this stand also much interesting accessory x-ray apparatus, together with a diathermy outfit in two units to facilitate portability. The diathermy outfit was shown in the exhibition at the stands of the Holborn Surgical Instrument Company Limited, and the Geintoun X-ray Manufacturing Company, Limited, have already been noted in passing in dealing with the main surgical exhibits of these firms.

The photographic side of x-ray work was amply demonstrated by Kodak Limited the chief place was again given to the Eastman "duphized" x-ray film, and the prints and transparencies were the wonder and also to some extent the despair, of visitors interested in x-ray work. Specimens of dental radiography were also shown, illustrating the "bite-wing" system for the early detection of interproximal cavities. The remainder of the exhibit was made up of intensifying screens, illuminators and accessories for the dark room.

#### 1 Portable Electro-cardiograph

At the stand of the Victor X-Ray Corporation Limited there was shown one of the new and most interesting things in the whole exhibition—namely a portable electrocardiograph on a new principle. This instrument which is of American design involves the introduction of amplification methods—by the use of a special three-tube valve amplifier—similar to radio-amplification in the measurement of the heart current. By this means the need for the extremely delicate galvanometer quartz string is eliminated and the place of that fragile and teasing construction is taken by a much more ruggedly constructed galvanometer in which is fastened a small mirror deflecting the light beam. Thus the film instead of recording a string shadow with the possibility of confusing lines records a spot of light. Many advantages are claimed, including not only greater convenience, but also increased accuracy, for it is claimed that by the lessened lag due to the greatly magnified scale the new electro-cardiograph can pick up and record heart currents for which the string instrument was not sufficiently sensitive. It is stated that no compensation for the patient's resistance is required, standardization of the instrument can be effected in daylight and its operation is extremely simple. We understand that portability was not the original intention but resulted as an almost unforeseen consequence of the design. The instrument is obviously interesting, but this is not the place to discuss its precise value in cardiology.

(To be continued)

#### THE EXHIBITORS' SMOKING CONCERT

THE usual smoking concert arranged by the exhibitors at the Annual Exhibition was held in the Egyptian Hall, Queen Street, Edinburgh on July 21st under the chairmanship of Mr Darrell Steel the musical programme arranged by Mr P. Corran Scott, was of the highest order. Dr C. O. Hartorne in thanking the committee for the invitation to the medical profession, regretted that owing to the very heavy programme of events arranged by the local executive committee, many members were



prevented from being present. Nevertheless, he was anxious, on behalf of his colleagues and as Chairman of the Representative Body, to assure the exhibitors that their courtesy was highly appreciated. He was glad to see that in spite of the laborious times which the exhibitors must have passed through they were able to arrange for some relaxation. Medical practitioners recognized very fully that through the assistance afforded them by the manufacturers the profession was able to help suffering humanity, and that without the co-operation of the manufacturers its hands would be tied. Dr Hawthorne complimented the exhibitors on the fine display which had been brought together in the Waverley Market, and hoped that their efforts would be successful from a pecuniary point of view. Mr L. Ferris Scott (Financial Secretary), and Dr G. C. Anderson (Deputy Medical Secretary) also congratulated the exhibitors on the display arranged, and hoped that their efforts would be rewarded. A vote of thanks to Mr Druehl Steel for taking the chair, proposed by Mr Percy, was carried with musical honours.

### THE ANNUAL GENERAL MEETING

To the list of representatives and delegates from Overseas Dominions who were presented to the President on the occasion of the Annual General Meeting (SUPPLEMENT, July 23rd, p. 50) should be added the name of Dr E. C. Alles, representing Ceylon.

### NOTIFICATION OF INDUSTRIAL POISONING

The Factory Department of the Home Office has issued the following instructions (Form 304) under the Factory and Workshop Acts, 1901 to 1920, and the Lead Paint (Protection against Poisoning) Act, 1926.

1 Every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from any of the following

Lead poisoning,  
Phosphorus poisoning,  
Arsenical poisoning,  
Mercurial poisoning,  
Carbon bisulphide poisoning,  
Aniline poisoning,  
Chronic benzene poisoning,  
Anthrax,  
Toxic jaundice,  
Epitheliomatous ulceration, or  
Chromo ulceration,

contracted in any  
factory or workshop,

is required by section 73 of the Factory and Workshop Act, 1901, under penalty, to notify the case forthwith to the Home Office, and by section 3 of the Lead Paint (Protection against Poisoning) Act, 1926, he is also required to notify lead poisoning contracted by any person employed in or in connexion with the painting of any building whether or not that building is a factory or workshop, unless it has already been so notified, and he is entitled to a fee of 2s. 6d. for so doing. The notice should state clearly the name, address, and occupation of the patient, the disease from which he or she is suffering, the factory or workshop or, in the case of a painter, the premises at which he or she has been employed and is believed to have contracted the disease, the name and address of the notifying practitioner, the date of notification. The notice should be addressed to the Chief Inspector of Factories, Home Office, London, S.W.1. No stamp need be affixed. Forms for notification (Form 303) will be supplied on application.

2 It will be observed that the opinion to be notified is twofold: (i) that the patient is the subject of one of the diseases or forms of poisoning specified above, and (ii) that the practitioner believes the poisoning to have been contracted in a factory or workshop or in or in connexion with the painting of a building.\* If the patient has previously been seen by another practitioner a third question arises—namely, whether the case has already been notified. If after reasonable inquiry it appears that it has not, the notification should be sent. There is no power to allow a fee for a notification which is not in accordance with the terms of the section.

3 When a plumber is affected there may be doubt as to his actual employment in a factory or workshop. Notification of lead poisoning affecting a plumber should be made, as he generally spends some portion of his time dealing with lead material in a factory or workshop occupied by his employer.

\* The object of notification is to afford to the factory inspectors a clue to dangerous conditions over which they can exercise control and their powers in this respect are limited to factory and workshop premises and to buildings the painting of which is being carried on. Notification of poisoning contracted otherwise (for example from lead in drinking water, from arsenic in food or even from industrial employment outside the factory Acts—such for instance as the occurrence of ceratoid epithelioma in a chimney sweep) being non-statutory, would be incomplete and therefore useless for statistical purposes.

4 Doubt has been felt by some practitioners as to the circumstances in which recurring attacks in the same person require re-notification. If the affected person continues at work, successive attacks, especially when distinct from those preceding, should each be notified. The case of persons affected with chronic poisoning who have ceased work stands on a different footing, seeing that the latter phases are not attributable to any new exposure to harmful factory or workshop conditions. Such cases have presumably been reported on previous occasions and it is not necessary to re-notify continuance or even recurrence after employment in dangerous processes has come to an end.

5 *Aniline Poisoning*—This term is meant to include the effects generally known under the term 'anilism'—that is, haemolytic action on the red blood cells so that the lips and complexion assume an ashen grey colour, with shortness of breath, etc.

6 *Chronic Benzene Poisoning*—This takes the form of myelopathic anaemia when small quantities of benzene are inhaled over a period of weeks or months.

### National Insurance.

#### RANGE OF MEDICAL SERVICE

WE have received from the Ministry of Health a copy of the decision of referees appointed by the Minister to settle a question arising under Article 38 of the Medical Benefit Consolidated Regulations, 1924. The referees were Mr E. H. Tindal-Atkinson, C.B.E., Barrister-at-law (Chairman), Dr Alexander Forbes, and Dr John Steed. Their report (slightly abridged by us for publication) is as follows.

Our inquiry was held in relation to the question whether amputation of the second toe at the metatarsophalangeal joint as a cure for hammer toe is within the range of medical service within the meaning of Article 38 and Clause 10 (2) of the Terms of Service for insurance practitioners.

The operation had been performed by Dr Malcolm Macleod upon Edna Norbury of Hulme. Both the Local Medical Committee and the Insurance Committee were in agreement that this operation was outside the range of medical service, and the matter was consequently referred to us by the Ministry of Health in accordance with Article 38 (4) of the Regulations. Our inquiry was held at Manchester on June 1st, 1927. Mr L. G. Dawson represented the Minister of Health, and Dr R. G. McGowan the two Committees.

There was no dispute as to Dr Macleod possessing the skill necessary for this operation from actual recent practice in performing this kind of service, and it was admitted that he was recognized locally as proficient in this respect.

The contentions put forward on the part of the Minister may be summarized under the following heads:

(a) The operation is well within the competence of a general practitioner.

(b) The operation represents one of several forms of treatment for hammer toe.

(c) In regarding the range of medical service it is impossible to separate a particular service into (i) the decision made in selecting one of several forms of treatment, and (ii) the operation involved in the selected form of treatment.

The third contention was advanced in anticipation of the main contention put forward on behalf of the Committee, which is fully dealt with below.

The witnesses called in support of these contentions were Dr A. Y. Greenwood, Dr H. Lund, a consulting surgeon of Manchester, Dr W. Rigby, a Regional Medical Officer for the Liverpool district, and Dr W. Davidson, a Divisional Medical Officer. These gentlemen were all in agreement as to the comparatively simple nature of the operation, and we scarcely think it necessary, for the reasons hereinafter appearing, to deal with detail their several experiences in performing it, or the alternative operations which may be undertaken in a case of this character, some of which might well, upon consideration, be found to be outside the range of medical service.

On behalf of the Committee, Dr McGowan did not adduce evidence, and we summarize his contentions as follows. While it is not denied that the actual amputation is within the competence of a general practitioner, in this particular case, where a decision has to be made as to the choice of treatment, the making of that decision so far invests the general practitioner with the character of a specialist that the whole service—that is, the advice coupled with the operation—must be considered as outside the range of medical service.

Dr McGowan pointed out that of recent years, orthopaedic surgery has become specialized, and that amputation is a cure for hammer toe as out of date in a case where, for example,

rejection of the joint would produce a more favourable result and would avoid a probable complication following amputation—namely Lullux valgus with consequent union.

During the inquiry it became fairly clear to us that the Committee had disagreed from a medical point of view with the decision which Dr Macleod had come to in selecting this form of treatment, and in a letter dated May 17th, 1927 from Dr McGowan as secretary of the Local Medical Committee, to the Minister of Health it was stated that one of the points chiefly influencing that Committee in their decision was that Sir Robert Jones, an authority on orthopaedic surgery, states in one of his books that the second toe should not be amputated for hammer toe.

In an inquiry held under Article 38 we held the view that it would not only be inadvisable but outside the functions of the referees to take into consideration or to come to any conclusion upon an issue as to the propriety from a medical point of view of the treatment carried out by the practitioner. We can only assume that the operation was legitimately undertaken and in justice to Dr Macleod there was no evidence that it was not completely successful as a cure in this particular case.

Our decision in this case must therefore be read in the light of the view as to our duties and the assumption stated in the preceding paragraph, and our unanimous opinion is as follows:

(a) The making of a decision in the choice of alternative forms of treatment is part of the duty of an insurance practitioner.

(b) The act of selecting one form of treatment does not in our opinion in the least affect the nature of the service rendered—that is in an insurance under Article 38—not in our opinion if possible upon such an issue to regard the particular service divided into decision and operation.

(c) Although amputation may not necessarily have been the best form of treatment in this case, the operation was clearly within the range of medical service.

(d) We regard as irrelevant to a decision under Article 38 considerations as to the propriety of the treatment selected.

In the result the conclusions of the Minister of Health need.

We should add that no evidence was forthcoming as to custom or practice peculiar to the Manchester district and in arriving at our decision we have therefore not taken into account any such custom or practice.

### LONDON PANEL COMMITTEE

A MEETING of the London Panel Committee was held on July 26th Dr H J CARDALE presiding.

**The Chair of the Committee.**—The chair having been temporarily taken by Dr Bayly, the re-election of Dr Cardale as Chairman of the Committee was proposed by Dr Gregg, who said that the esteem in which Dr Cardale was held by the members of the Committee and by insurance practitioners generally had increased continually during the now many years of his chairmanship. Dr Allen seconded the motion which was carried unanimously. Dr Cardale on again taking the chair thanked the Committee for the honour they had done him. The re-election of Dr Gregg to the vice-chair and of Dr A F Heald to the treasurership was also unanimous.

**Maternity Benefits.**—A special session of the Committee was appointed to consider as to measures which might be taken to secure prompt payment of sickness and maternity benefits. This arose out of a former resolution of the Committee. The Insurance Acts Committee to take up this matter and the reply of the Insurance Acts Committee that it could not see that any action on its part would have the desired effect the matter being one which did not primarily affect insurance practitioners.

**Federation of Medical and Allied Services.**—The Committee had before it a recommendation from one of its subcommittees that a representative to serve upon the Federation of Medical Allied Services should not be reappointed during the forthcoming year. The recommendation led to some discussion in the course of which the Chairman said that when he was first appointed a representative on the Federation that body took an interest in medical matters generally including national health insurance, but of late years it had dealt less with general medical matters and more with industrial medicine which subject it approached he thought not altogether from the general practitioners' point of view. Dr Clark Trotter moved the reference back of the subcommittee's recommendation. On a show of hands the voting was equal but a paper vote showed a clear majority against the reference back and the original recommendation not to appoint a representative was carried by 22 votes to 21.

### LONDON INSURANCE COMMITTEE

A MEETING of the London Insurance Committee was held on July 26th Mr DAVID DAVIS presiding.

#### Range of Medical Service

The Medical Benefit Subcommittee submitted a list of the medical services which had been held by the Local Medical Committee. The Insurance Committee agreeing to be beyond the competence and skill of a general medical practitioner. The number of these

cases into the inception of medical benefit had been 336. Of this number 229 had to do with eye testing and prescribing glasses, in 32 of the cases the service had been the giving of ultra-violet light treatment for various conditions and in 20 the enucleation of the tonsils. The remainder included a very varied range of services from salivarian injections to hysterectomy but it was pointed out by the committee that it must not be assumed that the services as such were outside the scope of medical benefit for the service was considered in relation to each particular case and its precise circumstances. Mr Rockliffe said that since he called for this report he had learned that it had been definitely agreed that the amending bill to be introduced into Parliament next year must be an agreed bill inasmuch as parliamentary time and other matters would not admit of a controversial measure. Therefore the money for any extension of services could not be obtained by the process recommended by the Royal Commission—namely the pooling of societies' funds. It might be however that somewhere there was hidden money which would enable an extension of medical services to take place and he was hopeful that this return would show that there were cases not of a very serious character in respect of which insured persons had required treatment in the past and in which some might be found under the Act of giving such treatment in the future. Miss Samuel drew attention to the fact that some of the services performed by insurance practitioners outside the scope of their obligations under the Act had been of the nature of major operations and she inquired whether any information had been received as to the results or treatment which was admitted to involve the application of skill and experience such as general practitioners as a class could not reasonably be expected to possess. The Chairman said that the Committee had received no complaints.

#### Censure for Mistaken Diagnosis

A long discussion took place on a case in which an insured person had died from a strangulated hernia after having been admitted in a moribund condition to hospital in the service of a practitioner having treated her for several days previously for a reducible hernia. In the opinion of the Medical Service Subcommittee the practitioner while not negligent in the ordinary sense of being inattentive or careless, had made a grave error in diagnosis and had not taken the steps reasonably to be expected in such a case of a general practitioner of ordinary professional competence and skill. The recommendation of the subcommittee was that he be severely censured. Mr Scott moved an amendment that the case be reported to the Ministry with a view to deduction from monies payable. He said that it was inconceivable even to a layman how a qualified practitioner could have missed the evident signs of a strangulated hernia. The details of the symptom set out in the subcommittee's report tallied with those given in a medical dictionary a significant of this condition. Dr H H Mills chairman of the subcommittee said that the case had been very carefully considered. The practitioner had been most assiduous in his attention to the patient but somehow he had not made the deduction from the evident signs which should have led him at once to send the patient to the hospital. The patient was only sent to hospital in the end as the result of the persistence of her relatives and it was then too late for an operation. But the recommendation of severe censure without a prospective fine was the very deliberate conclusion of the subcommittee. Dr Cardale said that to many medical men it seemed incomprehensible that the diagnosis should have been missed especially if it was brought to the practitioners' notice as the subcommittee found it had been, that there was faecal vomiting. That the practitioner did miss the diagnosis and honestly missed it there could be no doubt. He had tried to reduce the hernia and thought he had succeeded but what he had done no doubt was to push the swelling down more deeply into the tissues. He begged Mr Scott not to rely too much on a medical dictionary which was liable to be misleading in practice for all the given symptoms of a particular condition might be present, and yet to the doctor in charge of the case it might be evident that the condition was something different. It was easy in medicine to be side-tracked. Mr Rockliffe pointed out that on his form of medical record the practitioner had entered more than a week before the patient's death a hernia partially strangulated but Dr Mills stated that the practitioner had explained that he had used the wrong word the description which he meant to set down was reducible hernia. Mr Scott's amendment to fine as well as censure was defeated 10 voting in favour and 12 against and the motion of severe censure was carried. Mr Scott asked what were the qualifications of the practitioner but the Chairman pointed out that all practitioners on the panel were duly qualified in England and beyond this the Committee was not concerned.

### Naval and Military Appointments

#### ROYAL NAVAL MEDICAL SERVICE

Surgeon Commander H SIC Colson to the *President*, additional, Medical Department Admiralty, temporary. A. S. McIvor to the *Calypso*, Surgeon Lieutenant Commander I. W. Gunn to be Surgeon Commander, Surgeon Lieutenant Commander J. S. Elliott to the *Calcutta* on transfer. Surgeon Lieutenant A. H. Harkins is promoted to the rank of Surgeon Lieutenant Commander.

#### ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Commander T. B. Dixon to the Field for R.N. Barracks for fourteen days training. Surgeon Lieutenants R. B. Wyatt and R. A. Condon (probationary) to the Victoria for R.N. Hospital Haslar for fourteen and twenty-eight days training respectively.

H. L. Hoffmann has entered as probationary Surgeon Sublieutenant and attached to the London Division.  
Probationary Surgeon Sublieutenant E. T. Doleman to the Victoria for R.N. Hospital, Haslar, for fourteen days training.

#### ROYAL ARMY MEDICAL CORPS

The following Majors retire on retired pay: R. E. Todd, D. B. McGriggar, O. B. E., T. Dowling (and is granted the rank of Lieutenant Colonel), J. F. Grant, O. B. E.  
Captain F. C. Tibbs to be Major.  
The following Captains to be Majors (prov.), F. R. H. Mallan, M.C., A. O. F. Alloy, M.C., A. J. Beveridge, M.C., D. Fettes.

#### ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenants J. B. Gregar to R.A.F. Base, Mediterranean, T. Sheehan to R.A.F. Station, Donibristle.  
Flight Lieutenant J. J. Walsh is transferred to the Reserve, Class D.1.  
Flying Officer Michael Joseph Marren is dismissed the service by sentence of General Court Martial.

#### TERRITORIAL ARMY

##### ROYAL ARMY MEDICAL CORPS

Lieut. Colonel G. H. L. Hammetton, C.M.C. D.S.O., T.D. (supernumerary), is retired on reduction of establishment, and retains his rank with permission to wear the prescribed uniform.  
Lieut. Colonel W. Lister, T.D., to be Brevet Colonel, with precedence of September 14th, 1926.  
Lieutenant E. G. Oastler from the supernumerary list for service with the O.T.C., to be Lieutenant, with precedence as from January 3rd, 1926.  
N. R. Rawson, late Temporary Captain R.A.M.C., to be Lieutenant, with precedence as from May 6th, 1925.  
H. S. Davies to be Lieutenant.

#### TERRITORIAL ARMY RESERVE OF OFFICERS

##### ROYAL ARMY MEDICAL CORPS

Major J. S. Ward, having attained the age limit, relinquishes his commission and retains his rank.

#### COLONIAL MEDICAL SERVICES

Dr. R. Mugliston promoted Senior Medical Officer, Gold Coast. Drs. H. R. M. Ferguson promoted Senior Medical Officer and J. G. S. Turner promoted Medical Officer of Health (Sanitary Department), Nigeria, respectively. Dr. J. S. Robinson appointed Medical Officer, Nigeria. Dr. D. C. Garnett Medical Officer, Uganda has resigned.

### VACANCIES

BATH ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer (male, unmarried) Salary at the rate of £130 per annum.  
BROFORD COUNTY HOSPITAL.—Assistant House Surgeon (male, unmarried) Salary at the rate of £130 per annum.  
BIRMINGHAM CHILDREN'S HOSPITAL.—(1) Resident Medical Officer (2) House Physician Salary £175 and £75 per annum respectively.  
BIRMINGHAM UNION.—Medical Superintendent of the Silk Oak Hospital and Medical Officer of adjoining Institution Salary £1,000 per annum, rising to £1,200.  
BRIDFORD MUNICIPAL GENERAL HOSPITAL St. Luke's.—House Physicians and Surgeons Salary at the rate of £200 per annum each.  
BRISTOL GUARDIANS.—Second Assistant Medical Officer at the Southmead Hospital Salary £200 per annum.  
CARLISLE CUMBERLAND INFIRMARY.—Two Resident Medical Officers, one to be House Physician and House Surgeon for six months each salary at the rate of £155 and £175 per annum respectively the other to be Junior House Surgeon for six months, salary at the rate of £135 per annum.  
CHESHIRE JOINT COUNTIES MENTAL HOSPITAL.—Senior Assistant Medical Officer (male unmarried) Salary £450 per annum.  
CITY OF LONDON MATERNITY HOSPITAL, City Road E.C.1.—(1) Registrar Honorarium £100 per annum (2) Honorary Dental Surgeon.  
DORSET ROYAL INFIRMARY AND DISPENSARY.—Third House Surgeon (male) Salary at the rate of £150 per annum.  
DUNEDIN NEW ZEALAND UNIVERSITY OF OTAGO.—Senior Demonstrator in the Department of Physiology Salary £400 to £500 per annum, according to qualifications.  
FIFE GOVERNMENT.—District Medical Officer Salary £500 per annum, rising to £725.  
GLEBECK CORPORATION.—Medical Officer of Health Salary £1,000 per annum.  
HEREFORDSHIRE GENERAL HOSPITAL, Hereford.—House Surgeon Salary £150 per annum.  
HULL ROYAL INFIRMARY.—Assistant House Surgeon (male) Salary at the rate of £150 per annum.  
INFANTS HOSPITAL Vincent Square S.W.—Anaesthetist.  
JOHANNESBURG UNIVERSITY OF THE WITWATERSRAND.—Senior Lectureship in Physiology Salary £516 per annum rising to £726.  
KINGSTON, FULHAM, AND CHelsea GENERAL HOSPITAL.—Senior and Junior Resident Medical Officers Salaries at the rate of £125 and £100 per annum respectively.  
KNOWLE MENTAL HOSPITAL Fareham.—Senior Assistant Medical Officer (male) Salary £700 per annum, rising to £800.  
LEICESTER ROYAL INFIRMARY.—Surgical Dressers Honorarium 10s 6d. per week.  
LIVERPOOL HOSPITAL FOR DISEASES OF THE HEART.—(1) House Physician (2) Clinical Assistants.  
MANCHESTER EINFELD HOSPITAL.—House Surgeon.  
MINOR HOUSE HOSPITAL Golders Green N.W.11.—House Surgeon (male, unmarried) Salary at the rate of £200 per annum.  
MIDDLESBROUGH NORTH RIDING INFIRMARY.—Junior House Surgeon (male) Salary at the rate of £150 per annum.  
NEWCASTLE TYNE UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Professor of Anatomy.

NOTTINGHAM CHILDREN'S HOSPITAL.—Resident House Physician (woman) Salary at the rate of £150 per annum.  
PAISLEY DISTRICT ASYLUM.—Clinical Assistant Salary £100 per annum.  
PLYMOUTH HOMOEOPATHIC AND GENERAL HOSPITAL.—House Surgeon (male) Salary £100 per annum.  
QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.2.—Casualty Officer Salary £100 per annum.  
READING ROYAL BERKSHIRE HOSPITAL.—House Surgeon Salary £150 per annum.  
ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1929.  
ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.1.—Male Casualty Officer Salary at the rate of £150 per annum.  
SCARBOROUGH HOSPITAL AND DISPENSARY.—Two House Surgeons Salary £125 per annum.  
STAMPA'S HOSPITAL SOCIETY.—Assistant Medical Officer at King George's Sanatorium for Sailors, Liphook, Hants Salary at the rate of £700 per annum.  
SHEFFIELD ROYAL HOSPITAL.—Resident Surgical Officer (male) Salary £200 per annum.  
WEST HAM UNION.—Two District Medical Officers Salary £800 per annum each.  
WINDMILL ORTHOPAEDIC HOSPITAL, Headington, near Oxford.—Secretary and Workshops Manager Salary £550.

CERTIFYING FACTORY SURGEONS.—The following vacant appointments are announced: Towcester (Northamptonshire), Orewkerne (Somersetshire). Applications to the Chief Inspector at Factories, Home Office, Whitehall, S.W.1.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

### British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE  
TAVISTOCK SQUARE, W.C.1

#### Departments

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SCOTTISH MEDICAL SECRETARY 6, Drumsheugh Gardens Edinburgh (Telegrams) Associate Edinburgh Tel. 461 Central.  
IRISH MEDICAL SECRETARY 16, South Frederick Street, Dublin (Telegrams) Baellius Dublin Tel. 4737 Dublin).

### APPOINTMENTS

ASHWORTH, Esther M.B., Ch.B. D.P.H., Assistant Medical Officer of Health to the Holmden County Council.  
DUNCOMBE, Clement, M.B., B.Ch. Camb., D.P.H. Oxon. Assistant Medical Officer of Health and School Medical Officer, County Borough of Croydon.  
DUNCOMBE, Nicholas D., M.B., B.Ch. D.P.H. Camb. Assistant Medical Officer of Health and School Medical Officer, County Borough of Southampton.  
HARRINGTON, A. W. M.D. Medical Referee under the Workmen's Compensation Act, 1925 for employment in cases arising under the Metal Grinding Industries (Sickness) Scheme, 1927 in the districts of Ayr, Kilmarnock, Lanark, Paisley, Greenock, Renfrew County, Dute Isle of Arran, Stirling, Falkirk and Dumfriesshire County.  
TORTRELL, D. F. M.B. B.Ch., B.A.O. Dub. Certifying Factory Surgeon for the Market Rasen District, co. Lincoln.  
WEST BROMWICH AND DISTRICT HOSPITAL.—Honorary Physicians: P. C. P. Gloake M.D. B.S. M.R.C.P. Lond. and Alan Wilson M.C., M.B., B.S. Lond. Honorary Orthopaedic Surgeon: J. B. Leather M.B., B.S. Camb., F.R.C.S. Lond. Honorary Ear, Nose and Throat Surgeon: P. B. Gillespie, I.R.F.P.S. Glas., M.R.C.S., L.R.C.P. Edg.

### BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 2s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

#### BIRTH

FULTON.—On July 24th at Measera Ismailia, Egypt to the wife of Captain G. H. Fulton, Royal Army Medical Corps a daughter.  
WALKER.—On July 29th 1927 at Eastchurch Kent to Flight Lieutenant and Mrs. W. J. Graves Walker a daughter.

#### MARRIAGE

HEER.—CONNELL.—At Netherswell Church Stow Glos. on July 25th, J. R. B. Heer M.A., B.M. B.Ch. Oxon. M.R.C.P. son of J. H. Heer M.D., late at Darlington to Eleanor daughter of Archdeacon Connell of Stow on the Wold, Gloucestershire.

#### DEATHS

EDWARDS.—On July 18th at his residence, 11 Hawkwood Road, 1st 4 Davies Edwards M.B. B.S. Lond. B.Sc., D.P.H., Medical Officer of Health, Bournemouth in his 48th year.  
LAWSON.—On July 28th at the London Hospital Henry, Dillon F.R.C.S. Y.R.C.I., elder son of the late Henry A. Lawson F.R.C.P. and S. Ed.

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY AUGUST 13TH 1927

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### British Medical Association

#### CURRENT NOTES

##### Scholars and Grantees for 1927-28.

THE SCIENTIFIC COMMITTEE made the following recommendations to the Council for the year 1927-28, and they have been accepted by the Council.

##### Ernest Hart Memorial Scholarship (Value £200)

WHITTLE CLAUDE HOWARD MA MD MRCP (Cambridge).—Second year. The pathology and epidemiology of pneumonia and pneumococcal infections.

##### Ordinary Research Scholarships (Twice, each of the value of £150)

WILSON WILLIAM COMBE MD FRCSE (Edinburgh).—Second year. Injury and disease of the thoracic organs in order to elucidate the mechanical and pathological factors involved and to assess the value of treatment by surgical measures.

CAMERON GORDON ROY M.B. BS (Melbourn).—Research into the morbid anatomy, histology and etiology of pancreatic disease.

BAIRD DUGALD B.Sc. M.B. Ch.B. DPH (Glasgow).—Investigation of the bacteriology of infections of the urinary tract in pregnancy with possible application to treatment.

##### Grants

Grants to the amount of £350 were made as follows.

SHAW RONALD CUTHBERT FRCR LRCP (Manchester).—The etiological relations between the various forms of thyroid gland in toxic goitre with special reference to the surgical aspect. £70.

HOLLE JOHN CLIFFORD M.B. BS (Cambridge).—Factors influencing the blood level in normal rabbit, including diet with the administration of Ca salts orally and intravenously and of Collip parathyroid hormone. £15.

WILSON ISABEL GRACE M.B. Ch.B., MD DPM (London).—Disseminated sclerosis. £5.

GRAVE HENRIETTA HART MP Ch.B., MRCP (Sheffield).—The result of the tranplantation of endometrium and other tissues cut to the pelvic peritoneum of rabbit and the nature of the resulting tumours. £20.

CORFMAN WILLIAM SYDNEY CHARLES MA MB BCh MRCP (Cardiff).—A correlated investigation of the functional analysis of the stomach contents with the clinical type and course of disease in rheumatic children. £25.

DECK ELDER WILLIAM STEWART MA DSc MD Ch.B. FRCR Edg. (London).—The physiology and pathology of the uterocervical pressure. £70.

HOLMES ERIC GORDON MA MB BCh (Cambridge).—The metabolism of brain tissue. £50.

CROWDER GRAY PASCOE MSc MRCS LRCP (London).—The nervous control of the suprarenal gland. £25.

BURNETT WILLIAM ANDERSON M.B. Ch.B. DSc (Glasgow).—The investigation of changes in electrical reactions in nerve and muscle employing the accurate method of rhodopa and chro. £20.

MACKAY IAN LINDSAY B.Sc. MD Ch.B. (Wolverhampton).—The multiviscous variation in cellular of the organic and inorganic constituent of the blood in general anaesthesia. £20.

##### The Membership of the Association

We are glad to be able to announce that the membership of the Association is now over 33,000.

### THE ANNUAL EXHIBITION OF SURGICAL INSTRUMENTS, APPLIANCES, DRUGS, FOODS, ETC

(Continued from p. 101)

#### Ophthalmic Instruments

A very interesting and educative display was made of ophthalmic instruments by Theodore Hambro Limited. Only one or two of the many instruments can be selected for mention. One was the new Worth amblyoscope with original pictures, another the Lister perimeter and scotometer, which has lately been improved in several ways. There were numerous ophthalmoscopes, one to which special attention was directed being a student's luminous ophthalmoscope convertible to a non-luminous pattern. The ophthalmic drawings and lantern slides of the fundus and of external diseases, the work of a special staff of draughtsmen were again a feature.

The large exhibit of John Weiss and Son Limited may be placed under this heading because although it included much that was of interest from the point of view of general surgery it had also a very distinctive collection of ophthalmic instruments. Among these were Snelair's instruments for intracapsular extraction of the lens, Harrison Butler's strabismus hook and combined muscle clamp and Maddox's lacrimal syringe. Another exhibit in this section was the finger-grip attachment in stainless steel applied to iris capsule, and fixation forceps. There was a good collection also of ophthalmoscopes with prism reflector also of test types and of coloured test objects for charting fields. Among the general surgical instruments shown by this firm mention should be made of De Martel's clamp for abdominal surgery and various patterns of forceps, gouges, and chisels.

#### Acoustic Instruments

Improvements in aids for the deaf seem to be all in the direction of concealment. It is curious that while no one is ashamed of wearing glasses—indeed, the "tortoiseshell" frames rather emphasize the requirement—people seem to be afraid of the presence of any instrument which would indicate that their hearing is subnormal. The latest electrical aid shown by General Acoustics Limited, was "shell'con," an extremely small instrument the battery quite a midget, and the earpiece worn without a head band about the size of a farthing the entire contrivance weighed only a few ounces. Another feature of interest here was a testing set for eight different types of microphone to enable instruments to be built up to suit the particular condition.

R. H. Dent again showed his "ardente" series, including on this occasion a "wrist-watch" instrument. The contrivance is worn most inconspicuously on the wrist as if it were a watch, and comes into action immediately upon a

Chemical and Pharmaceutical Preparations

Of the exhibit of another Edinburgh firm, J F Macfarlan and Company, we had something to say in describing their ligatures. Among their other chemical manufactures was opiodine, which is a standardized preparation of the alkaloids of opium, also anæsthetic ether and chloroform, and a range of pharmaceutical chemicals, including salicin.

The stand of Parke Davis and Company contained samples of many preparations from this firm's laboratories in Middlesex. The eye was first taken by a range of gland products in tablet form, including thyroid and pituitary. A preparation of pituitary was shown for which it is claimed that it contains a minimum of protein matter and is stable. Adrenalin appeared in the well known 1 in 1,000 solution. Among the antitoxins and serums exhibited was the concentrated streptococcus antitoxin for scarlet fever, supplied in 10 ccm bulbs for treatment and 25 ccm for temporary immunization of contacts. The diphtheria toxin for the Schick test and heated toxin for use as a control also figured among the exhibits, and a new introduction was intestinal vaccines for school children. These well known drugs of an older much discussed era—those of the typhoid, and vermin—again appeared in the stand along with some later ones for which the stand was also prepared.

**Exhibition**

deformans and in syphilis and gonorrhoeal complications. Demonstrations of the Schering "conglobation test" for syphilis and several others were given.

Another series of products illustrating the resources of Evans, Sons, Leichenberg & Co. was given.

Genutasau, Limited, in addition to their sanato-gen tonic food and other preparations, showed a series of detoxicated vaccines, declared to be from fifty to one hundred times less toxic than ordinary vaccines, and consequently suitable for administration in much larger doses and imparting greater immunity. Among the newest introductions were antiviral vaccines (local immunity) for skin application, and a vaccine throat spray for coryza.

A large and varied chemical exhibit was shown by F. H. Spicer and Company, who are the distributors in Great Britain for laboratories abroad. Attention was drawn principally to a bactericidal emulsion, "morbact," presenting the *B. acidophilus* in a suitable form and concentration for acting bactericidally on the pathological organisms of the intestinal canal. Other preparations shown were metaphen, an organic mercury compound, cideidin, containing 15 per cent of available iodine in combination with lime and starch, and butyn, the local anesthetic, all bearing the name of the Abbott Laboratories, Chicago. Another exhibit here was the troupelet tablets, in which phenacetin, acetyl-salicylic acid, and codain are combined with a trace of Homburg salt. A large number of Homburg preparations, including the salts prepared from the spring water shown at Wiesbaden, or liquid solutions in which various products to which Boots Pure Drug Company's name is attached, such as salicylanilide, or liquid salicin in which salicylic acid is dissolved, are also shown.

How the pharmacopoeia can be given sweet flavor and fragrance was demonstrated by Oppenheimer, and Company, Limited. Hero was an aerosol vaporizer for reducing all liquids to invisible mist and various tablets and containers for insulating mist into the system in the least obvious and most agreeable way. Among the many preparations were milk, magnesium hydrate in semi-colloid condition. An interesting exhibit was the oxygen generator in the shape of an instrument for the evolution of oxygen gas, 99 per cent purity, from chemical cubes, in the same manner acetylene gas is generated from calcium carbide. Arrangement was offered only for emergency, not to distill cylinders.

Petrolagum, a palatable emulsion guaranteed to contain 65 per cent pure medicinal paraffin, with agar as the emulsifying agent, was shown by the firm of the name. A demonstration was given of the stability of the emulsion as compared with ordinary coloured water, and in addition to the raw material, test vials in which petrolagum is issued were exhibited, namely, plain, with phenolphthalein, all alone, and sweetened.

Another stand devoted to an intestinal lubricant, that of Kaylene, Limited. Kaylene is a colloidal form of aluminium silicate, and was shown also as Kaylene.



and again with a certain proportion of phenolphthalein to reinforce action in obstinate cases of constipation. The firm also showed a highly refined liquid paraffin prepared with a raspberry flavour for the use of children.

Nujol was seen again at the stand of the Anglo-American Oil Company, Limited and appeared also in the form of a pleasantly flavoured agar emulsion containing 50 per cent of the nujol to those with a palate too sensitive to the plain preparation. Hero also was to be seen mistol a combination of menthol, camphor, and eucalyptol in pure mineral oil, offered for its soothing and antiseptic properties when brought by means of an atomizer into contact with the mucosa of the nose and throat. The firm also showed a skin-killing spray under the name of Nit.

Gland products were shown in considerable variety at the stand of G. W. Curriel Company, of New York, who a London agents are Brooks and Warburton, Limited. One of them was boronate for the treatment of irregularities of menstruation. This and other products were offered to the profession with the assurance that they were made from the fresh glands of healthy food animals in the firm's own laboratories, and that every substance for which there is a recognized chemical or biological assay is analysed and standardized, while for the products in which an active principle has not been discovered the firm's chemists have set up certain standards based upon analytical determination to which every lot of glands must conform.

Another range of American gland products appeared at the stand of Armour and Company with respect to whose glandoid series it was stated again that only glands of maximum potency from fresh material obtained in the firm's own abattoirs adjoining the laboratory were employed. Attention was drawn to specimens of actual glands preserved in their natural colours, particularly posterior pituitary lobes. A non-boilable catgut ligature was also exhibited here.

The Ichthol Company showed the sulphur preparation of that name obtained from the quarries at Sceteld in the Tyrol. Literature was distributed recounting the romantic story of ichthol, which by the way, bears a misleading name, for the idea that it comes from fossil fish has been long since exploded. The peddling of the oil in the Tyrol has been going on for hundreds of years, but the use of ichthol as a recognized substance in medicine, especially in dermatology, dates back only to the last generation. Among the newer preparations shown was ichthargan, which is a compound of ichthol with silver ichthoform, a product of the reaction of ichthol with formaldehyde and ichholan, combining vaseline and linoline with ichthol.

The exhibit of Matthews Laboratories, Limited concentrated on digitalis which was shown in "Hatcher cat-unit." The cat-unit of digitalis introduced by Hatcher and Brodie in 1910, is the weight or the lethal dose of the dry drug in a cat when a solution is slowly given by intravenous injection. An interesting feature of the stand was the actual plants of *Digitalis purpurea* in flower.

Andrews liver salt, a pleasant-tasting saline aperient, was the exhibit of Scott and Turner, Limited. It was made up in two sizes, 4 oz and 8 oz in cylindrical tins. Sal hepatitis another well known effervescent saline combination, was shown by the Bristol Mills Company, and this firm also exhibited a dentifrice the ipana tooth paste for which antiseptic properties were claimed. Calcium salt was shown by the Sandoz Chemical Works under the name of calcium Sandoz and was recommended for its easy assimilation. Other preparations at the Sandoz stand were allitrim and calamine tablets, fermergin (alkaloid or ergot or rye) and seilgren (glucose idol or squill).

Among the many exhibits of the Hoffmann La Roche Chemical Works was isacen a synthetic aperient. Another preparation here was somnifine a liquid hypnotic for administration orally or by intramuscular or intravenous injection recommended by the firm for the commencement of anaesthesia and for reducing the quantity of inhalation anaesthetic to a minimum.

A very large number of pharmaceutical preparations were shown at the stand of the Anglo-American Pharmaceutical Company, Limited. These included agar-agar (agar agar with lactic acid ferments of Bulgarian milk with phenolphthalein), betol oil (a compound liniment containing the methyl ester of salicylic acid in combination with menthol), and various other medicaments and ointments, syrups, and powders.

The Anglo-French Drug Company and Modern Pharmaceuticals, Limited, combined at a stand, where they showed a large series of preparations, among them one called adrepato for the treatment of haemorrhoids, creosal svrup for respiratory troubles, orargol, a colloidal gold and silver antiseptic, and sularsenol for the treatment of syphilis. Some radio active substances were also shown here, including mesothorium and a preparation combining this element with the properties of colloidal copper. The Inhaling Drug and Apparatus Company, Limited, again showed the Spiess-Drager drug nebulizing and inhaling apparatus and inhalants.

Finally came the compounds of the house of Jeyes, including the many different forms of cylin, also jersol and branaleano, the latter a 33 per cent solution of glycol borate in glycerin, coloured with tincture of rubin, and offered as an antiseptic and sedative in the treatment of ulcerated conditions of the throat and in other affections of the mucous membrane.

One firm only appeared to specialize in toilet preparations—namely Kolynos, Incorporated. It showed dental creams and powder, including liquid kolynos for use as an antiseptic mouthwash, gurgle, or spray.

(To be continued)

## Meetings of Branches and Divisions

### BOMBAY BRANCH

The first meeting of the new session of the Bombay Branch was held at the Pathological Laboratory of the Grant Medical College on June 25th.

Miss BAROUR opened a discussion on anaemia in women in Bombay. She stated that the type of anaemia was more with fewer oedema diarrhoea and vomiting. Delivery premature or otherwise did not always lead to improvement. The blood picture was usually like that in pernicious anaemia. Less than half of these patients' serums were positive to the Wassermann test. Signs of haemolysis especially in the liver and spleen were found at necropsy. She thought the condition might have an infective origin or be originated by some chemical toxins from the intestines or some type of antinuclear or deficiency in assimilation of iron. It might be related to the toxæmia of pregnancy. She ended with a few words on treatment.

Dr PADNANI said that patients with sprue might start with diarrhoea and after improving temporarily die from anaemia. Severe secondary anaemia might closely resemble this type of anaemia. The points of distinction in pernicious anaemia were constant signs of haemolysis and absence of hydrochloric acid from the gastric contents. In sprue the van den Bergh reaction was indirectly positive.

Miss TURNER WATT stated that in Mysore two decades previously she had seen similar cases of anaemia in pregnant women. Induction of labour in the cases was not always successful. She suggested complete rest, the administration of calcium iron and arsenic by injection and cardiac stimulants in the treatment with transfusion whenever possible and feasible.

Lieut Colonel HAMILTON reported that such cases were also met with in Calcutta. Goones and one Mohammedan were specially affected. He was convinced that it was restricted to pregnancy and differed from other anaemia. He had never seen a case in Poona.

Lieut Colonel F. P. MACKIE of the Haifkin Institute who formerly agreed that sprue and pernicious anaemia were definitely separate diseases.

On the motion of Colonel Mackie seconded by Dr M. BAROUR it was unanimously resolved.

That the Council of the British Medical Association in London be asked to consider the question of giving a grant towards the inquiry into the causation of the anaemia of pregnancy which is cramped for want of funds.

It was stated that the inquiry which was under the direction of Miss Margaret Barour was being carried on at the Haifkin Institute with the aid of a grant from the Indian Research Fund Association.

Lieutenant BENJAMIN described a case of pernicious anaemia which showed the typical blood picture and was steadily going downhill in spite of treatment with haematinics and dilute hydrochloric acid. Auto erythropoiesis resulted in rapid improvement and the patient's red blood cells rose from 7,000 to 2,275,000 per cubic millimetre.

Dr P. T. PATIL and Dr KHANSAKA continued the discussion.

## Naval and Military Appointments

## ROYAL NAVAL MEDICAL SERVICE.

Surgeon Commanders C H M Gimlette to the *President* additional, for three months post graduate course appointment to the *Suffolk* cancelled H E Y White CVO, OBE, to the *Victory*, additional, for R N Hospital, Haslar (temporary, superannuated) T C Creaser to the *Nelson* on commissioning

Surgeon Lieutenant Commanders A W McRorie to the *President*, additional, for three months post graduate course F C Hunot to the *Barmouth* W E Heath to the *Esguard*, L S Goss to the *Suffolk*, J C Brown to the *Vivid* for *Rodney*

Surgeon Lieutenants N A Dickinson to the *Hermes* L P Spero to the *Adamant*, P J A The O'Rourke to the *Pembroke* for the *Centurion* for trials D V Beaton to the *Pembroke* for R N Hospital Chatham, J I Malone to the *Nelson* on commissioning W H Briddfield to the *Tamar*, additional

## ROYAL ARMY MEDICAL CORPS

Lieut Colonel J H R Winder, DSO, retires on retired pay. The following Captains to be Majors: T McNair, D H Murray, E Underhill (prov.), R A Mansell, MBE, J T Scroggie. The following Lieutenants to be Captains: C W Greeway, C R Christian, R J Rosic, J Huston, E G Dalziel, MC

## ROYAL AIR FORCE MEDICAL SERVICE

Group Captain C E C Stanford DSO to Headquarters, Coastal Area. Wing Commander H M S Turner, MBE, to Headquarters, Fighting Area, Uxbridge.

Squadron Leaders T J Kelly MC to Headquarters Inland Area, Stanmore V R Smith to No 5 Flying Training School, Sealand, E A H Gray to Home Aircraft Depot Henlow. Squadron Leader F C Jobson relinquishes his commission on completion of service.

Flight Lieutenant O S de Segundo, OBE, VD to Inspector of Recruiting on appointment to a temporary commission. Flying Officers L P Carroll to R A F Station, Worthy Down G W McMeer to R A F Depot, Uxbridge.

## VACANCIES.

ADLEY-TWITCH INFIRMARY AND CARDIGANSHIRE GENERAL HOSPITAL—House Surgeon (male) Salary £200 per annum

BATH ROYAL MINERAL WATER HOSPITAL—Resident Medical Officer (male, unmarried) Salary at the rate of £130 per annum

BEAUFORT COURT HOSPITAL—Assistant House Surgeon (male, unmarried) Salary at the rate of £130 per annum

BIRMINGHAM CITY—Medical Officer of Health Salary £1,800 per annum

BIRMINGHAM GENERAL HOSPITAL—Medical Registrar and Resident Medical Officer Salary £155 per annum

BIRMINGHAM UNION—Medical Superintendent of the Selly Oak Hospital and Medical Officer of adjoining Institution Salary £1,000 per annum, rising to £1,200

BOLTON UNION—Second Assistant Medical Officer (male) at Townley's Hospital Salary at the rate of £225 per annum

BOOTH BOROUGH HOSPITAL—(1) Senior Medical Officer (2) Two Junior Medical Officers (males) Salary £150 and £125 per annum respectively

BRIGHTON HOVE AND PRESTON DISPENSARY AND HOVE HOSPITAL—Honorary Surgical Registrar to the Western Branch of the Dispensary

Bristol General Infirmary—(1) Two House Physicians (2) House-Surgeon (3) Resident Obstetric Officer (4) House Surgeon to Special Departments (5) Casualty House Surgeon. Salary at the rate of £80 per annum each rising to £100 in the event of a second appointment

CLIFF ROYAL INFIRMARY—Ophthalmic House Surgeon Salary £75 per annum

CUMMERTON JOINT COUNTIES MENTAL HOSPITAL—Senior Assistant Medical Officer (male unmarried) Salary £450 per annum

CERNAGOSHIRE AND ANGLESEA INFIRMARY, Bangor—House Surgeon Salary £200 per annum

CHESTER ROYAL INFIRMARY—Honorary Radiologist Honorarium 300 guineas per annum

CITY OF LONDON UNIVERSITY HOSPITAL City Road E.C.1—(1) Registrar Honorarium £100 per annum (2) Honorary Dental Surgeon

DARLINGTON GENERAL HOSPITAL—House Surgeon (male) Salary £150 per annum

DUMFRIES CRITCHON ROYAL MENTAL HOSPITAL—Chemical Pathologist Salary £400 per annum increasing to £700

EAST AFRICAN MEDICAL SERVICE—Medical Officer as an Assistant Bacteriologist Salary £500 per annum rising to £840, and thence subject to efficiency bar to £920

GUILDFORD BOROUGH—Medical Officer of Health and School Medical Officer to the Borough Medical Officer of Health for the Rural District and Medical Officer to the Guildford, Godalming and Woking Joint Hospital Board Salary £800 per annum and £100 travelling allowance

HARPER ROYAL HARPER INFIRMARY—Resident Surgical Officer (male, unmarried) Salary £250 per annum

HOVE LIDY CHICHESTER HOSPITAL—(1) House Physician (2) Junior House-Physician Salary at the rate of £100 and £50 per annum respectively

KILGERSON HULL INCORPORATION FOR THE POOR—Assistant Resident Medical Officer for the Institution and Infirmary Salary £300 per annum

KNOLE MENTAL HOSPITAL Farnham—Senior Assistant Medical Officer (male) Salary £700 per annum rising to £800

LIVERPOOL EAR, NOSE AND THROAT INFIRMARY—Honorary Assistant Surgeon to the Ear, Nose and Throat Department

LIVERPOOL AND SAMARITAN HOSPITAL FOR WOMEN—House Surgeon Salary at the rate of £100 per annum

LIVERPOOL STANLEY HOSPITAL—(1) House-Physician (2) House-Surgeon (male) Salary at the rate of £100 per annum

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASE OF THE THROAT AND CHEST—Resident Medical Officer for the Inpatient Department

Middle Central Hospital Greenwich Road S.E.10 Inpatient Honorarium 52 guineas per annum

NEWCASTLE UPON TYNE UNIVERSITY OF DURNING COLLEGE OF MEDICINE—Professor of Anatomy

NEWCASTLE CITY—Assistant School Medical Officer (temporary) Salary 11 guineas a week

NEWBURY JENNY LIND HOSPITAL FOR CHILDREN—Resident Medical Officer (male) Salary at the rate of £120 per annum

NOTTINGHAM CHILDREN'S HOSPITAL—Resident House Physician (woman) Salary at the rate of £150 per annum

NOTTINGHAM GENERAL HOSPITAL—Resident Casualty Officer (male) Salary at the rate of £200 per annum

ORAGO UNIVERSITY, New Zealand—Professor of Dentistry Salary £100 per annum

PLYMOUTH SOUTH DEVON AND LAST CORNWALL HOSPITAL—Casualty House Surgeon

RICHMOND ROYAL HOSPITAL Surrey—Assistant House-Surgeon (male) Salary at the rate of £100 per annum, rising to £150 on appointment as Senior after six months

ROMFORD UNION—Resident Second Assistant Medical Officer at Old Church Hospital (unmarried) Salary £250 per annum

ROYAL FREE HOSPITAL Gray's Inn Road, W.C.1—House-Physician to the Children's Department

ROYAL NORTHERN HOSPITAL, Holloway Road, N.7—House-Surgeon Salary at the rate of £70 per annum

RUGBY HOSPITAL of St. Cro's—Senior and Junior Resident Officers (males) Salary at the rate of £150 and £100 per annum respectively

STAMPA'S HOSPITAL SOCIETY—Assistant Medical Officer at King George's Sanatorium for Sailors, Liphook, Havts Salary at the rate of £200 per annum

SHEFFIELD ROYAL HOSPITAL—(1) Honorary Assistant Ophthalmic Surgeon. (2) Honorary Physician

STOCKTON INFIRMARY—Resident Medical Officer (unmarried) Salary £150

STOCKTON AND THORNHALL INFIRMARY—House-Surgeon (male) Salary £75 per annum

WEIR HOSPITAL, Grove Road Balham S.W.12—Senior and Junior Medical Officers (male, unmarried) Salary £150 and £100 per annum respectively

WEST LONDON HOSPITAL, Hammersmith Road, W.6—(1) House Physician (2) Two House-Surgeons (males) Salary at the rate of £100 per annum

WINDFIELD ORTHOPEDIC HOSPITAL, Headington, near Oxford—Secretary and Workshops Manager Salary £550

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE  
TAVISTOCK SQUARE, W.1

## Departments

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GRAMS MEDISERA WESTCENT LONDON)

EDITOR British Medical Journal (Telegrams Etiology Recent London)

Telephone numbers of British Medical Association and British Medical Journal Museum 9851, 9852, 9853, and 9854 (internal exchange four lines)

SCOTTISH MEDICAL SECRETARY 6, Drumbeugh Gardens, Edinburgh (Telegrams Associate Edinburgh Tel. 4561 Central)

IRISH MEDICAL SECRETARY 16, South Frederick Street, Dublin (Telegrams Bacillus, Dublin Tel. 4737 Dublin)

## APPOINTMENTS

GARDNER, A. W., M.B. Ch.B. Ed. Junior Resident Assistant Medical Officer at the Booth Hall Infirmary, Manchester Union

HOWELL, Gilbert H., M.B. B.S., Registrar to the Ear, Nose, and Throat Department of Charing Cross Hospital, W.C.2

MCALLISTER, Andrew, F.R.C.S. Eng., Assistant Surgeon to the Samaritan Free Hospital for Women and Assistant Gynaecological Surgeon to the Royal Waterloo Hospital for Women and Children, London

O'DONOVAN, Wm. Jas., O.B.E., M.D. Lond., M.R.C.P. Lecturer on Diseases of the Skin at the London Hospital Medical College

PETTY, M. J., M.B. Camb., F.R.C.S. Eng., Honorary Surgeon to the British Hospital Buenos Aires

## POST-GRADUATE COURSES AND LECTURES.

WEST LONDON HOSPITAL POST GRADUATE COLLEGE Hammersmith W.12—Mon

10 Department 11 a.m. Surgical

Wed 11 a.m. Department 11 a.m. Surgical

Thurs 2 p.m. Department 11 a.m. Surgical

Fri 2 p.m. Department 11 a.m. Surgical

Sat 2 p.m. Department 11 a.m. Surgical

Sun 2 p.m. Department 11 a.m. Surgical

Mon 2 p.m. Department 11 a.m. Surgical

Tue 2 p.m. Department 11 a.m. Surgical

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Sun 2 p.m. Department 11 a.m. Surgical

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Thurs 2 p.m. Department 11 a.m. Surgical

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Sat 2 p.m. Department 11 a.m. Surgical

Sun 2 p.m. Department 11 a.m. Surgical

Mon 2 p.m. Department 11 a.m. Surgical

Tue 2 p.m. Department 11 a.m. Surgical

Wed 2 p.m. Department 11 a.m. Surgical

Thurs 2 p.m. Department 11 a.m. Surgical

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY AUGUST 20TH 1927

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### British Medical Association

#### CURRENT NOTES

##### Annual Conference of Local Medical and Panel Committees.

THE annual conference of representatives of Local Medical and Panel Committees will be held in the Great Hall British Medical Association House, Tavistock Square, London on Thursday, October 20th next, under the chairmanship of Dr F K Le Fleming (Wimborne Dorset). The report of the Insurance Acts Committee for the past year has been circulated to Local Medical and Panel Committees and is published in this issue of the SUPPLEMENT. All motions for inclusion in the provisional agenda of the conference should be in the hands of the Medical Secretary not later than Monday September 19th. Motions or amendments for the final agenda must be received by Monday October 10th. The final agenda will be issued on Thursday, October 13th.

##### Election of Direct Representatives upon Insurance Acts Committee and Scottish Subcommittee.

Nominations may now be made for the election of twenty-three direct representatives upon the Insurance Acts Committee for the session 1927-28. Forms have been circulated to Local Medical and Panel Committees and must be returned so as to reach the Medical Secretary not later than Monday, October 10th. Nominations may also be made for the election of eight direct representatives on the Insurance Acts Subcommittee (Scotland)—four by Scottish County Panel Committees and four by Scottish Burgh Panel Committees. The completed forms must be returned by Monday, October 10th.

#### ANNUAL REPRESENTATIVE MEETING

##### Puerperal Pyrexia Regulations

By the mischance of the separation of a sheet of "copy" the remarks made by Dr W A M SWAN (St Pancras) at the Representative Meeting on July 18th in moving the resolution regarding payment to the general practitioner for consultations under the Puerperal Pyrexia Regulations, were omitted from the report. The text of the St Pancras resolution was given (SUPPLEMENT, July 30th, p 58) and the fact that Dr Swan moved it. The report should have added that Dr Swan, in proposing the resolution said that it was usual in the case of a private consultation for the general practitioner to charge a fee since it was an extra service outside his actual attendance

on the case, and took up an appreciable amount of his time. The history etc of the case had to be prepared by him, and the practitioner spent a longer time in consultation than did the consultant, also he was responsible for carrying out any recommendations the consultant might make. If general practitioners were compelled to meet consultants without fee in cases of puerperal pyrexia, the principle might be established whereby other consultations of a similar nature would be forced upon them. The question of anaesthetics came up. Would the general practitioner be expected to give the anaesthetic should it be necessary? The motion furnished an opportunity to carry into practical effect in terms of remuneration the sympathetic references to general practitioners which had been made at that meeting.

##### Representatives' Excursion to the Scott Country

Some of the representatives who took part in the excursion to the Scott country as recorded in the SUPPLEMENT of July 23rd (p 52) expressed a desire to have picture postcards commemorative of it. Dr Samuel Davids (Mausehold Kelso) has been good enough to arrange to supply a set of four postcards: two are views of Floors Castle, one of Dryburgh Abbey and one of Galashiels war memorial. He will send the set, post free, to any representative on receipt of 6d.

To the list of representatives and delegates from Oversea Dominions who were presented to the President on the occasion of the Annual General Meeting (SUPPLEMENT July 23rd p 50) should be added the name of Dr B T ZWAR Vice-President of the Victorian Branch and its representative and delegate.

#### Association Notices

##### BRANCH AND DIVISION MEETINGS TO BE HELD

**KENT BRANCH**—The Kent Branch will meet at the British Legion Village Preston Hall, Aylesford near Maidstone on Thursday August 25th at 3 p.m. at the invitation of Dr J B McDougall the Medical Director. The industries carried on will be seen and Dr McDougall will give clinical notes of cases of interest. Tea will be provided.

**SOUTH BRANCH BRIGHTON DIVISION**—A meeting of the Brighton Division will be held at the Queen's Road Dispensary on Thursday September 1st at 3.30 p.m. report of representatives on Annual Edinburgh report of Secretary on Committee on Education of Edinburgh Charities Committee any other business. Address by Dr Bond, CBE, on his visit to Paris for the Paul Cullenary.



was for very many years the directly elected representative upon the Committee of Group C (Staffordshire and Shropshire) and always how'd a very keen interest in the welfare of insurance practitioners. Besides his membership of the Insurance Acts Committee he was a member of the Central Council of the Association and of several Committees and was Chairman of the Staffordshire Local Medical and Panel Committee.

#### STANDING ORDERS OF CONFERENCE OF LOCAL MEDICAL AND PANEL COMMITTEES

9 A strict interpretation of the existing Standing Order (xiii) does not allow of a motion for the revision of a resolution of a previous Conference being submitted by the Insurance Acts Committee. It is therefore considered that the Standing Order should be amended so as to make this possible.

The Committee recommends —

(Recommendation A) That Standing Order (xiii) be amended so as to read as follows —

(xiii) Revision of Resolutions.—A motion to rescind any resolution of a previous Conference shall not be in order at any subsequent Conference unless notice is given in the Provisional Agenda either by the Insurance Acts Committee or by the Local Medical and/or Panel Committees of at least five separate areas. In the latter case the notice must be received by the Insurance Acts Committee at least four calendar days before the date fixed for the issue of the Provisional Agenda.

#### CONSTITUTION OF INSURANCE ACTS COMMITTEE

10 The Committee has considered Minute 11 of the last Annual Conference dealing with the grouping of Local Medical and Panel Committees for the election of direct representatives upon the Committee and requesting the Committee to arrange if necessary for an alteration of its constitution so as to provide for an increase of not more than two additional direct representatives. This resolution was passed by the Conference mainly because of the desire of Cheshire which is at present bracketed with the whole of Wales as a Group to be allowed to join an English Group.

11 The Committee has had its consideration of the matter upon the number of insurance practitioners in each area on the 1st January 1927 and finds that the majority of Groups are at present represented on the Committee by one member for about 1,000 insurance practitioners. If Cheshire were removed from Group E so as to leave Wales and Monmouth a Group by itself this Group would be represented by two members for 1,314 practitioners (1 in 657) involving considerable over-representation as compared with other Groups. Furthermore it would be very difficult to place Cheshire equitably with any of her existing Group. Any rearrangement of the Grouping by reassigning the Group either with or without one or two additional members between them seems to be incompatible with any convenient territorial arrangement and would seem to cause at least as many inequities as would be removed. The Committee is therefore of opinion that the grouping should remain as at present.

(Recommendation B) That the number of direct representatives upon the Insurance Acts Committee and the grouping of areas for the purpose of their election remain as at present.

#### II—AMENDMENT OF MEDICAL BENEFIT REGULATIONS

12 At the last Annual Conference the Committee submitted to the Conference recommendations dealing with the following matters and received the approval of the Conference thereto —

(i) Charging of Fees (Minute 46) (ii) Notification of Right of Appeal to Minister against Decision of Insurance Committee (Minute 50) (iii) Withholding of Grant by Minister in case of alleged failure to keep proper records (Minute 54) (iv) Notice of Variation of Terms of Service (Minute 55) (v) Cases of doubt as to title to Benefit (Minute 56) (vi) Supply of drugs in cases of persons making own arrangements (Minute 74) (vii) Issue of Prescriptions for the purpose of drug testing (Minute 77) and (viii) Emergency Treatment for Temporary Residents (Minute 79). The Minister of Health was duly informed of the above mentioned resolutions of the Conference which in order to give effect to them necessitated alterations in the Medical Benefit Regulations or Distribution and Allocation Scheme. The Ministry stated however that in view of the alterations which would probably also be required to be made later in connection with other matters under discussion including the disciplinary procedure under the Act any general amendment of the Medical Benefit Regulations would be better postponed for the time being.

#### III—DISCIPLINARY PROCEDURE

13 A number of resolutions were passed by the last Annual Conference dealing with the disciplinary procedure under the National Health Insurance Act. The Conference also had before it a letter upon the subject from the Ministry of Health dated 9th October 1926 (M 16) in which it was suggested that arrangements might be made whereby in cases raising the question of the exercise by an insurance practitioner of reasonable care and skill in the treatment of an insured person the Minister might have available the advice of medical practitioners who were not officers of the Ministry. The principal resolution of the Conference was Minute 13 which gave the Insurance Acts Committee authority to negotiate with the Ministry upon the proposal contained in the above mentioned letter from the Ministry. Arrangements were accordingly made for a discussion of the whole question between the Insurance Acts Committee and representatives of the Ministry. This took place on November 30th 1926 and a full report of the proceedings was published in the Supplement to the B M J of December 11th 1926.

14 Arising out of this meeting with the Ministry it was arranged that the discussion should be continued at a subsequent date by a smaller conference representative of both sides and a meeting was held on December 9th 1926. At this further meeting representatives of the Insurance Acts Committee stated that there were aspects of the disciplinary machinery question other than the proposed professional panel which it was possibly worth considering with a view to ascertaining whether or not any part of the present machinery could be modified so as to obviate many of the complaints put forward by the profession and it was ultimately agreed to postpone further discussions until the Insurance Acts Committee had reviewed the whole of the disciplinary machinery drawn up its views as to the amendments if any which it desired to be made in the machinery and submitted them to the Ministry with a view to further joint meetings being arranged to discuss them in detail.

15 The Insurance Acts Committee has therefore considered very fully all the disciplinary provisions contained in the present Medical Benefit Regulations and has submitted its suggestions to the Ministry both in correspondence and in conference. In formulating its proposals the Committee had in mind two principles: first that the responsibility of the Minister of Health to Parliament for the efficiency of the medical service requires that any disciplinary machinery must be such that it can be absolutely relied upon to cure that complaints shall be investigated fairly and judicially so that the Minister can with confidence promulgate his decision; and second that in the investigation of a complaint the tribunal hearing the evidence should be made responsible for deciding on the recommendation and either that such recommendation should not be varied by individuals or bodies who have not had the opportunity of hearing the evidence or in the alternative that any such variation should not become operative without full information being given to the person complained against as to any or all recommendations made in his case by any of the various bodies through whose hands it has gone in order that he may exercise his judgment on the question of appeal.

16 The Committee recognizes that it would be inconsistent with constitutional practice for the Minister to attempt to divest himself of his responsibility to Parliament for the maintenance of a medical service to which grants are made from public funds but at the same time the Committee considers it essential that before making a decision in disciplinary matters the Minister should be advised in a manner different to that which has existed up to now.

17 The following are the proposed modifications of the procedure for dealing with complaints against insurance practitioners agreed to between the Insurance Acts Committee and the Ministry —

#### Withholding of Grant Cases Advisory Committee to the Minister

(i) The Committee has obtained an assurance from the Minister to the effect that before coming to a decision to withhold grant in any case in which the practitioner is charged with negligence he will seek the advice of practitioners or standing to be selected possibly in rotation from a panel nominated for the purpose by the Insurance Acts Committee. Three of these practitioners chosen from this panel will sit with the Chief Medical Officer of the Ministry as Chairman and two other medical officers of the Ministry as a joint advisory committee to the Minister. This joint advisory committee will make before the report of the Medical Service Subcommittee the resolution of the Insurance Committee as well as the report of the doctors' oral representation in the case and has the right to make oral representations or his written representations if he has chosen to adopt that course.



(ii) This new joint advisory committee will act in all cases in which the practitioner is charged with negligence, whether the charge is one of failure to exercise reasonable skill and care in treatment, or of failure to visit or of failure to order or supply some medicine or appliance which it is alleged, ought to have been ordered or supplied or of failure to discharge such obligation as is imposed upon him by the regulations to assist a patient to obtain necessary treatment which it was beyond the practitioner's province to provide. These are practically all the cases except fee charging in which a complaint is made by or on behalf of an insured person. Cases of fee charging and certification would not come before this joint advisory committee, unless some professional question was also involved.

(iii) The Minister has also agreed that any regulations which will have to be framed to meet this new proposal shall be framed so as to leave him a discretion to refer to this joint advisory committee any other disciplinary case in regard to which its advice would be of assistance, and he has intimated that it is his intention to exercise this discretion liberally. This joint advisory committee will have to advise on the question whether the facts found amount to a failure to provide proper treatment and also to advise as to the appropriate penalty, and should the committee be unable to arrive at a unanimous conclusion the non-official members that is those chosen from a panel of doctors nominated by the Insurance Acts Committee, will have the right to submit to the Minister a separate report.

(iv) The Minister has also agreed to associate one of the non-official members of the advisory committee with the official officers of the Ministry in the hearing of oral representation in those cases which fall to be referred to the joint advisory committee, whether these representations follow on a report of a Medical Service Sub-Committee and the recommendation of the Insurance Committee or upon the report of an Inquiry Committee appointed under Part VI of the Regulations, as a result of which the facts found by that Committee do not appear to the Minister to justify the removal of the respondent doctors from the medical list but the question of withholding grant is under consideration.

(v) With regard to the hearing of appeals under Article 35 of the Regulations, the Minister has agreed to the appointment of a non-official member of the advisory committee to sit with the officials hearing the appeal, in the capacity of an expert assessor, with liberty to put such questions as seem to him necessary to elucidate any medical issues involved in the case.

(vi) It will be appreciated that an appeal differs entirely from oral representations and is a party case in which both parties may be and often are legally represented. The issues are questions of fact or of law, or both and the doctor concerned if he is the respondent in the appeal, has not the same opportunity as in the case of oral representation of putting forward considerations in mitigation of penalty. The persons hearing the appeal have no jurisdiction to give any decision, their duty being to find the facts and to report them to the Minister. The Insurance Acts Committee has however, expressed the wish that the respondent doctor should have a further opportunity where an appeal is decided against him of making oral representations in mitigation of penalty and to this the Minister has offered no objection, although it must be appreciated that it would necessarily involve the attendance of a doctor on a second occasion.

(vii) Alternatively it would be administratively preferable to allow any plea in extenuation to be heard at the end of the hearing of the appeal, but it is recognised that this may embarrass the doctor's representative in his conduct of the respondent's case, and therefore the Insurance Acts Committee proposes to take legal advice before deciding on the procedure which should be adopted in this particular connection.

(viii) The Minister has further agreed to a non-official member of the advisory committee being associated with the official officers of the Ministry in hearing oral representations in cases which do not come within the scope of the advisory committee, e.g., cases of improper fee charging and certification cases.

(ix) Other directions in which alterations and improvements have been suggested by the Insurance Acts Committee, and to which the Minister has given his approval, are—

#### *Charges against Practitioners to be specific*

(x) Cases have occurred which have caused great local resentment in which the Clerk of the Insurance Committee has insufficiently set out the nature and ground of a

complaint which has been made against a practitioner, thus leading the Medical Service Sub-Committee into a sort of roving enquiry. The Committee considered that the Clerk of the Insurance Committee should be required to give the respondent practitioners a clear indication of the breach of the terms of service which they are alleged to have committed.

(xi) The Minister has expressed his willingness to issue a circular to Insurance Committees urging the need for exercising the utmost care to see that when practitioners are summoned to appear before a Medical Service Sub-Committee the nature of the complaint is set out as clearly as possible. At the same time the Committee will be advised that if in the course of a hearing the respondent doctor complains that a new issue has been raised, of which he has not been given notice, and he asks for an adjournment this application should be allowed.

#### *Position of Insurance Committee Clerk in Medical Service Cases*

(xii) Difficulties have been experienced in areas where the Clerk of the Insurance Committee regards it as his duty to prosecute the respondent doctor, and to meet this difficulty the Minister has agreed to advise all Committees to leave the conduct of cases referred to the Medical Service Sub-Committee, either by the Insurance Committee or the Medical Benefits Sub-Committee, in the hands of the Chairman of the Medical Service Sub-Committee and to limit the functions of the Clerk in this relation to a statement of the facts which have been brought to the notice of the Committee and which that body has instructed him to bring to the notice of the Sub-Committee.

#### *Preparation of Report of Medical Service Sub-Committee*

(xiii) Cases have arisen in which the statement drawn out by the Clerk for the information of the Insurance Committee has been regarded as inaccurate by one or more members of the Sub-Committee. There being no shorthand note there is nothing to appeal to for corroboration except the memories of those who were present. To meet this difficulty the Minister proposes to instruct Insurance Committees to have a shorthand note taken at all hearings of the Medical Service Sub-Committee by the best stenographer on the staff of the Committee. From these notes the Clerk will be required to write up a full memorandum of the case which, when approved by the Chairman, will be circulated as a draft to the other members of the Sub-Committee. If the accuracy of the draft on any material point is questioned by any member the matter must be taken up at the next meeting of the Sub-Committee. If no amendments are suggested, or only small verbal corrections, the memorandum will be accepted as conclusive. The Minister further proposes to instruct Insurance Committees that no report of a Medical Service Sub-Committee should be circulated to the Insurance Committee until it has been submitted to the members of the Sub-Committee present on the occasion in question.

#### *Medical Service Cases where Professional Questions arise*

(xiv) The Insurance Acts Committee considers that it is necessary to secure that in cases in which the Medical Service Sub-Committee has made a finding contrary to the unanimous advice of the medical members of the Sub-Committee on a question regarded by them as being purely professional the fact should be recorded in the report of the Sub-Committee. The Minister has informed the Insurance Acts Committee that he sees no reason why, if the professional members of the Medical Service Sub-Committee unanimously dissent on professional grounds, their grounds for so dissenting should not be recorded in the report.

#### *Recommendations of Medical Service Sub-Committee*

(xv) The Medical Service Sub-Committee in addition to being empowered to submit recommendations in one of the four ways set out in existing Article 30 (2) will also be permitted to recommend either the cautioning or censuring of a practitioner.

(xvi) The Insurance Acts Committee has asked that if and when the Medical Service Sub-Committee recommends the withholding by the Minister of moneys due to a practitioner, it should decide the amount so to be withheld. It is recognised that Medical Service Sub-Committees have already the power to make such a recommendation if they think fit, but the suggestion is that they should invariably do so.

(xvii) The Minister considers that this proposal would occasion considerable difficulty, since although the Medical Service Sub-Committee might be agreed that the

facts found were such as to justify the withholding of money it does not follow that both sides would be agreed as to the amount to be withheld. If the recommendation in regard to the amount to be withheld were adopted by a majority the minority whether it consisted of medical members or of approved society representatives would probably require their dissent to be recorded and the Insurance Committee and subsequently the joint advisory committee would have before them two conflicting recommendations.

(viii) It was also suggested by the Minister that in substance on the formulation of definite recommendations would tend to provoke in some cases an acrimonious debate which would be prejudicial to the relations between the lay and medical members.

(ix) The Minister has however expressed his willingness to issue a circular requesting all Medical Service Sub-Committees to include in their reports a definite recommendation as to the amount of money to be withheld in the agreement of both sides can be secured. Failing unanimity as to the amount the Medical Service Sub-Committee should endeavour to agree upon some form of recommendation which would give some indication of the degree of gravity which in their view attached to the case e.g. by recommending that the amount to be withheld should be substantial or otherwise. In the absence of a recommendation that the amount withheld should be substantial it would be inferred that though the Sub-Committee regarded the facts as found by them as justifying the withholding of money they did not regard the case as one of gravity. The Insurance Acts Committee has accepted these suggestions of the Minister as equitable and largely meeting the point under discussion.

#### Practitioner to be furnished with Report of Medical Service Sub-Committee

(xx) The Insurance Acts Committee was in some doubt as to whether or not the doctor is furnished with the report of the Medical Service Sub-Committee when he is notified of the Insurance Committee's recommendation.

(xvi) The Committee is informed by the Minister that under Article 34 (1) of the Regulations Insurance Committees are required to furnish the doctor with a copy of the report of the Medical Service Sub-Committee and so far as the Minister is aware this practice is invariably followed. It does not appear therefore that any amendment of the Regulations is necessary in this connection.

#### Persons who may appeal

(xxi) The Insurance Acts Committee considered that the right of appeal to the Minister given under Article 34 (1) to any person or society should be limited to any person or society concerned in the particular case.

(xxii) To meet this point the Ministry has agreed to the insertion of the word 'such' before the word 'person' in the 5th line of Article 34 (1) which will then read as follows—

34 (1) The Committee shall inform the persons (including a society) concerned in any investigation by the Medical or Pharmaceutical Service or Joint Service Sub-Committee of their decision in the matter and shall furnish them with a copy of the report of the Sub-Committee and any such person or society aggrieved by the decision of the Committee shall be entitled to appeal to the Minister by sending to the Minister notice of appeal within one month from the date on which notification of the decision was received.

#### Definition of Minister's Power under Regulation 36

(xxiv) Regulation 36 gives to the Minister power to withhold money from an Insurance Committee and so from an individual practitioner if he is satisfied whether on consideration of the Report of a Medical Service Sub-Committee or a Joint Services Sub-Committee or otherwise that an insurance practitioner has failed or neglected to comply with the terms of service. The Insurance Acts Committee feels that the power thus given the Minister by the words 'or otherwise' is far too wide and asked that the wording be varied so as to limit the power of the Minister to initiate complaints against practitioners to cases of alleged failure to keep adequate medical records to return Form R 2 or to make reports on tuberculosis cases. The Minister agreed to the omission of the words 'or otherwise' subject to the insertion of other words making it quite clear that the Minister has power to withhold the grant after an enquiry under Part VI or Part VII or without any such enquiry in the three classes of cases above mentioned.

#### Definition of Minister's Power under Article 56

(xxv) The Insurance Acts Committee considered that Article 56 should be deleted in order to prohibit the Minister from holding an enquiry in the absence of any representation.

(xxvi) The Minister has expressed his willingness to agree to an amendment of Article 56 so as to provide that his power to order an enquiry without any representations to that effect having been made to him should be limited to cases in which the doctor has already been convicted on a criminal charge.

18 This new procedure set out above to be followed before the Minister makes his final decision is one which is considered by the Insurance Acts Committee to be preferable to allowing the practitioner a right of appeal to the High Courts. Such right of appeal to the High Courts could probably only be obtained if the present disciplinary machinery were done away with and practitioners proceeded against in the first instance in all cases of complaint in the County or Police Courts when a right of appeal to the High Courts would properly follow. The Insurance Acts Committee considers that it is in the interests of insurance practitioners and of the Insurance service that the disciplinary machinery should remain within the four corners of the National Health Insurance Acts. The Committee therefore strongly recommends that the proposed new procedure be given a thorough trial. It is also suggested that if these proposals are approved by the Conference the Committee should agree with the Ministry that there shall not be any further alterations in the Regulations for a period of several years.

19 In conclusion the Committee desires to express its appreciation of the way in which the representatives of the Ministry have met the Committee in dealing with this very difficult question of disciplinary proceedings. It has been evident that the desire of the Ministry was to meet the requirements of the Committee as far as possible and to remove any doubts of practitioners as to the absolute fairness of every part of the procedure.

#### TIME LIMIT FOR COMPLAINTS AGAINST AN INSURANCE PRACTITIONER

20 A matter which has caused a good deal of dissatisfaction on in some areas more than in others is the practice of allowing complaints against practitioners to be considered when the period within which such complaints are required by Regulation 23 (1) to be made has expired. The point was taken up with the Ministry and after some discussion during which varying periods have been considered the Ministry has agreed to accept the proposal of the Insurance Acts Committee that in the case of complaints made after the expiration of six weeks from the event complained of but before the expiration of two months the Medical Service Sub-Committee should have a discretion to investigate the complaint. In the case of complaints made after two months the Medical Service Sub-Committee is to be precluded from investigating the case unless the Minister's approval has first been obtained.

#### IV—MISCELLANEOUS

##### CERTIFICATION AND SICKNESS BENEFIT CLAIMS—CHANGE OF DOCTOR

21 It will be remembered that at the last Annual Conference Sir Walter Kinnear, Controller of the Insurance Department at the Ministry of Health, addressed the Conference upon the serious position in which Approved Societies appeared to be finding themselves owing to the increased claims made upon their Sickness Benefit funds. The Conference instructed the Committee to see what practical steps could be taken to meet the difficulties raised by Sir Walter Kinnear and the representatives present pledged themselves to use their influence locally in order to secure strict adherence to the principles governing certification under the National Health Insurance Act.

22 Immediately after its first meeting subsequent to the Conference the Committee issued a letter (M 23) to Local Medical and Panel Committees drawing attention to the matter and urging upon them the necessity for advising insurance practitioners of the need for strict compliance with the certification rules in order that it could not justly be said that doctors as well as patients were treating National Health Insurance as if it were a form of Unemployment Benefit. Local Medical and Panel Committees were also asked to forward expressions of opinion upon any special cause or causes of increased Sickness Benefit claims on which they might be aware in their own areas. Such expressions of opinion as were received were given full consideration by the Committee and Minute 99 of the last Annual Conference suggests certain restrictions with regard to an insured

person's right to change his doctor, was also taken into consideration. The result of the Committee's full consideration of the matter is set forth in the following communication addressed to the Ministry of Health on January 26th 1927—

British Medical Association  
B.M.A. House  
Law Society, Square  
London W.C.1  
26th January 1927

Dear Sir

Sir, Re: Benefit Claims and Certificates

The Insurance Acts Committee has given careful consideration to the question of certification under the National Health Insurance Act in its relation to Sickness Benefit claims which was the subject of an address to the Annual Conference of representatives of Local Medical and Panel Committees in October last by Sir Walter Kumner, and particularly to the possible relation of the insured claimant for sickness benefit to the condition which allows for change of doctor at any time by insured persons.

With regard to this latter point I am restricted in stating that after a full and frank discussion of the matter is concerned the Committee remains firmly of opinion that the present method of recording of doctor by patient is the ideal principle in any system of national health insurance, and that it would not be advisable to return to the previous arrangement under which insured persons could only claim their medical attendance at home doctor. At the same time the Committee recognises that the additional duties of insured persons in their practitioners compared with their duties as private practitioners necessitate the existence of certain procedures in connection with the principle of change of doctor which are not necessary in private medical practice, and modification of this procedure may be necessary. The Committee submits in this connection the method proposed should be regarded in one of the insured persons should be required to give a statement in writing prescribed way, to give a statement in writing to the Insurance Committee at the time of change of doctor, provided that a person receiving treatment from a doctor should have the right of immediate change of doctor subject to the mutual consent of the two practitioners concerned. It is believed that the interpretation of a small formal check such as this would give the insured person who may be annoyed because he has been refused a certificate on which he may claim Sickness Benefit the opportunity to reflect.

There is one aspect of the question which was referred to in the discussion on November 30th 1926 namely the possibility of making provision for obviating in future the situation which arose recently in Durham and elsewhere where owing to the coal stoppage many persons were brought to bear upon the insurance system by the trade unions to obtain Sickness Benefit for their members in order to conserve the union funds. The Ministry is urged to take into very serious consideration the desirability of providing in advance for a situation which may easily arise again.

The Committee is also of opinion that certification rules bearing less severely upon insured persons than those at present in operation, that is to say, relying more upon his discretion while providing for a more rigorous prosecution of the individual wrongdoer would result in more efficient certification.

With respect to the general question of the recent increased claims the Committee would point out that under a system of compulsory State Insurance the attitude of the individual insured person with regard to obtaining benefit from State funds is entirely different from that of the voluntary member of an old friendly society or similar body. He will apply for benefit from funds which he regards as State provided and practically unlimited where he would never have claimed from a fund built up entirely from contributions of himself and his fellows. The present tendency to look to the State for help in every emergency is likely to make this factor more important as time goes on. Secondly, the economic pressure which keeps many sick persons at work who might very properly remain away and consequently be in receipt of Sickness Benefit is removed in times of unemployment, with the result that such persons quite properly claim Sickness Benefit. Then there is the wide spread and somewhat vexatious use at present made of medical referees by the approved societies which the Committee believes is tending to lessen the insurance practitioner's sense of responsibility in the matter of certification. Another cause which is operating in regard to women is the advice received at ante-natal and maternity

clinics both before and after confinement. These are, in the opinion of the Insurance Acts Committee, contrary to a system which must be taken into account in any effort to trace the cause of the increase in claims for Sickness Benefit.

In conclusion I am desirous to inform you that the Insurance Acts Committee fully recognises the serious nature of the present position and the duty of the medical profession in this matter. The Local Medical and Panel Committees to hold local meetings on insurance practice the question of certification in its relation to Sickness Benefit claims and to ensure that at such meetings attention should be given to the possibility of co-operation by practitioners in ways which might mitigate the fear that patients who shared to change from a doctor who for one reason had retired Sickness Benefit certificates, would readily be accepted by other practitioners.

Yours faithfully

(Sd) ALFRED COX  
Medical Secretary.

The Secretary,  
Ministry of Health,  
Whitehall,  
S.W.1

This letter to the Ministry of Health was circulated on March 3rd 1927 (M.H. 27) to Local Medical and Panel Committees. It was agreed to arrange meetings of their representatives in order that the question could be fully discussed and recorded that changes might be devised for co-operation of practitioners in the manner indicated in the letter to the Ministry with a view to preventing ill-effects on the movement and the abuse of Sickness Benefit.

1. With regard to the question of in order to strengthen the position of the doctor in the matter of certification the Committee was authorized by Minute 19 of the last Conference to consider the modification of the present method of insured persons to claim a new doctor at any time. The Committee's proposal that insured persons should give two weeks notice of their change of doctor has been submitted by the Ministry and approved by the Approved Societies Consultative Council. The Ministry has expressed a desire to put the new procedure into operation as early as possible and has submitted to the Committee a draft of a new medical card, designed to give effect to the Committee's suggestion. The Committee has no objection to the draft on the ground that it required in insured persons to send a written application to the Insurance Committee to be allowed to change his doctor at the end of fourteen days. Thus the Committee contended, would in many cases result in the insured person imagining that he had to give in his letter a reason which would frequently amount to a complaint against his old doctor in substitution of his request for a change of doctor. After discussion in the matter with the Ministry it has been arranged that the Ministry shall insert in heavy type in the instructions on the card a statement to the effect that an insured person when applying for a change of doctor should not give any reason.

#### CHARGING OF FEES

24. Consideration has been given to Minute 17 of the last Conference expressing the opinion that Form G.P. 15 should be amended so as to provide for the signature of the insured person after paragraph 3 Section (1) acknowledging that he understands it and the date the form being signed by the patient before the service referred to in the form is undertaken. The Committee has carefully considered the manner in which such an amendment might be made to Form G.P. 15, and has not taken into consideration the question of principle involved. The Committee has, however, come to the conclusion that the proposal at the Conference would not be to the best interests of either the patient or the insurance practitioner and has therefore not taken any further action in this matter.

#### MEICAL RECORDS

25. Minute 60 of the last Annual Conference reiterating the previously expressed opinion that it is unnecessary to record all attendances, etc., on medical record cards, except where practitioners had agreed to keep full records of work done for statistical purposes was brought to the notice of the Ministry but the Committee regrets to report that it has not so far been successful in securing any change in the present position. The Ministry states that the expressions of opinion continued in the resolution of the Conference do not appear substantially to affect the chief reasons (set out in paragraph 57 of the last report of the Committee) which led to the Ministry's conclusion that the requirement to keep a record of surgery attendances and visits could not be omitted.

from the system of medical records made obligatory on insurance practitioners and taken into consideration in fixing their remuneration. The Ministry agrees that assuming that the main features of the present system are to be retained there are certain minor modifications which experience suggests may be desirable and would be prepared to discuss these with representatives of the Committee.

26 Notwithstanding the continued refusal of the Ministry to dispense with the requirement that practitioners shall keep a record of every attendance and visit on insured persons the Committee considers that the Conference should reiterate its previously expressed opinion on this matter and recommends—

(Recommendation C) That the Conference reiterate the opinion previously expressed on the subject of Medical Records, namely that the value of careful clinical notes and essential dates on Medical Records is fully appreciated but that it is unnecessary to record all attendances, etc. except where practitioners have agreed to keep full records of work done for statistical purposes.

27 The attention of Panel Committee has been drawn to Minute 62 of the last Annual Conference concerning the inconvenience caused by neglect to forward medical records of insured persons transferred from one practitioner to another and Panel Committee have been asked to improve upon their constituents the necessity for returning the cards promptly when asked for.

#### TRANSFER OF PRACTICES

23 The Ministry of Health agreed to consider the proposal of the 1925 Annual Conference that a return should be made to the original 1913 transfer of practice regulation subject to the period of fourteen days being extended to one month or such other period as may on consideration be found suitable. This was reported to the Conference last year and the Committee's recommendation agreeing to the period being one month was adopted. The matter was brought to the notice of the Ministry at a deputation on November 30th 1926, and the Ministry has since intimated that it is prepared to accept the proposal of the Conference.

#### TITLE TO BENEFIT

29 In 1925 the Conference expressed the opinion that the notification of insured persons to the effect that they are no longer entitled to medical benefit should be made a statutory duty upon approved societies in view of the fact that friction was undoubtedly caused when insured persons applying for treatment were informed that they were no longer entitled to benefit. The Committee reported to the Conference last year (para 75) that certain procedure had been put into operation which it was hoped would result in more prompt and accurate information as to title to benefit being furnished and which the Ministry had said was having this effect. The Conference accepted this assurance and asked the Committee to review the matter in time for the forthcoming Conference and enquiries have been made as to whether the procedure referred to above continues to give satisfactory results. It would appear that since the new arrangements in connection with the clearance of the Central Index Register have been in force the number of insured persons applying for treatment when they are no longer entitled to medical benefit has materially diminished. Having regard however to the immense number of entries to be checked the process of revision is bound to occupy a considerable time before it is complete and its full effects can be estimated.

#### TEMPORARY RESIDENTS

30 Representations have been made to the Ministry with a view to the alteration of the Regulations so as to make it quite clear that an insured person ceases to be a temporary resident at the end of three months from his removal into a new area. The Committee considers that such an alteration is desirable in view of the fact that the present Regulation can be interpreted to allow of payment being made on a temporary resident basis in respect of persons who at the time of removal to another area do not intend to remain in that area more than three months but do in fact remain longer. The Ministry has promised to submit a draft of a new Regulation to meet the wishes of the Committee.

#### PROCEDURE IN CONNECTION WITH CLAIMS FOR EMERGENCY TREATMENT

31 The Committee asked the Ministry of Health to consider the desirability of making provision possibly by a variation of the Distribution Scheme whereby an insurance practitioner is given the right to a hearing before the Panel Committee when it is proposed to deduct from his remuneration

the amount of a claim for emergency treatment by another insurance practitioner in respect of one of his insured patients. The Ministry states that there would be no objection to the amendment of the Distribution Scheme in the manner suggested and is prepared to bring the proposal to the notice of Insurance Committees.

#### PAYMENT OF PRACTITIONER'S EXPENSES IN CONNECTION WITH DISCIPLINARY CASES

32 The Committee had its attention drawn to a case in which a practitioner had successfully appealed to the Minister of Health against the decision of an Insurance Committee and had been awarded the sum of five guineas towards his expenses in connection with the case this being only a small proportion of the legal costs incurred. Representations were made to the Ministry with the result that the Insurance Committee was directed to make a further payment of twenty guineas to the practitioner. The Ministry also agreed that where a practitioner succeeded in an appeal and was found to have been free from blame in connection with the case it was right that he should be reimbursed the taxed costs incurred by him in contesting his appeal less any costs awarded against the insured person which he might reasonably be expected to recover and subject to the understanding that in cases in which the practitioner though successful in his appeal was not entirely free from blame the Minister would feel it necessary to take the practitioner's conduct into account in deciding his award of costs. The Committee has signified its agreement with this statement of the procedure to be adopted in such cases in future.

#### MILEAGE

33 The Committee was instructed by the last Annual Conference (Minute 83) to negotiate on the question of mileage payments to practitioners being made quarterly, and expressed the opinion that this should be a national arrangement. The matter was taken up with the Ministry who pointed out that the Model Scheme for the distribution of the main portion of the Mileage Fund contains a clause providing for the payment of advances in respect of each quarter of a sum not exceeding 20 per cent of the total amount allocated to an area for the previous year. The Ministry states that this provision has been adopted by the majority of Insurance Committees concerned and that in any area where such a provision is not included in the Distribution Scheme it is suggested that the matter should be brought to the notice of the Insurance Committee of the Panel Committee with a view to the necessary amendment being undertaken. It is understood that apart from specific provision in the Scheme the Ministry has authorised payment of advances when Committees who have not adopted the clause above referred to have from time to time applied for permission to make such payments.

#### RANGE OF SERVICE—DENTAL TREATMENT

34 The Committee has not yet heard of a really clear case which would be likely in the law courts to secure a definite decision as to whether dental treatment is included in an insurance practitioner's terms of service or not. In accordance with Minute 92 of the last Annual Conference Local Medical and Panel Committees have been asked to bring to the notice of the Insurance Acts Committee immediately any case of an application for an anaesthetist's fee in connection with dental treatment by an insurance practitioner which appears likely to be suitable for testing the matter in the courts.

#### RANGE OF SERVICE—ULTRA VIOLET RAY TREATMENT

35 Arising out of an application from a Panel Committee for advice in dealing with the claim of a practitioner for charges under Article 38 for services involving the application of special skill and experience in connection with the administration of ultra violet ray treatment the Committee has expressed the opinion that ultra-violet ray treatment is not necessarily a specialist treatment and that it is for each Local Medical Committee to decide upon particular cases as they arise inasmuch as decisions must depend upon local circumstances.

#### MEDICAL BENEFIT FOR SEAMEN

36 Minute 85 of the last Annual Conference expressing the opinion that the existing arrangements whereby the insured seamen who as members of the Seamen's National Insurance Society obtain their Medical Benefit through the Society should be discontinued and that all insured seamen should obtain their Medical Benefit in the ordinary manner through Insurance Committees was communicated to the Ministry of Health. As this opinion coincides with that of

the Royal Commission it is probable that the matter will be dealt with when legislation is introduced dealing with such proposals of the Commission as have been adopted by the Government.

#### MEDICAL BENEFIT FOR INSURED PERSONS OVER 70 YEARS OF AGE

17. The Committee has submitted to it by the Ministry of Health details of a scheme which it is proposed to put into operation for securing correspondence between (a) the number of insured persons over 70 years of age in the Index Registers kept by Insurance Committees of such persons entitled to Medical Benefit and on doctors' lists; and (b) the number actually entitled to, or in a position to claim Medical Benefit. The Ministry stated that it appeared that the present system was unsatisfactory in approved societies was not in a position to keep fully in touch with this class of insured persons who are not entitled to Section or Disablement Benefit and who are not the subject of insurance contributions. The Ministry further stated that the present position results in a considerable omission of the benefits of doctors' lists.

18. The Ministry submitted drafts of a circular letter and model notice to insurance practitioners which it is proposed to issue to Insurance Committees. The main features of the proposed scheme are (1) that the Ministry will from time to time notify Insurance Committees of persons on their Index lists who are over 70 years of age (2) that Insurance Committees will notify the persons and the doctors that the ordinary medical card is to be cancelled and that they must in future fill up and supply medical cards to the valid or periods of 12 months from the end of June to the end of June and (3) that if no application for a special card or renewal of such a card was made within a reasonable period, the patient would be removed from the doctor's list subject to subsequent statement to the Committee received from the doctor. It was stated that the Ministry would then be credited to the doctor in respect of a current year June to June. The Ministry stated that the procedure proposed would of course apply to persons over 65 years of age over the 2nd January 1925 for both widows and Widowers, Orphan and Old Age Contributors. Persons aged 12 to 16 insurance contributions would have to be payable by such persons. The Ministry stated that it was wished that no undue hardship to the persons affected would result from the new procedure and that it would effect an improvement in keeping touch with such persons.

19. Correspondence has taken place between the Committee and the Ministry upon this matter and the Committee has informed the Ministry that its experience leads it to the belief that the Ministry's proposal may constitute a hardship upon the class of insured persons referred to and is likely to give trouble to doctors in getting patients reinstated on their lists. The matter has been discussed with the Ministry and further consideration is being given to the problem.

#### JOINT RESEARCH BY MEDICAL PRACTITIONERS

20. The Ministry of Health forwarded in May, 1926, for the observations of the Insurance Acts Committee a scheme for co-operative research by insurance practitioners which had been submitted by an outside body to the Ministry of Health for its consideration. The Insurance Acts Committee considered the matter and sought the advice of the Science Committee of the Association. The Ministry was then informed that while the Committee could not agree to the scheme suggested it was prepared to consider the possibilities of a scheme for joint research by insurance practitioners. A Sub-Committee was then appointed consisting of representatives of the Insurance Acts Committee and Science Committee. This Sub-Committee has discussed the matter with representatives of the Ministry of Health and has arrived at the following conclusions—

- (1) That any scheme of research must be voluntary and unpaid,
- (2) That any research or researches undertaken should not be restricted to either insurance practitioners on the one hand or to insured persons on the other,
- (3) That the researches should be organised by the Association and that where possible use should be made of the Divisional machinery of the Association, i.e., the Divisions should be asked in respect of certain researches to obtain the co-operation of a number of practitioners (whether engaged in insurance practice or otherwise) in each area,
- (4) That the subject or subjects should be capable of being dealt with by the individual practitioner in a simple manner, and that the results of the enquiry in order to sustain interest should be available after not too long a period.

21. This matter is one which affects the whole profession, and the scheme outlined has received the general approval of the Representative Body of the Association in July. The subjects of the proposed investigation are (a) Various operations and (b) After History of Gastro-Enterostomy. The Insurance Acts Committee hopes that the new system will have the cordial support of all Local Medical and Panel Committees as it is believed that such collective research might prove of real service to the profession and to the community.

#### OPHTHALMIC BENEFIT

22. It is evident that there is still considerable dissatisfaction with the present arrangements for the administration of Ophthalmic Benefit but as the Committee stated in its report last year, there is little prospect of any improvement in the situation so long as this benefit is administered at the entire discretion of Approved Societies or until it becomes the Committee's belief as it should be, one of the statutory benefits under the Act.

23. The main difficulty appears to be the action of Approved Societies in refusing in a large number of cases at any rate the insurance practitioner's recommendation that a particular member of the Society should consult an ophthalmic surgeon. Some societies even go so far as to send to an optician the member's card with such a recommendation and if the optician then refers the member should go to an ophthalmic surgeon the society will not then accept a recommendation. Societies take such action in the course of action, that they have not the funds to pay for the treatment and all cases recommended by insurance practitioners to ophthalmic surgeons, and Sir Walter Hunter, the Controller of the Insurance Department of the Ministry of Health in the course of an address to the last Annual Conference declared that if patients were recommended uniformly to consult an ophthalmic specialist and were not to have Ophthalmic Benefit would cease at an early date on account of the high cost of such treatment. It is of course rather the question as to whether the present arrangements whereby in many instances Approved Societies are treated by ophthalmic surgeons as private patients at a rate of one guinea or even more, is really a fair one offered by the medical profession or whether the position should not give an option either to the patient or to the insurance practitioner. This is a question which is receiving careful consideration by the Ophthalmic Committee on which the Insurance Acts Committee is represented and the Annual Representative Meeting at Durham in July has authorized the Council of the B.M.A. to explore the possibilities of the provision of this benefit by a list of clinics in certain populous areas as in addition to the present arrangements. It should be distinctly understood however that any alternative arrangement would not in any way vary the principle for which the Association stands namely that under no circumstances should a patient be referred to an optician without prior examination by an ophthalmologist.

24. The Committee had its attention drawn to an instance where an Approved Society had intimated to an insurance practitioner who was on the list of ophthalmologists that the Society would be unable to accept his examination of an insured member as to find in his capacity as an insurance practitioner given the recommendation that an ophthalmic surgeon should be consulted. The matter was brought to the notice of the Ministry who stated that a communication had been addressed to the Society concerned and that it was hoped the circumstances to which attention had been drawn would not recur in future cases. The Ministry also stated, however, that a system under which an insurance practitioner may refer his patients for specialist examination by himself provided possibilities for abuse, and that it would be necessary for a watch to be kept on the matter.

25. The Association's list of approved ophthalmologists now contains 875 names. Some of the practitioners on the list are available at more than one address, so that there are 976 addresses on the list. The eligibility of practitioners for inclusion in the list is decided by the Ophthalmic Committee of the Association. Each application is considered on its merits and the applicant is required to conform to criteria which are identical with those laid down in paragraph 8(5) of the terms of service of insurance practitioners in connection with specialist services. Where a practitioner bases his application on the fact that he is generally recognised by his colleagues as possessing special skill in treatment of the eyes, it was decided to enlist the co-operation of the Local Medical Committee concerned in confirming this fact, and a communication (N 24) was accordingly addressed to Local Medical Committees on January 8th, 1927, asking them to assist in this matter. One or two Local Medical Committees, however, appear to have been under the impression that a practitioner must be doing specialist practice in order to qualify for inclusion in the list. This



is not so. The requirement is that he is generally recognised by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered. That is to say that some of his neighbours recognise his proficiency in ophthalmic work by employing him to attend cases of their own.

The Panel Committee are doubtless aware that a Bill has recently been introduced into Parliament having for its objects the State registration of opticians and the regulation of the practice of sight testing. Persons registered under the proposed Bill would be endowed with special privileges by the State, would have the right to use after their names letters implying that they are recognised as being qualified to practise sight testing to charge and recover fees for such practice, and would have the statutory right to give certificates relating to visual acuity or visual defects which must be recognised as admissible by any local or central authority or government department in any part of Great Britain. The Bill was introduced for Second Reading in May but in view of the fact that the Minister of Health had set up a Departmental Committee to consider the draft Bill and to make recommendations, the Second Reading was negatived upon the understanding that the Bill could be reintroduced at a later date. The Association was asked to nominate a member to serve upon the above-mentioned Departmental Committee and Dr H. B. Brackenbury has been appointed. A memorandum of evidence has been submitted to the Departmental Committee on behalf of the Association. This memorandum is based upon the Association's policy contained in Minute 143 of the Annual Representative Meeting of 1923, in that any State recognition of sight testing by persons not possessed of a medical qualification would not be in the interest of the community and ought to be opposed in the strongest possible manner.

#### PRESCRIBING—THE CHEMISTS' NEW AGREEMENT WITH THE MINISTRY

47 The contract between the Ministry and the chemists for the supply of drugs etc. to insured persons expired this year and a new agreement has been negotiated. The financial arrangements under the Economy Act of 1926 provide a sum of 13s. per insured person per annum for Medical Benefit. After the other fixed payments such as the Capitation Fee to Doctors, mileage and certain administrative expenses have been made the balance is available to pay the chemists. With the expenditure on drugs at its present level there will not be enough to meet the bills this year. Faced with this position the chemists have agreed to take over the whole Drug Fund provide what drugs etc. are ordered and take the risk of the profit or loss on the transaction the Ministry being freed of any further responsibility in the matter.

48 The chemists most unnaturally asked that all practicable steps against extravagant prescribing be taken and they asked that the Regulations be amended to allow the Local Pharmaceutical Committees to make representations to the Panel Committee in cases in which in their opinion there is *prima facie* evidence of extravagance in an insurance practitioner's prescribing.

49 On being informed of these proposals the Insurance Acts Committee at once told the Ministry that while the contract with the chemists was a matter entirely between the Ministry and the chemists yet the Insurance Acts Committee could not agree to any alteration or regulations that would put the chemist in a position to criticise the doctor's prescribing. The Committee at the same time expressed its willingness to co-operate with the Ministry or the chemists to ensure reasonable economy in prescribing.

50 As the matter was one of considerable urgency the Committee undertook to meet the Retail Pharmacists' Union to discuss the situation. This meeting took place and the Committee's position was made clear to the chemists. It was pointed out to them that the suggested procedure was open to serious criticism both on the question of public policy as well as in regard to the traditional relations between physician and pharmacist. It was also shown to them that the existing arrangements with the Pricing Bureau provided all the necessary information for those who were responsible for setting the existing machinery in action but that this procedure had never been put into effective operation by the Ministry. The Insurance Acts Committee believing that in no case yet has a Regional Medical Officer brought a case of alleged extravagant prescribing before any Panel Committee. After the discussion the members of the Retail Pharmacists' Union present agreed to make a year's trial of the present procedure, and not to press for alteration of the Regulations, and so informed the Ministry, receiving in return the promise of cordial co-operation from the Insurance Acts Committee.

51 The Insurance Acts Committee has further undertaken to consider the question of a National Formulary and to co-operate in the compilation of a list of preparations which should ordinarily be regarded as foods and not as medicines.

#### REVISION OF BRITISH PHARMACOPOEIA

52 It was reported to the last Annual Conference that steps were being taken with a view to the revision of the British Pharmacopoeia and arising out of a recommendation of the Insurance Acts Committee that Committee was asked (Minute 107) to investigate the question of the inclusion of drugs and preparations in the new Pharmacopoeia in relation to economy in prescribing under the National Health Insurance Acts and to endeavour to obtain representation on the Committee which was set up to deal with the revision of the Pharmacopoeia.

53 As regards representation on the Revision Committee the Committee decided to take no action in view of the fact that the Council or the Association had appointed a Special Committee of which two members of the Insurance Acts Committee (Drs J. W. Bone and E. Lewis Lilley) were members. (1) to act as a Watching Committee in relation to any steps that may be taken relative to the revision of the British Pharmacopoeia and (2) to prepare evidence and nominate witnesses and when a Revision Committee is appointed by the Lord President of the Privy Council, Drs Bone and Lilley have been asked to represent the views of insurance practitioners to the Association's Special Committee referred to above.

54 The position in connection with the proposed revision of the British Pharmacopoeia is that a Sub-Committee has been appointed by the Committee of Civil Research (a Committee of the Privy Council) to consider the existing practice relating to the method of preparation of the Pharmacopoeia. At the invitation of the above-mentioned Sub-Committee the Association has submitted a memorandum containing its views upon the matter and its representatives (Dr J. W. Bone and the Deputy Medical Secretary) have given oral evidence before the Sub-Committee. In its memorandum the Association advanced the view that the method of compilation hitherto adopted by the General Medical Council was not the best that could be devised and that any attempt to prepare another edition of the Pharmacopoeia on the lines of the 1914 edition would break down unless the co-operation of all interests were secured. The suggestion was made that a Committee of experts should be appointed by the General Medical Council and should consist of members representative of the chief interests concerned, that the highest degree of responsibility should be given to this Committee to make decisions to initiate recommendations and to explore the whole field of modern therapeutics, and that it would then remain for the General Medical Council to adopt or to refer back the conclusions or its Committee. In its memorandum the Association also mentioned the need for economy and drew attention to the need for special regard being paid to the Drug Tariff under the National Health Insurance Acts.

#### ISSUE OF PRESCRIPTIONS FOR THE PURPOSE OF DRUG TESTING

55 The Conference (Minute 75) asked the Committee to consider the desirability of approaching the Ministry of Health with a view to obtaining the amendment of the present scheme for testing drugs supplied by chemists by providing that the Panel Committee should make a selection of the prescriptions that the analyst's certificates should be considered by a Sub-Committee of the Insurance Committee containing representatives of practitioners and that cases requiring further action should be referred to the Joint Services Sub-Committee. The Committee has considered the matter but is not in agreement with any of the above proposals. The Committee believes that the question involved is that of accurate dispensing is capable or being adequately dealt with by the Pharmaceutical Service Sub-Committee and seeing that the contract is between the chemist and the Insurance Committee is not a matter directly affecting the medical profession. Any complaint by a practitioner concerning the dispensing of his prescriptions should be made to the Insurance Committee with which body action would lie in respect of improper dispensing. Furthermore the Committee considers that it is not desirable that the medical profession should seek to have any disciplinary power over members of another profession which would be the position if the suggestion in Minute 75 were carried out.

#### NATIONAL HEALTH INSURANCE ACTS AND PATHOLOGICAL LABORATORY SERVICES

56 Apart from provision for the cost of vaccines and autogenous vaccines no facilities have so far been made available for the furnishing of pathological reports upon specimens nor for the cost of containers for transmission of

specimens to and from a pathologist. The recent Royal Commission on National Health Insurance however, recommended that as and when funds were available the present statutory benefits of the Act should be extended to various other matters in a certain order of priority, in which laboratory services were placed third.

57 There are in operation in various parts of the country tentative Laboratory Service Schemes in which use is made of the facilities afforded either by voluntary hospitals or by the health service of the local authority. The Insurance Acts Committee feels that in anticipation of the establishment of a National Health Insurance Laboratory Service it is very important that the position of pathologists and the terms and conditions of their employment in connection with a National Scheme should not be prejudiced by the launching of separate schemes which have no connection with one another or with any general lines of policy. The Committee is urging the Ministry not to rigidify the schemes which are at present in existence as forming any precedent for future statutory arrangements of this nature likely to be set up under the National Health Insurance Acts and has received an assurance from the Ministry that if and when a complete pathological service for insured persons is introduced, the Ministry will give full weight to the recommendations of the Royal Commission in this matter.

58 The Committee's attention was drawn to a Laboratory Scheme which had been circulated by an Insurance Committee to all other Insurance Committees throughout the country, with a request that some similar scheme be adopted. The Committee felt it necessary (in M 27 dated 5th May, 1927) to draw the attention of Panel Committees to the importance of the subject thus raised, and to ask them to withhold decision on any scheme for the provision of pathological services in view of the fact that the matter was to be discussed between the Insurance Acts Committee and the Ministry. This discussion has taken place and the Committee is informed that it is possible, under Section 26 of the National Health Insurance Act, for an Insurance Committee to make a donation out of its Administration Fund to an institution which undertook to make some return. It would appear that the Ministry has no control over expenditure from an Insurance Committee's Administration Fund, but the Government Auditor has to be satisfied that in respect of any donation to a hospital or charitable institution, the Insurance Committee receives some benefit in return. This means that an Insurance Committee can only carry out a pathological scheme on the lines of that referred to above if there is sufficient money in the Committee's Administration Fund.

#### TUBERCULOUS INSURED PERSONS

59 The Conference (Minute 102) expressed the opinion that insurance practitioners should not be expected to provide sickness certificates, prescriptions, or medicine, for tuberculous patients who were receiving continuous treatment at the Tuberculosis Dispensary. This matter was discussed with representatives of the Ministry of Health who stated that the procedure to be followed in cases where insured persons suffering from tuberculosis was set out in the Ministry's Memorandum 286 and that briefly the position was that where an insured person accepted systematic dispensary treatment on the advice of the Tuberculosis Officer no further obligation devolved upon the insurance practitioner except in the case of emergency in which he was required to inform the Tuberculosis Officer of the emergency and the treatment given. The Ministry further stated that the object of the new Regulations introduced two or three years ago was to secure that the tuberculous insured person was in the care of one doctor only, either the private practitioner or the Tuberculosis Officer.

60 The Committee considered that in view of the doubt and misunderstanding which appeared to exist amongst insurance practitioners concerning the relative positions of the insurance practitioner, the insured person and the Tuberculosis Officer, it was advisable that an explanatory statement should be issued. This was accordingly prepared, submitted to and approved by the Ministry of Health as being a correct statement of the present position and issued to Local Medical and Panel Committees in circular M 25 on March 3rd 1927.

#### PROVISION OF SPA TREATMENT FOR INSURED PERSONS

61 Your Committee has taken part in some discussions with representatives of Approved Societies, of Spa Doctors and Spa Managers concerning the possibility of providing Spa treatment for insured persons. It is found that the commitments of Approved Societies are such that there is no likelihood of money being available from Approved Society sources for this purpose for a long time.

#### ALTERATION OF MEDICAL CERTIFICATES BY APPROVED SOCIETY OFFICIALS

62 Minute 70 of the last Annual Conference instructing the Committee to press for disciplinary action being taken against approved society officials who altered or in any other way falsified certificates or otherwise interfered with the practitioner in the discharge of his duties under the Terms of Service, has been brought to the notice of the Ministry who have replied that they have the matter noted for action in an amending Act.

#### EMPLOYMENT OF PRIVATE REFEREES BY APPROVED SOCIETIES

63 Minute 105 of the last Annual Conference, deploring the employment of private medical referees by approved societies and instructing the Committee to press the Ministry to make it obligatory on all societies to use the Regional Medical Staff of the Ministry, was discussed between the Insurance Acts Committee and representatives of the Ministry. The latter stated that, apart from persuasion, it would not be possible without fresh legislation to prevent societies employing their own referees, if they so desired, and that persuasion would be difficult. In view of the large number of claims last autumn, a few societies had appointed such referees but the number was not great. The Ministry also stated that the experience of one or two societies which had been employing private referees had been examined, and the percentage of cases declared by them capable of work did not differ materially from the percentage so declared by the Regional Staff of the Ministry.

#### SICKNESS BENEFIT

64 Minute 104 of the last Annual Conference instructed the Committee to take action with a view to securing that approved society officials should not have the power to refuse sickness benefit, on medical grounds alone to any insured person who had been certified as incapable of work unless the insured person had been reported fit for work by the Regional Medical Officer. It was made clear at the Conference that the Committee had no power to urge a reform on the lines suggested, as it was not a matter with which the medical profession was directly concerned. The Committee has on full consideration felt itself unable to take any action in connection with this matter.

#### POSITION OF INSURANCE COMMITTEES

65 It was reported to the last Annual Conference that a memorandum (M 27) had been issued to Panel Committees confirming the policy of the Association as regards the unification of all local health activities in one local health authority, and Panel Committees were asked not to express any opinion for or against the abolition of Insurance Committees until an opportunity had been given of comparing the present proposals of the Government as to the nature and constitution of the new local authority to which it was proposed to hand over the duties of Insurance Committees, with the views of the Association, as everything depended upon the character of the new local health authority. It was thought that the above mentioned memorandum had made the Association's policy in this matter quite clear but from the resolutions passed by Panel Committees and forwarded to the Insurance Acts Committee there appeared still to be some dissatisfaction with what was understood to be the Association's policy. The Committee has therefore prepared and circulated to Local Medical and Panel Committees a further memorandum (M 28) upon this matter.

#### STATISTICS

66 The last Annual Conference (Minute 94) expressed the opinion that it was desirable that the Committee should take steps to collect statistics as to the proportion of total services rendered of the following specialist services which are included in the capitation fee, but are not included in the ordinary visits and attendance fees of private practices, namely (a) special visits in response to calls received after morning surgery hours, (b) night visits between 9 p.m. and 9 a.m. (c) treatment of fractures and dislocations, (d) vaccination and inoculations (e) catheter cases, (f) administration of anaesthetics, (g) miscarriages and (h) certificates. The Conference desired that these statistics should be collected only in respect of uninsured persons of similar economic standing to the insured. In considering how this information should be obtained the Committee came to the conclusion that it would be useless to ask individual practitioners to collect it and that the only possible source would be from Public Medical Services. Application was therefore made to the various Public Medical Services for assistance in this matter but these bodies have replied stating that they are unable to furnish the desired information.

67 With regard to the statistics which the Committee was instructed by the 1925 Annual Conference to endeavour to obtain and which it has taken steps to obtain during the past 12 months certain figures have been collected and the thanks of the Committee are due to the practitioners who have so willingly assisted by supplying the information which has thus been obtained. The data supplied are exceedingly valuable but the Committee regrets that the volume of information in its possession is not as great as that for which it aspired (10 per cent in all areas). It is not sufficiently realised that the onus is on Panel Committees to induce insurance practitioners to supply the material which is so necessary when negotiations on their behalf have to be undertaken. It is essential that up-to-date information should always be available and only those who are actually doing insurance work can supply it.

68 The Committee has considered a suggestion that a Sub-Department of the Medical Department should be instituted to be known as the Statistics Department towards the cost of which the National Insurance Defence Trust might be asked to contribute and which would be provided with additional clerical assistance as the work developed. The analytical work of the data now being collected is carried on out of ordinary office hours by the Medical Department and is paid for out of the National Insurance Defence Trust while the ordinary correspondence relative to this matter has so far been attended to in office hours by the staff of the Medical Department along with its other duties. The time may arrive when owing to the increased bulk of the work in connection with the collection of statistics increased assistance may be necessary, and when it does the Committee will have no hesitation in undertaking the necessary expense and asking for the necessary funds from the National Insurance Defence Trust. But as yet such expense would not be justified.

#### AMOUNT OF CENTRAL POOL FOR 1926

69 The following are the estimated and finally determined figures of the Central Practitioners' Fund (England) for 1926 together with the corresponding figures for 1925—

	Estimated	Final
1925	£5 560 000	£5 716 600
1926	£5 629 000	£5 827 000

#### V—NATIONAL INSURANCE DEFENCE TRUST

70 At the last Annual Conference it was decided that there should be no relaxation of effort in the matter of obtaining contributions for the Trust until a total of £250 000 had been reached. It was also decided that each area's quota of a fund of £250 000 should be given in the next statement of the Trust issued to Local Medical and Panel Committees. This was given effect to in the statement (M. 26) issued in March and the Trustees are glad to report that several areas have already contributed their full quota of the amount at present being aimed at. Against this however there are a number of areas which have so far subscribed very little towards their quota and several who have subscribed nothing.

71 A statement of the financial position of the Trust as at December 31st 1926 and the income and expenditure for the year 1926 was included in M. 26 issued in March and appeared in the B.M.J. Supplement of 26th June 1927. In this statement the sum of £250 was shown as being on loan to the Essex Public Medical Service. This should have been £500 the other £500 having been previously shown by inadvertence as a payment out of the Trust instead of a loan. A further statement showing the income and expenditure for the twelve months ending August 31st 1927 and the amounts so far subscribed by each area will be issued with the Provisional Agenda of the Annual Conference in September.

72 Panel Committees are aware that there is a Fund known as the Medical Representation in Parliament Fund the trustees of which are the members or Council or the British Medical Association for the time being in office. This Fund which is a voluntary Fund and which has been generously supported from time to time by many Panel Committees has for its objects (1) the securing of a larger representation of the medical profession in Parliament by obtaining suitable medical candidates and suitable constituencies and assisting when necessary by monetary grants such candidates irrespective of political party (2) to help maintain approved Members of Parliament as may be deemed necessary or advisable and (3) to promote such other Parliamentary action as may be thought advisable. The trustees of the National Insurance Defence Trust have given serious consideration to the question of co-operating with the Medical Representation in Parliament Fund with a view to securing adequate medical representation in Parliament with special reference to representation of the interests of insurance practitioners. The trustees have come to the conclusion that

some of the money now at its disposal might with advantage be spent in this way and has set aside the sum of £1 000 for the support of medical candidates for Parliament subject to the following conditions—

(1) That candidates be approved by the trustees of the National Insurance Defence Trust.

(2) That the candidates be also supported by the trustees of the Medical Representation in Parliament Fund of the British Medical Association.

(3) That the trustees of the National Insurance Defence Trust are adequately represented on the Parliamentary Elections Committee.

(4) That the representatives of the trustees on the Parliamentary Elections Committee be authorised to act for the trustees under the following conditions—

(a) At the request of the Chairman of the Parliamentary Elections Committee when immediate action is necessary.

(b) Subject to full report to the trustees at the first convenient opportunity.

## THE ANNUAL EXHIBITION OF SURGICAL INSTRUMENTS, APPLIANCES, DRUGS, FOODS, ETC.

(Continued from page 103)

### Dietetic Preparations

The dietetic preparations to be seen at Edinburgh mostly bear rubbishy names and require no description but some firms, in addition to their usual products, had new introductions. Thus Oxo, Limited, showed bottles of meat juice a preparation of the natural juices of fresh lean beef, containing soluble uncoagulated proteins, also beer essence prepared for invalids. The Glaxo firm exhibited ostelin (tablets and cream) a substance of which we have already given an account. It is offered as a convenient means of taking the essential principles of cod-liver oil while avoiding the intolerance often exhibited towards its fatty constituents. Virol, Limited showed a special preparation of their well known food with full cream Devonshire milk. Another exhibit here was virolax, an emulsion or finely divided paraffin. Horlick's Malted Milk Company emphasized the use of their malted milk in rendering palatable the bismuth meal employed in radiology. By the addition of hot or cold water the malted milk furnishes an opaque emulsion or the desired consistency in which to suspend the heavy metallic salt, yet free from the heaviness and insipidity of bread and milk or porridge.

Benger's Food, Limited, exhibited photographic transparencies illustrating the use of Benger's food in infant feeding and among the several other products of the firm were peptonized beer and chicken jellies. The stand of Nestle and Anglo-Swiss Condensed Milk Company reflected the atmosphere of cleanliness and purity associated with such products a food of attractive character shown here consisted of a full cream milk malt products and sugar. Meid Johnson and Company exhibited reconstituted milk food for infants adapted to breast-milk standards. The special point was made with regard to this and other diet materials of this firm that they were advertised only to the medical profession and that no directions were printed on the tins, the whole or the directions being in the hands of the doctor. Keen, Robinson and Company Limited which is incorporated with the Colman firm exhibited malted porridge upon which we published a special note some time ago. It is claimed as a complete food for infants invalids, and expectant and nursing mothers. This firm's well known hives and giant preparations were also exhibited, as well as other materials for gruels and porridges. A stand was again devoted to Sister Laura's Food (Laura M. Smith), recommending it as having the effect of breaking down the mucus in the case of high fever's milk with which it was prepared. Granar Food, Limited exhibited some crisp and appealing biscuits made from whole wheat also gluten bread to diabetics. Bernal food with and without the addition of milk were shown by the Glasgow firm of Mon Gomerie and Company, Limited, for the latter it was claimed also that they were nourishing without being a tax on the digestive organs. Bernaline bread was shown by

the same firm Vitaha, Limited, showed a meat juice for which it was claimed that in the process of preparation the vitamins and the active properties of the organic salts were not sacrificed.

Eno's fruit salt probably needs no "bush," but it had, as usual, an attractive little "bower" of its own, where its long record of popularity was advertised. The French natural mineral water, Vichy-Celestin, and other French and Austrian waters were again the exhibit of Ingram and Royle, Limited, and from continental springs one was transported to English apple orchards by Gaymer's cider (which was celebrating the thirtieth year of its appearance at the British Medical Association's Exhibition), and to tropical cultivations by Cadbury's cocoa and chocolate. A milk-and-honey chocolate here was specially delectable.

Finally, as a corrective for my food crutches or fads, as well as a means of enlightenment for the ignorant, the Food Education Society, with its many publications on dietetics and hygiene, was ready to point the way to common sense.

#### Baths and Spas

The virtues and attractions of Bath were proclaimed, in the genteel fashion one would expect, by some excellent photographs of the bathing establishments and water-colour drawings of the chief features of interest in the city. The Old Royal Baths are to be reopened in the early autumn. The bathing establishment at present includes the Queen's Baths and the new Royal Baths, the latter which were opened in 1916, have been three times considerably extended.

Hannogate advertised the claims of its eighty-eight different varieties of natural mineral water, but especially its strong and mild sulphur springs. A Hannogate "sulphur water ticket" for 12s weekly entitles the purchaser to mineral drinking waters as required, three alkaline or sulphur water baths, and admission to certain amenities of the spa.

The claim of Droitwich was that of the unique brine baths spa, where the brine is 40 per cent more dense than that of the Dead Sea, so that these Worcestershire springs are the most saline waters known. The exhibit consisted of photographs and artists' drawings of this useful resort and its neighbourhood.

Buxton completed the quartette with its hot and natural baths. Here again the exhibit consisted of photographs of the bathing establishment and the Derbyshire scenery. The corporation is shortly taking over the Buxton gardens, and will conduct them in conjunction with the baths.

One stand was used to advertise Stanboroughs, a modern hydrotherapeutic establishment at Watford, on a country estate consisting of 200 acres of park land. All kinds of hydrotherapeutic treatments are given here under the supervision of a qualified medical man.

#### Books, Publications, Office Equipment, etc

The official guide placed in the hands of members stated that among the first of Edinburgh's industries was the publishing of books, and, as anticipated, several Edinburgh book houses contributed to the exhibition. Among them were the publishers E and S Livingstone, whose house, originally confined to bookselling, was founded more than sixty years ago. Books published during the present year included the massive work by Lees on the diagnosis and treatment of venereal diseases, Mun's bacteriological atlas, and the second edition of the atlas by McKendrick and Whittaker, a work containing 450 reproductions from x-ray photographs. A smaller work was Riddell's *Medical Electricity and Radiology*. The first five volumes of a new series of dental manuals were shown.

Another Edinburgh publishing house, Oliver and Boyd, made a feature of works whose authors were Edinburgh physicians and surgeons, among them a useful work on the principle of early active movement in treating fractures of the upper extremity by Mr J W Dowden, with 224 illustrations. Others were *Exophthalmic Goitre* by Dr John Eison, the fourth edition of *The Clinical Study and Treatment of Sick Children* by the late Dr John Thomson, *Pulmonary Tuberculosis* by Dr John Guy, and Dr Easterbrook's *Morrison Lectures, Mental Invalids*.

Two Edinburgh booksellers also had stands. William Bryce had a well selected display of medical works of various publishers, as well as leading medical and scientific publications, British and foreign. James Thun included with some recent medical works an interesting selection of second-hand volumes, and some antiquarian ones—for example, "The remaining medical works of that famous and renowned physician, Dr Thomas Willis" (1681), and the works and life of Harvey, in Latin (1766). Another Scottish firm of booksellers was John Smith and Son (Glasgow), who showed a large number of recent publications on all branches of medicine and surgery, and again an interesting selection of early medical books.

Oxford University Press adorned its stand as usual with an array of notable volumes. One of them, issued during the week of the exhibition, was *The Ear, Nose, and Throat in General Practice*, by D A Crow. Others were *Intra-cranial Tumours* by Paves-Stewart, *A Textbook of Psychiatry* by Henderson and Gillespie, and second editions of *Price's Diseases of the Heart* and of *Graham's Diabetes Mellitus*.

A number of American as well as English works were to be seen at the stand of the W B Saunders Company. The American works run to vastness—witness *Pediatrics* (eight volumes), edited by Abt, and *Bickham's Operative Surgery* (six volumes). These, from the point of view of size, made the fourth edition of *Moyrhan's Abdominal Operations* appear quite diminished, although that comprises two octavo volumes and runs to more than 1,200 pages. The "Collected Papers" of the Mayo Clinic for 1926 were shown here.

J and A Churchill, Limited, placed in the forefront the *Medical Directory*, which reaches its 84th year with the next issue. At this stand a recently published book into which one was tempted to dip was *Pury's Some Famous Medical Trials*. Other works noticed were Craig's *Psychological Medicine* (fourth edition), *Sequeira's Diseases of the Skin*, and *The Queen Charlotte's Practice of Obstetrics*, by members of the staff of that hospital.

The *Medical Annual* was the leading exhibit of John Wright and Sons of Bristol, and other works noted here were *Laryngoscopy*, by J B Macalpino, the second edition of *Diseases of the Nose, Throat, and Ear*, edited by Logan Turner, and the ninth edition of *An Index of Treatment*, edited by Hutchinson and Sherren.

H K Lewis and Company, in addition to a selection of their own publications, showed a few of the most important and standard works issued by other publishers. They had also a good medical stationery exhibit, including card index systems, ledgers, and card books. Among their own publications were the fifth edition of *Stoddart's Mind and its Disorders*, *Sykes's Manual of General Medical Practice*, and several works on artificial light treatment.

A newcomer among the exhibitors was H M Stationery Office, with the publications of the Medical Research Council, the Ministry of Health, the National Physical Laboratory, and other Government or Government supported bodies, and our contemporary *The Lancet* also had a stand at which it exhibited its special numbers and various reprints and other publications.

Two makes of typewriters were shown. One was the Royal typewriter, which both in its ordinary and its portable form is a machine of great efficiency as well as elegance. The portable form is particularly convenient. It was shown also fitted with a medical keyboard. The instrument at the other stand was the Hammond typewriter, with which a large number of different kinds of type can be used. It is only necessary to turn a knob and, still with the same instrument, one writes in a different style of type or in a language of different alphabetical characters. A special medical arrangement was furnished with the instrument for convenience in writing prescriptions, labels, or technical articles containing unusual symbols.

The outstanding display of the Museum Galleries, London, was again a welcome feature of the Exhibition. Here were shown, in perfect taste and colouring, reproductions of the old masters, a series of famous portraits of famous people, mozzotints of works by Turner, etchings of London by several accomplished artists, all full of atmosphere and colour, and many other fine specimens of

engraving. A mezzotint portrait of Lord Lister was given the position of honour, and there were portraits of Hunter, Simpson, Pasteur, Harvey, Huxley and Jenner, as well as a mezzotint of "Dr Harvey explaining to Charles I his theory of the circulation of the blood," engraved direct from the original by permission of the Royal College of Physicians. We were told at this stand that the members of the medical profession are foremost among those who collect works of art or purchase the choicest reproduction. Certainly the stand was a centre of continual interest at Edinburgh and a place of retirement for mud and ice.

#### Heating Appliances, Laboratory Equipment, and Classrooms

Six gas-stove manufacturing firms—namely, Arden Hill and Company, the Davis Gas Stove Company, Fletcher Russell and Company, the Richmond Gas Stove and Meter Company, Wilsons and Mathiesons, and John Wills and Company—combined in an exhibition of modern live-gas grates and gas cookers. This was called the Radiation Stand, and was designed to illustrate the success of the efforts of manufacturers to produce domestic gas appliances which will satisfy health requirements. The gas grates shown incorporated in the canopy the patent injector venturi or "which has been worked out to ensure proper air charge of the apartment and absence of draughts. The gas burners had a automatic heat controller, which enabled food to be cooked entirely without attention. To show what a superior thing is the modern gas fire to the earlier forms, and also to the coal fire, comparative spectra of the energy emitted at various flame-lengths, as well as other diagrams illustrating the results of research work, were exhibited. It was altogether an interesting demonstration of the hygienic and other values of gas as a fuel. One of the firms concerned, Fletcher Russell, showed at another stand a range of the latest of their appliances adapted to chemistry, as well as gas distributors for laboratory tables and various forms of Bunsen burner.

A very fine display of laboratory equipment was made by Charles Harrison and Company, Ltd. Among other apparatus centrifuges were shown with speeds of from 500 to 10,000 revolutions a minute, also water baths, sterilizers, drying ovens and stills. But the principal exhibit was a range of microscopes, including a new high power binocular microscope by Reichert, a new capillary mirrorcope, and some photomicrographic apparatus specially built for opaque objects and for cinematography. The new dark-field condenser with built-in light source was also an object of interest.

Another excellent display of microscopes was to be found at the stand of Ogilvy and Company, who was also a large photomicrographic apparatus with special facilities for obtaining optical centres. Some new models of Leitz microscopes for routine work and for special research work were exhibited as well as many kinds of microscope accessories. There was also shown a new epididymoscope for the projection of opaque objects and lantern slides using a filament lamp as illuminant. This firm is the agent for Stillé of Stockholm who is surgical instruments and operating table were exhibited.

The exhibit of Baird and Tatlock (London) consisted of bacteriological and medical apparatus for educational and research work and attention was specially drawn to incubators with a simple automatic control over a wide range as well as water and electrical centrifuges, balances, sterilizers and all kinds of laboratory equipment. A new apparatus was an auto-immersion for staining slides, each stain proceeding to the same degree.

A demonstration of a recording sphygmomanometer giving an ink tracing of the heart beat in terms of millimetres of mercury was a noteworthy feature of the exhibit of Short and Mason Limited. The other apparatus on here included ordinary clinical and recording thermometers of various patterns, urinals, glassware and a microbarograph, which is a sensitive recording barometer giving magnified readings of variations of atmospheric pressure. The scientific instruments of this firm bear the well known name of Tyco.

The Behring Institute, of Marburg, Germany, gave a demonstration of a "venule" for the sterile withdrawal of blood. This is a modification of their "serule," an arrangement which combines syringe, cannula, and clamp. By the formation of a vacuum in the ampoule the instrument is made to serve as an aspirator for all kinds of liquids, and its special value in making blood tests, owing to the minimization of risk of contamination—the specimens taken being sterile, and so remaining until examined—was emphasized.

On a very different line a pretty exhibit was shown by Sedley Rothwell, of Oxford Street, in the shape of "the artistic effects that can be obtained by the use upon glassware of specially prepared paint. The stand comprised designs in hand painted glassware and Italian glass work, which is a form of plaster bas-relief. The designs were conventional and floral, and adapted for table service or toilet articles.

#### Medical Insurance

At the stand of the Medical Sicknes, Annuity and Life Assurance Society (500, High Holborn W.C.1) information was given on prominent sickness and accident insurance, life and partnership assurance, loans for house purchase, and similar matters. It is well known that this society was founded to enable medical practitioners to obtain sickness and accident insurance and life assurance on terms adapted to their special needs. One attractive policy proposed was an every contingency policy, which combined a sickness and accident contract with an endowment life assurance payable at death or at the date when the sickness insurance ceased.

Finally the Medical Insurance Agency (B.M.A. House, 1, Tavistock Square) had a stand at which advice was given on all matters relating to insurance. In particular the advantages of the special policy for medical motorists were urged. The Agency has for many years made a careful study of this class of insurance, which necessarily interests almost every member of the profession, and the special policy referred to which is underwritten by a prominent group of underwriters at Lloyd's is confidently claimed as quite the best obtainable. In addition to the ordinary staff of the Agency a consulting motor engineer (of the firm of Mann Egerton and Company, Limited) was in attendance at the stand to give help and advice on the choice and upkeep of cars. Another feature of the Agency which was stressed was the charitable side of its work. Each year the Committee of Management is able to support financially the benevolent funds of the profession. A total of just upon £18,000 in the form of grants has been made through this medium to the various charities.

Thus ends our survey of one of the largest most varied, and most attractive exhibitions ever held under the auspices of the Association.

## Meetings of Branches and Divisions

### LEINSTER BRANCH

A MEETING of the Leinster Branch was held at the Irish Office, 16 South Frederick Street, Dublin on July 28th.

On the motion of Dr. PEARCE, seconded by Dr. ROWLETTE, a committee consisting of Drs. MacElean, Quinn, McCann, and the president, the secretary, and Dr. Hennessey (ex-officio) member, was appointed to consider getting in touch with new graduates in order to induce them to join the Association.

After discussion it was unanimously agreed that the representative of the Leinster Branch on the Council of the Association be authorized to inform the Council that the Branch has in contemplation the holding of an annual meeting of the Association to hold the Annual Meeting in Dublin in 1931 and that the Branch is taking steps to secure the co-operation of the University, Royal College, and other bodies. It is hoped to be able to secure a co-operation at a later date and to elect a definite representative.

The names of several leading members of the profession in Great Britain were directed to be sent to the head office with a suggestion that one of them should give a lecture to the Branch.

It was agreed to leave the reorganization of the Divisions in the Branch to the Committee formed to consider the means of increasing the membership of the Branch.

On the proposition of Dr. POWELL, seconded by Sir JAMES CRAIG the following motion was adopted:

That the Leinster Branch of the British Medical Association has learned with regret that the vacancy on the General Purposes Board



created by the retirement of Dr McCormack has not been filled in the opinion of the Board it is desirable that in the administration of the prisons full influence should be given to the medical and scientific point of view, and such influence can only be maintained by appointing on the General Prisons Board a medical member possessing equal authority with the other members of the Board. Six new members were elected.

#### OXFORD AND READING BRANCH

At the annual meeting of the Oxford and Reading Branch, held at the Osier Pavilion, Headington, the following officers were elected.

President Dr Sidney Clifford Vice President, Dr Charles Honorary Secretary, Dr J G Bird

At a subsequent clinical meeting Dr W Stobie showed many cases of tuberculosis under treatment at the Pavilion. The meeting was very successful, and Dr Stobie's demonstration of the various methods of treatment in use was much appreciated.

#### BOOKS ADDED TO THE LIBRARY

The following books were received by the Library during the months of June and July, 1927.

- Alexander, J. The Surgery of Tuberculosis 1925  
American Gynecological Association Transactions, vol 51, and Index, vols 159-1926  
Barton and later Symptom Diagnosis 1927  
Brauer, A. Woman 1927  
Bedford, T G. Practical Physics 1927  
Bogbio, H. Punishment and Personality 1927  
Betha, D W. Practical Materia Medica Fourth edition 1926  
Besredka, A. Local Immunization 1927  
Bleakley, H (editor). Notable British Trials—H. Faulstich, 1924  
Bolito, W. Murder for Profit 1926  
Browning, C H. Bacteriology 1925  
Brundage, A H. Manual of Toxicology Fifteenth edition 1926  
Buchanan, J. Forensic Medicine Ninth edition 1925  
Buckley, J P. Modern Dental Materia Medica Fifth edition 1926  
Burke, E T. Treatment of Venereal Disease 1927  
Cabanes, Les Cinq Sens 1926  
Cabanes, Les Curiosités de la Médecine 1925  
Calcutta University Calendar 1927  
Campbell, H. Aids to Pathology Fifth edition 1926  
Christie, W F. Surplus Fat and How to Reduce It 1927  
Crew, I A E. The Genetics of Sexuality in Animals 1927  
Cushny, A R. Biological Relations of Optically Isomeric Substances 1926  
Eagleton, W P. Thrombo Phlebitis Infective. 1926  
Edinburgh University Bicentenary of the Faculty of Medicine, 1726-1926  
Fifth Avenue Hospital Clinics New York. First series 1927  
Fitzgerald, J G. Introduction to the Study of Preventive Medicine. Second edition 1927  
Fletcher and Kanungo. The Bacteriophage in the Treatment of Bacillary Dysentery 1927  
Frend, S. The Lge and the Id 1927  
Grayson, J. Surgical Treatment of Pulmonary and Pleural Tuberculosis 1925  
Grinnell, V. Das Ashura 1925  
Guy's Hospital Reports Volume 77, Part II, with Supplement, "Richard Bright and His Work" 1927  
Hammur, B. Methods and Principles of Teaching The Principles of Nursing 1926  
Head, G D. Concealed Tuberculosis 1924  
Hewat. The Examination of Urine Seventh edition 1926  
Holmes and Rue. Stenosis of the Uterus Third edition 1926  
Hutchinson, R. Second edition 1927  
Ireland—The National Calendar 1927  
Irwin, W K. Urinary Surgery Second edition 1927  
Jaubert, L. Le Cure de Scoli 1927  
Kaye, G W C. High Vacua 1927  
Kerridge, P M T. Principles of Physical Chemistry for Medical Students 1927  
Kinsley, J S. The Vertebrate Skeleton 1925  
Krischner. Hysteria 1926  
Laforgue, R. Le Rêve et la Psychoanalyse 1926  
Lapique, L. L'Événement en Fonction du Temps 1926  
Laqueur, A. Die Praxis der Physikalischen Therapie 1926  
Lassar-Cohn. Praxis der Harnanalyse 7 Aufl 1927  
Lawell, C H. Four Thousand Years of Pharmacy 1927  
Léclercq et Leclercq. Thérapeutique Chirurgicale Tome I, II 1926  
Lee, F. Researches regarding Haemodynamics in the Rabbit 1926  
Lees, D. Diagnosis and Treatment of Venereal Diseases 1927  
Leri, A. Les Affections des Os et Articulations 1926  
Levinson, A. The Examination of Children by Clinical and Laboratory Methods Second edition 1927  
Levy Valensi and Halphe. Fourth edition 1927  
Leyton, O. The Treatise on Dietetics 1927  
Linton, R G. Animal Dietetics 1927  
Loiselet, J. Vade Mecum  
Lotmar, F. Die Stammangehen und die extrapyramidal Motorischen Syndrome 1926  
Maclean, H and I S. Leathin and Allied Substances New edition 1927  
McNalty, A S. Epidemic Diseases of the Central Nervous System 1927  
Marcel, I E. Syphilis du Testicule 1926  
Marcel, P. Troubles de la Fonction Gastrique 1925  
Martin, A J. The Activated Sludge Process 1927  
Mayo Clinic and Foundation (Physicians of the) 1927  
von Neuburg, M. Die Lehre von der Heilraft der Natur 1926  
Odin, M. Studien über die Saugproduktion bei Diabetes Mellitus (Acta Medica Scandinavica) 1927  
O'Donnell, E. Trial of Kato Webster 1925  
Ophthalmological Society of United Kingdom. Transactions, Volume 45 1926  
Pancoast, H R, and E P. Pendergrass. Pneumoconiosis 1926  
Lippard, E. The Heart 1925  
Pinch, A E. Therapy 1927  
Fruvost, P. Tuberculose des Sereuses 1927

- Pullin, V E, and W J. Wiltshire. Y Rays—Past and Present 1927  
Queen Charlotte's Practice of Obstetrics 1927  
Rachet, J  
Ramus, C  
Rostam, I  
Puddiman, I  
Series, I S  
Shaw, D M  
Singer, M. The Thomas Splint 1927  
Stern, B J. Should We be Vaccinated? 1927  
Stern, B J. Social Factors in Medical Progress 1927  
Stuart, F H. Segregation and Autogamy in Bacteria 1927  
Strampell, A. Lehrbuch der Speziellen Pathologie und Anatomie 25 Aufl Bd I 1927  
Stumpf, C. Die Sprachlaute 1926  
Sullivan, J W N. Gall 1927  
Sumner, J B. Textbook 7  
Sumner, P. The Brain and the Nervous System 1927  
Farn, A W. Students G  
Welch, A K. Public Health 1925  
White, M A. Essays in  
Wilder, R M. A Primer  
Wood, T D, and H R. and Medical In-  
spection in Schools 1927  
Wright, S. Applied Physiology 1926  
Young, I (editor). Notable British Trials—H R Armstrong 1927

#### GENERAL MEDICAL COUNCIL

##### EXECUTIVE COMMITTEE

The minutes of a meeting of the Executive Committee of the General Medical Council, held on July 25th, when Sir DONALD MACALISTER was in the chair, have been published.

##### Threatened Expulsion of British Doctors from Madeira

Correspondence was laid before the Committee relating to a report which had reached the Foreign Office that the Portuguese authorities in Madeira had been threatening to expel British doctors from the island. The situation appears to have arisen out of a protest made by the association of Portuguese doctors against certain foreign doctors practising in Funchal, Madeira, without being legally qualified to do so. The British Ambassador in Lisbon stated that the present position of foreign doctors in Portugal is that, in order to exercise their profession in that country, they must acquire a medical licence by passing an examination for the degree of doctor and paying a sum of esudos 3,000 (about £300), corresponding to the fees of the ordinary Portuguese students. In 1866, when some similar trouble arose, the Portuguese Government agreed to suspend the law in favour of the British doctors then in Madeira, but the Ambassador points out that this was a favour of the Portuguese Government, and any exemption from the legal requirements could only be requested as a favour again. It was stated by the British Consul at Funchal that the four British doctors practising in Madeira only treat visitors, and are careful not to accept Portuguese patients. By direction of the President of the General Medical Council a letter was sent to the clerk of the Privy Council repeating the terms of Section 6 of the Medical Act, 1859, and adding that Portuguese doctors were not forbidden to practise in the United Kingdom nor to accept British subjects as patients, and that if British doctors who practised only amongst visitors were expelled from Madeira a hardship would be inflicted upon them which would not be experienced by Portuguese doctors who desired to practise in this country. The last word in the correspondence is a letter written on behalf of the Secretary of State for Foreign Affairs requesting the British Ambassador in Lisbon to keep a close watch on the matter, and, should occasion at any moment require it, to address representations to the subject to the Portuguese Government.

##### British Practitioners in Spain

The Registrar reported to the Committee that a medical woman holding British qualifications had expressed a desire to practise in Spain. A communication had thereupon been addressed to the British Ambassador at Madrid, informing him that, although reciprocity in regard to medical practice had not been established between the two countries, and consequently Spanish qualifications could not be recognized as entitling their holders to registration, it was open to the licensing authorities in this country to admit foreigners who were qualified in their own country to examinations in the United Kingdom under such terms as they might think fit. Also that the holder of a degree from a reputable Spanish university would be admitted to the final examination of the English Conjoint Board without further curriculum. It was suggested that this British doctor might be accorded a similar privilege in Spain. The Spanish Government replied that it was unable to grant reciprocal treatment in view of the absence of any definite convention between the Spanish and British Governments. To give the desired permission to this applicant to practise in Spain on the understanding that she passed the examination of "Revalida" equivalent to the final examination in this country, would be contrary to the provisions of the Royal Decree Law as set forth in 1925. But it was added that

it should confirm the given of the statement just quoted. Admission to a final examination in England the Spanish Government might accede to the request of this body and grant reciprocity of treatment regarding duly qualified British practitioners who desired to practise in Spain. The President of the Central Medical Council therefore gave instructions for the order to be sent confirming officially the statement that the holders of the degree of M.D. obtained in the Universities of Madrid, Salamanca, and Seville would be entitled to it for the final or qualifying examination of the Conjoint Board without taking any further course of study or examination and the passing of such examination would entitle them to registration. The letter also requested that persons in the British *Register* might be similarly permitted without further study or examination in Spain to offer themselves for the examination of Revahid. There for the moment the matter rests.

#### Legislation in Colonies and Mandated Territories

A bill making provision for the registration of medical practitioners which has been introduced into the Legislative Assembly of Southern Rhodesia was reported to the Committee. The Registrar pointed out that in the bill there did not appear to be any express provision for the recognition of British diplomas or diplomas entitled to registration in the *Medical Register*, but it was provided that foreign diplomas should not be recognized unless the requirements for obtaining them were not lower than those prescribed by the Central Medical Council and that they were obtained in a country with which reciprocity with Great Britain had been established. The Committee resolved to inform the Dominions Office that it was gratified to observe that provision had been made in Southern Rhodesia for the prohibition of unqualified practice but that in its opinion the measure should be amended to indicate that those who were registered or entitled to be registered in the *Medical Register* of the United Kingdom were entitled to registration in Southern Rhodesia.

A draft ordinance to regulate the practice of medicine in Palestine was also before the Committee. The Committee took exception to a provision therein which permitted the publication of a notice that a medical practitioner had established a practice. The passage to which exception was taken read as follows:

Nothing in this section shall be deemed to prevent a medical practitioner from indicating the situation of his professional premises by a plate fixed thereon bearing in plain and unambiguous English, and in hours of consultation or from publishing a notice that he has established a practice or changed his address.

The Committee also suggested that in the provision that Nothing in this ordinance shall prevent a nurse from working under the supervision of a medical practitioner the words direct personal should be inserted before superior.

#### London Public Medical Service

The Committee considered a communication from the London and 1 Counties Medical Protection Society forwarding papers relating to the London Public Medical Service and asking whether the procedure indicated therein was likely to be regarded as contravening the Warning Notice of the Council in regard to advertising. The Service is designed to provide ordinary medical attendance with medicine at home or at the surgery to persons who do not come within the terms of the Insurance Acts and find it difficult to pay the usual medical charges. The subscription is to be collected at the house by an officer of the Service, and the subscriber might apply for acceptance to any doctor who is a member of the Service. One sentence in the terms of service runs as follows:

While collectors may not canvas in the accepted sense of the term there is a species of legitimate canvassing in which they might well be instructed and we are of the opinion that the Secretary should be instructed to so instruct the collectors of the Service.

This appeared under the heading of propaganda. The Ministry of Health had also asked what view the Council might take as to broadcasting notices about the Service in view of a statement by the Central Committee of Management that it was intended to apply for broadcasting facilities. The reply sent by direction of the President of the General Medical Council to the interrogating society (a copy of which was forwarded to the Ministry of Health) was as follows:

The proposed method of advertising etc. appear to be contrary to the Warning Notice No. 6 as regards (a) a practitioner being associated with or employed by those who procure or auction advertising or publication for the purpose of obtaining patients and as regards (b) employing any agent for the purpose of obtaining patients or being associated with those who sanction such employment. It is therefore not possible to say that the scheme proposed may not bring its members within the habitable forth in the Warning Notice.

#### Medical Education in India

The Committee welcomed back Sir Norman Walker and Colonel R. A. Needham on the conclusion of their tour in

India. Sir Norman Walker's report to the Secretary of State is summarized in the *Lancet* this week (p. 312). A number of reports on the various universities and medical colleges were placed before the Committee some of them by Sir Norman Walker and Colonel Needham jointly, and others by Colonel Needham alone. In reporting with regard to the universities of Bombay, Punjab (Lahore), and Lucknow the recognition of whose M.B. B.S. degrees has been extended from year to year, Colonel Needham stated that substantial progress had been made towards meeting the requirements of the Council though much remained to be done before all the requirements were fulfilled or the standards of medical education and professional examinations raised to the desired level. He presented a special report on the University of Calcutta recognition of its degree automatically terminated in 1924, but new regulations complying in substance with the recommendations of the Council have lately been adopted. The Committee resolved that in the event of Calcutta making its new regulations immediately applicable to existing students of the first to the fourth years an application for recognition might be considered on receipt of a satisfactory report on the conduct of the first final examination. It deterred consideration of an application for the degrees of M.B. B.S. Patna and refused to accede to a similar application from the Andhra University (Vizagapatnam Medical College) a new college which is still according to the report of the inspectors having to face initial difficulties of construction and staff.

#### Other Business

The Committee expressed itself in favour of the granting of the petition of the College of Nursing for a charter. It also acceded to an application from Henry Bown, registered M.R.C.S. Eng. 1926 L.R.C.P. Lond. 1926 for the removal of his name from the *Medical Register* on the ground that he had ceased to practise.

## Naval and Military Appointments

### ROYAL NAVAL MEDICAL SERVICE

Surgeon Commanders A. J. Tozer to the *Marlborough*, C. F. O. Sankey to the *Laurel*, C. M. R. Thatcher to the *Greenwich* on commission, H. L. Tiers to the *Victory* for *Queen Elizabeth* for trial, Surgeon Lieutenant Commander R. L. Rampling to the *Centaur* and as *Stander* in Medical Officer, Surgeon Lieutenant H. E. M. Martin to the *Spencer*, J. V. Williams to the *Greenwich* on commission.

### ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant Commanders G. C. Clance to the *Fined* for R.N. Hospital Plymouth for fourteen days training, J. L. Rollason to the *Victory* for R.N. Hospital Harar for four days training, Surgeon Lieutenants L. E. Henderson to the *Peribroke* for R.N. Hospital Chatham for fourteen days training, August 3rd and to the *Benbow* for twenty-eight days training, August 11th R. W. H. Tincker to the *Peribroke* for R.N. Hospital Chatham for four days training.

Surgeon Sub-Lieutenant L. D. Nelson to be Surgeon Lieutenant, Late temporary Surgeon R. D. A. Imlie has entered as Surgeon Lieutenant (seniority February 20th 1923) and attached to the London Division.

Probationary Surgeon Lieutenant P. E. Stabler to be Surgeon Lieutenant with seniority of June 1st 1926, Probationary Surgeon Lieutenant W. T. Donnan to the *Tiger* for twenty-eight days training.

Probationary Surgeon Sub-Lieutenant F. T. Doleman's appointment to the *Victory* for Harar Hospital for training is cancelled.

Probationary Surgeon Sub-Lieutenant A. B. Thomas to be Surgeon Sub-Lieutenant with seniority July 2nd 1926.

Probationary Surgeon Sub-Lieutenant H. S. Waters to the *Yarmouth* for twenty-eight days training.

A. F. Davey to be probationary Surgeon Sub-Lieutenant and attached to the London Division.

### ROYAL AUSTRALIAN NAVY

Surgeon Commanders W. E. Rowlands to the *Victory* for Harar Hospital, L. S. Macfarlane to the *Victory* for R. Barracas temporary supernumerary.

### ROYAL ARMY MEDICAL CORPS

Major E. A. Strachan appointed Physician and Surgeon to the Royal Hospital Chelsea, Vice Major E. T. Poit, C.M.G., D.S.O. who has vacated the appointment.

Captain J. M. Macfie M.C. to be Major, Captain H. V. Stafford M.C. to be Major November 8th 1926 (Substituted for notification in the *London Gazette* November 8th 1926).

Captain H. R. L. E. Strang O.B.E. half pay his late R.A.M.C. on completion of a period of six years on the half pay his rates on retired pay on account of ill health July 15th 1927 and is granted the rank of Major (Substituted for notification in the *London Gazette* July 15th 1927).

Captain F. A. L. E. Strang to be Major (prov.) with precedence next below K. M. Nelson M.C.

Cap. W. G. D. McCall M.C. to be Major (prov.)

The following to be Lieutenants on probation: J. M. Quinlan L. R. S. Macfarlane M. F. N. Grinn J. J. O'Dwyer W. F. Lane Temporary Lieutenant de L. Carey and relinquishes the temporary rank of Lieutenant Temporary Lieutenant H. A. Ferguson and relinquishes the temporary rank of Lieutenant J. H. Anderson M. G. de Liff, Sturm D. B. O'Sullivan Beare.

The following are seconded under the provisions of Article 250 Royal Warrant for Pay and Promotion 1925: J. M. Quinlan, L. R. S. Macfarlane, J. H. Anderson.

## ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leader T McClarkin, MC, to Pathological Laboratory, Hilton  
Flight Lieutenant A S Iwing to R.A.F. Hospital, Halton  
Flying Officer J Hill to R.A.F. Hospital, Halton

## INDIAN MEDICAL SERVICE

The services of Major L H Khan are placed at the disposal of the Government of the Central Provinces, temporarily, for employment in the Jail Department

Major W J Simpson, Agency Surgeon in Bhopal, is appointed to officiate as Political Agent in Bhopal in addition to his own duties  
Lieut Colonels L O Thurston and F G N Stokes have retired from the service

Lieutenant E G Michelson to be Captain  
The provisional promotion of G H Fitzgerald to the rank of Captain, dated May 30th, 1925 is confirmed

## REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS  
Lieutenant C W Simpson from R.A. Regular Army Reserve of Officers, to be Lieutenant, retaining his present seniority

## TERRITORIAL FORCE

ROYAL ARMY MEDICAL CORPS  
Lieut Colonel H W Symons resigns his commission and is granted the rank of Major

Captain J Cohen from Hygiene Companies to be Captain with precedence as from January 30th 1916

Lieutenant A H Macklin OBE, MC, to be Captain with precedence as from July 31st 1926  
to be Lieutenants E J G Class (late Officer Cadet Edinburgh University Contingent Senior Division, OTC), F Tishman, J N Russell, M S Scott, I Heywood Jones

## VACANCIES

ABERYSTWYTH INFIRMARY AND CARDIGANSHIRE GENERAL HOSPITAL—House Surgeon (male) Salary £100 per annum

BATH ROYAL MINERAL WATER HOSPITAL—(1) Physician (2) Resident Medical Officer minimum salary at the rate of £150 per annum

BEYFORD COLONY HOSPITAL—Assistant House Surgeon (male, unmarried) Salary at the rate of £120 per annum

BIRMINGHAM CITY—Medical Officer of Health Salary £1830 per annum

BOOTHBY HONORARY HOSPITAL—(1) Senior Medical Officer (2) Two Junior Medical Officers (males) Salary £150 and £125 per annum respectively

BRIGHTON GENERAL HOSPITAL—(1) Two House Physicians (2) House Surgeon (3) Resident Obstetric Officer (4) House Surgeon to Special Departments (5) Casualty House Surgeon Salary at the rate of £80 per annum rising to £100 in the event of a second appointment

BRISTOL ROYAL INFIRMARY—(1) Two House Physicians (2) Four House Surgeons (3) House Surgeon to the Ear, Nose and Throat Department (4) House Surgeon to the Gynaecological, Ophthalmic and Dermatological Departments (5) Obstetric House Physician (6) Casualty House Surgeon Salary at the rate of £80 per annum or £100 if candidate has previously held a resident appointment in the Infirmary

CARDIGANSHIRE AND ANGLESEA INFIRMARY, Bangor—House Surgeon Salary £200 per annum

CITY OF LONDON MATERNITY HOSPITAL, City Road E.C.1—(1) Assistant Resident Medical Officer salary at the rate of £80 per annum for three months rising to £100 if elected Senior (2) Registrar, honorarium £100 per annum (3) Honorary Dental Surgeon

DORSET COUNTY HOSPITAL, Dorchester—House Surgeon Salary £120 per annum

DIYAFRICA MEDICAL SERVICE—Medical Officer as an Assistant Bacteriologist Salary £300 per annum rising to £340 and thence subject to efficiency bar to £320

EXETER ROYAL DEVON AND EXETER HOSPITAL—House Surgeon (male) Salary at the rate of £130 per annum

HULL ROYAL HULL INFIRMARY—Resident Surgical Officer (male, unmarried) Salary £250 per annum

HOVE HOSPITAL, Sackville Road Hove—Resident Medical Officer (male, unmarried) Salary £150 per annum

JEWELL MATERNITY HOSPITAL, Underwood Street E.1—Honorary Assistant Obstetric Surgeon

JOHNSTON UNIVERSITY OF WATERSFORD—Senior Lectureship in Physiology Salary £516 per annum rising to £726

KETERING AND DISTRICT GENERAL HOSPITAL—Resident Medical Officer (male) Salary £175 per annum

KING EDWARD VII MEMORIAL NATIONAL ASSOCIATION, Cardiff—(1) Area Tuberculosis Physician salary £500 per annum (plus bonus at present £156) rising to £700 (2) Assistant Resident Medical Officer at North Wales Sanatorium salary £200 per annum plus maintenance

LIMINGTON SPI WATFORD GENERAL HOSPITAL—House Physician Salary £150 per annum

LIVERPOOL ROYAL INFIRMARY—(1) House Physician (2) House Surgeon Salary at the rate of £125 per annum each

LIVERPOOL EYE AND EAR INFIRMARY—Honorary Assistant Surgeon to the Ear, Nose and Throat Department

LIVERPOOL ROYAL LIVERPOOL CHILDREN'S HOSPITAL—(1) Resident Casualty Officer (2) Resident Medical Officer at the Heswell Branch (3) Two Resident House Physicians and two Resident House Surgeons at the City Branch Salary for (1) and (2) at the rate of £120 per annum, and for (3) £60 per annum

LIVERPOOL AND SEAFORTH HOSPITAL FOR WOMEN—House Surgeon Salary at the rate of £100 per annum

LODOY TEMPERANCE HOSPITAL, Hampstead Road N.W.1—Honorary Anaesthetist

MILNAR GENERAL HOSPITAL, Greenwich Road S.E.10—Resident Medical Officer (unmarried) Salary £250 per annum

NEWCASTLE UPON TYNE UNIVERSITY OF DURHAM COLLEGE OF MEDICINE—Professor of Anatomy

OTAGO UNIVERSITY, New Zealand—Professor of Dentistry Salary £1000 per annum

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road N.W.1—(1) Assistant Resident Medical Officer (male) Salary at the rate of £80 per annum rising to £100 on appointment as Senior (2) District Resident Medical Officer Salary £100 per annum

REIMS ROAD ROYAL HOSPITAL, Swindon—Assistant House Surgeon (male) Salary at the rate of £100 per annum, rising to £150 on appointment as Senior after six months

ROCHESTER ST BARTHOLOMEW'S HOSPITAL—House Physician unmarried Salary at the rate of £175 per annum

rays Inn Road, W.C.1—House Physician to the

SL.1—Casualty Officer Salary £150 per annum

RUGBY HOSPITAL OF ST CROSS—Senior and Junior Resident Officers (males) Salary at the rate of £150 and £100 per annum respectively

SHEFFIELD ROYAL HOSPITAL—Senior Casualty Officer Salary £150 per annum

SUNDERLAND EDUCATION COMMITTEE—Assistant School Medical Officer Salary £600 per annum

WEST BROMWICH AND DISTRICT GENERAL HOSPITAL—(1) House Physician (2) Casualty House Surgeon Unmarried Salary £200 per annum

WEST LONDON HOSPITAL, Hammersmith Road, W.6—(1) House Physician (2) Two House Surgeons (males) Salary at the rate of £100 per annum

WINGFIELD ORTHOPEDIC HOSPITAL, Hardingdon, near Oxford—Secretary and Workshops Manager Salary £550

MEDICAL REFERENCE UNDER WOMEN'S COMPENSATION ACT 1915 for Sheriffdom of Inverclyde (physician) Applications to Private Secretary Scottish Office, Whitehall S.W.1, by September 3rd

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE  
TAVISTOCK SQUARE W.C.1

## Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager Telegrams Articulate Westcent London)

MEDICAL SECRETARIES (Telegrams Medisecra Westcent London)

EDITOR British Medical Journal (Telegrams Attology Westcent London)

Telephone numbers of British Medical Association and British Medical Journal Museum 5861 5862 5863 and 5864 (internal exchange to all lines)

SCOTTISH MEDICAL SECRETARY 6 Drumshigh Gardens, Edinburgh (Telegrams Associate, Edinburgh Tel 4361 Central)

IRISH MEDICAL SECRETARY 15 South Frederick Street, Dublin (Telegrams Bacillus, Dublin Tel 4737 Dublin)

## Diary of the Association

## AUGUST

25 Thurs Kent Branch British Legion Village, Preston Hall Ashford near Maidstone Dr McDougall will give clinical notes of cases of interest 3 p.m. Tea provided

## SEPTEMBER

1 Thurs Brighton Division Queen's Road Dispensary Address by Dr Bond C.B.E., on his visit to Paris for the final Centenary, 8.30 p.m.

## APPOINTMENTS

MANCHESTER ROYAL INFIRMARY—House Physicians H Arsell, MB, Ch B, Viet, C Metcalfe MB Ch B, Viet, J H Atkinson MB Ch B, Viet, A Hancock, MB, Ch B, Viet, House Surgeons R H Barry, MB Ch B, Viet, A H Baker MB Ch B, Viet, R Newton MB, Ch B, Viet, H J Brannan MB Ch B, Viet, J T C Keddle MB, Ch B, Viet, H B Kellor MB, Ch B, Viet, F E Waddy, MB Ch B, Viet, Second Assistant to the Director of the Clinical Laboratory H Virely, M.Sc. Assistant Surgical Officer, Dental Department H Townley, L.D.S. MB Ch B, Viet

CERTIFYING SURGEON—D S Cherry, MB Ch B, Viet, for the Kilburn District Virely W L R Wood, M.R.C.S., L.R.C.P., for the Osselt District, West Riding, Yorkshire

## POST GRADUATE COURSES AND LECTURES

WEST LONDON HOSPITAL POST GRADUATE COLLEGE, Hammersmith, W.12—Mon, 10 a.m., Gynaecological Operations, 5th Department 11 a.m., Surgical Ward Visit 2 p.m., Surgical Ward Visit Gynaecological Department Tues, Medical Wards Dental Department 2 p.m., Throat, Nose and Ear Department Wed, 10 a.m., Medical Diseases of Children 2 p.m., Eye Department Thurs, 10 a.m., Neurological Department 11 a.m., Surgical Wards, Orthopaedic Department 11 a.m., Gynaecological Operations 11 a.m., Skin Department 11 a.m., Lecture on Modern Methods in Medicine 2 p.m., Throat, Nose, and Ear Department Sat 9.30 a.m., Practical Therapy, 10 a.m., Medical Wards Medical Diseases of Children Daily at 2 p.m., Operations, Medical and Surgical Outpatient

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 2s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue

## MARRIAGES

DOUGLAS WALKER—On August 8th, 1927, at King's College Chapel at 10 a.m., to Amy Stewart only daughter of the late Andrew Walker and of Mrs Walker, 32, Ashley Gardens, Aberdeen

STONER-PATTERSON—On August 17th 1927 at North Shields Stuart C Stoner, MB B.S. (Dunelm) only son of Mr and Mrs T S Stoner of Tynemouth to Jean Evelyn, elder daughter of Mr and Mrs J P Patterson of North Shields

## DEATHS

MITCHELL—On August 8th, at 5 Ardros Terrace Inverness Jan 1 Mitchell aged 11 weeks, younger daughter of Dr and Mrs J V Mitchell

# SUPPLEMENT TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY AUGUST 27TH, 1927

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### British Medical Association

#### CURRENT NOTES

##### Prizes for Essays by Medical Students 1928 and 1929

THE Council of the British Medical Association proposes to award in March, 1928 prize of £10 each for the best essays by final year medical students on "What are the evidences of heart failure. Describe signs and symptoms of any three cases personally examined. One prize will be given in each of the following group of medical schools:

Group 1—University of Aberdeen University of St Andrews (University College Dundee)

Group 2—Queen's University of Belfast University of Dublin (Trinity College) National University of Ireland (University College Cork University College Dublin University College Galway) Royal College of Surgeons in Ireland (Schools of Surgery)

Group 3—University of Birmingham University of Bristol University of Wales

Group 4—University of Durham University of Leeds University of Sheffield

Group 5—University of Edinburgh School of Medicine of the Royal College

Group 6—University of Glasgow Anderson College of Medicine Queen's College School of Medicine of Women St Mungo's College

Group 7—University of Liverpool Victoria University of Manchester

Group 8—University of London Charing Cross Hospital Medical School King's College Hospital Medical School

Group 9—University of London Guy's Hospital Medical School London Hospital Medical College

Group 10—University of London (Post Free Hospital) School of Medicine for Women University College Hospital Medical School

Group 11—University of London Middlesex Hospital Medical School St Mary's Hospital Medical School

Group 12—University of London St Bartholomew's Hospital Medical College St George's Hospital Medical School

Group 13—University of London St Thomas's Hospital Medical School Westminster Hospital Medical School

Group 14—Medical Schools in the British Empire outside the United Kingdom

The prizes will be awarded to the authors of the essays declared to be the best sent in from the respective group but if no essay received from a group is considered deserving of a prize no prize will be awarded in respect of that group. The essay, which must not exceed 5,000 words should be clinical in nature and must include concise notes of three cases personally observed by the student. Essays should be plainly written or typed on fool-cap paper (one side only) and must reach the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1, not later than January 14th, 1928. Each essay must be signed by a pseudonym only and be accompanied by a signed and dated statement that the essay has been the bona fide work of the competitor and that he or she has no vetting of the final professional examination together with particulars of his or her full name, pseudonym, address

and medical school. The essays received will be adjudicated on by examiners appointed by the Council from among members of the Association not resident in the area of the particular group. The decision of the Council will be final.

Notices as to the competition have been sent to the deans of the medical schools with a request for their exhibition on the notice boards, as well as to those hospitals concerned with the education of medical students and to the honorary secretaries of the Divisions and Branches of the Association in whose areas the respective schools are situated.

##### Subject for Essay 1929

The subject for the essay for similar prizes to be awarded in March 1929 (essays to be received by mid January 1929), will be "The symptoms and changes of encephalitis lethargica with their appropriate treatment." Further particulars of the 1929 competition will be announced in due course.

##### Meetings of Committees

The following is a provisional list of dates of meetings of the Council and central committees of the British Medical Association for the session 1927-28

	1927				1928			
	Thur	Fri	Sat	Sun	Mar	Apr	May	June
Charities	—	—	—	—	—	—	—	—
Science	—	—	11	—	—	9	—	June 29
Ethical	Tues	Sept 1	—	Jan 12	—	—	15	—
Hospital	Wed	—	1	11	—	—	15	—
Insurance	Thurs	15	17	12	—	15	—	23
Public Health	Fri	16	—	2	—	—	1	—
Organization	Tue	20	—	1	—	20	—	—
Medical-Political	Wed	21	—	12	—	21	—	—
Journal	Thurs	22	—	19	—	—	—	—
Domestic	Fri	—	25	—	—	25	—	2
Naval and Military	Tues	—	29	—	—	27	—	29
Finance	Wed	3	—	—	—	2	—	3
Secretariat	Thurs	9	—	2	—	—	31	—
Council	Wed	Oct 12	Dec 1	Feb 1	Apr 11	June 1	July 23	—

##### Medical Appointments Abroad

The head office of the British Medical Association has a good deal of information placed at its disposal by its Branches overseas which may be very useful to those proposing to accept medical appointments abroad. Practitioners are cordially invited to apply to the Medical Secretary, B.M.A. House, Tavistock Square, W.C.1, for any information that may be available regarding overseas appointments in which they may be interested.

**The Half-yearly Indexes**

The usual half-yearly indexes to the *JOURNAL* and to the *SUPPLEMENT* and *EPITOME* have been printed, they will, however, not be issued with all copies of the *JOURNAL*, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire together.

**Association Notices.****BRANCH AND DIVISION MEETINGS TO BE HELD**

**BORDER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION**—The next meeting of the Dumfries and Galloway Division will be held in the King's Arms Hotel, Stranraer, on Thursday, September 1st, at 3.30 p.m. Agenda: Correspondence, "Recent methods in the treatment of varicose ulcer of the leg," by Mr. P. A. McCreadie, F.R.C.S. Ed., discussion on the treatment of tuberculous glands in the neck, introduced by Dr. Macdonald Ross, demonstration of pathological specimens by Mr. G. R. Livingston, F.R.C.S. Ed. After the meeting the members will dine together.

**SUSSEX BRANCH BRIGHTON DIVISION**—A meeting of the Brighton Division will be held at the Queen's Road Dispensary on Thursday, September 1st, at 3.30 p.m. Agenda: Report of Representatives on Annual Edinburgh, report of Secretary on Edinburgh Charities Committee and other business. Address by Dr. Boud, C.B.E., on his visit to Paris for the Piel Centenary. The following is a list of meetings arranged for the coming season, 1927-28: Saturday, September 24th, 1927, at Chichester Heritage Friday, October 6th meeting with Sussex Law Society Wednesday, October 19th, Sussex County Hospital Thursday, November 17th, Children's Hospital Wednesday, December 14th, Poor Law Infirmary Thursday, January 19th, 1928, Sussex County Hospital Wednesday, February 15th, Sussex Eye Hospital Thursday March 15th, Children's Hospital Wednesday April 18th, Lady Chichester Hospital Thursday, May 17th, Brighton Borough Sanatorium Wednesday, June 20th, Sussex County Hospital. The dates of meetings with Dental Society pharmacists and teachers, and also of supper, will be notified later. A clinical meeting of the Division will be held at the Heritage, Chichester, on the afternoon of Saturday, September 24th. Members are invited to bring their wives, who will be conducted over the Heritage during the clinical meeting. By the kindness of Mrs. Kimmins tea will be provided. A detailed programme will be announced later. Members intending to be present are requested to inform the honorary secretary as early as possible, also any members desiring to be taken by car are requested to write to the secretary, as there are plenty of seats available.

**Meetings of Branches and Divisions****BORDER COUNTIES BRANCH**

The annual general meeting of the Border Counties Branch was held at the Crown and White Hotel, Carlisle, on July 8th when Dr. P. M. KERR the retiring president was in the chair.

The Branch Council's annual report and financial statement was read and circulated, and names of office bearers for 1927-28 announced as follows:

*In absentia* Dr. J. R. Burnett *President Elect*, Dr. John Ritchie *Vice President*, Dr. P. M. Kerr (two years) *Mr. Norman MacLaren* (one year) *Honorary Secretary and Treasurer*, Dr. G. T. Wilkin.

Dr. P. M. Kerr, on vacating the chair, invested Dr. J. R. Burnett with the insignia of office and a very hearty vote of thanks to Dr. Kerr for his conduct of office of president for the past year was accorded with acclamation.

The meeting adjourned for tea thirty members and ladies partaking of the president's hospitality, after which Dr. Burnett gave his presidential address entitled "Some notes on the history and work of the St. John Ambulance Association."

The address was illustrated by a number of very interesting lantern slides, and the meeting ended with a very hearty vote of thanks to Dr. Burnett.

**NORTH WALES BRANCH**

The annual meeting of the North Wales Branch was held at the Grand Hotel, Penryn, on July 8th. It was agreed that the spring meeting, in 1928 should be held at Llandudno, and the summer meeting at Llangwyfan Sanatorium. The new President, Dr. J. R. WILLIAMS, J.P., took the chair. Dr. E. I. Spiggs was unanimously chosen president elect, and Dr. Lewys Lloyd secretary for 1927-28.

The members were entertained to lunch by the President at the Grand Hotel. In reply to Dr. J. R. PRITCHETT who proposed the "British Medical Association," Dr. ALFRED COX, the Medical Secretary, dwelt upon the work of the Association for all sections of the medical practice and cited the gift chair in the Great Hall

as a symbol of the unity of the whole profession at home and overseas. The address was much appreciated, several questions were answered by Dr. Cox, and a hearty vote of thanks was accorded to him for visiting the Branch.

A pleasant incident during the proceedings was the presentation of a silver cigarette box by Dr. Prythor, on behalf of the practitioners of Carnarvonshire and Anglesey, to Dr. Fenwick Jones, the tuberculosis officer, on his leaving the area to take charge of Llangwyfan Sanatorium.

**SOUTH WALES AND MONTMOUTHSHIRE BRANCH SWANSEA DIVISION**—At the annual meeting of the Swansea Division, held on June 23rd, the following officers were appointed:

*Chairman*, Dr. Daniel E. Evans. *Vice Chairman*, Dr. A. F. S. Sladden. *Honorary Secretaries*, Dr. Joseph Lloyd and Dr. F. H. K. Knight. *Representatives in Representative Body*, Dr. H. J. Jones. *Representative in Representative Body*, Dr. H. J. Jones. *Committee*, Dr. L. Freeman Marks. *Contract Practice Subcommittee*, Dr. Joseph Lloyd, Dr. L. Freeman Marks, and Dr. Horatio E. Rawlings.

Dr. J. M. Morris (North) was nominated president elect of the Branch.

**Correspondence.****Disciplinary Procedure**

SIR,—I have been reading with great interest the annual report of the Insurance Acts Committee (*SUPPLEMENT*, August 20th, p. 105) on the subject of disciplinary procedure and note that many minor grievances are likely to be redressed. Unless I have not read the report correctly, its many words intend to conceal the fact that the biggest grievance of all is left untouched. I refer to the procedure adopted to determine the appropriate penalty in cases which have been investigated by an inquiry committee under Part VI of the Regulations.

Perhaps I may be allowed to recite what now happens. The practitioner accused of some major delinquency is first heard by the Medical Service Subcommittee, the evidence not being on oath and often being very vague and diffuse. This Committee reports to the Insurance Committee for the county, which then becomes the prosecutor, and on its motion a court of inquiry is convened. Before this court the practitioner is arraigned. A barrister is in the chair, evidence is given on oath, and every attempt is made to give a fair hearing so far as the Minister allows. This is not very far, for the practitioner may not bring evidence of the way in which he ordinarily conducts his practice, nor may the court state whether he is or is not guilty, or whether there are features in the case which might move them, if permitted, to add to their report recommendations of any kind. The report of the inquiry committee is then referred to another committee (which for convenience I will call the Star Chamber), which is composed of Ministry officials and sits in private. This committee hears any new evidence which may come along from either side, and even hears expert evidence quite unknown to the practitioner—for example, expert evidence as to what is or is not suggestive of diphtheria or appendicitis, etc. This Star Chamber advises the Minister as to penalty. Sometimes he takes its advice, sometimes not. In the latter case he acts on his own initiative and imposes whatever penalty he sees fit. This is no exaggeration, and the Insurance Acts Committee no doubt knows the cases which are hinted at.

The above is the procedure to which the profession has taken chief objection. After the most careful study of the Insurance Acts Committee report I can find no certain evidence that this procedure is to be altered in any particular. One may, however, infer that occasionally in such cases the Star Chamber committee will be reinforced by one or more members taken from a list prepared by the Insurance Acts Committee. That is the utmost suggested, and the Minister is careful to state that he will not take the names on this list in rotation, and it also appears doubtful whether any part of the case which has a quasi-legal flavour will be permitted to be discussed.

It is exceedingly difficult to see in what way the profession will be assisted by this shadow of a remedy. Even if the Star Chamber committee does include a member of the Insurance Acts Committee it will still be permitted to hear new evidence, unknown to the practitioner. The Insurance Acts Committee member will not be in a position to object to what is very prevalent on the committee already condones. And what of the Insurance Committee or the approved society concerned? If we have a right to representatives sent to see that there is fair play to the practitioner, can we deny their right to similar representatives sitting to safeguard the insured person? Let us imagine a sitting of this Star Chamber committee. It will comprise a certain number of perfectly honest men—judicial men—trying to do their best. They will have before them the report of the Medical Service Subcommittee, usually unimpeached but judicial. Also the report of the Insurance Committee—frankly hostile majorities are not unknown on these committees.



Lieutenant J. A. Friedman to be Captain.  
Lieutenant J. Ledingham resigns his commission.  
Lieutenant J. O'Hara from the and (Island) Division Train  
R. S. C. to be Lieutenant with precedence as from October 2, 1916  
Subaltern for Service with OTC - Captain V. C. Penney to  
R. A. C. to be Lieutenant with precedence as from August 1, 1917  
for service with Medical Unit Cambridge University College  
Senior Division OTC and relinquishes the rank of Captain.



# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY SEPTEMBER 10TH 1927

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### British Medical Association.

#### CURRENT NOTES

##### South African Medical Congress March 1923.

THE first South African Medical Congress under the aegis of the Federal Council of the Medical Association (the South African (British Medical Association) is to be held in Bloemfontein in the week beginning March 12th 1923. A large number of American visitors are expected and our South African members would greatly appreciate the presence of a contingent from the parent body. To any members who may be contemplating a pleasure trip during the trying months of the English winter a visit to South Africa can be highly recommended and there will be combining an agreeable holiday with effective work for the Association if they will make Bloemfontein the objective of their journey. The Medical Secretary will be glad to bar from any member who is willing to consider the journey and to give any information and assistance that he can.

##### Working Urban District Council Medical Officer of Health

Owing to a misunderstanding which has now been removed as to the nature of this appointment attention was called to the proposed appointment of a medical officer of health under the Working Urban District Council among the Important Notices in our issue of September 3rd. We are glad to state that in view of explanations which have been given there is now no objection to this post, and it is advertised in our advertisement columns this week.

##### Women and the British Medical Association

At the end of 1926 (SUPPLEMENT, December 18th p 253) a note was published on an article contributed to the Medical Women's Federation News-Letter by Miss Sarah Gray, F.R.C.S.I., of Nottingham giving an account of the Annual Meeting in that town in 1892 when a resolution was adopted admitting women to the membership of the Association. Mrs Garrett Anderson had been admitted a member twenty three years earlier but shortly afterwards (1878) a rule excluding women was made. She, Dr Walker Dnabar of Clinton and Dr Sarah Gray herself were present at the meeting in Nottingham the last two as spectators in the gallery. It seems that at that date the suggestion to admit women had already taken shape in Australia, Mrs Laura Fowler (now Mrs Charles Hope) had graduated M.B. B.S. at the Adelaide University in 1891. At the suggestion of Dr London then Honorary Secretary of the Adelaide and South Australian Branch she in December of that year applied to be admitted a member of the British Medical Association but was told that the rules prohibited her election. In the following February the Branch held a meeting on this subject when a resolution was moved by Dr London and seconded by Dr (now Sir) Joseph Verco in favour of the admission of women (see South Australasian Medical Gazette, March, 1892). There was some opposition, and finally it was

resolved to take a plebiscite on the whole Branch. This was done and at a meeting of the Branch on March 24th, it was reported that 75 members out of a possible 26 had voted of the 75 who voted 40 were in favour 20 were untravelling and 9 professed indifference. Some correspondence ensued between Dr London as Honorary Secretary of the Branch and the General Secretary of the Association and owing to the long postal delays the matter had been decided at Nottingham. The matter was referred to in the annual report of the Central Council of the British Medical Association for 1892 when it was said that the question of the admission of women as members had again been brought forward by two of the Australian Branches. It was recalled that in 1876 a vote of the members had been taken 6 250 circulars were issued asking each member to say 'yes' or 'no' to the question whether medical women should be admitted as members out of 4 161 voting papers returned 3 072 were against the admission of women and 1 081 in favour. The report went on to quote the following passage from a letter received from the Honorary Secretary of the Adelaide and South Australia Branch. It was felt by some that it was a distinct hardship that women should be debarred from such membership as the colonial universities granted them degrees and put them on an even footing with men, it was not consistent therefore to refuse them admission to the meetings of the Association and Branches providing the Articles of the Association were altered to allow them to become members. The report also stated that at the Melbourne and Victoria Branch had resolved. That duly qualified medical women are eligible as members of the Victorian Branch of the British Medical Association subject to the approval of the Council of the Association. This section of the report of the Central Council concluded with the statement that as the previous decision of the whole Association was arrived at fourteen years ago the views of the majority may since have become modified, the Council had therefore decided to place the question before the meeting of the members during the Annual Meeting at Nottingham. It was at this meeting that the resolution admitting women was adopted. On October 12th, 1892 Dr Laura Fowler was elected a member of the British Medical Association and of its South Australian Branch. Whether she was the first woman to be elected a member of the British Medical Association under the new rule it would not now be easy to ascertain, but she must have been one of the earliest.

### Association Notices.

#### BRANCH AND DIVISION MEETINGS TO BE HELD

**LINCOLNSHIRE AND CHESHIRE BRANCH.** ASHTON UNDER LYNE DISTRICT.—A meeting of the Ashton under Lyne Division will be held in the George and Dragon Hotel Ashton on Friday September 16th at 8.30 p.m. A hot pot supper will be served. Agenda.—Report of Executive Committee as to the scale of minimum remuneration for public health medical officers and recommendation of Executive that the Division adopt a resolution under

its Ethical Rules report of representative to Representative Body,  
secretary's statement regarding payments by private patients in  
Lako Hospital

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—A dance will  
be held at the Waverley Ballroom, Whitley Bay, on Friday,  
October 28th. Tickets, 12s 6d each may be obtained from Dr  
John Murray of 4, Alma Place, North Shields. The proceeds will  
be devoted to the charities supported by the British Medical  
Association

**SURREY BRANCH GUILDFORD DIVISION**—The following programme  
of meetings has been arranged for the session 1927/28. All meetings  
are held at the Royal Surrey County Hospital Guildford. Tea is  
served at 3.45 p.m., and meetings commence at 4 p.m. punctually

Oct. 6th Sir St Clair Thomson Lister and His Work for Humanity  
Nov. 3rd Messrs Butler and Sheaf Surgical and Other Experiences  
Dec. 2nd Dr J. M. Watt Puerperal Septicæ  
Jan. 5th Sir John Collicott Where Law and Medicine Meet  
Feb. 2nd Sir D. Arey Power The History of Medicine  
March 1st Sir Thomas Lewis The Rheumatic Heart in Children  
April 5th Clinical Meeting  
" 28th Visit to King George V Sanatorium, Godalming, by Lind  
May 3rd Invitation of Dr James Watt  
June 7th Demonstration Clinical Meeting in the Wards and Pathological  
Annual Meeting

**WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION**  
—Under the auspices of the University of Birmingham a series  
of postgraduate lectures (particulars of which are appended) will  
be held on six successive Fridays, at 3.30 p.m. at the Herefordshire  
General Hospital, beginning on Friday October 7th. It is hoped  
that every member of the Division will make an effort to attend.  
The fee for the course is two guineas. Tea will be provided.  
Applications should be made to the honorary secretary, Dr J. R.  
Bulman, Hill Side, Hereford

Oct. 7th Dr Wynn Chronic Arthritis and its Treatment.  
" 14th Dr Wilkinson The Significance of Blood Pressure Variations  
" 21st Mr G. P. Mills Some Common After Effects of Injury  
" 28th Dr Emmanuel Cardiac Irregularities  
Nov. 4th Dr Douglas Stanley Problems in the Diagnosis of Lung  
Diseases  
" 11th Mr Beclwith Whitehouse The Menstrual Function in  
Health and Disease

## Correspondence.

## Remuneration of Insurance Practitioners

Sir,—Many of us are impressed by the ever increasing  
demands made upon us by panel patients, and have an uneasy  
feeling that if the capitation fee of 9s was inadequate three  
years ago the time has now arrived when what we are  
receiving for our attendance upon panel patients verges on the  
ridiculous. To test the matter we have examined the record  
cards of all our patients whose names begin with the letter C.  
The number was 139

The cards showed from August 1st, 1926, to August 1st, 1927,  
387 surgery attendances and 131 visits. Now 139 patients  
at 9s per annum = £62 11s, 387 surgery attendances at  
2s = £38 14s, 131 visits at 4s = £26 4s, total £64 18s

From these figures it is apparent that we are not actually  
receiving 2s per surgery attendance or 4s per visit—a rate of  
remuneration that in pre-war days we should have considered  
very moderate

This is an ordinary semi rural practice, and our patients are  
not pampered, but our record cards are kept with meticulous  
care. If other practitioners who have confidence in the accuracy  
of their records also would analyse the figures for a group  
chosen haphazard, as by taking all names beginning with the  
same letter, and forward them for publication, we should soon  
see in what light we are justified in regarding the present  
capitation fee, and with little trouble to ourselves meet the  
demand of the Insurance Acts Committee for statistics

Our total panel is about 1500, but by this short cut, which  
occupied little more than an hour, we have satisfied ourselves  
that the capitation fee is in urgent need of revision.—W  
arc, etc,

Calne Wilts, Sept 2nd

C EDE  
A K JAMES

## THE MEDICAL REGISTER • UNTRACEABLE PRACTITIONERS.

We are requested by the Registrar of the General Medical Council to publish the following list of medical practitioners  
who have not replied to his inquiries as to the accuracy of their addresses. Anyone, wherever resident, who finds his or  
her name included in this list should communicate immediately with the Registrar of the General Medical Council,  
44, Hullam Street, Portland Place, London, W 1, otherwise the name will be omitted from the next issue of the Medical  
Register

Abdurahman, Ismail M.B. 1915 (E)  
Abushady, Ahmed Z. L.M.S.S. 1915 (E)  
Adams, Edward J. M.R.C.S. 1857 (F)  
Addison, John H. L.R.C.P. 1901 (E)  
Addison, Holloway L. M.R.C.S. 1914 (E)  
Adeney, George C. M.R.C.S. 1903 (E)  
Aharna, Joseph L.R.C.S. 1871 (E)  
Ahmed Abdul M. M.R.C.S. 1916 (E)  
Ahmed Esawy, M.R.C.S. 1917 (E)  
Aiken, James P. M.B. 1912 (I)  
Aiklev, Frederick S. M.B. 1893 (S)  
Ainsley, James E. L.R.C.P. 1916 (F)  
Ainsworth, Douglas R. M.R.C.S. 1922 (E)  
Alcorn, Robert M. L.R.C.P. 1914 (I)  
Alexander, Frederick H. M.B. 1921 (E)  
Allen, Norman M.R.C.S. 1883 (E)  
Allport, Ethel A. M.B. 1909 (E)  
Alper, Evett G. M.R.C.S. 1902 (L)  
Alper, Minnie, M.D. 1922 (E)  
Anderson, Charles M. M.R.C.S. 1876 (E)  
Anderson, Florence M. M.B. 1922 (I)  
Anderson, Frederick, M.D. 1897 (S)  
Anderson, John O. M.B. 1897 (E)  
Anderson, Thomas Cochrane M.L. 1882 (S)  
Andrew, George, M.R.C.S. 1874 (E)  
Andriag, Philip O. O.B.E., M.R.C.S. 1896 (E)  
Anthony, William M. M.R.C.S. 1915 (E)  
Arbuthnot, J. M.B. 1911 (S)  
Armstrong, George L.R.C.P. 1903 (E)  
Armstrong, Margaret M. M.B. 1914 (I)  
Arnold, Frank A. L.S.A. 1892 (E)  
Ash, Alfred E. M.R.C.S. 1890 (E)  
Ashburner, Robert L.R.C.P. 1883 (E)  
Atkins, Francis L. L.S.A. 1873 (E)  
Austin, (Mrs.) Christina M.B. 1905 (S)  
Avalon, Claude H. M.R.C.S. 1914 (E)  
Bailley, Edwin R. M.R.C.S. 1914 (E)  
Bainbridge, Philip G. L.R.C.P. 1923 (S)  
Baker, Leonard T. M.B. 1909 (E)  
Banerjee, Prabhodh C. L.R.C.P. 1919 (E)  
Barker, George P. L.R.C.P. 1899 (E)  
Barrett, John E. L.R.C.S. 1863 (I)  
Barry, David T. M.B. 1894 (I)  
Barry, John M. J.R.C.P. 1901 (I)  
Bartlett, George B. L.R.C.P. 1910 (I)  
Basu, Sir Kailas M. M.B. 1883 (S)  
Basu, Sir Kailas O. K.C., C.I.E., O.B.E., L.M.S., 1895 (Col.)

Bates, Herbert, M.B. 1901 (E)  
Baylor, Robert J. L.R.C.P. 1880 (I)  
Bajumi, Mahmud, M.R.C.S. 1915 (E)  
Bald, Thomas M. M.R.C.S. 1899 (E)  
Barnbrook, Arthur, M.R.C.S. 1920 (E)  
Bards, Samuel A. M.R.C.S. 1924 (E)  
Beasley, Henry C. L.R.C.P. 1893 (I)  
Bentley, William P. M.B. 1904 (S)  
Beddoes, Thomas P. M.R.C.S. 1884 (E)  
Bell, Francis G. M.C. M.R.C.S. 1910 (S)  
Bell, Mary C. M.B. 1903 (L)  
Belton, (Mrs.) Eileen M. M.B. 1917 (I)  
Benbow, Thomas W. L.R.C.P. 1882 (S)  
Bennett, Thomas A. P. M.R.C.S. 1915 (E)  
Benson, Henry P. D.A. M.R.C.S. 1922 (I)  
Bestawros, Riaz H. M.B. 1892 (E)  
Bettbridge, (Mrs.) F. M.C. 1925 (E)  
Beyan Brown, Frederic L.M.S.S. 1908 (E)  
Bibb, William A. M.C. M.R.C.S. 1913 (E)  
Billmorla, Sorab D. L.M.S.S. 1917 (E)  
Birmingham, Herbert J. L.R.C.S. 1921 (Col.)  
Bishop, Dorell W. M.R.C.S. 1881 (I)  
Blanchard, David F. L.R.C.P. 1894 (S)  
Blindon, Max, M.R.C.S. 1897 (L)  
Blumel, Charles H. M.B. 1884 (I)  
Bolton, Robert F. M.R.C.S. 1917 (E)  
Boon, Thomas L. M.R.C.S. 1918 (S)  
Boon, Alfred H. M.R.C.S. 1920 (E)  
Boughton, William D. L.R.C.P. 1917 (L)  
Bourne, Newcome W. M.R.C.S. 1877 (E)  
Bowe, Francis M.R.C.S. 1879 (E)  
Bowen, Daniel R. L.R.C.P. 1880 (E)  
Bowen, John E. L.R.C.P. 1887 (S)  
Bowle, Edgar O. M.B. 1921 (I)  
Boyd, Richard P. M.B. 1914 (I)  
Boyd, Alexander J. M.B. 1935 (I)  
Braby, George W. L.R.C.P. 1893 (E)  
Brandt, Reginald R. J.M.D. 1924 (I)  
Bratton, William L.R.C.P. 1885 (I)  
Bray, Frederick H. M.B. 1915 (E)  
Bray, Percy D. L.S.A. 1895 (F)  
Bretton, Lancelot M. L.S.A. 1895 (F)  
Bridges, William P. L.S.A. 1877 (E)  
Bridgstocke, Leslie C.W. L.S.A. 1907 (E)  
Brishow, Harry I. M.B. 1906 (I)  
Brito, Mutunayagam, Michael A. D. M.R.C.S., 1924 (E)  
Broad, William, M.D. 1899 (S)

Brook, Benjamin C. L.R.C.P. 1884 (S)  
Brodie, John, M.R.C.S. 1919 (E)  
Brook, Charles M.R.C.S. 1861 (E)  
Brook, Thomas, M.B. 1912 (I)  
Brooks, Gertrude M.B. 1911 (E)  
Brooks, (Mrs.) Mollie M. St J. M.B. 1910 (I)  
Brown, Abraham S. M.R.C.S. 1915 (E)  
Brown, Duncan F. M.B. 1893 (S)  
Brown, Elsie M.R.C.S. 1893 (E)  
Brown, James F. L.S.S. 1897 (L)  
Brown, John M.D. 1863 (E)  
Browne, Elcott S. L.R.C.S. 1874 (I)  
Browning, William H. L.R.C.P. 1921 (I)  
Bruce, Hugh G. M.D. 1887 (E)  
Bruce, James W. K. M.B. 1912 (S)  
Bryan, Richard B. (Clerk) M.B. 1907 (I)  
Burl, Hubert W. L.R.C.P. 1883 (E)  
Burke, Henry O.D. M.B. 1924 (I)  
Burns, Hugh W. M.R.C.S. 1905 (E)  
Burrell, Rex J. M.B. 1916 (I)  
Barton, Russell N. L.R.C.P. 1917 (I)  
Butterfield, Arthur L.R.C.P. 1861 (E)  
Bynoe, Charles A. L.R.C.S. 1915 (E)  
Byrne, Henry L.R.C.S. 1887 (I)  
Byrne, Lucetta H. L.R.C.P. 1921 (I)  
Calkin, Michael L.R.C.S. 1885 (E)  
Cannell, Edward M.R.C.S. 1892 (I)  
Cameron, Patrick S. C.V.D. 1918 (S)  
Campbell, Helen Y. I.R.C.I. 1907 (S)  
Capener, (Mrs.) Marion C.V. (formerly Clai M.R.C.S. 1921 (E))  
Carew, Walter D. L.R.C.P. 1921 (E)  
Carleton, Mervyn H. L.R.C.P. 1921 (S)  
Carrasco, Milton M.R.C.S. 1915 (E)  
Carrington, George H. L.S.A. 1884 (E)  
Carte, Percy G. M.B. 1912 (I)  
Carte, Gerald B. M.B. 1816 (I)  
Carte, Ralph H. M.R.C.S. 1923 (F)  
Castle, Thomas L.R.C.P. 1861 (E)  
Chadwick, Harold D. L.S.A. 1891 (E)  
Chadwick, Alfred, M.R.C.S. 1875 (E)  
Challenger, Neville L. M.R.C.S. 1882 (E)  
Chapman, Robert L. L.M.S.S. 1915 (E)  
Chataway, (Mrs.) C. S. M. M.R.C.S. 1915 (E)  
Chaudhri, Kewal R. L.S.S. 1924 (E)  
Childs, Tom W. J. M.D. 1913 (S)

Geoffrey Benjamin G M R C S 1755 (E)  
 Goldberg Joseph M R C S 1755 (E)  
 Gold mine L R C P 1755 (E)  
 Goodchild Thomas V L R C P 1755 (I)  
 Gordon John MB 1872 (S)  
 Cornell Thomas B MB 1893 (S)  
 Could Charles H M R C S 1913 (E)  
 Could John F M R C S 1834 (E)  
 Goulton Arthur M R C S 1833 (E)  
 Grace Jeremiah L R C P 1755 (E)  
 Gracey Daniel J MB 1721 (I)  
 Craham Alfred S MR 1920 (E)  
 Craham Georg R M L R C P 1824 (E)  
 Craham Gilbert M MB 1911 (S)  
 Craham William M MB 1833 (I)  
 Craham Hodgson Harold K M B 1916 (E)  
 Grace Joseph M M B 1745 (E)  
 Crant Edward A M B 1722 (I)  
 Gray James J L R C I 1843 (S)  
 Green Cyril A H M R C S 1744 (E)  
 Greenwood Cecil D L S A 1833 (E)  
 Criffen Vincent D L R C P 1910 (S)  
 Griffith James De B M B 1874 (I)  
 Grimmer Thomas S M P and S 1724 (Col.)  
 Cromber Paul J MB 1923 (I)  
 Grove Frederica P M R C S 1901 (E)  
 Grove Ernes J C MB 1765 (S)  
 Guillivole Denis P M R C S 1918 (E)  
 Guinnes Cereshon W MB 1810 (I)  
 Guncardson Hubert M M R C S 1719 (E)  
 Gwynn Neville C L R C P 1755 (E)  
 Harlan Harry S L R C P 1763 (S)  
 He Asjee Salomon L R C I 1722 (S)  
 Hloer Charle L R C P 1763 (S)  
 Hooper Henry C C M R C S 1731 (E)  
 Hustine John W M R C S 1922 (E)  
 John John R M R C P 1776 (E)  
 Johnston Henry S L R C P 1743 (I)  
 Jones Ralph L M S S A 1913 (E)  
 Jones William A L M S S A 1922 (E)  
 Hull Daniel J C L R C P 1915 (I)  
 Kelly Ignatius P MB 1911 (I)  
 Keran Robert L R C S 1841 (I)  
 Kuhn Gustaf P M B 1922 (Col.)  
 Lambert Alexander C M P and S 1716 (Col.)  
 Lauder Harold V P T M R C S 1833 (E)  
 Lauder-Charles Charles T F B 1923 (I)  
 McCorkell Andrew E M B 1922 (I)  
 McCormack Michael J L M B 1771 (I)  
 Macdonald John F M B L R C P 1755 (S)  
 Macmillan Robert L R C S 1872 (I)  
 Maguire Joseph L R C S 1847 (I)  
 Matthews Alfred M M R C S 1722 (E)  
 Mifsud William E L R C P 1860 (E)  
 Mill William M R C S 1822 (E)  
 Moorhead Charles W L S 1750 (E)  
 Morris David M B 1755 (E)  
 Mullan Patricia M D 1840 (I)  
 Nicolas John D L R C P 1755 (S)  
 Ogilvie Nettie L R C P 1823 (S)  
 O'Grady Francis R L R C S 1863 (I)  
 Oliver Stuart L S A 1860 (E)  
 Paling John M M B 1863 (Col.)  
 Perkin Herbert F M B 1902 (I)  
 Peck Edward J J M B M R C S 1748 (E)  
 Ratton Frederica C M B 1849 (S)  
 Reid Oswald J M B 1920 (Col.)  
 Richard Arthur J L R C P 1823 (S)  
 Rom Solomon J L R C P 1722 (S)  
 Ross Donald M L R C P 1912 (E)  
 Ro Hugh C L R C P 1833 (E)  
 Sammut Carmel M D 1915 (Col.)  
 Sheridan John J M B 1921 (I)  
 Siss Maurice M B 1845 (I)  
 Smartt The Hon Sir Thomas W K C M G L R C S 1758 (I)  
 Starling Ernest L C M C M R C S 1733 (E)  
 Stokes William M D 1753 (I)  
 Sumner Theodo us J M B 1923 (S)  
 Taaffe Robert H F L R C P 1910 (I)  
 Van Rens de Croot Stanley H R L S A 1862 (E)  
 Vellema Douwe M MB 1923 (I)  
 Wheat Ernest G M R C S 1913 (E)  
 Whyte Henderson M B C S 1913 (E)  
 Whitcomb George M B L R C P 1903 (I)  
 Winship William A L S A 1855 (E)  
 Wood Thomas F M B 1826 (I)

Flt Lt Lieut D. Loughlin to School of Technical Training, London  
Flying Officers J. E. Foran to Headquarters, Egypt; J. McCarren to  
Research Laboratory and Medical Officers School of Instruction of  
appointments to a short-service commission.



## VACANCIES

ASHTON UNDER LYNE DISTRICT INFIRMARY—House Surgeon Salary at the rate of £150 per annum

BATH MINISTRY OF PENSIONS HOSPITAL—Junior Medical Officer Salary £200 per annum

BIRMINGHAM CITY—Medical Officer of Health Salary £1,800 per annum

BIRMINGHAM MATERNITY HOSPITAL—House Surgeon Salary at the rate of £75 per annum

BIRMINGHAM AND MIDLAND EYE HOSPITAL—Junior House Surgeon Salary £110 per annum

BIRMINGHAM EDUCATION COMMITTEE—Assistant School Medical Officer Salary £600 per annum

CAMBRIDGE ADDENBROOKS HOSPITAL—Casualty Officer and Resident Anaesthetist (male) Salary £130 per annum

CARDIFF CITY MENTAL HOSPITAL Whitechurch, near Cardiff—Senior Assistant Medical Officer (male) Salary £550 per annum, rising to £600 or to a married man £700

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street W.C.1—Senior and Junior House Surgeons Salaries at the rate of £100 and £50 per annum respectively

CHESHIRE COUNTY MENTAL HOSPITAL, Parkside, Macclesfield—Resident Clinical Assistant Salary £75 per annum

DUBLIN GENERAL HOSPITAL—House Surgeon (male) Salary £125 per annum

DEBENHAM EDUCATION COMMITTEE—Assistant School Medical Officer (male) Salary £600 per annum, rising to £700

DONCASTER UNION—Resident Medical Officer Salary £220 per annum

EDINBURGH HOSPITAL FOR CHILDREN Southwark, S.E.1—Hon. Physician (male) Salary £120 per annum

GLASGOW EYE INFIRMARY—(1) Assistant Surgeon (2) Clinical Assistant (male) Royal Infirmary Infirmary—Third House Surgeon (male, unmarried) Salary £100 per annum

HOSPITAL OF ST JOHN AND ST ELIZABETH, Grove End Road N.W.8—Resident House Physician (male) Salary at the rate of £100 per annum

JOHANNESBURG UNIVERSITY OF THE WITWATERSRAND—Senior Lecturer in Physiology Salary £516 per annum, rising to £726

LIVERPOOL INSTITUTE OF PREVENTIVE MEDICINE S.W.1—Research Fellowship in Bacteriology £500 per annum

LIVERPOOL PORT SANITARY AUTHORITY—Assistant Medical Officer of Health Salary £700 per annum, rising to £800

LONDON HOMOEOPATHIC HOSPITAL, Great Ormond Street and Queen Square, Bloomsbury, W.C.1—Resident Medical Officer Salary at the rate of £100 per annum

LONDON JEWISH HOSPITAL, Stepney Green E.1—(1) Honorary Medical Officer in charge of the Department for Diseases of the Skin (2) Honorary Assistant Surgeon for Diseases of the Eye

LONDON UNIVERSITY—Readership in Pathology Salary £800 a year

LORD MAYOR FREEMAN CRIPPLES HOSPITAL, Alton and Hylton Island—Assistant Resident Medical Officer (male) Salary £400 per annum

MILTON KEYNES PARKSIDE MENTAL HOSPITAL—Resident Clinical Assistant Salary £75 per annum

MANCHESTER ALCOHOL HOSPITAL—House Surgeon (male) Salary at the rate of £100 per annum

MANCHESTER BABIES HOSPITAL—(1) Resident Medical Officer (2) Junior Resident Medical Officer Salaries at the rate of £125 and £50 per annum respectively

MANCHESTER EYE HOSPITAL—House Surgeon Salary at the rate of £150 per annum

MANCHESTER HOSPITAL—two for the Whitworth Park Hospital £50 per annum

MINOR HOUSE HOSPITAL, North End Road, Golders Green N.W.11—House Surgeon (male, unmarried) Salary at the rate of £200 per annum

MERTHYR TOWN GENERAL HOSPITAL, Merthyr Tydfil—Resident House Surgeon Salary £100 per annum

MIDDLESBROUGH NORTH ORTHOPEDIC HOSPITAL—House Physician (male, unmarried) Salary £115 per annum

MILNER GENERAL HOSPITAL FOR SOUTH EAST LONDON, Greenwich Road S.E.10—House Physician (male, unmarried) Salary £125 per annum

NORTH STAFFORDSHIRE ROYAL INFIRMARY, Thirskill Stoke on Trent—House Surgeon for the Eye, Ear, Nose, and Throat Departments Salary £150 per annum

NORWICH JESSIE LIND HOSPITAL FOR CHILDREN—Resident Medical Officer (male) Salary £120 per annum

NOTTINGHAM GENERAL DISPENSARY—Resident Surgeon (male) Salary £250 rising to £300

OTAGO HOSPITAL BOARD—Resident Surgical Officer (senior) Salary at the rate of £500 per annum

PRINCE OF WALES GENERAL HOSPITAL, Tottenham N.15—(1) House Surgeon (2) Special House Surgeon (3) Hon. Physician (4) Junior House Surgeon (5) Junior House Physician Salaries (1) (2) and (3) £120, and (4) and (5) £90 per annum each

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road E.C.1—Assistant Surgeon

ROYAL NATIONAL ORTHOPEDIC HOSPITAL, Great Portland Street W.1—House Surgeon Salary £150 a year

ROYAL NORTHAMPTON HOSPITAL, Holloway N.—(1) House Physician (2) Obstetric House Surgeon Salaries at the rate of £70 per annum each. (3) Anaesthetist honorarium £10 10s per annum

ST. PETER'S HOSPITAL FOR STONE, etc., Henrietta Street, Covent Garden W.C.2—House Surgeon Salary £75 per annum

SILFORD ROYAL HOSPITAL—Two House Surgeons (male) Salaries at the rate of £125 per annum each

SALISBURY GENERAL INFIRMARY—House Surgeon (male, unmarried) Salary £150

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road N.W.—Anaesthetist twice weekly Honorarium £30 per annum

SHEFFIELD JESSIE HOSPITAL (FIRTH) AVALIAVA—Resident Medical Officer Salary at the rate of £175 per annum

SHEFFIELD ROYAL HOSPITAL—Resident Anaesthetist (male) Salary £80 per annum

SOUTHAMPTON COUNTY BOROUGH—Resident Medical Officer at Isolation Hospital Salary £360 per annum

STAFFORDSHIRE EDUCATION COMMITTEE—Assistant School Medical Inspector (male) Salary £600 rising to £800

SWANSEA HOSPITAL—House Surgeon for Ophthalmic and Aural Departments (male, unmarried) Salary £150 to £200 per annum

WATFORD PRICE MEMORIAL HOSPITAL—Resident Medical Officer Salary £150 per annum

WHITBY AND WEST CUMBRIAN HOSPITAL—Junior House Surgeon Salary £100 per annum

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY—House Surgeon Salary £200 per annum

CERTIFYING FACTORY SURGEONS—The following vacant appointment is announced Lymouth (Devonshire) Applications to the Chief Inspector of Factories Home Office Whitehall S.W.1

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

## POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1 Wimpole Street W.1—Monday, September 19th, to Saturday, September 24th Westminster Hospital S.W.1 Course in Medicine, Surgery, and the Specialties, all day course fee £3 3s. Royal National Orthopaedic Hospital, Great Portland Street W.1 Course in Orthopaedics, all day clinical demonstrations and lectures, fee £2 2s. Queen's Hospital for Children, The Grove Road E. Course in Diseases of Children, all day, lectures demonstration, and operations fee £3 3s. Royal Westminster Ophthalmological Hospital, King William Street W.C.1 Course in Ophthalmology, afternoons clinical instruction at 2 p.m., operations at 3 p.m. special demonstrations at 5 p.m. fee £4 4s. Chelsea Royal Hospital, St. George's Field, S.W. Psychological Medicine, Tuesdays and Saturdays at 11 a.m. All information from the Secretary, Fellowship of Medicine, 1, Wimpole Street W.1

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
TALISTOCK SQUARE N.C.1

## Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams Articulate Westcent London

MEDICAL SECRETARY (Telegrams Medicera Westcent London)

LONDON BRITISH MEDICAL JOURNAL (Telegrams Atology Westcent, London)

Telephone numbers of British Medical Association and British Medical Journal Museum 861 8562 8563 and 8564 (interal exchange, four lines)

SCOTTISH MEDICAL SECRETARY 6 Drumsheugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 4361 Central)

IRISH MEDICAL SECRETARY 16 South Frederick Street Dublin (Telegrams Breiluss Dublin Tel 4737 Dublin)

## Diary of the Association

SEPTEMBER			
13	Tues	London	Central Ethical Committee 2 p.m.
15	Thurs	London	Insurance Acts Committee 12 noon
16	Fri	London	Public Health Committee 2.30 p.m.
		Ashton	8.30 p.m.
20	Tues	London	Organization Committee
21	Wed	London	Medical Political Committee 2.30 p.m.
22	Thurs	London	Journal Committee 2.30 p.m.
24	Sat	Brighton	Division Clinical Afternoon The Heritage Chailey
26	Mon	London	Psycho Analysis Committee 2.30 p.m.
27	Tues	London	Hospitals Committee 2.30 p.m.
28	Wed	London	Finance Committee 2.30 p.m.
OCTOBER			
4	Tues	London	Conference between Representatives of the British Medical Association and the Society of Medical Officers of Health 2.30 p.m.
5	Wed	London	Arrangements Committee Meeting of Council Members, 11 a.m. Full Committee with the Cardiff Members, 2.30 p.m.
6	Thurs	Guildford Division	Royal Surrey County Hospital, Guildford, Sir St. Clair Thomson on Lister and His Work for Humanity, 4 p.m. Tea 3.45
7	Fri	Hereford Division	Herefordshire General Hospital, Lost Graduate Lecture by Dr. Wynn on Chronic Arthritis and its Treatment 3.30 p.m. Tea
14	Fri	London	Ophthalmic Committee 2.30 p.m.
28	Fri	Tyneside Division	Dance at the Waverley Ballroom, Whitley Bay

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 7s, which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

## BIRTHS

SILVER—At Stagsden Nursing Home Bournemouth on August 14th, to the wife of J. McDonald Silver M.B. F.R.C.S. Ed. a daughter.

SKINNER—On August 23rd 1927 to the wife of J. A. D. Skinner B.A. Cantab M.R.C.S. Eng. L.R.C.P. Lond. of 114, Chesterton Road, Cambridge a son.

STEVENS—On August 28th at Redholm Thame, to Marjorie, wife of A. Langley B. Stevens M.B. a son.

## MARRIAGES

ARMSTRONG—PITON—At Trinity Church, Warr on September 5th by Rev. J. Ellis as assisted by Rev. Martin Robert W. Arm (strong B.Sc. M.B., eldest son of R. J. Arm (strong Esq. Wellington Park, Bala) to Margaret Bryce, only daughter of Mrs. J. D. Piton, Bala, M.B. a son.

## DEATHS

BIRNLS—On September 2nd 1927 at his residence St. Edmunds, Pontefract, W.D. Edgar George Barne M.D. Lond. O.B.E. in his 79th year. No flowers by request.

GIBBS—On August 25th 1927, Cuthbert Chapinham Crib M.D., M.R.C.P. Lond. 83 Harley Street, aged 76.

LEADER—On August 20th, after a long illness, Madeline Dyllis Parker, M.L.S.A., of 35 Kent Gardens, Finsbury.

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY SEPTEMBER 17TH 1927

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### British Medical Association

#### CURRENT NOTES

##### The Autumn Dinner

THE Autumn Dinner of the Association will be held at the *Edwina VII Rooms, Hotel Victoria, Northumberland Avenue, London, W.C.2* on *Wednesday, October 12th* at *7 for 7.30 p.m.* This will be somewhat in the nature of a special occasion as in addition to many distinguished guests, the Association will entertain upon their retirement from office *Mr R. G. Hogarth*, the immediate Past-President, and also *Sir Robert Bolam* who has been Chairman of Council for the past seven years. Tickets which can be obtained from the Financial Secretary of the Association will be *10s. 6d.* each exclusive of wines and as it is certain that many applications will be received reservation should be made at once.

##### The Annual Handbook of the Association 1927-28.

THE *Annual Handbook* of the British Medical Association for 1927-28 is in preparation. When available copies can be had by members, gratis and post free on application to the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1. To non-members the book will be on sale at *3s. 6d.* (post free *3s. 9d.*). Primarily intended as a book of reference for honorary secretaries and other workers of the Association the *Handbook* should prove of interest and assistance to all members. The new edition will be completely revised. It will contain the decisions of the Representative Body of the Association on matters of policy, particularly about medical charities, information as to the constitution of the Association, and as to the *BRITISH MEDICAL JOURNAL* (the circulation of which is now *36,750* copies weekly) and other publications of the Association, list of the members of the Council and central committees, officers and officials of the Association and other information regarding the work of the Association.

##### The Katherine Bishop Harman Prize.

IN April 1926 Mrs Katherine Bishop Harman M.B. B.S. Lond., presented to the Association the sum of *£1,090* for the establishment of a prize to be awarded by the Council for the encouragement of research into the disorders incident to maternity. The following are the regulations governing the award of the prize.

1. The purpose of the prize is the encouragement of study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child bearing. Its money value shall be the net annual income of the capital fund as this has accumulated during a period of two years. The first award shall be made in 1928 and essays must be forwarded to the Medical Secretary of the Association, British Medical Association House, Tavistock Square, W.C.1, no later than December 31st 1927.

2. As a general rule the prize will be awarded for the essay which in an open competition is judged by the Council to be most helpful to the end for which the prize is established, and the Council may at its discretion either prescribe a special or limited subject for the competition or not leave to the competitors an individual selection of the work they wish to present, provided that this falls within the purpose of the prize. In every instance the award made by the Council shall be final.

3. Any medical practitioner registered in the British Empire is eligible to compete for the prize.

4. Should the Council on any of the elected dates decide that no justification for the award of the prize exist, the prize shall be offered again in the year next following this decision and in this event the money value of the prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine.

5. Each essay must be typewritten or printed in the English language, must be distinguished by a motto and must be accompanied by a sealed envelop marked with the same motto and enclosing the candidate's name and address.

The Council has decided that no specific subject shall be prescribed for the Katherine Bishop Harman Prize Competition, 1928, but that competitors be left free to choose the work they wish to present provided that this falls within the regulations governing the prize.

##### Medical Appointments Abroad.

THE head office of the British Medical Association has a good deal of information placed at its disposal by its Branches overseas which may be very useful to those proposing to accept medical appointments abroad. Practitioners are cordially invited to apply to the Medical Secretary, B.M.A. House, Tavistock Square, W.C.1 for any information that may be available regarding overseas appointments in which they may be interested.

##### British Medical Association Library

THE Association's library contains more than *50,000* volumes including books in all branches of medical literature. It is open on weekdays from *10 a.m. to 6.30 p.m.* (Saturdays from *10 a.m. to 2 p.m.*). The Librarian and his assistant are always ready to help members to find books or references. Besides the facilities afforded to members for consulting monographs, periodicals and works of reference in the library, books in all branches of medical literature and many in general science can be obtained on loan by members resident in the British Isles, free of charge (other than postage) from the lending department. The lending facilities include books on medicine, surgery, anatomy, physiology, bacteriology, dentistry, hygiene, obstetrics, and other branches of medical and surgical science, the subjects of biology, botany, chemistry, electricity, sanitary engineering, radiology, medico-legal questions, and noted firms, microcopy, physics, philosophy, zoology, technology, voyages and travels, and zoology. The books issued include latest editions, new books and new editions being made available as soon as possible after publication. Books are ordinarily kept for twenty-eight days. Communications as to the library and lending department should be addressed to the Librarian, British Medical Association House, Tavistock Square, London, W.C.1.

## Association Notices.

### BRANCH AND DIVISION MEETINGS TO BE HELD

**LANCASHIRE AND CHESHIRE BRANCH ASHTON UNDER LYNE DIVISION**—A meeting of the Ashton under Lyne Division will be held in the George and Dragon Hotel, Ashton, on Friday, September 16th, at 8.30 p.m. A "hot pot" supper will be served. Agenda: Report of Executive Committee as to the scale of minimum commencing salaries for public health medical officers, and recommendation of Executive that the Division adopt a resolution under its Ethical Rules, report of representative to Representative Body, secretary's statement regarding payments by private patients in Lake Hospital.

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—A dance will be held at the Waverley Ballroom, Whitley Bay, on Friday, October 28th. Tickets, 12s. 6d. each may be obtained from Dr. John Murray of 4, Albert Place, North Shields. The proceeds will be devoted to the charities supported by the British Medical Association.

**NORTH WALES BRANCH**—A joint meeting with the North Wales Division of the National Veterinary Medical Association will be held at the Queen Hotel, Chester, on Friday, September 30th at 5.30 p.m. Subject for discussion: "Skin affections transmissible from animals to man."

**SUSSEX BRANCH BRIGHTON DIVISION**—The Brighton Division will be held at the afternoon of Saturday, September 24th, to bring their wives, who will be conducted to the meeting. By the kindness of Mrs. Kimmins tea will be provided. A detailed programme will be announced later. Members intending to be present are requested to inform the honorary secretary as early as possible, also any members desiring to be taken by car are requested to write to the secretary, as there are plenty of seats available.

## National Insurance

### MEDICAL CERTIFICATION OF INCAPACITY OF INSURED PERSONS FOR WORK

THE Ministry of Health and the Scottish Board of Health have just issued, under the above title, a memorandum for the information of insurance medical practitioners. It is of the greatest importance that the contents of this memorandum should be noted by practitioners who are newly entering upon insurance work, or who have recently done so, as a proper understanding of the certification rules and an exact observance of them are essential, if there is to be an avoidance of serious and often disagreeable difficulties alike to the practitioner, and to his patient and the approved society of which he may be a member. Even the experienced insurance practitioner, aware as he is of these difficulties and disagreeable possibilities, may be in a better position to avoid them if he will remember the official interpretation of ambiguous phrases, and renew his acquaintance with those rules and directions for procedure which apply to circumstances of relatively rare occurrence, but which are none the less important in those circumstances.

The memorandum is drawn up under two main headings: first, the general meaning of the term "incapable of work," and second, the medical certification rules. The term "incapable of work" is unfortunate, but has to be used because it is the statutory phrase employed in the National Health Insurance Acts. A combination of common sense and experience has, however, led to an interpretation which is now commonly understood and accepted. An insured person is regarded as "incapable of work" through some specific disease or bodily or mental disablement when he is in such a condition that an attempt to work would be seriously prejudicial to his health. If it seems probable that he will soon be able to resume his usual or former occupation it is unreasonable to expect him to undertake any other form of work in the meantime, and in these circumstances, therefore, he may be properly certified, even though some other form of work might be more immediately possible. If, however, it is evident, either at the outset or at some subsequent period, that his condition is such as to incapacitate him permanently from following his usual occupation, but that he might perform

some other suitable kind of remunerative work, either at once or after a course of training, he cannot properly be certified as incapable of work, and it is for the approved society, rather than the practitioner, to determine how long the payment of sickness benefit should reasonably continue. Pregnancy gives rise to special difficulties, and there is a good deal of misapprehension on the part of patients and of those who give them advice in connexion with maternity centres, as well as on the part of some practitioners, with regard to its relation to incapacity for work. It is not the case that pregnancy by itself at any stage necessarily renders an insured woman incapable of work, or that there is any obligation to certify accordingly. Each case must be individually considered, regard being had not only to the patient's condition, but to the exact nature of the work which she would be expected to perform.

The official printed forms of certificates are well known, and the main certification rules are quite clear. All the particulars on the forms are material, and the description of the cause of incapacity should be stated as precisely as the practitioner's knowledge admits. It may be as well to remind the inexperienced practitioner that when he has signed the printed form this is just as definite a statement of fact by him as though he had written it all out with his own hand, and that any deliberate misstatement is not a mere "technical" offence, but one which is viewed very seriously, not only by the Ministry of Health, but also by the General Medical Council. The ordinary procedure need not be further referred to, but it may be useful to draw attention to a few of the special points mentioned in the memorandum.

With regard to First Certificates, "there is no obligation on the practitioner to issue the certificate if the patient does not ask for it." It sometimes saves trouble, nevertheless, to remind the patient of his right to claim. With regard to subsequent certificates, "In cases where the practitioner is satisfied that the patient, though not fit to resume work immediately, will be fit before a further certificate would next ordinarily be given," he should state in the appropriate place "the date on which the patient should come to see him again for the purpose of obtaining a Final Certificate." This requirement is often overlooked. With regard to the special intermediate certificates for prolonged chronic cases, which are often referred to by practitioners as "monthly certificates," these certificates "should not be given at intervals of so long as three weeks or a month if the patient is, in fact, being seen by the doctor more frequently." This, again, is often honoured in the breach rather than the observance. With regard to Final Certificates, "a Final Certificate must not be issued to an insured person after he has resumed work." It should be noted that "an insured person's right to a certificate is not affected by the fact that he may have a claim for compensation under the Workmen's Compensation Act."

The paragraphs of the memorandum with regard to (1) advice as to additional benefits, (2) exempt persons, (3) persons over 70 years of age, (4) certificates in respect of patients referred to the regional medical officer, are quoted below in full.

#### Advice as to Additional Benefits

20 Practitioners are required on the application of their insured patients to state on the next certificate issued any form of special medical or other treatment which they have advised the patient to obtain, in cases in which they are specifically informed by the society that it is in a position to defray or to contribute toward the cost of such treatment for its members. The obligation will arise in those cases only in which (i) the practitioner has advised the patient to obtain the treatment, (ii) the patient has agreed to him to state this fact on the certificate, and (iii) he has been officially informed (which will usually be by means of a notice handed to him by the patient at the time) that the society is in a position to resist the member. The obligations of a practitioner in this respect are limited to patients to whom certificates of

... are being issued and it is open to the practitioner to charge a fee for any special form of certificate a patient may require for production to his certifier.

It could be noted however that in the opinion of the practitioner an insured person requires ophthalmic treatment which is not within the scope of the practitioner's obligation. He is required under his Terms of Service to give a written invitation to that effect if so directed by the insured person. No special form is provided for the purpose and the practitioner is not entitled to accept a fee for furnishing a certificate of invitation. This obligation applies to all appropriate cases where certificates of incapacity are being issued or not.

#### Excerpt From

Practitioners are required to issue a certain certificate in respect of exempt persons. Such certificate will not be required of more than once in six months and the form for the purpose will be presented by the person who desires the certificate.

#### Persons over 70 years of age

An insured person over 70 years of age, although entitled to medical benefit, is not entitled to sickness and disablement benefits. Practitioners are therefore under no obligation to issue certificates to such persons. After January 2nd 1928 they will apply to insured persons over the age of 65 years.

#### Certificates in respect of Patients referred to the Regional Medical Officer

Cases brought to the notice of the dependent society that practitioners are under a misapprehension concerning their obligations with regard to the issue of certificates to insured patients equivalent to examination by the Regional Medical Officer. It is important to note that the responsibility of the Regional Medical Officer in respect of cases referred is confined to that of giving evidence and practising as respectively. The certifier is not thereby relieved of its responsibility for deciding whether or not a member of the society is entitled to benefit or is the practitioner's responsibility or the treatment of his patient or for the exercise of his own professional judgment on the question of incapacity for work in any way superseded. A practitioner is not therefore precluded from giving a certificate of incapacity to a person who has been stated by the regional medical officer to be capable of work if the practitioner is of opinion that the patient is in fact incapable of work.

Practitioners sometimes find that the officials or agents of approved societies approach them, or instruct their members to approach them, with a view to obtaining certificates on a particular day other than that on which the patient would ordinarily attend for treatment. Again, pressure is sometimes brought to bear upon practitioners by society officials to ante-date or post-date certificates for the convenience of the official or the society. It is essential that practitioners should resist any such practices and avoid any such irregularities. The Ministry and the Board of Health have drawn the attention of societies to these matters and may be relied upon to support practitioners with regard to them. It would be well if practitioners or secretaries of Local Committees would forward the complete particulars of any such cases to the Insurance Act Committee or the British Medical Association.

There is one important paragraph of the memorandum to which exception may well be taken. It is that which deals with the issue of certificates to patients whose right to claim treatment from him as insured persons the practitioner doubts, and in whose case therefore he acts in accordance with Clause 7 (2) of the Terms of Service. In these cases the practitioner charges a fee to the patient under such conditions that the fee may be easily returned or remitted if the patient afterwards substantiates his claim to treatment as an insured person. In these cases the practitioner is expressly prohibited from ordering any drug or appliance on the official form and those representatives of the Insurance Acts Committee who discuss this matter with the Ministry held that both logically and for administrative convenience, the official forms of certificate should not be used in these cases. The Ministry promised to consider the matter afresh and it is therefore a little surprising that without any further communication with the committee, then memorandum should state categorically that "the official certificates should accordingly be used in such cases as they would be in ordinary cases." It is of great value for practitioners to understand clearly, as they have hitherto been told (1) that in no circumstances may any fee whatever be charged

to an insured person for any service within the contract, and (2) that the official certificate forms are never to be used for anyone other than an insured person, and therefore that in any case in which the practitioner uses the forms he is precluded from saying that he did not know that the person to whom he issued them was an insured person. If the present official pronouncement remains unchallenged or unrevised the propositions can no longer be regarded as true and in some directions administrative simplicity will be displaced by confusion. Logically, in the circumstances indicated, if the patient is not to be regarded as an insured person in respect of the supply of medicines, it is difficult to understand why he should not be in the same position in respect to the issue of certificates. This matter is of real importance and, as the memorandum does not in any sense purport to be a legal definition by the Ministry, it is to be hoped that they may be further opportunity for consultation.

## Naval and Military Appointments

### ROYAL NAVAL MEDICAL SERVICE

Sir or Lieutenant Commander A. G. B. appointments to the War Office and the Admiralty. Dr. J. C. B. appointments to the War Office. Dr. J. H. N. appointments to the War Office. Dr. J. H. N. appointments to the War Office. Dr. J. H. N. appointments to the War Office.

### ROYAL ARMY MEDICAL SERVICE

Sir or Commander A. G. L. R. D. O. B. E. V. D. to be Parities for four in law training. Dr. T. C. S. appointments to the War Office. Dr. T. C. S. appointments to the War Office. Dr. T. C. S. appointments to the War Office.

### ROYAL ARMY MEDICAL CORPS

Major J. A. Clark M.B.E. retire on retired pay and granted as rank of Lieutenant Colonel. Captain J. W. Male M.B.E. IC to be Major (prov). Captain G. A. Maurice D.S.O. MC to be Major (prov) and remains second. Captain Percival William late W. African Medical Service to be temporary Lieutenant and temporarily relinquishes the rank of Captain.

### ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leaders P. H. Young to Headquarters Coastal Area D. McLaren to Hospital Orderly Training Depot. Halton Flight Lieutenant G. J. Griffiths to Base Combined Hospital Flying Officer J. M. Ritt to Base Laboratory and Medical Officers School of Instruction on appointment to a short service commission.

### REGULAR ARMY RESERVE OF OFFICERS

Colonel W. E. Hull on CMG C.B.E. D.S.O. late R.A.M.C. having attained the age limit of liability to recall cases to belong to the Reserve of Officers.

### ROYAL ARMY MEDICAL CORPS

Lieut-Colonels R. L. Argle H.L.W. Worthington D.S.O. and J. H. R. Ward D.S.O. having attained the age limit of liability to recall cases to belong to the Reserve of Officers. Second Lieutenant W. H. Scriven from Reserve of Officers R.A. to be Lieutenant.

## VACANCIES

London. Lord Mayor's Police Hospital—Second Assistant Resident Medical Officer (male unmarried) Salary £200 per annum rising to £250.  
Bournemouth. Royal Victoria L.D. West Hants Hospital—Two House-Surgeons (male, British nationality) Salary £120 per annum (male) £150 per annum (female) £100 per annum—House-Surgeon (male) £150 per annum (female) £100 per annum.  
Barnstaple. Royal Devon and Exeter Hospital—(1) House-Surgeon (male) salary £150 per annum (2) Honorary Surgical Clinical Assistant (1) Honorary Clinical Assistant on the Ophthalmic Department (1) Honorary Medical Clinical Assistant.  
Bristol. Gloucester County Hospital—Assistant School Medical Officer Salary £100 per annum.  
Cardiff. Adden Cote Hospital—Casualty Officer and Resident Anaesthetist (male) Salary £120 per annum.  
Central London Ophthalmic Hospital—Judd Senior W.C.I.—Senior and Junior House-Surgeons Salaries at the rate of £100 and £50 per annum respectively.  
Dumfries. Dumfries Royal Medical Hospital—Assistant Physician (male unmarried) Salary £100 per annum.  
Dundee. Dundee Royal Infirmary—Assistant Surgeon.  
Evelina Hospital for Children—Southwark S.E.1—House Physician (male) Salary £120 per annum.  
Hull. Hull Royal Infirmary—Third House-Surgeon (male unmarried) Salary £50 per annum.  
Hospital for Sick Children—Great Ormond Street W.C.1—(1) House-Surgeon (2) House-Physician and Assistant Casualty Officer Salary £50 for 12 months each.  
Islington. East Suffolk and Ipswich Hospital—House-Physician and two House-Surgeons Salaries at the rate of £100 per annum each.  
Jamaica General Hospital—C.D. Poor Law Infirmary—Resident Medical Officer (male) Salary £200 per annum.  
Kingston. Two Hills Incorporation for the Poor—Male Resident Medical Officer for the Institution and Infirmary Salary £200 per annum rising to £250.

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# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY SEPTEMBER 24TH 1927

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### National Insurance

#### TERMS OF SERVICE OF INSURANCE PRACTITIONERS

##### NEW PROCEDURE AS TO CHANGE OF DOCTOR

THE Ministry of Health has issued a new regulation—namely the National Health Insurance Medical Benefit Amendment Regulations (No. 3) 1927—which has been made by him after consultation with the Insurance Acts Committee of the British Medical Association as representative of the joint body of insurance practitioners.

Under the powers conferred on them by Clause 2 of Part I of the First Schedule to the National Health Insurance Medical Benefit Consolidated Regulations 1924, the Insurance Committee is empowered with effect from October 1st next to alter and modify the Terms of Service of practitioners who are under contract with them and on and after that date the provisions of the regulations will form part of the terms and conditions on which insurance practice is carried on in each Insurance Committee's area and in so far as they affect the rights and obligations of insurance practitioners shall be deemed to form part of the practitioner's terms of service.

As from October 1st 1927 an insured person who is not included in the list of an insurance practitioner's district in which he is residing and who desires to apply for acceptance by another practitioner may either transfer in the consent of both practitioners notified by their signatures on the appropriate space of the medical card or with the authorization of the Insurance Committee which will be given as a matter of right but with effect only after the expiry of fourteen days after application. Under this latter alternative the insured person must send to the Insurance Committee his medical card with a letter stating his intention to transfer and the medical card will be returned to him with a slip attached authorizing transfer after the approved date. This slip should be completed by the insured person and signed and dated by the practitioner accepting him for treatment. The card with the slip attached should then be forwarded by the practitioner to the Committee. Acceptance cannot be registered until the date named and in the meantime the insured person should continue to obtain treatment from the former practitioner.

A new form of medical card is being prepared which will contain instructions as to the new procedure but it is not possible for reasons of economy to make a general issue of new cards to all insured persons. Cases will therefore occur in which insured persons in possession of old medical cards will apply as at present for acceptance by a new practitioner. In such cases the practitioner is required to inform the insured person that if he is already on the list of another practitioner in the district it is necessary that he should obtain either the written consent or the letter of the transfer or the authorization of the Insurance Committee. The practitioner on whose list the insured person is included can give his consent in cases

where old cards are presented by writing across Part A the word "I consent to transfer" and appending his signature and the date. The insured person and the new practitioner should then complete Part B. The new style of medical card will provide a space Part C to be completed by both practitioners in cases where transfer is made by consent.

To assist Insurance Committees in bringing the change of procedure to the notice of insured persons a poster containing the new instructions has been prepared and practitioners will be asked to exhibit it in a prominent place in their waiting rooms. Copies of this poster will be obtainable on application to the appropriate Insurance Committee.

The new regulation does not in any way affect the existing procedure regarding the acceptance of persons not already on the list of another practitioner practicing in the same district of temporary residents or of persons on the lists of approved institutions.

The text of the new regulation is printed below.

##### The Amended Regulation

15—(1) An insured person other than a member of an institution or a person on whom a permit is required to make his own arrangements for obtaining treatment may at any time make application for acceptance by an insurance practitioner notwithstanding that he is at the date of application included in the list of another practitioner and if accepted shall forthwith be entitled to obtain treatment from the practitioner to whom application has been made.

Provided that if the insured person at the date of the application included in the list of another practitioner and has not removed permanently or temporarily outside the district within which the practitioner has undertaken to provide treatment the application of such insured person shall only be accepted if either

- both the practitioner in whose list the insured person is included and the practitioner to whom he applies for acceptance consent to the transfer and such consent is signified by the practitioners in accordance with the instructions printed on the medical card; or
- the insured person has forwarded to the Committee his medical card together with a notice of his desire to transfer and not less than fourteen days after such notice is received by the Committee the insured person and the practitioner to whom he proposes to transfer have signed a statement in a form approved by the Minister and used by the Committee indicating the agreement of the insured person and the practitioner that the transfer should be effected which form shall be attached to the medical card by the Committee.

#### CHESEBURY LOCAL MEDICAL AND PANEL COMMITTEE

##### Presentations to Dr. J. H. Marsh

On September 14th a luncheon was held at the Northwich by the Local Medical and Panel Committee of the County Palatine of Chester in honour of Dr. J. H. Marsh, J.P., who was unfortunately prevented by illness from attending. Dr. Marsh who is medical officer of health for the borough of Macclesfield has been a member of the Committee for ten years and in recognition of this a testimonial has been presented to him consisting of an oak bookcase, a library chair and an illuminated address.

showing the staff of Aesculapius surmounting the three wheat sheaves of Cheshire and flanked by fasces emblematical of the disciplinary functions of the Panel Committee. The address also carries the arms of Macclesfield upon mulberry leaves, symbolizing the silk industry, a hand tying a left handed knot, in recognition of his surgical prowess, and designations of surgical instruments and of the herbal origins of belladonna and digitalis. Mrs Marsh was given a minute Japanese garden in a porcelain tray, with dwarf marsh plants and trees—a *jeu d'esprit* upon her surname—and a pool with fish. Speaking at the conclusion of the complimentary luncheon, Dr L GRANT commented on the fine qualities of chairmanship shown by Dr Marsh, and added that he combined an acute, incisive intellect with tact, patience, fearlessness, and excellent judgement. Dr LIONEL PICTON, honorary secretary of the Committee, paid tribute to Dr Marsh's sterling qualities, and in particular his broad humanity. Sir WILLIAM HODGSON, J.P., chairman of the Cheshire County Council, who took the chair at the luncheon, referred warmly to his close association with Dr Marsh for many years, and paid a high tribute to his steadfastness in fulfilling all the obligations of his professional and public work. Dr Marsh, he added, had never sacrificed his principles in any circumstances, and the work he had done had stood the test of time. Sir William Hodgson afterwards entertained the guests to tea at the County Council School of Agriculture, at Reaseheath. Visits were paid to the cow houses at milking time, in order to see the methods used in producing milk of such a low bacteriological count that its keeping powers obviated the necessity for preservative or sterilizing treatment.

#### MIDDLESEX PANEL COMMITTEE

A MEETING of the Middlesex Panel Committee was held in the House of the British Medical Association, Tavistock Square, on September 8th, Dr BRACKENBURY, the re-elected chairman, presiding. Dr Brackenbury and Dr C F T Scott were appointed as the Committee's representatives to the Conference of Panel Committees. Dr Rose, of Wendover, was nominated for the representation of Group N on the Insurance Acts Committee. A lengthy discussion followed upon the question of practitioners having the opportunity of supervising their patients in local hospitals. A motion was moved by Dr R GILLBARD that it was essential to consider the relation of practitioners to their patients as regards hospital treatment. At the suggestion of Dr RINGE it was expanded to contain the proposal that practitioners so desiring should have access under reasonable conditions to their own patients for treatment in local hospitals. The motion thus enlarged was carried unanimously. Dr GILLBARD the Chairman and Dr C F T Scott emphasized the educational value to the younger practitioners of such facilities.

### Correspondence.

#### Remuneration of Insurance Practitioners

SIR,—Having kept an accurate record of the number of attendances and visits I have made each year to National Insurance patients, I now send you the following figures.

Following the lead of Drs Ede and James, in their letter published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of September 10th (p 126), I have calculated a visit as being remunerated at twice the amount of an attendance, and by dividing the total amount received, including mileage, by the number of attendances and visits during each year, I find the figures for the last five years to be as follows:

Year	Attendance s d	Visit s d
1922	2 9	5 6
1923	2 1	4 2
1924	1 8	3 4
1925	1 6	3 0
1926	1 4	2 8

The numbers on my panel have remained approximately the same during this period. My practice is semi-rural, about one third of the number live more than two miles from my residence, and the mileage paid to me in respect of these has been included in the calculation of the amounts per attendance and visit.

This clearly shows that demands by insured persons on doctors are steadily increasing, and that the present capitation fee is becoming more and more inadequate and needful of revision—I am, etc.,

Leominster, Sept 16th

GERARD STEEL

SIR,—I beg to submit the following statistics from my own cards. The total panel is about 1,800. The letter D was chosen, and the dates September 1st, 1926, to August 31st, 1927. There were 59 D cards. These showed 266 attendances and 168 visits. Remuneration at 9s per annum = £26 11s, remuneration at 2s per attendance and 4s per visit = £26 12s + £33 12s = £60 4s—I am, etc.,

SIR,—I have kept exact records of work done for patients insured under the National Health Insurance Act, and am, therefore, greatly interested to read the letter of Drs Ede and James in the SUPPLEMENT of September 10th (p 126), and to see how closely their remuneration for such work corresponds with mine, even though the two practices are separated by almost the complete length of the country, and mine would appear to be more rural in character.

During the year ending June 30th, 1927, the average number of insured persons on my list was 559. In respect of these there were 977 surgery attendances, and 956 visits were paid to the patients' homes.

During the same period I received £258 8s 11d from the Practitioners' Fund. Allowing 2s for each surgery attendance (£97 14s), the balance (£160 14s 11) provided 3s 4 35d for each visit paid.

Of the 956 visits, 723 were to patients who resided not less than two miles from my surgery. For these I received mileage grant amounting to £52 2s 2d, representing an additional 1s 5 3d for each such visit.

For dispensing I received £62 18s 1d, which affords 7 81d for each visit and surgery attendance. It should, however, be stated that the number of surgery attendances only includes those instances where the patient was actually seen, and does not include the numerous instances when "repeat" mixtures, etc., were dispensed without the patient attending personally—I am, etc.,

September 14th

NORTHUMBRIAN

### Association Notices

#### LEICESTER AND RUTLAND, AND NUNEATON AND TAMWORTH DIVISIONS

THE following change has been made by the Council and takes effect as from the date of publication of this notice.

That the civil parish of Appleby Magna be transferred from the Leicester and Rutland Division of the Midland Branch to the Nuneaton and Tamworth Division of the Birmingham Branch.

#### BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH COVENTRY DIVISION**—The annual dinner of the Coventry Division will be held at the Kings Head Hotel, Coventry, on Tuesday, October 4th, at 8 15 p.m.

**BIRMINGHAM BRANCH WEST BROMWICH DIVISION**—The fourth regular meeting of the West Bromwich Division will be held at the offices of the Smethwick Insurance Committee, 1, South Road, Smethwick, on Tuesday, October 11th, at 3 30 p.m. Dr W A Potts (Birmingham) will read a paper on psycho-analysis.

**KENT BRANCH TUNBRIDGE WELLS DIVISION**—The annual meeting of the Tunbridge Wells Division will be held at the General Hospital, Tunbridge Wells, on Thursday, October 6th, at 8 30 p.m. Agenda: Result of election of officers and representative on Branch Council, annual report and financial statement, report of representative to the Annual Representative Meeting at Edinburgh. Future meetings: Wednesday, November 9th at 8 30 p.m., Mr A H Neve, coroner for West Kent; Wednesday, November 23rd, at 8 30 p.m., Dr Claude Wilson, Thursday, December 8th, annual dinner.

**METROPOLITAN COUNTIES BRANCH CITY DIVISION**—The first meeting of the session 1927-28 of the City Division will be held at the Metropolitan Hospital, Kingsland Road, on Tuesday, October 4th, at 9 30 p.m. Dr R M Bronte, the Home Office pathologist, will read a paper on "The doctor as a witness." It is hoped that members will give the session a good start. Coffee and biscuits. The following further meetings have been arranged:

Nov 1st	Dr W Langdon Brown	Modern Aspects of Nephritis
Dec 1st	Annual Dinner	Trocadero Restaurant
6th	Sir John Thomson Walker	Urinary Obstructions
Jan 3rd	Dr Philip Hamill	Bacilluria
Feb 7th	Dr H C Semon	Diagnostic Pitfalls in Dermatology
Mar 6th	Mr Norman Patterson, F.R.C.S.	Ear Trouble in General Practice
April 3rd	Drs Loughborough and T H G Shore	Treatment of Fibrositis
May 1st	Dr F M R Walker	(subject to be announced)
June 5th	Annual General Meeting	
July 3rd	General Meeting and Pathological Specimens	Dr T H G Shore

Chemical meetings every second Friday in the month from October 1927 to July 1928, at 4 30 p.m. Tea at 4 p.m. by the staff of the Metropolitan Hospital.

**METROPOLITAN COUNTIES BRANCH WANDSWORTH DIVISION**—A meeting of the Wandsworth Division will be held at Stanley's Restaurant, Lavender Hill, on Wednesday, September 28th, at 8 30 p.m. Business. Report of the proceedings of the Annual Representative Meeting by the representatives, Drs Bishop and Noobs. Address by Dr Caley, medical officer of health for the Metropolitan Borough of Wandsworth, on the public health work carried out under his supervision.

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—A dance will be held at the Waverley Ballroom, Whitley Bay, on Friday, October 28th. Tickets, 12s 6d each, may be obtained from Dr John Murray of 4, Alma Place, North Shields. The proceeds will be devoted to the charities supported by the British Medical

**NORTHERN COUNTIES OF SCOTLAND BRANCH BUNF MORAY AND NAINY DIVISION**—The autumn meeting of the Bunf, Moray and Nainy Division will be held at the Gordon Richmond Hotel Spey Bay on Saturday September 24th at 12 noon. After the meeting members and their guests (ladies or gentlemen) will lunch together. In the afternoon a sweep the golf competition will be held on the course of the Spey Bay Club. Agenda: Report or representative to the Annual Representative Meeting programme for winter meetings.

**NORTH WALES BRANCH**—A joint meeting with the North Wales Division of the National Veterinary Medical Association will be held at the Queen Hotel Chester on Friday September 30th at 2.30 p.m. Subject for discussion: Skin affections transmissible from animals to man.

**SUNDERLAND DIVISION**—The Sunderland Division will hold a clinical evening at the Royal Infirmary Sunderland on October 5th and at the Monkwearmouth Hospital on November 2nd.

**SOUTH BRANCH BRISTOL DIVISION**—A clinical meeting of the Bristol Division will be held at the Heritage Chalet on the afternoon of Saturday September 24th. Members are invited to bring their wives, who will be catered for over the Heritage during the meeting. By the kindness of Mrs. Kimmis tea will be provided. A detailed programme will be announced later. Members intending to be present are requested to inform the honorary secretary as early as possible, also any members desiring to be taken by car are requested to write to the secretary, as there are plenty of seats available.

**WILTSHIRE BRANCH TROWBRIDGE DIVISION**—A clinical meeting of the Trowbridge Division will be held at The Sanatorium Winsley on Wednesday September 28th at 3.15 p.m. Cases of interest illustrating various forms of tuberculosis will be shown. Dr. J. D. Macie will demonstrate the method of producing artificial pneumothorax. Tea will be kindly provided by the Sanatorium Committee. Members are asked to bring stethoscopes.

**WILTSHIRE BRANCH DEWISBURY DIVISION**—A meeting of the Dewbury Division will be held at the Dewbury Infirmary on Friday October 7th at 8.15 p.m. Dr. W. Griffiths (Leeds) will read a paper on one point in the management of cases of heart disease. Light refreshments will be served at the close of the meeting.

**YORKSHIRE BRANCH HALIFAX DIVISION**—A general meeting of the Halifax Division will be held in the Board Room of the Royal Halifax Infirmary on Wednesday October 12th. A discussion on pain will be opened by Dr. Pollard and Dr. Davidson in which members are invited to take part. The annual dinner will be held at the White Swan Hotel on Thursday November 17th at 7.30 p.m.

**YORKSHIRE BRANCH WAKEFIELD PONTFRICK AND CASTLEFORD DIVISION**—A meeting of the Wakefield Pontefract and Castleford Division will be held at the Grete Bull Restaurant Wakefield on Thursday October 6th when Dr. H. Charles Cameron will deliver a British Medical Association Lecture on Entasis and nervous disturbances in children. The following further meetings have been arranged:

Oct. 29th Clinical Meeting West Riding Mental Hospital Wakefield by kind permission of Dr. J. Shaw Bolton at 3 p.m.  
Nov. 16th Mr. C. J. Howarth B.A. LL.B. Dr. W. Steven and Dr. T. Gibson on Death Certification and Coroner's Inquest.  
Dec. 8th Mr. E. R. Flint F.R.C.S. Assistant Surgeon General Infirmary Leeds. Fracture.  
Jan. 12th Dr. C. B. Hiffman M.B.E. The Insurance Practitioner and Some of his Relation Ship.  
Feb. 4th Mr. A. Cough F.R.C.S. Surgeon to the Women's and Children's Hospital Leeds. Menstrual Diseases and the Menopausal.  
Mar. 8th Dr. J. A. Veale Physician in charge of the Skin Department, General Infirmary Leeds. Common Skin Diseases.  
April 19th Dr. J. de F. Burrows Assistant Physician General Infirmary Leeds. Diagnosis of Acute Cerebro-pinal Disease.

All the lectures will be held at the Great Bull Restaurant Westgate Wakefield. Garage accommodation will be available. Supper (2s. 6d.) at 7.45 p.m. will precede the lectures.

## Meetings of Branches and Divisions

**BORDER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION**—A well attended meeting of the Dumfries and Galloway Division was held in the King Arms Hotel Stranraer on September 1st. Mr. G. P. Liversidge F.R.C.S. Ed. the chairman presiding.

The HONORARY SECRETARY read a letter from the Medical Secretary regarding the appointment of an assistant school medical officer for Dumfrieshire where the salary offered is below the scale and it was unanimously agreed to support the Association in every way in its effort to have a satisfactory scale adopted.

Dr. Moyra Jun. showed a case of hypospadias in a girl aged 6 years weighing over 8 st. but bright and intelligent. He was thanked for affording the opportunity to the Division in seeing such an unusual case. Mr. P. A. McCredie F.R.C.S. Ed. read a paper on the treatment of varicose ulcers of the leg by modern method which gave rise to considerable discussion in which the majority of the members took part and for which Mr. McCredie was heartily thanked. Dr. Macdonald Ross introduced a lively discussion on the treatment of tuberculous glands. Various opinions were expressed and Dr. Ross replied. The Chairman exhibited various interesting specimens of more than passing interest including a twisted ovarian pedicle causing obstruction of the bowel emergency caused by feather inhaled which finally came away through operation made to drain the abscess and caecum grand which simulated appendicitis.

The members dined together and so concluded a very successful meeting.

## Naval and Military Appointments

### ROYAL NAVAL MEDICAL SERVICE

Surgeon Lieutenant Commander F. C. Hunt to be Surgeon Commander. Surgeon Lieutenants J. J. Keay to the Earlham G. W. Garde to the Lord of the Admiralty Plymouth temporary.

### ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant L. D. Nelson to the *Catara* for fourteen days training. Temporary Surgeon Lieutenant T. C. Steven on to the *Carsport* for twenty-eight days training.

### ROYAL ARMY MEDICAL CORPS

Major General Sir M. W. Okeefe K.C. I.C. C.D. LL.D. retired pay. Late R.A.M.C. is appointed Colonel. Commandant vice Lieutenant General Sir A. Keoch G.C.B. G.C.V.O. C.I.E. LL.D. retired pay. Late R.A.M.C. Captain L. M. Rowlett D.S.O. MC to be Major (prov.).

### ROYAL AIR FORCE MEDICAL SERVICE

Wing Commander H. W. Scott to No. 21 Group Headquarters West Drayton for duty as Senior Medical Officer. Flight Lieutenant E. G. Howell to R.A.F. Depot Uxbridge. Flying Officer A. F. Cook to be Flight Lieutenant. Flying Officer M. D. Baskin to be transferred to the Reserve Class D (II). Flying Officers G. D. O'Brien and P. O. Callaghan to be Arch Laboratory and Medical Officers School of Instruction on appointment to short service commission. J. M. Ritchie is granted a short service commission in the rank of Flying Officer for three years on the active list with effect from and with seniority of September 1st 1927.

### INDIAN MEDICAL SERVICE

The King has approved the retirement of Colonel E. L. Perry D.S.O. F.R.C.S. Major S. M. Hepworth M.B. is appointed temporarily to act as Superintendent I.M.S. Institute D. Hira Dun. The promotion to present rank of Major D. Z. Shah I.M.S. is antedated from November 5th 1925 to May 5th 1925. The following promotions are made subject to His Majesty's approval: Captains to be Majors W. J. Webster M.C. E. C. A. Smith R. S. Maier M.C. and S. R. Pratt. Lieutenants to be Captains Robert Linton Maier Tait and James Fort S. Shepherd. The King has sanctioned the following promotions: Lieut Colonel W. S. A. Key C.I.E. to be Brevet Colonel Major J. Scott D.S.O. O.R.E. to be Brevet Lieutenant Colonel. The undermentioned officers are appointed substantively to the Medical Research Department: Major S. S. Soesay and Major G. Corvill M.D.

### TERRITORIAL ARMY

#### ROYAL ARMY MEDICAL CORPS

Captains W. Johnson M.C. E. T. Burk D.S.O. and J. B. Scott to be Major. Captains J. McG. Johnson and R. G. Lichelmore resign their commissions and retain their rank. Lieutenant J. L. Johnston to be Captain. Lieutenant W. Morrison M.C. late R.F.A. Special Reserve to be Lieutenant.

### TERRITORIAL ARMY RESERVE OF OFFICERS

#### ROYAL ARMY MEDICAL CORPS

Lieut. Colonels F. E. Fremantle O.B.E. T.D. and M. A. Cox O.B.E. T.D. having attained the age limit are retired and retain their rank with permission to wear the prescribed uniform. Captain W. J. Wilkin on having attained the age limit relinquish his commission and retains his rank. Lieutenant W. Morrison M.C. late R.F.A. (Spec. Res.) to be Lieutenant. General Hospital—Captain D. Mallam resigns his commission and retains his rank. Hygiene Company—Captain H. G. Moys resigns his commission and retains his rank.

### COLONIAL MEDICAL SERVICES

Dr. M. L. McCauley appointed District Medical Officer Medical Department Fiji. Dr. H. D. Tonking appointed Medical Officer Kenya. Dr. W. H. Peacock promoted Deputy Director of Sanitary Service Sierra Leone. Dr. B. V. Hall V. Kelme Asi and Government Medical Officer appointed Deputy Port Health Officer Georgetown British Guiana. Dr. E. G. Don and J. W. Graham have been confirmed in their appointments as Medical Officers Nigeria and Tanganyika respectively. Dr. H. B. Lee D.S.O. MC confirmed in his appointment as Medical Officer Nigeria. Dr. R. J. A. Macmillan D.S.O. T.D. appointed Senior Medical Officer and Sanitary Officer Jinja Uganda. Dr. R. S. McElroy appointed Sanitary Officer Mbale Township and Bugere District Uganda. The Secretary of State for the Colonies has approved the alteration of the title of Dr. T. W. H. Burne from Chief Surgeon Selangor to Chief Surgeon Federal Malay States.

## VACANCIES

SCOT HEATHWOOD HO-PITAL—Resident 1st Medical Officer. Remuneration at the rate of £200 per annum.  
DEVONPORT ROYAL ALFRED HO-PITAL and EYE INFIRMARY—House-Surgeon (unmarried) Salary £150 per annum.  
DEVONPORT ROYAL INFIRMARY—Assistant Surgeon.  
EXETER ROYAL DEVON AND EXETER HO-PITAL—(1) House Physician. (2) Casualty Officer. Males. Salary at the rate of £100 and £100 per annum respectively.  
GLoucester and NORTH KENT HO-PITAL—Junior House-Surgeon. Salary at the rate of £150 per annum.  
HO-PITAL FOR EPILEPSY AND PARALYSIS, Maiden Vale Ws.—(1) Resident Medical Officer. (2) House-Physician. Salary at the rate of £100 and £100 per annum respectively. (3) Medical Registrar honorarium £100 for one year. (4) Honorary Nurses. (5) Honorary attendants attached to the Ho-Pital for Sick Children. (6) Medical Officer. (7) W.C.L.—(1) House-Surgeon. (2) House Physician and an Casualty Officer. Salary £50 for six months each.

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## BRITISH MEDICAL JOURNAL.

LONDON SATURDAY OCTOBER 1st 1927

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## British Medical Association

## CURRENT NOTES

## The Autumn Dinner

As stated in the SUPPLEMENT of September 17th the Autumn Dinner of the Association will be held in the King Edward VII Rooms, Hotel Victoria, Northumberland Avenue, London, W.C.2 on Wednesday, October 12th at 7.30 p.m. The retiring officers—Mr R. G. Hogarth, the immediate Past-President, and Sir Robert Bolam, who has been Chairman of Council for the past seven years—will be the chief guests of the evening. Mr Neville Chamberlain, the Minister of Health, has consented to reply to the toast of 'The Common Health' and the Earl of Birchenhead will be among those replying for the Guests. Among others who have already accepted the invitation of the Council are Sir Arthur Robinson, the First Secretary of the Ministry of Health, Sir F. J. Willis, Chairman of the Board of Control, the medical heads of the various services, the Presidents of many of the medical societies, the President of the Royal College of Physicians of Edinburgh, and several of the medical and university Members of Parliament. Members are urged to apply immediately for tickets which can be obtained from the Financial Secretary of the Association, price 10s. 6d. each exclusive of wines. Ladies are welcome.

## Testimonial to Dr J. P. Williams Freeman

The attention of our readers is directed to page 139 of this week's SUPPLEMENT, on which will be found a letter signed by the representatives on the Insurance Acts Committee of areas which are distinctively rural, together with Dr. Dam and Dr. Brackenbury, asking for subscriptions to a proposed testimonial to commemorate the work that has been done for rural insurance practitioners by Dr. J. P. Williams-Freeman.

## Proposed Formation of a Pathologists' Group in the Association

The following petition has been sent to the Council of the Association by Dr S. C. Dyke of the Wolverhampton and Staffordshire Hospital, signed by twenty-eight members of the British Medical Association who are members of the British Pathologists' Association, of which Dr Dyke is secretary.

"We the undersigned members of the British Medical Association engaged in the study and practice of pathology, beg hereby to make petition that a Pathologists' Group be established within the British Medical Association under the terms set forth in Appendix III to the Annual Report of the Association."

"The debate upon the Committee of the Association at the recent Meeting provided ample evidence of the function and status of pathologists in the medical practice of the Association."

medical practitioner. It is our opinion that the interests of this body are not at present sufficiently represented in the councils of the British Medical Association.

The interests of pathologists differ in some respects from those of the medical practitioner constituting the membership of the ordinary Divisions and Branches of the Association. In meetings of such formations of the Association pathologists may therefore find it difficult to make their opinions of weight with the Association.

We are of the opinion that some central format on within the Association is necessary to collect, formulate and give vent to the opinions of pathologists upon matters concerning relationships with other branches in the medical profession and between workers in the various branches of their own subject and also to exercise a general supervision over their interests in various ways.

We would suggest that all those members of the Association attached as salaried officers, either on a whole or a part time basis to the staff of a laboratory devoted to pathology or one of the allied sciences or directors of the pathological service of a voluntary hospital though unsalaried be eligible for membership.

Dr Dyke points out that there are probably a large number of other members of the British Medical Association who are interested in the matter and who would like to sign the petition. Those members of the Association who come within the definition contained in the last paragraph of the petition who are in agreement with it and would like to sign it are asked to send their names at once to the Medical Secretary of the Association.

## Work of the Central Committees.

## National Health Insurance

On September 15th the Insurance Acts Committee discussed a number of questions arising out of the matters covered by its report to the Panel Conference. These included points in connexion with the revision of the disciplinary machinery, the modification of the regulations as to change of doctor and the new form of medical card, and methods of co-operation with the Retail Pharmacists' Union. All these matters will be discussed in detail at the forthcoming conference. In connexion with the resolution of the Representative Body at Edinburgh calling upon the Insurance Acts Committee to urge upon the Ministry of Health the provision or extended benefits under the National Health Insurance Acts the Committee reiterated its intention to take every opportunity of impressing this view upon the Ministry in the future as it has done in the past.

## Public Health

On September 16th the Public Health Committee had under consideration the means of giving effect to the instruction of the Representative Body for the extension of the Association's work for public education in health. The Committee approved a draft circular for transmission to the Divisions and Branches together with the Memorandum on the Education of the Public in Health Matters adopted by the Representative Body at Edinburgh. The Committee is of opinion that a public address on the lines of the Hastings Lecture or January last should be made an annual fixture, and that the next of the series should be delivered in the spring of 1928.



A small subcommittee was appointed to draw up a list of possible subjects for the lecture, for consideration at the next meeting. The Committee had to determine the appropriate method of meeting a number of those difficulties which inevitably arise from time to time in connexion with public health appointments and the application of the Association's scale of salaries. On the other hand, the general applicability of that scale was illustrated by a report upon forty-two public appointments made at the scale salary between the beginning of May and the end of August of this year. Another matter of interest considered at the meeting was a request from the National Clean Milk Society for support in a movement to secure an alteration in the classification of milk prescribed by the Milk (Special Designations) Order, 1923. In the opinion of the Committee sufficient time has not yet elapsed since the Order came into force to justify the formulation of a considered verdict as to the merits of the existing classification, and the proposed action would consequently be premature.

At its meeting on September 20th the Organization Committee had before it a number of reports illustrating the increasing activity of the Association in various fields. Points of special interest were the increase in membership from 32,122 in February last to 33,300 on September 7th, and the formation during the year of two new Divisions in South Africa—namely, the Alhwal North, Queenstown and Umfuta Divisions of the Witwatersrand Branch. The Transvaal Division of the Association now has an official organ, the *Malaya Medical Journal*, which is published quarterly, with the principal of the Malaya College of Medicine as editor-in-chief and the acting principal as deputy editor. Circulation of that *Journal* is not confined to members of the profession, and accordingly it contains articles on such subjects as estate sanitation, which are of interest to the local planters and other subscribers. The Committee congratulated the Medical Secretary on the success of his visit to the Irish Branches last spring, and directed that his report on the subject should be placed before the Council.

In June last the Council had under consideration a report as to the necessity for an international medical code for intercommunication between officers of ships at sea in cases of illness or accident, and instructed the Medico-Political Committee to investigate and report upon the matter. In the interval promises of co-operation have been received from the Government departments interested in the question, and the Medico-Political Committee, at its meeting on September 21st, decided to recommend to the Council the appointment of an *ad hoc* committee to explore the whole subject. This recommendation will come before the Council at its next meeting. The Committee had before it certain reports as to delay and inconvenience occasioned to relatives by the working of the new regulations for the delivery of death certificates to the local registrars. The point raised seems to be one of substance and the Committee is requesting the Registrar-General to make a statement upon the subject for publication in the *British Medical Journal* at an early date. Complaints are received from members from time to time of the regulation adopted by certain local authorities ordering their medical officers to hand over the fees allowed to medical practitioners under the Coroners (Amendment) Act, 1926. The Committee expressed the opinion that, so far as whole-time officers are concerned, it is impossible to take exception to such a rule.

#### Direct Representation upon Insurance Acts Committee and Scottish Subcommittee

Nominations may now be made for the election of twenty-three direct representatives upon the Insurance Acts Committee for the session 1927-28. Forms have been circulated to Local Medical and Panel Committees, and must be returned so as to reach the Medical Secretary not later than Monday, October 10th. Nominations may also be made for the election of eight direct representatives on the Insurance Acts Subcommittee (Scotland)—four by Scottish

County Panel Committees and four by Scottish Burgh Panel Committees. The completed forms must be returned by Monday, October 10th.

#### The Annual Panel Conference

The annual Conference of Representatives of Local Medical and Panel Committees will be held in the Great Hall, British Medical Association House, Tavistock Square, London, on Thursday, October 20th next, under the chairmanship of Dr E K Lo Fleming (Wimborne, Dorset). Motions or amendments for the final agenda must be received by the Medical Secretary by Monday, October 10th. The final agenda will be issued on Thursday, October 13th.

#### Association Notices

**BRANCH AND DIVISION MEETINGS TO BE HELD**  
BIRMINGHAM BRANCH COVENTRY DIVISION—The annual dinner of the Coventry Division will be held at the King's Head Hotel on Tuesday, October 4th.

BIRMINGHAM BRANCH WEST BROMWICH DIVISION—The fourth regular meeting of the West Bromwich Division will be held at the offices of the Smethwick Insurance Committee 1, South Road, Smethwick, on Tuesday, October 11th, at 3.30 p.m. Dr W A Potts (Birmingham) will read a paper on psychoanalysis.

DORSET AND WEST HANTS BRANCH—The autumn meeting of the Dorset and West Hants Branch will be held on Wednesday, October 5th, at the Burlington Hotel, Bournemouth, at 3 p.m., when the president, Dr Grey Edwards, will take the chair. Agenda: Communications, election of officers, time and place of next meeting, papers—Dr "Ophiant" (Bridport) and Dr Wifery memories, Dr Moise "Twenty years' hard" (The Bournemouth members invite visiting members to lunch at the Burlington Hotel at 1.30 p.m. The vice-presidents, Drs Ophiant and Moise, invite members to tea after the meeting.

KEY BRANCH TUNBRIDGE WELLS DIVISION—The annual meeting of the Tunbridge Wells Division will be held at the General Hospital, Tunbridge Wells, on Thursday, October 6th, at 8.30 p.m. Agenda: Result of election of officers and representative on Branch Council, annual report and financial statement, report of representative to the Annual Representative Meeting at Edinburgh.

LANCASHIRE AND CHESTER BRANCH MID CHESHIRE DIVISION—There will be a meeting of the Mid Cheshire Division in the Board Room of the Altrincham General Hospital on Sunday, October 2nd, at 4 p.m. Tea at 3.45. Agenda: Report of representative at Annual Representative Meeting, Edinburgh, friendly society non-panel expiation fees, medical charities, testimonial to Dr T W H Gristling. At the end of the business meeting a short address on a gynaecological subject will be given by Dr Kenneth Bailey, University of Manchester.

METROPOLITAN COUNTIES BRANCH CITY DIVISION—The first meeting of the session 1927-28 of the City Division will be held at the Metropolitan Hospital, Kingsland Road, on Tuesday, October 4th, at 9.30 p.m. Dr R M Bronte, the Home Office pathologist, will read a paper on "The doctor as a witness." It is hoped that members will give the session a good start. Coffee and biscuits.

METROPOLITAN COUNTIES BRANCH NORTH MIDDLESEX DIVISION—The annual dinner of the North Middlesex Division will be held on Thursday, October 13th, at the Connaught Rooms, Great Queen Street, at 8.30 p.m. (for 8.45). Tickets 10s 6d each. Members are requested to inform the honorary secretary not later than October 8th whether or not they intend to be present.

METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION—A meeting of the South West Essex Division will be held at the Woolford Jubilee Hospital, Woodford Green, on Tuesday, October 11th, at 3.30 p.m., when Dr F G Crookshank will read a paper on the psychical aspect of treatment of common diseases.

OXFORD AND READING BRANCH OXFORD DIVISION—A meeting of the Oxford Division will be held under the auspices of Radcliffe Infirmary Post Graduate Course on Friday, October 14th, at 3 p.m., at the Radcliffe Infirmary, Oxford. The speaker will be Dr J Gravesen, medical superintendent of Vejle Hospital, Denmark. Subject: Modern treatment of pulmonary tuberculosis (illustrated by lantern slides).

NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND DIVISION—A meeting of the North Northumberland Division will be held at the Alnwick Infirmary on Tuesday, October 4th, at 3 p.m. Election of office bearers for the ensuing year. Agenda: winter session any other competent business. Tea will be provided at the close of the meeting.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION—A meeting of the Sunderland Division will be held at the Royal Infirmary, Sunderland, on Wednesday, October 5th, at 7.30 p.m. Cases will be shown from 7.30 to 8.30. Coffee will be served at 8.30 after which Mr Wilham Robinson, F.R.C.S., will give an address on rational dietary.

SOUTHERY BRANCH PORTSMOUTH DIVISION—Division meeting will be held on the second Thursday in each month at the Queen's Hotel preceded by a supper at 9 p.m. Sir John Rose Bradbury, K.C.M.G., M.D., President of the Royal College of Physicians will open the winter session on October 13th with an address on medical

(male, unmarried) Salary £150 per annum  
 M.D. at 31, 108, Hospital, Austin Street E.L.—Honorary Surgeon to the  
 Ear, Nose, and Throat Department.

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BRITISH MEDICAL JOURNAL

Gynaecological Clinics Operations Tues 2.30 to 5 p.m. Medical,  
Surgical Throat Nose and Ear Clinics Operations Wed 2.30 p.m.  
Special Demonstration in 1st Riv Department Thurs 11.30 to 5 p.m.  
Skin and Eye Clinics Operations Thurs 11.30 to 5 p.m.  
2.30 to 5 p.m. Medical Operations Thurs 11.30 to 5 p.m.  
5 p.m. Surgical 10.30 a.m. Throat Nose and Ear Clinics  
St. Mary's Hospital Medical and Children's Diseases Clinics 2.30 to  
of 1 in in the Lower Extremities W—Mon 11 to 11.45 a.m. Significance  
Large Bowel 2.15 to 3 p.m. Recent Work on the Pituitary and Ovary  
3.15 to 4 p.m. Cancer of the Tongue  
West London Hospital Post Graduate College Hammersmith W 6—Mon,  
10 a.m. to 1 p.m. Surgical Ward Visit, Demonstrations in Venereal  
Ward 2 p.m. Medical Wards Throat Nose and Ear Department,  
Diseases 10 a.m. to 1 p.m. Children's Medical Outpatients, Medical  
Wed 10 a.m. to 1 p.m. Medical Pathology 2 p.m. Surgical Wards,  
Wards 2 a.m. to 1 p.m. Children's Throat Nose and Ear Department,  
Eye Department Thurs, 10 a.m. to 1 p.m. Neurological Department  
Demonstration in Medical Pathology 2 p.m. Surgical Wards,  
Ment's Gynaecological Fractures 2 p.m. Eye and (urological Department  
Operations Dental Clinic Fri 10 a.m. to 1 p.m. Gynaecological  
Nose and Ear Department Sat 10 a.m. to 1 p.m. Bacterial Throat,  
Department Children's Medical Department Daily Operations, Medical  
and Surgical Outpatients at 2 p.m.  
JAMES WICKES & SONS LTD. FOR CLINICAL RESEARCH St. Andrews—Tues.,  
4 p.m. Ocular Manifestations of Gastro-intestinal Disorder  
MANCHESTER POST OFFICE Dr. John Ferriar (1761 1815) Public Health  
in Surgery Fri 4.15 p.m.  
Affairs Tues & Wed at 3.45 p.m.

British Medical Association  
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**Diary of the Association**  
 OCTOBER  
 Sun Mid-Cheshire Division  
 Tues London

**Diary of the Association**

**OCTOBER**

Mid Cheshire Division Conference Altrincham General Hospital 4 pm  
London Medical Association between Representatives of the British  
Health 2.30 pm  
City Division and the Society of Medical Officers of  
R. M. Bonte Metropolitan Hospital Kingsland Road Dr  
County Division Annual Dinner 8.15 pm  
North London Division Annual Dinner 8.30 pm  
London Northumberland Division Annual Dinner Kings Head Hotel,  
Members Arrangements Committee 11 a.m. Full Committee Meeting of Council  
2.0 p.m.  
Doris and West Hants Branch  
3 p.m. Luncheon 1.30  
Sunderland Division Burlington Hotel Newcastle,  
7.30 p.m. Mr W. Robin on Rational Dietry A.O.  
Childs Division Royal Surrey County Hospital Guildford  
St. Stephen Thomson on Liners and His Work for Humanity  
4 p.m. Feb 3.45  
Tunbridge Wells Division Annual Meeting General Hospital  
Tunbridge Wells 8.0 p.m.  
Wilford Pontefract and Castleford Division  
Restaurant Wilford B.M.A.  
Children  
Council on Fluorides B.M.A.  
London

7 Fri	London	Medical Students and Newly Qualified Practitioners	2.30 pm
	London	Children on Fluorosis and Some Nervous Disturbances	8 pm
	London	Discussion on Procedure and Evidence in Criminal Cases	8 pm
	Dewsbury Division	Hereditary Infirmary	8.15 pm
	Hereford Division	Hereditary Infirmary	8.15 pm
	Graduate Division	General Hospital Post	3.30 pm
	Treatment Lectures by Dr W. W. Griffiths		3.30 pm
	South Suffolk Division	Crown and Anchor Hotel Ipswich	3.30 pm
	W. W. Rowley Bristow	Common Injuries in Practice	3.30 pm
11 Tues	South West Essex Division	Woodford Jubilee Hospital Woodford Green	3.30 pm
	Treatment of Common Diseases		3.30 pm
	West Bromwich Division	Psychical Asylum	3.30 pm
	W. A. Lott on Psychoanalysis		3.30 pm
12 Wed	London	Council	10 am
	Autumn Dinner of the B.M.A.		3.30 pm
	W. W. C. 2		7.30 pm
14 Fri	Ilfracombe Division	Royal Infirmary	7.30 pm
	London	Ophthalmic Committee	2.30 pm
	Discussion on Pain		

**BIRTHS, MARRIAGES, AND DEATHS**  
*The charge for inserting announcement of Births, Marriages, and Deaths is 9s which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue*

RINGROSE—On September 20th at Westfield Church, Road West  
 Leeds a Miss M Ringrose MB ChB DPH (C)  
 11 T Ringrose Bsc Lond a son

[illegible]

EDWARDS Alexander H MB FRCSd Surgeon to Orthopaedic  
Department Royal Infirmary, Glasgow  
LOKITT Walter MC MB BS Dunelm House Physician to the North  
OUMESBY Hospital Middlesbrough  
QUINN CHARLOTTE VERNITA Housh  
President of Medical Officers  
Medical Officer G L G Irvine MB BS  
Office Miss J C Williams MB BS

APPOINTMENTS

Marylebone Road NW1—Senior  
MB BS Assistant Resident  
MB BS District Resident Medical

DIARY OF SOCIETY

**CLUB OF SOCIETIES AND LECTURES**  
 Section of Orthopaedics—Tue 4 30 p m Presidential  
 Address by Mr W Rowley Briston  
 discussion  
 Section of History of Medicine—Wed 5 p m Dr Kenneth J Finkelman  
 Valves in Veins—in Historical Survey

**POST GRADUATE COURSES AND LECTURES**  
 FELLOWSHIP OF MEDICINE AND POST GRADUATE  
 National Hospital for Diseases of the Throat  
 Special Post Graduate Lectures  
 4 p m Lectures

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL IS ACTIVATION  
 National Hospital for Diseases of the Heart Westminster Street W 1  
 Special Post Graduate Course 17 Cardiology occurring all day from  
 10 am to 4 pm fee £7 7s (limited to twenty) Central London  
 Throat Voice and Ear Hospital Glas, s Inn Road W C 1 Special Course  
 in Laryngology Rhinology and Otolaryngology including Operative Surgery  
 and Bacteriology suitable for D I O Students all day Clinical Pathology  
 £5 5s Operative Class £7 7s Peroral Endoscopy £6 6s and Pathology  
 £4 4s the last three courses strictly limited London School of  
 Hygiene and Tropical Medicine Endelsleigh Gardens Tuesday and  
 Saturday Clinical Demonstration on Diseases in the Tropics fee £2 2s  
 National Hospital Queen Square W C 1 Special two months Course  
 in Neurology Royal Free Hospital Gray's Inn Road W C 1 On  
 Friday, at 5 pm Demonstration on Ante Natal Diagnosis and Treat  
 ment fee £1 1s (limited to ten) All information and tickets from the  
 Secretary Fellowship of Medicine 11 Wimpole Street W 1  
 LONDON SCHOOL OF MEDICINE 11 Wimpole Street W 1  
 W C 2 - Chesterfield Lectures St Johns 110 p.m. Leicester Square  
 5 pm Anatomy of the Skin Thurs, 5 pm  
 ANATOMY OF THE SKIN Thurs, 5 pm  
 - Mon 10 am to 11 am Anatomy and Physiology of the Circulatory  
 System 11 am to 12.30 pm Diseases of the Mitral Valve 11.15 am to  
 12.30 pm Anatomy of the Heart 10 to 11 am Symptomatology  
 11.15 am to 12.30 pm The Polygraph Thurs 10 to 11 am Cardiology  
 10 to 11 am Prognosis in Heart Disease 11.15 am to 12.30 pm The  
 Electrocardiograph  
 Aortic Regurgitation Thurs 10 to 11 am Cardiology  
 Aortic Stenosis Thurs 10 to 11 am Cardiology  
 Mitral Regurgitation Thurs 10 to 11 am Cardiology  
 Mitral Stenosis Thurs 10 to 11 am Cardiology  
 Medical Cases in Heart Disease 11.15 am to 12.30 pm The

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## British Medical Association

## CURRENT NOTES

## The Autumn Dinner

THE Autumn Dinner of the Association will be held in the King Edward VII Rooms, Hotel Victoria, Northumberland Avenue, London, W.C.2 on Wednesday next, October 12th, at 7.15 or 7.30 p.m. The retiring officers—Mr R. C. Howarth, the immediate Past-President, and Sir Robert Bolam, who has been Chairman of Council for the past seven years—will be the chief guests of the evening. Mr Neville Chamberlain, the Minister of Health, has consented to reply to the toast of "The Common Health" and the Earl of Birkenhead will be among those replying for 'The Guests'. Among others who have already accepted the invitation of the Council are Sir Arthur Robinson, the First Secretary of the Ministry of Health, Sir P. J. Willis, Chairman of the Board of Control, the medical heads of the various services, the Presidents of many of the medical societies, the President of the Royal College of Physicians of Edinburgh, and several of the medical and university Members of Parliament. Members are urged to apply immediately for tickets, which can be obtained from the Financial Secretary of the Association, price 10s. 6d. each exclusive of wines. Ladies are welcome.

## Hospitals Committee.

On September 27th the Hospitals Committee had before it an invitation to give evidence before a committee appointed by the King Edward's Hospital Fund for London on the initiative of its President, the Prince of Wales, "to inquire and report upon the question of hospital accommodation in London for persons prepared to pay more than ordinary voluntary hospital patients, and to report the conclusions at which they may arrive. The committee accepted the invitation, considered and approved a draft memorandum of evidence based upon the existing hospital policy of the Association, and appointed the following to give oral evidence on behalf of the Association: Mr H. S. Souttar, Mr W. McAdam Eccles, Dr H. B. Brackenbury, Mr N. Bishop Harman, and the Deputy Medical Secretary. The committee appointed a special subcommittee to consider the resolutions of the Representative Body on the formation of a middle-class hospital policy, and appointed representatives on a special committee which the Council is being asked to set up in order to examine in conjunction with representatives of the Public Health and Medico-Political Committees the whole question of the manner in which the State and both voluntary and statutory associations and authorities are encroaching at the present time upon the field of private medical practice. This committee will have before it the discussion of this matter at the Representative Meeting at Edinburgh. The committee has had under consideration principles for regulating the admission of paying patients referred to

the x-ray departments of hospital and expect to reach a final decision on the subject at its next meeting. Mr H. S. Souttar was nominated to serve on the Insurance Acts Committee as a member of the Hospitals Committee who is also on the voluntary staff of a hospital.

## Psycho-Analysis Committee.

The Psycho-Analysis Committee met on September 26th and reappointed Dr R. Langdon Down as its chairman, Dr R. Worster-Drought as deputy chairman, and Dr P. G. Gordon of Bath as honorary secretary. After lengthy discussion a questionnaire on psychological analysis was adopted for circulation to those particularly interested in this branch of medical work.

## Royal Army Medical Corps

The British Medical Association after prolonged efforts, has been successful in obtaining rates of remuneration for officers of the Royal Army Medical Corps which, in its opinion, compare favourably with those in other branches of medical practice. Such being the case it feels that the new regime must be given a fair trial and consequently it is advising those newly qualified men who ask for guidance that it is well worth their while to apply for commissions in the Corps.

The increasing number of inquiries now being made at the War Office regarding service in the R.A.M.C. appears to justify the belief that young medical men are beginning to think more of service in the Corps as a career which offers many opportunities of advancement not to be found in general practice. This change of attitude is no doubt due, in part at least, to the improvements that have been made during the past twelve months in pay and general conditions of service and to the prospect of more rapid promotion incidental to these changes. The pay and allowances (when received in full) of an unmarried lieutenant now amount to approximately £511 a year while a captain, if unmarried gets at present rates £617 and if married £709. These rates of course increase with promotion in rank and years of service till they reach the maximum of over £2,000 a year and in addition each year of service carries its element of gratuity or pension. An officer is eligible for promotion to the rank of captain on the completion of three and a half years commissioned service and to the rank of major on the completion of twelve years' commissioned service provided that in each case he has passed the necessary examination and is recommended for such promotion. Promotion to the higher ranks is by selection, and is naturally dependent on the occurrence of vacancies, but last year twenty-three majors were promoted to the rank of lieutenant-colonel, and for new entrants to the service the prospect of advancement to all the higher ranks is now unusually favourable. Two other features of the present conditions of service should be specially attractive to newly-qualified practitioners. Those who take up a hospital appointment can under certain conditions, at their commissions antedated—that is, service in a hospital appointment will count as service in the army—and if for any reason an officer wishes to retire after seven

## Association Notices.

[SUPPLEMENT TO THE  
BRITISH MEDICAL JOURNAL]

jeans' service he may do so with a gratuity of £1,000, a sum which should go a substantial way towards opening the door to a civil practice.

The next examination of candidates for commissions will be held in January, 1928, and in the meantime full information regarding the service and mode of entry may be obtained on application to the Under Secretary of State (A M D 1), The War Office, Whitehall, London, S W 1, either personally or by letter.

## L Association Professionnelle Internationale des Medecins

The second annual conference of the above association was held in Paris from September 29th to October 1st. There were present representatives of the national medical associations of Austria, Czechoslovakia, Denmark, France, Germany, Holland, Jugoslavia, Lithuania, Luxembourg, Poland, Rumania, Sweden, and Switzerland. The Medical Secretary of the British Medical Association was present as an observer. A great deal of attention was given to the question of national insurance against sickness, and two resolutions (of which the following is a translation) were adopted unanimously.

The annual conference of the A P I M declares itself unanimously of opinion (1) that in the interest of the insured persons, in all laws of social insurance there should be free choice of doctor by the patient and (2) that when any laws are under consideration which affect the medical profession the representative medical organizations should be consulted by the Governments concerned.

## Association Notices.

## BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH** WEST BROMWICH DIVISION—The fourth regular meeting of the West Bromwich Division will be held at the offices of the Smethwick Insurance Committee, 1, South Road, Smethwick, on Tuesday, October 11th, at 3.30 p.m. Dr W A Potts (Birmingham) will read a paper on psycho analysis.

**METROPOLITAN COUNTIES BRANCH** CITY DIVISION—A clinical meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road, on Friday, October 14th, at 4.30 p.m. Dr W Langdon Brown will read a paper on modern aspects of nephritis.

**METROPOLITAN COUNTIES BRANCH** HAMPSHIRE DIVISION—A special meeting of the Hampshire Division will be held at the Hampshire General Hospital, on Thursday, October 13th, at 8.30 p.m., to receive a report from representatives on the Annual Representative Meeting held at Edinburgh last July. This meeting will be followed at 9.15 by an ordinary meeting, at which the chairman, Dr W Arthur Rice, will give an inaugural address entitled "Save the mothers." Coffee.

**METROPOLITAN COUNTIES BRANCH** HENDON DIVISION—A combined clinical meeting and dinner of the Hendon Division will be held on at the Brent Bridge Hotel on Friday, October 14th, at 7.45 for 8 p.m. An address will be given by Dr James Neil (general secretary Medical Defence Union) on some medico legal difficulties in general practice. All medical practitioners are cordially invited. Dinner tickets 8s 6d. Members are requested to intimate their intention of being present or not to the honorary secretary at an early date.

**METROPOLITAN COUNTIES BRANCH** LAMBETH AND SOUTHWARK DIVISION—A clinical meeting of the Lambeth and Southwark Division will be held at the Belgrave Hospital for Children, Clapham Road, S W 9, on Wednesday, October 12th, at 4.30 p.m. Tea at 4 o'clock. Dr Edmund Cautley will conduct the meeting.

**METROPOLITAN COUNTIES BRANCH** NORTH MIDDLESEX DIVISION—The annual dinner of the North Middlesex Division will be held on Thursday, October 13th, at the Connaught Rooms, Great Queen Street, at 8.30 p.m. (for 8.45). Tickets 10s 6d each. Members are requested to inform the honorary secretary not later than October 8th whether or not they intend to be present.

**METROPOLITAN COUNTIES BRANCH** ST PANCRAS DIVISION—The first meeting of the new session of the St Pancras Division will be held at the British Medical Association House, Tavistock Square, W C 1, on Tuesday, October 11th, at 9 p.m. Sir Berkeley Moynihan Bt, President of the Royal College of Surgeons, will give an address on medicine in art (illustrated by lantern slides).

**METROPOLITAN COUNTIES BRANCH** SOUTH WEST ESSEX DIVISION—A meeting of the South West Essex Division will be held at the Woodford Jubilee Hospital, Woodford Green, on Tuesday, October 11th, at 3.30 p.m., when Dr F G Crookshank will read a paper on the physical aspect and treatment of common diseases.

**METROPOLITAN COUNTIES BRANCH** WILLESDEAN DIVISION—A meeting of the Willesden Division will be held at the Willesden General

Hospital, Hurlenden Road, N W 10, on Wednesday, October 19th, at 9 p.m. Mr A H Levy, F R C S, will speak on ocular manifestations of general disease.

**NORTH OF ENGLAND BRANCH** TRIVESIDE DIVISION—A dance will be held at the Waverley Ballroom, Whitley Bay, on Friday, October 28th. Tickets, 12s 6d each, may be obtained from Dr John Murray of 4, Alma Place, North Shields. The proceeds will be devoted to the charities supported by the British Medical Association.

**OXFORD AND READING BRANCH** OXFORD DIVISION—A meeting of the Oxford Division will be held under the auspices of Radcliffe Infirmary Post Graduate Course on Friday, October 14th, at 3 p.m., at the Radcliffe Infirmary, Oxford. The speaker will be Dr J Gravesen, medical superintendent of Vejlefjord Sanatorium, Denmark. Subject: Modern treatment of pulmonary tuberculosis (illustrated by lantern slides).

**SOUTHERY BRANCH** PORTSMOUTH DIVISION—Division meetings will be held on the second Thursday in each month at the Queen's Hotel, preceded by a supper at 9 p.m. Sir John Ross Bradford, K C M G, M D, President of the Royal College of Physicians, will open the winter session on October 13th with an address on medical defence, members may invite friends in the legal profession. Non members can attend once during the session and are cordially invited to this first meeting. Members of other Divisions are cordially invited to attend all meetings. The cost of the supper is 3s 6d including gratuities.

**SOUTH WALES AND MONMOUTHSHIRE BRANCH** SWANSEA DIVISION—The annual dinner of the Swansea Division will take place at the Hotel Metropole on Thursday, October 13th, when Dr Alfred Cox will be the chief guest. Several prominent local men will also be present as guests, and members are urged to keep this date free.

**SURREY BRANCH** CROYDON DIVISION—A meeting of the Croydon Division will be held at the Croydon General Hospital on October 12th at 4 p.m., when Mr E M Cowell, D S O, F R C S, will give a lecture demonstration on the modern surgical outlook. The Division will also hold a meeting at the Croydon General Hospital on October 18th at 8 p.m., when Dr J Strickland Goodall will read a paper on arterio sclerosis.

**SUSSEX BRANCH** BRIGHTON DIVISION—The next clinical meeting of the Brighton Division will be held at the Sussex County Hospital, Brighton, on Wednesday, October 19th, at 3.45 p.m. Arrangements are being made for a joint meeting between those members of the Sussex Law Society who practise in Brighton, Hove, and neighbourhood and the Brighton Division of the British Medical Association, to be held at the invitation of the Sussex Law Society at the Law Library 147, North Street, Brighton (first floor), on Friday, October 7th, at 8 p.m., when Mr John Flowers will open a discussion on questions of procedure and evidence in criminal cases, and deal especially with the admissibility of evidence tending to show past offences committed by the accused. It is hoped that many members of both professions will attend.

**SUSSEX BRANCH** HASTINGS DIVISION—The first meeting of the new session of the Hastings Division will take place at the Queen's Hotel, Hastings, on Thursday, October 13th, at 8.15 p.m. Mr Somerville Hastings, F R C S (surgicon Middlesex Hospital), will give an address, "The future of medical practice in England." At this meeting the Division will welcome friends of members.

**WEST SOMERSET BRANCH**—The autumn meeting of the West Somerset Branch will be held at the Taunton and Somerset Hospital on Friday, October 28th, at 4 p.m. Dr Eric Fritchard, F R C P, consulting physician Queen's Hospital for Children, London, will give a British Medical Association Lecture on the principles of nutrition in their application to the feeding of infants and children. The annual dinner for medical men residing in West Somerset will be held at the County Hotel, Taunton, on the evening of the same day at 7.15. Price of tickets 7s 6d (exclusive of wines).

**WORCESTERSHIRE AND HEREFORD BRANCH** HEREFORD DIVISION—The series of post graduate lectures at the Herefordshire General Hospital, arranged under the auspices of the University of Birmingham, will commence to day (Friday, October 7th) at 3.30 p.m., when Dr Wynn will discuss chronic arthritis and its treatment. The second lecture of the series on the significance of blood pressure variations will be delivered by Dr Willinson on Friday, October 14th, at the same hour.

**YORKSHIRE BRANCH** HALIFAX DIVISION—A general meeting of the Halifax Division will be held in the Board Room of the Royal Halifax Infirmary on Wednesday, October 12th. A discussion on p.m. will be opened by Dr Pollard and Dr Davidson, in which members are invited to take part. The annual dinner will be held at the White Swan Hotel on Thursday, November 17th, at 7.30 p.m.

**YORKSHIRE BRANCH** SHEFFIELD DIVISION—A general meeting of the Sheffield Division will be held at the Church House, St James Street, Sheffield on Tuesday, October 25th, at 8.30 p.m. Agenda: Report of representatives—Dr Forbes, Dr Mackinnon, and Dr Brockman, and vote of thanks. A general meeting of the Division will be held on Friday, December 9th, at the University, Sheffield, at 8.30 p.m. when a British Medical Association Lecture will be delivered by Mr H Beckwith Whitehouse, M S, F R C S, on practical applications of recent views on the menstrual functions.

**YORKSHIRE BRANCH** WAKEFIELD, PONTEFRACT AND CASTLEFORD DIVISION—A clinical meeting of the Wakefield, Pontefract and Bolton Division will be held by kind permission of Dr J Sherrin at the West Riding Mental Hospital, Wakefield, on Sunday, October 23rd, at 3 p.m.



BATHURST HOSPITAL, Lambeth Road S.E.—Resident House-Physician (male) £100 per annum. Honorary at the rate of £50 per annum.

BIRMINGHAM, CHURCH LANE, 2, D. ROYAL COLLEGE OF THEOPHILUS AND ST. PAUL'S HOSPITAL.—Hon. & Surg. on (male) Salary £250 per annum with allowance of £150 in lieu of residence.

BIRMINGHAM, 4 D MIDLAND EYE HOSPITAL.—Resident Surgical Officer Salary £150 per annum.

BIRMINGHAM, 110.—Three House-Surgeons at the Dudley Road Hospital. Salary at the rate of £200 per annum each.

BLACKBURN, 4 D EAST LANCASHIRE ROYAL INFIRMARY.—Third House-Surgeon (male) Salary £150 per annum.

BOOTS DORCHESTER HOSPITAL.—Honorary Surgeon.

BURTON AND ROYAL INFIRMARY.—(1) House-Surgeon (2) House-Physician (male) Salary £150 per annum.

BURTON, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000.

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ST. MARK'S HOSPITAL FOR CANCER, LISTERIA AND OTHER DISEASES OF THE RECTUM City Road E.C.1—House Surgeon (mate) Salary at the rate of £75 per annum

SHROPSHIRE ORTHOPEDIC HOSPITAL AND AGES HUNT SURGICAL HOME Oswestry Two House Surgeons (males) Salary £200 per annum

SOUTH WEST AFRICA—District Surgeon at Oramboland Salary £1,000 per annum

VICTORIA HOSPITAL FOR CHILDREN Tite Street S.W.3—(1) Honorary Medical Registrar (2) Honorary Surgeon Registrar (3) Honorary Outpatient Anaesthetist honorarium 10s. 6d. per attendance

WALSLEY GENERAL HOSPITAL—(1) Senior House-Surgeon (2) Junior House-Surgeon Salary £200 and £125 per annum respectively

WILTSHIRE AND DEVON JOINT COMMITTEE FOR TUBERCULOSIS—Assistant Tuberculosis Officer Salary at the rate of £650 per annum

WEST END HOSPITAL FOR NERVOUS DISEASES—Anaesthetist

WEST SUFFOLK COUNTY COUNCIL AND BOGNOR URBAN DISTRICT COUNCIL—Assistant County Medical Officer of Health and Medical Officer of Health for the Bognor Urban District Salary for former £500 per annum, rising to £600, and for the latter £200 per annum rising to £300

CERTIFYING FACTORY SURGEON—The appointment of Stalloway (County of Shropshire) is vacant. Applications to the Chief Inspector of Factories Home Office Whitehall S.W.1

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

### APPOINTMENTS

BOLTON C. M.B. B.Ch. Dub., House Surgeon to the Ancoats Hospital, Manchester

BROWN Helen H. M.B. Ch.B. Liverp. Medical Officer of Maternity and Child Welfare for the City of Lincoln

DUNCOMB Clement M.B. B.Ch. Camb. D.Ph. Oxon. Assistant Medical Officer of Health and School Medical Officer for Croydon

### DIARY OF SOCIETIES AND LECTURES

Royal War Section—Mon 5 p.m. by Surgeon Vice Admiral A. Gaskell Prof. the Service Medical Officer

Section of Therapeutics—Tues 5 p.m. Presidential Address by Prof. J. A. Gunn Pharmacological Syndromes

Section of Neurology—Thurs 8.30 p.m. Presidential Address by Professor Lown Præmwill. The Upward Movement of the Eyes a Clinical Study of a Co-ordinated Movement

Clinical Section—Fri 8 p.m. Cases

Section of Ophthalmology—Fri 8 p.m. Cases. Illustrations of coloboma of the optic disc and allied conditions will be shown on the epidiascope. 8.30 p.m. Miss Ida C. Mann The Process of Retinal Differentiation in Man.

HARVEY SOCIETY Hospital for Epilepsy and Paralysis Maudslayi W—Thurs 4.30 p.m. Clinical W

MEDICAL SOCIETY OF LONDON W1—Mon 8 p.m. Annual General Meeting Address by Mr H. W. Carson F.R.C.S. Surgery in the Early Days of the Medical Society of London

SOCIETY FOR THE STUDY OF INFERTILITY 11 Chandos Street W1—Tues 4 p.m. Norman Kerr Memorial Lecture by Professor W. E. Dixon M.D. F.R.S. The Tobacco Habit

WEST LENT MEDICO-CHIRURGICAL SOCIETY Miller General Hospital Greenwich, S.E.10—Annual General Meeting Fri 8.15 p.m. Clinical cases will be shown by Mr C. H. Joll F.R.C.S. Dr H. Nickolds and Mr P. B. Roth F.R.C.S. Mr H. P. Winsbury White, F.R.C.S. will demonstrate a series of neurectomy specimens.

### POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—Central London Ophthalmic Hospital Judd Street W.C. Tues Special Clinical Demonstration at 4 p.m. open to all medical practitioners

Central London Throat Nose and Ear Hospital Gray's Inn Road W.C. Clinical per week. London School of Hygiene and Tropical Medicine 2 p.m. (Royal Free Hospital Gray's Inn Road)

W.C. Wed, 5.15 p.m., The Direct Current with special reference to its uses in cases of injury National Hospital Queen Square W.C. Special Two Months Course in Neurology. All information and tickets from the Secretary. Fellowship of Medicine 1, Wimpole Street, W.1

HOSPITAL FOR SICK CHILDREN Great Ormond Street, W.C.1—Thurs 4 p.m., Disorders of the Thyroid

LONDON SCHOOL OF DERMATOLOGY St John's Hospital Leicester Square W.C.2—Tues 5 p.m., Physiology of the Skin Thurs, 5 p.m., Morphology and Histopathology of Elementary Lesions

NATIONAL HOSPITAL, Queen Square, W.C.1—Mon, Tues Thurs and Fri, 2 p.m. Out-patient Clinics Mon 3.30 p.m., Optic Atrophy, Tues, 3.30 p.m., Surgery of Compression Paraplegia Thurs 3.30 p.m., Disorders of Movement Fri 3.30 p.m. Demonstration of Reeducative Methods Operations Tues and Fri 9 a.m.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART Westminster Street W.1—Mon, 10 to 11 a.m. Diseases of the Arteries and High Blood Pressure 11.15 a.m. to 12.30 p.m. The Electrocardiograph Tues 10 to 11 a.m., Ray Examination in Cardiovascular Disease 11.15 a.m. to 12.30 p.m., Carditis Wed 10 to 11 a.m. Heart Disease in Pregnancy 11.15 a.m. to 12.30 p.m., Cardiac Arrhythmias 3 to 4 p.m. Pathological Demonstration Thurs 10 to 11 a.m. Chronic Myocardial Disease 11.15 a.m. to 12.30 p.m. Treatment Fri 10 to 11 a.m. Treatment 11.15 a.m. to 12.30 p.m., Cardiac Arrhythmias Ward rounds and out-patients daily

NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales General Hospital Tottenham N.15—Mon 2.30 to 5 p.m. Medical Surgical and Gynaecological Clinics Operations Tues, 2.30 to 5 p.m. Medical Surgical Throat Nose, and Ear Clinics Operations Wed 2.30 to 5 p.m. Medical Skin and Eye Clinics Operations Thurs 11.30 a.m. Dental Clinics 2.30 to 5 p.m. Medical Surgical and Ear Nose and Throat Clinics Operations Fri 10.30 a.m. Throat Nose and Ear Clinics 2.30 to 5 p.m., Surgical, Medical, and Children's Diseases Clinics Operations

TAVISTOCK SQUARE CLINIC FOR FUNCTIONAL NERVOUS DISORDERS 51 Tavistock Square W.C.1—Mon, 4.45 p.m. Nature and Scope of Psychotherapy, 5.45 p.m. Adaptation Tues Wed Thurs and Fri 4.45 p.m. Methods of Treatment Tues 5.45 p.m., Differential Diagnosis of Post-encephalitic and Functional Conditions. Wed 5.45 p.m. Freud Jung Adler Thurs 5.45 p.m. Conflict and Repression Fri 5.45 p.m. Emotional Development

WEST LONDON HOSPITAL POST GRADUATE COLLEGE, Hammer Smith, W.6—Mon 10 a.m. to 1 p.m. Genito-urinary Operations, Skin Department, Surgical Wards 2 p.m., Surgical Wards Gynaecological and Eye Depriming Tues, 10 a.m. to 1 p.m., Medical Ward Visit, Demonstrations in General Diseases 2 p.m., Medical Wards Throat, Nose and Ear Department Wed 10 a.m. to 1 p.m. Children's Medical Out-patient Medical Wards, Demonstration in Medical Pathology 2 p.m., Surgical Wards Lye Department Thurs 10 a.m. to 1 p.m., Neurological Department, Demonstration of Fractures 2 p.m. Eye and Genito-urinary Department Fri 10 a.m. to 1 p.m. Gynaecological and Electrical Departments 2 p.m. Throat Sat 10 a.m. to 1 p.m., Bacterial Therapy Dept. Daily Operations Medical at 2 p.m.

J1 4 p.m. Influence of Diet on the Physiology of the Stomach

MANCHESTER ROYAL INFIRMARY—Tues, 4.15 p.m. Chronic inflammation of the Colon Fri 4.15 p.m., Dr Thomas Percival (1740-1804) on the Health of the Cotton Operatives some of the present-day problems. Tea served at 3.45 p.m.

### British Medical Association.

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE  
TAVISTOCK SQUARE, W.C.1

#### Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams 3)  
MEDICAL SECRETARY (Legal) London)  
EDITOR British Medical Anthology (Scientific Secretary) London)  
Telephone numbers of British Medical Association and British Medical Journal Museum 9851, 9862, 9863 and 9864 (internal exchange four lines)

SCOTTISH MEDICAL SECRETARY 6 Drumshallow Gardens Edinburgh (Telegrams Associate Edinburgh Tel 24361 Edinburgh)

IRISH MEDICAL SECRETARY 16 South Frederick Street, Dublin (Telegrams Baillieu Dublin Tel 4737 Dublin)

#### Diary of the Association

OCTOBER

11 Tues St Pancras Division B.M.A. House Tavistock Square W.C.1  
St. Berkeley Moynihan, Bt on Medicine in Art 9 p.m.  
South West Essex Division Woodford Jubilee Hospital Woodford Green Di. F. C. Crookshank on Psychological Aspect and Treatment of Common Diseases 3.30 p.m.  
West Bromwich Division 1 South Road Smethwick Dr W. A. Potts on Psycho-analysis, 3.30 p.m.

12 Wed London Council 10 a.m.  
Autumn Dinner of the B.M.A. Hotel Victoria Northumberland Avenue W.C.2 7.30 p.m.  
Croydon Division Croydon General Hospital Lecture Demonstration by Mr E. M. Cowell on the Modern Surgical Outlook 4 p.m.  
Halifax Division Royal Halifax Infirmary Discussion on Laminectomy and Southwark Division Chancery Meeting Belvoir Hospital for Children Clapham Road S.W.9 4.30 p.m.

13 Thurs Hampstead Division Hampstead General Hospital Special Meeting, 8.30 p.m. Ordinary Meeting Dr W. Arthur Ross on Save the Mothers 9.15  
Hastings Division Queens Hotel Hastings Mr Somerville Hastings on the Future of Medical Practice in England, 8.15 p.m.  
North Middlesex Division Annual Dinner, Connaught Rooms Great Queen Street 8.30 p.m.  
Portsmouth Division Queens Hotel Sir John Ross Bradford on Medical Defence. Meeting preceded by Supper, 9 p.m.  
Swansea Division Annual Dinner Hotel Metropole

14 Fri London Ophthalmic Committee 2.30 p.m.  
City Division Clinical Meeting Metropolitan Hospital, Kingsland Road, 4 p.m.  
Hendon Division Clinical Meeting and Dinner Brent Bridge Hotel Dr James Neal on Some Medical Legal Difficulties in General Practice 8 p.m.  
Hereford Division Herefordshire General Hospital Second Post Graduate Lecture by Dr Wilkinson on Blood Inure Variations 3.30 p.m.  
Oxford Division Radcliffe Infirmary Oxford Dr J. Graves on Phylloxera Tuberculosis 3 p.m.

18 Tues London Standing Ethical Subcommittee 2.30 p.m.  
19 Wed London Contract Practice Subcommittee 2.30 p.m.  
London Regulations and Standing Orders Subcommittee 2.30 p.m.

### BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

#### BIRTH

FORSYTHE—On September 15th 1927 at Monkholme Nursing Home, Burnley, to C. Constance Forsythe M.B. (Mrs Beatty) wife of Dr J. W. J. Forsythe Osborne House, Padiham, Lancs, a daughter.

#### MARRIAGES

On 28th, at The Oratory, Hayley Road, Thomas Thorpe M.R.C.S., L.R.C.P., 11th of Edgbaston Birmingham  
On 5th at St Michael's Church Chatham by the Rev Father Ryan Captain Cyril V. Walker the Army Medical Corps son of the late Dr C. E. Walker of Hurworth and Mrs Walker of Woodlands Terrace Burlington to Norah M. Wall M.R.C.S.E., L.R.C.P. London eldest daughter of Dr and Mrs W. G. Wall Hurworth, New Road Chatham

#### DEATHS

ARMISTEAD—Suddenly at the Royal Alexandra Infirmary, Paisley on September 30th 1927 (the result of an accident) Jean Lilian married wife of W. H. Armistead, M.B., Ch.B. Ed. of Bonhill, 15, Carrington Drive Paisley

STEVENS—At Redholme Thame, on September 29th suddenly Michael Langley dearly loved infant son of Dr and Mrs A. L. B. Stevens, aged 1 month

# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY OCTOBER 15TH 1927

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### British Medical Association.

#### CURRENT NOTES

##### Illustrations in the Journal

During the Annual Representative Meeting in Edinburgh a motion was brought forward by the Edinburgh and Leith Division requesting the Council to consider the possibility of improving the general quality of the illustrations appearing in the British Medical Journal. After an explanation had been given by the Chairman of the Journal Committee, in the course of which he emphasized the expense involved in reproducing pictures on special art paper, the motion was withdrawn.

This is a matter to which a great deal of attention has been given, and the efforts to obtain good results will not be relaxed. Pen and ink drawings that can be reproduced in line blocks are easily dealt with. The root of the difficulty is that nowadays most of the pictures submitted are photographs, and that they are not taken with a view to reproduction on a rapid press, as are those produced by journalist-photographers for the daily press. The situation was discussed again at the last meeting of the Journal Committee when the opinion was expressed that some good might be done if an appeal were made to contributors to realize that some of the difficulties in the way of satisfactory reproduction of photographs in the Journal can only be overcome if they will give their assistance.

Many of the illustrations sent for reproduction are very far from being suitable. Snapshots taken with a hand camera are a very severe test of a photographer's skill. Few amateurs can in this way produce a print suitable for reproduction on the printed page or even on special art paper. For photographs of patients it is best to use a portrait lens. Usually it is preferable to employ a photographer accustomed to portrait work. Care should be taken that the subject is properly lighted and shown against a flat uniform background. The whole effect of photography is in the contrast between the black and white. In most cases a smoothly stretched sheet white or grey gives the best contrast an ordinary wall with fittings in or upon it or a curtain hanging in folds is no unsuitable. Satisfactory process reproductions of anatomical details or of post-mortem appearances can seldom be obtained from photographs. Drawings in black and white without a wash will usually give all the details requisite, and are preferable to photographs or wash drawings. It is often as difficult to get a good result from a wash drawing as from a photograph. Descriptive details should not be written on a photograph or a drawing. Refer to letters in the margin with lines to the point to which it is desired to direct attention should be pencilled in faintly, and the description given in the legend.

The following rules from two contemporaries indicate the view taken by other editors and printers.

*The Biochemical Journal* Illustrations and curves accompanying papers must be carefully drawn about twice the size of the finished block on smooth white Bristol boards in Indian ink. Any lettering on these drawings should be lightly inserted in pencil.

*The Journal of Physiology* drawings should be in Indian ink and plain white. Numbers and letters should be employed letters numbers etc. should be written in pencil.

##### Treasurer's Cup Golf Competition.

The Central Golf Committee appointed by the Secretaries Conference at Edinburgh for the purpose of the Treasurer's Cup Golf Competition is as follows: Dr E. K. Le Fleming (Wimborne, Dorset) and Dr J. G. McCutcheon (Glasgow) together with the Deputy Medical Secretary. The Committee has decided that the competition shall be held in two stages—namely a first (or Division) stage, and a second (or final) stage, and that each Division should find its own winner in its own way. Entries should be handed in to the Secretary of the local Division as soon as possible, and the Division stage should be completed by June 1st, 1928. The winners of the Division stage will play off under medal play conditions (handicap) on Friday July 27th, 1928 during the Annual Meeting of the Association at Cardiff. It is hoped that this competition will include every Division in the British Isles. The rules and regulations governing the competition for this year are as follows.

##### RULES AND REGULATIONS

The cup is to be played for in two stages. The competition is open to all members of the British Medical Association.

**1st Stage.** Entries to be handed in to the Secretary of the member's Division. Arrangements for the first stage to be in the hands of a special Golf Subcommittee (or failing this the Executive of the Division). The terms of the competition to be settled locally by the Golf Subcommittee (or Executive) it having been decided by the Secretaries Conference 1927 that each Division should find its own winner in its own way. The handicap under which a member enters should be his lowest club handicap (limit handicap 18) and must not be altered at any time during the first stage of the competition. The first stage of the competition must be completed by June 1st 1928. In the event of the winner of the first stage not being able to compete in the final stage the runner up (with the consent of the local Golf Subcommittee) may compete in his or her stead in order that the Division may be represented.

**2nd (or Final) Stage.** The winners of the first (or Division) stage will play off under medal play conditions (handicap) on Friday July 27th 1928 during the Annual Meeting of the Association at Cardiff. The handicap allowed for the final stage of the competition will be the lowest handicap of the competitor as a July 27th 1928. The winner to be the player who returns the lowest score under handicap. In the event of a tie the winner shall be the player who returns the lowest score under handicap for the last nine holes. Arrangements for this stage to be decided by the Central Committee appointed by the Secretaries Conference.

All disputes to be settled by the committee responsible for the completion of each stage.

## The B M A Charities Fund

Dr D D Evans, M C, Charities Secretary for the South Essex Division, has forwarded the sum of £51 3s 6d as a contribution to the B M A Charities Fund collected from members of the local profession, as stated below

	£	s	d		£	s	d
H D Linder (Burnham on Crouch)	1	1	0	O W L Emery (Westchiff)	2	2	0
F Rees (Southend)	1	1	0	O Macdonald	1	1	0
F E Inghill	1	1	0	Maigret King	1	1	0
H G Elicy	1	1	0	R W S Chisholms (South Benfleet)	10	6	
H L Simpson (Southend)	1	1	0	F A Bevin (Hadhleigh)	1	1	0
Eyre Lloyd	1	1	0	J E Jamison (Rayleigh)	1	1	0
R A S Sunderland	1	1	0	W L Adams	2	2	0
Cleveland Smith	5	5	0	J R Cuthbert (Telsah)	1	1	0
E Wragg	2	2	0	C C Philip	1	1	0
R Lloyd (Burnham on Crouch)	1	1	0	J Diction (Southend)	1	1	0
Newman Norman (Westchiff)	1	1	0	F L Fairweather (Hoelev)	1	1	0
L W Light (Southminster)	1	1	0	C Grant (Thundersley)	10	0	
W H Sarril (Leigh)	1	1	0	A W Holthurn (Westchiff)	1	1	0
S Bridger (Southend)	2	2	0	D D Evans (Westchiff)	1	1	0
Essex Branch Council (Private Fund by Dr Corfield)	5	0	0	A L Dobbin (Hoelev)	1	1	0
J F Waller (Southend)	3	3	0	A D E Bayliss (Westchiff)	1	1	0
Brice Poole (Westchiff)	1	1	0	F J G Hattersby (Rayleigh)	1	1	0
Hamon Morgan (Westchiff)	1	1	0	Charlotte Shields (Westchiff)	1	1	0
					£51	3	6

As the total membership of the Division is 108, and as the contributions mentioned below are additional in many cases to subscriptions already paid to the various medical charities, it will be seen that the South Essex Division, which is the Division of Dr J F Waller, the chairman of the Charities Committee of the Association, is setting an excellent example

## The Association and the Newly Qualified Practitioner

The reports before the Medical Students and Newly Qualified Practitioners Subcommittee at the first meeting of each session must always have a particular interest, inasmuch as the ability of the British Medical Association to attract and retain within its membership each successive generation of practitioners is the most obvious measure of its vitality. The figures for the year under review register good progress, though they show also a wide field for increased activity in recruiting. The great majority of the medical schools in the country are now covered by the Council's scheme for recruitment, which is worked by the Branches and Divisions concerned, and their efforts, supplemented by those of the central office, have secured enrolment in the Association of 48 per cent of those who qualified in the period October, 1925, to September, 1926. How far this percentage may be increased by later enrolment or diminished by inevitable casualties remains to be seen, though some light may be thrown on the probabilities by an inspection of the record of the practitioners registered in 1923. This shows that of a total of 1,613 members drawn up to date from the ranks of those who registered in that year, the total number of casualties stands at the low figure of 108. What can be done in the first instance by well directed propaganda is illustrated by the best returns for the year 1925-26. From Durham University, (Newcastle-on-Tyne Division) 95 per cent of those who qualified during this period have joined the Association; from Glasgow (Glasgow and West of Scotland Branch) 95 per cent, from Queen's University, Belfast (Belfast Division of the Ulster Branch) 80 per cent, and from the Welsh National School of Medicine (Cardiff Division) 70 per cent. The special difficulties of the London area have long been recognized by the subcommittee, which welcomed a report that the Metropolitan Counties Branch had amended its standing orders to provide for a special standing committee to deal with the whole problem.

The general popularity of the Association's *Handbook for Recently Qualified Medical Practitioners* has never been in doubt. A reprint of the second edition of this work was sanctioned in October, 1926, within a year of its issue, and the demand, as indicated by the sales now reported, has not slackened. The utility of the *Handbook* is by no means confined to the newly qualified, for whom it is more particularly intended. Dr Todd, honorary secretary of the Australian Federal Committee, is distributing it to the class of final-year students of Sydney University to whom he lectures on the ethics of medical practice, and he pays a warm tribute to its usefulness in this connexion.

The entries for the prizes offered by the Association for essays by final-year students have always been disappointing numerically, though not as regards quality. For the five years during which the competition has been open, the average annual entry has been less than 27. On the suggestion of the Treasurer the subcommittee is recommending the Organization Committee to recommend to the Council that the competition should be thrown open to practitioners for twelve months after the date of their initial qualification, in the hope that those who have successfully disposed of their final examinations may be in a position to devote more time and energy to the special work entailed by the essays.

## The Malayan Medical Journal

Gratifying progress is to be noted in successive numbers of the *Malayan Medical Journal*, of which the September issue has just been received. It will be recalled that in January last this quarterly periodical became the official organ of the Malaya Branch of the British Medical Association, and in a Current Note on January 15th (SUPPLEMENT, p. 17) we referred briefly to the history of medical journalism in Malaya since 1892. The September issue contains original articles on water purification, on a mosquito and sanitary survey of Labuan, on the neglect of common diseases of the eye, on encephalitis lethargica in Malaya, and on the distinction between albumin and quinone in Mayer's test. Editorial articles discuss the BCG method of prophylaxis against tuberculosis, cosmophilous leucocytes, water and public health, and the retirement of Dr W. Fletcher, a past-president of the Branch, after twenty-four years' service in Malaya.

Dr. E. B. GUNSON, president of the Auckland Division or the New Zealand Branch, delivered a public address on August 1st in Auckland, the first of a series of three given by members of the Division. Dr. Gunson discussed the outstanding advances made in medical research during the past twenty years, with particular reference to the growth of specialism. He indicated the value of immunization against small-pox, typhoid fever, and diphtheria, described the eradication of malaria, and commented on the reduction in the infantile mortality rate following the adoption of the Plunket system. The lecture was illustrated by two cinematograph films, one of which demonstrated the preparation and use of serum in the fight against diphtheria, while the other showed the consequences of neglect of the teeth.

## Association Notices.

## BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH** COVENTRY DIVISION—The following programme of meetings has been arranged by the Coventry Division:  
Nov. 1st Coventry and Warwickshire Hospital 8.30 p.m. Paper by Chairman (Dr W. Brazill) on Medicine in Lay Literature.  
Dec. 6th Coventry and Warwickshire Hospital 8.0 p.m. Paper by Mr M. of the Rectum 8.30 p.m. Paper by Dr Brai holecystography.  
Feb. 7th Coventry 8.30 p.m. Discussion on Dental Sepsis and Internal Medicine. Openers Mr Harold Round of Birmingham and Dr Annand.  
April 3rd Coventry and Warwickshire Hospital, 8.30 p.m. Clinical Meeting.  
May 1st Annual Meeting, 8.30 p.m., the Hospital.  
**DORSET AND WEST HANTS BRANCH** WEST DORSET DIVISION—A meeting of the West Dorset Division will be held at the Weymouth and District Hospital on Tuesday, October 18th, at 8 p.m. Agenda: Cases will be shown and discussed. Dr J. Criswell (Bournemouth) will read a paper entitled "Language and mind." Members are requested to enter as soon as possible for the Divisional golf competition, and to forward their names and entrance fees (2s 6d) to the honorary secretary. Entries must be made by the end of this month.

**EAST YORK AND NORTH LINCOLN BRANCH** EAST YORK DIVISION—The following programme has been arranged:

Oct. 26th Reception  
Nov. 15th Discussion Tocal Sepsis  
Jan. 27th Annual Dinner  
Mar. 16th Clinical Meeting  
May 18th Annual Meeting at Wilberforce House, Hull

Members wishing to read papers or to show clinical cases or pathological specimens, should communicate with the honorary secretary at least a week beforehand.

WE—SOMERSET BRANCH—The autumn meeting of the West Somerset Branch will be held at the Taunton and Somerset Hospital on Friday, October 23th at 4 p.m. Dr Eric Price, a consulting physician to the Queen's Hospital for Children in London, will give a British Medical Association Lecture on the principles of nutrition in their application to the feeding of infants and children. The annual dinner for medical men residing in West



Somerset will be held at the County Hotel, Taunton, on the evening of the same day at 7.15. Price of tickets 7s 6d (exclusive of wines).

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION—The third post graduate lecture of the series arranged under the auspices of the University of Birmingham will be given at the Herefordshire General Hospital on Friday, October 21st at 3.30 p.m. by Mr G. P. Mills on some common effects of injury. Tea provided.

YORKSHIRE BRANCH HALIFAX DIVISION—The annual dinner of the Halifax Division will be held at the White Swan Hotel on Thursday, November 17th, at 7.30 p.m.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A general meeting of the Sheffield Division will be held at the Church House, St James Street, Sheffield, on Tuesday, October 25th, at 8.30 p.m. Agenda: Report of representatives—Dr Forbes, Dr MacInnon, and Dr Brockman, and vote of thanks. A general meeting of the Division will be held on Friday, December 9th, at the University, Sheffield, at 8.30 p.m., when a British Medical Association Lecture will be delivered by Mr H. Beck with Whitehouse, M.S., F.R.C.S., on practical applications of recent views on the menstrual functions.

YORKSHIRE BRANCH WAKEFIELD, PONTEFRAC, AND CASTLEFORD DIVISION—A clinical meeting of the Wakefield, Pontefract and Castleford Division will be held by kind permission of Dr J. Shaw-Bolton at the West Riding Mental Hospital, Wakefield, on Sunday, October 23rd, at 3 p.m.

## Meetings of Branches and Divisions.

### METROPOLITAN COUNTIES BRANCH ST PANCRAS DIVISION

LECTURE BY SIR BERKELEY MOYNIHAN ON  
"MEDICINE IN ART"

At a very largely attended meeting of the St Pancras Division, held at the British Medical Association House, Tavistock Square, on the evening of October 11th, Sir Berkeley Moynihan, Bt., President of the Royal College of Surgeons of England, gave a lecture, illustrated by lantern slides, on "Medicine in Art."

In the old Greek mythology, said the lecturer, many great truths were hidden deep. Apollo, the god of light, and leader of the choir of muses on the heights of Parnassus, was also the god of art, and he had a favourite son, Aesculapius, upon whom he conferred the divine gift of healing. This family association between art and medicine had continued through the ages, and the great artists of the world had not been least happy when they had engaged their energies in depicting some of the injuries and maladies of mankind. The gargoyles of Notre Dame and other cathedrals, which were so placed as to indicate that evil spirits had been driven out of the church, were not the mere extravagances of the artist's fancy, but were modelled from actual examples of deformities. The Lincoln "imp" was possessed, not only of horns, which were very usual in these representations, but also of hare lip and a cleft palate. The lecturer was able to place side by side with his reproductions of the gargoyles actual pictures of human beings which showed that the stone figures were not just the wild caprice of the artist's fancy. One famous gargoyle in Venice, which was the subject of a finely written but misleading description by Ruskin, caught the attention of Charcot, who found that it corresponded closely with cases of hystero epilepsy he had seen at the Salpêtrière Hospital, and probably this famous gargoyle was a portrait of one of the artist's fellow workers who was suffering from the condition indicated.

Belief in possession by evil spirits was as old as human history itself. Drawings from a temple at Luxor showed how the phenomenon was imagined in an earlier day than that of Tutankhamen. It was curious that Charcot had for years described as one of the signs of hystero epilepsy the bending back of the body in the arc of a circle, without being aware that that exact phrase—the arc of a circle—was used thousands of times in the mediaeval descriptions of the victims of possession. The rite of exorcism, by the way, was still practised rather widely in Europe, and it was still declared that devils were actually seen issuing from the mouth or the top of the head of the victim. To what indefinite ages this belief went back was shown in prehistoric skulls (of which the lecturer produced photographs) with elaborate incisions, no doubt made for the letting out of the demon. In the Middle Ages it was almost a studio exercise for the painter to depict the exorcist at his work. In Raphael's "Transfiguration" a boy was shown who was clearly the victim of hystero epilepsy, but Raphael, as was clear also from other examples, drew this condition from his imagination, never having come in contact with a case, and his drawing was wrong in several particulars. Instead of standing on tiptoe as he should be doing, the boy

was planted firmly on his feet, his body was straight instead of being arched backwards, his forearm was supine instead of being pronated, and his mouth was open instead of being rigid, with the tongue protruding. Either this was, as Sir Charles Bell suggested, a case of malingering, or it was a poor effort of Raphael's imagination. But in Rubens's copy or imitation of Raphael's picture the same boy appeared much more truthfully represented, and in a similar work of an otherwise undistinguished pupil of Rubens the boy was delineated more correctly still. It was evident that the greatest of the artists had the poorest idea of what the appearance in hystero epilepsy really was. In another example showing exorcism, Raphael's cartoon of Ananias, although the arc of the circle and the drawing back of the head were correct, the arms and the feet were wrong.

Emotions as depicted by artists made an interesting study. Sir Charles Bell, who was both artist and anatomist, as an anatomical study put into action those muscles which he thought ought to be engaged in the expression of certain emotions, and his drawings very faithfully conveyed the expression of fear, suspicion, and so forth. The rapt expression was well shown in the Reynolds portrait of John Hunter, when the surgeon was in that famous trance. It was unfortunate, by the way, that in making this picture Reynolds was experimenting with bitumen, with the result that the colours were fugitive, and little by little this famous picture, which was at the Royal College of Surgeons, was disappearing. Expert opinion had been taken as to the possibility of saving it, but inevitably, in thirty or forty years' time, the picture would be unrecognizable. Another favourite studio exercise of the mediaeval artist was the expression of ecstasy, and here the lecturer mentioned what to him was one of the greatest pictures in the world, "The contemplation of St. Jerome," to be seen at the Louvre.

A rare portrayal of normal anatomy was afforded by the Laocöon, the famous antique group of marble in the Vatican. It was certain that the author of this work was one of the most competent of anatomists, so far as surface anatomy was concerned it was incomparable. The lecturer had in his consulting room a reproduction of the famous picture in the Uffizi Gallery of the dying Alexander. He was accustomed to ask his medical friends to discern from that picture the disease from which Alexander died, the answer was seldom forthcoming. It was cerebro spinal meningitis. Another point of medical interest in mediaeval painting was that in the representations by Michelangelo of the dead Christ the veins were made to stand out, as they did not in death. He once remarked on this to Lord Lascelles, who was an art critic of distinction, and Lord Lascelles made the cogent criticism that this might be intended to indicate that Christ would return to life.

One of the diseases depicted by artists in all ages was achondroplasia. It was seen in Egyptian drawings of 3000 B.C., in the Bayeux tapestry, and in the work of Velasquez. Raphael well showed the hypertrophy of muscles, and Leonardo depicted an enlarged thyroid. Acromegaly was well illustrated in one of the stone figures at Rheims, evidently the builder copied it from life, perhaps from one of the workmen. From many mediaeval pictures a diagnosis of leprosy could be made, but it was curious that one never found, at least in any painting, he had been able to study, any evidence of the existence of syphilis during the Middle Ages. It was, he thought, reasonable to suppose that syphilis never was found on this continent or in northern Africa before the discovery of America. Professor Elliot Smith assured him that there was no relic or mummy which would corroborate even a probable diagnosis of syphilis, and it was the same with works of art, there was nothing in sculpture or in portrayals on canvas which might be the characteristic rashes or other appearances of syphilis. Leprosy, on the contrary, was very faithfully depicted by the artists. The lecturer's concluding examples were from pictures illustrating surgery. Many mediaeval works portrayed the operation of circumcision, which was almost a studio subject for the old painters. Frans Hals had happily depicted a gentleman having a schaeus cyst removed from the scalp, and there were examples in great art of still more ambitious operations.

Artists through the centuries had not flinched from depicting with much realism the maladies, diseases, and deformities of mankind. Sir Berkeley Moynihan thought it was a good thing that medical men, when they took their infrequent and well-earned holidays, should carry with them the knowledge gained by their training at home, so that they could see with different eyes from those of other men the pictures and sculpture which were to be found in the galleries of Europe. At any rate it had been to him a great pleasure to be able to see in these pictures something that had escaped the eye of the ordinary—pictures, that is, the non-medical—critic. He thought it a good thing, too, that medical men should have the opportunity of turning sometimes, when they were perhaps a little disillusioned, from the worship of Aesculapius to the shrine of his father Apollo.

**DORSET AND WEST HANTS BRANCH Bournemouth Division**  
A very successful meeting of the Bournemouth Division was held in the Town Hall, Bournemouth, on October 7th when Dr How Wint was in the chair.

Dr JOHN O. SUTTON as one of the representative stated that he and his co-opted assistants had visited at the Annual Representative Meeting at Edinburgh, as instructed by the Division in June last. He urged the necessity of keeping the Parliamentary Fund going and appealed to every member to support it. The Charities Fund was also a very important item, and he thought it the duty of every member to support this work by an annual contribution. Dr MOORE said that the motion of the Division regarding the constitution and powers of the General Medical Council received better hearing this year than it had the year before, but it was defeated. On the motion of the CHAIRMAN, seconded by Dr MANOYER, a very hearty vote of thanks was unanimously accorded to the two representatives at Edinburgh.

The CHAIRMAN, in calling upon Dr R. C. CANTI to deliver his British Medical Association Lecture on living tissue culture, and how his films aid that the Bournemouth Division felt much honoured at having Dr CANTI with them that evening, inasmuch as the film had been shown only once in England and at Edinburgh during the Annual Meeting of the Association. Bournemouth was the first Division visited by him.

Dr CANTI explained that he was going to show two films. The first would show normal cells of the chick embryo and then malignant cells from a rat sarcoma growing and dividing. The second film would show the effect of radium emanations on the activity of both normal and malignant cells. The picture to be shown was projected upon some 200 some 400 and other 600 times, once was taken under low magnification and others under very high powers of magnification. Dr CANTI also threw on the screen some slides showing the apparatus by which the films were taken—apparatus which was original and very ingenious.

After the demonstration Dr CANTI replied to questions by members.

Dr H. L. GREVE, proposing a vote of thanks to the lecturer, said that he was at this wonderful film first at the Royal Society during the Lister centenary celebration, and he admired it more now than then he did then. He looked forward to an opportunity of seeing it a third time.

Dr E. K. LE FLEMING who seconded the vote of thanks, said that he could not understand how it was that more notice had not been taken of the film in view of its deep interest and vast possibilities. The vote of thanks was carried with acclamation.

On the motion of Dr JOHN O. SUTTON, seconded by the HONORARY SECRETARY, a vote of thanks was unanimously accorded to the Bournemouth Council for placing the room at their disposal.

**NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND Division**  
The annual meeting of the North Northumberland Division was held in the Inn, Alnwick, on October 4th when Dr FULTON was in the chair.

The following office-bearers were elected for the ensuing year: Chairman, Dr LAWRIE; Vice-Chairman, Dr SCOTT; Secretary, Dr R. E. MYLES.

It was decided to hold the annual dinner on Thursday, November 17th, at Alnwick, when the principal guests invited were to be Professor STUART MACDONALD and Dr F. BEATON of Birmingham. The secretary was instructed to make arrangements to hold a meeting at Berwick and to ask Dr MACKAY to suggest a suitable speaker from Edinburgh. Professor RANKEN LYLE and Drs HAMILTON BARCLAY and NATHAN were also to be invited to deliver addresses during the winter.

**WILTSHIRE BRANCH TROWBRIDGE Division**  
A clinical meeting of the Trowbridge Division was held at Witley Sanatorium on September 26th when Dr C. O. LEY was in the chair. Dr J. D. MACFIE gave a short account of the method of inducing artificial pneumothorax and afterwards performed the operation on a patient. He also showed a number of cases of tuberculosis of interest and demonstrated the appearance of the lungs on the x-ray screen. Tea was provided by the courtesy of the managing committee and matron of the sanatorium.

## Correspondence

**Representation on the Insurance Acts Committee**  
SIR—Will you allow me a few sentences in connexion with, but not in reply to, Dr PICTON's letter? Otherwise that letter may leave quite a false impression on my feelings towards a part of the country with which I have some strong associations. It is true that some years ago I did use the words "nobody wants Cheshire" but they were preceded by the word "apparently" and were meant merely to state a fact, and not to indicate, or imply, my opinion. The fact was that, as regards the topographical groups for electing direct representatives on the Insurance Acts Committee, Wales, Lancashire, and Staffordshire had each in turn protested against being included in any group with Cheshire. Thus created, and still creates, a difficulty for the Committee and the Conference. Nobody appreciates more than I do the initiative and energy shown for many years by the Cheshire Panel Committee and its admirable honorary secretary—I am, etc.,  
L. WILKINSON, W. L., Oct. 5th.

H. B. BRACKENBURY

## Present Position of the Mileage Question

SIR—In the SUPPLEMENT of October 11th 1924 you were good enough to print a table showing the official data upon which the mileage fund had been calculated up to the year 1924, in which year a lump sum of £250,000 was accepted to quote the official letter of Sir Arthur Robison "for the Mileage Fund and to meet other points raised with regard to the rural practitioner by the deputation which recently saw representatives of the Ministry or Health on the subject."

This sum of £250,000 has remained unchanged and unchanged until this year when the Mileage Committee were asked once more to consider the relevant information which could be made available and assist the Minister with a recommendation as to the amount of the fund.

The most important information before the committee consisted of the official records of travelling collected by the Ministry in 1923 and 1924 from 249 rural practices (about 5 per cent of the whole) carefully selected so as to be representative and typical of the whole.

It might be useful if the Insurance Acts Committee were to complete the table with the assistance of the Ministry, by bringing the figures up to date, but in the meantime it may be stated that these official records show a substantial increase in all the factors which go to make up the calculation of the miles actually travelled as compared with the previous records of 1920-21.

(a) The number of visits paid per insured person amounted to 1.67 per annum as compared with 1.57—an increase of 6.36 per cent.

(b) The proportion of visits paid to insured persons as compared with private patients was increased and now constitutes 37 per cent of all visits paid, as compared with 33 per cent in 1920-21.

(c) The number of doctors claiming mileage has increased by over 4 per cent.

(d) The number of insured persons on the lists of all doctors claiming mileage has increased by over 10 per cent.

(e) The number of distance units has increased by 12.2 per cent.

In view of these increases it is not surprising that the total number of miles actually travelled in England and Wales works out at 7,471,744—an increase of 25 per cent over that for 1920-21.

Nevertheless the committee recommended that the total Mileage Fund should remain at £250,000. I hope the coming conference will not view this result with satisfaction. Many of us are at present engaged in laboriously keeping mileage records for 1927-28, but we may well ask "Cut hono?" if the £250,000 is to become a stereotyped figure—I am, etc.,

Andover Oct. 10th

J. P. WILLIAMS FREEMAN

## New Procedure as to Change of Doctor

SIR—In the new Regulations issued by the Minister of Health it is stated that if an insured person wishes to transfer from the panel or one doctor to that of another in his area he must either obtain the consent of both doctors or write to the Panel Committee requesting their permission to make the change.

Thus although nominally an insured person has in freedom of choice or medical attendant should he wish to assert this freedom he must apply to a third party for permission to do so. Is not this but the thin end of the wedge to curtail the insured person's freedom of choice?

Again the new Regulations will tend to increase the clerical work of the Insurance Committees' staffs as each application for transfer will necessitate two communications to the committee instead of one as at present. More work will provide an excuse for extra clerks or increases of salaries and thus add to the expenses of running the panel system. Would it not be better to try to lessen the work of committees, reduce their expenditure and apply any money so saved to increase the capital on loan?

Furthermore, anyone who has had experience of panel practice in industrial areas will know how difficult it is to make insured persons bring their cards to be signed before they require treatment, also to make them go to a post office to ask for a form if they have mislaid their cards. How can we expect these people to take their cards to two doctors in order to obtain the required signatures, or to write to a committee for permission to have their card signed? Many will prefer to pay for treatment as private patients rather than wrestle with tangles of red tape and this will not add to the popularity of the panel system—I am, etc.,

September 21st

SCARFILL

## THE TAVISTOCK HOUSE FOUNDATIONS

## A DICKENS TAPIR UNVEILED

DURING the meeting of the Council of the British Medical Association on Wednesday, October 12th, a simple ceremony took place in the garden at the rear of the Council Chamber to mark the setting up of the inscribed stone which records the residence of Charles Dickens at Tavistock House on this spot, and marks the site of the foundations of that house.

Besides the President of the Association (Sir Robert Philip) and the Chairman (Dr H B Brackenbury) and members of Council, there were present Mr Frank S Johnson, chairman of council of the Dickens Fellowship, Mr A W Edwards, honorary secretary of that body, Mr Walter Dexter, editor of *The Dickensian*, and several members of the Fellowship council.

Dr BRACKENBURY, in opening the proceedings, said that the British Medical Association was fortunate in having several famous names associated with the ground it now occupied, and he hoped others of them would be commemorated in due time. None of them, however, was more famous than that of Charles Dickens, and he was very glad, as the Association was the custodian of what remained of Charles Dickens's residence at Tavistock House, to welcome representatives of the Dickens Fellowship at the ceremony.

Dr C E DOUGLAS, in the course of a brief Dickensian eulogy, said that the Association took no responsibility for the fact that there remained only a ruin associated with Dickens in Tavistock Square. When the Association acquired this building the ruin was already accomplished. These stones, if they could speak, would tell of a sad deed of vandalism. Tavistock House, which was the last dwelling place of Charles Dickens in London, was a place which should have been held in reverence by all English speaking people. Here there issued from Dickens's fertile pen such types as Jo the sweeper, Mr Panks, Little Dorrit, and Harold Skimpole. To this house Thackeray came to visit the novelist, here Carlyle enjoyed his companionship, and here, too, were performed those plays into which Dickens entered with so great a zest. It was nothing short of a crime that this residence of Dickens should have been suffered to fall into decay. For Dickens, although a humorist, was much more. He was a warrior from his youth up, a brave soldier in the liberation war of humanity. The slums with which he was familiar in his early years, the gross brutalities which marred his time, the barbarities of prison life, and the fearful ill usage of children burnt into his soul, and it was due to him in no small measure that these things had largely passed away. Dickens was not a doctor, and he rather laughed at the profession. Indeed, the speaker doubted whether, since Molière, there had been anyone who had treated the profession as Dickens treated it. But that had all been forgiven. The characterization of Sir Parker Peps, the absurd Dr Slammer, and the obsequious Mr Phillip could never offend the members of the medical profession of to-day, because they recognized in Dickens one of themselves, in the sense that he was in his way as great a pioneer of preventive medicine as Southwood Smith, and Farr, and Chadwick were in theirs.

Sir ROBERT PHILIP, as President of the Association, then unveiled the inscription on the stone, which reads

THIS IS THE SITE AND THESE BRICKS WERE  
PART OF THE FOUNDATION OF THE HOUSE OF  
CHARLES DICKENS  
1851-1860

BRITISH MEDICAL ASSOCIATION, 1927

Mr JOHNSON, Chairman of Council of the Dickens Fellowship, expressed his pleasure at taking part in the function. The British Medical Association had followed a number of other bodies in doing what it could to preserve and indicate the relics of Dickens. Hundreds of thousands of Dickens lovers would be interested in that little ceremony. London was a great place for all who cared for Dickens. It was peopled with his characters. Many places within a mile of that house were familiar to the novelist's own haunts. Tavistock House was the last of his London residences. He came there in the autumn of 1851, and remained there for nine years before moving to Gadshill near Rochester, where, after ten years more, he died. Tavistock House was perhaps the most interesting of Dickens's residences because he was in the fullness of his powers when he lived there. From Tavistock House he gave

to the world *Bleak House*, *Hard Times*, *Little Dorrit*, *A Tale of Two Cities*, and *The Commercial Traveller*, as well as *Fanny Hill*, *Child's History of England* and some famous Christmas stories. In conclusion, Mr Johnson asked permission for the Fellowship to bring on certain occasions parties of visitors who would desire to see what remained of the home of the great Victorian.

Dr BRACKENBURY said that members of the Dickens Fellowship, in moderate numbers, would find ready access to this spot. The brief ceremony then concluded.

## THE WILLIAMS-FREEMAN PRESENTATION FUND

The following is the first list of subscriptions received in response to the letter published in our columns of October 1st (p 139).

## A Local Medical and Panel Committee Contributions

	£ s d
Sunderland Local Medical and Panel Committee	5 5 0
Northamptonshire Local Medical and Panel Committee	38 2 0
and Panel Committee	5 5 0
Medical and Panel Committee	10 10 0
Devonshire Local Medical and Panel Committee	40 0 0
Habifax Panel Committee	2 2 0
West Suffolk Panel Committee	31 0 0
Brighton Panel Committee	1 1 0
Wiltshire Panel Committee	100 0 0
Eife Panel Committee	5 0 0
Dumbarthonsire Panel Committee	2 2 0
Shropshire Panel Committee	73 6 0
Northumberland Local Medical Committee	50 0 0
North Riding of Yorkshire Panel Committee	54 13 0

## B Individual Contributions

C E Douglas, St Andrews	1 1 0
Sir Robert Bolam, Newcastle on Tyne	1 1 0
Lockhart E W Stephens, Emsworth	1 1 0
E Llewellyn, Peterborough	1 0 0
Alfred Cox, London	2 2 0

Total to October 10th (morning)

£222 16 0

Cheques should be made payable to the Williams-Freeman Presentation Fund, and addressed to Dr D G Greenfield, Treasurer, c/o the Medical Secretary, British Medical Association, B M A House, Tavistock Square, London, WC1.

## National Insurance.

## LONDON PANEL COMMITTEE

A MEETING of the London Panel Committee was held on September 29th, with Dr H J CARDALE in the chair. The chairman and Dr Gregg were reappointed direct representatives for the County of London on the Insurance Acts Committee.

## Resolutions for Forthcoming Panel Conference

With regard to the annual report of the Insurance Acts Committee some question was raised on paragraph 40, dealing with joint research by practitioners. The Panel Committee expressed its entire agreement with the principle of joint research by insurance practitioners, but could not subscribe to the view expressed in the report that any scheme of research should be unpaid. The representatives of the committee at the forthcoming Panel Conference were instructed to urge that, in view of the roads which this work would make upon the time of practitioners, those undertaking it should be remunerated.

Discussion also took place on a resolution proposed to be moved at the Conference with regard to practitioners' appeals. A procedure is outlined in the report of the Insurance Acts Committee which makes it administratively practicable to allow an appeal for extension to be heard at the end of the hearing of an appeal. The committee decided to oppose this procedure as it would preclude a practitioner from any further opportunity, where an appeal is decided against him, of making oral representations to the Minister in mitigation of penalty. It was also agreed after discussion, to urge at the Conference that any additional raised at the hearing of a complaint against a practitioner before the Medical Service Subcommittee should not be admitted, but should be the subject of a fresh charge.

## Foods or Medicinal

A letter was read from the Insurance Committee's observations on whether certain foods could be regarded as medicinal products or foods. The committee agreed to send a reply that in its opinion saccharin glyco-lactoplo, and similar products were in the nature of foods, and were therefore not allowable at the cost of the Drug Fund, but that hygienic should be classed in the same way as extract of milk which is allowed at the cost of the Drug Fund, owing to its medicinal properties.

## Night Call

The committee agreed to a clause suggested by the Ministry of Health for insertion in the allocation scheme. This clause



## APPOINTMENTS

CLAYTON, Miss Vera E. M.B., B.S. Lond., House Surgeon to the New Sussex Hospital for Women and Children, Brighton.  
 BARBER Hugh, M.D., M.R.C.P. Lond., Visiting and Consulting Physician to the Derby Poor Law Institution.  
 DRYNLEY Gertrude M.D., B.S. Lond., Consulting Gynaecological Surgeon to the Wembley Hospital.  
 DODD R.R., M.B., B.S. Durh., Assistant School Medical Officer Sunderland Education Committee.  
 MINN, Miss Ida C., M.B., B.S. Lond., F.R.C.S., Assistant Surgeon to the Royal London Ophthalmic Hospital.  
 RAWLINGS Norman W., L.M.S.S.A. Lond. Honorary Anaesthetist to the Manchester Hospital for Consumption and Diseases of the Throat and Chest.  
 CERTIFYING FACTORY SURGEONS.—D. Cameron, M.B., Ch.B. Ed. for the Buckhaven District, co. Fife, W.T. Clarke, M.R.C.S. L.R.C.P. for the Morley District, co. York, N.T. Edgecombe M.B., Ch.B. Glas. for the Ayrton District, co. Berwick, H.R. Fisher, M.B., Ch.B. Liverp., for the Menai District, co. Anglesey, W.A. Hives M.B., B.S. Lond., for the Stamford District, co. Lincoln, J.F. Roberts, M.D. Liverp., for the Liverpool (Garston) District, co. Lancashire.

## DIARY OF SOCIETIES AND LECTURES.

## ROYAL SOCIETY OF MEDICINE

General Meeting of Fellows—Tues, 5.30 p.m. Ballot for Fellowship.  
 Section of Pathology—Tues, 8.30 p.m., J. McIntosh Histology of Some Virus Infections of the Central Nervous System R.J. Ludford Repair of Superficial Skin Lesions in the Mouse W. Cramer Stomach Lesions in Rats.  
 Section of Internal Medicine—Wed, 4 p.m. Cases.  
 Section of Surgery—Wed, 4 p.m. Mr. A.L. Walker Rupture of Uterus following Caesarean Section Mr. A.O. Palmer Age Incidence of Carcinoma Corporis Uteri Sir Lwen Macleod A Lantein Lecture on a Visit to Certain.  
 Section of Electro-Physiology—Wed, 4 p.m. Presidential Address by Sir Henry Gauvain.  
 Section of Pathology—Wed, 4 p.m. Presidential Address by Sir Henry Gauvain.  
 Section of Pathology—Wed, 4 p.m. Presidential Address by Sir Henry Gauvain.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.1—Tues, 4 p.m., Harveian Oration by Sir William Hale White.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE 11, Chandos Street, W.1—Thurs, 7.45 p.m. Demonstration 8.15 p.m. Inaugural Address by the President Professor J.W. Stephens, F.R.S., on The Functions of the Spleen, illustrated by lantern slides.

HUNTERIAN SOCIETY—Mon 7.30 p.m. First Dinner Meeting at Simpson's Restaurant, 2 and 3, Bird in Hand Court E.C. 8.30 p.m. Presidential Address by Mr. A.E. Mortimer Woolf Some Personalities of the Hunterian Epoch.

LONDON CLINICAL SOCIETY London Temperance Hospital, Hampstead Road, N.W.—Thurs, 9 p.m., Discussion Dyspepsia Openers Dr John Ryle and Mr Herbert Paterson All medical practitioners are invited.

## POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—Special Lecture at 11, Chandos Street, W.1, Mon, 8 p.m. Disorders of the Central Nervous System, W.C. Hospital, Vauxhall Bridge Road, S.W.—Wed, 4 p.m., Clinical Lecture, The Significance of the Enlargement of the Spleen in Children All these lectures and demonstrations are free to medical practitioners. Central London Throat, Nose and Ear Hospital, Gray's Inn Road W.C. Clinical Course, all day, 12.25, Chelsea Hospital for Women, Arthur Street, S.W. Special Course in Gynaecology, mornings and/or afternoons London School of Tropical Medicine, Endsley Gardens, W.C. Tues and Thurs, Clinical Demonstration at 2 p.m. Royal Free Hospital Gray's Inn Road Wed, 6.15 p.m. Lecture Demonstration Paddington Green Children's Hospital, Paddington Green W.2, and Victoria Hospital for Children, Tit Street, Chelsea Combined Course in Diseases of Children, all day National Hospital Queen Square W.C. Special Two Months Course in Neurology All information and tickets from the Fellowship of Medicine 11, Wimpole Street W.1.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.1—Thurs, 4 p.m., Hernia.

LONDON SCHOOL OF DERMATOLOGY St John's Hospital, Leicester Square, W.C.2—Tues, 6 p.m., Bacteriology and Mycology Thurs, 5 p.m., Pathology Demonstration.

NATIONAL HOSPITAL, 2 p.m. Out-patient. Results of Head Injuries. Tues, 3.30 p.m., 1. The Ear in Relation to Neurology Fri, 3.30 p.m., The Diagnostic Significance of Sensory Disorders Operations Tues and Fri 9 a.m.

NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales General Hospital, Tottenham N.15—Mon 2.30 to 5 p.m. Medical, Surgical, and Gynaecological Clinics Operations Tues, 2.30 to 5 p.m. Medical, Surgical, Throat, Nose and Ear Clinics Operations Wed, 2.30 to 5 p.m. Medical Skin and Eye Clinics Operations Thurs, 11.30 a.m., Dental Clinics 2.30 to 5 p.m. Medical Surgical and Ear, Nose and Throat Clinics Operations Fri 10.30 a.m. Throat Nose and Ear Clinics 2.30 to 5 p.m., Surgical, Medical, and Children's Diseases Clinics Operations.

TAVERSTOCK SQUARE CLINIC FOR FUNCTIONAL NERVOUS DISORDERS 51 Tavistock Square W.C.1—Mon, 4.45 p.m., Biology of the Endocrine System 5.45 p.m. Hysteria Tues 4.45 p.m. Function of the Endocrines, 5.45 p.m. Neurasthenia Wed 4.45 p.m. Evolution of the Three Layers of the Nervous System 5.45 p.m. Anxiety States Thurs 4.45 p.m., Psychoneuroses 5.45 p.m. Dementia Praecox and Manic Depression Fri, 4.45 p.m. Toxaemia 5.45 p.m. Insomnia.

WEST LONDON HOSPITAL POST GRADUATE COLLEGE 10 a.m. to 1 p.m. Genito-urinary Operations. 2 p.m. Surgical Wards Gynaecology. Tues 10 a.m. to 1 p.m. Medical Ward visit Demonstrations in Venereal Diseases. 2 p.m. Medical Wards Throat Nose and Ear Department Wed 10 a.m. to 1 p.m. Children's Medical Outpatients Medical Wards Demonstration in Medical Pathology 2 p.m. Surgical Wards, Eye Department Thurs 10 a.m. to 1 p.m. Neurological Department Demonstration of Fractures 2 p.m., Eye and Genito-urinary Depart-

ments, Gynaecological Ward Fri, 10 a.m. to 1 p.m., Gynaecological Operations Dental, Skin and Electrical Departments 2 p.m., Throat, Nose, and Ear Department Sat 10 a.m. to 1 p.m., Bacterial Therapy Department Children's Medical Department Daily Operations Medical and Surgical Outpatients at 2 p.m.  
 JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH St Andrews—Tues, 4 p.m., Superficial Pain as an Aid in the Differential Diagnosis of Abdominal Disease.  
 MANCHESTER ROYAL INFIRMARY—Tues 4.15 p.m., Some Recent Views on Nephritis Fri, 4.15 p.m., The Field of Vision.

## British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE,  
TAVISTOCK SQUARE, W.C.1

## Departments

1. APPOINTMENTS (Financial Secretary and Business Manager)

EDITOR, *British Medical Journal* (London) Secretary, Westcott (London)

Telephone numbers of British Medical Association and *British Medical Journal*, Museum 5851, 5852, 5853, and 5854 (internal exchange, four lines)

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## Diary of the Association

## OCTOBER

- 18 Tues. London Standing Ethical Subcommittee 2.30 p.m.  
 Croydon Division Croydon General Hospital Dr J Strickland Goodall on Arterio-sclerosis, 8.30 p.m.  
 Lewisham Division 8, Church Terrace, Lee, S.E. Dr Jane L. Hawthorne on Birth Control, 8.15 p.m.  
 West Dorset Division Weymouth and District Hospital Dr J Carswell on Language and Mind, 8 p.m.  
 19 Wed. London Contract Practice Subcommittee 2.30 p.m.  
 London Regulations and Standing Orders Subcommittee 2.30 p.m.  
 Brighton Division Clinical Meeting, Sussex County Hospital 3.45 p.m.  
 Lanarkshire Division St. Enoch Station Hotel Dr John Comrie on the Experiences of a Consulting Physician in North Russia 3.30 p.m.  
 South Eastern Counties Division Edinburgh Branch Royal Hotel, Galashieles Mr Walter Mercer on Orthopaedic Surgery, 3 p.m.  
 Wilkes Division Wilkes General Hospital Harlesden Road, N.W.10 Mr A. H. Levy on Ocular Manifestations of General Disease 9 p.m.  
 20 Thurs. East London Division Reception.  
 21 Fri. Hereford Division Hereford General Hospital Third Port Graduate Lecture by Mr G. P. Mills on Some Common Effects of Injury 3.30 p.m.  
 23 Sun. Wakefield, Pontefract, and Castleford Division Clinical Meeting West Riding Mental Hospital, 3 p.m.  
 25 Tues. Sheffield Division Church House, St. James Street, 8.30 p.m.  
 South West Essex Division Walthamstow Hospital Dr C. O. Hawthorne on the *British Pharmacopoeia* Status and Values, 3.30 p.m.  
 26 Wed. London Insurance Acts Prescribing Subcommittee, 2.30 p.m.  
 Croydon Division Croydon General Hospital Lecture Demonstration by Dr P. W. Hammond on Medical Electricity, 4 p.m.  
 27 Thurs. London Psycho-analysis Committee, 2.15 to 4.30 p.m.  
 28 Fri. London Joint Research Subcommittee, 2.30 p.m.  
 Tyneside Division Dance at the Waverley Ballroom, Whitley Bay.  
 West Somerset Branch Taunton and Somerset Hospital B.M.A. Lecture by Dr Erio Pritchard on the Principles of Nutrition in the Feeding of Infants and Children, 4 p.m.  
 Annual Dinner, County Hotel, Taunton, 7.15 p.m.  
 1 Tues. London Library Subcommittee 2.30 p.m.  
 City Division Metropolitan Hospital Lecture Demonstration by Dr W. Langdon Brown on the Modern Aspects of Nephritis, 4.30 p.m.  
 Coventry Division Coventry and Warwickshire Hospital Dr W. Brazil on Medicine in Lay Literature, 8.30 p.m.

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

## BIRTH

MALHOTRA—On October 3rd 1927 at Dudley House Beaumont Street W.1 to Champa (née Sethi) wife of Captain R. C. Malhotra, O.B.E. I.M.S. a son.

## MARRIAGES

ANDERSON—FRASER—On October 5th 1927 at West Parish Church Inverness, by the Rev J. MacLellan (uncle of the bride) Roderic Anderson, M.B. Ch.B. youngest son of the late George Anderson, Nether Auchmarie Forgue to Isabella later on Fraser daughter of the late Mr and Mrs James Fraser and granddaughter of the late William MacGillivray, Garbole, and Mrs MacGillivray, Ardaraich, Inverness.

FRASER—O'BRIEN—On October 8th at St Mary's Church Hilly, by the Rev J. MacLellan, L.R.C.P. Barrister at Law, son of the late R. Fraser M.B. Ch.B. to Kathleen O'Brien M.B. Ch.B. daughter of P. J. O'Brien, M.D., of Midleton House Middleton, co. Cork.

## DEATHS

ANSTON—On October 5th aged 81 years Henry Edward Anston of The Prow, Wylam, Northumberland, formerly medical officer of health for Newcastle-on-Tyne.  
 PAGE—On September 13th at Christchurch, Hants, A. J. M. Page, M.D., of pulmonary tuberculosis.



# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY OCTOBER 22ND, 1927

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## British Medical Association

### THE AUTUMN DINNER

THE sixth annual Autumn Dinner was held in the Lower VII Rooms of the Hotel Victoria on Wednesday, October 12th, with Dr. H. B. BRUCE-CLACK, Chairman of Council, presiding. The first purpose of the gathering was to honour the retiring officers, Mr. R. G. Hogarth, C.B.E., LL.D., F.R.C.P., President of the Association 1926-27, and Sir Robert Bolam, M.D., LL.D., F.R.C.P., Chairman of Council 1921-27, who were seated respectively to the right and left of the Chairman, with Mrs. Hogarth and Lady Bolam. Two Cabinet Ministers were present, namely, the Right Hon. Neville Chamberlain, M.P., Minister of Health, and the Right Hon. the Earl of Birkenhead, Secretary of State for India. The other official guests, some sixty in number, included

Sir Thomas Barlow, Sir James Berry (President Royal Society of Medicine), Sir Geoffrey Butler, Dr. H. H. Dale, Dr. A. V. Davy, Mr. P. Professor W. E. Dixon, Major W. E. Elliot, M.P. (Parliamentary Under-Secretary for Scotland), Lieut. General Sir Andrew Fell, D.G.A.M.S., Surgeon Vice-Admiral A. G. G. G. (President War Section Royal Society of Medicine), Professor W. H. Gilmore, Dr. J. Strickland Goodall, Sir Laurence Halpern, Mr. A. Bishop Harman (Treasurer of the Association), Dr. C. O. Hartshorn (Chairman Representative Body), Sir Thomas Horder, Mr. Norman King (Registrar General Medical Council), Dr. P. W. Leslie, Dr. E. Graham Little, Mr. P. Sir Richard Luce, M.P., Dr. J. A. McDonald, Sir Ewen Maclean (President Elect), Sir Philip J. Jones, Dr. Hamilton C. Marr (President Medico-Psychological Association), Sir Vice-Marshal D. Munro, Dr. Christine Murrell, Sir Robert Plump (President of the Association), Sir Alfred Rice, Sir Arthur Robin (First Secretary Ministry of Health), Sir Humphry Rolleston, Major General J. B. Smith, Mr. W. G. Spencer (Honorary Librarian), Dr. J. T. Stanton, Dr. T. H. C. Sutherland, Sir Jenner Verrall, Mr. S. P. Vivian (Registrar General), Dr. T. Watts, M.P., Sir A. L. Webb (Director General Medical Services Ministry of Pensions), Dr. J. Wheatley, Sir Dawson Williams, Sir F. J. Willis (Chairman Board of Control), Mr. J. J. Withers, M.P., and Sir E. Hilton Young, M.P.

### "The Retiring Officers"

THE CHAIRMAN, after the toast of His Majesty the King, had been honoured proposed the health of the two retiring officers. He said:

The British Medical Association has a great respect for order and precedent, from which it departs only with reluctance. One of the things which are in order is to have an Autumn Dinner. For late years it had been the custom to hold that dinner in the Association's own hall in Tavistock Square, and it was regretted that circumstances had, for this year at any rate, made it impossible for the Association to welcome its guests in its own home. Another thing he said, which is prescribed for us is the order of toasts at this dinner, and first among these is the health of the retiring officers. It is not part of our

custom that the Chairman should propose that toast, but when just a few of us who had to make some arrangements at this dinner were considering the matter it was suggested by one of my colleagues that the issue of the toast would be enhanced if it were proposed from the chair, however unworthy the occupant of the chair might be for such a task. That suggestion was received with suspicion on his part and alacrity, and it was not until afterwards that I realized that I also was a retiring officer—although by the kindness of the Council I have been allowed to pass from one office to another—and that the placing of this toast in my hands was a most effective means of preventing any long being said about the retiring Chairman or the Representative Body. (Laughter.)

It is a great privilege to propose this toast with regard to the two officers who retire this year. It has really been an extraordinary pleasure to have had Mr. Hogarth with us during the last two years, first as President-Elect and then as President, and he is still happily taking part in our concerns at least for another year as Past-President. He has served us well in Council and at the Representative Meeting, and at all the official gatherings of our Association. He has been of great help to us in the advice he has given, and he has managed to maintain an attitude of constant cheerfulness which has also been a great help. A special feature of his personality has been those happy speeches which he has delivered not only to us here but in various places throughout the country. I wish he would tell me how he manages to think of those delightful phrases which abound in the speeches he delivers. I am sure he must have to search the dictionary sometimes for the appropriate word, and I dare say some of you like myself when you hear these phrases do strive to remember them and steal them and repeat them as if they were your own, but when the moment comes my memory at all events, always fails me. Mr. Hogarth, I am sure will forgive me if I say that the difficulty of expressing our feelings of gratitude to Sir Robert Bolam is even greater than the difficulty with regard to Mr. Hogarth. Sir Robert Bolam has given us the most assiduous and self-sacrificing service in innumerable ways for a very long time. None of us can ever thank him sufficiently. As it is impossible to express in words what we should like to say, I am not going to attempt to do so. We have had other opportunities when others who are here to-night have tried to express what we all feel about Sir Robert Bolam's personality and work, but none of us however able could really do justice to what ought to be said. (Applause.)

There are just two things I would like to say about Sir Robert Bolam. Lately he has come to be associated very prominently with one outward and visible sign of the inward and spiritual grace which of course the Association possesses in such abundance, and there is just a little danger of a legend growing up in the Association of Sir Robert

Bolam as the great master builder. That would be quite a true legend if we had regard to more than the material building, but lest those who come after us should concentrate too much upon that aspect of Sir Robert Bolam's work—lest it should grow into a sort of legend which, however true, would be very incomplete—we should like to testify that behind all that he has done so extremely well there lies the motive of increasing the power and influence of the British Medical Association and, through that increase of power and influence, helping forward the well-being and the public health of the people of this country. (Applause.) We have not only admired the extraordinary work he has done, but the very remarkable way in which he has persuaded us to help him in that work. I think it was Boswell who told us that Burke's way of dealing with an argument was to wind into his subject like a serpent, whereas Johnson himself used the sledge-hammer. I have known Sir Robert Bolam use both those methods of approach, but what I think Goldsmith said of Johnson was that when his pistol missed fire he knocked you down with the butt end of it. I do not know whether Sir Robert Bolam would do that, because as yet his pistol has never missed fire, but the fact that he has done the work of a business man in connexion with our Association, and has done all the other work so well, and has persuaded us in the way he has to carry on the work and inspired us to further efforts is a very remarkable achievement. But there is something more than that in the respect which we feel for Sir Robert Bolam's personality. It goes beyond thankfulness for his work and admiration of the way in which he has done it to a personal affection for the man himself. (Applause.)

When I ask you to drink this toast I hope you will remember also Mrs Hogarth and Lady Bolam. They too have made very great sacrifices and have helped us very much, not only by allowing their husbands to do what they have done, but also by their presence at our annual meetings and at other gatherings from time to time.

The toast was drunk with much enthusiasm.

Mr R G HOGARTH began by remarking that he always thought it a salutary rule that Presidents of the British Medical Association, when once they had passed the elixir, should be content to "cruise upon the midnight with no pain." But, he continued, since your goodwill and Dr Brackenbury's far too generous speech compel my brief return to the upper air, I shall not affect to disguise my grateful appreciation of the references made to a year of office now judged beyond appeal. The constitution of the Association happily does not expose its presidents to the horrid dilemma which recently confronted their brother President of the United States, for it effectually represses ambitions prompting towards a third term of office by sternly denying the bare possibility of a second. That is sound preventive medicine. (Laughter.) For myself, I never can be sufficiently grateful to those who do the work of the Association at headquarters, to Dr Cox and his colleagues, to the Chairmen of the Council and the Representative Body, and to every member of the Association with whom I have had relations. I was singularly fortunate in being able to turn at any moment for counsel to Sir Robert Bolam, whose name, I predict, will be held in ever-increasing honour, though he has now retired from the office which he filled with so much distinction to himself and so much profit to the Association. He is the real founder and only begetter of the stately mansion which worthily proclaims the Association's confidence in itself and its mission, and presents to a public necessarily much impressed by externals an imposing frontispiece. I will not say that Sir Robert has "builted better than he knew," but I can say that many of us are only now beginning to grasp the prescient wisdom of the great designs which his buoyant and magnetic optimism biased the timid and emboldened the doubting to accept. Nor am I less a debtor to Dr Brackenbury, large of tolerance, easy of approach, greatly patient of the infirmities of his friends, a staunch bicker, and hearty in encouragement and praise. Fortunately indeed was my lot to be in office when the Association had two such men in its chairs—incomparable strategists in coping with these outside the household, and possessed of a rare genius in the direction

of its innermost councils. Long may our twin Dioscure illumine the path of the British Medical Association! I would gladly mention others, but I fear that I have already trespassed too long on your forbearance, and the path of it all is that it is the efficiency of our splendid organization which makes the presidential yoke so easy. I thank Dr Brackenbury on my own and my wife's behalf for the kind things he has said. (Applause.)

Sir ROBERT BOLAM, who was received with prolonged applause, said I have but a few words to say because, although I am returning from office, you have asked me to work still longer for the Association we all love, and I do not feel that I am severing myself in any great measure from the work you have asked me to do, and which you have prized quite beyond its worth. I cannot offer you the flowing phrases and rounded periods of the Past-President, and would only say that, seven years ago, when you were kind enough to elect me to the leadership of your executive team, I took the position with hesitation and doubt, and if it had not been for the constant help of all the members of the Council and the officers, none of this work to which you have put my name could have come to fruition. The last seven years have not been an easy time in medical politics. There have been many things which are of interest to large numbers of our members and guests here and which one might allude to on an occasion less festive than this, but I am not going to stand between you and the Ministers of His Majesty's Government who have been kind enough to come on this occasion, and whose presence is an evidence that the place of the Association is higher now than it was ten years ago. This Association will only stand in the public eye at a high level if the public and those concerned with government are assured that we are out for the public health and not for the private pocket. I believe, and it has been the sustaining belief in all the work that I have done, that we are doing good work for the national health, and so long as that is the case I am sure that our Association is bound to prosper. It is a little difficult for me, after the kind words that have been said, and the indication of your kindness that has been all around me during the last few months, to say what I feel. But I thank you very sincerely for the way in which you have received this toast. I want especially to thank Dr Brackenbury for his reference to the help that I have received from my wife in carrying out this work, and I want to end by saying that I trust my successor in office, my very good and loyal friend the chairman here to-night, may have as happy a period of office as I have had. (Loud applause.)

#### "The Common Health"

Mr H S SOUTER, CBE, FRCS, proposed the toast of "The Common Health." He said: "This is a subject which excites the interest of everybody. There has never been a time when interest in the health of the nation was so universal, and I think the reason is that we have suddenly discovered that health is obtainable, that there is enough health to go round. As a nation we are the despair of foreigners because they do not understand our lack of co-ordination and the scope we allow to individuality. But I think, nevertheless, it would be an advantage if we could introduce a certain element of co-ordination into our health service. Take, for example, our great hospitals, which have been converted from refuges for the sick poor into machine shops for the cure of those who are ill. The hospital is now a wonderful organization in which sick people are restored to health. We no longer allow them to disappear from our ken even after they have come out. We follow them up with all the energy of a motor firm after its clients. We have our follow-up departments, our annexes, our convalescent homes. Yet the hospital is extraordinarily isolated. On the one hand, largely separated from it, we have the great body of general practitioners who look after the health of the people in their own homes, and on the other hand the great municipal and State hospitals, which have as little connexion with the big teaching hospitals as if those institutions never existed. Surely a great deal could be done by co-ordinating all these services. That is just where the Ministry of Health comes in. The Ministry can co-ordinate the services of the different branches of the medical profession until it really does come true that we

have defeated disease. Even at the present day it is beginning to be realized that most disease is unnecessary. It is quite unnecessary for people to die from tuberculosis. Most of the fevers we have defeated so completely that numbers of the fever hospitals in London have actually closed their doors. A great deal of disease can be defeated entirely, and where we cannot defeat disease we can ameliorate its effects. Gilbert, beneath whose humour there was often a strain of pathos, said:

What if the evening comes too soon  
We've months and months or afterwards

and it is in the power of our profession to prolong the "art moon" even if it cannot restore to perfect health. Working as I do in a great hospital I look upon it as a centre of great medical service. Why should we not be coupled up with the private practitioners whose patients come within our gates? The hospital service should be so organized that the doctor who sends in his patient is kept informed of all that happens to him. Again the great State and municipal hospitals could surely get help from the large voluntary hospitals with their laboratories. Perhaps you will say that such co-ordination threatens the voluntary principle and suggests a State medical service. But I think that a distinction can be drawn between what has been termed a State medical service and medicine in the service of the State. The one is somewhat un-English; the other is thoroughly in harmony with our national temperament, for I do not believe that there is any country in the world where every man and woman is so thoroughly devoted to the service of the State. (Much and without any great number of words every mother's son having served in the great war is ready now to give his country in the ways of peace.) And surely to us here the service of the State as a whole is a greater thing than the service simply of our own profession. It is a special pleasure to couple with this toast the name of Mr. Chamberlain, for that name to the generation which has passed or is passing as well as to the present generation, is a sign of high service to the State. (Applause.)

The Right Hon. DEWILL CHURCHMAN, in responding to the toast "You, Sir, have told us that you like in this Association to maintain your old forms and procedure and I think perhaps something of your old form is to be found in the unfamiliar phrase 'The Common Health.' I suppose that what it means is the summation of the health of all the individuals who compose the community and when we drink this toast we intend to signify our desire to maintain and if possible improve the average health of the nation. That is the task to which both you and the department over which I have the honour to preside are devoting attention. Your part is to repair the injuries to the individual and mine to surround the individual with such safeguards as will render it necessary for you to do as little as possible. If I were to be a wholly successful your occupation would be gone. Fortunately we shall never deprive the individual of one of the greatest pleasures of his existence, that of the examination and discussion of his symptoms." (Laughter.) But I think that working together we may truly claim that we are making a good job of the common health. If we take the decade 1870-80 for comparison we find the average mortality rate during that period to have been 21.4 per 1,000. Last year the rate was 11.6. The infant mortality rate in the earlier period was 1.49 per 1,000. Last year it was 70. In fifty years therefore we have nearly halved the general rate and more than halved the infant mortality rate. There are very remarkable figures and it would be interesting to follow up their reactions. If it had not been for that extraordinary progress I suppose that to-day we should find our elves in the presence of a diminishing and not an increasing population. Perhaps this would free us from the nightmare of unemployment and it is certain that one of the great political parties would not as it is now, be sent from top to bottom by internal divisions on the question of birth control. (Laughter.)

One might pursue various academic speculations but I think it is more interesting to consider what it is that has brought about this wonderful improvement. It would be a mistake to attribute it to any one factor. The advance

of medical and surgical science must have had a great deal to do with it. I venture to think that the activities of the Ministry of Health have also had a share, especially in view of the attack upon tuberculosis and the establishment of a network of maternity and child welfare institutions. Something again must be attributed to the general rise in the standard of living. But I should not be surprised if, after all, one of the most potent factors was the gradual education of the man and woman of this country in the simple rules of how to keep themselves healthy. That education has been fostered by the efforts of general practitioners or medical officers of health of the school medical service and also of the press. Although perhaps by the teaching conveyed in this last medium the public may occasionally be bewildered. But there is still much to do in the education of the public and now that powers are given to local authorities to carry on propaganda in connexion with all kinds of health services I hope that with due regard to economy they will make use of those powers and will not leave the field entirely to miscellaneous fanatics such as those who are responsible for the rapid spread of small pox—(Hear, hear!)—or which we had no fewer than 11,000 cases in this country last year.

But ladies and gentlemen perhaps I might venture to say to you in the privacy of his room that I am not sure that the education ought to be confined to the man in the street. Is it not the case that there are some members of your own profession whose theory and practice have got a little rusty since they walked the hospitals and who might be the better for a certain amount of retraining? If there be such I am not blaming them for I realize very fully what it must mean to be a country doctor in some remote town or village trying to extract a not too exuberant income from a practice which entails unremitting and exhausting labour and I say to myself, What wonder if a man working year in and year out under such conditions finds himself rolling a little behind as most modern practice. What wonder if sometimes he fails to recognize the first symptoms of a disease like tuberculosis until the manifestations become unmistakable. Last year we spent on the treatment of tuberculosis in this country two and a half million pounds and although it is true that the mortality rate of tuberculosis is gradually decreasing the decrease is desperately slow and as a matter of fact notifications of new cases are actually increasing. I do not draw from that the conclusion that the disease is on the increase but rather that we are only gradually coming to realize the extent of its incidence. I believe that there are many practitioners throughout the country who would welcome the opportunity of improving their knowledge on this and many other subjects. Only yesterday I received a letter signed by twelve doctors who had been taking a post-graduate course at Cambridge and wished to express to me their sense of the benefit received. I am sure there are many more in the same position and it is for that reason that I am so deeply interested in the project now approaching realization of the establishment of a post-graduate medical school in London. (Applause.) When that school is finally established I believe a considerable proportion of general practitioners from all over the country will find it possible to come to London and take instruction under the first physicians and surgeons of the day. I believe, too, that they will not only learn when they come here, but that they may even teach as well for the danger always is that those who are responsible for the education of students may get a little separated from the practical problems which confront the man in general practice every day. (Applause.)

I do not think that any Minister or Health responding to this toast should omit all allusion to the housing conditions of the people. I have to be a little cautious in speaking about housing because if I express the mildst form of satisfaction someone accuses me of declaring that the housing problem is solved. It is not solved, but do you realize that in the last twelve months new housing accommodation has provided in this country for nearly one million persons. Surely it is unreasonable to withhold us to congratulate ourselves upon an achievement as satisfactory as that. (Applause.) It is an achievement all

the more satisfactory because it opens up the path towards the tackling of a problem which is much older than the shortage of houses—namely, the slum problem. It is customary to talk of the slum problem as though slum clearance were the only way in which it could be tackled. I should like to call your attention to certain figures which seem to me highly significant. Under the existing law the initiative for dealing with the problem of the slums lies with the local authority, but the Government undertakes to provide half the cost of approved schemes. Last year at the Ministry of Health we confirmed eight schemes of slum clearance involving altogether 923 houses and other buildings. The schemes contemplated the demolition of those 923 houses, and to that extent added to the problem of shortage and in the previous year—the last year in which the figures are available—528,000 houses were reconditioned, repaired, and made fit for occupation at the instance of the local medical officers of health and their staffs—that is to say, 500 times as many houses were dealt with under that procedure as under the procedure of slum clearance. To anyone who is looking for the most rapid and economical way of dealing with the slum problem those figures offer much food for thought.

If I may mention some minor activities of the Ministry of Health I would remind this assemblage that during the past year we made strenuous efforts to secure for the public cleaner milk, purer food, and a less smoky atmosphere, and the public showed its appreciation of our efforts in the usual way! (Laughter.) I remember someone saying—I believe it was in this very Association—that not until three Cabinet Ministers died in one day, and their deaths were certified as being due to fog, would there be any hope of Government legislation with regard to smoke. Well, we have had the legislation, and there have been no deaths of Cabinet Ministers. If the Minister of Health before long comes to an untimely end his death will not be certified as due to natural causes, it will be a case of wilful murder with a strong recommendation from the jury for mercy in view of the provocation occasioned by the late Minister's excessive zeal for legislation. (Laughter.) But I did not accept my present office in order to sit down and look on, and I have two bills in Parliament at the present time which I hope to see on the Statute Book before Christmas—the Nursing Homes (Registration) Bill and the Mental Deficiency Bill—both of them important, and the latter extremely urgent. After Christmas one must not prophesy, but among the subjects which seem to me to call for legislation are the slum problem, of which I spoke just now, the question of lunacy, on which we have recommendations from the Royal Commission, and in connexion with which I think we shall have to consider very seriously whether the present law sufficiently protects the position of the certifying doctor—("Hear, hear!")—and the question of national health insurance, in connexion with which I should like very much to see established a system of specialist services. Above all there is the question of the reform of the Poor Law. One of the considerations which weighed with me most powerfully when I decided to embark upon this question of Poor Law reform was the possibility which it seemed to me to offer of promoting the efficiency of our institutions. We have had some very interesting observations by Mr. Soutter upon the question of co-ordination and the desirability of linking up the various bodies engaged in institutional treatment. The much of medical and surgical science every one makes more imperative the need for institutions in which alone can be combined the equipment and specialist skill necessary to give the most effective treatment. I am convinced that without some greater co-operation between the various classes of institutions there is serious danger lest the great voluntary system, the glory of our country, be squeezed out—a contingency which I should regard as a disaster. But it is equally clear to me that one of the first steps towards co-operation would be to reduce the number of classes of institutions from three to two—to make the Poor Law infirmities into municipal hospitals and so cut away at a stroke half the difficulties. The stigma of pauperism would disappear, negotiations would be facilitated, vested interests would be reduced, friction would largely be lessened and with

a closer link between those hospitals which are supported out of public funds and those which are supported by voluntary subscription we should make a nearer approach to the ideal of hospital treatment being made available to every citizen. The reform of the Poor Law is essentially a great health measure, and I should feel myself deeply encouraged and heartened in the task I have before me if I felt that I carried with me your confidence and support. I trust that the friendly and mutually respecting relations between the British Medical Association and the Ministry of Health will continue, and for my part, having, what not every Minister can claim, the office which above all others is most agreeable to me, because it was the prospect of doing something towards improving the national health which first tempted me into politics, I can declare that the greatest help and encouragement in my work is the feeling that I have with me the sympathy and goodwill of the medical profession. (Loud applause.)

#### "The Guests"

Dr R. W. LEE, LL.D., briefly proposed the toast of "The Guests," coupling with it the names of the Earl of Birkenhead and Dr. Raymond Crawford, Chairman of Council of Epsom College. With regard to the former, he said, it would be superfluous to speak of his remarkable and dazzling career. To whatever party in the State a man owed allegiance he could join in doing homage to Lord Birkenhead's great gifts as lawyer, statesman, and man of letters. The other "victim" was one of the hardest workers in the cause of medical charity, and Dr. Lee took advantage of the occasion to appeal to the 33,000 members of the British Medical Association for a more effective support of the medical charities.

THE EARL OF BIRKENHEAD said that in view of the interest of the hour he would add little to the "excellent and adequate rhetoric with which we have been indulged." He had had it in mind to recommend to members of the British Medical Association a medical career in India. He could not develop the topic that evening, but he would take an early opportunity of doing so, and he begged the Association to use its great influence in making known to the younger members of the profession how great a career might still await a young adventurous man in India. Doctors begin as medical students, and everyone knew the kind of men they were as students, but quite suddenly they emerged into a premature middle age, with an air of respectability and a bedside manner. This startling change took place in about a period of three years. He had listened to the speeches that evening in some bewilderment. Mr. Soutter had explained to the company that nobody nowadays need die, owing to the resources of prevention which he and his friends were developing, and then Mr. Chamberlain had spoken of birth control in such a manner as to suggest that presently nobody would be born. If nobody could die and nobody could be born it seemed to him that there would be established what might be termed a "reasonable equipose."

Dr. RAYMOND CRAWFORD, Chairman of Council of Epsom College, who also responded to the toast, said that he thought the British Medical Association had rendered a service to the profession in pointing out the inadequacy of the support which the medical charities had received from the profession in the past, and in forming a committee specially charged with the duty of promoting the welfare of such charities. The Association, however, might have done more wisely not to have instituted a special fund of its own, but to have appealed solely and only for the existing charities. He agreed that the Association by reason of its organization, which covered the whole profession, was an admirable body for the collection of money, but he thought the distribution of the funds might most properly be entrusted to a small impartial committee, consisting, say, of the President of the Association and the Presidents of the Royal Colleges. He apologized for introducing a note which might seem like criticism, but he represented an old charity, and he asked those present to imagine the feelings of nestlings when they found a late young cuckoo in the nest. But it was a great and worthy task to bring home to the profession the fact that it needed only the sacrifice by each member of one guinea a year to

remove the shadow of destitution from those members of the profession and their families who had fallen upon hard times.

#### 'The Chairman'

Sir EWEN MACLEAN proposed the health of the Chairman, and mentioned that the Council had that day invited Dr. Brackenbury to be the ambassador of the Association at the South African Medical Congress in March next, an invitation which he hoped Dr. Brackenbury would be able to accept.

Dr. BRACKENBURY, after acknowledging the compliment, said that he hoped there would be no misunderstanding as a result of the remarks of Dr. Raymond Crawford. So far as he could interpret Dr. Crawford's wishes, the same were in the already being carried out by the Association and the organization which Dr. Crawford thought most suitable for attaining the ends he had in view was in fact the very organization which the Association had established. There was not a shadow of foundation for any suspicion of rivalry or disharmony in what the Association was doing in the cause of medical charity, and though he thought the present would surely have settled it, it is that they had had no previous information of the whole of the work which the Association collected—and which it was going to collect on a larger scale in the future—were distributed by the Association among the existing medical charities. He hoped that no one would infer that there was any inharmonious relationship between what the Association was doing and existing charities which it was its purpose to help. (Hear, hear!)

The proceedings closed with the singing of "Auld Melodie." During the dinner a programme of music was provided, and afterwards the oratory was pleasantly diversified by some excellent singing and entertainment.

### PROCEEDINGS OF COUNCIL

A MEETING of the Council took place on Wednesday, October 12th, at the House of the Association, Tavistock Square. Dr. H. B. BRACKENBURY, Chairman of Council, presided, and there were present:

Sir Robert Philip (President), Dr. C. O. Hawthorne (Chairman of Representative Body), Mr. N. Bishop Harman (Treasurer), Mr. P. G. Hogarth (Past President), Sir Ewen Maclean (President Elect), Dr. A. Landon (Deputy Chairman of Representative Body), Sir Robert Bolam (Immediate Past Chairman of Council), Dr. J. Barrett Anderson, Dr. J. Arrington, Dr. F. J. Baidou, Sir F. B. Smith, Sir Alfred Blenkinsop, Dr. J. W. Bone, Dr. H. C. Bransford, Dr. G. F. Bullock, Dr. H. G. Dain, Dr. C. E. Douglas, Mr. W. McAdam Eccles, Dr. D. E. Finlay, Dr. T. Frazer, Dr. F. J. Gomez, Dr. F. W. Goodbody, Dr. P. Wallace Henry, Dr. G. B. Hillman, Dr. J. Hildon, Dr. I. W. Johnson, Dr. P. Landon, Dr. D. E. K. Le Fleming, Dr. R. W. Leslie, Dr. E. Llewellyn, Dr. J. Livingston, Sir Richard Luce, Mr. P. Dr. J. A. Mackenzie, Dr. S. Morton Mackenzie, Dr. J. G. McCutcheon, Dr. A. McKinnell, Dr. O. Marriot, Dr. J. C. Mathew, Dr. G. W. Miller, Dr. Chr. Murrill, Mr. A. W. Nuthall, Lieut. Colonel F. O'Connell, Dr. W. Paterson, Dr. J. Patria, Dr. R. C. Pearce, Dr. J. P. Pritchard, Dr. F. Radcliffe, Dr. E. H. Snell, Mr. H. S. Soutar, Dr. E. A. Starling, Dr. Lockhart, Dr. W. Stephen, Dr. John Storer, Lieut. Colonel Ashton Street, Dr. W. E. Thomas, Dr. G. C. Trotter, Mr. E. B. Turner, Sir Jenner Verrall, Dr. F. Walker, Mr. A. M. Webber, and Dr. W. F. A. Worley.

Apologies for absence were received from Mr. T. P. Dunhill, Group Captain J. J. Poche, Dr. Dini Watson, and Sir William de Courcey. The latter

#### Preliminary Business

The Chairman reported the deaths of our former members of Council—Dr. E. G. Barrow, Dr. C. W. Daniel, Dr. W. J. Tyson, and Mr. J. W. Greer. The only one of these personally known to him was Mr. Greer, who did much for the profession in his own locality of South Wales and for the Association as a whole, but he knew that the others also did excellent service. The members stood for a few moments in memory of these late colleagues.

It was reported that an acknowledgment of the resolution passed by the Representative Body during their Majesty's visit to Edinburgh had been received from Lord Sarnfordham, private secretary to His Majesty, in the following terms:

"I have submitted to the King and Queen the resolution passed at the Annual Meeting of the British Medical Association in Edinburgh for which I am commanded to express Their Majesties' thanks."

A long and admirable report on the Annual Meeting at Edinburgh by the Honorary Local General Secretary, Dr.ergus Hewat, was printed and circulated to the members of the Council. Dr. Hewat was thanked for his report, the suggestions in which had been considered by the Arrangements Committee. A very cordial vote of thanks of a comprehensive nature was carried by acclamation to the many who had contributed to the outstanding success of the Edinburgh meeting.

The Council agreed unanimously and with acclamation to recommend to the Representative Body that the Past President, Mr. R. C. Hogarth, be elected a Vice-President of the Association in recognition of his services during his presidential year.

It was reported that Mr. W. E. Hempson, Solicitor to the Association, had offered to place at the disposal of the Council a mark of his esteem for the Association and appreciation of its happy relations therewith on the occasion of his retirement, a sum of twenty-five guineas as a prize to be awarded for the best essay or treatise on some phase or branch of public health. The Council thanked Mr. Hempson, accepted his offer, and referred the arrangement to the Science Committee.

An offer was also reported from Sir Hop Williams, on behalf of Mr. T. Watkin Williams, who was General Secretary of the Association from 1863 to 1872, to present a replica of the medal connected with the Hastings Prize, founded in 1820. The intention of the Hastings Prize was that on or two gold medals should be given annually for essays or papers, but about 1877 it fell into abeyance chiefly because of the lack of essays of a character to merit the award. The offer of the replica which had been presented by the artist to Mr. Watkin Williams was accepted with thanks.

The New Zealand Branch having invited to its annual conference an official visitor from the home Association, Mr. Victor Bonney, who had intimated his willingness to accept the invitation, the Council agreed that Mr. Bonney be appointed an official representative of the Association at the conference which is to be held in February next.

#### Representation at the South African Medical Congress

At the meeting of the Council held at Edinburgh in July, it was resolved to ask the President and Sir Robert Bolam to act as delegates to the Association to the twenty-second South African Medical Congress to be held at Bloemfontein in March next. A great deal of interest taken in this event in South Africa and the officers of the Medical Association of South Africa (British Medical Association) are anxious that this be the first annual general meeting of the Association since its incorporation and the first scientific meeting of the profession in South Africa displacing the old Congress, should be attended by some representative person or persons from the Association at home more especially because a party from the American College of Surgeons is expected.

Unfortunately both Sir Robert Philip and Sir Robert Bolam now intimated their inability to accept the invitation. Dr. Morton Mackenzie urged that the whole question of overseas representation should be placed on a more settled basis. Sir Jenner Verrall also pleaded for the adoption of some regular principle. The first thing obviously to do in each case was to determine whether the Association ought to be represented and having done that the Association ought to pay all the expenses of its delegate or delegates. Sir Robert Bolam believed that the time had come when the Association must accept the periodical spending of certain sums of money on these visits if the bonds with the overseas Branches or affiliated bodies were to be maintained. This was a point on which the Council should overcome the natural qualms of the Treasurer and the Finance Committee. Mr. McAdam Eccles, Sir Ewen Maclean, and Dr. Briowe all urged that it was important that the Association should be represented at the South African meeting.

Eventually the matter was adjourned for private conversations, and at a later period of the sitting Sir Robert Bolam made the formal proposition that Dr. Brackenbury, the Chairman of Council, be asked to make the journey as official delegate of the Association. He indicated how it would be possible having regard to the sailings of boats for the Chairman to leave immediately after the February Council meeting and to return just in time for the Council meeting in April. He felt that this occasion in South Africa was one at which the official side of the Association should be represented, and there could be no more suitable representative than Dr. Brackenbury.



The motion was carried immediately with hearty applause. Dr Brackenbury expressed himself sensible of the compliment, but said that, for domestic and other reasons, he could not give an answer at the moment to a proposition which had never entered his head until that afternoon.

Discussion took place on the course to be taken should Dr Brackenbury, after all, find it necessary to decline the invitation, and it was agreed that in those circumstances, which it was hoped would not arise, the matter should stand over until the December meeting of the Council.

#### *Groups in the Association*

Petitions were received by the Council, one of them signed by thirty-one members of the Association engaged in the study and practice of pathology, asking that a Pathologists' Group should be established within the Association, and the other signed by thirty spa practitioners, asking for a Spa Practitioners' Group. The first petition suggested that for the Pathologists' Group all members of the Association attached as salaried officers either on a whole or part time basis to the staff of a laboratory devoted to pathology or one of the allied sciences, or directors of the pathological service of a voluntary hospital, though unsalaried, should be eligible for membership. The signatories of the second petition considered that the qualification for members of the group should be that they regularly prescribed the mineral waters or baths of the spas in which they resided, or were on the staff of a hospital or clinic where the use of the local mineral waters was part of the routine treatment.

The Chairman said that it must be borne in mind that these were the two groups which the Council had in contemplation when it decided that groups might be established.

Dr Morton Mackenzie said that he was a little troubled about the definition of the pathologists, and he thought the definition suggested should be considered as only provisional. Sir Robert Bolam noted that the signatories were mostly clinical pathologists; those who did laboratory work pure and simple did not appear to be represented.

After some discussion it was agreed, in view of the difficulty of definition in the case of the pathologists, that the question of forming that group and the definition of eligibility be referred to the Science and Organization Committees for their prompt consideration. The same difficulty did not arise in the case of spa practitioners, and sanction was given for the formation of this group to be proceeded with, the first meeting to be held in London at an early date.

The question of the formation of groups within the Association also came forward on the report of the Organization Committee. Dr Morton Mackenzie, chairman of that committee, said that at the Representative Meeting it was argued that the class or classes of persons to be included in a group should be defined by the group committee. The Organization Committee, however, felt that this was a matter which must be left in the hands of the Council. It would prove unworkable for the different group committees to make their own definitions. At the same time it was desired to bring the group committee into consultation, and it was proposed that the question of the suitability of any individual person for membership of a group should be determined by the Council after such consultation with the group committee. A recommendation to this effect was agreed to.

#### *The Safeguarding of Private Practice*

The Council considered the three resolutions adopted by the Annual Representative Meeting with regard to the inroads made on the sphere of private medical practice by the development of services under the auspices of the State, voluntary bodies, and others, by the transference of the treatment of many diseases and conditions to whole time medical officers, and by the hospital contributory schemes in many parts of the country. It decided to set up a special committee to consider and report on these resolutions, the committee to consist of the officers of the Association *ex officio*, the chairmen of the Medico-Political, Public Health, and Hospitals Committees, and of the Maternity and Child Welfare Subcommittee, Mr E. B. Turner, Dr F. Radcliffe, Dr Eustice Hill, Dr Astley Clarke, Dr West Watson, Dr E. R. Forth, Dr M. W. Renton, Dr E. A. Strickland, Dr E. H. Sell, Dr W. W. Jamison, and Dr Christine Marshall.

#### *International Medical Sea Code*

It was also agreed, following a previous resolution of the Council, to set up a special committee to consider the possibility of forming an international medical sea code. It had been ascertained that the Admiralty, the Board of Trade, and the Ministry of Health were willing to appoint representatives on such a committee. The Council decided that the personnel of the committee should include, in addition to the officers of the Association *ex officio*, representatives of the Government departments just named, as well as, if possible, a representative of the Postmaster General, representatives of some of the principal steamship companies, certain experts on the wireless telegraphy side, the editor of the *Ship Captains' Guide*, and two other members of the Council, Dr John Bone and Dr William Paterson.

#### *Payment to Hospitals in Accident Cases*

Mr Soutar, chairman of the Hospitals Committee brought forward the opinion of counsel (Mr J. H. Stamp) as to the legal position and powers of voluntary hospitals in regard to the recovery of money for the treatment of patients, a matter on which some doubt had been expressed at a previous meeting of Council when authority was given to obtain counsel's opinion. One point expressed in this lengthy opinion was that it would be very difficult for a hospital to establish a legal claim to charge for emergency services in accident cases. In serious cases the victim was not in a position to enter into any contract before treatment, and in few cases would it be practicable to raise with the victim any question as to the terms upon which he was to be treated, but it was an obvious injustice (the opinion continued) that a person who had caused an accident through negligence, or had granted a policy of insurance covering treatment in case of accident, should escape liability because a charitable institution had given the necessary assistance. The opinion set out certain lines for an enactment which would make well-to-do people liable in any event for hospital treatment, and poor people only when they had a remedy over against others. The Hospitals Committee brought forward a recommendation to amend the hospital policy by the deletion of the words "from the insurance company" in paragraph 34, which at present read:

"In all cases of accident where medical attendance is given at a voluntary hospital and such medical attendance is covered either directly or indirectly by insurance, the hospital authorities should recover from the insurance company the full cost of maintenance and treatment of such patient."

This was proposed because the hospital had no legal power to recover money from the insurance company, and it was, indeed, doubtful whether it had legal power to recover from the individual.

Dr Radcliffe wished to substitute the words "ought to be able to" for the word "should" in this paragraph ["should recover the full cost of maintenance"]. He said that recently the Norwich Hospital had decided that all motor accident cases should go into the paying ward, but in view of the legal opinion it made no difference whether the cases went into the paying ward or into the free ward unless there was agreement on the part of the patient beforehand to go into the paying ward which was usually out of the question in road accidents. He thought the alteration he proposed corresponded better with the realities of the situation.

Sir Robert Bolam said that Dr Radcliffe's proposed wording reduced the whole thing to a pious opinion. If a hospital stated by notice that cases of this kind would be expected to pay the cost of maintenance and treatment, then the hospital came into much the same position as any private individual.

Dr Radcliffe's amendment was lost.

Mr McAdam Eccles said that when a person who was not able to pay met with a motor accident and brought a claim for damages against, for instance, the firm owning the motor car which had run him down—which firm was, or should be, insured in some company—there was always a sum set out on the claim, generally a substantial sum, for the treatment of the person, whether in hospital or elsewhere, the treatment being the service which had been rendered to him by a medical man. At present these cases were increasing in number, and the members of the medical profession were not getting their due. He thought the resolution ought to be passed as it stood, it was up to the hospital to claim the money from the person

who had been treated who was his person to receive money from the insurance company.

The recommendation was agreed to.

#### *Paying Patients in Hospitals*

Mr Souttar submitted a memorandum of the evidence which had already been given by the Hospitals Committee to the special committee under Lord Humber's chairmanship which had been set up by the King Edward's Hospital Fund to inquire into the question of hospital accommodation in London to persons prepared to pay more than the ordinary volume of hospital patients. He said that the evidence given on behalf of the Association before the Privy Bds. Committee was called were well received and a friendly discussion took place on the whole subject. There had now been time for the memorandum to be submitted to Council later it was presented.

Dr Bone raised the question of paying patients in the ward or voluntary hospitals which were not public wards, no provision seemed to have been made for this in the memorandum. Mr Souttar replied that it came under the class of private paying patients in nursing homes attached to hospitals. Hospitals could make private arrangements in numerous ways.

Mr Bishop Harman speaking with regard to the provision laid down in the memorandum that in the case of private paying patients in nursing homes attached to hospitals should be open to the patient to elect any registered practitioner as his attendant, said that when the evidence was presented the question was raised by those hearing the evidence as to the conditions in America and the case of Johns Hopkins Hospital where there was an independent nursing home was cited against him. But on the other side he was able to show that in New York 75 per cent of the registered practitioners were attached to a hospital in some capacity or other so that conditions in the United States evidently varied. In the West London Hospital there were 20 private beds which were an integral part of the hospital but private practitioners were allowed to come in and consultations were held. In that way something of the elasticity of arrangements which the Association desired to see was secured.

The report was approved.

#### *Alleged Abuse in regard to Electrical Treatment*

Dr Haslthorne for the Science Committee brought forward a letter which had been received from Dr C. B. Heald, a former member of Council who drew attention to a propaganda sponsored by an association which represented the big electrical firms in favour of the installation of ultra violet light in the home for people to give themselves this treatment more or less indiscriminately. Dr Heald stated that he had evidence that it was proposed to teach dealers in ordinary electrical equipment the methods of application of various treatments by electro-medical apparatus with the object of inducing ordinary customers to buy this apparatus in return for free instruction. Dr Heald also stated that he was aware of very large numbers of cases in which practitioners had sent patients for electrical treatment to unqualified persons without any attempt either to control or specify the treatment. The Science Committee to which Dr Heald's letter had been sent felt that the matter alleged were not entirely within its compass and that it might be well for the Council to set up a joint committee on which the Science Committee should be represented to consider this important subject. There were two allegations in Dr Heald's letter each falling into a separate department. The first was a matter upon which the Association might feel justified in issuing a public warning and for this purpose the Science Committee would be the right machinery. But as to the second allegation that medical practitioners sent patients without accompanying directions to unqualified persons this proper came under the purview of the Ethical Committee.

The Chairman stated that the Insurance Act Committee was also interested in this matter from the point of view of whether ultra violet light treatment was a treatment which was to be effected from general practitioners as a class or should be regarded as specialist treatment in which case a different administrative procedure was involved. There was no certain possibility of abuse here also.

It was agreed to refer the two allegations in the letter respectively to the Science and Ethical Committees.

#### *Scottish Affairs*

Sir Robert Bohn, as chairman of the Building Committee, reported that following upon previous resolutions of the Council a scheme for extension of the Scottish House at Edinburgh had been entered into by the purchase of the old lunatic house in Drumcraig Gardens and the reconstruction of portions of the two houses. The estimated cost of reconstruction was about £5000. The probable return from letting or portions of the two houses was £440 a year and the annual rates £250.

Dr C. W. Miller on behalf of the Scottish Committee thanked the Council for the action it had taken with regard to the Scottish House which he hoped would prove a great asset to the Association.

The Scottish Committee reported on the Reorganization of Office (Scotland) Bill which proposes to abolish the Scottish Board of Health and to substitute therefor a Department of Health for Scotland under the Secretary of State with a secretary and offices in Edinburgh. The Scottish Committee's view was that the medical interest and the interests of public health generally would be better served by a department with a principal medical officer than a board even though the latter might contain one or more medical members and it therefore approved of the bill.

Dr Buchanan asked whether the principal medical officer would have direct access to the Secretary of State and on this question some discussion took place. The Chairman pointed out that there was no Minister of Health for Scotland, the Secretary of State for Scotland being concerned with all Scottish affairs not health alone. It was important to bear in mind the need for securing direct access to the principal medical officer to the political head of the department—a thing which in the case of the English Ministry of Health had been watched very carefully and not without anxiety—whether in the case of Scotland the Secretary of State or the Parliamentary Under Secretary for Scotland who was vice president of the Scottish Board of Health. Dr Miller promised that the discussions on and the possible amendments to the bill would be carefully watched from this point of view.

No special resolution was passed but the report of the Scottish Committee was approved.

#### *Other Committee's*

The Public Health Committee's report was adopted without discussion. Apart from routine matters it contained one recommendation to the Representative Body (which was agreed to by the Council) on the question of when a tuberculosis officer should be considered to be a subordinate officer and when he should be considered as an officer in charge of a department and therefore entitled to a commanding salary of £750. The criterion for placing him in the latter category would be the fact that the clinical work in his area is not subject to detailed supervision by a chief medical officer. This was in amendment of a previous resolution of the Council and followed upon a suggestion made by the Secretary of the Ministry of Health who had pointed out that the higher salary was appropriate where the tuberculosis officer was in fact independent or detailed control of his clinical work but that this did not depend as the former resolution had suggested upon the size of the county.

A short discussion took place upon the report of the Arrangements Committee, which dealt chiefly with the arrangements for Sessions at the Annual Meeting at Cardiff and the appointment of a sectional officer. The Committee proposed following up a suggestion to that effect from the Honorary Local General Secretary at Edinburgh to abolish the ordinary members' badge but several members of Council stated that this badge had been found very useful and the Council decided that it should be retained.

For the Office Committee Dr Brackenbury reported that it had come to the knowledge of the Association that pamphlets based on the Association's publication *Secret Remedies* were prepared and sold by unauthorized persons. A copy of the booklet purchased in Hyde Park had been sent to the Solicitor. This booklet was marked a copyright by a certain individual who proclaimed himself to be working in conjunction with the British Medical Association in a campaign to prevent the exploitation of the public by unscrupulous chemists and manufacturers and by arrangement with the Association he was prepared to sell

certain compounds at a cheaper rate, the Association's analysis guaranteeing that they were exactly the same as the mixtures advertised. The Council agreed to take legal steps to prevent this unauthorized use of the Association's name and its publications.

Dr Morton Mackenzie, for the Organization Committee, reported that the membership of the Association at the beginning of September stood at 33,000. He read the names of a number of honorary secretaries of Divisions or Branches who had relinquished office during the last six months, and whose services were considered to be deserving of special recognition. Among these was one member of the Council, Dr John Stevens, lately secretary of the Edinburgh Branch. It was resolved that a suitable letter be sent from the Council in each of the cases. Dr Mackenzie also referred in terms of high appreciation to the recent visit by the Medical Secretary to the Irish Branches, which was the subject of a long report by the Medical Secretary circulated to the Council.

The Finance and Journal Committees brought forward only routine business. On the Building Committee Sir Robert Belam, as chairman, made a brief private statement with regard to the clearance of the site in connexion with the building scheme at headquarters. The report of the Ethical Committee involved a private discussion on the conduct of a member of the Association. The Psycho Analysis Committee, under the chairmanship of Dr Langdon Down, reported that it was issuing a questionnaire on psychological analysis to those who were known to be practising special modes of psychotherapy, as it believed that the replies to such an inquiry would assist the committee in its work.

The Council rose at the unusually early hour of 4.30 p.m.

## British Medical Association

### CURRENT NOTES

#### Proposed B.M.A. Masonic Lodge

It is proposed to apply to Grand Lodge of England for a charter for a B.M.A. Lodge of Freemasons. This Lodge, if constituted, would be situated in London, and would meet by dispensation once annually at the place of the Annual Meeting of Association, and during that meeting. It is suggested that the Lodge should include not only English Masons but Scottish, Irish, and Oversea members. Masons who are members of the British Medical Association who would like to be founders, or joining members after the founding, are invited to communicate with any of the undermentioned: Mr H. S. Soutter, C.B.E., F.R.C.S., 58, Queen Anne Street, London, W.1; Dr J. A. Macdonald, LL.D., 19, East Street, Trunton; Dr J. R. Pydlersch, Doldi, Llangefni, Anglesey; Dr F. J. Gomez, South Petherton, Somerset; Dr I. W. Johnson, Brook House, Bury, Lancs.; Dr F. J. Baidon, 42, Hoghton Street, Southport; Dr R. W. Leshe, LL.D., St Helens, Stranstown, Belfast; Dr E. Lewys-Lloyd, Rhianfa, Neptune Road, Towyn, N. Wales; Dr J. Armstrong, Wellington Street, Ballymena, co. Antrim; Dr G. C. Anderson, B.M.A. House, Tavistock Square, London, W.C.1; or Dr H. C. Bristowe, Wington, near Bristol (Acting Secretary). A meeting will be called later in London of those who signify their wish to be included among the founders.

#### Ophthalmic Benefit

The Ophthalmic Committee, on Friday, October 14th, elected Dr R. Wallace Henry chairman for the current session. The committee had under consideration the suggestion approved by the Representative Body at Edinburgh for providing ophthalmic benefit under the National Health Insurance Acts through clinics in large centres, as an arrangement auxiliary to existing schemes for attendance by ophthalmic surgeons. A special subcommittee was appointed to draw up a scheme for submission to the full committee.

#### The Katherine Bishop Harman Prize

In April, 1926, Mrs Katherine Bishop Harman, M.B., B.S. Lond., presented to the Association the sum of £1,000 for the establishment of a prize to be awarded by the

Council for the encouragement of research into the disorders incident to maternity. The following are the regulations governing the award of the prize:

1 The purpose of the prize is the encouragement of study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child bearing. Its money value shall be the net annual income of the capital fund as this has accumulated during a period of two years. The first award shall be made in 1928 and essays must be forwarded to the Medical Secretary of the Association, British Medical Association House, Tavistock Square, W.C.1, not later than December 31st, 1927.

2 As a general rule the prize will be awarded for the essay which, in an open competition is judged by the Council to be most helpful to the end for which the prize is established and the Council may at its discretion either prescribe a special or limited subject for the competition or may leave to the competitors an individual selection of the work they wish to present provided that this falls within the purpose of the prize. In every instance the award made by the Council shall be final.

3 Any medical practitioner registered in the British Empire is eligible to compete for the prize.

4 Should the Council on any of the selected dates decide that no justification for the award of the prize exists, the prize shall be offered again in the year next following this decision, and in this event the money value of the prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine.

5 Each essay must be typewritten or printed in the English language must be distinguished by a motto and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address.

The Council has decided that no specific subject shall be prescribed for the Katherine Bishop Harman Prize Competition, 1928, but that competitors be left free to choose the work they wish to present, provided that this falls within the regulations governing the prize.

#### Sir Charles Hastings Clinical Prize

The Council of the Association has decided that the Sir Charles Hastings Clinical Prize be again open for competition in 1928. The following are the regulations governing the award of the prize:

##### Regulations

1 The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice. It includes a money award of the value of fifty guineas.

2 Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3 The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no essay entered is of sufficient merit no award will be made.

4 Essays, or whatever form the candidate desires his work to take must be sent to the British Medical Association House, London, W.C.1, not later than December 31st, 1927 and the prize will be awarded at the Annual General Meeting of the Association to be held at Cardiff in July, 1928.

5 No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work.

6 If any question arises in reference to the eligibility of the candidate or the admissibility of his essay, the decision of the Council on any such point shall be final.

7 Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.

8 The writer of the essay to whom the prize is awarded may, on the initiative of the Science Committee, be requested to prepare a paper on the subject of his essay for publication in the *BRITISH MEDICAL JOURNAL* or for presentation to the appropriate Section of the Annual Meeting of the Association.

9 Inquiries relative to the prize should be addressed to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1.

#### Medical Appointments Abroad

The head office of the British Medical Association has a good deal of information placed at its disposal by its Branches overseas, which may be very useful to those proposing to accept medical appointments abroad. Practitioners are cordially invited to apply to the Medical Secretary, B.M.A. House, Tavistock Square, W.C.1, for any information that may be available regarding overseas appointments in which they may be interested.

## Association Notices

ELECTION OF MEMBERS OF COUNCIL, 1928-29,  
BY BRANCHES OUTSIDE UNITED KINGDOM

NOTICE is hereby given that **Nominations** of Candidates for election as Members of Council by the corresponding Branches outside the United Kingdom in which there are vacancies (see below) for a period of either three two or one year **must be forwarded** in writing, so as to reach the Medical Secretary **on or before February 8th, 1928**.

Nominations must be signed by not less than three Members of any Branch in the Group and must be in the following form or in one to the like effect:

## NOMINATION FOR

(By one less than Three Members of the corresponding Branch)

We the undersigned hereby nominate  
of \_\_\_\_\_  
to be elected by the \_\_\_\_\_  
Branches as a Member of the Council of the Association for the  
period of \_\_\_\_\_ years.  
Signed \_\_\_\_\_  
Branches

Date 1927

The election where contests occur will be by voting papers containing the names of all duly nominated Candidates issued from the Head Office British Medical Association House, Tavistock Square, London W.C.1 to each member of each Branch in the Group.

A notice will be published by the Council in the JOURNAL as soon as possible after February 8th 1928 as to any Group for which only one candidate has been nominated and is thereby elected. Not later than the second week in June 1928 a notice will be published by the Council in the JOURNAL giving the result of the elections for those Groups where there have been contests.

GROUPOUT (ABOVE LISTED) OF BRANCHES OUTSIDE THE UNITED KINGDOM FOR ELECTION OF MEMBERS OF THE COUNCIL OF THE ASSOCIATION 1928-29 IN CASES WHERE THERE ARE VACANCIES

	Member of Council
Societal and Tamaritan Victorian Western Australian	1
New South Wales Queensland	1
N.Z. and Fiji	1
Holland and China Malaya	1
Burma (South Africa) Cape Eastern Cape Midlands Cape	1
Western Transvaal Gibraltar Gambia West Africa	1
India Madras Malabar Malabar and Northern Rhodesia	1
Natal Natal Natal Natal Natal Natal Natal Natal	1
Tanzania Territory Uganda Witwatersrand Zanzibar	1

ALFRED COX

Medical Secretary

October 2nd 1927

## BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH** CONVENTY DIVISION—A meeting of the Coventry Division will be held at the Coventry and Warwickshire Hospital on Tuesday November 1st at 8.30 p.m. The Chairman Dr W. Brazil will read a paper on medicine in lay literature.

**BORDER COUNTIES BRANCH**—A general meeting of the Border Counties Branch will be held at the Hevies Hotel, Keswick on Friday November 4th at 3 p.m. The Branch Council will meet at 2.30 p.m. Agenda: A British Medical Association lecture by Professor E. E. Gill on Liverpool on Anaphylaxis, the Schick and Dick tests and the method of immunizing diphtheria patient. Tea by invitation of the president.

**BORDER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION**—The next meeting of the Dumfries and Galloway Division will be held in the Dumfries and Galloway Sanatorium on Tuesday November 1st at 3 p.m. Dr Steven the medical superintendent will discuss the lay-out of the sanatorium and the new buildings will be visited. A demonstration will be given of the working of the new x-ray plant including the Potter-Buckley diaphragm and stereoscope. The use of the ultra violet light apparatus will also be shown comprising the carbon arc the tungsten arc and mercury vapour lamp. Tea will be supplied and the chairman (Dr Livingstone) has kindly undertaken to provide transport to and from Dumfries for members at a distance if early notice is given.

**EDINBURGH BRANCH SOUTH-EASTERN COUNTIES DIVISION**—The annual dinner of the South Eastern Counties Division will be held in the Royal Hotel, Galloway on Wednesday November 2nd at 7 p.m. when Dr N. P. Fairfax (Innerleithen) will preside. The special guests of the evening will be the Earl of Home, Sir Robert Philip (President of the British Medical Association) and Mr G. Thorneycroft (Lord Lieutenant of the County of Peebles). A large attendance of members of the Division is hoped for. Price of dinner tickets 12s. 6d. with an additional 2s. 6d. toward the cost of entertaining the official guests.

**KEY BRANCH DARTFORD DIVISION**—A general meeting of the Dartford Division will be held at King Edward Avenue Hospital, Dartford on Tuesday October 25th at 3 p.m. Dr Malcolm Donaldson, physician accoucheur to St. Bartholomew's Hospital will give the first of two lectures on ante-natal work.

**KEY BRANCH ROCHESTER CHATHAM AND CILLINGHAM DIVISION**—The quarterly meeting and dinner of the Rochester Chatham and Cillingham Division will take place at the Bull Hotel, Rochester on Wednesday October 25th at 7.30 p.m. The charge for dinner will be 6s. 6d. each, including wine. Morning dress.

**METROPOLITAN COLTIES BRANCH CITY DIVISION**—A meeting of the City Division will be held at the Metropolitan Hospital, King's Cross, London, on Thursday November 1st at 9.30 p.m. Dr W. Langdon Brown will read a paper on the not in a practical report.

**METROPOLITAN COLTIES BRANCH KENSINGTON DIVISION**—A general meeting of the Kensington Division will be held at St. Mary Abbe's Church, Kensington on Tuesday November 1st at 8.15 p.m. Agenda: An address will be given by Dr Christine Murrill on the need of a new form of cheaper nursing home accommodation for the poorer middle classes.

**METROPOLITAN COLTIES BRANCH LAMETH AND SOUTHWARK DIVISION**—The programme of meetings has been arranged for the coming year.

**NORTH BRANCH ALFRED COX**—A meeting of the North Branch will be held at the North Branch Club, 11, St. Paul's Church, London, on Tuesday November 1st at 8 p.m. Agenda: A paper will be read by Dr A. L. Davis on the clinical meeting.

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**SURREY BRANCH GUILDFORD DIVISION**—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford, on Thursday, November 3rd, at 4 o'clock. Paper by Messrs Butler and Sheaf: Surgical and other experiences in America. Tea served at 3.45 p.m.

**WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION**—The fourth of the series of post graduate lectures arranged under the auspices of the University of Birmingham will be given by Dr Emanuel on cardiac irregularities at the Herefordshire General Hospital on Friday, October 28th, at 3.30 p.m. Tea provided.

**YORKSHIRE BRANCH DEWSBURY DIVISION**—The following programme of meetings has been arranged by the Dewsbury Division:

Nov 4th	At the Batley Hospital	Professor W. E. Dixon (Cambridge)
	Tobacco Smoking.	
Dec 2nd	A Meeting at Dewbury and District Infirmary.	
Jan 13th	At the Batley Hospital	Mr L. R. Braithwaite (Leeds)
	Chronic Pains in the Right Iliac Fossa.	
Feb 3rd	At the Dewsbury Infirmary	Dr G. Cooper (Leeds)
	Radio therapy.	
Mar 6th	Annual Dinner.	
April 6th	A Meeting at the Batley Hospital.	
May 4th	Annual Meeting at the Dewbury Infirmary.	

There will be light refreshment at the close of meetings, which will be held at 8.15 p.m.

**YORKSHIRE BRANCH SHEFFIELD DIVISION**—A general meeting of the Sheffield Division will be held at the Church House, St. James Street, Sheffield, on Tuesday, October 25th, at 8.30 p.m. Agenda: Report of representatives—Dr Forbes, Dr Mackinnon, and Dr Brockman, and vote of thanks. A general meeting of the Division will be held on Friday, December 9th, at the University, Sheffield, at 8.30 p.m., when a British Medical Association Lecture will be delivered by Mr H. Beckwith Whitehouse, M.S., F.R.C.S., on practical applications of recent views on the menstrual functions.

**YORKSHIRE BRANCH WAKEFIELD, PONTEFRAC, AND CASTLEFORD DIVISION**—A clinical meeting of the Wakefield, Pontefract, and Castleford Division will be held by kind permission of Dr J. Shaw, Bolton, at the West Riding Mental Hospital, Wakefield, on Sunday, October 23rd, at 3 p.m.

## Meetings of Branches and Divisions

### METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION

The first clinical meeting of the Lambeth and Southwark Division was held at the Belgrave Hospital for Children, Clapham Road, S.W.9, on October 12th. Dr EDWARD CANTLEY, senior physician to the hospital, showed many interesting cases, including a boy, aged 9, suffering from rheumatic fever complicated by pericarditis, consolidation of left lung, and rheumatic nodules, a girl, aged 3, with rheumatoid arthritis involving both wrists and knees, and a boy, aged 6, who had recovered from an attack of meningitis in which the cerebrospinal fluid had contained 800 cells per cubic millimetre.

### SURREY BRANCH GUILDFORD DIVISION

A meeting of the Guildford Division was held at the Royal Surrey County Hospital, Guildford, on October 6th. Sir STCLAIR THOMSON delivered a lantern lecture on Lister and his work for humanity. At its conclusion a vote of thanks was accorded to the lecturer for his interesting address. Sir Stclair Thomson, in acknowledging the vote of thanks, offered to present to the hospital a coloured reproduction of a portrait of Lister, which was gratefully acknowledged by the CHAIRMAN.

### Annual Dinner

The annual dinner was held in the evening at the Angel Hotel, when Mr H. B. BUTLER presided. After the usual loyal toast had been honoured, Mr J. A. SHERRER submitted the toast of "The Mayor and Corporation of Guildford." He recalled the interest the Mayor had taken in Poor Law institutional work, and mentioned the coming transfer of it from the guardians to the corporation, in conjunction with other local authorities. He urged the fullest co-operation between the British Medical Association and those responsible for the civic part of the work. The Mayor, in acknowledging the toast, expressed his admiration for the gratuitous work done by local members of the medical profession both at the hospital and the Poor Law institution. He desired to express his thanks to Dr Pierce, medical officer of health for Guildford, and wish him good health in retirement. The toast of "The Guests," proposed by the CHAIRMAN, was responded to by Sir STCLAIR THOMSON and Dr PIERCE.

Mr F. W. SMALLPRICE proposed the toast of "The British Medical Association." He said that during the twenty-four years of his time of office as coroner he had had dealings with all medical men practising in the borough, and he desired to thank them for their great kindness. He had always had harmonious association with them. He suggested that the British Medical Association should consider the question of attendance on motor accident cases, which he said were brought to the Royal Surrey County Hospital for attention. They occupied a number of beds and took up a considerable amount of time of the medical staff, who had to attend them for nothing. He considered that if an individual could afford a motor car or motor cycle he could afford to pay something for the attention received. Dr ARNOLD LYNDON, in responding to the toast, said that the prestige of the British Medical Association with its 33,000 members and 320 branches and divisions never stood higher than it did at the present time. Its good work had been done by the Association to promote the cause of preventive medicine and Dr Lyndon mentioned as

instances of this the early publication of reports on mortality in connexion with childbirth and on rheumatic heart disease in children, which it was hoped would assist in ameliorating the present position.

### SUSSEX BRANCH BRIGHTON DIVISION

A combined meeting of the Brighton Division and the Sussex Law Society was held on October 7th, when Mr JOHN FLOWERS, barrister-at-law, gave an address on questions of procedure and evidence in criminal cases. Mr Flowers criticized the prevailing custom of a prisoner selecting, for his defence, more or less at random, any counsel who happened to be present in court. He contrasted favourably the criminal procedure in this country with that in others, and strongly advocated that the presiding judge at Quarter Sessions and Assizes should not learn beforehand the previous record of prisoners, which might militate against a fair and impartial summing up of the facts of the case. He disagreed with the idea of employing professional jurymen, and preferred the present jury system. He dealt at length with the admissibility of evidence tending to show that a prisoner had committed criminal acts other than the one mentioned in the indictment. Dr T. S. TAYLOR, J.P., opened the discussion and expressed his belief that police charges were nearly always justifiable. He was followed by Dr L. A. PARKS, Dr R. WHITTINGTON, and Mr W. C. HILLIER, the Chief Constable of Hove.

### YORKSHIRE BRANCH WAKEFIELD, PONTEFRAC, AND CASTLEFORD DIVISION

A meeting of the Wakefield, Pontefract, and Castleford Division was held at the Great Bull Restaurant, Wakefield, on October 6th, when Dr H. SCHOLEFIELD was in the chair. The Chairman referred sympathetically to the illness of Dr Gibson, and with pride to Dr Hillman's recent election as Mayor of Wakefield for the coming year.

Dr H. CHARLES CAMEROY then gave a British Medical Association Lecture on emuresis and the nervous child. This proved to be one of the very best lectures that the Division has had. It was good fortune to hear it. It was given in a delightfully charming manner, and was a masterly description of the nervous, introspective, anatomic vivacious child. The lecturer dealt with the matter under three headings: (1) scrutiny of the management of the child; (2) the state of its metabolism; (3) its physique. He considered that the nervous disturbances in children were in most cases due to an unstable metabolism—a ketonæmia—or low grade ketosis, as evinced by sweet smelling breath and ending in a bilious attack. The child was in a state of hypoglycæmia and half anesthetized, often waking in the night in this condition. Dr Cameron suggested sugar, preferably in the form of glucose (3 drachms of powdered glucose in a wineglassful of water, flavoured with fruit juice, four times a day). The further factors in treatment he considered to be restoration of confidence, suggestion (wearing of a horse made belt, consisting of a pad of ray substance such as salt or bismuth) and lying on a pad of sphagnum moss for the three purposes of suggestion, absorption and deodorization. In his opinion the public school dormitory was the very worst place for the pathological bedwetting child. He emphasized the fact that a child suffering from emuresis was as anxious about it as the parents and that this anxiety was one of the main factors in prolonging the condition. With regard to prognosis he was not optimistic.

Dr SCHOLEFIELD, STEVEN, and HILLMAN contributed to the subsequent discussion and on the motion of Dr WALKER, seconded by Dr DUFF, the lecturer was thanked for his address.

### YORKSHIRE BRANCH YORK DIVISION

A meeting of the York Division was held in the York Medical Society's Room on September 30th, when Dr G. W. GOSTLING was in the chair.

The HONORARY SECRETARY stated that he had been asked to read a paper at the Secretaries' Conference at the Annual Representative Meeting on the organization of an urban Division. With reference to police calls in the West Riding area he said that he instructed he had written to the Chief Constable accepting the suggested scale of fees and asking that mileage be paid at the rate of 1s. a mile each way over two miles, to this the Chief Constable had agreed. He had also inquired as to the ambulance expenses the Chief Constable had replied stating that the police were rarely called upon to pay these charges. After discussion it was decided to take no further action as regards the latter question.

Dr W. A. LVELLY (Charities Secretary of the Division) reported on the result of his appeal to members on behalf of medical charities. Several members expressed dissatisfaction with the result of the appeal and Dr Taylor suggested that a personal appeal to every individual practitioner might produce a better result. This idea was welcomed by the meeting and Dr Taylor promised to undertake it himself for one year. The HONORARY SECRETARY suggested that an endeavour should be made to persuade members to subscribe by means of bankers' order.

The HONORARY SECRETARY read correspondence between himself and Dr Haydock (medical officer to Messrs Rowntree and Co.) and the Medical Secretary with regard to a proposal that Messrs Rowntree's medical officer should attend such of their employees between the ages of 14 and 16 as seemed to require it in their own homes. After discussion it was unanimously agreed to refer the matter to the Executive Committee to enquire the feasibility of a scheme proposed by Dr Reynolds or any alternative proposed by Dr PETER MACDONALD on behalf of the Division expressed approval of Dr Haydock's action in approaching the Division on the matter.





WILKESDEN GENERAL HOSPITAL Harlesden Road NW 10—Physician in charge of Department for Diseases of the Skin  
WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL—Fracture and Orthopaedic Surgeon

CERTIFYING FACTORY SURGEON—The appointment at Snodland (Kent) is vacant. Applications to the Chief Inspector of Factories, Home Office, Whitehall S.W.1.

*This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.*

## APPOINTMENTS

BAIRD Dugald, M.B., Ch.B. Glas., Assistant Gynaecologist, Glasgow Royal Infirmary  
INGRAM J. T., M.D. Lond., Honorary Physician to the Dermatological Department, Leeds General Infirmary  
GORDON A. Knysvelt, M.B., B.Ch. Cantab., Honorary Consulting Pathologist, Victoria Hospital, Swindon  
McMILLAN, Duncan, M.D. Ed., Junior Assistant Physician at Crichton Royal Mental Hospital, Dumfries  
MOORE D. L. H. M.B., B.Ch. B.A.O. Dub., Certifying Factory Surgeon for the Exmouth District, co. Devon

## DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE  
Section of Odontology—Mon 8 p.m. Presidential Address by Mr. W. Rushton. Mr. F. A. Doubleday, Chronic Furunculosis of the Periodontal Membrane and its Treatment  
Section of Medicine—Tues 5 p.m. Dr. Vincent Lyon (Philadelphia) The Technique and Usefulness of Medical Biliary Drainage in Gall Tract Disease (illustrated by lantern slides and cinematograph film)  
Section of Comparative Medicine—Wed 5 p.m. Professor O. Charnock Bradley, What is Comparative Medicine?  
Section of Urology—Thurs 8.30 p.m. Presidential Address by Mr. Frank Kidd. Purpura of the Urinary Tract  
Section of Disease in Children—Fri, 4.30 p.m. Cases  
Section of Epidemiology—Fri, 8 p.m., Dr. E. W. Goodall, The Epidemic Constitution  
MEDICAL SOCIETY OF LONDON 11 Chandos Street W.1—Mon 8.30 p.m. Discussion: The Development of the Duodenal Tube and its Practical Value in Diagnosis and Treatment. To be opened by Dr. B. B. Vincent Lyon (Philadelphia)  
MEDICO-LEGAL SOCIETY 11 Chandos Street W.1—Thurs 8.30 p.m. Presidential Address by Sir W. H. Wilcock K.C.I.E., C.B. Recent Advances in Toxicology and Forensic Medicine  
ST JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY St John's Hospital for Diseases of the Skin Leicester Square W.C.2—Wed, 4.15 p.m. Clinical Cases. Discussion: Pimples to be opened by Dr. J. E. M. Wigley

## POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—Special Lecture at the Medical Society 11 Chandos Street, W.1, Mon 5 p.m. Surgical Hints. Open to the medical profession without fee. Royal Northern Hospital Holloway Road N.7. Special Surgical Demonstration Mon, 2 p.m. Special Medical Demonstration Tues 3 p.m. Open to the medical profession without fee. Central London Ophthalmic Hospital Judd Street W.C. Special Ophthalmic Demonstration Thurs 4 p.m. Free to medical practitioners. Royal Eye Hospital St George's Circus S.E. Series of Demonstrations on the Diagnosis and Treatment of Diseases of the Eye Mon to Fri 3 p.m. fee 41 ls. Loddington Green Children's Hospital and Victoria Hospital for Children Combined Course in Diseases of Children occupying all day. Sessions at each hospital alternately fee 45 ls. Chelsea Hospital for Women Arthur Street S.W. Course in Gynaecology, Operations and Lectures daily fee 45 ls. National Hospital Queen Square W.C.1 Two Months Course in Neurology. All information and tickets from the Secretary, Fellowship of Medicine 1 Wimpole Street W.1  
HOSPITAL FOR CHILDREN Great Ormond Street W.C.1—Thurs 4 p.m., Cornal Ulceration  
LONDON SCHOOL OF DERMATOLOGY St John's Hospital Leicester Square, W.C.2—Tues 5 p.m. Immunity and Anaphylaxis Thurs 5 p.m., General Principles of Treatment  
NATIONAL HOSPITAL Queen Square W.C.1—Mon Tues Thurs and Fri 2 p.m. Out-patient Clinics Mon 3.30 p.m. The Results of Head Injuries Tues 3.30 p.m. The Psychoneuroses Thurs 3.30 p.m. Demonstration of Methods of Testing the Eighth Nerve Fri 3.30 p.m., Diagnosis of Sensory Disorders  
NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales's General Hospital Tottenham N.15—Mon 2.30 to 5 p.m. Medical Surgical and Gynaecological Clinics Operations Tues 2 p.m. Special Demonstration of Ear, Nose and Throat Cases 2.30 to 5 p.m. Medical Surgical Throat, Nose, and Ear Clinics Operations Wed 2.30 to 5 p.m. Medical Skin and Eye Clinics Operations Thurs 11.30 a.m. Dental Clinics 2 p.m. Special Demonstration of Surgical Cases 2.30 to 5 p.m. Medical Surgical and Ear Nose and Throat Clinics Operations Fri 10.30 a.m. Throat Nose and Ear Clinics 2.30 to 5 p.m. Surgical Medical, and Children's Diseases Clinics Operations  
ROYAL INSTITUTE OF PUBLIC HEALTH 37 Russell Square W.C.1—Wed 4 p.m. Some Diseases conveyed to Man from Animals, and their Prevention  
ROYAL NORTHERN HOSPITAL Holloway Road N.—Tues 3.15 p.m. Demonstration of Medical Cases.  
SOUTH WEST LONDON POST GRADUATE ASSOCIATION St James's Hospital Ouseley Road Balham S.W.12—Thurs 4 p.m. Pneumococcal Infections in Childhood  
WEST LONDON HOSPITAL POST GRADUATE COLLEGE 10 a.m. to 1 p.m. Genito-urinary Operations. 2 p.m. Surgical Wards Gynaecology. Tues 10 a.m. to 1 p.m. Medical Ward Visit Demonstrations in Venereal Diseases 2 p.m. Medical Wards Throat Nose and Ear Department Wed 10 a.m. to 1 p.m. Children's Medical Out-patients Medical Ward Demonstration in Medical Pathology 2 p.m. Surgical Wards, Eye Department Thurs 10 a.m. to 1 p.m. Neurological Department Demonstration of Fractures 2 p.m. Eye and Genito-urinary Departments Gynaecological Ward Fri, 10 a.m. to 1 p.m. Gynaecological

Operations Dental Skin, and Electrical Departments 2 p.m., Throat, Nose, and Ear Department Sat, 10 a.m. to 1 p.m. Bacterial Therapy Department Children's Medical Department Daily Operations Medical and Surgical Out-patients at 2 p.m.  
JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH St Andrews—Tues, 4 p.m., Dyspepsia as met with in General Practice  
MANCHESTER ROYAL INFIRMARY—Tues 4.15 p.m. Some Medico-legal Cases Fri, 4.15 p.m., Microscopy of the Living Eye  
SHEFFIELD UNIVERSITY POST GRADUATE CLINICS—At Royal Hospital Fri, 3.30 p.m., Clinical Cases

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
TAVISTOCK SQUARE, W.C.1

### Departments

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Telephone numbers of British Medical Association and British Medical Journal Museum 9861, 9862, 9863, and 9864 (internal exchange, four lines)  
SCOTTISH MEDICAL SECRETARY 6 Drumsheugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 24361 Edinburgh)  
IRISH MEDICAL SECRETARY 16, South Frederick Street Dublin (Telegrams Bacillus Dublin Tel 4737 Dublin)

### Diary of the Association

- OCTOBER
- 23 Sun Wakefield, Pontefract and Castleford Division Clinical Meeting West Riding Mental Hospital 3 p.m.
- 25 Tues Dartford Division King Edward Avenue Hospital Dartford Dr. Malcolm Donaldson on Ante Natal Work 3 p.m. Sheffield Division Church House St James Street 8.40 p.m. Shropshire and Mid Wales Branch Annual Meeting, Royal Salop Infirmary Council Meeting 5.15 p.m. General Meeting 6 p.m. Annual Dinner, Music Hall Shrewsbury, 7.30 p.m. South West Essex Division Walthamstow Hospital Dr. C. O. Hawthorne on the *British Pharmacopoeia* Status and Values, 3.30 p.m.
- 26 Wed London Insurance Acts Prescribing Subcommittee 2.30 p.m. Croydon Division Croydon General Hospital Lecture Demonstration by Dr. P. W. Hamond on Medical Electricity 4 p.m. Oxford Division Radcliffe Infirmary Oxford Professor F. R. Fraser on Cardiac Dyspnoea 2.30 p.m. Rochester Chatham and Gillingham Division Meeting and Dinner Bull Hotel Rochester 7.30 p.m.
- 27 Thurs London Psycho Analysis Committee 2.15 to 4.30 p.m.
- 28 Fri London Joint Research Subcommittee 2.30 p.m. Hereford Division Herefordshire General Hospital Fourth Postgraduate Lecture by Dr. Emanuel on Cardiac Irrigations 3.30 p.m. Lambeth and Southwark Division Lambeth Hospital Brook Street, S.E.11 Dr. A. L. Baily on Poor Law Administration 4 p.m. Tyneside Division Dance at the Waverley Ballroom Whiffy Bay West Somerset Branch Taunton and Somerset Hospital B.M.A. Lecture by Dr. Eric Pritchard on the Principles of Nutrition in the Feeding of Infants and Children 4 p.m. Annual Dinner County Hotel, Taunton, 7.15 p.m.
- NOVEMBER
- 1 Tues London Library Subcommittee 2.30 p.m. City Division Metropolitan Hospital Kingsland Road E. Dr. W. Langdon Brown on the Modern Aspects of Nephritis 9.30 p.m. Coventry Division Coventry and Warwickshire Hospital Dr. W. Brazil on Medicine in Lay Literature 8.30 p.m. Dumfries and Galloway Division Dumfries and Galloway Sanatorium The Medical Superintendent will describe the building and there will be demonstrations 3 p.m. Kensington Division St Mary Abbott's Parish Hall Kensington Dr. Christine Muirrell on Nursing Home Accommodation for the Poorer Middle Classes 8.45 p.m.
- 2 Wed London Propaganda Subcommittee 2.30 p.m. South Eastern Counties Division Edinburgh Branch 7 p.m. Dinner Royal Hotel Galashiels 7 p.m. Sunderland Division Monkwearmouth Hospital Sunderland, 9 p.m.
- 3 Thurs Childford Division Royal Surrey County Hospital Messrs Butler and Sheaf on Surgical Experiences in America, 3.45 p.m.
- 4 Fri Border Counties Branch Keswick Hotel Keswick B.M.A. Lecture by Professor E. E. Glynn on Anaphylaxis, the Schick and Dick Tests and the Method of Immunizing Diphtheria Patients 3 p.m. Branch Council 2.30
- 11 Fri London Science Committee 2 p.m. London Joint Science and Organization Committee 4 p.m.

## BIRTHS, MARRIAGES, AND DEATHS

*The charge for inserting announcement of Births, Marriages, and Deaths is 7s, which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

### BIRTH

DAVIES—On October 28th 1927 at Colchester to Eileen Stella (nee Goodwin) wife of A. Glen Duncan M.D. a daughter

### DEATHS

BRIDGES—On October 6th, 1927 at 2, Courtfield Road S.W.7 Mrs. Constance (nee Scott) the devoted wife of E. Chittenden Bridge M.D. Dow—On October 14th at 9 The Crescent Plymouth Edith M. Dow M.B. B.S. eldest daughter of Dr and Mrs Elgar Down JONES HUMPHRIES—On October 2nd, 1927 at Abercromby Road Montgomeryshire Harry Merick Jones-Humphreys aged 68

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY OCTOBER 29TH 1927

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## ANNUAL PANEL CONFERENCE

### NEW DISCIPLINARY MACHINERY APPROVED

*Thursday October 20th 1927*

THE Annual Conference of representatives of Local Medical and Panel Committees was held on Thursday October 20th in the Great Hall of the British Medical Association House, Tavistock Square, London. There was a very large attendance, practically all the insurance areas in England and Wales were represented and only a few of the remote Scottish areas were without a representative. The chair was occupied by Dr L. K. LE FLEMING of Wimborne Dorset who, in the course of the proceedings, was again unanimously elected Chairman of the Conference for another year. He was supported by Dr H. G. DAM, Chairman of the Insurance Acts Committee. The consideration of the report of the Committee (STILEMENT, *British Medical Journal* August 26th 1927) took almost the whole of the day. It was described by Dr DAM as one of the most important reports in a domestic sense, ever issued since the Committee was formed.

At the outset the Conference, by standing in silence for a few moments signified its sorrow at the death of Dr T. RIDLEY BAILEY, for many years the directly elected representative of the Staffordshire and Shropshire group of insurance areas upon the Insurance Acts Committee.

#### *Constitution of Insurance Acts Committee*

##### *Re-constitution of the Committee*

Dr DAM explained that after prolonged consideration the Committee, obeying last year's instruction to consider the grouping of Panel Committees for election of direct representatives to the Insurance Acts Committee, had found that the existing arrangement could not suitably be modified even with the suggested addition of two other members. At present there was one representative on the Committee to between 850 and 1,000 insurance practitioners. To make Wales a separate entity by sharing off Cheshire leaving Wales with the two members for itself would mean that in Wales there was one member to 650 practitioners and to introduce Cheshire into the scheme of English groups would mean a very large regrouping.

Dr L. J. PICTON (Cheshire) explained that as it was bracketed with Wales, Cheshire was scarcely likely ever to have a member. The Welsh Committee naturally preferring to have two Welsh members especially in view of the differences in insurance administration between Wales and England. But it was hard on Cheshire to be perpetually disfranchised. Cheshire was content to be grouped with any set of English counties. It was for a time grouped with Lancashire and if that was not again feasible it was willing to form part of a group consisting of Staffordshire, Shropshire and perhaps Derbyshire. He moved that Wales should have separate representation in the scheme or grouping as already it had in fact.

Dr DAM said that he could see that Wales was better taken as a separate entity and if that was the desire of the Conference he was prepared to ask the Committee to consider the most equitable scheme for fitting in Cheshire with some English constituencies.

The Conference agreed to this arrangement.

#### **DISCIPLINARY PROCEDURE**

The Conference then came to the principal subject on the day's agenda on a motion to approve the portion of the Insurance Act Committee's report relating to the proposed new disciplinary procedure.

Dr DAM said that the Committee was putting forward a scheme which while it was not ideal, did provide he thought for most of the difficulties which had been experienced in relation to the question of discipline. In this matter the Committee had been negotiating with the Ministry, both sides had made suggestions, and the scheme was the result of prolonged discussion. In considering any disciplinary machinery it must be remembered that if only comparatively small numbers or persons were employed there should be no need for such machinery at all but where there were many thousands of members of a profession scattered all over the country, taking part under contract in a service, it became necessary to establish certain rules under which that service could be

carried out. If the ordinary conditions of employment were available, whereby the heads of the service themselves could choose and dismiss those employed under it, the need for such machinery again would not arise, and regulations in that event need only be very few. But which the national insurance scheme was started the profession obtained the right of any practitioner to go on the panel if he wished, and Insurance Committees in taking practitioners on the panel were left without choice, while a practitioner could only be removed from the panel after a prolonged and difficult procedure. This privilege meant that the profession had to accept certain disciplinary arrangements. If a practitioner could be engaged and dismissed at will the ordinary courts of the land would be sufficient to deal with breaches of contract or irregularities.

As matters stood (Dr. Dun continued) the question of discipline could be dealt with in one of two ways: either, by agreement with the Ministry, inside the scheme, or, again by agreement with the Ministry, outside the scheme—that was to say, through the ordinary courts, and he understood, from conversations with the Ministry, that if the profession was strongly in favour of the latter method the Ministry would offer no serious objection. That would get rid of the agitating question of a final appeal from the decision of the Minister. But if a doctor who broke his insurance contract was to be sued in the county court or other court of law, with the possibility of appeal up to the House of Lords, it would mean publicity in all cases in which the action of a doctor was called in question. On the other hand, if the disciplinary machinery was to be kept inside the service, the Minister said—and the speaker sympathized with his position—that his final decision ought to be accepted and that he could not consent to a liability to appeal before a court to defend his decision, though, of course, the Minister could not prevent an appeal on the score of any irregularity of procedure, or that his decision was *ultra vires*.

The Committee then set itself to consider what were the disadvantages which experience showed to exist under the present scheme. The hearing of complaints by Medical Service Subcommittees and the action taken thereon by Insurance Committees was well understood, but from this stage to the promulgation of the Minister's decision there was a gap, and with regard to what took place during these intervening stages the profession had little knowledge and no control. When the scheme was initiated the superior body was not the Minister of Health but the Insurance Commissioners, and representations by Insurance Committees were dealt with by that body, whose members were known, and whom the profession was content to accept. But with the advent of the Minister of Health, who had many other duties besides this, it was obvious that he must delegate his responsibilities with regard to a decision on disciplinary cases in National Insurance, and the profession had no official knowledge of the manner in which that delegation was done. He hoped it would be found that the scheme put forward that day provided for the bridging of that gap. It provided for the association of the medical profession with the machinery from the beginning right up to the final recommendation to the Minister. The duty of the representatives of the profession at the various stages of the proceeding would be to see that fair play was done. The scheme provided for what Mr. Lloyd George said originally that the profession would get—the judgement of the doctor by his peers. In no case would the civil service be able to deal with disciplinary decisions without the advice of a representative of the profession in practice.

The difficulty in securing this modification had been the administrative one, but Sir Arthur Robinson, the First Secretary of the Ministry, had said in effect, "I can quite see that under the existing machinery we may be setting up a standard of medical ethics or behaviour or medical treatment of which you have no knowledge and of which you might disapprove. On those grounds we are prepared to concede that the doctors who are working the service should have the right to be concerned in the consideration of all cases in which there is a medical issue." That did not include all cases of complaint. It definitely left aside those cases in which there was no professional issue—namely, the charging of fees and the wrongful issue of

certificates, is to dates, for instance—though if the complaint with regard to a certificate involved any professional question it would be considered under these new arrangements also.

Dr. Dun then sketched the new procedure which would follow a complaint. The time limit in the Regulations for making a complaint had been in certain cases practically disregarded. If an Insurance Committee should have an officer hostile to the medical service—and unfortunately there were such committees and such officers—it was likely that a complaint would be admitted after practically any lapse of time. But it had now been finally agreed that if a complaint was made after the period of six weeks it might, with the approval of the Medical Service Subcommittee, be heard within two months, but after two months it could not be heard at all except with the consent of the Minister, and to obtain such consent the subcommittee or the complaining party would have to satisfy the Minister that there had been reasonable grounds for delay, and the practitioner would also be given the same opportunity of making representations against an extension of the time. That, he thought, safeguarded the position in regard to a time limit for complaints. There were risks, again, in which a complaint was couched in indefinite terms, and if during the hearing any fresh cause of complaint was discovered it was proceeded with. The Ministry had now agreed to inform Insurance Committees that complaints should be as specifically stated as possible. There might be some disappointment that this was not made a definite regulation, but it was not advisable to press to have it made absolute, for this would mean that in most cases it would be necessary for the clerk of the Insurance Committee to hear by himself the person or society complaining, and he would thus be enabled, if he was so inclined, to put leading questions, which might result in more serious charges. Again, the position of the clerk of the Insurance Committee at the hearing itself had been considered. There were clerks who thought it their business to act as a sort of prosecuting counsel against the doctor. That was an entirely irregular procedure, but it could only happen with the consent of the doctors who were sitting on the Medical Service Subcommittee, and if they were not prepared to prevent clerks taking up that attitude it could not be brought about by regulation. There was one set of circumstances in which the clerk might consider himself entitled to act in that way—namely, when the complaint was put forward by the Medical Benefit Subcommittee or the Insurance Committee itself. It had been agreed with the Ministry that Insurance Committees should be informed that the appearance of their clerk as "counsel" was not satisfactory, and that the clerk should act only in certain ways as laid down. Again, it had been found in certain cases that clerks submitted to the Insurance Committee the reports of Medical Service Subcommittee proceedings which the subcommittee had not properly considered. This was an unbusinesslike proceeding, but, as in the other matter just mentioned, it could only happen with the consent of the medical members of the subcommittee. In the speaker's own recent reports were first submitted to all members of the subcommittee present, and if they disapproved in any respect the report had to be reconsidered before it was presented to the full committee. It was proposed now that the best shorthand notes available should be taken as the basis of the preparation of the reports, and that the report must be agreed to by the subcommittee itself.

With regard to the powers of Insurance Committees, these committees under present Regulations could do only four things on a Medical Service Subcommittee's recommendation: they could remove patients from the doctor's list, limit his list, recommend to the Ministry that a name be deducted, or recommend that the doctor be taken off the panel. It was now proposed that in addition they should have the power of censuring the doctor. In many instances the case might finish there, instead of a recommendation that money be withheld. If the recommendation went further the papers were sent to the Ministry, and the practitioner was advised of the findings of the Insurance Committee, was furnished with the report of the subcommittee, and was informed that he might appeal if he

the finding within a given period. If he appealed the appeal had hitherto been heard by one or two officers of the Ministry, in agreement had now been obtained from the Ministry that in future a doctor nominated by the profession should be associated with the officers of the Ministry who heard the appeal. The appeal was not a rehearing, it was an appeal for reconsideration on the evidence already given, and it was not open to either party on an appeal to introduce new evidence relating to the case. If a practitioner did not appeal within the given time he was informed that the Minister was considering the report of the committee, and was asked if he desired to make oral or written representations. If he desired to make representations by word at a meeting in the office of officers of the Ministry attended for this purpose, and it had been arranged that when such representations were made a doctor, again nominated by the profession, should be present.

The case then went to the Minister for consideration as to what should be done, and this was where the new body would function. All cases in which there was a protest would be referred to a joint Advisory Committee consisting of the Chief Medical Officer and two other officers of the Ministry and three medical men chosen from a panel which was nominated by the profession itself. That committee of six would consider the report of the Medical Service Subcommittee and of the Insurance Committee, the representations of the practitioner, and the findings of the appeal tribunal, and would advise the Minister as to what action should be taken. The Minister had then to promulgate his decree. Of course he was not compelled to accept the finding of this committee, though as a matter of practice and business it would be found that he inevitably did so. It did not then the scheme had failed and some other method must be devised. With regard to cases heard by a committee of inquiry where the representation was that the practitioner should be removed from the panel it had been stated that the functions of that committee were improperly curtailed and that it had no power to hear certain evidence. He wanted to make it plain that that committee was in a position to hear any evidence it considered proper to the particular charge. If a doctor was charged with a specific breach—that for instance on a certain occasion he did not visit a particular patient—and it had been admitted as evidence that he was in the habit of not visiting his patients regularly, such improper admission of evidence would be a ground of appeal as it would in a similar case in the courts of the land, but if the charge was a general one—such as that he was repeatedly intoxicated—it would be quite proper to hear evidence as to general character. The committee of inquiry advised the Minister as to the facts found and the inferences to be drawn from those facts. There had been cases in the past in which the evidence had not been considered to be sufficiently conclusive to justify a man being taken from the panel but he had been found at fault, and the Minister had decided to withhold money. Last year partly as a result of the recommendation of the Royal Commission, it was agreed that where the Minister did not decide to take a man off the panel he should not proceed to a less penalty without rehearing the case. The Minister intended that the reports of committees of inquiry should go to the joint Advisory Committee to consider whether there should be removal from the panel or not so that even apart from a minor penalty, on the major question the machinery of the joint Advisory Committee would be used.

If this new procedure were approved the Insurance Acts Committee would suggest that for a certain period of years the profession should forego the claim to have an appeal to the courts. The Committee felt that if a scheme was devised which seemed fair and just from beginning to end it should have a sufficient trial and that any question of appeal to the courts on which the Conference had voted last year should in the meantime be held over.

There were a number of minor points in the scheme which might be mentioned, especially with regard to safeguarding the procedure on initiation of complaints and as to the person who might so initiate them. The Minister's powers also in initiating complaints were limited to cases concerning the keeping of records and medical reports.

With regard to the joint Advisory Committee, its proceedings would take place in private but of course it would be the duty of the members of that committee which were nominated by the profession to see that nothing took place which might be unfair to the man against whom the charge had been laid. The committee would refuse to admit any fresh evidence of any sort for or against the doctor. If the representatives of the profession on the committee found that in practice things were happening at that stage of the proceedings of which they disapproved their course would be to come back to the Insurance Acts Committee which had nominated them, and intimate their recommendation. It would then be known that the scheme now put forward had proved unsatisfactory, and that some other solution must be sought. But if proper representatives were selected and if the committee functioned in the way which was reasonably to be expected, the profession would get all that it required in the way of safeguards and the disciplinary machinery would at last be placed upon a satisfactory footing. (Applause)

#### *The Right of Appeal to the High Court*

Dr F R TUNTON (Wolverhampton) said that his Panel Committee was entirely satisfied with the proposed arrangements and safeguards but a strong opinion was expressed that the right of appeal to the High Court against decisions of the Minister should remain. The Minister was not in a position of a judge who had to act upon the finding of a jury, he would have a joint Advisory Committee but he could override its recommendations. Such a thing might be said to be most unlikely, but, after all there was nothing to prevent it.

Dr L J PICTON (Cresline) pleaded that the decision of last year's Conference to the effect that there should be an appeal to the court in certain cases be reaffirmed. Time after time the Minister of Health had told the profession that legally and constitutionally it was quite impossible for such right of appeal to be conceded but now the Minister admitted that an appeal was perfectly possible. Either insurance practitioners were State servants or they were not. If they were not State servants they enjoyed the ordinary privileges or citizenship including the right to have their appeals heard by the courts. To his mind there was no essential difference between the practitioner's contract with the Insurance Committee and a builder's contract with the county council. In the latter case in the event of a dispute matters went to arbitration but there was usually a provision in the arbitration procedure admitting the right to appeal. The machinery which Dr Dain had just described might be regarded as arbitration machinery and added to that machinery there should be the right of appeal to the courts from the Minister's final decision. Such appeal would very rarely be made but the fact that it was there would be the greatest possible safeguard against the abuses which the profession feared and of which in the past it had had experience—namely those following from the sitting aside by the Minister of the decisions of the people who openly had been admitted to advise him and his acceptance of the advice of other people whose identity was unknown to the profession or the public. The publicity of the local court had been dreaded but there was no need for these matters to go through the local court. The builder's contract did not go through that court. Dr Dain had said that if the scheme went wrong the medical members of this joint Advisory Committee would resign and yet he had also said that this scheme must be given a number of years' trial. In that case what was the point of resigning?

Dr H S BEADLES (West Ham) thought that the Insurance Acts Committee—or the subcommittee which had conducted the negotiations—was to be heartily congratulated upon what it had attained. To very large numbers of insurance practitioners it would seem wholly satisfactory but there were the others who still wanted to have possible resort to legal tribunals. He thought it a mistake to propose that the scheme be unaltered for three years.

Dr A FOSTER (Worcester) pointed out that judges were continually complaining about the increasing powers of



Government departments Lord Haldane some years ago appointed a committee to go into this subject, but so great was the opposition from the departments themselves that the subjects of the inquiry were greatly reduced and a very minor report, embodied in a bill now before Parliament, was forthcoming. If the judges could not beat the Government departments, how was the profession to get into the courts? At the present moment it did not seem possible to go beyond the department, which declared itself responsible to Parliament. In a few years' time it might be possible to do more, but for the present he thought the course suggested by the Insurance Acts Committee was the best.

Dr DUN desired to make the position of the Insurance Acts Committee quite clear. On the instructions of the Conference last year the Committee had explored with the Ministry certain procedure. As a result it brought forward the present scheme. The Conference also passed other resolutions, of which that referred to by Dr PICTON was one. But he asked the Conference to accept the scheme he had explained, without reaffirming any claim to appeal to the courts. He did this because he believed that a great improvement in the present machinery had been obtained ("Heu, heu"). It would be extremely difficult to get an appeal allowed on the merits of the case, at any rate until the judiciary had made the position of the courts more powerful as against administrative departments. He did not want the Conference to pass a resolution which stood in the name of Wolverhampton, to demand the right of appeal to the High Court, on the other hand, he did not want it negatively, because if, after a period of trial, this scheme should prove unsatisfactory, it would be awkward for the Conference to reverse a previous decision of this kind. Let matters be left as they were for three years.

Dr TURTON, on behalf of Wolverhampton, withdrew his resolution which demanded the right of appeal to the High Court.

Dr PICTON still desired the Conference to reaffirm its decision of last year, that there should be an appeal to the Court in the following cases: (1) irregular proceedings, (2) alleged vindictive penalty, and (3) when a common law action by the patient would normally lie, and that the question of appeal in other cases be referred to the Insurance Acts Committee. It was vital to maintain this right if the distinction between a State service and a service of medical citizens was to mean anything at all.

The CHAIRMAN thought the feeling of the Conference was with Dr DUN in saying that now was not the time either to reaffirm or to deny the view of the profession that there should be access to the courts (Applause). If that was the sense of the Conference he assumed that Dr PICTON would be willing to have this resolution withdrawn in the same way as that of Wolverhampton.

Dr PICTON bowed to the feeling of the Conference, and withdrew the resolution he had tabled on the subject.

#### *Criticisms of the Scheme*

Dr GORDON WARD (Kent) thought the proposed procedure open to certain objections. It left the question as to guilt and penalty in inquiry cases with persons who had not heard the evidence, and it permitted evidence to be brought against a practitioner or an Insurance Committee of which neither party was made aware. The position as to discipline was not the same as last year. Owing to arrangements with the chemists, the chances of a practitioner falling a victim to the disciplinary procedure were greater than before. Moreover, the profession had to contemplate the likelihood of a Government coming into power which would introduce reform by administrative action. There was the more need for care, therefore, in all disciplinary procedures. Dr DUN had said that the Minister must obviously delegate his duties in regard to a decision or disciplinary matters. This was not true. The famous case of the £1,000 fine was one in which the Minister did not delegate. It was open to a Minister to turn down his department. Again, the Insurance Acts Committee was apparently content that the judgement should be given by persons (the joint Advisory Committee) who had not heard the evidence or seen the witnesses, and had only written evidence before them. If the Minister

must delegate his powers, he could surely delegate them to a judicial body, which the joint Advisory Committee was not. Dr DUN had said that the medical members of that committee could resign if anything happened at which they did not approve. But how were they to be appointed? A list was to be nominated from which the Minister would make the selection—but not by rotation, he would not pick any whom he did not want. Dr DUN had said that the new committee would hear no fresh evidence. But the old committee which intervened between the Inquiry Committee and the Minister did hear fresh evidence, and the Conference was told, for the first time that morning, that that was not to happen in future. This meant, he presumed, that evidence of character would not be admitted. He saw no reason why, apart from the confirming power of the Minister, the proceedings should not be undertaken by the Inquiry Committee, which heard the evidence and saw the witnesses. The proposal that the state of affairs now set out should remain unquestioned for several years also seemed to him unwise.

Dr BRACKENBURY wished to draw the attention of the Conference to two big things which had been secured by this proposed arrangement, and which he hoped, without any substantial amendment, would be accepted, not as a makeshift which was sure to fail, but as a successful working scheme. Up to the present moment there had been a period in these disciplinary proceedings in which the profession had been in the dark. So far as the Medical Service Subcommittee and the Insurance Committee were concerned, the profession knew what was going on and had its representatives present, but from that time onwards until the decision was promulgated the profession did not know what was proceeding. By this new machinery, however, representatives of the profession would be present throughout, and what went on in the Ministry would be as well known to representatives of the profession as what went on before the case reached the Ministry. The second gain was even greater. The medical profession would not tolerate professional matters being decided by those who were not members of the profession, and under the existing arrangement there was the possibility, at any rate, of civil servants coming in and passing judgement upon the way in which professional work was done, whether a certain treatment should have been adopted, and so forth. Under this new arrangement, however, it had been secured that a purely professional tribunal should judge upon these matters. Having secured these two things, he hoped that the profession would accept the arrangement and endeavour to make it work.

Dr DUN said that Dr WARD's statements were extremely inaccurate. He had said, "It [the new arrangement] leaves the question as to guilt and penalty in inquiry cases with persons who have not heard the evidence." It did nothing of the sort. The "guilt" was decided by the Medical Service Subcommittee or the Committee of Inquiry in every case. He had further said, "It permits evidence to be brought against a practitioner or an Insurance Committee of which neither party is made aware." That was exactly what it did not do. The whole object of the joint Advisory Committee was to prevent the possibility of that being done. If, as the scheme provided, representatives of the profession were there to see that that was not done the efficiency of the scheme must depend upon those representatives.

Dr PICTON pointed out that Dr Brackenbury had just stated that he did not wish professional matters to be judged by civil servants, who were lay people, nevertheless, last year Dr Brackenbury was responsible for forming the resolution, which the Conference carried, involving the submission of questions regarding the quality of treatment to the ordinary courts. Dr PICTON was anxious that the decision of the Conference, properly taken last year, should not be reversed, altered, or vitiated.

Dr GORDON WARD said that Dr Brackenbury had used a phrase suggesting that the profession had now seemed light in darkness. But had not Dr DUN said that the members of the joint Advisory Committee would not be at liberty to divulge what took place there? And though they were nominated by the profession, it was not the profession which chose them.

A resolution by Dr. Cardon Ward objecting to the proposed disciplinary procedure on the grounds he had outlined in his speech received a very little support in the Conference and was overwhelmingly rejected.

Dr. H. J. CARDWILE (London) moved:

That the panel of practitioners from which it is proposed to select a disciplinary committee to sit in the Ministry of Health shall be drawn by lot annually by the Insurance Acts Committee and be submitted to the Annual Conference for confirmation or amendment.

Dr. DAVIS thought that the executive might be entrusted with the duty of choosing these members which was an undesirable one for a large Conference. It was of fundamental importance that the selection should be strong and impartially minded. It might not be expedient for the Committee to take place annually. He would suggest a three years' appointment with the possibility of renewal.

Dr. CARDWILE withdrew his motion.

#### Model Rules of Insurance

Dr. DAVIS said that some of the matters relating to the Insurance, although of fundamental importance to the practitioners, could not well be dealt with in the Regulations but they should as far as possible be embodied in the Model Rules of Procedure of Service Subcommittee. They were as follows:

- (1) That the charges should be pecuniarily laid.
- (2) That the clerk should not act as the solicitor or advocate for the Committee.
- (3) That the Service Subcommittee reports should be prepared by shorthand notes and be submitted for approval to the panel at the hearing.
- (4) That the fact that the finding of a Service Subcommittee which is considered by the medical member present to be correct on a question purely professional has been taken as an advisory to their unanimous advice should be recorded.
- (5) That the recommendations of the Subcommittee should be embodied in the naming of a monetary fine if any a suggestion in paragraph 17 (xx) of the Insurance Acts Committee Annual Report.

He brought forward this as a resolution.

Dr. F. BRUCE (Brighton) moved in amendment that the Insurance Acts Committee should be instructed to prepare the reduction of the matters above set out in the Rules of Procedure or that in some other manner they should be made obligatory. Dr. R. R. LUTHER (London) seconded.

Dr. DAVIS pointed out that one of these things could not be made obligatory.

Dr. BRUCE still thought that the Committee might "grip" up the Ministry and he said that the Ministry was not willing to accept of recognition and thus or that might be induced to lay it down as a definite instruction. The Brighton amendment was lost and a further amendment by Dr. J. HOLMES (Bury) was also lost. The all-England medical union given before the Medical Service Subcommittee should be of such a nature as to withdraw its understanding that the Insurance Acts Committee would look into the question why a statement of the oath was not obtainable in England although it was in Scotland.

The motion of the Insurance Acts Committee that the matters specified be embodied in model rules of procedure was then adopted.

#### Procedure in Inquiries and Appeals

Dr. CARDWILE (London) moved to oppose an appeal procedure suggested as one alternative in the Insurance Acts Committee's report—namely to allow an appeal in examination to be heard at the end of the hearing of the appeal. He considered that this would preclude a practitioner from any further opportunity, where an appeal was decided against him, of making oral representations to the Ministry in mitigation of penalty.

Dr. DAVIS said that at a discussion with officials of the Ministry and also with the solicitor to the British Medical Association it appeared that the procedure to which Dr. Cardwile objected was frequently followed already and the legal view was that it did not prejudice the appellant. On balance it was better that anything to be urged in mitigation should be so urged at the end of the appeal rather than that the appellant should be put to the trouble of having to appear for this purpose on a subsequent occasion. If the Conference desired it there was no reason why either method should not be available.

Dr. CARDWILE expressed his astonishment at hearing that

a solicitor approved a plea for extension being made before a court which had not yet found a man guilty.

His motion, however, was lost. A motion by East Smith suggesting that with a view to eliminating trivial cases the chairman of the Medical Service Subcommittee should consult the chairman of the Local Medical Committee before a charge was definitely formulated was withdrawn. Dr. DAVIS urged that the present proposals seemed likely to work satisfactorily without this addition. Dr. CARDWILE also proposed that any additional issue raised at the hearing at a complaint before the Medical Service Subcommittee should not be admitted but should form the subject of fresh charges. No doubt in a number of these cases no such change would be formulated at all. Dr. DAVIS thought that the acceptance of this amendment would give a new charge being dealt with even though the doctor himself wished there and then to rebut it. Dr. CARDWILE pointed out that many medical men when called upon to defend themselves had little idea how to proceed and the necessity ought not to be placed upon them of deciding on the spot of the moment whether they should lift the new charge immediately to be met. This amendment was also lost.

Dr. CARDWILE had a further amendment seeking to limit the functions of clerks to Insurance Committees in respect of all cases investigated by the Medical Service Subcommittee but Dr. DAVIS thought the procedure laid down in the proposals of the Insurance Acts Committee was a sufficient safeguard and he said that the medical members of the Medical Service Subcommittee must be trusted to do their part in preventing any usurpation of the role of prosecutor by the clerk. The amendment was lost.

#### The Motion of the Insurance Acts Committee

Dr. CARDON WARD (Kent) in bringing forward a motion that no decision on disciplinary procedure should be finally agreed by the Insurance Acts Committee without reference to the Panel Conference protested against such statements in the report of the Committee as that "The Committee has accepted these statements of the Minister as equitable." It had no business to accept them. The Insurance Acts Committee weakened itself by not keeping in closer touch with the Conference. But there was a more serious matter. Some time ago he was representing his Panel Committee in the matter of a claim that a certain service—treatment by carbon dioxide—was not out of the range of medical benefit and the medical witness against his claim was an eminent member of the Insurance Acts Committee. He was extremely wise that any member of the negotiating body should put him in a position in obligation to the Ministry of giving evidence. It was true the Committee could decide how many members of the Insurance Acts Committee were paid by the Ministry and how it might be that a panel member (found one) withdrew.

Dr. DAVIS said that Dr. Gordon Ward had been even more offensive than he had ever known him (found applicant). He had used the members of the Insurance Acts Committee were paid by the Ministry. It was a false and most offensive accusation. If a medical man who happened to be a member of the Committee was called upon to give evidence on a matter on which he had some knowledge he did so as a private individual and entirely on his own responsibility. The speaker only resented the reputation that the Insurance Acts Committee was in the pocket of the Ministry.

A REPRESENTATIVE asked that the Conference should rest upon a withdrawal by Dr. Ward of his false statements.

Dr. Ward who is again greeted by cries of "Withdraw!" said that he would like to put a list of payments received by members of the Insurance Acts Committee from the Ministry. He thought it a pity that a very prominent member of the Committee should have given evidence against his (the speaker's) Panel Committee and have allowed himself to be misled in that manner.

Dr. BRUCE said it was clear to him that Dr. Ward had a particular incident in mind. There was an inquiry in which Kent was concerned as to whether a certain service was within or not within the contract. He (the speaker) gave evidence at that inquiry. He was not

paid one halfpenny—and he never supposed that he should be paid one halfpenny—directly or indirectly for giving that evidence (Applause)

Dr WARD Of course it is not an unnatural assumption I made, that services of that sort were paid for

A REPRESENTATIVE Not an unnatural assumption for Dr Gordon Ward!

Dr WARD The services ought to be paid for. But so far as any question of payment is concerned I absolutely withdraw what I said. At the same time it is not desirable that, paid or unpaid, a prominent member like Dr Brackenbury should turn up at the Ministry and oppose a Panel Committee.

The motion which Dr Ward had moved, that no decision on disciplinary procedure should be finally agreed without reference to the Panel Conference, was accepted by Dr Dain as being, in effect, what the Committee always had in view, and what it was doing at the present meeting.

The general motion approving the modifications in disciplinary procedure brought forward by the Committee was then carried, and it was further agreed that the Regulations when revised, and in the absence of factors of importance, should not be altered for a period of three years.

#### *The Position in Scotland*

Dr DAIN stated that the Scottish Board of Health had agreed to set up an Advisory Committee, as in England, and to adopt the same procedure, adopting also the suggestions as to the work of Medical Service Subcommittees—with the exception of that relating to the position of the Insurance Committee clerk in medical service cases—and the Insurance Acts Subcommittee for Scotland, after discussion with the Board of Health, had agreed not to press for this. The Board was unable to agree to the deletion of the words "or otherwise" in Regulation 36, which gives the Minister power to withhold money if he is satisfied, "whether on consideration of the report of a Medical Service Subcommittee or Joint Services Subcommittee or otherwise, that a practitioner has failed or neglected to comply with the terms of service", but it had agreed to prepare an amending regulation so as to provide that in such cases procedure at least comparable to that of the Medical Service Subcommittee would be followed. The Board also desired to retain the power to order an inquiry in the absence of a formal representation, and in view of the special circumstances in Scotland this had been agreed. All the other proposed changes were agreed to, and the fourteen days' notice of change of doctor would come into operation at the beginning of next year.

#### *NATIONAL INSURANCE DEFENCE TRUST*

Dr DAIN, speaking as chairman of the trustees of the National Insurance Defence Fund, said that the fund now exceeded £120,000, nearly half-way towards the quarter-of-a-million goal. The income from subscriptions had increased during the year, but the inequality of the contributions in relation to areas gave the trustees some anxiety. Such inequality might cause serious differences of opinion should circumstances arise which made it necessary to distribute moneys from the fund. The fund had received, for some years now, satisfactory support from the great majority of the committees, but a few committees had subscribed nothing, and others were far below their quota. He thought it was time that every committee should be informed that by this year at least 10 per cent of the quota should have been paid in, and by next year 20 per cent. He read out the names of those committees whose actual payments so far represented less than 10 per cent of the quota for their areas. They included one committee whose representative had been prominent in "gingering" the Executive, but this committee, apparently, while prepared to use the means of negotiation which the Conference and the Insurance Acts Committee provided, was not prepared to pay its share to a defence fund. Its payment at present stood at 7 per cent of its quota, and other committees showed an even smaller figure. On the other hand, some committees—Devonshire, Northamptonshire, York, Southport, Haddington, and Lancashire—had already paid 100 per cent of their full quota, and very many others were not far behind.

Dr Gordon Ward agreed that the contribution of Kent to the fund was lamentably small ("Hear, hear") The

Kent Committee had thought of increasing its contribution, but first it would like to know one or two things about the fund. A body of trustees must be extremely careful on technical procedure, and he noticed that from the fund a loan of £6,500 had been made to the British Medical Association. It looked bad, on paper, to have this loan without security. Again, it was proposed to use part of the fund for the support of members of Parliament, but the trend of the law undoubtedly was to make it obligatory to divorce political funds from funds used for other purposes.

Dr DAIN said that the first object of the Trust was "to assist in defraying the expenses incurred in organizing or taking any action to protect the interests of the medical profession in connexion with the present National Health Insurance system or any extension or modification thereof." When these words were drafted the trustees were advised by their lawyer that they were sufficiently wide to cover any action they might wish to take, including action with a view to securing representation in Parliament of the interests of insurance practitioners. The solicitor had again been consulted, and his opinion was that the words just quoted made the trustees perfectly free to use the money in support of parliamentary candidates. With regard to the loan to the British Medical Association, this was purely a banking matter, current rates of interest were paid, and the loan was repayable at short notice on either side. He left it to the Conference to consider how far the trustees would have been justified in incurring the expense of drawing up documents conveying securities in the case of an arrangement of this kind ("Hear, hear")

A motion by Kent that the use of the fund for such political purposes as the support of members of Parliament was not clearly contemplated, and should not be sanctioned until approved by the highest legal opinion, was lost.

Dr H. S. BEADLES (West Ham) moved

That this Conference disapproves of the action of the trustees in allocating £1,000 to the Medical Representation in Parliament Fund of the British Medical Association.

Speaking for a committee which supported the defence fund from the beginning, he said that the legal powers of the trustees in this respect were sufficiently wide, but there was a moral obligation. The trustees had taken a new depositum in the way they suggested using this money, and before they so used it they should have come to the Conference. When this fund was formed those who had to persuade their constituents to contribute used the argument that a solid capital sum was required, and that it should be drawn upon only for administrative purposes. It was true that the £1,000 allocated to the Representation in Parliament Fund was not a large sum, but it was only the beginning of the use of this money for political purposes. It was stated in the Annual Report of the Insurance Acts Committee that this allocation was being made to a non-party fund. That he strongly denied. The Parliamentary fund of the British Medical Association could be used for the support of a Conservative or Liberal candidate, but on no account for a Labour candidate, on the plea that the Labour party was out for a whole-time State medical service. It should not be called a non-party fund.

Mr H. D. POLLARD (Bedfordshire), while quite satisfied about the legal position, was profoundly dissatisfied as to the moral right of the trustees to use the money in the way suggested.

Dr J. HOLMES (Bury) also supported West Ham.

Dr BRACKENBURY said that, strictly speaking, the West Ham motion was wrong. The trustees had not allocated £1,000 to the British Medical Association fund. There was no proposal to contribute out of the trust fund a sum or money to another fund. He agreed that such a thing, while not illegal, would be inadvisable. The proposal actually made was different. The trustees reserved to themselves the use of this money. What they proposed to do was to set apart £1,000 from the fund for a particular purpose, they themselves to approve the candidates they proposed to support, and to lay down any other conditions. He thought it was quite wise for the trustees of this fund to earmark £1,000 for their use in the support of such candidates as would in their view enable them better to carry

out the use of the objects of the Trust. It was very important to have somebody in Parliament—he did not mind on which side of the House—who understood the position of insurance practitioners when proposals for the extension of the insurance service came forward.

Dr D. O. TWINING, speaking for a committee (Devonshire) which had made its 100 per cent contribution said that it was unanimously against the use of this fund for political purposes.

Dr H. L. PEARSON (Birkenhead) said that the proposal to allocate money for this purpose would increase the difficulties of Panel Committees in inducing the members to agree to make contributions.

Dr DUN said that the critics had taken in extraordinarily small view of medical organization. The best way to avoid having to spend this fund in defence against some Government proposal was to make the voice of insurance practitioners heard in Parliament where the medical profession was very inadequately represented. The first object of this fund was not to strike pay—though it was an important object to compensate those who in certain eventualities would suffer—but to secure it possible that that occasion never arose. It was a short sighted view that until a large sum of money was available for protective purposes none was to be spent on what might be called political purposes. To get an insurance practitioner in Parliament would be extremely useful although the claims of practice made it very difficult to find one who would make what might be a severe sacrifice scarcely possible for those who had not private means.

Sir ROBERT BOLAM said that, as Dr Brackenbury had explained, this money was not to be placed in the hands of the body with which he (the speaker) was primarily identified—the British Medical Association or its committee. No doubt in the view of many committees it would be pleasant to reserve the accumulations of this fund until it reached a quarter of a million. But what was the fund for? Did the Government imagine that the fund was non-political? Those responsible for the fund might sit in the background treasuring their quarter of a million until it became too late for its effective use. Medical men in Parliament had been of the greatest use to the profession, not merely by their interventions in debate but by the impression they were able to give to legislation in embryo. The amount of money laid aside for this purpose was a mere bagatelle. It would pay insurance practitioners over and over again if by the expenditure of a few thousand pounds they could support two or three people in Parliament. It might avert the cataclysm which was in view when this money was collected.

Dr J. S. EDWARDS (Perth) spoke in favour and Dr J. A. PRINHAM (Dorset) against the West Ham resolution.

Dr BEADLEY, in reply, said that Dr Brackenbury's argument as to the exact form in which the money would be allocated was a mere quibble. The West Ham resolution clearly indicated the position. This fund could not put members in Parliament. Members were elected to Parliament as party men, and many hundred and ninety times out of a thousand their votes were given at the behest of the party whip without professional or any other considerations. The men in his district felt that their money was being surreptitiously conveyed to another fund whose purposes they were unable to support.

The Conference voted

For the West Ham resolution

71

Against

66

The result was received with cheer.

A motion was proposed by Dr J. HOLMES to consider the feasibility of returning on application from the executors of a deceased practitioner the amount he had paid to the fund. This was lost.

#### ANNUAL REPORT OF INSURANCE ACTS COMMITTEE

The Conference then returned to the miscellaneous matters dealt with in the Annual Report of the Committee.

#### Statistics

Dr GORDON WARD moved to instruct the Committee to prepare and issue a digest of the statistical information received following previous resolutions of the Conference on the subject. He complained that figures had been sent

in from his own area and nothing more had been heard of them.

Dr DUN was strongly opposed to the publication of a digest or analysis of the figures which had been collected. The figures were being collected for use when required and it would be very inadvisable to publish interim reports on the returns. Here again as in the case of the defence fund the response to the Committee's request had been unequal and some committees had done much more than others in the way of collecting statistics.

Preference was given to another motion on the same subject from Catehead whose representative Dr R. FOUNDS, urged that the time had now arrived for the setting up of a department for the collection of statistics and data in the operation of private and insurance practice. Dr DUN said that the situation was being watched and the Committee was prepared to set up a department when there was work for it to do but statistics had to be provided by individuals and no amount of central organization would produce the statistics. He thought that at present the need was met by the work done in the office. The motion was lost.

#### Change of Doctor

Dr C. A. RORIE (Dundee) moved a resolution viewing with regret the agreement come to between the Insurance Acts Committee and the Ministry regarding 'change of doctor' (see paragraphs 21-23 of the Committee's report). He asked the Conference to reaffirm its belief that permission to change doctor at six months except when the change was by mutual agreement would be a more satisfactory arrangement.

Dr A. FOUNDS (Sheffield) supported the resolution and said that before an important matter of this kind was decided it should have been brought before the Conference.

Dr DUN said that this was a case where he was compelled to ask approval of action taken without opportunity for consultation with the Conference. The position was a serious one as was made plain by Sir Walter Kinnear's speech at the last Conference. What had happened was that the patient's right to change was not limited as to time—it was only delayed administratively for fourteen days. Two difficulties arose in connection with this matter. The first was the ease with which insured persons had appeared to be getting certificates stating that they were incapable of work. A reason constantly given by doctors to the Committee was informed why they were unable to refuse the application of an insured person for a certificate was that the patient could immediately go to some other doctor. It had now been agreed that an experiment should be made with a new method which interposed a fortnight's delay and made it necessary for the patient to write a letter. A patient annoyed because he was denied a certificate might well think twice before he wrote a letter. But there was another difficulty—namely the wholesale growth of what could only be described as canvassing particularly in urban areas. Under the old arrangement of free choice without restriction as to time it was an easy matter for a man to go into a person's house collect four or five cards as a result of some plausible tale and get them transferred to his own list. Such cases were extremely difficult to deal with by the machinery of the General Medical Council because patients were loath to give evidence. The Committee regarded the new method as likely to put an effective stop to that business. It would be difficult for a man to go and get hold of a few cards because each insured person must make personal application. He was sure that the proceeding was quite sound. The reason why the Conference was not consulted was because the Ministry regarded the matter as urgent and approved societies were a king for a restriction in some way of freedom to change the doctor.

The Dundee amendment was lost.

Dr C. W. WINDSOR (Hertfordshire) asked that the wording on the medical card should be made stronger also so that it should be laid down that when an insured person gave some complaint against the doctor as the reason for the transfer this complaint should not be recorded or investigated by the Insurance Committee. Dr H. J. CARRILE (London) thought it would be better to leave it

laid down that the Insurance Committee should arrange the transfer and inform the insured person that if he wished to persist in the complaint he must do so in a separate letter. Dr E R FORHERGILL thought it would be rather unwise to put it in the mind of the insured person that he might persist in the complaint.

Eventually it was agreed that the whole of this question of the insured person's letter should be referred to the Committee.

#### Records

The Conference unanimously, on a motion by the Insurance Acts Committee, reaffirmed its opinion on the subject of medical records, that while the value of careful clinical notes and essential dates on such records was fully appreciated, it was unnecessary to record all attendances, etc., except where practitioners had agreed to keep full records of work done for statistical purposes.

#### Accident and Emergency Treatment

Dr E O TURNER (Buckinghamshire) had a resolution requesting the Committee, in view of the increasing number of motor accidents, to consider the whole matter with a view to the formation of a fund from which special payments for treatment might be made. Some members of his committee thought that motor accidents should be treated entirely as private cases, but the Ministry would not agree to that, others that this would afford a good opportunity of asking for an increase of the modest capitation fee, or the setting up of a special fund like the mileage fund to deal with these cases.

Dr J W BONE, who asked whether the Conference thought there was any chance whatever of getting what Dr Turner wanted, moved to proceed to the next business, and this was agreed to.

Dr J ARTHUR (Northamptonshire) moved that in the case of an insured person from another area fees for emergency treatment should be paid from the central fund, or by the area to which the insured person belonged. His committee was getting rather alarmed at the number of motor accident claims, and thought that some other fund should be available. In those counties through which the main motor highways passed it seemed only fair that the local practitioners should be remunerated out of some other fund than the local pool.

Dr DAIN drew attention to paragraph 31 of the Annual Report, and explained that this was one of the things which the Distribution Committee endeavoured to meet.

Dr H R CRAN (Sussex) said that Sussex had a greater motor density than any other county, but in the course of the year there were not more than thirty applications for emergency treatment, and only a small proportion of these were for motor accidents. Therefore he did not think this matter worth considering.

The motion was lost.

#### Mileage

Dr J P WILLIAMS-FREEMAN (Hampshire), who was received with applause, asked the Conference to record its dissatisfaction that, though the mileage statistics showed an increase of 25 per cent on the miles travelled, no increase was made in the Mileage Fund for 1927. The Conference would be familiar with the way in which the Mileage Fund was decided. The Mileage Committee was asked to study the returns of miles travelled by those who kept records, to decide the cost of motoring, the value of the time so spent, and the deduction to be made on account of the travelling done by the town practitioner, which was included in the ordinary capitation fee. That was a very abstemious calculation, but at the last meeting of the Mileage Committee the most recent statistics available indicated an increase of 25 per cent on the amount of work done, nevertheless, the amount recommended remained at the same figure because the cost of travelling had gone down. It was true that the cost of travelling was at the moment extremely low, but who was to say how long petrol and tyres would remain at their present price? Even allowing for the increased deduction for town travelling, the calculated figure would now be £243,000. The lump sum allowed to the Mileage Fund was £250,000, that was the stabilized

figure. Yet besides the £243,000 now calculated, the other disabilities, apart from mileage, of the country practitioner were supposed to represent a sum of £40,000, which should be added to the sum for mileage. He thought there was some danger of that £250,000 being allowed to crystallise year by year, while the liabilities of the country practitioner tended to increase.

Dr DAIN hoped the Conference would not record any dissatisfaction that there was no increase in the Mileage Fund. He was not sure that that 25 per cent increase had occurred since the figure of £250,000 was arrived at. The diminished cost of travelling was an important factor to bear in mind, also there was a slight but gradual decrease in the cost of living, which diminished the value of the time element. It would be unwise to reopen the question at the present time, and he did not think that the rural practitioner was greatly dissatisfied.

Dr WILLIAMS-FREEMAN said that if the Conference thought it better to take what it could get rather than run the risk of being cut down it could say so, but that was not his view. The Mileage Fund should be arrived at by a careful statistical study, and practitioners must abide by the consequences one way or the other, but they should not give up the strategical position they had gained.

Dr Williams-Freeman's motion on the subject was lost.

#### Range of Service

Several motions were on the agenda relating to ultra-violet ray treatment and the range of service, and Dr DAIN accepted the reference back of the section of the report referring to this subject, which expressed the view that the treatment was not necessarily a specialist one, but that each Local Medical Committee should decide on cases as they arose. It was difficult with the existing procedure to arrive at any solution which would be fair alike to the doctor who was prepared to administer this treatment and the patient who required it. The situation must be argued with the Ministry.

#### Medical Benefit for Old Age Pensioners

Dr DAIN also agreed to take up several amendments relating to the issue of a special card for old age pensioners, and to evolve a scheme, if possible, for putting this matter on a more satisfactory basis.

#### Ophthalmic Benefit

Dr H N BROWN (East Suffolk) moved that insured persons granted ophthalmic benefit by their approved societies should have a free choice of ophthalmic surgeon from the list issued (that is, the British Medical Association list), to which Dr W H PALMER (London) moved an amendment to delete the reference to the list, which, he said, did not include some men practising as ophthalmologists who were recognized in their areas as having the qualifications necessary for this service. Dr DAIN was unable to accept Dr Palmer's amendment. The only list available was the British Medical Association list, which was not confined to members of the Association, but was merely compiled for the convenience of doctors, patients, and the Ministry. So far as he knew, the only men who were prepared to give the service at the rate of remuneration available were on that list.

The amendment was lost, and the East Suffolk motion carried.

#### The New Arrangement with Insurance Chemists

The CHAIRMAN, when the Conference arrived at several amendments on the agenda which had to do with the revised arrangements made between the Ministry and insurance chemists, pointed out that the new agreement was arrived at without the knowledge of, or consultation with, the profession. It was an accomplished fact, which nothing that the Conference could do could alter. The profession had never had any quarrel with the chemists, and if it was anticipated that trouble would arise between any of the parties concerned, either between doctors and chemists, insured persons and chemists, or the Ministry and either party, was any good done at this moment by exploring the possibilities of disagreement?



Dr BRACKENBURY asked whether the Chairman would accept a motion to proceed to the next business. The Chairman said he could only do so if the proposers of the various amendments had no objection. Dr LOUNGS (Gateshead) it once agreed to withdraw in amendment which stood in his name, but Dr GORDON WARD (Kent), who had also an amendment deprecating the agreement on the grounds of public policy, persisted in moving it. He urged that if the Conference passed over the matter it would be taken that the profession had tacitly approved of the scheme.

Dr F RANCLIFFE said that in Lancashire the chemists in the co-operative movement were starting to be dispensing chemists under the Act, which raised the point that the greater number of prescriptions in insured persons took to his own co-operative society the bigger became his dividend as a member of the society. Dr WORMINGTON said that in Newcastle the co-operative societies did not pay dividends on prescriptions dispensed.

Dr BRACKENBURY appealed to Dr Gordon Ward "if it is any use," not to press the amendment or, alternatively, to alter its wording. At present it read: "The proposed arrangement, which would make it possible and financially profitable for chemists to limit the quality and quantity of medicines prescribed for insured persons, is contrary to public policy and must be resisted by every possible means." Was it necessary the Ministry having done this thing publicly, for the Conference to make this solemn pronouncement at the present stage? It could only lead to additional difficulty for the profession, the Ministry, and the chemists alike. Why not say it was against public policy and leave it at that?

Dr GORDON WARD accepted the suggestion. Dr BRACKENBURY added that even in that form he thought it might be better to pass it over. He doubted the wisdom of putting it on record. Dr WARD pressed for his amendment in the modified form, that the arrangement was contrary to public policy, and this was carried.

Dr H DIXIE (Northumberland) raised the question of the further difficulty which this arrangement might place upon rural practitioners in their endeavour to obtain an increase in the dispensing fee. Dr DIXIE said that that matter had been taken up with the Ministry, who stated that the agreement would not have any effect upon the dispensing doctor. He would be paid in the same way as before, and his fee would be the first charge on the Drug Fund.

Dr BRACKENBURY pointed out that even should the claim that the practitioner's 2s 3d be raised to 2s 6d be conceded the increase would not reduce what was left in the fund to below the minimum which had been promised to the chemists.

Dr V J L POLLARDON (Coventry) moved that the Committee be instructed to press that all data supplied by pricing bureaux and otherwise to Pharmaceutical Committees, be also supplied to Panel Committees. Dr DIXIE said that his own Panel Committee received these data already. Dr BRANLES said that that was by courtesy not by legal right. The motion was carried.

A long motion by Lancashire was withdrawn, but the mover expressed the view that the Committee should use its efforts to ensure that the dispensing capitation fee should in each year be at least equal to the amount per insured person on which the Drug Fund was calculated.

Dr GORDON WARD moved to call attention to the grave deficiencies in the pharmaceutical services, particularly failure to make up prescriptions promptly and to make due provision for emergency dispensing. Dr DIXIE said that the Insurance Acts Committee had set up a subcommittee to consider questions of prescribing and the alterations which might be expected to follow from the agreement with the chemists. The subcommittee would meet the following week but he did not know that what Dr Gordon Ward had just moved was within its reference. He regarded it as the business of Insurance and Panel Committees in their areas to see that the service was efficient. He could not accept a commission to collect reports on the state of affairs in the different areas. It was a matter for local action.

The motion was lost.

### 1 Proposed National Formulary

Dr B E A BARR (West Suffolk) moved that the Committee be urged to expedite the compilation of a national formulary. Such formulary would be useful especially for men on the boundaries of different areas, and would also lead to economy in prescribing.

Dr DIXIE welcomed this motion, but desired to hear what arguments could be put up against the formulary.

Dr H S BRANLES was against a national formulary, which, he considered, would give insured patients the idea that they were being prescribed for in a different way from private patients. It would also create a stereotyped condition of prescribing. Practitioners never seemed to appreciate what was in a formulary, and added various drugs to the formulary compounds, so that the result was to make prescribing more expensive.

Dr J W BOVE also opposed a national formulary for insured patients. If any formulary was to be set up it should be for all patients, insured or other. A century or more ago there was a 'Pharmacopoeia for poor persons' which was in general use. If it got about that anything of this kind was to be recreated, would it be for the good of the insurance service?

Dr H F OLDFIELD opposed it because it would come to be accepted as the correct method of dealing with insured patients, and the instrument for judging cases of so-called overprescribing.

Dr DIXIE said that the Conference had previously turned down a national formulary, but he had always been in favour of it. What doctor who dispensed for his own patients did not use stock mixtures? It was a matter of convenience. There was nothing to prevent a formulary, efficient, becoming standardized for private patients as well. It did not limit the choice of remedies, and consequently did no harm to the patient.

Dr BARR desired to withdraw his motion and leave the matter to the Insurance Acts Committee to report later, but the Chairman thought it best to obtain the vote of the Conference, and the motion was carried on a show of hands by what appeared to be a fair majority.

### Approved Society Referees

Dr A M STUART (Walsall) asked the Committee to take steps to secure the amendment of approved society rules which enabled the societies to require insured persons to submit themselves for examination, without reference to the practitioner in attendance by specially appointed referees. The referees, he said were not always men or such standing that their opinions would be acceptable to the general run of insurance practitioners. Nothing was known of the method by which they were selected.

Dr DIXIE said that the Committee could not undertake to secure the amendment of the rules of approved societies.

The Chairman said that here was a resolution asking the Committee to take steps, but nobody indicated what steps were to be taken.

Dr STUART said that to decide what steps were to be taken was the business of the Committee. (Laughter.) It was certainly in the power of the Ministry to secure amendment of the rules and the Committee could make representations to the Ministry.

The motion was lost. Dr DIXIE accepted another motion by Gateshead, asking the Committee to institute further negotiations with the Ministry with a view to securing in the next amending Insurance Bill an obligation on all approved societies to use the regional medical staff of the Ministry in place of private medical referees.

### Sickness Benefit

Dr J MCNEIL (Berksire) regretted that no action had been taken on the resolution of last Conference that approved society officials should not have the power to refuse sickness benefit on medical grounds alone to any persons certified as incapable of work by an insurance practitioner unless the person was reported fit for work by the regional medical officer. It had been held that this did not concern the medical profession, but surely the profession's honour was concerned.

Dr DIXIE said that the approved societies were given the entire responsibility of deciding who should or should

not receive sickness benefit. This was an internal matter concerning the responsibilities of approved societies. If the Conference deemed that there were thousands of such cases occurring it would be a different matter, but the argument was based on isolated cases.

A motion by Ayrshire that each Panel Committee be recommended to appoint a subcommittee to render any necessary assistance, when consulted, in cases where the opinion of the regional medical officer differed from that of the insurance practitioner, and there was an appeal, was lost, Dr DAIN pointing out that this was a matter for local action if any action were desired.

#### *Research by Insurance Practitioners*

Dr E A GREGG (London) proposed, and it was agreed, that the Conference approve of research being undertaken by insurance practitioners, but there was debate on another proposition by Dr Gregg, that the practitioners be remunerated for all such work. Dr Gregg said that the feeling of the London Panel Committee was that insurance practice offered the opportunity for a continuity of observation which would be most useful in connexion with any research of this kind, but it was surprising that the Insurance Acts Committee should go back on the policy of the British Medical Association that a doctor should be paid for what he did.

Dr DAIN said that the opinion of those who had been consulted was that less useful statistics would be obtained if this research was limited to insurance practitioners in respect to their insured patients. Therefore it was decided to make the scheme embrace the whole profession. Again, everybody consulted who had had experience of research work was against payment for such work. The matter had passed very largely out of the hands of the Insurance Acts Committee. The object was to obtain the services of volunteers, and every practitioner, whether a member of the British Medical Association or not, would be invited to contribute. There was no reason why Panel Committees should not collaborate with Divisions.

The motion that practitioners should be remunerated for such work was met by a motion to proceed to the next business, which was carried.

This concluded the discussion on matters arising out of the Annual Report of the Insurance Acts Committee, which was then put as a whole to the Conference and approved.

#### *Miscellaneous Matters*

Dr J HOLMES (Bury) moved that the time had now come when the committee of every insurance area should receive money from the central pool in full for all insured persons on its list. He gave some figures in support of his motion, but the Conference at this stage was breaking up, and his arguments were not well heard. Dr DAIN said that those concerned essentially were satisfied that the central pool did contain the proper amount to pay practitioners nine shillings per head for all the people for whom they were responsible. The matter of distribution was one as between committees, and until inflation was got rid of—and it was being slowly done away with—payment in full was not to be expected. The motion was lost.

A motion by Lanarkshire, instructing the Committee to secure that the administrative expenses of Panel Committees be paid out of insurance funds, and not deducted from the medical practitioners' fund, was also lost.

Dr C F T SCOTT (Middlesex) moved the reference to the Insurance Acts Committee of the consideration of the relationship of insurance practitioners to their insured patients in the matter of hospital treatment, and the need that insurance practitioners who so desired should have reasonable access to their own patients for treatment in local hospitals. Dr DAIN was not prepared to accept this as the business of the Insurance Acts Committee. The relationship of the doctor to his patients, so far as the hospital question was concerned, could not be separated into insured and non-insured categories. The motion was lost.

This concluded the agenda, and the Conference, which had started at 10 a.m., concluded at 7 p.m., with cordial votes of thanks to its Chairman, Dr Le Fleming, and the Chairman of the Insurance Acts Committee, Dr DAIN.

### THE CONFERENCE DINNER

FOLLOWING the Conference a company of about 120 set down to dinner at the Holborn Restaurant, with Dr L F FLEMING in the chair. After dinner there were some excellent speeches, interspersed with songs and humorous items. The members of the Insurance Acts Committee were the guests of the evening.

Dr LIONEL J PICTON, OBE, proposed the health of the Committee. Speaking for Cheshire, he traced the 'combative instinct' of that county back to the time when there was a Roman legion in Chester, one of whose surgeons was a Greek, so that the profession in Cheshire could claim descent from the school of Hippocrates himself. Just at present Cheshire was exercised over the threat to the well-being and even the existence of the general practitioner, who, regarding the Insurance Acts Committee as his mouthpiece, was jealous that it should unflinchingly represent his views, in its interviews with the powers that be. As illustrating the varied work of the modern practitioner, Dr Picton said that he knew of one doctor in a town of over thirty thousand inhabitants who, in addition to a large insurance and private practice, was also part-time medical officer of health, medical officer of a fever hospital, school medical officer, with four clinical assistants, surgeon in a hospital with sixty beds, and, not content with all this, an active magistrate. Cheshire's attitude was justified by the present tendency to limit the work of the general practitioner. One suddenly found that a county council had appointed a panel of specialists for something or other, and the Insurance Acts Committee had agreed to a list of consultants for something else. Cheshire objected to restricting the field of activity which was once open to all who were licensed to practise. But he concluded by saying that the Insurance Acts Committee was composed of members of remarkable business and professional insight, and that their sacrifices in the interests of insurance practitioners were much appreciated by the rank and file.

Dr H GUY DAIN, responding as chairman of the Committee, said that he regarded the chairmanship as the blue ribbon of the profession on its organizational side. It was the third time he had had the honour of replying to this toast, and he suggested that in future it would be more suitable if it were responded to by the 'baby' of the Committee. But he thanked those present very much for their commendations, and instead of any review of the work of the Committee, which had been exhaustively explored in the Conference that day, he might be permitted to tell one story which happened to be absolutely true. A lady patient who was suffering from cystitis belonged to an approved society, which wanted further information. Misreading the speaker's handwriting, the secretary wrote to her that he noted she was suffering from "eychitis," and that it would be necessary to know the nature of her eye accident and whether she was claiming compensation. (Laughter.)

Dr LE FLEMING, in response to the toast of his health, proposed by Dr G H SEDGWICK in a very entertaining speech (of which we hope to print some account in a later issue), said that his difficulty, as chairman of the Conference, had been, not the problems that were presented, but how to tap, without making it too obvious that he was doing so, the reliable sources of advice which fortified him on either side as he sat on the platform. The Conference was fortunate in having at its command the most perfect staff work that any organization could desire. The foundation of the success of the Conference was the office work behind it, and he called upon those present to drink to the health of the staff, coupled with the names of Dr Cox, Dr Anderson, and Dr Dwyer, respectively the Medical Secretary, the Deputy Medical Secretary, and the Scottish Medical Secretary.

Dr Cox said how pleased he was to hear the complimentary remarks of the Chairman, more especially because they indicated an appreciation of the work of some members of the staff in the background, and he wished to mention the work of Mr S Coulson, the clerk of the Committee, in particular. He then went on to refer to his recent visit to Paris to the conference of the International Union of Medical Organizations. The chairman of the conference was a Pole, the secretary a Frenchman, and the members included representatives from Bulgaria, Rumania, Yugoslavia, Lithuania, Holland, Denmark, Sweden, and other countries. He was struck by the fact that all the associations represented, some of them very large, were envious of the position which the profession had established for itself in Great Britain. That attitude was not a mere expression of compliment, for real envy emerged in the discussions which took place. Nearly all the discussions centred round national health insurance. Almost every country in Europe now had a national health insurance system. In Britain at any rate, two questions had been solved which still awaited solution in other countries, and had greatly depreciated the status of the

Practitioners on one or then—namely free choice of doctor and freedom with the administration of medical benefit by approved societies. The approved societies or their equivalents in other countries were shortly starting an international association, and would undoubtedly take their decisions to the League of Nations which through the International Labour Office was trying to establish some principles which would govern all systems of medical insurance in the countries which were members of the League. The Paris conference naturally felt that the approved societies were going to do this sort of thing, it was high time the medical profession did something on its side and therefore certain resolutions were passed which it was felt expressed the feeling of the profession. One was that in any insurance system the medical profession should take a leading part in governing the medical side of it. Another related to free choice of doctor and on this point all the representatives were agreed except the representative of Austria who stated that he could not vote for such a solution although he agreed with it in principle. In Austria dependants had to be brought within the scope of insurance and the doctors were employed by the insurance organisation. Dr Cox and that the conference showed the necessity that the profession in every country should keep its heads sharp. The tendency all over Europe was to set up insurance systems and gradually to make them State systems in which the doctors were merely employees. He had returned from the conference deeply impressed with the idea that in Britain the insurance system was greatly in advance of any other he could learn about in any country of Europe. But the price of liberty was eternal vigilance. (Applause.)

## British Medical Association

### CURRENT NOTES

#### Spa Practitioners Group

The Council, at its meeting on October 12th sanctioned the formation of a Group of Spa Practitioner membership to be open to those members of the Association who regularly prescribe the mineral waters or baths or the spas in which they reside, or who are on the staff of a hospital or clinic where the use of the local mineral waters is part of the routine treatment. The Council also agreed that a meeting of those eligible to form the group should be held at an early date. It has since been arranged that the meeting shall be held at the headquarters of the Association on Wednesday, November 23rd at 12.30 p.m. Formal notice will be found under Association Notices. The Medical Secretary will be glad to hear from practitioners who claim to be members of the group and whose names have not already been received.

#### The Royal Medical Benevolent Fund and the B.M.A.

The Chairman of Council received with great pleasure after the Autumn Dinner of the Association on October 12th a letter from Sir Thomas Birlow Bt, President of the Royal Medical Benevolent Fund, in which after thanking the Council for its hospitality he went on to say warmly he appreciated the thorough and whole-hearted way in which the British Medical Association had helped the Royal Medical Benevolent Fund by sending Sir Robert Blam, Dr C. O. Hawthorne, and Mr F. H. Scott to serve on its Council, and by the way in which the Association had placed the needs of the Fund before its members thus facilitating the gathering of subscriptions. In view of the prominence the Association is giving to this new development of its work the Chairman of Council was gratified to have this testimony, as no doubt the members of the Association generally will be.

#### Some Work of the Week

Apart from the meeting of the Paucal Conference the week ending Saturday, October 22nd was mainly occupied by meeting or subcommittees. On Tuesday, October 18th the Ethical Subcommittee dealt with two cases referred to the General Ethical Committee by Divisions. On October 22nd at the meeting of the Contract Practice Subcommittee a request for an opportunity to discuss the question of charges for medical attendance on juvenile members was referred from the Independent Order of Oddfellows. It was decided to accede to this request. The Puerperal Subcommittee on Thursday approved a report of Mr. H. A. E. which will be submitted to a meeting of the Committee arranged for November 23rd.

## Association Notices

### 11 INCH AND DIVISION MEETINGS TO BE HELD

**BRANCH BRANCH COVENTRY DIVISION**—A meeting of the Coventry Division will be held at the Coventry and Warwickshire Hospital on Tuesday, November 1st at 8.30 p.m. Dr A. J. Wilson will demonstrate a case of miliary exanthema in an adult aged 30. Paper by the chairman Dr Brail on medicine in lay literature.

**BRANCH BRANCH BIRMINGHAM**—A general meeting of the Birmingham Branch will be held at the Warwick Hotel, Warwick, on Friday, November 4th at 5 p.m. The Branch Council will meet at 2.30 p.m. Agenda: A British Medical Association Lecture by Dr E. E. Glynn, Liverpool, entitled "Anaphylaxis, the Shock and Dick test and the method of immunizing diphtheria patients." Tea by invitation of the president.

**BRANCH BRANCH DUMFRIES AND GALLOWAY DIVISION**—The next meeting of the Dumfries and Galloway Division will be held in the Dumfries and Galloway Sanatorium on Tuesday, November 1st at 3 p.m. Dr Steven, the medical superintendent, will describe the lay-out of the sanatorium and the new buildings will be visited. A demonstration will be given of the working of the new x-ray plant including the Potter-Bucky diaphragm and stereoscope. The use of the ultra-violet light apparatus will also be shown comprising the carbon arc, the tungsten arc and mercury vapour lamp. Tea will be supplied and the chairman (Dr Livingston) has kindly undertaken to provide transport to and from Dumfries for members at a distance if early notice is given.

**BRANCH BRANCH ENGLISH DIVISION**—The following programme of meetings has been arranged:

**December 1st** At Cokermouth Annual Dinner  
**December 7th** At Mansport Paper by Dr J. A. Douglas Smith. The Early Treatment of the General Sex. Demonstration of Cases.  
**March 1st** At Whitby in Visit to the Whitby and West Cumbria Hospital Demonstration of Cases.  
**March 1st** At Carlisle Annual General Meeting.

Further details of the meetings will be announced later.

**DUNDEE BRANCH**—The annual business meeting of the Dundee Branch will be held in the Medical School Dundee at 8.30 p.m. on Thursday, November 10th.

**EDINBURGH BRANCH SOUTH EASTERN COUNTIES DIVISION**—The annual dinner of the South Eastern Counties Division will be held in the Royal Hotel, Galahiel, on Wednesday, November 2nd at 7 p.m. when Dr N. P. Fairfax (Innerleithen) will preside. The official guests of the evening will be the Earl of Home, Sir Popham Lush (President of the British Medical Association) and Mr M. G. Thorburn (Lord Lieutenant of the County of Peebles). A large attendance of members of the Division is hoped for. Price of dinner ticket 10s. 6d. with an additional 2s. 6d. towards the cost of entertaining the official guests.

**FIFE BRANCH**—The first clinical meeting of the section of the Fife Branch will be held in the Maternity Home, Kirkcaldy, on Thursday, November 3rd at 3 p.m. Dr A. Maitland Pamay (St. Andrew's) will address the meeting on ocular manifestations of gastro-intestinal disease.

**KENT BRANCH**—The quarterly meeting of the Kent Branch will be held in the Royal Hotel, Bromley, on Thursday, November 10th at 5 p.m. A British Medical Association Lecture will be given by Dr George A. Allan (Glasgow), a member of the British Medical Association Special Subcommittee on Pneumatic Heart Disease in Children on the early detection and supervision of rheumatic infection in children.

**KENT BRANCH AN APP DIVISION**—The next meeting of the Ashford Division will be held on November 2nd at 4 p.m. in the North Street Club when a lecture will be given by Mr R. Mowll, deputy coroner on the new Coroners and Registration Acts.

**LANCASHIRE AND CHESHIRE BRANCH**—A science meeting of the Lancashire and Cheshire Branch will be held at the Birkenhead General Hospital on Wednesday, November 2nd at 3 p.m. Agenda: Dr F. G. Foster (Birkenhead) Treatment of gonorrhoea in the male as at present practised and demonstration of cystoscopic technique. Mr Eldon Gort (Birkenhead) The treatment of hypopyon ulcers of the cornea with the electric thermocatheter. Discussion: The future of non-teaching hospitals to be reduced by Dr Dalzell (Birkenhead). Tea will be provided. Members proposing to attend are requested to notify the honorary secretary of the Birkenhead Division, Dr Dalzell, 41 Balls Road, Birkenhead.

**METROPOLITAN COUNTIES BRANCH CITY DIVISION**—A meeting of the City Division will be held at the Metropolitan Hospital, Kingland Road, E. on Tuesday, November 1st at 9.30 p.m. Dr W. Langdon Brown will read a paper on the modern aspects of nephritis.

**METROPOLITAN COUNTIES BRANCH FINCHLEY DIVISION**—The following programme of meetings has been arranged:

**November 1st** Dr Alfred Cox The Secret of the Success of the Association.  
**December 6th** Mr Trevor Davies Some Points in Gynaecological Diagnosis.  
**January 10th** Dr W. S. L. Linn (Lancet) to be announced later.  
**February 1st** Dr F. W. R. Wall Faith Healing.  
**March 6th** Mr J. W. Joyce The Clinical Features of Thrombosis of the Branches of Coronary Arteries.  
**April 3rd** Mr J. S. Herman L.D.S. The Dental Treatment of Fractured Jaws.  
**May 1st** Annual Meeting.

All the meetings are to be held at the Finchley Memorial Hospital at 8.45 p.m.

**METROPOLITAN COUNTIES BRANCH KENSINGTON DIVISION**—A general meeting of the Kensington Division will be held at St. Mary Abbott's Parish Hall, Kensington, on Tuesday, November 1st at 8.45 p.m. Agenda: An address will be given by Dr Christine Murrell on the need of some form of cheaper nursing home accommodation for the poorer middle classes.

**METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION**—The next meeting of the Lambeth and Southwark Division will be held at the Lambeth Hospital, Brook Street, S.E. 11, on Friday, October 28th, when Dr A. L. Baly, the medical superintendent, will read a paper on Pool Law administration. Tea at 4 p.m.

**METROPOLITAN COUNTIES BRANCH ST PANCRA'S DIVISION**—A meeting of the St Pancras Division will be held in the British Medical Association House, Tavistock Square, W.C. 1, on Tuesday, November 8th at 9 p.m. Professor V. H. Molliam of the University of London will give an address on some experiments in malnutrition.

**METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION**—A meeting of the South West Essex Division will be held at the Westcliff Schoolrooms, High Road, Leyton on Tuesday, November 8th at 3.30 p.m. Dr R. M. Bronte will read a paper on the medical witness. A reception and dance will be held in the Town Hall, Leyton on Thursday, November 24th. All medical practitioners, whether members of the British Medical Association or not, together with their friends will be warmly welcome. The function will be in aid of medical charities. Tickets 7s 6d single 12s 6d double (lady and gentleman), can be obtained from the honorary secretary, or from members of the Executive Committee.

**MIDLAND BRANCH CHESTERFIELD DIVISION**—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, November 11th, at 8.15 p.m. Dr George Wilkinson will read a paper on small but troublesome ailments of the ear and nose.

**NORFOLK BRANCH**—A meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital, on Wednesday, November 30th, at 3.15 p.m., when Dr H. J. Stirling will read a paper on the diagnosis and treatment of hyperthyroidism (illustrated by lantern slides).

**NORTHERN COUNTIES OF SCOTLAND BRANCH BANFF, MORAY AND NAINN DIVISION**—A meeting of the Banff, Moray, and Nainn Division will be held on Friday, November 18th when Professor D. Murray Lyon will deliver a British Medical Association Lecture on asthma, with special reference to its etiology and treatment.

**NORTH OF ENGLAND BRANCH BISHOP AUCLAND DIVISION**—The following programme of meetings has been arranged:

Nov. 25th Lecture by Dr D. Wells Patterson: The Earliest Signs of Disease.

Jan. 27th Lecture by Dr J. C. Spence: Medical Emergencies in Children.

Feb. 24th Lecture by Dr Harvey Evers: Uterine Haemorrhage—Some Practical Observations.

The meetings will be held in the Cottage Hospital, Bishop Auckland, at 8 p.m.

**NORTH OF ENGLAND BRANCH DARLINGTON DIVISION**—A meeting of the Darlington Division will be held at the Hospital, Darlington on Thursday, November 17th, at 8.30 p.m., when an address will be given by Professor Hugh Maclean on the subject of the medical treatment of gastric and duodenal ulcers. Members from neighbouring Divisions will be welcome.

**NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION**—A meeting of the Sunderland Division will be held at the Monkwearmouth Hospital, Sunderland, on Wednesday, November 2nd, at 9 p.m. Agenda: Medical certificates for elementary school children; report of Executive Committee; report of representative at Annual Representative Meeting. A clinical evening will be held at the hospital the same evening at 7.30 p.m. A dance in aid of the B.M.A. Charities Fund has been arranged for February, 1928.

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—A dance will be held at the Waverley Ballroom, Whitley Bay, to-day (Friday, October 28th). Tickets, 12s 6d each may be obtained from Dr John Murray of 4, Albert Place, North Shields. The proceeds will be devoted to the charities supported by the British Medical Association.

**SOUTHERN BRANCH PORTSMOUTH DIVISION**—The second meeting of the session of the Portsmouth Division will be held on Thursday, November 10th at the Queen's Hotel, Southsea at 9.30 p.m., preceded by a supper at 9 o'clock. Mr Norman C. Luke will speak on "busman's holiday" in America. The cost of the supper is 3s 6d, including gratuities. Notice of intention to be present at the supper should be given to the honorary secretary, Dr F. C. B. Gillingham, 15 Bading Avenue, Southsea by the preceding Monday. Members from other Divisions are cordially invited to the meetings. The following programme of further meetings has been arranged:

Nov. 24th Clinical Meeting, Royal Portsmouth Hospital 3 to 5 p.m.

Dec. 8th Clergy Night, Dr I. M. R. Walshe, Faith Healing.

Jan. 10th Annual Dinner at the Swan Cafe in aid of Medical Charities.

12th Dr E. Appolter: The Possible Cooperation of the Profession in the Treatment of Mental Disorder.

Feb. 9th Professor Hugh Maclean: Renal Disease and High Blood Pressure.

Mar. 8th Dental Night, Dr A. Livingston, M.D.S. (the title of the dental subject will be announced later).

22nd Clinical Meeting, Royal Portsmouth Hospital 3 to 5 p.m.

April 12th Sir Walter Fletcher, M.B.E., F.R.S.: The Work of the Medical Research Council.

May 10th Business Meeting.

— Annual Dinner.

**SOUTH WALES AND MONMOUTHSHIRE BRANCH SWA SEA DIVISION**—

The following programme of meetings has been arranged to be held at the General Hospital, Swansea at 8.15 p.m., unless otherwise announced:

Nov. 10th Lecture by Sir Evan J. Nichol.

24th Discussion: Acute Intestinal Obstruction. To be opened by Dr D. Price, F. Evans (Medical), Dr A. T. Madden (Pathological), Mr How H. Gabe (Surgical).

Dec. 8th B.M.A. Lecture by Dr S. A. Kinnier Wilson.

**SOUTH WALES AND MONMOUTHSHIRE BRANCH SOUTH WEST WALES DIVISION**—A meeting of the South West Wales Division will be

held on Wednesday, November 2nd, at 3 p.m., at the Ivy Bush Hotel, Carmarthen. Business Report by the representative at Annual Representative Meeting at Edinburgh, arrangements for future meetings, British Medical Association circular, "Public education in health", elect extra members to the Executive Committee for the Annual Meeting at Cardiff in 1928.

**SURREY BRANCH CROYDON DIVISION**—At the meeting of the Croydon Division to be held at the Croydon General Hospital on Wednesday, November 9th, at 4 p.m. Mr J. S. Bookless will give a lecture demonstration on the exophthalmos.

**SURREY BRANCH GUILDFORD DIVISION**—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford on Thursday, November 3rd, at 4 o'clock. Paper by Messrs Butler and Sheaf: Surgical and other experiences in America. Tea served at 3.45 p.m.

**SURREY BRANCH KINGSTON ON THAMES DIVISION**—A general meeting of the Kingston on Thames Division will be held at Surbiton Hospital on Tuesday, November 1st, at 8.45 p.m. Professor Hugh Maclean will discuss the treatment of diabetes from the general practitioner's point of view.

**SUSSEX BRANCH HASTINGS DIVISION**—The next meeting of the Hastings Division will take place at the Queen's Hotel on Tuesday, November 1st, at 8.15 p.m. Dr Morgan will read his report on the Annual Representative Meeting at Edinburgh. Dr D. McAlpine (neurologist, Middlesex Hospital) will give an anatomical and pathological resume of some of the commoner diseases of the nervous system (illustrated by lantern slides). Members are reminded that the annual dance will take place on Friday, December 2nd, at the Albany Hotel, Hastings. Tickets, 7s 6d (including buffet supper). Members are requested to notify the honorary secretary, Dr T. Reed, Hawkswood, London Road, St Leonards on Sea, as early as possible how many tickets they will require.

**WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION**—The fifth of the series of post graduate lectures arranged under the auspices of the University of Birmingham will be given by Dr Douglas Stanly on problems in the diagnosis of lung disease at the Herefordshire General Hospital on Friday, November 4th, at 3.30 p.m. Tea will be provided.

**YORKSHIRE BRANCH HALIFAX DIVISION**—The annual dinner of the Halifax Division will be held at the White Swan Hotel on Thursday, November 17th, at 7.30 p.m.

**YORKSHIRE BRANCH SHEFFIELD DIVISION**—A general meeting of the Sheffield Division will be held on Friday, December 9th, at the University, Sheffield, at 8.30 p.m., when a British Medical Association Lecture will be delivered by Professor H. Beckwith Whitehouse, on practical applications of recent views on the menstrual functions.

#### SPI PRACTITIONERS GROUP

The formation of a Spi Practitioners Group has been sanctioned by the Council of the Association. Membership of the group is open to those members of the Association who regularly prescribe the mineral waters or baths of the spas in which they reside, and those members of the Association who are on the staff of a hospital or clinic where the use of the local mineral waters is part of the routine treatment. A meeting of those eligible for membership will be held, to inaugurate the group, at the British Medical Association House, Tavistock Square, London, W.C. 1, on Wednesday, November 23rd, at 12.30 p.m.

## Meetings of Branches and Divisions

#### CAPE MIDLAND BRANCH

A GENERAL meeting of the Cape Midland Branch was held at Dr Laurie's residence, Port Elizabeth on September 15th, when the president Dr J. G. MUTERER, was in the chair.

In a symposium on fractures of the forearm and hand the following papers, illustrated by lantern slides, were read: "Surgical anatomy and mode of causation" by Dr B. KALLA, "Non operative treatment," by Dr T. WINKEL, "Operative treatment" by Dr R. D. LAURIE.

In the discussion which followed Dr T. P. OVES recalled some of his experiences with Lane's plates and screws, and also with osseous grafts. Dr HUGH drew attention to the advantages of uterine oxide in the treatment of fractures in out-patient practice. Dr BLAW stressed the importance of local tenderness as an aid to the diagnosis of the site of fracture. In reply, Dr LAURIE answered questions which had been put to him by different members and described his method of preparation of the skin prior to operations on the bone. Dr NORMAN WILSON showed x-ray films of a fractured olecranon, which he had united to the shaft by wiring. Dr J. G. MUTERER congratulated the readers of the papers and thanked Dr Laurie for the time and trouble he had taken in the preparation of lantern slides.

The honorary secretary was instructed on behalf of the Branch to congratulate the Mayor of Port Elizabeth on his recent appointment. The next meeting, a clinical one, will be held in Uitenhage on October 27th.

**LANCASHIRE AND CHESHIRE BRANCH SALFORD DIVISION**—On October 6th the Salford Division held a special meeting in the Mayor's Parlour at which Dr NATHAN RAW gave an address upon recent research in tuberculosis. The members of the Salford Insurance Committee and of the Health Committee of Salford Corporation were present by invitation.

## METROPOLITAN COUNTIES BRANCH LEWIS HAM DIVISION

4. A meeting of the Williams Division was held on October 18th at 448 W. 12th St. Dr. W. H. HALLINAN, M.D. occupied the chair. In the absence of Dr. James Hawthorne through illness, Dr. GEORGE JONES opened a discussion on birth control. He gave an historical account and a full explanation and demonstrated some varieties of contraceptive pessaries. Dr. HALLINAN stated that the medical profession is more liberal than the clergy and professors. Dr. B. DUNSTON of Berkeley and Dr. BUCHAN supported Dr. Jones while Dr. BEATTIE HALLINAN and ARNOLD held contrary views.

A vote of thanks was accorded to Dr. Jones for his address.

## METROPOLITAN COUNTIES BRANCH SOUTH WEST Essex Division

A MEETING of the South West Essex Division was held at Woodford Jubilee Hospital on October 11th. Dr BARNES moved.

That this Division heartily approves the motion introduced by Dr E. R. Fothergill (Brighton) at the Edinburgh Meeting.

That the Representative is viewing with considerable concern the indications of a continually being made of private medical practice until the supply of the State is voluntary. It is and there is a feeling in that this is not only a limitation to the resources of the individual members of the medical profession but a threat to all classes of the community in future. The Committee to which all the members of the profession are referred is a committee of private practice and it is not possible to have a medical profession and to expect to bring the Branch into the Division of cooperation with the local medical profession for the purpose.

Dr Badenoch enumerated the many departments of medicine which had recently been taken out of the hands of the medical practitioners. He quoted passages from the Education Act 1921 and Dame Janet Campbell's report advocating co-operation with local practitioners in the formation of clinics and pleaded that this co-operation was not in fact desired by the authorities concerned. He stated that the Government had a large majority in the Executive Council and that it was bound to arrange for a further and fuller discussion of the subject at an early date.

Dr F. E. Coombs has frequently addressed the meeting on the general subject of the connection between diet and disease. He deplored the prevalent notion of the "functional" and urged that the principal factor in disease should be brought to the notice of the public more than it is at present. First, take on the importance of more trouble to the consumer was the direct legacy of the great quantities of some of the leading medicinal chemicals and now that the principal part of disease was beginning to be investigated the great difficulty was found in determining the knowledge, gained by well known vendors, might be perverted in a very real way by an exaggeration of the claims of the toxicogeners at a certain point as an expression of caution. It once a typical exophthalmic goitre was due to add in intensity but repression of fear might have been cured while the case was in a more fatal stage. Depressed emotion was frequent in the latter part of disease though the patient might have recovered in the initial upswing of the disease, especially where the emotion was full expression at the time. Frequently some minor defect was found associated with a general disturbance, for example, errors of refraction in eyes, well-known phenomena of the upper respiratory tract, or sexual changes invariably denoted a subject in the mind the harmonious necessary for perfect health was disturbed. Sexual upsurges were very frequently the disturbing factor, but not the inevitable one.

Several members took part in the discussion which followed and a very hearty vote of thanks was accorded Dr Crookshank for a witty and thought-provoking lecture.

## NORTH OF ENGLAND BRANCH BLYTH DIVISION

A meeting of the Birth Division was held on October 12th. The monthly circular was discussed and other matters of local interest dealt with.

Dr Milne was asked to arrange the golf competition for the

Dr C F Fairhe agreed to prepare a programme for a speaker in December to which one of the Association's lecturers from Newcastle will be invited.

The Secretary was instructed to write to Mrs Angu conveying to her the Division's sympathy inasmuch as Dr Angu was personally known to nearly all the members of the Division and was a favourite with them.

There was music and coffee and an enjoyable evening was spent

## NORTH OF EAGLE D BRANCH HENNAH DIVISION

A meeting of the Hexham Division was held at the Abbey Hotel on October 19th to discuss a programme for the winter season. Dr James Hutton, President of the North of England Branch, gave an address on the importance of the work of the member body of the British Medical Association. Mr. J. M. HODGE, on honorary secretary of the Branch, described the facilities provided by the Newcastle Bureau for secretarial work for helping secretaries of a Division. As the Division covers a wide area it was agreed on the motion of Dr McCOLL that meetings be held in different parts of the Division. Dr Goodwin invited the Division to hold a meeting at Barrford Sanatorium. Coffee was served at the conclusion of the meeting. A programme of scientific and social meetings is being arranged.

SOUTHERN BRANCH I LE OF WIGHT DIVISION

The quarterly meeting of the 111 of Wight Division was held at the Osborne Cottage Hotel on October 22nd Major General Sir S. G. R. Moore, KCB, CBE, taking the chair. Dr. Charles Moore, consulting physician to the Osborne Convalescent Home and Phys. Coun. to the Royal Devon and Cornwall Hospital delivered

an addr on the behaviour of the diaphragm in one case of pleural effusion. He described the movements of the diaphragm in health and disease and explained the reasons for needlings proving abortive. A hearty vote of thanks was awarded him for his lucid and interesting address.

Attending the members and their guests one twenty two in all sit down to supper and a most enjoyable evening was spent. This is the first occasion within recent years at any rate that an evening meeting followed by a supper has been held and it was well received that a repetition is proposed.

Thank very much also accorded to Major General Sir S. Gule Moores for suggesting and arranging the meeting.

SOUTHER BRANCH PORT 10TH DIVISIO

A MEETING of the Port Louth Division was held at the Queen's Hotel, Southsea, on October 13th, under the chairmanship of Dr LYTLE. The chairman extended a hearty welcome to the Recorder of Portmouth, Mr John Harris, Judge Lacey, other members of the legal profession and also to medical non members who had been specially invited.

Sir John Ho a BRADFORD A CMG FRS President of the Royal College of Physicians in an address on medical defence, suggested that it was necessary for a learned profession to need a defence association but the who practised the art and science of medicine had found them unnecessary. He added that medicine dealt with fact while the law dealt in the main with opinions. No one could have opinions as a habit but in spite of its uncertainty, foundation the methods of the lawyer worked well.

The Recorder of Port Mouton Judge LAYLE and other members of the legal profession Mr F G ALLEN Clerk of the Peace and Lieutenant Commander Ray subsequently spoke.

The total attendance including fourteen members of the legal profession was a hundred of whom eighty partook of supper at 9 p.m.

The meeting terminated with a hearty vote of thanks to Sir John L. Bradford proposed by Dr MRS. J. E. E. and seconded by Dr BEATON.

## SOUTH WALE AND MONMOUTH HIRE BRANCH SWANSEA DIVI 107

A meeting of the Swansea Division was held at the Swansea General Hospital on October 6th when the chairman Dr DANIEL E. EVANS delivered a most interesting and instructive address on the significance of the cardiac murrmur. Twenty five members were present.

## WILLIAMS-FREEMAN PRESENTATION FUND

The following is the second list of subscriptions received in reply to the letter published in the SUPPLEMENT of October 1st (p. 139)

Amount promised by acknowledged	£	s	d
A Local Medical and Panel Committee Contributions	422	10	0
Warwickshire Local Medical and Panel Committee	15	15	0
Leicestershire Local Medical and Panel Committee	25	3	0
Westminster Local Medical and Panel Committee	24	18	0
Wiltshire Local Medical and Panel Committee	3	13	0
Wiltshire Local Medical and Panel Committee	2	2	0
Warwickshire Local Medical and Panel Committee	5	5	0
Warwickshire Local Medical and Panel Committee	2	2	0
Warwickshire Local Medical and Panel Committee	57	15	0
Warwickshire Local Medical and Panel Committee	70	0	0
Warwickshire Local Medical and Panel Committee	21	0	0
Warwickshire Local Medical and Panel Committee	2	5	0
Warwickshire Local Medical and Panel Committee	3	5	0
Warwickshire Local Medical and Panel Committee	2	10	0
Warwickshire Local Medical and Panel Committee	5	5	0
Warwickshire Local Medical and Panel Committee	4	10	0
Warwickshire Local Medical and Panel Committee	20	0	0
Warwickshire Local Medical and Panel Committee	30	0	0
Warwickshire Local Medical and Panel Committee	10	10	0
Warwickshire Local Medical and Panel Committee	10	10	0
Warwickshire Local Medical and Panel Committee	5	0	0
Warwickshire Local Medical and Panel Committee	20	0	0

### B. Individual Contributions

Dr	H	B	Bracebury	Hendon	2	2	
Dr	A	S	Iern	Botley	Hants	1	0
Dr	E	R	Bothergill	Hove	1	1	0
Dr	E	W	Wade	Harleston	Norfolk	1	0
Dr	H	C	Jonas	Barn	taple	2	2
Dr	H	G	Dain	Birmingham		1	1
Dr	T		Baker	Southsea		1	0
Dr	W	W	Jendrine	Docking	Norfolk	1	1
Dr	L	W	Oliver	Ropley	Hants	5	0
Dr	T		Cumming	Aiken	London	1	1
Dr	A	R	hav	Blakeney	Norfolk	1	1
Dr	T		Wood	Locket	Weymouth	1	1
Dr	H	J	Cardale	London		1	1
Dr	A		Linnell	Leicester		1	1
Dr	P		Donaldson	Norfolk		1	1

Total to October 24th (morning)	£265 9 0
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Cheques should be made payable to the Williams-Freeman Pension Fund, and addressed to Dr D G Greenfield, Treasurer of the Medical Secretary British Medical Association, B M A House, Tavistock Square, London, W C 1.



## National Insurance

## LOCAL MEDICAL AND PANEL COMMITTEES

## COVENTRY

At the meeting of the Coventry Panel and Local Medical Committee on October 12th, with Dr ARTHUR HAWLEY in the chair consideration was given to an inquiry received from a Poor Law authority as to whether certificates enabling insured persons to receive sickness benefit could be given to contacts with small pox whom the doctors had ordered to refrain from work. It was decided that no certificate ought to be issued unless definite diagnosis of incapacity for work could be indicated, but that the hardship of the position should be brought to the notice of the Minister of Health.

The Committee unanimously passed a resolution of protest against the chemists' new terms of service, 'being of opinion that practitioners are placed in an invidious position and that the traditional relation between doctor and chemist must suffer, also that the liability of the individual chemist to suffer loss is calculated to prejudice the morale of the dispensing service to the ultimate detriment of the insured persons.'

The Panel Committee decided to ask the Insurance Acts Committee to press for the supply to Panel Committees of all data relative to prescribing issued to the local Pharmaceutical Committee by the Pricing Bureau.

## WARWICKSHIRE

The Warwickshire Panel and Local Medical Committee met at Lutterington on October 6th, Dr Herbert Milnes presiding. Difficulties under the new arrangements with the pharmacists were indicated by the reference through the Insurance Committee of a prescription for eight ounces of brandy. The Committee decided that in the absence of justification this was excessive for a single prescription.

The Herefordshire scheme for post-graduate study financed out of the special milerage grant was considered, and it was decided to ask the Ministry of Health to approve a similar scheme for Warwickshire.

The sum of £15 15s was voted towards the Wilkams Freeman Presentation Fund.

The Insurance Committee was asked to vary the local distribution scheme so as to provide for the halving (from six to three) of the units credited for temporary residents' treatment in cases where the patient is an inmate of a convalescent home.

## Correspondence

## THE PANEL CONFERENCE

## A Retrospect and Some Criticism

SIR,—The Conference of Local Medical and Panel Committees last week was not what one would like it to be. The extraordinary management of each speaker having to walk from his seat in the body of the hall up to a place between the Chairman and one of the Medical Secretaries prevented many who would have liked to make a few short remarks from speaking at all. Medical men are not practised speakers, and they should not be put to such an ordeal. How much better it would have been to have had a slightly raised rostrum about one third of the way down the hall from which they could speak, and what an amount of time it would have saved!

Owing to this very defective arrangement the discussion was very poor and very useless. The result was that motions were carried that ought not to have been carried at all, and motions were defeated that should have been carried. The futile discussions we have listened to every year on disciplinary procedure have so curtailed our time that matters of much greater importance have been passed over in too great a hurry. I think everyone is sick of these interminable discussions on discipline. All the morning and much of the afternoon was wasted.

Again, the loud speaker used did not fulfil its purpose in enabling everyone to hear. Many in the hall did not hear half of what was said, the position of the transmitter just in front of the face of the speaker was most annoying.

The whole attitude of the Conference is much too much of the follow my leader type, and unfortunately those speakers who are independent and not afraid of speaking their minds are not supported as they should be. Perhaps some have only themselves to thank for this, and they might have been more successful by using a little more tact.

I am confident that the discussion was too much curtailed on many matters owing to the strong desire of many in the meeting to get the business finished. For example, very little was said about the new method of change of doctor. This is not so advantageous as might be thought. Of course, when a person is issued a certificate by one doctor and wishes to change for this reason, it is as well to give him as much trouble as possible. Just because it was alleged that during the strike this sort of thing occurred—in assertion one feels very much doubt about—why should every insured person who wishes to change be put to the very unpleasant task of going to the

doctor from whom he wishes to change and tell him to his face he wishes to give him up? Also, when a person moves from one part of a town to another, perhaps two or three miles away, why should he be troubled to go to both doctors and waste so much time? Free choice of doctor was our own slogan—why make it so difficult? This is the first method the next is to send the medical card to the Insurance Committee with a letter stating that he wishes to change. How many will write this letter? Very few. The insurance clerks will be put to a lot of trouble over a very small matter. Some have already gone so far as to have a typed form of letter ready for the insured person to sign. Why should it not be sufficient for insured persons to be simply informed that they can get their cards signed by another doctor after fourteen days also be informed—much, no doubt, to the doctor during the fourteen days wait—they must pay him his fee as a private patient.

It was fortunate that the question of ultraviolet ray treatment was referred back, for there is no doubt their decision that it came within the terms of service would have been deferred.

It was very unfortunate that nobody drew attention to the extraordinary action of the chemists in accepting 15 per cent reduction. What is behind this? There must be some reason for a body of presumably business men agreeing to this. I heard rumours but nobody referred to them. It cannot be that the chemists expect to get the doctors to be more economical—few would have the cheek to broach the matter. No, there is something behind. Can it be that the price of drugs is at present in many cases over 50 per cent too high, and that somebody is making too much profit?

The question of a national formulary was curbed but all the arguments used were against it. Many voted for it in the belief that they were voting for a local formulary, which is a very different thing. If you ask the commercial travellers who visit doctors all over the country they will tell you that certain drugs are used much more in certain parts, a very curious fact of which the promoters of a national formulary are not aware.

The motion by West Ham disapproving of the allocation of £1,000 from the National Defence Fund to the Medical Representation in Parliament Fund was carried by 71 votes to 66. This decision will be bitterly regretted later on. What we want more than anything else is a first class man to speak for us in Parliament. We have Lord Dawson in the House of Lords, we want some of his stamp in the House of Commons. The Medical Representation in Parliament Fund should be well supported, and one hopes that Panel Committees will subscribe in another way to this excellent fund.

Another matter that ought to have been discussed is the proposal to form clinics for eye work. Our experience of clinics ought to make us feel shy of this proposal, especially as the approved societies will try and control them and put in the men who will do the work at the cheapest fee.

The one bright spot in the arrangements for the Conference was the dinner at the Holborn Restaurant afterwards. This was very well arranged, the food and the entertainers were excellent, and the speech of Dr Sedgwick (whom one hopes to hear again) was a real treat to listen to.

These conferences ought to fulfil a very important part in the working of the Insurance Act, but if they are not conducted in a manner more calculated to obtain the opinion of the rank and file of the profession they will fail in their object. This last conference was mostly a waste of time—I am, etc.,

Hastings Oct 23rd

ARTHUR D. LAMBY

## CHANGE OF DOCTOR

SIR,—May I, in view of my own experience since the introduction of the new regulations regarding change of panel doctor, join in the protest this has evoked.

In most industrial towns there are, of course, some enormous panels mainly built up during or just after the war by the men who strived at home. Patients on these lists are attended to, as a rule, by assistants and junior partners, seldom or never seeing the principal whose name is on their cards. One often hears the plaint, 'I never seem to see the same doctor twice.' Consequently, there has been a fairly steady flow from these to the lists of doctors whose lists are small enough to admit of all receiving that personal interest and attention which patients have a right to expect.

In my own practice, up to the beginning of this month, every week brought two or three such recruits, but since the new procedure has been introduced, only one has so far attempted to transfer. The procedure is too complicated, and patients feel they must be doing something wrong in attempting to force the barriers of red tape. Consequently, they go to the doctor they prefer and pay his fees.

So far I have not heard of a single case where the burden is

## IT'S COMING

## ROYAL NAVAL MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS

ROYAL AIR FORCE MEDICAL SERVICE

REGULAR ARMY RESERVE OF OFFICERS

INDIAN MEDICAL SERVICE

TERRITORIAL ARMY

## VACANCIES

[illegible]

## APPOINTMENTS

COOPER R Hunt MD MRCP Honorary Anesthetist Ho pital or  
Epil & analar & larla Val  
Lancor Rodney FRCS Visiting Consulting Surgeon Victoria  
Ho pital Swain  
MILNE J V B Ch F BDS Liver Tutor in Clinical Dental  
Surgery University of Ls  
NEWME H P MD Oxon D F H Medial Officer of Health for  
Birmingham

[illegible]

NAME PT ROOM INPT DTH - J 1950 Date of Hrg Surgeon (Certificate)  
 Brs ) 1) M 4 C 6 10 11 1B CB CVt How Surgeon ) 1) the  
 2) M 4 J 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 102

ADAMS—On October 16th aged 40 years David Rutherford Adams  
MB Glas. of Linden Lodge Porquary, South Devon

# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY NOVEMBER 5TH 1927

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## British Medical Association

### CURRENT NOTES

#### The Panel Conference Dinner

In publishing last week (SUPPLEMENT p. 174) in account of the annual Panel Conference dinner at the Holborn Restaurant we were only able to make brief reference to the speech by Dr G. H. Sedgwick who proposed the Chairman's health. Our reporter was so placed that Dr Sedgwick came among the speakers was not fully audible. We are indebted to one or two friends for the following reconstruction of a happy piece of after-dinner conversation.

Dr Sedgwick began by remarking that some matter of great importance—Cicero or it might be Mr. Gladstone—had said that virtue was its own reward but he was feeling strongly at the moment that the virtue of a cheerful willingness to oblige was apt at times to make one in alarming responsibilities. In an address to the aspirants to high British Medical Association, Dr Sedgwick suggested that they should always refer to speak of the excellent secretarial department of the Association as "The Office" saying it rather lightly with a jest and a slight fall in recent years it would be visible. This however by the way. His next remark was to ask the members of the Conference to drink the health of their Chairman Dr E. K. Le Fleming who, being born with a generous whim for his fellow members, came annually from the mountain heights of Dorset and after presiding with such dignity and grace over their deliberations in the Great Hall set the seal upon a worthy spent day by taking charge of the more festive gathering still with the same dignity and the same grace a little enlivened perhaps by the irresponsibility of a convivial occasion. At the annual Panel Conference it was impossible not to admire the way in which Dr Le Fleming sat all day upon his elevated seat of responsibility—with the Chairman of the Insurance Acts Committee and the personnel of The Office arranged to twinkle about him—and was not only quite undisturbed either by the pungency of Kent or the drizzle of West Ham but remained throughout the day cheerful, alert, and in the possession of a most successful attractive, unforced and debonair whilst his control of the Conference—disiplinarily disciplinary and unflinching—was admirable. Those who squeezed comfortably in the body of the hall (added Dr Sedgwick) could not but have a dim perception of the truth the Chairman enfolded in his arms of six stoutly appointed to listen to a continuous stream of orators from 10 o'clock to 7 o'clock not a chairman of whom they might justly be proud and to whom the best thanks were due for his services. In this chairman here a thing

which never changed was the Englishman's innate love of honouring publicly and enthusiastically those who served him without hope of reward.

#### Association's Ophthalmic List.

In giving oral evidence recently before the Departmental Committee on the Optical Practitioners (Registration) Bill the Association's witnesses submitted the following analysis (as at August 31st last) of the names appearing upon the Association's list of registered medical practitioners who have intimated their willingness to advise on ophthalmic cases and prescribe spectacle when necessary (at a fee of one guinea) for insured members of approved societies.

	England	Scotland	Wales	Total
No. of medical practitioners on B.M.A. Ophthalmic List (of whom 615 are members of B.M.A.)	—	—	—	77
No. of names and/or addresses on Ophthalmic List	677	63	—	1041

	Consultant (believed to be practising solely as such) as defined on List under (a) of Criteria.	Practitioner also engaged in General Practice placed on List under following Section of Criteria.				Total G.P.
		(a)	(b)	(b) and/or (c)		
England	351	410	24	55	7	529
Scotland	43	44	7	4	—	55
Wales	15	8	2	1	—	11
Total	409	462	33	60	7	562

#### The criteria (a), (b), and (c) referred to are

- That he has held hospital or other appointments affording special opportunities for acquiring special skill and experience of the kind required for the performance of the service rendered and has had actual recent practice in performing the service rendered or services of a similar character.
- That he has had special academic or post graduate study of a subject which comprises the service rendered and has had a recent practice as aforesaid.
- That he is generally recognized by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered.

#### Payment of Expenses for Interviews.

Several complaints have reached the Medical Secretariat from doctors who have been asked to travel long distances for interview in connexion with a sister's practice in private practice and to whom travelling expenses have not been offered. Experience shows that it is a very rare case for applicants who are invited to interview possible employers to arrange beforehand with regard to travelling expenses as it would be difficult to establish any legal claim in the absence of such written undertaking.

## British Medical Association.

DEPARTMENTAL COMMITTEE ON THE OPTICAL PRACTITIONERS  
(REGISTRATION) BILL.

## MEMORANDUM OF EVIDENCE SUBMITTED BY THE BRITISH MEDICAL ASSOCIATION

ORAL evidence in support of the Memorandum printed below was given by Dr R. Wallace Henry (Chairman of the Ophthalmic Committee), Mr N. Bishop Harman and the Medical Secretary, before the Departmental Committee on the Optical Practitioners (Registration) Bill on September 26th, 1927.

1 The British Medical Association is a voluntary organisation of the medical profession. Its membership now totals upwards of 33,000 and includes representatives of every form of medical practice. It is organised throughout the Empire in local units called Divisions and in combinations of Divisions called Branches. By means of this local machinery and with the help of its weekly organ, the "British Medical Journal," the Association is able to inform, and to collect the opinions of, the main body of the medical profession. Every year the Divisions of the Association send representatives to the Annual Meeting of the Representative Body, at which are discussed the various problems which affect the work of the medical profession. Matters of policy are determined by the Representative Body after full discussion and debate.

2 The policy of the Association (as expressed by the Representative Body of the Association) which has guided the Council in its deliberations, now submitted concerning the proposed State recognition of opticians, is as follows—

That any State recognition of sight testing by persons not possessed of a medical qualification would not be in the interests of the community, and ought to be opposed in the strongest possible manner.

3 The Council considers that the reference of persons for sight-testing to other than registered medical practitioners ought in no way to be encouraged by the State, because it believes that State recognition in the manner indicated in the Draft Bill would be contrary to the interests of public health.

4 The Association is cordially in favour of any measure which has the object of increasing the efficiency of opticians in their technical work of manufacturing and fitting lenses and spectacles and would support the registration of opticians who devote their services to the foregoing branches of optics, believing that such registration would secure efficient work and be in the interests of the public. But the Bill which the Departmental Committee is now considering proposes on the contrary to create a new class of persons with special privileges in connection with the testing of sight, the interpretation of which essentially requires medical skill. Persons registered under the proposed Bill would be endowed with the privileges by the State, would have the right to use after their names letters implying that they are recognised as being qualified to practise sight testing and to charge and recover fees for such practice and would also have the statutory right to give certificates relating to visual acuity or visual defects, which shall be recognised as admissible by any local or central authority or government department in any part of Great Britain. Any enactment conferring such privileges would in the opinion of the Association, be misleading and indeed dangerous to the public because it would convey the suggestion that persons thus recognised who have not had a complete medical and surgical training are competent to advise upon and treat all defects of vision irrespective of the cause of the defects, whether constitutional or otherwise. This is the view emphasised by the Departmental Committee on the Causation and Prevention of Blindness (consisting of seven laymen, four Government officials and three practising ophthalmic surgeons) in the following paragraphs of the report issued in September 1922—

272 It is agreed that the medical profession and the general public are greatly indebted to opticians for the more or less excellent work done by them both in devising and perfecting optical instruments and in the making of glasses for those who suffer from errors of refraction. This work demands both a high degree of skill and special training, and it is natural that opticians who have acquired this skill and undergone this training should demand some form of official recognition which shall differentiate them from others not so equipped.

Nevertheless, we are of opinion that it would be an undesirable and a positive danger to the public for Parliament to pass any measure which might convey the idea that an optician, who is a person qualified to provide glasses prescribed by medical men, is further himself competent to examine the eyes of patients and to prescribe glasses for the correction of errors of refraction.

273 Many opticians call themselves by such titles as 'ophthalmic opticians,' 'optologists,' etc., have dark rooms on their premises and practise both retinoscopy and ophthalmoscopy. The British Optical Association holds examinations which include papers on the pathology of the eye.

274 An optician who practises ophthalmoscopy, and who advises and prescribes glasses for clients who consult him directly, poses by implication as an expert in the detection and treatment of eye defects, and claims a degree of medical knowledge which he does not possess. There is only one place where ophthalmology can be learnt, that is at a hospital, and an optician may do positive harm by prescribing glasses for cases in which error of refraction is accompanied by some disease which he is incapable of detecting.

275 Doubtless, in uncomplicated cases of error of refraction a trained optician can frequently prescribe the appropriate spectacles. He is, however, attempting to do work for which his equipment is incomplete. By the very terms of his "diploma" the trained optician is prohibited the use of mydriatic drugs,\* which are very frequently necessary for the accurate determination of errors of refraction. These drugs may only be used by medical practitioners. Further, there are many instances in which an error of refraction is the concomitant of a pathological condition, such as ciliary spasm, glaucoma, retinal disease and so on, which the optician, through want of medical training, is incapable of recognising, and in which serious harm or even blindness may result from the failure to detect the presence of disease. There are cases in which an ophthalmic practitioner will for a time deliberately withhold glasses in order to secure rest for the eye. In such a case it has happened not seldom that the patient has subsequently consulted an optician who, prescribing glasses that have for a time improved the vision, has thereby defeated the object of the ophthalmic practitioner and perhaps done permanent harm to the patient's eyesight.

276 Even reputable opticians, who would not deliberately run such a risk, and who would refer to an ophthalmic practitioner any cases in which they had any suspicion of disease, are liable through lack of medical training, to fail to recognise diseased conditions. Unscrupulous persons who deliberately advertise themselves as competent to treat diseases of the eye are a far greater danger to the public. If such a Register is suggested by the above mentioned Sub Committee of the Technical Optics Committee were established it would probably be difficult to prevent such persons who might succeed in obtaining admission to the Register from posing and advertising themselves as experts competent to treat diseases of the eye. Most ophthalmic practitioners have had experience of the harm wrought by those who, though they have had no medical training, profess to treat eye diseases, and who often seek to enhance their reputation by charging exorbitant fees. Such men are even now a source of danger, and the public resort to them at their own risk. That danger would, in our view, be increased if an official State Register of Opticians were established and such men gained admission to it for the public would regard the Register as an official guarantee.

\* (Comment by B. M. F.)—It is understood that at the present time (1927) this prohibition is only applicable to the holders of diplomas issued by the Worshipful Company of Spectacle Makers.

† For the purposes of this report the term Ophthalmic Practitioner is used to include (1) those medical practitioners who confine their work to the special practice of ophthalmology (2) such other medical practitioners as by special training are competent to deal with ophthalmic cases.



that those whose names were included in it were competent not only to provide but to prescribe glasses and generally to deal with defects of vision from whatever cause arising.

2. For the above reason we are of opinion that it would be inadvisable in the interests of the public to establish a Register of Opticians such as has been suggested. The proper function of an optician is not to prescribe glasses but to provide them to the prescription of an ophthalmic practitioner and in official lists of Opticians would tend to mislead the public into thinking that registered opticians were competent to discharge functions which belong only to those who have had a medical training.

The following are the main reasons why the Association objects to any proposal to divorce examination and treatment of cases from medical and surgical practice—

(1) The eye is not a separate optical instrument but a living and inseparable portion of the human body and shares its diseases. No only are defects of vision frequently connected with conditions of local and general disease but the general health is frequently affected by ocular conditions and the meaning and nature of these in each case can only be properly determined and treated by persons who have received a medical and surgical training.

(2) The most exact objective test of the refraction of the eye is the mirror test or retinoscopy. This cannot properly be performed in many cases unless the accommodation is temporarily suspended by the use of drugs which dilate the pupil.

This is of special importance in dealing with children whose range of visual accommodation is so great as to render any mode of examination of the refraction of the eyes futile and possibly dangerous without the use of an efficient paralyzing drug. The Education Authorities who are responsible for the examination and treatment of eye defects in school children have recognized this and invariably their work is carried out by registered medical practitioners specially qualified in the connection. The use of drugs which paralyze temporarily the internal muscles of the eye may be fraught with serious consequences particularly in patients of middle and old age if they are administered by the untrained who have not had such medical and surgical training as will enable them to select suitable cases for treatment or one of the more serious of ocular diseases namely, glaucoma may be made acute or even caused and the sight totally lost by the administration of drugs which dilate the pupil.

(3) Failure of sight is often the first symptom of general disease requiring medical treatment. It has been said that one five per cent of eye cases show a serious organic disease. An investigation shows that this is an understatement of the real position. Figures which illustrate this point were collected 2½ years ago and more recently for the purpose of this Departmental Committee are given in Appendices A and B. The cases of internal disease are scattered throughout the whole number and commonly give no warning of their nature, the patient simply complaining of dimness of vision which leads to a request for glasses. As the correction of the error of refraction which commonly complicates these cases may materially improve vision the optician often considers that he has done all that is needed by giving glasses whereas the real root of the trouble remains undiscovered.

(4) Of the cases in which the error of refraction is the obvious feature it should be remarked that these are by no means all straightforward optical cases in which there as optical instruments independent of a human body may be dealt with by an optician with mechanical measuring instrument. Many of these are high myopia. A record of 7,000 private case papers shows that 180 between the ages of 20 and 60 years had three or more dioptres of error. Of these cases no less than 26 per cent showed serious conditions of eye strain or failure which require much more than optical treatment and amongst those engaged in close eye work no less than 27 per cent had breakdowns. The figures of that investigation were published widely in the United Kingdom and in the United States of America and so far there has been no challenge to the deductions drawn therefrom. A material or fact they have been so far accepted that material decision may have been based upon them. The inference to be drawn is that a great deal of medical attention is required in the cases of an eye which is to be cured. In addition to the above class of cases there are many cases in which in addition to the error which requires the provision of glasses inflammatory condition of the eye and its appendages are present which need medical and sometimes surgical treatment (see Appendix B).

(5) In a great number of young patients who complain of symptoms of eye strain or of headache there may be found only very small errors of refraction such as may be found in a large proportion or even the majority of the population and without causing any real trouble even in the case of work at benches or desks. To the optician there are cases for glasses to the doctor there are cases for wider investigation.

An illustrative of this point attention is directed to the ophthalmic returns concerning the workmen of Messrs. Pontreves and Messrs. Lever Bros. respectively. In the former where an optician is employed during the six months ending December 1920 333 visits were paid to the optician by 241 different persons and 404 fittings were supplied. In the case of Messrs. Lever Bros. where an ophthalmic surgeon is employed during the six months ending June 1921 14 different persons were seen by the ophthalmic surgeon. The total visits paid by that number was 647 and only 170 pairs of glasses were prescribed and 70 repaired.

To the doctor who does ophthalmic practice these young workers are subjects for close clinical investigation. He wants to know why there is this supersensitiveness and he is often able to discover probable causes of trouble and indicate to the private practitioner what is the line of treatment that is best likely to benefit the patient. Such treatment is by no means confined to the ordering of glasses or drugs; it must be general medical treatment entering into the details of the patient's life.

Advice of this kind cannot be given by opticians even if really skilled in their craft. It can only be given by a doctor with that experience of men and of health problems which the medical curriculum is designed to give. No training in a narrow groove can give this.

(6) In adult persons the results of wear and tear are often shown first in the eyes. Changes in the cornea in the iris in the reaction of the pupil in the lens in the vitreous and above all in the state of the vessels of the retina are so well known as an indication of ageing of the tissues and the disabilities that arise therefrom that their discovery and estimation are a necessary part of every medical examination which is designed to reveal the true state of the body of the patient. The extreme value of such an examination will be appreciated when it is realized that the eye is the only part of the body where the blood vessels and nerves can be actually seen while its close connection with the brain frequently renders it possible to recognize disease of that organ in its earliest stages.

This knowledge could not be expected from opticians unless indeed it was proposed to subject them to such a wide and lengthy curriculum that it would be to all intents and purposes co-extensive with the medical curriculum. If so it would be more an aqueous bath to them and to the public that they should become medically qualified.

(7) Although the number of cases in which known damage to the eyes as the result of ignorance on the part of the optician may be small although serious, yet experience shows that a very large percentage of those who are given glasses do not get the full benefit that they might reasonably be expected to obtain.

In the short-sighted over-correction of the error is common while in the long-sighted under-correction is usual the estimation of the correct amount of astigmatism and the setting of the cylinders for such correction are frequently at fault whilst defects of muscle balance are generally overlooked. The result is that the individual concerned is not obtaining full value for the money expended.

(8) Since it is known that the great majority of patients have some error of refraction and since opticians have only one means of treatment for all eye conditions (the provision of glasses) glasses are ordered sometimes unnecessarily while other and necessary remedial measures are neglected.

6 It is claimed by those who support the Draft Bill that there are not sufficient ophthalmologists in the country to undertake the work of sight testing. This statement under attack the suggestion of the Statutory treatment of school children in elementary schools but experience has since shown that the needs of the school children have been met adequately in this respect. It has been found advisable to insist that the school children's eyes shall be examined and if necessary corrected by an ophthalmologist. There would appear to be no good reason why the parents should not have the same advantage. If the State were to recognize the sight testing optician in the manner indicated in the Draft Bill the probability is that in practice all the

children would be examined under one standard and nearly all the parents under a standard quite different and inferior.

7 Under the National Health Insurance system many approved societies are able to give to their members an additional benefit in the shape of ophthalmic benefit, such benefit including the preliminary sight-testing operations, and the provision of my spectacles that may be necessary.

Some approved societies refer all their cases to ophthalmic surgeons for the necessary examination, whilst others, not being able to afford the ophthalmic surgeon for every case send their members to opticians, leaving it to the latter to say whether or not the case is one which should be seen by an ophthalmic surgeon.

State registration of the optician would result in the reference to the optician in the first instance of the great majority of those insured persons who are entitled to ophthalmic benefit, and, eventually, no doubt would lead to a large proportion of the community making use of the services of the optician rather than those of the ophthalmologist, and doing so in the full belief that they were consulting those fully qualified to advise in all conditions of sight and to furnish the necessary certificates.

8 In order to ascertain the number of medical practitioners who are able and willing to undertake the examination of the eyes of those who are entitled to this particular form of benefit under the National Health Insurance Acts, the Association has compiled a list of close on 900 practitioners spread all over the country.

There are, in addition, ophthalmic surgeons engaged in consulting and hospital work and a considerable number of school medical officers engaged either whole or part time in this work, who are not on the list.

The qualifications of the practitioners for this particular and specialist form of work are carefully scrutinised by an expert Committee of the Association, and each applicant must satisfy the Committee—

(a) That he has held hospital or other appointments affording special opportunities for acquiring special skill and experience of the kind required for the performance of the service rendered, and has had actual recent practice in performing the service rendered or services of a similar character or

(b) that he has had special academic or post-graduate study of a subject which comprises the service rendered, and has had actual recent practice as aforesaid, or

(c) that he is generally recognised by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered.

It is confidently asserted that many more fully qualified persons would be found to undertake sight-testing examinations at fees within the means of the average person if they could be assured that sufficient work was likely to be forthcoming. This assurance cannot be given at the present time while unqualified persons are being freely employed not only by individual members of the public but by bodies which are using money partly provided by the State. State registration of the optician would have the effect of deterring medical practitioners from fitting themselves to undertake this particular form of special practice and of encouraging the practice of partly qualified persons. Consequently any dangers which exist at the moment through this work being carried out by those who have not the necessary medical qualifications would be materially increased.

#### APPENDIX A

Extract from book entitled "The Conjunctiva in Health and Disease, being a record of some research work, by N. Bishop Harman published in London by Baillière Tindall & Co. 1905 Chapter III headed Sociological Inquiry.

"The material for this enquiry has been obtained from four sources: 1. One of the clinics at the Moorfields Eye Hospital (i.e., the Royal London Ophthalmic Hospital). 2. The clinic at Moorfields is one of twelve bi-weekly clinics. It is held on Wednesdays and Saturdays, and is under the care of Mr. W. T. Holmes Spicer, to whom my thanks are due for his permission to utilise his case papers." The letter of the Moorfields clinic were examined for one year—1902. There were nearly 3,000 cases. The primary tables obtained by the examination of these cases papers are altogether too unwieldy to publish. The features of interest have been extracted, and are shown in a graphic manner as possible so that they may tell their tale with as little explanatory text as may be. (Then follows a statement of the manner in which the cases were grouped according to age: Infancy group—birth to 3 years. School age group—3 to 14. Young adult age group—15 to 30. Adult age group—31 to 55. Elders age group—all exceeding 56 years of age.

#### "SUMMARY OF CASES IN THE MOORFIELDS CLINIC, 1902"

	Cases	Per centage
Conjunctivitis simple, mucopurulent, follicular etc.	300	18.1
Purulent conjunctivitis	28	1.0
Angular conjunctivitis	44	1.6
Trachoma, acute 14, chronic 19	33	1.2
Blepharitis	111	4.0
Phlyctenulosis	56	2.0
Superficial Keratitis	135	4.9
Injuries	168	6.8
Refractions	1,442	52.3
Other diseases (of the eyes)	220	7.9
Total	2,707	100.0

The percentage of refraction cases to all cases in each group work out as: Infants, 12.4 school, 60, young adults, 52.4 adults, 51.9, elders, 29.1."

(Note—It should be noted that at this date school medical INSPECTION had been instituted, which at that time meant only the examination of the visual acuity of the children as shown by tests of reading Snellen's test cards. There was no organised school medical TREATMENT at school clinics, hence the high proportion of children attending the hospital for errors of refraction.

#### APPENDIX B

ANALYSES (COLLECTED 1927) OF A SERIES OF 100 CASES	
Practitioner 1—Analysis (collected 1927) of Series of 100 consecutive new cases	
High Myopia (over 5 D)	7—7
Defects of Muscle Balance	
Squint	10
High Esophoria	1
Exophoria and defects of Convergence	7
Hyperphoria	1
Paralysis of Recti Muscles	2—23
Surface Diseases	
Follicular Conjunctivitis	3
Conjunctivitis (Various Types)	16
Marginal Blepharitis	2
Corneal Ulcers	1
Nebulae	6
Conical Cornea	1—32
Injuries to Eye	2—2
Diseases of deeper parts of the eye	
Early Cataract	23
Advanced Cataract	3
Choroiditis	1
Senile changes of Choroid and/or Retina	9
Atrophy of Optic Nerve	1
Neuro-Retinitis	1
Retro Ocular Neuritis	2
Toxic Amblyopia	1
Optic Neuritis	1
Embolism of Retinal Artery	1
Thrombosis of Retinal Vein	1
Ptosis	9
Iritis	1
Glaucoma	1
Vitreous Opacities	7
Hemianopia	1
Retinitis	2
Proptosis	1—64
Diseases about the Eye	
Lachrymal Disease	11
Meibomian Cysts	3
Abscess of Eyelid	1
Entropion	1—16
Constitutional Diseases associated with Ocular Affections	
Heart Disease	3
High Blood Pressure	1
Diabetes	1
Nephritis	3
Disseminated Sclerosis	2
Lateral Sclerosis	1
Locomotor Ataxia	1
Syphilis	3
Diphtheria	1
Chorea	1
Epilepsy	1
Mumps	2
Influenza	2
Neurasthenia	2—22

Note—In the above series there were 35 cases including 15 who had Muscle Imbalance and High Myopia who had

no other defect. There were 102 who had some form of disease present which required local or general treatment apart from the prescription of glasses.

The difference between the total of above figures and 100 is occasioned by the fact that some cases were found to be suffering from more than one disease.

**Practitioner 2.—Findings (collected 1927) in 100 consecutive NEW eye patients examined privately.** Cases examined in regard to Blind Persons Act or Workmen's Compensation Acts are excluded from this list.

Errors of refraction of sufficient degree to require correcting glasses.

Other determining conditions found. (Note.—In many cases more than one defect was found and where each contributed to the disability of vision the error noted.)

1	Bad conditions of work	4
2	Congenital defects	5
	Strabismus	2
	Structural defect	2
	Cataract	1
3	High myopia (over 20)	10
4	Defects of muscle balance	27
	Squint	3
	Gross esophoria	3
	Gross exoph and defects of convergence	14
	Hyperphoria (2 very weak)	5
5	Surface diseases of eyes	15
	Follicular conjunctivitis	3
	Sty	1
	Trachoma (1)	1
	Blepharitis	1
	Corneal ulcers	3
	Episcleritis	2
6	Injuries to eye	5
	Birth	1
	Miscellaneous accidents	2
	Foreign bodies	2
7	Diseases within the eyes	37
	Uveitis	4
	Iritis	2
	Cyclitis	1
	Detached retina	1
	Glaucoma early	8
	advanced	2
	Cataract early	10
	advanced	1
	Central senile choroiditis	1
	Arterio-sclerosis	8
8	Inflammations about the eyes	3
	Orbital periorbitis	1
	Nasal disease	1
	Lacrimal disease	1
9	General conditions not included in foregoing	11
	Pyorrhoea	1
	Herpes ophthalmicus	1
	Cold	1
	Diabetes	1
	Syphilis	1
	Lic	1

**Practitioner 3.—100 consecutive cases (collected 1927) from my present notebook of private cases—**

Refraction	43 cases
Imbalance	10
Cataract	11
Tear passages	3
Blepharitis	4
Corneal affections	4
Glaucoma	1
Iritis	2
Vitreous Opacities	3
Retino-Choroiditis	3
Optic Atrophy	3 (including 2 cases of locomotor ataxia)
Atheroma of vessels	3
Tic	1
Colour Blindness	1
Herpes	1
Retrolbulbar Neuritis	2

100 cases

**Practitioner 4.—**Of 100 consecutive cases 46 were found to be pure errors of refraction with no complications—the remaining 54 were mostly cases with varying degrees of errors of refraction—some without but all showing additional defects either general or local.

**Practitioner 5.—**I am now able to give an analysis of 100 consecutive cases examined by me under O.B. scheme sent by Societies known by me to be sending all their claimants direct to an ophthalmic surgeon.

We have been told that 95 per cent of the O.B. cases are simple uncomplicated refractions that can be dealt with by my competent refractometer and that the Societies are waiting for us in referring such to us.

My figures show that with a liberal interpretation only 43 come under this category i.e. in the cases with reasonable error proper glasses might have been ordered by anyone treating the eye as a piece of mechanism.

Thirty-two others proved to be difficult refracton cases many of them demanding a cycloplegic or mydriatic to enable one to prescribe with any confidence or to desist from prescribing. This number includes several cases that had already had wrong glasses ordered by qualified opticians and also 11 cases in which the correct advice was to dispense with glasses altogether or to continue without a change.

The remaining 20 cases were altogether unsuitable for optical treatment being complicated including injury (3) early cataract (2) conjunctivitis (4) and one each of minor strabismus, neurasthenia, toxic amblyopia, cysts, vitreous hemorrhage, macula disease, quiet ecchymosis and meningitis.

**Practitioner 6.—**In 100 consecutive cases in my Hospital Clinic—

54 were errors of refraction alone  
46 showed additional defects.

**Practitioner 7.—**Details of 100 consecutive patients seen in private practice—

(1) Number of cases with error of refraction only 47  
(2) Number of cases with other defects 53

#### Details of Cases in Group 2

High myopia	3
Myopia (lenticular)	1
Detachment of retina	1
Convergent squint	4
? squint	2
Convergence insufficiency	1
Lacrimal mucocele	1
Blepharospasm	1
Vitreous hemorrhage	1
Conjunctivitis	6
Glaucoma	7
Perforating injury (recent)	1
(old)	1
Incipient cataract	5
Cataract senile	2
Anterior capsular	1
Nebulae	2
Interstitial keratitis	1
Superficial keratitis	1
Cyclitis	1
Results of iritis	1
Occlusion of puncta	1
Thrombosis of retinal vein from arterio-sclerosis	1
Retinitis (arterio-sclerotic)	1
Amblyopia (from squint)	1
Dental neuralgia	1
Constipation	1
Alcoholism	1
Frontal sinusitis	1
Hemianopia	1
	53

**Practitioner 8.—**I have taken a series of 100 unselected cases in private and find that 50 can be regarded as simple refraction and 50 had some other eye trouble varying in seriousness. At the hospital out of 100 consecutive cases omitting recidivists 43 were refractive only and 57 showed additional defects.

**Practitioner 9.—**I took 100 cards straight backward in my card index with the following result—

(1) those arising from errors of refraction alone 40  
(2) the rest (with or without errors of refraction) showing additional defects 60

**Practitioner 10.—**I find that in a complete series—not selected—or 100 cases there were 41 cases with errors of refraction alone the other 59 cases were those of patients with or without errors of refraction with additional defects.

**Practitioner 11.—**One hundred consecutive cases seen in private. In 51 cases the defect was merely an error of refraction with or without heterophoria. In 49 cases other eye defects were present with or without an error of refraction. In one case no ocular defect was discovered.

## Association Notices

## BRANCH AND DIVISION MEETINGS TO BE HELD

**CAMBRIDGE AND HUNTINGDON BRANCH**—A meeting of the Cambridge and Huntingdon Branch will be held at Addenbrooks' Hospital, Cambridge, to-day (Friday, November 4th) at 2.30 p.m. when papers will be read by Dr G S Haynes on three cases of oesophageal obstruction and by Mr W Gifford Nash, F.R.C.S., on some rare abdominal cases.

**DUNDEE BRANCH**—The annual business meeting of the Dundee Branch will be held in the Medical School, Dundee, at 8.30 p.m., on Thursday, November 10th.

**GLASGOW AND WEST OF SCOTLAND BRANCH Ayrshire Division**—A meeting of the Ayrshire Division will be held in the Infirmary, Kilmarnock, on Thursday, November 17th, at 3.30 p.m. A British Medical Association Lecture will be given by Professor D P D Wilkie (Edinburgh), entitled "Some aspects of gall bladder diseases," illustrated by lantern slides.

**GLOUCESTERSHIRE BRANCH**—The opening meeting of the session of the Gloucestershire Branch will be held at the General Hospital, Cheltenham, on Thursday, November 10th, at 6.15 p.m. There will be supper at the Cadogan Cafe after the meeting (5s each exclusive of wines). Agenda: Presidential address on a series of cases of gastric ulcer occurring in a small hospital.

**KENT BRANCH**—The quarterly meeting of the Kent Branch will be held in the Royal Bell Hotel, Bromley, on Thursday, November 10th, at 5 p.m. A British Medical Association Lecture will be given by Dr George A Allan (Glasgow), a member of the British Medical Association Special Subcommittee on Rheumatic Heart Disease in Children, on the early detection and supervision of rheumatic infection in children.

**KENT BRANCH TUNBRIDGE WELLS DIVISION**—A meeting of the Tunbridge Wells Division will be held at the General Hospital, Tunbridge Wells, on Tuesday, November 8th, at 8.30 p.m. Mr A H Neve (colonel for West Kent) will give an address on a colonel's difficulties. Reference will be made to the Colonels Amendment Act of 1926 and the report of the Lunacy Commission. Local members of the legal profession are also invited to this meeting.

**LANCASHIRE AND CHESHIRE BRANCH Hyde Division**—The following programme has been arranged by the Hyde Division for the session 1927-28:

- Nov 17th Dance in aid of Medical Charities in Hyde Town Hall 8.30 p.m. to 1.30 a.m.
- Dec 8th Address by Sir William Milligan, in Stalybridge Town Hall 8.30 p.m.
- Jan 20th Clinical Meeting in the Maternity and Child Welfare Centre Hyde 8.30 p.m.
- Feb 23rd Address by Dr A Corsar Sturrock in Dukinfield Town Town Hall 8.30 p.m.
- Mar 15th Presidential Address by Dr T B Williams, in Stalybridge Town Hall 8.30 p.m.
- May 17th Picnic
- June 14th Annual General Meeting in Hyde Town Hall 8.30 p.m.

A joint meeting with Stockport Division will take place at Stockport in July. Visitors from other Divisions will be welcomed at all meetings.

**METROPOLITAN COUNTIES BRANCH City Division**—A clinical meeting of the City Division conducted by Dr T H G Shore, will be held on Friday, November 11th, at 4.15 p.m., at the Metropolitan Hospital, Ter. The annual dinner of the Division will take place at the Tiverton Restaurant on Thursday, December 1st, at 7.45 p.m., when several eminent guests will be present, and there will be a good musical entertainment. Tickets (12s 6d) from the secretary.

**METROPOLITAN COUNTIES BRANCH HAMPSTEAD DIVISION**—A meeting of the Hampstead Division will be held at the Hampstead General Hospital on Thursday, November 10th, at 8.30 p.m. An address will be given by Mr F E Scrase (M.O.H. Hampstead), on lessons of the last small pox outbreak in Hampstead. Coffee.

**METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION**—A clinical meeting of the Lambeth and Southwark Division will be held at the Belgrave Hospital for Children, Clapham Road S.W., on Wednesday, November 9th, at 4 p.m. It will be conducted by Mr Sidney Boyd M.S., F.R.C.S.

**METROPOLITAN COUNTIES BRANCH MARYLEBONE DIVISION**—A meeting of the Marylebone Division will be held in the Council Chamber, British Medical Association House, Tavistock Square, on Wednesday, November 23rd, at 8.15 p.m. Agenda—Discussion: The relation of voluntary and municipal hospitals to pending legislation, to be opened by Dr Masterman. St. Giles Hospital. Cambridge. Speakers representing the views of private practitioners, voluntary hospital and municipal hospital staffs, Poor Law medical officers, medical officers of health, and members of hospital boards of management will take part. All members and non-members of the Association are welcomed.

**METROPOLITAN COUNTIES BRANCH ST PANCRAS DIVISION**—A meeting of the St Pancras Division will be held in the British Medical Association House, Tavistock Square, W.C.1, on Tuesday, November 8th, at 9 p.m. Professor V H Mollam of the University of London will give an address on some experiments in malnutrition.

**METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION**—A meeting of the South West Essex Division will be held at the Wesleyan Schoolrooms, High Road, Leyton, on Tuesday, November 8th, at 3.30 p.m. Dr R M Bronte will read a paper on the medical witness. A reception and dance will be held in the Town Hall, Leyton, on Thursday, November 24th. All medical practitioners, whether members of the British Medical Association or not,

together with their friends, will be heartily welcome. The function will be in aid of medical charities. Tickets, 7s 6d single, 12s 6d double (lady and gentleman), can be obtained from the honorary secretary, or from members of the Executive Committee.

**METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION**—A meeting of the Willesden Division will be held at the Willesden General Hospital, Harlesden Road, N.W., on Wednesday, November 16th, at 9 p.m. Mr H S Souttar, F.R.C.S., will give an address on the rectum. The annual dinner of the Division will take place at the Criterion Restaurant, Piccadilly, S.W. on Sunday, November 20th, at 7 p.m. Tickets, 10s (excluding wine), can be obtained from Dr W Lock, 45, Church Road, N.W.10.

**MIDLAND BRANCH CHESTERFIELD DIVISION**—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, November 11th, at 8.15 p.m. Mr George Wilkinson, F.R.C.S. surgeon to the ear and throat department, Chesterfield Royal Hospital, and lecturer on diseases of the ear and throat, Sheffield University, will read a paper on small but troublesome ailments of the ear and nose. Tea and coffee at 8 p.m.

**NORTHERN COUNTIES OF SCOTLAND BRANCH BANFF, MORAY AND NAIRN DIVISION**—A meeting of the Banff, Moray, and Nairn Division will be held at the Gordon Arms Hotel, Elgin, on Friday, November 18th, at 6 p.m., when Professor D Murray Lyon of the University of Edinburgh will deliver a British Medical Association Lecture on asthma, with special reference to its etiology and treatment. The lecture is open to non-members of the Association, who will be cordially welcomed. The annual dinner will be held at the same hotel at 8 p.m., tickets 8s 6d. Members proposing to be present are asked to notify the Divisional Secretary, Dr G Smith Sowden (St. Giles, Little Cross, Elgin) as early as possible, and also to state if they intend to bring guests.

**NORTH OF ENGLAND BRANCH STOCKTON DIVISION**—The following arrangements of meetings have been made:

- Nov 18th Dr E Farquhar Murray (Newcastle on Tyne) Still Birth
- Jan 27th Dr W H Dickinson (Newcastle on Tyne) The Diagnosis of Pulmonary Tuberculosis

Feb 24th Dr George Hall (Newcastle on Tyne) Infantile Paralysis  
The annual dinner of the Division will be held on December 1st. Particulars later.

**NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION**—The annual address before the Sunderland Division will be given in the Masonic Room of the Palatine Hotel, Sunderland, on Thursday, November 10th, at 5 p.m., by Sir Norman Walker, and the subject will be "Dermatology—a retrospect, a survey, and a prospect." The annual dinner of the Division will be held in the Banqueting Hall of the Palatine Hotel the same evening at 7.15. Tickets, 10s 6d each (exclusive of wine). Application for tickets should be made at once to the honorary secretary, Dr R H Dix, 7, Otter Terrace, Sunderland. A dance in aid of the B.M.A. Charities Fund is being arranged for February, 1928.

**SOUTHERN BRANCH PORTSMOUTH DIVISION**—The second meeting of the session of the Portsmouth Division will be held on Thursday, November 10th, at the Queen's Hotel, Southsea, at 9.30 p.m., preceded by a supper at 9 o'clock. Mr Norman C Lako will speak on a "busman's holiday" in America. The cost of the supper is 3s 6d, including gratuities. Notice of intention to be present at the supper should be given to the honorary secretary, Dr I C H Gittings, 15, Baring Avenue, Southsea.

**SURREY BRANCH CROYDON DIVISION**—At the meeting of the Croydon Division to be held at the Croydon General Hospital on Wednesday, November 9th, at 4 p.m. Mr J S Bookless will give a lecture demonstration on the exophthalmos.

**SURREY BRANCH REICATE DIVISION**—A clinical meeting of the Reigate Division will be held at the East Surrey Hospital on Wednesday, November 9th, at 4 p.m. Cases will be shown by members of the staff.

**SUSSEX BRANCH CHICHESTER AND WORTHING DIVISION**—The autumn meeting of the Chichester and Worthing Division will be held at Waine's Hotel, Worthing, on Wednesday, November 16th, at 7 p.m. As on former occasions, the Division will entertain guests representative of the public authorities in the area. It is hoped that members will bring their wives and other guests. Members of neighbouring Divisions (Horsham, Brighton, etc.), with their wives and guests, are cordially invited. The price of the dinner ticket will be 10s 6d (exclusive of wines, but including all gratuities). No subscription will be asked for the entertainment of the official guests. Members are asked to make application to the honorary secretary, Dr Duncan D Mackintosh, St. Elmo, Victoria Road, Worthing, for their dinner tickets, enclosing remittance, before November 9th.

**WEST SOMERSET BRANCH TROWBRIDGE DIVISION**—The annual dinner of the Trowbridge Division will be held at the Angel Hotel, Cluppennham, on Wednesday, November 23rd, at 7.30 p.m. Mr G W Hey Groves will give an address after dinner. Tickets (exclusive of wines) 10s 6d. Members proposing to attend are asked to notify the honorary secretary, Dr A D Hamilton, Brook Cottage, Lacock, by November 18th.

**WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION**—The last of the series of six post-graduate lectures arranged under the auspices of the University of Birmingham will be given at the Herefordshire General Hospital by Mr Bickwith Whitehead on the menstrual function in health and disease, on Friday, November 11th, at 3.30 p.m.

**YORKSHIRE BRANCH HALIFAX DIVISION**—The annual dinner of the Halifax Division will be held at the White Swan Hotel on Thursday, November 17th, at 7.30 p.m.

**YORKSHIRE BRANCH ROTTERHAM DIVISION**—The annual dinner of the Rotherham Division will be held at the Crown Hotel, Pool on Friday, November 25th, at 7.15 for 7.30 p.m., tickets 12s.





## DIARY OF SOCIETIES AND LECTURES

## ROYAL SOCIETY OF MEDICINE

Section of Therapeutics—Tues 5 p.m. Dr R. D. Lawrence (a) An Insulin Resistant Case of Diabetes (b) Recovery from (?) Pituitary Diabetes after Pregnancy Dr F. Parkes Weber Artificial Cerebral Congestion against Sea sickness Dr J. H. Gaddum A Comparison of Thyroxin with some other Iodine Derivatives Other papers will be read

Section of Psychiatry—Tues, 8.30 p.m. Presidential Address by Dr R. L. Langdon Down Psychiatry and the Report of the Royal Commission Section of Surgery Subsection of Proctology—Wed 5.30 p.m. Discussion The Rectum by Radium to be opened by Sir C. ...

Section of Epilepsy and Paralysis—Maida Vale, W.9 8 p.m. Clinical Meeting at the Hospital for Epilepsy and Paralysis

Clinical Section—Fri 5 p.m. Cases Section of Ophthalmology—Fri, 8 p.m. Cases 8.30 p.m. Mr O. Gayer Morgan and Dr T. D. Howitt Diathermy in Iridocyclitis Dr P. H. Adams Congenital Cataract with Spontaneous Absorption of the Lens Mr Ernest Clarke and Mr Rayner Batten Drawings illustrating Toxic Haemorrhagic Relinitis

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East S.W.1—Tues and Thurs, 5 p.m., FitzPatrick Lectures by Dr Herbert R. Spencer The history of British Midwifery (1650-1800)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields W.C.2—Thurs 5 p.m., Bradshaw Lecture by Sir Cuthbert Wallis Enlarged Prostate: A Review

BIOCHEMICAL SOCIETY National Institute for Medical Research, Hampstead N.W.3—Mon, 5 p.m. Communications—(i) W. Stephenson A Cell free Dehydrogenase obtained from Bacteria (ii) G. A. Harrison Cause of Andrewes Diazo Test for Uraemia (iii) W. Hadden and F. R. Henley Equalization of Alcoholic Fermentation (iv) W. J. Thorpe Histamine in Tissue Extracts (v) O. Rosenheim Fluorescence of Ergosterol (vi) M. G. Eggleston and P. Eggleston Phosphagen Demonstrations—(i) J. T. Irving A Simple Shaker for Light Objects (ii) O. Rosenheim and E. Schuster A New Colorimeter

HUNTERIAN SOCIETY, Cutlers Hall, E.C.—Mon 9 p.m. Discussion The legal Perils of the Doctor To be opened by Earl Russell, Dr James Neal Mr Rayner Goddard, Sir Herbert Waterhouse, and Dr Temple Grey

WILT KENT MEDICO CHIRURGICAL SOCIETY, Miller General Hospital, Greenwich S.E.10—Fri, 8.45 p.m. Dr E. Mipother Co-operation by the Profession in the Treatment of Mental Disorder

## POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—Special Lecture at the Medical Society 11 Chandos Street W.1 Mon 5 p.m., Bleeding from the Nose and Throat open to the medical profession without fee. Royal London Ophthalmic Hospital City Road E.C.1 Special Demonstration, Wed 12 noon open to the medical profession without fee St Mary's Hospital Paddington W.2 Wed, 3 p.m., Special Demonstration free to the medical profession Cancer Hospital, Ilham Road S.W. Thurs, 3 p.m. Special Demonstration free to the medical profession Brompton Hospital for Diseases of the Chest, Brompton, S.W.3 Special Course for one week instruction in all departments of Hospital Medicine General Hospital Haverstock Hill N.W.3 General Practitioners Course second week 4.30 to 6 p.m. daily All information and tickets from the Secretary Fellowship of Medicine, 1, Wimpole Street W.1

HOSPITAL FOR SICK CHILDREN, Great Ormond Street W.C.1—Thurs 4 p.m., Value of Blood Sugar Estimation in Diagnosis and Treatment LONDON SCHOOL OF DERMATOLOGY, St John's Hospital Leicester Square, W.C.2—Tues 5 p.m. Diseases due to Animal Parasites Thurs, 5 p.m., Occupational Dermatitis

NATIONAL HOSPITAL Queen Square W.C.1—Mon, Tues Thurs Fri 2 p.m., Out-patient Clinics Mon 3.30 p.m. Progressive Leucoplakia Degeneration Tues 3.30 p.m. Clinical Lecture Thurs 3.30 p.m. Neurosyphilis Fri 3.30 p.m. Vascular Disease of the Nervous System Operations Tues and Fri 9 a.m.

NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales General Hospital Tottenham N.15—Mon 2.30 to 5 p.m. Medical Surgical and Operations Tues 2.30 to 5 p.m. Medical, and Ear Clinics Operations Wed 2.30 p.m. of Dermatological Cases 2.30 to 5 p.m. Medical Surgical, and Ear Nose and Throat Clinics 2 p.m. of Surgical Cases 2.30 to 5 p.m., Surgical, Skin and Eye Clinics

Medical and Children's Diseases Clinics Operations

ROYAL INSTITUTE OF PUBLIC HEALTH 37 Russell Square W.C.1—Wed, 4 p.m. The Present Situation in regard to Housing (with lantern illustrations)

ROYAL NORTHERN HOSPITAL Holloway Road N.—Tues 3.15 p.m. Ante Natal Care

SOUTH WEST LONDON POST GRADUATE ASSOCIATION St James's Hospital, Ovally Road Balham, S.W.12—Wed 4 p.m. Clinical Demonstration of Surgical Cases

WEST LONDON HOSPITAL POST GRADUATE COLLEGE Hammer-smith W.6—Mon, 10 a.m. to 1 p.m. Genito-urinary Operations Skin Department Surgical Wards 2 p.m. Surgical Wards Gynaecological and Eye Departments Tues 10 a.m. to 1 p.m. Medical Ward Visit Demonstrations in Venereal Diseases 2 p.m. Medical Wards Throat Nose and Ear Department 4.30 p.m. Heart in Childhood Wed 10 a.m. to 1 p.m. Medical Wards Demonstration in Ear, Nose and Throat Thurs, 2 p.m. Demonstration of Fractures 2 p.m. Eye and Ear Departments Gynaecological Ward Fri 10 a.m. to 1 p.m. Operations Dental Skin, and Electrical Departments 2 p.m. Throat Nose and Ear Department 5 p.m. Staff Consultation in Massage Department Sat 10 a.m. to 1 p.m. Bacterial Therapy Department Children's Medical Department Daily Operations Medical and Surgical Out-patients at 2 p.m.

GLASGOW POST GRADUATE MEDICAL ASSOCIATION—At Royal Hospital for Sick Children Wed 4.15 p.m. Surgical Cases

JAMES CLERKE MAXWELL INSTITUTE FOR CLINICAL RESEARCH St Andrews—Tues, 4 p.m. The Maculogical Principles in their Relation to Common Catarrhinal Affections

MANCHESTER ANTHROPOLOGICAL SOCIETY—Thurs, 4.15 p.m., Some Remarks on the Stone Age Tues at 3.30 p.m.

MILITARY MEDICAL SOCIETY—Tues 4.15 p.m. Venere Otitis Media Fri 3.15 p.m. at Royal Residential Schools for the Deaf Old Trafford The Education of the Deaf at Child Level at 3.5 p.m.

STUDY CLUB FOR POST GRADUATE CLINICS—At the Royal Hospital for Sick Children 4 p.m. Surgical Cases

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE

TAVISTOCK SQUARE, W.C.1

## Departments

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SCOTTISH MEDICAL SECRETARY 6 Drumshuggan Gardens Edinburgh. (Telegrams Associate Edinburgh Tel 23501 Edinburgh)

IRISH MEDICAL SECRETARY 15 South Frederick Street, Dublin (Telegrams Bacillus Dublin Tel 4737 Dublin)

## Diary of the Association

NOVEMBER

- 4 Fri London Hospitals Subcommittee 2.30 p.m.  
8 Tues London Central Ethical Committee (Special Meeting) 2.30 p.m.  
St Pancras Division B.M.A. House Tavistock Square, W.C.1 Professor V. H. Mollison on Some Experiments in Malnutrition, 9 p.m.  
South West Essex Division Wesleyan Schools High Road, Levton Dr R. M. Bronte on the Medical Witness 3.30 p.m.  
Thames Division General Hospital, Tooting, Surrey, W.C.1 Mr A. H. Nave on a Coroner's Difficulties 8.30 p.m.  
9 Wed London Scope of State and Hospital Medical Service Committee 2.30 p.m.  
Croydon Division Croydon General Hospital Lecture Demonstration by Mr J. S. Bookless on Exophthalmos 4 p.m.  
Lambeth and Southwark Division Clinical Meeting Belgrave Hospital for Children 4 p.m.  
Reigate Division Clinical Meeting East Surrey Hospital 4 p.m.  
10 Thurs London Charities Committee 2.30 p.m.  
Hampstead Division Hampstead General Hospital Mr F. E. Scrase on the Last Small pox Outbreak in Hampstead 8.30 p.m.  
Kent Branch Royal Hall Bromley B.M.A. Lecture by Dr C. A. Allan on Rheumatic Infection in Children 3 p.m.  
Dundee Branch Annual Meeting, Medical School, Dundee, 3.30 p.m.  
Gloucestershire Branch General Hospital Cheltenham, 6.15 p.m. Supper Cadogan Club after meeting.  
Portsmouth Division Mr Norman C. Lake on A Busman's Holiday in America, 9 p.m.  
Sunderland Division Clarendon Hotel Sunderland Sir Norman Walker on Dermatology 5 p.m. Annual Dinner 7.15  
Swansea Division General Hospital, Swansea Lecture by Sir Owen J. Maclean 3.15 p.m.  
Wakefield Infirmary and Castleford Division Great Hall Restaurant Westgate Wakefield Discussion on Death Certification and Coro 7.45 p.m.  
11 Fri London Science Committee 4 p.m.  
London Joint Section of the British Medical Association 4.15 p.m.  
Chesterfield Division G. Wilkinson on Ailments of the Ear and Nose 8.15 p.m.  
City Division Clinical Meeting Metropolitan Hospital 4.15 p.m.  
12 Fri London General Hospital Sixth by Mr R. G. Whitehead on the Health and Diet 3.30 p.m.  
15 Tues Croydon Division Croydon General Hospital Dr S. F. St J Stadman on Cancer 8.30 p.m.  
16 Wed London Hospitals Committee 2.15 p.m.  
Chichester and Worthing Division Warner's Hotel 7 p.m.  
Villiers Division Willoughby General Hospital Mr H. S. Sait on the Rectum 9 p.m.  
17 Thurs London Insurance Acts Committee 12 noon  
Villiers Division Infirmary Kilnwick B.M.A. Lecture by Dr S. F. St J on Some Aspects of Childbirth Diseases 3.30 p.m.  
Darlington Division Hospital Darlington Professor Hugh Mackin on Gastric and Duodenal Ulcers 8.30 p.m.  
Halifax Division Annual Dinner White Swan Hotel 7.30 p.m.  
Hyde Division Dance, Hyde Town Hall 8.30 p.m.  
18 Fri London Lunacy Law and Administration Committee 2.30 p.m.  
Banff Moray and Nairn Division Gordon Arms Hotel Perth B.M.A. Lecture by Professor D. Murray Lyon on Asthma, 6 p.m. Annual Dinner 8 p.m.  
East York Division Discussion on Focal Sepsis  
Stockton Division Dr E. Enghar Murray on Stillbirth

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

## BIRTH

HERRILL—At the Pinlea Nursing Home, Newerfle-on-Tyne on October 29th to Dr and Mrs George Hurrell of 31, Denholm, Monkwearth daughter

## MARRIAGES

FRASER—ROBINSON—On October 29th 1927 at the Church of St Pancras by the Rev E. L. Metcalf M.A. John Alexander Fraser M.B. B.S. only son of the Rev John and Mrs Fraser of Kilmarnock and the only daughter of Mr and Mrs J. Robinson of Kilmarnock

GOODWIN—SIMS—On October 15th at Preston College of Education by the Rev D. I. Campbell Vicar of Preston Canon Dawson Minister of Brighton Goodwin son of Mr W. F. Goodwin 1, Temple Gardens Brighton to Kathleen May Shrubshall daughter of Dr and Mrs Shrubshall 47 Eaton Place Brighton

MUNN—HILL—On October 27th at Castlewellan Presbyterian Church by the Rev Edwin Lyster B.A. uncle of the bride and the Rev J. Cassels Cordner B.A. Dr Norman Barry Munn M.C. and the Rev J. Munsterman M.C. Munn inside Woodcock Road Belfast to the daughter of Dr Wainman M. and Mr Hill and Castlewellan

# SUPPLEMENT

## TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY NOVEMBER 12TH 1927

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## THE EFFICIENCY OF THE NATIONAL INSURANCE MEDICAL SERVICE

ADDRESS BY DR H B BRACKENBURY TO APPROVED SOCIETY SECRETARIES

At a meeting of the Incorporated Association of Approved Society Secretaries, held in London on November 2nd Dr H B BRACKENBURY, Chairman of Council of the British Medical Association, delivered an address on 'The efficiency of the national insurance medical service'. Mr T P PRANCE, chairman of the London Centre of the Incorporated Association presided over an audience which included some of the most prominent figures in approved society organization.

Dr Brackenbury, who had been introduced as the 'proponent of the British Medical Association' and that he did not fill any such role that evening. He proposed to discuss, in a non-controversial spirit, some of the matters on which approved societies and the medical profession had to work together. He was taking it for granted that an insurance medical service was a good thing in itself although, of course, efficiency—the word used in his title—might equally characterize a thing bad in itself. By what standard, then, should the efficiency of the medical service be judged? Not, certainly, by the standard of an ideal medicine. Medicine, in its art and science was by no means ideal. It had many imperfections, there were many gaps in its knowledge, it included some survivals, good things in their time, but now outworn. In a word it was like every other sphere of art or life of similar width. The actual practice of medicine also, apart from the imperfections of the science or art in itself had not reached an ideal level. It was not to be expected that all those concerned would be always working at the highest pitch of efficiency. Allowance must be made for varieties of human nature and circumstance. Therefore the efficiency of the insurance medical service should not be measured by some ideal condition which did not in fact exist but by what was actually attained in comparable branches of the profession or in some cognate service. There were three branches of medical service with which the insurance medical service might rightly be compared—namely the work of specialists in hospital work (especially that of the out-patient department), and the private practice of the family doctor. Those who were working the insurance service on its

service should be equal to the standard set up in these other branches and in his own judgment the insurance medical service was as efficient as any of them.

Take the work of specialists. Here there was just as much variation in efficiency, knowledge and skill as in any other branch of the profession. There were specialists who were first class in every possible respect, and others with equal claims on paper whose work was not quite of the same order. Specialist work while it contained a great deal that was most excellent had an admixture that was less satisfactory owing to slightly less knowledge, competence or experience perhaps to minor defects of character or to various economic and other circumstances into which it was not necessary to go. The out-patient department of hospitals—which was in some cases though not in others comparable with the insurance medical service—was again a field in which a vast amount of good work was done but it had its faults and inadequacies, which must have come home to the present. He had known for instance patients who had been attending out-patient departments for years at regular intervals of a fortnight or a month and except on the first occasion had never had a medical examination. He was making no accusation against out-patient departments any more than against specialists but he remembered his own experience, many years ago, as resident medical officer in a special hospital in London. He remembered how particularly at evening sessions in the out-patient department the first few patients would be examined with the utmost interest and thoroughness, and then the porter would come in to say that there were a hundred others who must be seen that evening so that at a certain stage one began to do each patient less than justice though he trusted no serious injustice.

The private practice of the family doctor, again, offered a parallel to the insurance service. The great bulk of practitioners of this class were of a very high type, and did their work most conscientiously, but there were others who were rather less conscientious, for example, about accepting patients when their practice was already so busy that such patients were not likely to receive the full attention which every doctor wanted to give. There were differences between practitioners also in respect to knowledge to their acquaintance with modern discoveries in medicine and in other ways. In private practice, again, there were times of stress due to local epidemics when the most conscientious practitioner had to give less than the service he would desire to give to the individual patient. Judged by all these standards Dr Brackenbury believed that on the whole, the insurance medical service

was rather higher than the others in its general level of efficiency, though this, of course, was not capable of proof. He feared that the tendency was for those he was addressing to have brought to their attention the imperfections of the service rather than its excellencies. The work which in insurance doctor did over and above any legal requirement was not likely to reach the approved society official, whereas any lapse or delinquency was reported.

Dr Brackenbury passed on to consider any dangers inherent in the insurance medical service which tended to depreciate or hamper its efficiency or prevent its further development. He thought these came under two headings: a tendency to an over-regulation of the profession, and a tendency to its commercialization. With regard to the first, while he recognized the need for all sorts of regulations and rules, he thought there was a danger that this might be carried too far. The doctor's job was to deal with the patient in front of him. His first concern was to help that man or woman in every way possible, even perhaps in ways not strictly medical. The more he was distracted from his job the worse would that job be done, so that the things the doctor had to do apart from that job were more or less troublesome or annoying, though as a rule he took them philosophically. Dr Brackenbury instanced what took place at a birth. The doctor's job was to look after the mother and infant, but he also had to find out whether the birth had been notified by the father or the nurse, and, if not, it was his business to notify, he had perhaps to deal with a maternity claim for the mother, should something be wrong with the infant's eyes he had not only to attend to it, but to notify the fact to another authority, and should the mother develop a rise of temperature, even a moderate rise, the cause for which might be quite normal, such as the commencing of the breasts to function, he must make another notification, perhaps again to a different authority. All these things might be necessary, but they were no essential part of the doctor's primary object. He did not do them automatically. He had to stay to consider to which authority a particular notification should be sent, or whether the time allowed for making the notification had elapsed, and all this detracted to some extent from his fundamental service.

To this, in the insurance medical service, were to be added a whole lot of other regulations. He agreed that, if a man took ordinary care, he was not likely often to find himself in any difficulty. When addressing senior students about to enter the practice of the profession the speaker had found them rather oppressed by the pitfalls of insurance practice from this point of view, and he had reassured them by pointing out that there were laws in this country against murder, yet though every one of us was a potential murderer, no man of sound mind spent his time thinking about those laws and how he could manage to avoid transgressing them. The insurance doctor could work for quite a long time without any particular attention to the exact bearing of the terms of service, but every now and then the very thing happened to provide against which the regulations were framed, and in order to act properly in that contingency he would find it necessary to fill up certain forms, send in certain claims, and so forth. The speaker's submission was that there was a real danger that things of this kind, trifling in themselves, but engaging the doctor's thoughts even when he was not actually doing anything in connexion with them, might become too onerous, and so detract from the efficiency of the actual job. If, therefore, in certification rules for example, some things could be set out in general terms instead of with meticulous precision, so much the better. He mentioned as an example the convalescent certificate, in which more elasticity might well be allowed. Another matter was the necessity for recording all attendances and visits on the cards. There were certain cases, no doubt, in which it was desirable that such records should be kept, also there were certain doctors with the statistical habit of mind who delighted in doing this kind of thing, but on the whole this particular requirement became a nuisance against which the Panel Conference usually protested, and in extremely chronic cases, where a patient simply came periodically for his certificate, the practice of searching out that card and making the entry was far short of an absurdity.

Finally, there was a tendency to commercialization—not exactly a suitable word to cover what he had in mind—to be combated. If this was allowed to spread to any large extent it would ruin the medical profession as a profession. He instanced four ways in which, he thought, the danger arose. The first was with regard to doctors' lists. There was a danger in having too large lists. Allowing for the exceptional case (and, of course, in prescribing an absolute maximum this always had to be allowed for), he believed the present maximum too high for the ordinary circumstances of practice. It was true that there were practitioners who were extraordinarily quick-minded, methodical, and energetic, who laid themselves out to deal with large numbers of insured persons and practically no others. These men could manage a list of 2,500. But there were other doctors, not quite of that type, and who had other work to do, for whom, he thought, that number was too large. Nor was he specially concerned for the exceptional case, because he deprecated the devotion of a practitioner almost exclusively to insurance work. A man was likely to be a better doctor if he did not confine himself entirely to one type of practice, and did not cut away, say, that very important class of patients comprising poisons under 16 years of age.

Another direction in which commercialization appeared was in connexion with lock-up surgeries. He admitted that there were circumstances in which a lock-up surgery could not be helped, and was, indeed, a boon to patients. But the tendency to lock-up surgeries was in most cases undesirable. He did not think that any family doctor could really do his full duty to his patients unless he lived among them and knew their circumstances and their lives. Again, there was the question of assistants. The taking of an assistant was in itself an eminently desirable thing. It was an excellent way in which the newly qualified practitioner might be introduced into the profession. It must not be imagined that a doctor's request for permission to employ an assistant, when he had not got the maximum number of insured persons on his list, was due to some sinister motive—quite the contrary, but Dr Brackenbury agreed that if a man had a lock-up surgery and a small list, and asked for an assistant, who's everything might be quite straightforward, inquiries ought to be made, lest there be any intention to exploit the lock-up surgery as a branch practice for the mere purpose of reaping an income over and above what had to be paid to the assistant to do the work. Following from this there were cases here and there in which a doctor or firm of doctors, or even a commercial company, ran practices for purely business purposes. A man might start a practice, put in a cheap assistant, get a number of insured persons and others attached, advertise the practice by such methods as were available without running the risk of disciplinary action, and presently sell the practice to the assistant, and he might repeat this operation in various places, himself running the whole thing as a business proposition, living upon the creation of practices and the selling of them at an appropriate moment. It was largely because of the facilities offered by the Insurance Act that that insidious sort of commercialization was made more easy, and it was a thing which all who had the interests of the medical profession at heart, and the interests of the insurance medical service, must endeavour to stop.

In proposing a vote of thanks to Dr Brackenbury, Mr CAVEN, general secretary of the association, said that Dr Brackenbury, more than any man, was responsible for the better atmosphere which now existed between approved societies and the medical profession. It was he who presided over a series of conferences, held at the old British Medical Association House, between representatives of the sides, and although some on the approved society side entered those conferences with the fixed intention of fighting the medical profession, they found their feelings blunted with Dr Brackenbury in the chair. If anyone came that evening intending to criticize, Dr Brackenbury's candour must have disarmed them, but the speaker suggested that it was now the turn of the British Medical Association to invite a layman, representative of approved societies, to address a gathering of insurance practitioners.

## British Medical Association

## CURRENT NOTES

British Medical Bureau (The Scholastic Clerical) and  
Medical Association Ltd)

In our last issue (p. 839) the attention of members was directed to the institution of the British Medical Bureau under an agreement with the old established Scholastic Clerical, and Medical Association Ltd which since 1820, has been providing for the wants of medical practitioners by its transfer of practices and provision of partners. Practitioners and locumtenents are concerned with great acceptance to the profession. Its new name of British Medical Bureau is intended to emphasize the relations which it now has with the British Medical Association, and the fact that in future it will do its work in accordance with the general policy of the British Medical Association. It will be noted that members of the Association will have the advantage of a reduced scale of charges. The Association has always been able confidently to recommend the institution to its members as a result of much experience of its straightforward dealing and can now do so with even more confidence than before in view of the new relations that exist between the two bodies. The negotiations have been conducted by the Council of the British Medical Association with the approval of the Representative Body. An advertisement will be found at page 47 of this issue. All correspondence should be addressed to Mr. A. V. Squire, General Manager, British Medical Bureau, 12 Stratford Place, Oxford Street, W.1 (telegraphic address "Triform Wendo, London", telephone, Mariav 1732 and 1733).

## Some Work of the Committees.

During the past fortnight the Psycho Analysis Committee and a number of subcommittees have held meetings. The work of the Psycho Analysis Committee while it entails frequent meetings does not lend itself to occasional commitment. Among the subcommittees two the Prescribing Subcommittee and the Hospitals Subcommittee, have been specially appointed this session to consider particular problems. The Prescribing Subcommittee was appointed by the Insurance Acts Committee to consider the steps could most profitably be taken to draw the attention of insurance practitioners to the necessity for care in prescribing. At its first meeting on October 26th it is approved for submission to the parent committee a circular dealing with this subject addressed to Panel Committees, and a memorandum on prescribing for issue to individual insurance practitioners. The Hospitals Subcommittee has the task of "considering the co-ordination of hospital provision, in view of the letter of January 1st 1927, sent by the British Hospitals Association to the Ministry of Health and the reply of the Ministry of Health thereto, dated February 15th 1927," together with certain other matters bearing upon the hospital policy of the Association. Among these is the question of the formulation of a middle class hospital policy. The Propaganda Subcommittee on November 2nd made its final preliminary review of the work accomplished during the past and plans for the present session. The Library Subcommittee has under consideration the development of the Association's Library and the possibility of some scheme of co-operation with other medical libraries in London. The work of the Joint Research Subcommittee is making good progress. At a meeting on October 23rd the subcommittee completed its scheme for the conduct of investigations into the treatment of varicose ulceration and gastro-enterostomy and decided upon the terms of the questions to be addressed to practitioners engaging in the inquiries. The questions will be submitted for the approval of the Science Committee at its next meeting. It is hoped that the two investigations may be set on foot very shortly, when full particulars will be published in the Journal. The subcommittee has been fortunate in securing the help of Dr. A. P. Luff who will assist in the collation and evaluation of the data obtained and in the general conduct of the research. The Maternity and Child Welfare Subcommittee on November

3rd considered the ante-natal record form issued by the Central Midwives Board to its midwives and decided to represent to the Ministry of Health that it is undesirable to assign to midwives duties which can only be properly carried out by duly qualified medical practitioners. The subcommittee also had before it a resolution of the Representative Body with regard to ante-natal work and proposed at its next meeting to consider a scheme that has been formulated in Kent for the provision of ante-natal examinations for all expectant mothers. On consideration of a project put forward by the Association of Infant Welfare and Maternity Centres, for the establishment of pivoting centres for better class mothers it was decided to invite a representative of that association to meet the subcommittee and discuss the matter.

## Association Notices

## BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH** NORTON AND TAMWORTH DIVISION.—An ordinary meeting of the Norton and Tamworth Division will be held at the Tamworth General Hospital on Thursday November 17th at 3.30 p.m. Agenda. Inaugural address by the chairman Dr. Ashworth. A special meeting will then be held to consider Dr. Jones's report as representative in the Representative Body and the question of adopting new Rules of Organization.

**DOVER AND WEST HAST BRANCH** BOURNEMOUTH DIVISION.—A general meeting of the Bournemouth Division will be held in conjunction with the Bournemouth Legal Society by their kind invitation on Monday November 21st at the Alexandra Hall, St. Peter's Road, Bournemouth at 8 p.m. when a discussion on "Should communications to a medical man be privileged in legal proceedings both civil and criminal" will take place. The two chief speakers for the legal society will be Mr. E. W. Marshall, Barrister and Mr. W. E. D. Angibau and for the Division Dr. E. K. Lo Fleming and Dr. G. H. Morse. The subject will then be open for general discussion and it is hoped that as many members as possible will be present and that a large number will take part in the debate. The legal society are kindly providing coffee. Members wishing to compete in the Treaurrer's Cup golf competition are asked to enter their names stating their club handicap to Dr. Graham-Jones, Streteford Court, Park Lane by Saturday November 19th. There will be an entrance fee of 2s. 6d. towards a prize for the winner of the Division stage of the competition.

**EAST YORK AND NORTH LINCOLN BRANCH** EAST YORK DIVISION.—The East Yorkshire Division will hold a joint meeting with the Hull and District Society of Dental Surgeons for a discussion on focal sepsis in Hammond's Cafe on Friday November 18th at 8.5 p.m. The meeting will be preceded by an informal supper (price 3s.) commencing at 8 o'clock.

**FIFE BRANCH**—A clinical meeting of the Fife Branch will be held in the Maternity Home, Town and Crescent, Kirkcaldy on Wednesday November 23rd at 3.30 p.m. Mr. Frank E. Jardine (Edinburgh) will address the meeting on the use of behotherapy in surgical cases.

**GLASGOW AND WEST OF SCOTLAND BRANCH** ABERDEEN DIVISION.—A meeting of the Aberdeenshire Division will be held in the Infirmary, Kilmarnock on Thursday November 17th at 3.30 p.m. A British Medical Association Lecture will be given by Professor D. P. D. Wilkie (Edinburgh) entitled "Some aspects of gall bladder disease" illustrated by lantern slides.

**KENT BRANCH** ISLE OF THAMES DIVISION.—A meeting of the Isle of Thanet Division will be held at the Queen's Highcliffe Hotel, Cliftonville on Thursday November 24th at 8.45 p.m. when Dr. H. Raven will take the chair. Paper by Dr. H. Warwick Brown on nervous exhaustion especially with reference to auto-intoxication as a factor in its production.

**LANCA SHIRE AND CHESHIRE BRANCH** HYDE DIVISION.—The dance arranged by the Hyde Division in aid of medical charities will take place in the Hyde Town Hall on Thursday November 17th, 8.30 p.m. to 1.30 a.m.

**METROPOLITAN COUNTIES BRANCH** CITY DIVISION.—A clinical meeting of the City Division conducted by Dr. T. H. G. Shore will be held to-day (Friday November 11th) at 4.15 p.m. at the Metropolitan Hospital. The annual dinner of the Division will take place at the Trocadero Restaurant on Thursday December 1st at 7.45 p.m. when several eminent guests will be present and there will be a good musical entertainment. Tickets (12s. 6d.) from the secretary.

**METROPOLITAN COUNTIES BRANCH** HAMPTON DIVISION.—The following programme of meetings for the session 1927-28 has been arranged:

Dec 5th Dr. A. E. Hayward Pinch Radium Therapy  
Jan 12th Dr. T. J. Bennett The Treatment of Gastric Ulcer  
Feb 5th Dr. S. H. Bennett Copeland F.R.S. "Esophageal Cancer"  
Mar 12th Dr. G. A. Sturtevant The Heart in Acute Infections  
May 12th Division on the Annual Report of Council  
Jun 1st Annual Meeting of the Division Election of Officers and Executive Committee  
July 12th Discussion on the Supplementary Report of Council on the matters to be presented at the Annual Representative Meeting

All meetings unless otherwise announced will be held at the Hampton General Hospital at 8.30 p.m. Members are invited to honor or to report cases of interest at any of the meetings.

**METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION**—A meeting of the Lambeth and Southwark Division will be held at the Lambeth Carlton Club, Coldharbour Lane, on Tuesday, November 22nd, at 9 p.m. Agenda: Report by Dr E H Jebus on Annual Representative Meeting at Edinburgh, paper by Mr E P Brockman (Orthopaedic Department, St Thomas's Hospital) on common disabilities of the foot and ankle.

**METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION**—A meeting of the Lewisham Division will be held on Tuesday, November 15th, at 8.45 p.m. at the Town Hall, Catford, S.E. 6, when Mr Charles Beney, aural surgeon, St John's Hospital, Lewisham, will give an address entitled "The urgency of the discharging ear," and will show clinical cases.

**METROPOLITAN COUNTIES BRANCH MARYLEBONE DIVISION**—A meeting of the Marylebone Division will be held in the Council Chamber, British Medical Association House, Tavistock Square, on Wednesday, November 23rd, at 8.15 p.m. Agenda—Discussion: The relation of voluntary and municipal hospitals to pending legislation, to be opened by Dr Masterman, St Giles Hospital, Cumberwell. Speakers representing the views of private practitioners, voluntary hospital and municipal hospital staffs, Poor Law medical officers, medical officers of health, and members of hospital boards of management will take part. All members and non-members of the Association are welcomed.

**METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION**—The South-West Essex Division will hold a reception and dance in the Town Hall, Leyton, on Thursday, November 24th. All medical practitioners, whether members of the British Medical Association or not, together with their friends, will be heartily welcome. The function will be in aid of medical charities. Tickets, 7s 6d single, 12s 6d double (lady and gentleman), can be obtained from the honorary secretary, or from members of the Executive Committee.

**METROPOLITAN COUNTIES BRANCH TOWER HAMLETS DIVISION**—A meeting of the Tower Hamlets Division will be held at the British Red Cross Society's Clinic at 126, Brunswick Road, Poplar, E. 14, on Wednesday, November 16th, at 4.15 p.m., when Dr J. Sainsbury will give a lecture demonstration and exhibit clinical cases. Tea will be served at 4 p.m.

**METROPOLITAN COUNTIES BRANCH WE TWINSTER AND HOLBORN DIVISION**—A meeting of the Westminster and Holborn Division will be held at Romano's Restaurant, Strand, W.C., on Thursday, November 24th, at 8.15 p.m., preceded by a dinner at 7.30. Sir Crisp English will open a discussion on "Is it desirable that each member of the community should have an annual medical overhaul?"

**METROPOLITAN COUNTIES BRANCH WILLESDEEN DIVISION**—A meeting of the Willesden Division will be held at the Willesden General Hospital, Hailesden Road, N.W., on Wednesday, November 16th, at 9 p.m. Mr H. S. Souttar will give an address on the rectum. The annual dinner of the Division will take place at the Criterion Restaurant, Piccadilly S.W., on Sunday, November 20th, at 7 p.m. Tickets, 10s (excluding wine), can be obtained from Dr W. Lock, 45, Church Road, N.W. 10.

**MIDLAND BRANCH HOLLAND DIVISION**—A meeting of the Holland Division will be held at the Y.M.C.A. Institute, Spalding, on Friday, November 18th, at 3 p.m., when an address will be given by Dr H. Bell Tawse (Nottingham), on some difficulties of the general practitioner with ear, nose, and throat cases, illustrated by lantern slides. Members of the neighbouring Division are cordially invited. The following further meetings of the Division have been arranged:

December Dr A. P. Beddard, physician to Guy's Hospital  
January B.M.A. Lecture by Sir Humphry Rolleston, Bart.  
February Dr J. Wilkie Scott (Nottingham)

**NORFOLK BRANCH**—A meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital, on Wednesday, November 30th, at 3.15 p.m., when Dr H. J. Stirling will read a paper on the diagnosis and treatment of hyperthyroidism (illustrated by lantern slides).

**NORFOLK BRANCH EAST NORFOLK DIVISION**—A general meeting of the East Norfolk Division will be held in the Medical Library, Norwich, on Wednesday, November 16th, at 3.15 p.m. Agenda: Report of Representative to Annual Representative Meeting, Edinburgh; Charities Fund; resignation of honorary secretary; election of honorary secretary. As the honorary secretary is leaving the Division he would be glad of as large an attendance as possible to enable him to see personally as many members as possible before his departure.

**NORTHERN COUNTIES OF SCOTLAND BRANCH BANFF, MORAY AND NAIRN DIVISION**—A meeting of the Banff, Moray, and Nairn Division will be held at the Gordon Arms Hotel, Elgin, on Friday, November 18th, at 6 p.m., when Professor D. Murray Lyon, of the University of Edinburgh, will deliver a British Medical Association Lecture on asthma, with special reference to its etiology and treatment. The lecture is open to non-members of the Association, who will be cordially welcomed. The annual dinner will be held at the same hotel at 8 p.m., tickets 8s 6d. Members proposing to be present are asked to notify the Divisional Secretary, Dr G. Smith Sowden (St Giles, Little Cross, Elgin) as early as possible, and also to state if they intend to bring guests.

**NORTH OF ENGLAND BRANCH BISHOP AUCKLAND DIVISION**—A meeting of the Bishop Auckland Division will be held at the Cottage Hospital, Bishop Auckland, on Friday, November 25th, at 8 p.m. Dr D. Wells Patterson will give a lecture on the earliest signs of disease.

**NORTH OF ENGLAND BRANCH DARLINGTON DIVISION**—A meeting of the Darlington Division will be held at the Hospital, Darlington, on Thursday, November 17th, at 8.30 p.m., when an address will

be given by Professor Hugh Macleod on the subject of the medical treatment of gastric and duodenal ulcer. Members from neighbouring Divisions will be welcome.

**NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND DIVISION**—The annual dinner of the North Northumberland Division is to be held on Thursday, November 17th, in the Plough Hotel, Alnwick, at 6.30 p.m. for 7 p.m. when the chief guests will be Professor Stuart MacDonald and Dr Frank Beaton of Ashington. Price of tickets (exclusive of wines) 10s 6d.

**NORTH OF ENGLAND BRANCH STOCKTON DIVISION**—At the meeting of the Stockton Division to be held on Friday, November 18th, Dr E. Laing Murray (Newcastle on Tyne) will read a paper on stillbirth.

**SOUTHERN BRANCH PORTSMOUTH DIVISION**—A clinical meeting of the Portsmouth Division will be held at the Royal Portsmouth Hospital (Out-patient Department), on Thursday, November 24th, 3 p.m., examination of patients, 3.45, tea by invitation of the medical and surgical staff of the hospital, 4 o'clock, discussion (in board room of hospital). Brief notes of cases should be sent to Mr C. A. Scott Ridout, clinical secretary, not later than first post Monday, November 14th, so as to be included in the agenda. A dance in aid of the B.M.A. Charities Fund is being arranged for February, 1928.

**SOUTHERN BRANCH WINCHESTER DIVISION**—The next meeting of the Winchester Division will be held at the Royal Hants County Hospital on Wednesday, November 16th, at 3 p.m., at which Mr B. H. Paddock will read a paper on the treatment of otitis media in children. The chairman will provide tea about 3.30. Will members who intend to be present kindly notify the honorary secretary, Dr W. A. Bruce Young, Everthorpe, Winchester, not later than Tuesday morning, November 15th.

**SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION**—A meeting of the Swansea Division will be held at the General Hospital, Swansea, on Thursday, November 24th, at 8.15 p.m. Discussion: Acute intestinal obstruction to be opened by Dr D. E. Evans (medical), Dr A. F. Sladden (pathological), and Mr Howell Gabb (surgical).

**SOUTH WESTERN BRANCH**—An autumn intermediate meeting of the South Western Branch will be held in the Library of the Royal Devon and Exeter Hospital, Exeter, on Tuesday, November 22nd, at 3.15 p.m. Lecture by Dr James Menell. The use and abuse of bone-setting and osteopathy. Tea will be provided.

**SURREY BRANCH CROYDON DIVISION**—A meeting of the Croydon Division will be held at the Croydon General Hospital on Tuesday, November 15th, at 8.30 p.m. Dr S. F. St. J. Steadman will give a lantern lecture on cancer.

**SUSSEX BRANCH CHICHESTER AND WORTHING DIVISION**—The autumn meeting of the Chichester and Worthing Division will be held at Warne's Hotel, Worthing, on Wednesday, November 16th, at 7 p.m. As on former occasions the Division will entertain guests representative of the public authorities in the area. It is hoped that members will bring their wives and other guests. Members of neighbouring Divisions (Horsham, Brighton, etc.), with their wives and guests, are cordially invited. The price of the dinner ticket will be 10s 6d (exclusive of wines, but including all gratuities). No subscription will be asked for the entertainment of the official guests. Members are asked to make application to the honorary secretary, Dr Duncan D. Macintosh, St. Elmo, Victoria Road, Worthing, for their dinner tickets, enclosing remittance.

**SUSSEX BRANCH HASTINGS DIVISION**—The annual dance arranged by the Hastings Division will take place on Friday, December 2nd, at the Albany Hotel, Hastings. Tickets, 7s 6d (including buffet supper). Members are requested to notify the honorary secretary, Dr T. Reed, Hawkswood London Road St. Leonards-on-Sea, as early as possible how many tickets they will require.

**WEST SOMERSET BRANCH TROWBRIDGE DIVISION**—The annual dinner of the Trowbridge Division will be held at the Angel Hotel, Chippenham, on Wednesday, November 23rd, at 7.30 p.m. Mr E. W. Hey Groves will give an address after dinner. Tickets (exclusive of wines) 10s 6d. Members proposing to attend are asked to notify the honorary secretary, Dr A. D. Hamilton, Biggo Cottage, Lacock, by November 18th.

**WILTSHIRE BRANCH**—A meeting of the Wiltshire Branch will be held at the County Mental Hospital, Devizes, on Wednesday, November 16th, at 3 p.m., when Mr D. A. Mitchell (Bath) will read a paper entitled "Ante natal work in general practice." It is hoped that all members of the Branch will make an effort to be present.

**YORKSHIRE BRANCH BRADFORD DIVISION**—The following programme of meetings has been arranged for the session 1927-28:

Nov 23rd Annual Dinner  
Dec 13th Combined Clinical Meeting with Medical-Chirurgical Society  
Jan 26th Annual Dance and Supper  
Feb 22nd or 23rd British Medical Association Lecture  
Mar 21st Smoking Concert  
April 18th Visit from Member of Headquarters Staff

**YORKSHIRE BRANCH HALIFAX DIVISION**—The annual dinner of the Halifax Division will be held at the White Swan Hotel, Halifax, on Thursday, November 17th at 8 p.m. Tickets price 10s 6d. Applications for tickets for members and guests, who need not be members of the medical profession should be made immediately to Dr W. O. Lodge, 3, Heath Hall, Halifax.

**YORKSHIRE BRANCH ROTHERHAM DIVISION**—The annual dinner of the Rotherham Division will be held at the Crown Hotel Rotherham, on Friday, November 25th at 7.15 for 7.30 p.m. tickets 12s 6d (exclusive of wines). Members proposing to attend are asked to notify the honorary secretary Dr W. S. Wildman, Eastwood Ho., Rotherham, by November 20th, stating the number and names of guests. It will facilitate arrangements if tickets are paid for in advance.



**YORKSHIRE BRANCH SHEFFIELD DIVISION**—A general meeting of the Sheffield Division will be held on Friday, December 9th, at the University, Sheffield, at 8.30 p.m. when a British Medical Association Lecture will be delivered by Professor H. Beaumont Whitehouse on practical applications of recent views on the menstrual function.

#### SPA PRACTITIONERS' GROUP

The formation of a Spa Practitioners' Group has been sanctioned by the Council of the Association. Membership of the group is open to the members of the Association who regularly prescribe the mineral waters or baths of the spas in which they reside and the members of the Association who are on the staff of a hospital or clinic where the use of the local mineral waters is part of the routine treatment. A meeting of those eligible for membership will be held to inaugurate the group at the British Medical Association House, Tavistock Square, London W.G.1 on Wednesday, November 23rd, at 12.30 p.m.

### Meetings of Branches and Divisions

#### DORSET AND WEST HANTS BRANCH WEST DORSET DIVISION

A meeting of the West Dorset Division was held at the Weymouth District Hospital on October 18th. Mr. Gerard-Pearse showed a case of a small girl admitted to the hospital almost moribund and suffering from acute streptococcal peritonitis. The abdomen was opened and drained and the appendix which appeared normal removed. The girl was now fit and well.

Dr. Roderic Hall, who displayed some interesting radiographs of the chest in cases of early pulmonary tuberculosis, pointed out the distinctive diagnostic features.

After refreshments had been served, Dr. John Carswell (Bournemouth) read a paper entitled "Language and mind: being reflections suggested by Sir Henry Head's treatise *Aphasia and the Immense Importance of Head's Work*". He suggested that it would have a great effect on the future of medicine and that it deserved and would repay careful study.

The chairman, Dr. O'Leary, thanked Dr. Carswell for his excellent paper and for travelling so far to deliver it.

#### EAST YORK AND NORTH LINCOLN BRANCH EAST YORK DIVISION

The first seasonal meeting of the East York Division took the form of a reception at Field's Restaurant, Hull. Refreshments were provided also an attractive programme of music and recitation. A display of local medical antiquities and local medical literature attracted considerable attention from the guests.

Mr. Thomas Sheppard gave a very entertaining address on the old Hull Medical School.

The ex-chairman, Dr. Ritchie Rodger, in presenting the chairman's badge to Dr. Macdonald Macdonald, the present chairman said that it was only Dr. Macdonald's retiring nature which had prevented him being chairman previously. Dr. Macdonald, thanking Dr. Rodger on behalf of the Division for the gift, remarked that a badge was originally the mark of a servant as distinguished from a master in that spirit he would wear it during his term of office as a servant of the Division.

The Ritchie Rodger golf cup was then presented to Mrs. McInnes in the absence of Dr. McInnes, the winner. Mrs. McInnes expressed thanks on behalf of her husband.

There was a large attendance at the reception to which all the medical practitioners of the area had been invited with their wives and a very enjoyable evening was spent.

#### KENT BRANCH DOVER DIVISION

A clinical meeting of the Dover Division was held at the Victoria War Memorial Hospital, Deal, on October 21st. Dr. Hall, howed a patient on whom a sleeve resection of the stomach had been performed for a growth which on microscopic examination by three pathologists had proved to be sarcoma. He also showed a case of partial gastrectomy for carcinoma. Dr. Birdwood showed a case of longobian leucemia, a case of achiliaia of the oesophagus, a case of consolidated lung for diagnosis and a case of large hard calcareous fibroid of the uterus. Dr. Davies showed a case of partial molar pregnancy which was thought to be functional. All the cases gave rise to considerable discussion. Dr. Jorday, Dr. Kirk, Dr. McCall-Saunders, Dr. Westlake, Dr. Frazer and Dr. Egan contributed to the discussions.

#### METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION

A meeting of the South West Essex Division was held at Leyton on October 25th, when Dr. G. O. Hawthorne gave an illuminating lecture on *The British Pharmacopoeia* status and values. He thought his audience probably recalled dry lectures on materia medica wherein the *British Pharmacopoeia* was frequently mentioned and remembering wondered whether he could make those dry bones live! The function of the *British Pharmacopoeia* in the medical profession was a limited and subordinate one yet its predominant and supreme. It was compiled by order of the legislature and its prime function was the standardization of medicines.

With the *British Pharmacopoeia* there would be no certainty that a preparation made by different firms would be of constant composition. Tincture opii though grateful and soothing in London does when the General Medical Council commanded by the legislature set to work to compile the *British Pharmacopoeia* it had in general use. This was done with the help of the pharmaceutical societies and by analysis of prescriptions. The resultant volume would not be treated as a collection of remedies of guaranteed efficacy. It was no part of the work of the General Medical Council to decide what medical agents should or should not be used but to set a standard for those substances in general use. In the discussion which followed some criticism was made of changes in some of the preparations in the 1914 *British Pharmacopoeia*. Dr. Hawthorne hoped that such criticisms would find their way to the appropriate committee so that mistakes might be eliminated in the next edition.

#### SOUTH WALES AND MONMOUTH FREE BRANCH SWANSEA DIVISION

The annual dinner of the Swansea Division took place on October 13th at the Hotel Metropole, Swansea. The chairman of the Division, Dr. Daniel E. Evans, was supported by leading representatives of the district, and the Medical Secretary, Dr. Alfred Cox OBE, was the chief guest. Dr. Cox who had a great reception and was accorded musical honours gave an admirable instructive address. His Honour Judge Evans Davies in proposing the toast of the British Medical Association paid a special tribute to the practitioners of the district. Dr. A. P. Sladder proposed. The Chairman's health in a graceful speech and Dr. Evans in reply said he felt proud of the honour accorded him and of the splendid support given him by his colleagues. Mr. David Davies, J.P., editor of the *South Wales Daily Post* made a most entertaining speech in proposing the toast of Our Patients and Dr. Fawcett (ex-chairman of the Division) and Dr. J. M. Morris (president-elect of the South Wales and Monmouthshire Branch) were prevailed upon to reply. The toast of Our Guests was proposed by Dr. Hozart E. Rawlings one of the Division's most respected past chairmen and excellent replies were made by the Rev. Chancellor Watkins Jones and Mr. Walter Samuel barrister at law.

The growing strength of the Division is most satisfactory and its chairman is to be congratulated on the splendid send-off given at the commencement of his term of office. The dinner was very well attended and angurs well for the coming season with its interesting programme. During the dinner musical items were provided by an accomplished instrumental trio.

### National Insurance

#### INSURANCE ACTS COMMITTEE

##### ELECTION OF DIRECT REPRESENTATIVES FOR 1927-28

The following direct representatives upon the Insurance Acts Committee were elected unopposed for the Groups mentioned.

##### Group G

Dr. W. H. Smiles (Huddersfield)  
Dr. E. Welch (Leeds)

##### Group D

Dr. P. G. McGowan (Manchester)  
Dr. H. P. Oldham MBE (Morecambe)  
Dr. Frank Radcliffe (Oldham)

##### Group E

Dr. J. C. Davies (Wrexham)  
Dr. W. E. Thomas (Ystrad Rhondda Glam)

##### Group F

Dr. O. J. Palmer (Mansfield Woodhouse Notts)

##### Group H

Mr. E. Lewis Lilley FPCS (Leicester)

##### Group I

Dr. John Steed (Stanton-on-Wye)

##### Group J

Dr. D. G. Greenfield (Rushden Northants)

##### Group L

Dr. H. C. Jones (Barnstaple)

##### Group V

Dr. C. H. Panting (Leyton)  
Dr. H. Poole (Wendover Bucks)

##### Group O

Dr. H. J. Cardale (London)  
Dr. E. A. Gregg (London)

In the contested Groups—namely, A, B, G, K, and M—the results were as follows: the votes being counted upon the single transferable vote system and the counting verified by the Proportional Representation Society.

##### Group A

Dr. D. Elliot Dickson (Lockgelly Fife) Elected  
Dr. J. G. McCutcheon (Glasgow) Elected  
Dr. W. R. Martine (Haddington)  
Dr. John Orr (Edinburgh)  
Dr. D. Lyon Stevenon (Larhall)  
Dr. James Wilson (Irme Ayrshire)

## Group B

Dr R H Dix (Sunderland) *Elected*  
Dr J L Spens (Gateshead)

## Group G

Dr G L Lefevre (Longton, Staffs) *Elected*  
Dr J A Ainscow (Birmingham)

## Group H

Dr Thomas MacCarthy (Sherborne, Dorset) *Elected*  
Dr J Lockhart Livingston (Hursley)

## Group I

Dr J J Day (Canterbury) *Elected*  
Dr E R Fothergill (Hove) *Elected*  
Dr P V Fry (East Molesey)

## Scottish Subcommittee

Contests took place in connexion with the election of the eight members of this subcommittee by the members of Scottish Panel Committees—four by County Panel Committees and four by Burgh Panel Committees—with the following result

## County Panel Committees

Dr R Bruce, DSO (Culter, Aberdeenshire) *Elected*  
Dr J W Little (Newmarus, Lanark) *Elected*  
Dr W R Maritime (Weston, Haddington) *Elected*  
Dr James Wilson (Inver, Ayrshire) *Elected*  
Dr D MacDiarmid (Kippen, Stirlings)

(Note—Dr D E Dickson (Lochelly, Fife), who was also a candidate, automatically became a member of the subcommittee by reason of his election to the Insurance Acts Committee)

## Burgh Panel Committees

Dr W Lawson (Glasgow) *Elected*  
Dr G W Miller, DSO (Dundee) *Elected*  
Dr John Orr (Edinburgh) *Elected*  
Dr James Todd (Glasgow) *Elected*  
Dr Ann M Watson (Aberdeen)

ALFRED COX, Medical Secretary

## LONDON INSURANCE COMMITTEE

## The Farming Out of Insurance Practice

At the meeting of the London Insurance Committee, on October 27th, a report was received on a case which had been before the Committee on previous occasions, relating to the alleged failure of a practitioner to comply with his obligations to provide treatment personally for his insured patients. Of the 3,350 prescriptions issued from this practice in three months, 3,291 were signed by his assistant. The Committee had decided to censure the practitioner and to draw the attention of the Ministry to the case. The Ministry, however, while agreeing that it was very undesirable that an insurance practice should be conducted on these lines, held that there had been no breach, because the practitioner's obligation to give personal service was qualified by the provision that treatment might at any time be given by an assistant, provided reasonable steps were taken to secure continuity of treatment, and that if a patient demanded treatment from the practitioner personally the practitioner must comply, there was no evidence of absence of continuity in this case or that any patient had unsuccessfully demanded personal service. The Committee thereupon by deputation with some members of the Panel Committee, put the case before the officials of the Ministry. It was pointed out that both Committees were in accord as to the employment of assistants, holding that this furnished a valuable training ground for a young practitioner, but the "farming out" of a practice which meant that the whole or the greater part of the work was delegated to the assistant, destroyed part of the object which it was desired to secure, since the assistant would be deprived of the supervision of his principal. It was also pointed out that the object of the provision in the terms of service just cited was simply to provide a safeguard for the patient, and was not intended to apply to a practice *en bloc*. No report was given as to what answer if any the Ministry made to these contentions, but on the point made by the Committee, that it customarily gave permission for the employment of an assistant for a stated period, which was renewable and that it might properly refuse to renew its consent in a particular case the Ministry was unable to say that, the Committee's consent having once been given, it could not be revoked holding that this was purely a question of the legal construction of the Regulations.

## Appeals to the Ministry

In a case in which there was a charge by an approved society of negligence in certification, the Medical Service Subcommittee had come to the conclusion that the allegation was not proved but the full Committee had reversed this finding and decided to caution the practitioner. The practitioner thereupon appealed to the Ministry of Health which allowed the appeal and directed the Committee to pay the costs incurred by the appellant. One point in the case which turned upon the practitioner's statement that the insured person was "incapable of work," was that the practitioner considered this phrase to refer to the work to which the man was accustomed (driving a motor omnibus) and not to any other work, and this view appeared to be upheld by the Ministry which stated "We think that the appellant had sufficient grounds for forming the opinion that at the relevant times the insured person was 'incapable of work' and for certifying to that effect and therefore that his appeal succeeds."

Four practitioners who failed to furnish to the Committee returns of medical records in respect of insured persons who had been referred from their lists were fined by the Minister another was fined £5 and another £2.

## LONDON PANEL COMMITTEE

At a meeting of the London Panel Committee on October 25th, with Dr H J CARNALL in the chair, Dr T J Ryan was appointed a member of the Committee to fill a vacancy in the representation of Stoke Newington. The resignation of Mr A E Webb-Johnson, representing the consulting staffs of medical schools, owing to his inability to attend the meetings, was accepted. The chairman drew attention to the Williams Freeman presentation fund, stating that, although the work done for rural practitioners scarcely came within the purview of the London Committee, those who had worked on the Insurance Acts Committee and other bodies with Dr Williams Freeman realized how much he had done for his brethren in the country, and it might be that some London practitioners would like to join in the tribute that was being paid to him.

## The Responsibilities of Pharmacists

The Committee debated two cases of inaccurate dispensing which, with others, had been sent from the Insurance Committee for observations. In these cases the Pharmacy Subcommittee reported that the inaccuracies of the pharmacists were caused by a particular drug being over strength when supplied by two wholesale firms with whom they dealt and in these circumstances the subcommittee recommended that the facts did not warrant the chemists being penalized. Dr Cudde from the chair, objected to this finding, pointing out that nothing should be done to whittle away the responsibility of the chemists, and that if they had been let down by the wholesale firm they had their remedy. Dr A F Heald said that in this case his sympathies went out to the chemists the wholesale house was wholly at fault. The chemists had the preparation sent down in bulk, diluted it, and dispensed it, and there their responsibility ended. Dr V S Partidge said that it was admitted that the mistake was that of the wholesaler. This was a case in which if it had been a sale over the counter to a purchaser, no conviction under the Adulteration Acts would have been registered against the chemist, who would have been able to plead warranty but no amount of warranty was any defence before the Insurance Committee. The Panel Committee, however, decided not to express any opinion that chemists in these circumstances should not be penalized.

## Graduation of Medicine Containers

The chairman stated that the London Insurance Committee had now passed a resolution that all medicine containers supplied by those conveying drugs and appliances to the insured should be graduated, and the Minister of Health had been asked to consider the insertion of an appropriate clause in the terms of service. This matter was one on which the Panel Committee had continually insisted, and it was gratifying that, in spite of strong opposition from the chemists, the Insurance Committee had now come round to this point of view.

At the annual meeting of the Reading Insurance Committee, held on Friday last, Dr G H R Holden was elected chairman for the ensuing year.

## Correspondence.

## Ophthalmic Clinics for Insured Persons

SIR,—I am surprised that the question of establishing ophthalmic clinics for insured persons has been allowed to pass unchallenged by ophthalmic surgeons.

I see the remuneration suggested works out at about 8s 4d per case, and for this one would have in the great majority of cases to see the patients again for a post mydriatic test.

If the big societies cannot afford to send all their cases to ophthalmic surgeons it would be far better, in my opinion, to carry on with the present arrangement until they can afford to do so. There should also be some method devised so that a general practitioner can send urgent cases, such as foreign bodies, corneal ulcers, acute uveitis, glaucoma, etc., and fundus cases for examination.

It might also be pointed out to the big societies that if straightforward refraction cases can easily be dealt with by an optician, why is it that so many of these cases come to hospital to have their eyes tested?

Those of us who have had experience of working in clinics know that they would be neither for the benefit of the patient nor of the ophthalmic surgeons. Let us by every means in our power preserve the principle of private practice—I am, etc.,

October 23rd

OPHTHALMIC SURGEON

THE Home Secretary gives notice that he has withdrawn from Dr Lyle Pleydell Carter of Chippenham, Wilts, the authorizations granted by the Regulations made under the Dangerous Drugs Act, 1920, to duly qualified medical practitioners to be in possession of and supply raw opium and the drugs to which Part III of the Act applies, and has also directed that the exception in Regulation 4 of the Dangerous Drugs Regulations, 1921, which permits dangerous drugs to be supplied on a prescription given by a medical practitioner, shall not apply in respect of prescriptions given by Dr Carter. Any person supplying Dr Carter with raw opium or any of the drugs to which Part III of the Dangerous Drugs Act 1920, applies, and any person supplying the drugs on a prescription issued by Dr Carter, will be committing an offence against the Act.



## DIARY OF SOCIETIES AND LECTURES

**ROYAL SOCIETY OF MEDICINE**  
**War Section**—Mon 5 p.m. Major E. O. Lambkin, R.A.M.C. Recent treatment of Gonorrhoea  
 —Tues 5.30 p.m., Ballot for Fellowship  
 8.30 p.m., The Histology of Some Virus Infections of the C. Professor C. A. Fannett Some Nuclein The Mechanism —Dr J. M. Ross (2) Urethritis Hyper trophy Cystica Dr J. W. Orr Sebaceous Glands in the Oesophagus  
**Annual Dinner of the Society**—Wed, Hotel Victoria, 7.30 for 8 p.m.  
**Section of Dermatology**—Thurs 4 p.m. Cases.  
**Sections of Electrotherapeutics, Medicine, Surgery and Orthopaedics**—Thurs, 8.30 p.m. Special Discussion Radiological Pitfalls Openers Dr A. L. Barclay (Electrotherapeutics), Dr E. I. Spriggs (Medicine), Mr M. Page (Surgery), Mr H. A. T. Fairbank (Orthopaedics) Dr A. F. Huxst and Mr A. C. Jordan will also speak  
**Section of Obstetrics**—Fri 8 p.m. Mr J. P. Hedley Case of Papilliferous Ovarian Cysts Dr J. S. Fairbairn and Mr T. H. Sims Pseudomyoma pituitaria associated with Ruptured Ovarian Cyst and Appendicular Disease Mr A. R. Walker Diabetes Mellitus and Pregnancy  
**ROYAL COLLEGE OF PHYSICIANS OF LONDON**, Pall Mall East S.W.1—Tues, 5 p.m. Mitchell Lecture by Dr P. O. Varrier Jones Village Settlements for the Tuberculous At Medical Society of London, 11 Chandos Street W.1 Wed 5 p.m., Lloyd Roberts Lecture by the Right Hon Lord Hewart Criminal Law and Insanity  
**ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE**—Laboratory Meeting at the London School of Hygiene and Tropical Medicine Endsleigh Gardens Thurs 8.15 p.m. Demonstrations Dr Mary V. I. Beattie, Major H. C. Brown Dr P. A. Buxton Dr A. Castellani Captain W. Dye Dr H. M. Hansell Colonel S. P. James Colonel Clayton Lane, Dr P. H. Manson Bahr Dr N. A. Dyce Sharp Drs J. Gordon Thomson and A. Robertson Dr V. B. Wigglesworth, and Dr C. M. Wenyon  
**CHILDISH CLINICAL SOCIETY**, Hotel Rembrandt, Thurlow Place, S.W.—Tues 8.30 p.m., Discussion Local Sepsis, to be opened by Sir William H. Wilcock and Dr William Hunter Dinner at 7.30 p.m.  
**HARVEY SOCIETY**, Paddington Town Hall—Thurs 8.30 p.m. Discussion The Etiology and Treatment of Anterior Poliomyelitis to be opened by Dr S. A. Kinnier Wilson, followed by Dr James Collier  
**LONDON CLINICAL SOCIETY**—At London Temperance Hospital Hampstead Road Thurs 9 p.m., Topical Discussion Dyspepsia Openers Dr John Ryle and Mr Herbert Paterson All medical practitioners are invited  
**MEDICAL SOCIETY OF LONDON**, 11, Chandos Street, W.1—Mon, 8 p.m., Clinical Evening  
**SOCIETY OF MEDICAL OFFICERS OF HEALTH** 1 Upper Montague Street, W.C.1—Fri 5 p.m., Health Aspects of the Factories Bill  
**TUBERCULOSIS SOCIETY**—At House of Royal Society of Medicine 1, Wimpole Street W.1 Fri, 8 p.m., Dr G. T. Herbert The Treatment of Tuberculosis Lymphoma by Replacement

## POST GRADUATE COURSES AND LECTURES

**FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION**—Special Lecture at Medical Society, 11, Chandos Street W.1, Mon 5 p.m. Treatment of Uterine Prolapse, no fee Hospital for Diseases of the Heart and Lungs, Victoria Park E.9 Wed 10.30 a.m. Clinical Demonstration on the pathology of Tuberculosis in the Laboratory and Museum The whole hospital will be open to post graduates all day no fee London Temperance Hospital Hampstead Road N.W.1 Thurs 2 p.m. Clinical Demonstration in Surgery no fee Royal London Ophthalmic Hospital City Road E.C. Clinical Demonstration in Ophthalmology, Wed 1 p.m. no fee Royal Waterloo Hospital Waterloo Road, S.E.1 Post Graduate Course in Medicine, Surgery and Gynaecology occupying afternoons and some mornings with lectures and clinical demonstrations and operations fee £3 3s for a three weeks course St Peter's Hospital Henrietta Street W.C.2 Post graduate Course in Urology, occupying every afternoon, with lectures and demonstrations and operations fee £5 5s for two weeks course National Hospital Queen Square W.C.1 Special Post graduate Course in Neurology All information syllabuses and tickets from the Secretary Fellowship of Medicine 1, Wimpole Street W.1  
**CENTRAL LONDON THROAT NOSE AND EAR HOSPITAL**, Gray's Inn Road, W.C.1—Wed, 4 p.m., Annual Address on Observation  
**HOSPITAL FOR SICK CHILDREN**, Great Ormond Street, W.C.1—Thurs, 4 p.m., Congenital Pyloric Stenosis  
**LONDON SCHOOL OF DERMATOLOGY**, St John's Hospital Leicester Square, W.C.2—Tues, 5 p.m., Myotic Diseases Thurs, 5 p.m., Pathology Demonstration  
**NATIONAL HOSPITAL** Queen Square W.C.1—Mon, Tues Thurs and Fri 2 p.m. Out patient Clinics Mon 3.30 p.m. Diagnosis of Cerebral Tumours Tues, 3.30 p.m. Disseminated Sclerosis Thurs, 3.30 p.m., Disorders of Posture and Gait Fri, 3.30 p.m., Surgery of the Brain Operations Tues and Fri, 9 a.m.  
**NORTH EAST LONDON POST GRADUATE COLLEGE** Prince of Wales General Hospital, Tottenham N.15—Mon 2.30 p.m. Special Demonstration of Medical Cases 2.30 to 5 p.m. Medical, Surgical and Gynaecological Clinics Operations Tues, 2.30 to 5 p.m. Medical Surgical Throat, Nose and Ear Clinics Operations Wed 2.30 to 5 p.m. Medical, Skin, and Eye Clinics Operations Thurs, 11.30 a.m., Dental Clinics 2.30 to 5 p.m. Medical Surgical and Ear Nose and Throat Clinics Operations Fri 10.10 a.m. Throat Nose, and Ear Clinics 2 p.m. Special Demonstration of X Ray Cases 2.30 to 5 p.m., Surgical, Medical, and Children's Diseases Clinics Operations  
**ROYAL NORTHEN HOSPITAL** Holloway Road N.—Tues 3.15 p.m., Recent Work on Exophthalmic Goitre and Allied Disorders  
**ROYAL INSTITUTE OF PUBLIC HEALTH** 37 Russell Square, W.C.1—Wed, 4 p.m., The Milk Supply  
**SOUTH WEST LONDON POST GRADUATE ASSOCIATION** St James's Hospital, Grosvenor Road Balham S.W.12—Tues 4 p.m., Clinical Demonstration of Gynaecological Cases  
**WEST LONDON HOSPITAL POST GRADUATE COLLEGE** Hammersmith W.6—Mon 10 a.m. to 1 p.m. Genito-urinary Operations Skin Department Surgical Ward 2 p.m. Surgical Wards Gynaecological and Eye Departments Tues 10 a.m. to 1 p.m. Medical Ward Visit Demonstrations in Venereal Diseases 2 p.m. Medical Ward Throat Nose and Ear Department Wed 10 a.m. to 1 p.m. Children's Medical Out patients Medical Ward Demonstration in Medical Pathology Eye Department 4.30 p.m. Special of a Vascular Skin Thurs 10 a.m. to 1 p.m. Venereal Department, Demonstration of Fracture 2 p.m. Eye and Genito-urinary Depart

ment 4.30 p.m., Special Lecture Castric and Dent 11 to 1 p.m., Gynaecological Operations, Ear Departments 2 p.m. Throat Nose and ment 11 to 1 p.m. Bacterial Therapy Department Daily Operations, Medical and t 2 p.m.  
**JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH**, St Andrews—Tues, 4 p.m., Clinical Significance of Haematuria  
**GLASGOW POST GRADUATE MEDICAL ASSOCIATION**—At Royal Infirmary Wed, 4.15 p.m. Medical Cases  
**MANCHESTER ANCOATS HOSPITAL**—Thurs, 4.15 p.m. Medical Treatment of Peptic Ulcer  
**MANCHESTER ROYAL INFIRMARY**—Tues 4.15 p.m. Diagnosis of Pulmonary Diseases At Royal Residential Schools for the Deaf Old Trafford Fri, 4.15 p.m., Demonstration showing Physical and Mental Development of the Deaf Child  
**SHEFFIELD UNIVERSITY POST GRADUATE CLINIC**—At Royal Hospital Fri, 3.30 p.m. Differential Diagnosis of Facial Pain

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
 TAVISTOCK SQUARE N.C.1

## Departments

**SUBSCRIPTIONS AND ADVERTISEMENTS** (Financial Secretary and Business Manager) Telegrams n) London)  
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**SCOTTISH MEDICAL SECRETARY** 6 Drumshough Gardens Edinburgh (Telegrams Associate Edinburgh Tel 24361 Edinburgh)  
**IRISH MEDICAL SECRETARY** 16 South Frederick Street, Dublin (Telegrams Bacillus Dublin Tel 4737 Dublin)

## Diary of the Association

## NOVEMBER

- 11 Fri London Science Committee 2 p.m.  
 London Joint Science and Organization Committee 4 p.m.  
 15 Tues London Ophthalmic Subcommittee Meeting at Ministry of Health, 3 p.m.  
 Croydon Division Croydon General Hospital Dr S. F. St J Sterdman on Cancer 8.30 p.m.  
 Lewisham Division Town Hall Catford, S.E.6 Mr C. Boney on the Urgency of the Discharge Bill 8.45 p.m.  
 16 Wed London Hospitals Committee 2.15 p.m.  
 Chester and Worthing Division Warnes Hotel, 7 p.m.  
 East Norfolk Division Medical Library Norwich, 3.15 p.m.  
 Tower Hamlets Division 126 Brunswick Road Poplar E.14 Leturo Demonstration by Dr J. Stansbury 4.15 p.m.  
 Willesden Division Willesden General Hospital Mr H. S. Sumtair on the Rectum 9 p.m.  
 Wiltshire Branch County Mental Hospital Devizes Mr D. A. Mitchell on Ante Natal Work in General Practice 3 p.m.  
 Winchester Division Royal Albert County Hospital Mr B. H. Piddock on the Treatment of Otitis Media in Children, 3 p.m.  
 17 Thurs London Insurance Acts Committee 12 noon  
 Ayr Division Infirmary, Kilmarnock B.M.A. Lecture by Professor D. P. D. White on Some Aspects of Gallbladder Diseases, 3.30 p.m.  
 Darlington Division Hospital Darlington Professor Hugh McLean on Gastric and Duodenal Ulcers 8.30 p.m.  
 Halifax Division Annual Dinner White Swan Hotel, Halifax, 8 p.m.  
 Hyde Division Dance, Hyde Town Hall 8.30 p.m.  
 North Northumberland Division Annual Dinner, Hough Hotel, Alnwick, 7 p.m.  
 Nantaton and Farnworth Division Tamworth General Hospital, 3.30 p.m.  
 18 Fri London Lunacy Law and Administration Committee 2.30 p.m.  
 Banff, Moray, and Nairn Division Gordon Arms Hotel Elgin. B.M.A. Lecture by Professor D. Murray Lyon on Asthma, 6 p.m. Annual Dinner 8 p.m.  
 East York Division Discussion on Focal Sepsis  
 Holland Division B.M.A. Institute Spalding Mr H. Ball Tawse on Difficulties of the General Practitioner with Ear, Nose and Throat Cases, 3 p.m.  
 Stockton Division Dr E. Farquhar Murray on Stillbirth  
 20 Sun Willesden Division Annual Dinner Criterion Restaurant, Piccadilly S.W. 7 p.m.  
 21 Mon Bournemouth Division Alexandra Hall, St Peters Road, Bournemouth Discussion on Should Communications to a Medical Man be privileged in Legal Procedure? 8 p.m.  
 22 Tues London Contract Practice Subcommittee 2.30 p.m.  
 Lambeth and Southwark Division Lambeth Carlton Club, Coldharbour Lane Mr E. P. Brockman on Disabilities of the Foot and Ankle 9 p.m.  
 South Western Branch Royal Devon and Exeter Hospital, Exeter Dr James Mennell on Bone-setting and Osteopathy, 3.15 p.m.  
 23 Wed London Puerperal Morbidity and Mortality Committee 2.30 p.m.  
 Bradford Division Annual Dinner  
 Croydon Division Croydon General Hospital Lecture Demonstration by Dr F. H. Harniman Johnson on Treatment by Deep X Ray Therapy 4 p.m.  
 Fife Branch Maternity Home Townshead Cre-cent, Kirkcaldy Mr F. E. Jardine on Heliotherapy in Surgical Cases 3.30 p.m.

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 3s, which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

## BIRTH

GORDON—At 142 St Clair Street Kirkcaldy Fife on November 5th to Dr and Mrs E. S. Gordon a son.

# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY NOVEMBER 19TH 1927

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### British Medical Association

#### CURRENT NOTES

##### Committee Work at Headquarters Science Committee

THE Science Committee met on November 11th and elected Mr H. S. Souttar chairman for the coming session. The committee had before it a memorandum on the difficulties which have arisen in the practical application of the scale of minimum salaries for non-professional medical teachers, laboratory, and research workers adopted by the Representative Body in 1926. It was clear to the committee that some modification of the existing position was essential if the interests of such workers were to be adequately safeguarded in the future, and the committee is recommending the Council to take certain steps towards the solution of the problem in consultation with representatives of the bodies most closely concerned in the matter—namely, the medical schools. On the report of the Library Subcommittee the Science Committee decided to recommend to the Council the favourable reception of the suggestion referred to in last week's Current Notes for exploring the possibilities of effecting some measure of co-operation between London libraries for medical and scientific purposes. The committee also approved for recommendation to the Council the subcommittee's request for an increase in the Association's subscription to Lewis's Circulating Library with a view to meeting the increased demand now made by members upon the Association's library. It is worthy of note that in the past five years the annual circulation of volumes from the library has increased from 3,700 in 1922 to some 10,000 at the present time. The committee examined in detail and approved the scheme of the Joint Research Subcommittee for inquiry into the after-history of gastro-intestinal and the treatment of various ulcerations, details of which will be published in the JOURNAL in an early date. A report was received from Dr. Reginald Miller and Dr. Mand Sanders on the first year's working of the Paddington Green Children's Hospital Rheumatism Supervisory Centre, to which the Council made a grant of £100 last December. The committee expressed its warm appreciation of the progress recorded and decided to recommend to the Council the grant of a further sum of £200 in aid of the investigations being carried out at the centre. The committee reappointed the Library and Post Graduate the Scholarships and Grants, and

the Research Subcommittees and nominated also a special subcommittee to consider the position created by the general advertisement of ultra violet light apparatus for supply to the lay public for self-treatment.

##### Committee on Scope of Stat. and Hospital Medical Service

THE Representative Body at Edinburgh devoted some time to a discussion on the encroachment of various State and voluntary health services upon the sphere of private practice. As a result of this discussion the Council appointed a special committee consisting of representatives of the Medico-Political Public Health and Hospitals Committees, to consider the matter in its various aspects. At its first meeting on November 9th this committee elected Dr. J. W. Bone chairman and proceeded to explore the wide field covered by its reference. The committee began its investigations with the health services carried on by local authorities and decided to make a comprehensive survey of these services with the assistance of the Society of Medical Officers of Health both by seeking information from individual medical officers of health and by conducting personal investigations in certain typical areas. The question of the services offered to the public by voluntary and other hospitals will be considered at the next meeting.

##### Other Committees

Other committees which met during the week were the Central Ethical Committee, the Charities Committee, and the Organization Committee. The Charities Committee decided upon the apportionment of the money at its disposal between the several medical benevolent funds, subject to the approval of the Council.

##### National Insurance Change of Doctor

FROM various communications that have been received by the Medical Secretary it appears that there is some confusion as to the origin of the amendment of the change of doctor regulation which came into operation on October 1st 1927. Before then an insured person had a right of change of doctor at any time. Now unless there is agreement on the part of the two doctors concerned a change can only be effected fourteen days after notice has been given by the insured person.

The first suggestion as to limitation of the right to change at any time was made at the Consultative Council of Approved Societies as was stated by Sir Walter Kinnear



in his speech to the Panel Conference reported in the SUPPLEMENT of October 30th, 1926 (p 194) He said

The first suggestion before that body [the Consultative Council of Approved Societies] when it met was that he [Sir Walter Kinnear] should be asked to approach the profession with a request that the arrangement as regards immediate transfer from one doctor to another, which was made two or three years ago, might be altered and a time limit of three or six months imposed."

As a result of Sir Walter Kinnear's speech the Insurance Acts Committee communicated with Panel Committees, talked the matter over with the Ministry, and eventually suggested the present arrangement for a fourteen days' postponement of the actual change, failing immediate change by mutual consent. In connexion with this it should be remembered that originally an insured person could only change once a year, after due notice, then he was allowed to change once in six months, and finally he was given the right to change at any time, and these alterations were brought about very largely on the initiative of the Insurance Acts Committee.

#### The Annual Handbook of the Association 1927-28

The Annual Handbook of the British Medical Association for 1927-28 is now available. Copies can be had by members, gratis and post free, on application to the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1. Primarily intended as a book of reference for honorary secretaries and other workers of the Association, the Handbook should prove of interest and assistance to all members. The new edition is completely revised. It contains the decisions of the Representative Body of the Association on matters of policy, particulars about medical charities, information as to the constitution of the Association, and as to the British Medical Journal (the circulation of which is now 36,750 copies weekly) and other publications of the Association, lists of the members of the Council and central committees, officers, and officials of the Association, and much other information regarding the work of the Association. To non-members the book is on sale at 3s 6d (post free 3s 9½d).

#### British Medical Bureau (The Scholastic Clerical, and Medical Association Ltd)

In the JOURNAL of November 5th (p 839) attention was directed to the institution of the British Medical Bureau under an agreement with the old-established Scholastic, Clerical, and Medical Association, Ltd, which, since 1880, has been providing for the wants of medical practitioners, so far as transfer of practices and provision of partners, assistants, and locumtenents are concerned, with great acceptance to the profession. Its new name of "British Medical Bureau" is intended to emphasize the relations it now has with the British Medical Association, and the fact that it will do its work in accordance with the general policy of the British Medical Association. It will be noted that members of the Association have the advantage of a reduced scale of charges. The Association has always been able to recommend this institution to its members as a result of much experience of its straightforward dealing, and can now do so with even more confidence than before, in view of the new relations that exist between the two bodies. The negotiations have been conducted by the Council of the British Medical Association with the approval of the Representative Body. An advertisement will be found at page 55 of this issue. All correspondence should be addressed to Mr A. V. Storey, General Manager, British Medical Bureau, 12, Stratford Place, Oxford Street, W.1 (telegraphic address, "Triform Wesdo, London", telephone numbers, Mayfair 1782 and 1783).

#### Armistice Day at the B.M.A. Head Office

On Armistice Day, Friday, November 11th, the members of the central staff of the Association assembled in the Great Hall shortly before 11 a.m., as they did last year, and observed the two minutes' silence standing. The Union Jack, flown from the flagstaff on the main building, was lowered to half mast during the silence, as in previous years.

## Association Notices

### BRANCH AND DIVISION MEETINGS TO BE HELD

**DORSET AND WEST HANTS BRANCH Bournemouth Division**—A general meeting of the Bournemouth Division will be held in conjunction with the Bournemouth Legal Society, by their kind invitation, on Monday November 21st at the Alexandra Hall, St Peter's Road, Bournemouth, at 8 p.m. when a discussion entitled "Should communications to a medical man be privileged in legal procedure, both civil and criminal?" will take place. The two chief speakers for the Legal Society will be Mr E. W. Marshall Huvey and Mr W. E. D'Angibau and for the Division Dr E. K. Le Fleming and Dr G. H. Morse. The subject will then be open for general discussion, and it is hoped that as many members as possible will be present and that a large number will take part in the debate. The Legal Society are kindly providing coffee.

**DUNDEE BRANCH**—A meeting of the Dundee Branch will be held in the Medical School, Dundee, at 8.30 p.m., on Tuesday, November 29th. Business: (1) Lecture with lantern slides, by Dr A. A. Macklin on "A polar expedition, with special reference to the medical aspects"—non-members of the Association and senior medical students are invited, (2) election of officers for 1928.

**EAST YORK AND NORTH LINCOLN BRANCH East Yorkshire Division**—The committee of the Scarborough Division have invited the members of the East Yorkshire Division to their second annual dance at the Crown Hotel on Thursday, December 8th. Tickets (10s 6d each) to be obtained from Dr Parker, 19, York Place or Dr Ferguson, 56, Gladstone Street, Scarborough. Applications for tickets with remittances, should be sent not later than November 30th.

**FIFE BRANCH**—A clinical meeting of the Fife Branch will be held in the Maternity Home, Townsend Crescent, Kirkcaldy, on Wednesday, November 23rd, at 3.30 p.m. Mr Frank L. Jardine (Edinburgh) will address the meeting on the use of heliotherapy in surgical cases.

**GLASGOW AND WEST OF SCOTLAND BRANCH Lanarkshire Division**—A meeting of the Lanarkshire Division will be held at St. Louis Station Hotel on Wednesday, November 23rd, at 3.30 p.m. Dr D. Dale Logan will read a paper on gas poisoning in collieries.

**KENT BRANCH ISLE OF THANET DIVISION**—A meeting of the Isle of Thanet Division will be held at the Queen's Hotel, Cliftonville, on Thursday, November 24th, at 8.45 p.m., when Dr H. Raven will take the chair. Paper by Dr H. Warwick Brown on nervous exhaustion, especially with reference to auto-intoxication as a factor in its production.

**LANCASHIRE AND CHESHIRE BRANCH Southport Division**—A meeting of the Southport Division will be held at 52, Houghton Street on Friday, November 25th, at 8.15 p.m. Agenda: Medical charities, medical service on St. Luke's Day, British Medical Association Scientific Lecture, public education in health, social function.

**METROPOLITAN COUNTIES BRANCH CITY DIVISION**—The annual dinner of the City Division will take place at the Grosvenor Restaurant on Thursday, December 1st, at 7.45 p.m., when several eminent guests will be present, and there will be a good musical entertainment. Tickets (12s 6d) from the secretary.

**METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION**—A meeting of the Lambeth and Southwark Division will be held at the Lambeth Carlton Club, Coldharbour Lane, on Tuesday, November 22nd, at 9 p.m. Agenda: Dr E. H. Jebens on Annual Representative paper by Mr E. P. Brockman (Orthopaedic Surgeon, St. Thomas's Hospital) on common disabilities of the foot and ankle.

**METROPOLITAN COUNTIES BRANCH MARYLEBONE DIVISION**—A meeting of the Marylebone Division will be held in the Council Chamber, British Medical Association House, Tavistock Square, on Wednesday, November 23rd, at 8.15 p.m. Agenda: Discussion: The relation of voluntary and municipal hospitals to pending legislation, to be opened by Dr Masteyman, St. Giles's Hospital, Cumberwell. Speakers representing the views of private practitioners, voluntary hospital and municipal hospital staffs, Poor Law medical officers, medical officers of health, and members of hospital boards of management will take part. All members and non-members of the Association are welcomed.

**METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION**—The South West Essex Division will hold a reception and dance at The Town Hall, Leyton, on Thursday, November 23rd. All medical practitioners, whether members of the British Medical Association or not, together with their friends, will be heartily welcome. The function will be in aid of medical charities. Tickets 7s 6d single, 12s 6d double (lady and gentleman), can be obtained from the honorary secretary, or from members of the Executive Committee.

**METROPOLITAN COUNTIES BRANCH WANDSWORTH DIVISION**—A special meeting of the Wandsworth Division will be held at Stanley's Restaurant, Lavender Hill on Wednesday, November 23rd, at 8.45 p.m. to consider the adoption of Rules of Organization. It will be followed by an ordinary meeting at which the agenda will be: (1) Clinical assistantships, (2) the work of the out-patient departments as it affects general practitioners.

**METROPOLITAN COUNTIES BRANCH WESTMINSTER AND HOLBORN DIVISION**—A meeting of the Westminster and Holborn Division will be held at Pomona's Restaurant, Strand, W.C., on Thursday, November 24th, at 8.15 p.m., preceded by a dinner at 7.30 p.m. Dr C. P. English will open a discussion entitled "Is it desirable that every member of the community should have an annual medical overhaul?"



**EDINBURGH BRANCH SOUTH-EASTERN COUNTIES DIVISION**  
An ordinary meeting of the South Eastern Counties Division was held in the Royal Hotel, Galashiels, on October 19th.

The following motion, proposed by Dr FLEMING, and seconded by Dr YOUNG, was unanimously approved and directed to be sent to the Medical Secretary of the British Medical Association:

That in view of the increased numbers of members and others who attended the last Annual Meeting at Edinburgh, and the difficulty many experienced in obtaining tickets for functions they wished to attend, a complete timetable of meetings, excursions, and social functions be printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL instead of the very incomplete provisional timetable as published in the issue of June 25th 1927 in order to give members more time to study what is offered by the meeting and plan accordingly than is possible when such information is only available after registration at the actual meeting.

The SECRETARY reported the receipt of a letter from Dr COX on public education in health, and suggested that it be remitted to the chairman in the first instance.

Mr MERCEUR, in an interesting address, stated that orthopaedics dated from the publication of a paper in 1740 by Andre on the subject of "orthopaedia," but that the surgery of deformities went back to the days of Hippocrates, who wrote freely and eruditely upon the treatment of fractures and deformities. Orthopaedic surgery was then defined and a plea made for specialism in the subject. Spastic paralysis could be materially reduced by the lessened use of forceps. The early diagnosis of rickets and the sanatorium treatment of tuberculosis also helped in the same direction. Whole-hearted co-operation was required between the practitioner and the orthopaedic surgeon. Various points in the treatment of poliomyelitis, rickets, tuberculosis, and mechanical injuries were then discussed and illustrated by a considerable number of lantern slides.

Mr Merceur was warmly thanked for his address, on the conclusion of which a discussion was held on a letter from Sir David Wallace regarding a proposed orthopaedic hospital with major and minor clinics in the south-eastern district of Scotland. It was ultimately agreed that no further steps should be taken until the members of the Division had had an opportunity of meeting Sir David Wallace and Professor Fraser within the following fortnight. In sending out the agenda sheets the secretary was directed to make a special appeal for a large attendance of Hawick practitioners.

#### JAMAICA BRANCH

The monthly meeting of the Jamaica Branch was held on September 15th, when Dr C. A. H. THOMSON was in the chair.

Dis. GEOFFREY and MOODY read papers on the physiology and pathology of blood pressure, and anabolin in the treatment of blood pressure.

The annual general meeting of the Jamaica Branch was held at the P. G. Hospital, Kingston, Jamaica, on October 20th, when the president elect, Dr C. A. H. THOMSON, was in the chair and delivered his presidential address.

The following were elected office bearers for the ensuing year:  
President Dr C. A. H. THOMSON. President Elect Dr B. M. WILSON.  
Secretary Dr STRATHAIRN. Assistant Secretary Dr ALLEN.

It was decided to celebrate the jubilee of the Branch by a dinner, and the president, the president elect, the secretary, Dr GEOFFREY, and Dr GIDEON were elected a special committee to arrange the same.

The draft annual report was adopted subject to audit.

Drs ALLEN, BAXTER, and STRATHAIRN were appointed a sub-committee to arrange the monthly meetings.

In the evening the annual dinner was held at the South Camp Hotel, when twenty-two members were present.

#### LANCASHIRE AND CHESHIRE BRANCH

A SCIENTIFIC meeting was held on November 2nd at the General Hospital, Birkhead, the chair being taken by Dr E. H. MOVES, president of the Branch, about eighty members were present.

In a paper on the treatment of gonorrhoea in the male as at present practised Dr F. G. FOSTER emphasized the gravity and consequences of the disease, as well as the uselessness of treatment with oleoresins by the mouth. He discussed the differential diagnosis of other conditions and also the methods of determining if the infection had spread to the posterior urethra. This was followed by a full description of irrigation methods and the exhibition of a cheap but efficient irrigation outfit. An account was then given of the more common complications and other methods of treatment, the paper concluded with a discussion of the criteria of cure.

Mr ELDOY GORST contributed a paper on the treatment of hypopyon ulcer of the cornea with the electric thermophore. He explained that this type of corneal ulcer is usually the consequence of a foreign body on the cornea and that the infecting organism is usually the pneumococcus, occasionally other organisms. The thermophore devised by Shahan is an electrically heated apparatus to which applicators of varying size and shape can be fitted. It can be used from the main supply by means of a suitable lamp or other resistance, and is so contrived that it can be continuously maintained at a given temperature. The thermal death point of the pneumococcus being 138° F, corneal ulcer can be treated by the application of the thermophore at 150° to 160° for one minute a period in which material heating of the globe is not produced. Mr Gorst gave details of a series of cases which he had treated, in most of which successful results had been obtained.

After tea Dr DALZELL in a short but pointed speech introduced a discussion on the future of non-teaching hospitals,

emphasizing the extreme importance of this question to the profession at the present time. He succeeded admirably in his expressed intention of making his remarks provocative as he was quickly followed by other speakers who elaborated on the agreed with the points that he had made. It was unfortunate that the lateness of the hour cut short this discussion, as it obviously aroused very great interest.

The meeting closed with a hearty vote of thanks to the British Medical Association and Dr Dalzell, to the nation and authorities of the hospitals, and to the president.

#### METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION

A MEETING of the Lambeth and Southwark Division was held at the Lambeth Hospital, Brook Street, S.E., on October 28th. Dr A. L. BALLY, medical superintendent, gave a very interesting address on Poor Law administration. Various questions were asked and answered, and a general discussion ensued.

#### METROPOLITAN COUNTIES BRANCH STRATFORD DIVISION

A MEETING of the Stratford Division was held at the Educational Offices, Stratford, on October 25th, when the Division commenced its usual course of winter lectures. The chair was taken by Dr GARLAND COLLINS, medical officer of health for West Ham, and an address was given by Professor LEONARD HILL, F.R.S., on artificial sunlight and treatment by ultra-violet rays, which was demonstrated by lantern slides. Professor Hill enlarged upon all the various conditions to which, in his opinion the ultra-violet rays could be usefully applied. Over fifty practitioners were present.

#### SOUTHERN BRANCH PORTSMOUTH DIVISION

A MEETING of the Portsmouth Division was held at the Queen's Hotel, Southsea, on November 10th, when Dr LYLE presided.

Mr NORMAN C. LAKE, assistant surgeon, Charing Cross Hospital, gave an address entitled 'A busman's holiday in America,' which was listened to with intense interest. Perhaps the sections which excited the most interest were those dealing with Crile's clinic at Cleveland, the Mayo Clinic, and the comparison of English and American methods. The speaker also dealt with medico-political subjects, such as paying patients in hospitals, the management of hospitals, payment by insurance companies for accidents. This side of the lecture gave the Division much food for thought.

Mr RIDOUT opened the discussion and he was followed by Messrs LUMB, STANLEY HILLMAN, and MARTIN and Drs MACGILLIVRAY and GIRTINGS. On the motion of Dr Bosworth Wright seconded by Mr MARTIN, a vote of thanks to Mr Norman C. Lake for his address was carried with much applause.

Sixty-five members attended the meeting, of whom forty ate down to supper at 9 p.m.

#### SOUTH MIDLAND BRANCH

A MEETING of the South Midland Branch was held at the Fridge Hotel, Bedford, on October 27th. Dr HARWOOD YARRED, nominated by the Branch Council, was unanimously elected president for 1928.

On the motion of Dr FASNACHT, secretary of the Bedfordshire Division, the question of mileage fees for witnesses attending coroners' inquests, assize courts, etc. was considered. Dr Fasnacht reported the action of the Bedfordshire Division in negotiating with the Bedfordshire County Council and stated that they had arranged a mileage rate of 1s. a mile for the total journey both ways for inquests held more than two miles from the doctor's house, and that this had been subsequently extended to attending assize courts and quarter sessions. Dr Fasnacht reported that he had had difficulty in obtaining his fee personally, and suspected that other doctors had not been drawing it. He therefore wished to draw the attention of the Branch to this subject. He had also written and reported to the secretaries of the Northamptonshire and Buckinghamshire Divisions. The secretary of the Branch was instructed to direct the attention of the Divisions to this point and to urge them to approach their respective county councils. Dr BONE stated that it was legal for a coroner to pay a fee for a report when no inquest was held. The secretary was instructed also to inform the Division secretaries of this fact.

Dr S. J. ROSS read a paper on some difficulties in diagnosing certain surgical conditions. He gave details of several difficult cases which he had met recently and discussed them from the diagnostic standpoint. The paper was followed with interest, and there was some discussion subsequently in which Mr HART JONES (president), Mr HOLMAN, Dr BONE and Mr BARNES took part. On the motion of the PRESIDENT a hearty vote of thanks was passed to Dr ROSS. Tea was afterwards provided by the president.

#### SOUTH WALES AND MONMOUTHSHIRE BRANCH SOUTH WEST WALES DIVISION

A MEETING of the South West Wales Division was held at the Ivy Bush Hotel, Carmarthen, on November 2nd, when Dr D. H. PENNANT, D.S.O. (Saundersfoot), was in the chair.

The secretary was asked to convey the sympathies of the Division to the relatives of the late Dr Samuel Williams (Llanelli). Dr OSCAR WILLIAMS gave an excellent and concise account of the transactions at the Annual Representative Meeting at Edinburgh at which he represented the Division. After a long discussion on what had been done at the Annual Representative Meeting, the secretary was instructed to communicate with the

Dr. Oscar Williams was heartily thanked for his work and for his excellent report.

It was decided to invite Dr F W Lenz (London) to lecture to the Division and to invite Sir Ewen Maclean to open a discussion also decided to hold in May 1923

Liberal Education

instructed to write to the county councils of Carmarthen, Cardigan and Pembrokeshire and urge them to take steps for the propagation of public education in health and to draw their attention to Section 67 of the Public Health Act 1925.

The Director instructed the secretary to inform the county councils and the medical officers of health that it would do all it could to co-operate with them and with the medical officers of health if they would formulate a scheme.

## ST. LEONARD'S BRANCH HASTINGS DIVISION

A MEETING of the Hastings Division was held at the Queen's Hotel on October 13th.

Mr. SOMERVILLE HASTING FRCS gave an address on the state of medical practice in England and dealt first with those divisions which had occurred in the functions of the general practitioner. The old type of family doctor had been benefited and was for ever this was due to the increase in various public medical services of which there were now about seventeen categories and the number would tend to increase. This type of doctor thought himself fore-shadowed some form of State medical service. The great defect of this service was its lack of co-ordination and it was intended to create watertight compartments which would not be efficient without the guiding influence of the general practitioner. Mr. Hastings then showed how the public service had resulted in great public benefits. He believed however that there was a real danger of the services being retained in the hands of specialists. The general practitioner's function in this scheme he thought was to be a medical regulator. A State medical service was inevitable and it was the duty of every general practitioner to make up his mind that or of a service he wanted and then to strive and influence his organization and the people to see that he got such a service.

A good discussion followed in which it appeared that Mr. Hering's views did not meet with general approval.

### SEFOLS Branch

A meeting of the Suffolk Branch was held at the Royal Hotel  
Lore on October 22nd when Dr A. E. Go. at Birthlow's  
Hospital read a paper on anaemia in which he dealt with the  
differential diagnosis of anaemias their causes and their treat-  
ment. Members and their wives were entertained to tea by the  
Lore staff practitioners.

## ULSTER BEACH TROOP DIVISION

The annual meeting of the Tyrone Division was held in the Tyrone County Hospital on November 3rd.

After was read from the Minister of Labour on a scheme of equal practitioner treatment for disabled ex-soldiers in reply to a resolution passed at a previous meeting of the Division advocating the adoption of payment on the basis of a panel system in stead of the present system which was open to abuse and was unfair factor. The reply of the Minister was referred to the Branch Council for consideration.

Dr W L Le (Newtownstewart) was appointed chairman of the Division for the ensuing year Dr F Bradley (Fintona) vice chairman and to retain the position of secretary and Dr W P Leach was re-elected assistant secretary The Executive Committee was elected and Dr Thompson was appointed representative on the Branch Council.

The part time medical referee system was next considered. Several members got in favour of retaining it and voted against it. The consensus of opinion of the meeting was that it was not a satisfactory system and that they were still in favour of whole-time referees. Dr LYLE proposed that as the trial term of 6 months had elapsed the deputation that visited the Ministry on a previous occasion should again arrange to do so. The Secretary was instructed to bring this under the notice of the Branch Council.

A circular was read by the SECRETARY on the education of the public on health matters. It was decided that no action be taken as the health services were in such a chaotic state in Northern Ireland that no useful purpose would be served pending the adoption of the Poor Law Commission's report.

Dr Kinn (Enniskillen) gave a very lucid and interesting summary of the Poor Law Commission's report emphasizing the points as they affected the various brackets of the medical service. He pointed out a very grave omission in the report—namely the necessity of a Ministry of Health for Northern Ireland. After a short discussion on some points in the report—such as the whole was considered satisfactory with the above exception—it was proposed by Dr McNEAGHAN, seconded by Dr McCULLY,

That in the opinion of the Tyrone Division of the British Medical Association a Ministry of Health with an advisory council having statutory recognition is absolutely necessary for the proper co-ordination of the proposed health services.

A decision took place regarding the form of medical certificate in the case of a junior applying to be excused on grounds of ill health. It was pointed out that the form was in its essence derogatory to and incompatible with the spirit of an honourable profession and that this matter be brought to the notice of the Branch Council. The members drew attention to the inadequate remuneration paid to Crown witnesses and to registrars when called on to give evidence in court. The same applied to medical attendance on police cases. The clerk was instructed to bring this matter before the Branch Council.

The meeting ended with a vote of thanks to Dr. Bidd.

WEST SOMERSET BRANCH

A MEETING of the West Somerset Branch was held at the Taunton and Somerset Hospital Taunton on October 23th when Dr E N JEFF was in the chair. Revised Organization Rules were adopted and a few other matters of general interest were discussed.

Dr ERIC PEARLMAN consulting physician Queen's Hospital for Children London gave a British Medical Association Lecture entitled 'The principles of nutrition in their application to the feeding of infants and children' illustrated by lantern slides.

The annual dinner was held in the evening at the County Hotel Taunton. After dinner the company were entertained by a musical programme contributed by visitors and members present at the dinner.

YORKSHIRE BRANCH WAKEFIELD POSTERACT AND CASTLEFORD  
DIVISION

A MEETING of the Wakefield Pontefract and Castleford Division was held at the Great Bull Restaurant Westgate Wakefield on November 10th when Dr. Gray was in the chair.

The chairman opened the discussion on death certification and coroner inquests by detailing the new regulations and dealing with some of the advantages of them. He mentioned that even if a *post mortem* examination had been made there still remained a small percentage (4 to 5 per cent) of cases in which the cause of death was undeterminable.

Dr STEVEN who followed dealt with the question from the general practitioner point of view and emphasized the delay which arose from the posting of the death certificates to the Registrar.

Mr HOWARTH (coroner for Wakefield) gave an interesting account of early death certification stating that the first certified death in Wakefield was in 1845. He gave some interesting cases of death which he had in the register in pre-certification days many having been entered as dying from the "Visitation of God". He deplored the lack of co-ordination between various bodies and the delays which arose from that cause. He pointed out that it was the duty of the doctor to notify the police or the coroner in any case in which he felt unable to certify or when there was any cause for suspicion.

Mr. Butler (registrar of deaths) drew attention to the fact that there was a difference in the registrars point of view and the point of view of the public to consider in all these matters. He mentioned that a registrar was able to register a case of stillbirth where a neither a doctor nor the midwife had given a certificate upon the statement of any other suitable person. He expressed a desire that where an unnatural cause of death was given on a certificate it should be entered in block capitals.

The discussion was continued by Alderman W. BENTLEY the coroner for Pontefract Mr. DENTON registrar for Wakefield and Dr. LISTER WALKER and Twist.

## PUBLIC HEALTH APPOINTMENTS

### STATEMENT BY THE MEDICAL WOMEN'S FEDERATION

THE Medical Women's Federation, being much concerned to note that a large proportion of the underpaid public health appointments advertised by local authorities are accepted by women, has issued to its members the following memorandum

Women who may be tempted to accept these black listed appointments are asked to remember the following facts:

1 That the whole position of women in the medical profession depends on their complete adherence to professional standards of conduct and policy. They would never have been admitted to professional organizations nor accepted as colleagues in any sense it had been anticipated that they would attempt to undercut their male competitors. Nothing more calculated to introduce an element of discord into the relations of men and women than the spread of this practice.

2 That the salaries offered would be far lower than they are now but for the determined stand made in pre war days. The present position is not a new one. Medical women ever since their admission to the profession have had to make precisely the same sacrifices for principle as are now demanded. With the inauguration of the school medical service in 1903 and later when maternity and child welfare posts were created persistent efforts were made by local authorities to pay their assistant medical officers below the British Medical Association minimum, and to secure women at a lower rate than men. With rare exceptions the efforts were a failure and blacklegging was

so uncommon that until the close of the war comparatively few authorities wasted time in advertising posts below the agreed minimum.

3 That the salary scale fixed by the British Medical Association and the Society of Medical Officers of Health is now too high in relation to the enormous expense of medical education and the heavy cost of maintaining a household. Young men and women with few responsibilities should do nothing to make life impossible for the many of both sexes who have heavier obligations.

4 That lowered pay invariably implies lowered status and prestige. Holders of appointments which have been banned invariably find themselves cut off from professional advancement and stultified in all their work. The woman who straps herself is belonging to an inferior grade of doctor cannot complain if she is taken at her own valuation.

5 That in regard to salaries the minimum always tends to become a maximum, and once the agreed scale is abandoned and the professional ranks are broken, the lowest salaries will tend to be adopted by other authorities making new appointments. Authorities wishing to be economical would proceed still further, and the scale all over the country would be rapidly depressed.

6 That attempts to evade the scale and split the ranks of the profession by offering a man's post at the agreed rate and a woman's at slightly below are particularly to be deprecated. Where the rule of "equal pay for equal work" is violated there is no limit to the extent to which women will be exploited and swayed. Medical women in the public health service have often been faced with the danger of a rise for male employees only, which could only be resisted by appealing to an inviolable rule.

7 That a woman who has betrayed her professional brethren, past, present, and to come, cannot expect the support of her colleagues or of professional organizations at any time in her career.

## National Insurance

### LONDON PANEL COMMITTEE

#### Dinner Dance and Presentation

THE London insurance practitioners' eighth annual dinner and dance will be held at the New Prince's Galleries, Piccadilly, on Thursday, December 1st, at 8 p.m., reception at 7.30. The dinner and dance are open to all practitioners and their friends. Tickets, 17s 6d each (exclusive of wines, but including light refreshments during dance), or dance tickets only (7s 6d each, inclusive of light refreshments during dance) may be obtained from any member of the London Panel Committee or from Dr C. L. Batteson (17, Russell Square, W.C.1). An added attraction to practitioners attending the dinner will be the presentation which will take place immediately afterwards to Dr H. J. Cudde, chairman of the London Panel Committee, as a recognition of his sterling services on behalf of members of the medical profession working under the Insurance Acts.

## Correspondence

### The Panel Conference

SIR,—We are indebted to Dr Lukin for his criticism of the Panel Conference (SUPPLEMENT, October 29th, p. 178). I, however, differ somewhat with him as to the place where the speakers should stand. All should seek from the platform, facing then audience, even though much time is lost while they walk to the platform. Much of this can, however, be saved by a little forethought. Enclose with the final agenda a form containing spaces for the name and address of the representative and as many numbered blank spaces as there are motions. Each representative to fill the spaces referring to the motions on which he wishes to speak with one word—for, against, or "amend"—returning it at once to the secretary. A clerk can readily tabulate all forms as received, giving the name of each intending speaker under the appropriate heading—for, "against," "amend"—of each motion. With such a list the chairman can call a speaker from each lot in turn. The intending speakers, on their part, should move up to the space at the ends of the platform ready to step forward when called directly a particular motion is reached. There is ample standing room for a considerable number of speakers. When those who sent up their names have spoken then the chairman could call for any others who wished to speak. The meeting could at that time, as it present, with the approval of the chairman call for an immediate vote.

The Conference dinner is a pleasant function and I should be sorry to see it dropped, but as it is at present arranged

it detracts very much from the efficiency of the Conference. It causes the latter part of the business to be rushed through in a most unseemly manner, so that the meeting can be finished at the time fixed for the dinner. The result is that many motions are adopted or rejected without due discussion or consideration. The dinner ought to be held on the preceding night. This arrangement would cause little or no inconvenience to most representatives. So convinced am I about this evil that I purpose impressing on the Bury Panel Committee not to support the dinner unless it is so held. Personally I have determined, should the Bury Panel Committee again favour me with their confidence, not to attend the dinner if it be on the night of the Conference. The panel representatives do not go to London for the dinner, but for the Conference, and it ought to be the first consideration—I am, etc.,

Bury, Lancs, Nov. 5th

JAMES HOLMES

### Change of Doctor

SIR,—It interests me to see at last in the columns of your esteemed JOURNAL (SUPPLEMENT, October 29th, p. 178) some little protest against the new scheme of change of doctor under the National Health Insurance Act.

From a practical point of view the complex and involved new method of procedure renders it next to impossible for the average panel patient with his limited time, to change his doctor, with the trouble involved in writing letters and repeatedly visiting insurance committee offices, and other delay. Further, I wonder whether in these new schemes which involve any consideration is given to the younger medical practitioner who launches out on his own and attempts to build up some form of panel practice. Do the more senior members of the profession realize that in the creation of such a scheme they have more or less completely closed the gate to their younger colleagues, beset as they are with numerous other difficulties in making headway in their profession?

I think this aspect of the question calls for urgent consideration on the part of those responsible for the initiation of the scheme, and I feel sure that in bringing these points forward I am expressing the views of several of my young colleagues—I am, etc.,

November 4th

ALUN LLS

SIR,—In the SUPPLEMENT of October 29th there is a letter from Dr H. S. Griffith mentioning the existence of a large practice near him employing several doctors so that a patient rarely saw the same doctor twice.

In such a case, no doubt, it would be better for the patient to be under the continuous observation of one doctor who had time to take an interest in him. But such large practices form only a small percentage. The majority of practices are but medium sized. In such cases the frequent changing of doctors at any moment destroys continuity of observation, which in many cases is essential for diagnosis and also, therefore, tends to make the doctor lose interest in his work, as he cannot feel that a patient is really his patient.

In the majority of cases I have found that the transfers are effected for what is purely a side issue (that is, when they are not virtually contrived). In some cases the patient may misunderstand the doctor, or his certain doubts in his mind which at the moment the doctor does not appreciate. In most, if not all cases these doubts are cleared up when the patient attends next time, and the patient then appreciates that the doctor understood the case. The effect of this being, able to transfer at any moment is that the public get an unnecessarily lowered opinion of the profession, being virtually encouraged to believe that many doctors do not understand their work.

Many of us younger medical men if given a chance will make good. I noticed this when I first started in practice. This was towards the end of the "transfer in block" period. I was of a youthful appearance, and many patients obviously thought it rather incredible at first that I could know anything about it. But they were on my list, and they soon found, after attending a few times that there was no reason to suppose any difference in competence, and they became very loyal patients. I think we are entitled to a fair chance.

In many cases transfers are effected because of a small debt on account of the family. We are very lenient to poor people, and do not dream of pressing them for a small debt of 2s. But it is rather unfair to us to lose the panel patient the only one, perhaps for whom we are paid, because of having attended (without fee) a member of the family. This should not be encouraged by the profession.

It is not necessary to insist on the value or continuity of observation in medicine. Sir James Mackenzie stressed it enough. The free transfer took this away from us—and probably in the clinically most serious and important cases. We do not take too much responsibility on ourselves, and in cases of doubt we send them to hospital with a letter as to the clinical history. In many cases we get a letter from



## MEDIA M PANEL

ROYAL NAVAL MEDICAL SERVICE

FOUR NEW YORK LETTERS

Sergeant Lieutenant R. Hall to L. T. Crisp at New York

ROYAL ARMY MEDICAL COMMISSION

ROYAL AIR FORCE MEDICAL SERVICE

ROYAL AIR FORCE MEDICAL SERVICE

LIBRARY OF THE U.S. AIR FORCE  
HISTORICAL DIVISION  
WASHINGTON, D.C.

## INDIAN MEDICAL SERVICE.

Br 1 Colonel J Norman Walker is appointed to be in p t r t l r  
of t m l H p t a Central Province

## TERRITORIAL FORCE

John Henry for service with OTC - Lieutenant V. C. Pennell  
- Captain.

## COLONIAL MEDICAL SERVICES

[illegible]

## VACANCIES

TR COV CI - Hol. e-Physician at Wrenbury Hall Tube

This list of vacancies is compiled from our advertisement column. Here full particulars will be found. To ensure notice in the paper, please not later than the first day of the month.

## APPOINTMENTS

SHEFFIELD ROYAL LEO HALL - H orary Pl, eian  
R C Abercrombie MLC MB Howarth J  
E Gordon Mackie MB ChB H orary  
Horn MD MRCP Sec Casualty Officer  
ChB Fe Int Surgical Officer J Shurvell  
Hon Surgeon Hugh Mack MB ChB



# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY NOVEMBER 26th 1927

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### British Medical Association

#### CURRENT NOTES

##### Some Work of the Week.

##### Hospital Policy and Contributory Schemes

THE Hospitals Committee met on November 16th under the chairmanship of Mr W MeAdam Eccles (London) who has succeeded Mr H S Souttar, on the appointment of the latter to the chairmanship of the Science Committee. Dr Astley Clarke (Leicester) is now deputy chairman of the Hospitals Committee. The committee was chiefly occupied in a discussion of the probable effects upon the medical profession of the contributory schemes which are now springing up in all parts of the country. A comprehensive inquiry into this development has been set on foot and it is clear that in many of these schemes there are points which conflict with the accepted policy of the British Medical Association. At a later stage the Association will probably be recommended to prosecute an active campaign among the hospital staffs in the hope that the principle already enunciated may be actively enforced before irretrievable harm has been done. The committee is seriously concerned at the apathy shown in many quarters in this connexion. The committee has enlarged the personnel of the subcommittee which is dealing with the general co-ordination of hospital provision and the subcommittee now includes the chairman (Mr MeAdam Eccles), the deputy chairman (Dr Astley Clarke), Sir Richard Luce, Mr L W G Masterman, Dr B Sangster, Sir Edmund Mr Souttar, Dr H M Stewart, and Dr W A West Watson.

##### First Meeting of Insurance Acts Committee

The Insurance Acts Committee met on November 17th, appointed Dr H C Dym (Birmingham) as its chairman and discussed the action to be taken on the resolutions of the Panel Conference. The committee appointed a Scottish Subcommittee, a Rural Practitioners Subcommittee, an Emergency Subcommittee, and a Prescribing Subcommittee and made the following nominations to the Distribution Committee for England and Wales: Dr H C Dym (Birmingham), Dr E Lewis-Lloyd (Mentoneth), a nominee of the London Panel Committee, and the Deputy Medical Secretary together with Dr W Baigent (Northallerton), Dr H T Jones (Barnstaple), and Dr J Stead (Stranmillis, Co Wick) when questions concerning mileage are under discussion. The importance of the last-named body is indicated by its reference.

To determine the basis on which the proportion in the fund available for the remuneration of an insurance practitioner for the treatment of insured persons and for mileage should

be distributed among the Insurance Committee areas in England and Wales.

On the corresponding committee for Scotland the Scottish Subcommittee of the Insurance Acts Committee has nominated Dr D Elliot Dickson (Lochgelly), Dr J G McCulloch (Glasgow), Dr J Wilson (Irvine) and the Scottish Medical Secretary.

##### Lunacy Law and the Protection of the Practitioner

It will be remembered that the Representative Body at Edinburgh on consideration of a memorandum submitted by the Special Committee on Lunacy Law and Mental Disorder, thanked the committee for its memorandum, and referred it to the Council, with a request that the committee should be reappointed with instructions to take whatever steps are possible to secure that the Report of the Royal Commission declares to be fair—namely that the medical profession should not be asked to perform their essential part under the menace of litigation which even if unsuccessful, may spell financial or professional ruin. The Lunacy Law Committee at a meeting on November 18th under the chairmanship of Dr R Langdon-Down (Hampton Wick) discussed this reference and made certain recommendations which will be considered by the Council at its meeting on December 14th.

##### Standard of Treatment under National Insurance Acts

The following extract from the eighth Annual Report of the Ministry of Health for 1926-27 affords an interesting commentary upon the efficiency of the medical service under the National Insurance Acts.

During the year (1926-27) there were only 77 cases in which money was withheld from doctors, the total amount being £1,000 as compared with 100 cases in 1925 when the total amount withheld was £1,509. The corresponding figures for 1924 are 134 cases and £2,053 withheld. This progressive reduction is as remarkable as it is reassuring. Out of the 77 disciplinary cases which resulted in the withholding of money, only 16 were cases of neglect (i.e. failure or refusal to visit or unsatisfactory treatment etc.) as compared with 32 in the previous year. The fact that out of 13,000 doctors on the Medical List there were only 16 cases in which a charge of negligence sufficiently serious to justify the withholding of money was established indicates that a high standard of treatment has been secured. Of the remaining 61 cases 15 were cases of irregular certification, 5 were cases of overcharging, and 21 were cases of failure to keep proper records. There were 14 cases of failure to make necessary reports or to return record cards to Insurance Committees and the 6 miscellaneous cases included irregularities in prescribing and unsatisfactory surgery accommodation.

The largest amount withheld from a doctor was £80 for failure to keep medical records. This does not represent a penalty in the strict sense, but the withholding of remuneration in respect of work which had not been done. The remainder of the total amount withheld was made up of sums ranging from 10 guineas to £50.

## Association Notices

## BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH COVENTRY DIVISION**—A meeting of the Coventry Division will take place at the Coventry and Warwickshire Hospital on Tuesday, December 6th at 8.30 p.m. Mr M Anderson will read a paper on carcinoma of the rectum.

**BIRMINGHAM BRANCH DUDLEY DIVISION**—A meeting of the Dudley Division will be held at the Corbett Hospital, Stourbridge, on Thursday, December 1st, at 8.30 p.m. Dr B H St Clair Roberts will read a paper on ophthalmic benefit under the National Health Insurance Act.

**BORDER COUNTIES BRANCH ENGLISH DIVISION**—The annual dinner of the English Division will take place at Cockermouth on Friday, December 9th.

**DUNDEE BRANCH**—A meeting of the Dundee Branch will be held in the Medical School, Dundee, at 8.30 p.m., on Tuesday, November 29th. Business: (1) Lecture with lantern slides, by Dr A A Mackinnon on 'A polar expedition, with special reference to the medical aspects'—non-members of the Association and senior medical students are invited; (2) election of officers for 1928.

**EAST YORK AND NORTH LINCOLN BRANCH EAST YORKSHIRE DIVISION**—The committee of the Scarborough Division have invited the members of the East Yorkshire Division to their second annual dinner at the Crown Hotel on Thursday, December 8th. Tickets (10s. 6d. each) to be obtained from Dr Parker, 19 York Place or Dr Feigson, 56, Gladstone Street, Scarborough. Applications for tickets with remittances, should be sent not later than November 30th.

**GLASGOW AND WEST OF SCOTLAND BRANCH**—A clinical meeting of the Glasgow and West of Scotland Branch will be held, by the courtesy of the Glasgow Parish Council and the medical superintendent, at Stobhill Hospital, Springburn, Glasgow, on Tuesday, November 29th, at 3 p.m. Tea will be served from 2.15 p.m. to 3 p.m. Cases will be demonstrated by members of the staff. The annual dinner of the Branch will be held the same evening at 6.30 at Feigson and Lister's Restaurant, 36, Buchanan Street, Glasgow.

**KENT BRANCH DARTFORD DIVISION**—A general meeting of the Dartford Division will be held at the King Edward Avenue Hospital, Dartford, on Tuesday, November 29th, at 3 p.m., when Dr Malcolm Donaldson will give his second lecture.

**LANCASHIRE AND CHESHIRE BRANCH HYDE DIVISION**—A meeting of the Hyde Division will be held at the Stalybridge Town Hall on Thursday, December 8th, at 8.30 p.m., when Sir William Milligan will give an address.

**LANCASHIRE AND CHESHIRE BRANCH WARRINGTON DIVISION**—A meeting of the Warrington Division will be held at the Infirmary, Kendrick Street, on Friday, December 2nd, at 8.30 p.m. Agenda: Mr W R Douglas (Manchester) will read a paper on chronic inflammation of the caecum.

**METROPOLITAN COUNTIES BRANCH CITY DIVISION**—The annual dinner of the City Division will take place at the Trocadero Restaurant on Thursday, December 1st at 7.45 p.m., when several eminent guests will be present, and there will be a good musical entertainment. Tickets (12s. 6d.) from the secretary.

**METROPOLITAN COUNTIES BRANCH FINCHLEY DIVISION**—A meeting of the Finchley Division will be held at the Finchley Memorial Hospital on Tuesday, December 6th, at 8.45 p.m. Mr Trevor Davis will read a paper on some points in gynaecological diagnosis.

**METROPOLITAN COUNTIES BRANCH HAMPSHIRE DIVISION**—A meeting of the Hampstead Division will be held at the Hampstead General Hospital on Thursday, December 8th, at 8.30 p.m. Mr A E Hayward Pinch will read a paper on radium therapy.

**METROPOLITAN COUNTIES BRANCH HENDON DIVISION**—The next clinical meeting of the Hendon Division will take place at the Hendon Cottage Hospital to-day (Friday, November 25th) at 8.30 p.m. when Dr Eric Pritchard, medical director, Infants Hospital, Vincent Square, will deliver an address on infant feeding.

**METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION**—A clinical meeting of the Lambeth and Southwark Division will be held at the Belgrave Hospital for Children, Clapham Road S.W., on Wednesday, December 14th. It will be conducted by Dr M S Thomson. Tea at 4 p.m.

**METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION**—The following programme of meetings has been arranged by the Lewisham Division:

Dec 20th	The Differential Diagnosis of Pulmonary Tuberculosis by Dr Ro e Jordan
Jan 17th	Clinical Evening at South Eastern Children's Hospital, Sidcup
Feb 21st	Some Recent Aspects of Biological Therapy by Dr J Stanley White with lantern slides and a film. How Biological Products are Made
Mar 20th	Birth Control by Dr Jane L Hawthorne
April 17th	Ignatation of the Skin by Dr William A Goldsmith
May 1st	Clinical Evening at St John's Hospital Lewisham arranged by Dr E Okunheim
May 15th	Annual Meeting
Jun 15th	Some Points in the F.R.C.S. Examination of the Alimentary Tract by Mr J M Redding

Meetings to be held at 8.15 p.m. at the Town Hall, Catford S.F.6, unless otherwise stated.

**METROPOLITAN COUNTIES BRANCH NORTH MIDDLESEX DIVISION**—The following programme of the meetings of the North Middlesex Division has been arranged:

Nov 30th	Dr F W Price	Some Recent Advances in the Diagnosis, Prognosis and Treatment of Heart Disease
Jan 25th	Mr F H C Benians	Local Immunization and Antitoxin Therapy
Feb 23rd	Ten minute Papers	
Mar 23rd	Dr I R Verrilland	Dyspnoea in Nervous Disease
April 25th	Dr G Grant Mcdonald	Insulin
May 30th	Annual Meeting	
June 28th	Visit to Oxo Factory	

**METROPOLITAN COUNTIES BRANCH ST PANCRAS DIVISION**—A meeting of the St Pancras Division will be held at the British Medical Association House, Tavistock Square, W.C.1, on Tuesday, December 13th at 9 p.m. Dr Eric Gordon Fleming will read a paper on chiropractic and common sense.

**METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION**—A meeting of the South West Essex Division will be held at Livingstone College, Knott's Green, Lenton, on Tuesday, December 6th, at 3.30 p.m. Dr Dan McKenzie will read a paper on untolden ways in medical history.

**MIDLAND BRANCH CHESTERFIELD DIVISION**—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield on Friday, December 9th, at 8.15 p.m. Mr G O'Rourke, LL.D., will speak on medicine and the law.

**MIDLAND BRANCH HOLLAND DIVISION**—A meeting of the Holland Division will be held at Spalding on Friday, January 6th 1928, at 3 p.m. Sir Humphry Rolleston Bt, Regius Professor of Physics in the University of Cambridge, will give a British Medical Association Lecture on the medical aspects of idiocy and imbecilities.

**NORFOLK BRANCH**—A meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital, on Wednesday, November 30th, at 3.15 p.m. when Dr H J Starling will read a paper on the diagnosis and treatment of hyperthyroidism (illustrated by lantern slides).

**NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION**—The following programme of meetings has been arranged by the Sunderland Division:

Feb 2nd	Annual Dance in aid of B.M.A. Charities. Further particulars to be issued later
" 15th	Dr Alfred Parkin. The Medical Legal Aspect of the Workmen's Compensation Act
Mar 21st	Dr Harvey Evans. The Place of the Uterine Carcinoma
April 18th	Dr A F Bernard Shaw. The Present Status of the Jaundice Problem
May 16th	Dr J C Spence. Hypertrophic Pyloric Stenosis—its importance as an example of the method of diagnosis, treatment, and study of disease in childhood

The meetings will be held on the third Wednesdays in the month at the Royal Infirmary, Sunderland, at 8.15 p.m.

**SOUTHERN BRANCH JERSEY DIVISION**—A meeting of the Jersey Division will be held at the General Hospital on Thursday, December 15th, at 8.30 p.m. Mr C T Cuthbert will read a paper entitled "From Old to New."

**SOUTHERN BRANCH PORTSMOUTH DIVISION**—A meeting of the Portsmouth Division will be held at the Queen's Hotel, Portsmouth, on Thursday, December 8th. Dr F M R Walsho will lecture on faith healing. The meeting will be preceded by a supper at 9 p.m., price 3s. 6d., including gratuities.

**SOUTH WALES AND MONMOUTHSHIRE BRANCH CARDIFF DIVISION**—A meeting of the Cardiff Division will be held in the Engineers' Institute, Park Place, Cardiff, on Thursday, December 15th, at 8.30 p.m. Professor W E Dixon, M.D., F.R.S., will give a British Medical Association Lecture on the trend of thought in modern therapy. After the lecture Professor Dixon will be entertained at a Divisional supper at the Park Hotel, Cardiff.

**SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION**—At the meeting of the Swansea Division to be held at the General Hospital Swansea, on Thursday, December 8th at 8.15 p.m. Dr S A Hunter Wilson will deliver a British Medical Association Lecture.

**SURREY BRANCH CROYDON DIVISION**—At the meeting of the Croydon Division to be held at the Croydon General Hospital on Wednesday, December 14th, preceded by tea at 4 p.m., Mr A H Todd will give a lantern demonstration on selected orthopaedic cases of general interest.

**SURREY BRANCH GUILDFORD DIVISION**—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford, on Friday, December 2nd, at 4 p.m. Dr J M Wyatt will read a paper on purpural sepsis. Tea at 3.45.

**SUSSEX BRANCH HASTINGS DIVISION**—The annual dinner arranged by the Hastings Division will take place on Friday, December 2nd, at the Albany Hotel, Hastings. Tickets 7s. 6d. (including buffet supper). Members are requested to notify the honorary secretary, Dr T Reed, Hawkswood, London Road, St Leonards-on-Sea as early as possible how many tickets they will require.

**YORKSHIRE BRANCH DUNSWORTH DIVISION**—A meeting of the Dunsworthy Division will be held at the Dunsworthy and District Hospital on Friday, December 2nd.

**YORKSHIRE BRANCH HUDDERSFIELD DIVISION**—The medical dinner of the Huddersfield Division will be held in the Royal Infirmary on Wednesday, December 7th from 9 p.m. to 1 a.m. For those who do not wish to dance a bridge or a concert at 9.15 p.m., will be arranged. As the dance will only be held if a sufficient number of tickets are sold it will greatly assist the committee if members will notify the honorary secretary, Mr A

Lanier Walker 4 New North Road Huddersfield before November 25th the number of tickets required. The price of tickets is 6d each.

**YORKSHIRE BRANCH SHEFFIELD DIVISION**—A general meeting of the Sheffield Division will be held on Friday December 9th at the University Sheffield at 8.30 p.m. when a British Medical Association Lecture will be delivered by Professor H. Beckwith Whitehouse on practical applications of recent views on the menstrual functions.

**YORKSHIRE BRANCH WAKEFIELD PONTEFRAC AND CASTLEFORD DIVISIONS**—A meeting of the Wakefield Pontefract and Castleford Division will be held at the Great Bull Restaurant, Westgate Wakefield on Thursday December 8th. Mr E. R. Flint Assistant Surgeon General Infirmary Leeds, will lecture on fracture. Supper at 7.30 p.m. (2s. 6d.) will precede the lecture.

## Meetings of Branches and Divisions

**BORDER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION**  
A most interesting meeting was held by the Dumfries and Galloway Division at the Lochmahon Sanatorium on November 1st. The members were welcomed by Sir William Younger M.C. of Auchin Castle on behalf of the committee of management.

Dr J. RITCHIE introduced a discussion on the new legislation in Scotland on midwives and maternity homes, emphasizing the importance of practitioners taking care to avoid breaches of law. Questions were asked and answered.

Dr STEVENSON in a clear and instructive address detailed the history of the sanatorium and its extension and gave graphic demonstrations of the apparatus used by himself and his staff both in the diagnosis and treatment of residual and visiting patients.

Following the demonstration visits were paid to the various buildings and extension, after which tea was provided and votes of thanks were accorded to Sir William Younger and his committee and to Dr Steven and his staff.

**DORSET AND WEST HANTS BRANCH WEST DORSET DIVISION**  
A meeting of the West Dorset Division was held at the County Hospital Dorchester on November 17th.

Dr MORRIS showed a case of a child of 7 with rheumatic nodules on the hands and fingers.

Dr VASU VERTMAN showed a man of 57 suffering from a neoplasm of the descending colon who was admitted with marked ascites and massive oedema of the legs. His heart was dilated. He was treated with injections of 12 c.c. of a 10% urotel twice weekly for a fortnight. There was profuse diarrhoea and the urine increased from 30 to 70 oz per diem. The ascites and oedema had now disappeared.

Dr ADAM BOWEN demonstrated a man of 67 suffering from a peculiar fibrillation with ascites. The liver and spleen were enlarged and the feet were oedematous. He had also been treated with urotel. The urine excretion increased but there was no effect on the ascites or oedema. He showed also a girl of 18 who had had an attack of supposed influenza four years ago. Since then she had suffered from attacks of epilepsy. Lately she had developed an upper motor neuron lesion on the right side. She was now suffering also from a habit spasm consisting of a jerk of her head. Her optic discs were normal and there were no signs of Parkinsonism. There was a recent history of a transient diplopia. The suggested diagnosis was that the attack of influenza was really encephalitis lethargica.

Dr PRITCHARD showed the spleen removed from a man of 63 who had had enlarged spleen and liver and enlarged glands in the axillae and groins. The spleen was cirrhotic. The diagnosis was Banti's disease.

In the absence of Mr Smerdon Dr FLEMING read a note on the case of a child admitted suffering from ileocolic intussusception. Mr Smerdon operated and found besides the intussusception a ganglionic appendix. The child made an uninterrupted recovery.

Dr STURGE showed radiograms of a man suffering from fracture calcification of the elbow on whom he had operated with good functional result. He also exhibited a specimen of an ovarian cyst that had contained 16 pints of fluid and read notes of three recent cases of ovarian cyst.

After refreshments had been served Dr STURGE read a most interesting and thought provoking paper on the subconscious mind in everyday life. He covered a very wide field. Owing to the lateness of the hour there was very little discussion.

**EDINBURGH BRANCH SOUTH EASTERN COUNTIES DIVISION**  
A special meeting of the South Eastern Division was held in the Royal Hotel Glasgow on October 28th to meet Sir David Wallace and Professor John Frazer of Edinburgh to consider a scheme for a hospital for cripple children with major and minor amputations for the south-eastern area of Scotland.

Sir David Wallace who was the first called on by the chairman said that the proposal was the result of the urgent need for that had been shown for such a hospital and laid special emphasis on the fact that the scheme was in the nature of a policy which included preventive treatment surgical treatment and after-care.

Professor FRASER referred chiefly to figures stating that in the area there were about 750 cripples of school age alone.

Dr AGNES MACDONALD TYRRELL OLIVER McLAY and DAVIDSON (Hawick) contributed to the discussion in which the visitors made it clear that the proposal was not only not antagonistic to the present hospitals such as the Royal Infirmary and Sick Children's Hospital Edinburgh but was actually advocated by these institutions. Orthopaedic surgery was very much a specialism and required long periods of after-care which could not be given in infirmaries whose accommodation was insufficient for present demands. It was further made clear that the intention was to work in conjunction with the general practitioner and the cottage hospital of the area.

Dr FAIRFAX the chairman afterwards expressed the meeting's appreciation of the trouble to which Sir David Wallace and Professor Frazer had gone and proposed a warm vote of thanks which was seconded by Dr TYRRELL. Dr JOHN S. MITCHELL (Selkirk) moved that as the result of what the Division had heard from Mr Murray and their visitors that day the Division give its hearty approval to the scheme. Dr AGNES MACDONALD seconded and the motion was unanimously carried. Sir David Wallace himself thanked the members for their reception.

### Annual Dinner

The annual dinner of the Division was held in the Royal Hotel Glasgow on November 2nd when Dr NORMAN P. FAIRFAX (Innerleithen) chairman of the Division presided. The guests of the Division were the Earl of Home Mr M. G. Thorburn (Lord Lieutenant of the County of Peebles) and Dr John Stevens (chairman of the Edinburgh Branch). Private guests included Messrs Beely Mercer and Crichton Smith (town clerk of Kelso). The Earl of Home proposed the toast of the evening. The British Medical Association which was replied to by Dr STEVENSON. During the evening a musical entertainment was given by the chairman Dr FAIRFAX and Dr GORDON and Dr PACE while Dr MITCHELL (Selkirk) contributed in his usual manner the modern version of Young Love. The dinner was a very great success and was enjoyed by all. It concluded about 11 o'clock by the company singing Auld Lang Syne.

### METROPOLITAN COUNTIES BRANCH CAMBERWELL DIVISION

A meeting of the Camberwell Division was held at St Giles's Hospital Camberwell on November 15th when Dr Cox chairman of the Division presided and thirty-one members and visitors were present.

Dr ROBERT HUTCHINSON gave a most interesting and instructive address on dyspepsia. He defined the condition as any discomfort felt during digestion and due to organic disease of the stomach or to primary disorder of its functions. For practical purposes the duodenum could be regarded as part of the stomach. Having stressed the importance of diagnosis the lecturer reminded his audience of the numerous other disorders of the body which simulate dyspepsia in their symptoms. Organic disease of the stomach was more common than formerly realised and should always be suspected in the presence of real pain vomiting and wasting. Regarding functional cases Dr Hutchinson considered that undue importance was attributed to the part played by physical causes such as oral sepsis defective teeth etc. and too little attention given to the nervous causes. Dealing with treatment the speaker was of the opinion that surgery was indicated in all chronic cases except gastritis. Functional disorders should have their nervous cause investigated and remedied if possible. Symptomatic treatment should be supplementary.

Dr HUTCHINSON addressed was much appreciated by the meeting and in the subsequent discussion the President Dr BUTTER Dr CLARKE and Dr HEND and Mr MATTHEWS took part.

On the motion of Dr HEND seconded by Dr COX a vote of thanks was enthusiastically accorded to Dr HUTCHINSON for his address.

### METROPOLITAN COUNTIES BRANCH CITY DIVISION

A very well attended clinical meeting of the City Division was held at the Metropolitan Hospital on November 11th when Dr T. H. G. SHORE presided and demonstrated the following cases:

A man aged 50 with leukaemia both in the spleen and the axillary lymphatic glands.

A boy aged 14 with haemophilia who suffered from epistaxis and haemorrhages into joints. He was treated with haemophilin.

A woman aged 32 who suffered from pleurisy and pneumonia. Her spleen which was large had been removed without harm resulting.

Two women one aged 27 the other 29 with pernicious anaemia both patients improved under treatment with large doses of dilute hydrochloric acid.

A man aged 58 with subacute combined degeneration of the spinal cord. He had tingling of the hands and feet and loss of knee-jerks.

A man aged 53 with gastric ulcer who developed pneumonia and a parapneumonic abscess.

A girl aged 15 with aortic stenosis (rheumatic).

A man aged 67 suffering from vulvar cancer at caries due to extension of the external table of the skull.

A man aged 50 with combined diabetes and jaundice.

The meeting terminated with a hearty vote of thanks to Dr Shore.

### METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION

A clinical meeting of the Lambeth and Southwark Division was held at the Belgrave Hospital Clapham Road on November 9th.

It was conducted by Mr SYDNEY BORD who showed many interesting cases the outstanding ones being:

Tom, 11, in a girl aged 3½ operation on September 14th 1927 now doing well at home.



Two cases of bilateral undescended testicle. The first patient, aged 5½ is awaiting operation. The second patient aged 7½ years, has undergone two operations—the first on October 6th 1927 (one side), and the second on October 31st.

Syndactylism, in a boy aged 2 operation on October 6th 1927.  
Hypoplasia in a child aged 4 years second stage operation on October 13th, 1927.

Tuberculous abscess (fourth right costal cartilage) in a boy aged 2 years.  
Naevus of the right breast, cavernous type, in a boy aged 6 months.  
Sarcoma of right kidney, in a girl aged 6½ operation June 7th, 1927.  
Tumour removed weighing 5 lb 6 oz. The patient now has a cyst, probably due to extensive recurrence in the omentum.

#### METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION

A MEETING of the Lewisham Division was held at the Town Hall, Catford, on November 15th, when Dr W. HALLINAN took the chair, and Mr CHARLES BENNY delivered an address on the urgency of the discharging ear. Mr BENNY advocated the conservative mastoid operation, which improved or saved the hearing, was not dangerous, and stopped the discharge. He read extracts from a papyrus of the time of Moses, showing that drops were then used. The mastoid antrum was affected in all cases of chronic discharge and no drops could reach the antrum. Early operation was required if the discharge continued after three or four weeks. He had abandoned the radical and Schwanitz operation. The advantages of the conservative operation were that the hearing was improved, the dressings were painless, there was no scarring, the patients remained only a short time in the hospital, and the after treatment was simple. The antrum was entered from before backwards, the tympanic membrane was always in view, and the whole of the diseased mucosa was destroyed by pure carbolic acid. The meatus was enlarged. The danger signs of aurial suppuration were: (1) rapid decrease of hearing, (2) headaches on affected side, (3) vertigo, (4) profuse discharge, often with blood, (5) tinnitus. Paralysis was inconstant. Six clinical cases were shown and the operation was demonstrated on a large model ear. Drs FANNON, BUCHAN, HALLINAN, and JONES joined in the subsequent discussion. A vote of thanks was accorded to the lecturer.

Members of the Lewisham Division and their wives inspected the United Danies (London), Ltd premises at 57, Perry Vale, Forest Hill, on November 9th, when they were received by two of the directors Messrs Tustin and Edwards. Following an explanation of the premises, the plant was viewed, after which tea was served. On the motion of Dr BUCHAN, seconded by Dr G. JONES, a vote of thanks was accorded to the United Danies (London), Ltd, for the opportunity of visiting their premises.

#### METROPOLITAN COUNTIES BRANCH TOWER HAMLETS DIVISION

A CLINICAL meeting of the Tower Hamlets Division was held on November 16th at the British Red Cross Society's Clinic Poplar. About thirty members were present. Dr J. SAINSBURY demonstrated various types of electrotherapeutic apparatus, indicating how they were used in different cases. Dr OXLEY the chairman of the Poplar Division of the British Red Cross Society gave a brief account of the history of the clinic, and hoped that the local doctors would continue to support it. The chairman, Dr HASTINGS, proposed a vote of thanks to the lecturer, who briefly responded.

#### MIDLAND BRANCH HOLLAND DIVISION

THE first meeting of the winter session of the Holland Division was held at the Y.M.C.A. Institute, Spring Gardens, Spalding, on November 18th. Mr H. BELL TAYNE gave an interesting and instructive address on some difficulties of the general practitioner in ear, nose and throat cases, illustrated by lantern slides and specimens. The meeting was a very great success, and a cordial vote of thanks was accorded to the lecturer.

#### NORTH-EAST COUNTIES OF SCOTLAND BRANCH BANFF, MORAY, AND NAIRN DIVISION

A MEETING of the Banff, Moray, and Nairn Division was held in the Gordon Arms Hotel, Elgin, on November 18th to hear the British Medical Association Lecture by Professor D. MURRAY LEON, of the chair of clinical therapeutics in the University of Edinburgh, who chose as his subject, 'Asthma—with special reference to its etiology and treatment'. The subject was one which was calculated to appeal to all general practitioners, and was listened to with great attention and appreciation by a large audience. At the close a very cordial vote of thanks was accorded on the motion of Dr JOHN TAYLOR (Elgin), who voiced the gratitude of the members of the Division to the lecturer for having given up so much of his valuable time to come so far to lecture on such an interesting subject. Professor MURRAY LEON, in reply, said he was very gratified at the size of the gathering and the attention with which his remarks had been received.

Later in the evening a dinner was held under the chairmanship of the Division chairman, Dr JAMES TAYLOR (Keith). In addition to the lecturer Lord Provost Wittet was a guest of the evening. In proposing the toast of the British Medical Association Dr H. G. COWIE (Banff) urged the members to throw off a large measure of the apathy at present existing, as no one knew when severe struggle to maintain its dignity and status. The Scottish Medical Secretary Dr DREVER replied in replying to the toast of his health, which had been proposed by Dr TAYLOR (Elgin), the

DIVISION SECRETARY thanked the members for the loyal support they had given him in the past and appealed to them to help him to make the Division, which was considered one of the five Scottish Divisions, the highest. The singing of "Auld Lang Syne" terminated another very successful gathering.

#### NORTH OF ENGLAND BRANCH DARLINGTON DIVISION

A CLINICAL meeting of the Darlington Division was held at the Greenbank Hospital, Darlington, on November 17th, when Dr F. C. PRIDHAM presided. There was a large attendance, not only of members of the Darlington Division, but also of neighbouring Divisions, so that the seating capacity of the hall was overtaxed. The speaker was Professor HUGH MACLEAN who gave an address on the treatment of gastric and duodenal ulcers. He was followed with rapt attention, his matter being so interesting, his subject so thoroughly practical to general practitioners, and his way plates so clear and convincing. A discussion followed and a vote of thanks to Professor Maclean was carried with acclamation.

#### NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION

##### Annual Dinner

THE annual dinner of the Sunderland Division was held at the Palatine Hotel, Sunderland, on November 10th, when Dr HAMILTON ROSS, chairman of the Division, presided. Sir Norman Walker was the guest of the evening.

After the loyal toast had been honoured, Dr W. GRANT WATSON, in proposing that of "Our Guest," referred to the distinction which Sir Norman Walker had attained in the profession as a dermatologist, and as the author of the well known *Introduction to the Study of Dermatology*. Sir NORMAN WALKER, in reply, expressed his gratification at learning that his book found a place upon the shelves of the general practitioners. After referring to the great changes which had taken place in medical and surgical practice during the last forty years he was pleased to note the friendly relations which existed between the medical profession in all districts at the present time. He appealed for the co-operation of all branches and sections of the profession to assist in every possible way in the research work of medicine and surgery. He considered that the medical graduate of the present was better qualified than his fore-runner of forty years ago, the medical profession was without doubt making a great advance in its educational standard.

Mr ALFRED PARKIN (Newcastle on Tyne) proposed the toast of "The Sunderland Division of the British Medical Association," associating with it the name of the chairman. He said that the Division was a flourishing body, and formed a part of the North of England organization, which was almost the backbone of the British Medical Association. Sunderland had he said, provided many prominent secretaries, not only for the Division but for the North of England Branch. They were impressed in Newcastle by the progress being made at the Sunderland Royal Infirmary, a work for which the local Division might fully claim some credit.

The CHAIRMAN replied to the toast. He said that the North of England Branch of the Association was the strongest numerically in England, with a membership of 80 per cent of those practising in the area, while Sunderland was the second strongest Division, with about 83 per cent of those practising in the area as members. He hoped the public and the profession would give early serious attention to the urgent matter of the co-ordination of hospitals.

Dr STANLEY PAW proposed the toast of "The Other Profession," which was acknowledged by Prebendary A. B. WATKINS WILSON and His Honour Judge RICHARDSON. Dr W. MILBANK, in proposing the toast of "Our Honorary Secretary," paid a cordial compliment to the work of Dr R. H. DIX for the Association, and the large amount of time he sacrificed to its interests.

#### SURREY BRANCH GUILDFORD DIVISION

A WELL attended meeting of the Guildford Division was held at the Royal Surrey County Hospital on November 3rd, when Mr H. BRANSON BUTLER, chairman of the Division, presided. After the routine business had been transacted Dr W. L. R. ILLING took the chair, and Mr BUTLER gave a very interesting account of his experiences both surgical and other on a tour through Canada and the United States of America in September last, organized by the Royal Society of Medicine.

Mr E. W. SHEAF gave his impressions of the work of the Mayo Clinic where operations took place daily from 8 a.m. till 11.30 p.m. He said that the vastness of the work could be gauged by the fact that over 20,000 operations were performed there annually. The party were shown over the experimental institute and a number of short lectures were given on recent research there. The whole of the work was, he said, of a universally high standard, actuated by high scientific ideals. During his six days' stay, at Cleveland, spent mostly with Dr Crile, many quite technical things were seen. Dr Crile was a surgeon of great technical skill and originality, he was an indefatigable worker who found time for the most profound researches as well as for an unusual amount of practical surgery. At Baltimore Dr Bloodgood had described some of the results of a cancer campaign. He said that the results had been that before the campaign the bulk of breast tumours seen were malignant, now the innocent variety predominated and Dr Bloodgood considered that dealing with these in their early stages prevented the development of many cases of cancer. Boston they saw much interesting work, and had an opportunity of a very brief view of Dr Harvey Cushing's technique in brain

salary. At every entrance into it both the party as a whole and the individual were shown the utmost hospitality and kindness.

A vote of thanks to Mr Butler and Mr Scait proposed by Dr F. E. Lewis (Pipri) brought a very pleasant meeting to a close.

# SOUTH BRANCH CHICHESTER AND WORTHING DIVISION Annual Dinner

The annual dinner of the Chichester and Worthing Division was held at Warner's Hotel, Worthing, on November 16th. In the absence through ill health of Dr Frank Hind, chairman of the Division, Dr H. J. Milbank-Smith, the vice-chairman, presided. The large company, 111 in all, included three mayors (Worthing, Chichester, and Arundel).

Dr SIMON MATTHEW, in proposing the Mayor and Corporation of Worthing, expressed his difficulty in saying anything about the town, because it was already so well known and he fore-shadowed the time when it would have a population of 75,000 and be a county borough. The Mayor of Worthing, Alderman Fotheringham, in responding, expressed his regret that Dr Hind was absent, and referred to his zealous devotion to duty on the Health Sub-committee of the town council. He expressed pride in the town's health record and mentioned that since 1891 the population had risen from 6,000 to 33,500 while the death rate had fallen from 20 per thousand to 10 per thousand, and the infant mortality from 150 per thousand to 20 per thousand. In this connexion he gave great credit to Dr Willshaw, the medical officer of health.

Dr C. O. HAWTHORNE, Chairman of the Representative Body of the British Medical Association, in proposing The Common Health, said that the health of the community must have a wide appeal and must commend itself to a profession the members of which were doing their individual best to create a nation of sound men and sound bodies. He suggested that dining as a new art was an important contribution to the mental, moral, and social health and happiness, and uttered a warning against the bad practices of the personal health for most people, the best advice was "Practise moderation, cultivate common sense, and think of your health the better."

Dr GRAHAM LITTLE, M.P., who replied to the toast, said that he felt he had done at Worthing. Referring to the present day, he said that he was giving too much thought to food and drink. He thought that the great fault of the new paper medicine was its undue emphasis and rigidity on questions of diet. He suggested that in the first and most important steps to be taken to promote the public health was to induce more doctors to Parliament. This in itself was in the House of Commons did not bear the weight it should.

In proposing Propriety to the British Medical Association, Dr LOCALIA STURGES, spoke of its value in covering as it did the whole of the British Empire, and he commended it to every young member of the profession as the most desirable meeting ground and most profitable communion in the world. Dr L. A. LARSEN, respondent to the toast, in the absence of Dr Alfred Cox, Medical Secretary of the Association, said that the Association had 33,000 members in all parts of the world, and emphasized that it was a democratic body. He gave particulars of the part played by the South Branch and the Chichester and Worthing Division in the affairs of the Association. He said that the profession was doing its best to solve the terrible problem of maternity mortality. The main object of the Association was the common health and the majority of their deliberations had that object in view.

The Mayor of Chichester, Dr ARTHUR BODD, proposed the health of the chairman and honorary secretary of the Chichester and Worthing Division, and Dr D. D. MACINTOSH, in acknowledging the toast, expressed his immense enjoyment of his task. The health of the chairman was proposed in very warm terms by Dr BODD, who described Dr Milbank-Smith as a man of keen energy and enthusiasm.

## WILTSHIRE BRANCH

A GENERAL meeting of the Wiltshire Branch was held at the County Hotel, Haverhill, on November 16th, when the president, Dr C. E. TANG, was in the chair and twenty members of the Branch were present. The president referred to the loss of the Branch and welcomed the death of Dr J. E. Gordon (Salisbury) and a letter from Mrs. Gordon was read, thanking the members of the Branch for their sympathy and for the wreath sent in their name.

The question of the treatment of persons injured in motor accidents referred to the Branch by the Wiltshire Panel Committee was considered, and it was resolved to refer the matter to a committee representing a number of the hospitals in the county, who would draw up a report on the problem with recommendations for the future consideration of the Branch.

Dr D. A. BURCHELL (Bath) read a paper entitled "Antenatal work in general practice," in which he laid stress on the necessity for this work to be carried out by medical men and not by midwives. A general discussion followed, and on the motion of Dr Ede, seconded by Dr HAYDON, it was decided to appoint a subcommittee to consider a scheme for carrying out the work and to report at the next meeting of the Branch. Dr TANG said that he could give an assurance that any scheme put forward by the Branch would be sympathetically received and considered by the County Public Health Committee. It was resolved that the committee be proposed to be set up should be the Medical Advisory Committee, with power to co-opt. A hearty vote of thanks was accorded to Mr Mitchell for his paper. A vote was provided after the meeting by the kindness of Dr Cole and the committee of the institution.

## GENERAL COUNCIL

OF

## MEDICAL EDUCATION AND REGISTRATION

### WINTER SESSION, 1927

THE one hundred and twenty-sixth session of the General Medical Council opened on Tuesday, November 22nd, at its house in Hallam Street, London. Sir DONALD MACALISTER, Bt., K.C.B., presided.

PROFESSOR R. J. JOHNSTONE of Belfast, Professor J. S. B. STOPFORD of Manchester, and Mr. H. W. MONTSARRAT of Liverpool took their seats as members of the Council, the two former for three years as representatives of their universities, and Mr. Montsarrat as successor to the late Mr. Thelwall Thomas as representative of the University of Liverpool until 1930. The appointment was also announced of Professor J. LORRAIN SMITH as representative of the University of Edinburgh for the ensuing five years.

### PRESIDENT'S ADDRESS

The President then spoke as follows:

GENTLEMEN,—Twice during the past summer the Council has had to mourn the death of a distinguished member. In August Professor Harvey Littlejohn of Edinburgh died after a long period of ill health, but full of his wonted intellectual vigour. For twelve years he had served the Council with conspicuous ability and zest, and his loss will be deeply felt in many fields of professional activity. In September Mr. Thelwall Thomas of Liverpool was called away suddenly. He had joined the Council only at the beginning of last year, but already he had approved himself a cheerful and sagacious colleague, and had amply justified the welcome we accorded him on his appointment. Professor R. B. Wild of Manchester has resigned his membership on retiring from his professional chair. For five years he has held office, and the Pharmacopoeia Committee in particular has greatly benefited by his special knowledge and experience in pharmacology and therapeutics.

In the place of Dr. Littlejohn the University of Edinburgh has appointed Professor J. LORRAIN SMITH, the Dean of its Medical Faculty. He is not a stranger to the Council, for in 1912 and 1913 he represented with much acceptance the University of Manchester. We are glad to see him again among us. Liverpool has appointed another eminent colleague to succeed Mr. Thelwall Thomas—namely, Mr. H. W. MONTSARRAT. His reputation for energy and administrative ability has preceded him, and enhances the warmth of our welcome. Dr. Wild is succeeded by Dr. J. S. B. STOPFORD, M.B.L., professor of anatomy in the University of Manchester, and formerly Dean of its Medical Faculty. His contributions to neurological surgery are familiar to many of us. The Queen's University of Belfast has sent us Dr. R. J. JOHNSTONE, professor of gynaecology and member of Parliament in succession to Colonel Sinclair, M.P., who so happily still sits with us in another capacity. To all the new members and to Sir Hilton Young and Sir FARGUHAR BUZZARD who return to us with new and well-earned honours—Sir Farguhar Buzzard announced only to-day—the Council offers its cordial welcome and congratulations.

### The Irish Free State

FOUR members of our body have been appointed to the Irish Free State Medical Registration Council established under the Free State Act, passed in accordance with the recent agreement to which I made reference in my last address. The election of our colleague Dr. COFFEY as President of the Irish Council goes far to ensure its smooth and effective working in co-operation with our own body. The British bill for the ratification of the Irish agreement has passed through the House of Lords. It is expected to come before the House of Commons during the present session of Parliament.

### The British Pharmacopoeia

THE committee considering the question of the method of preparing the next British Pharmacopoeia has practically completed the taking of evidence, and will, I learn,

proceed forthwith to the drafting of its report. But I shall have no fresh information on the subject to communicate to the Council at the present session. We are still waiting the conclusions of the Privy Council Committee on the Poisons and Pharmacy Acts. These conclusions may have bearings on medicine which will call for your consideration at a later date.

#### *Practice in the Dominions*

The Executive Committee has had communications, through the Privy Council, from Quebec, Ontario, and New Zealand, which indicate a disposition in these parts of the empire to withdraw from practitioners registered in the *Medical Register* the privileges of practising within their respective territories which have hitherto been accorded them, in virtue of reciprocal agreements made by Order in Council. The ground for the withdrawal seems, generally speaking, to be a desire to "protect" certain local professional interests. If no modification of the views held by the provincial authorities on this subject can be brought about, the Privy Council will have to consider whether the privileges granted by this country to practitioners from these British possessions now registrable on the Colonial List of the *Register* can justly be continued.

#### *India*

The reports of the Executive Committee, based on the results of the visitations and inspections of Sir Norman Walker and Colonel Needham, have been duly forwarded to the Secretary of State for India, the Indian Government, and the Indian universities. There has as yet been time for little more than formal acknowledgements of their receipt, but from numerous unofficial communications we may gather that the desire of the Council to assist the Indian authorities in their efforts to improve the methods and standards of medical education in India has been gratefully recognized. We further learn that definite steps have been taken to bring before the Central Legislature the question of establishing, by the agency of an all-India Council, some form of control of Indian standards of professional qualification.

It is of interest in this connexion to record that both Sir Norman Walker and Colonel Needham have been severally invited to visit the United States, within the next few months, for the purpose of giving to certain medical authorities in that country the benefit of their special experience in matters of medical education and examination.

#### *The Medical Curriculum*

The Education Committee will probably be able to present to you at this session a final report, setting forth the progress made by the several teaching and examining bodies in this country towards giving legislative effect to the Council's resolutions on the medical curriculum, which came into force in January, 1923. It is satisfactory to observe that, almost without exception, the regulations of the licensing bodies are now in practical conformity with the principles laid down by the Council. The circulation of the final report among the bodies concerned will without question be of service to the cause of professional training and testing. Each body will find something of value for its own use in the experience and practice of the others.

#### *Visitations of Examinations*

The Examination Committee, in like manner, will have a report to submit on the visitations of professional examinations other than the final or qualifying examination. From this report also much may be learned regarding the merits of diverse examination methods and arrangements.

#### *Registration of Students*

The regulations for the registration of medical and dental students have been carefully revised by the Education Committee, with a view to greater clearness and consistency in their statement. The amended form will be submitted for your approval.

#### *Registration of Opticians*

In pursuance of your instructions Mr. Eison and I appeared before the Departmental Committee on the Registration of Opticians Bill, and gave evidence in support of

the memorandum on the subject which appears in the Council's minutes. So far as I am aware the decision of the committee has not yet been published.

#### *Business of the Session*

As is customary at this November session, most of your time will be occupied in judicial inquiries into the conduct of medical and dental practitioners. It is therefore difficult to forecast the length of our sittings, but I see no reason to doubt that they will be completed within the present week.

### National Insurance.

#### LONDON PANEL COMMITTEE

##### *Dinner Dance and Presentation*

THE London insurance practitioners' eighth annual dinner and dance will be held at the New Princes Galleries, Piccadilly, on Thursday, December 1st, at 8 p.m., reception at 7.30. The dinner and dance are open to all practitioners and their friends. Tickets, 17s. 6d. each (exclusive of wines, but including light refreshments during dance), or dance tickets only (7s. 6d. each, inclusive of light refreshments during dance) may be obtained from any member of the London Panel Committee or from Dr. C. L. Bitteson (17, Russell Square, W.C.1). An added attraction to practitioners attending the dinner will be the presentation which will take place immediately afterwards to Dr. H. J. Cardale, chairman of the London Panel Committee, as a recognition of his sterling services on behalf of members of the medical profession working under the Insurance Acts.

### Correspondence

#### *Ophthalmic Clinics for Insured Persons*

SIR,—In the SUPPLEMENT for November 12th (p. 194) "Ophthalmic Surgeon" expressed surprise that the question of establishing ophthalmic clinics had been allowed to pass unchallenged by ophthalmic surgeons. It has not. In view, however, that I have written several letters on the subject, but the Ophthalmic Committee of the British Medical Association seem determined to have clinics.

From what I can gather it is proposed that ophthalmic specialists are to see patients in a building provided by the approved societies, and they will also do the clerical work, the rate of remuneration being 8s. 4d. per head.

In order to bring the cost of ophthalmic benefit within the means of the societies I have suggested, as a compromise, that the cost be reduced to 15s. 6d., of which the societies find 10s. 6d., the balance of 5s. is provided by the member to the society on application for ophthalmic benefit, as absence from work attending a clinic would probably cost him that amount. But I agree with your correspondent that if it is a question of a clinic or the present system, let us have the present one.

Should the clinic system be adopted it would mean the abolition of free choice of specialists, and the doctor would once again be a servant of the societies. If adopted for specialists it might be tried on panel practitioners, the visiting could be done by district surgeons. In fact, no sooner do general practitioners escape from the societies than our own heads are suggested that ophthalmic surgeons should become club doctors.

I cannot do better than conclude with the words of your correspondent. Let us by every means in our power preserve the principle of private practice—I am, etc.,

Southease Nov 15th

I. C. D. CHITING

#### *Insurance Practice Limitation of Lists*

SIR,—I read with surprise Dr. Brackenbury's address to the Incorporated Association of Approved Society Secretaries reported in the BRITISH MEDICAL JOURNAL SUPPLEMENT of November 12th (p. 189). There are two points which I would like to criticize: (1) the comparison of insurance work with that of a hospital out-patient department, (2) the remarks on the limitation of panel lists.

I practise in an industrial town in Scotland, where the great bulk of the work is national health insurance. My panel is at present about 2,250. I consult at my house five evenings a week for an average of two and a quarter hours each evening. My average number of patients per evening is 28. The panel visiting list is about 12 per day at present for six days a week. In summer the evening consulting drops to 20 and the visiting to 6. Each patient, when shown into my consulting room, brings his record card with him, this has been handed to him on entering. The card is kept up to date by entries made,







# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY, DECEMBER 31<sup>st</sup> 1927

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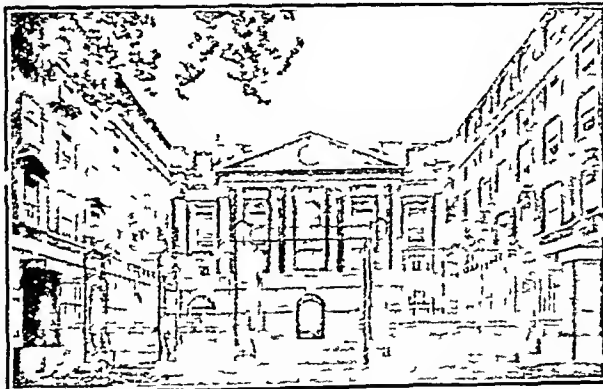
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### British Medical Association

#### CURRENT NOTES

##### Annual Meeting Cardiff 1923

The ninety-sixth Annual Meeting of the British Medical Association will be held in the latter part of July 1928 - Cardiff under the presidency of Sir Ewen Mackinn, M.D., F.R.C.P., Professor of Obstetrics and Gynaecology in the Welsh National School of Medicine and senior gynaecologist to King Edward VII's Hospital, Cardiff. The President-Elect, it will be recalled, was Chairman of the Representative Body of the Association in 1911-12. The Annual Representative Meeting will open on Friday, July 20th, Sir Ewen Mackinn will give his Presidential address to the Association at the adjourned Annual General Meeting on Tuesday, July 24th and the Sections will meet on the three following days. The scientific and clinical work of the Cardiff meeting will be divided among eighteen Sections, and we publish below the names of the Sections and their President. The Honorary General Secretary of the meeting is Dr Gilbert Strachan. The full list of officers of Sections and further information about the meeting generally, will appear in later issues.



THE BRITISH MEDICAL ASSOCIATION'S HOUSE, TAVISTOCK SQUARE, LONDON

#### Sections and their Presidents

Medicine.—Sir THOMAS LEWIS CBE MD FRS FRCP (London)  
Surgery.—Professor A. W. GREEN CBE MS FRCS (Cardiff)  
Obstetrics and Gynaecology.—T. WATTS EDE MD FRCP (London)  
Pathology and Bacteriology.—Professor E. H. KENTLE MD FRCP (Cardiff)  
Mental Diseases and Neurology.—EDITH GOODALL CBE MD FRCP (Cardiff)  
Orthopaedics.—Sir JOHN L. THOMAS KBE CB CMG FRCS (Edinburgh)  
Diseases of Children.—ALFRED HOWELL MD (Cardiff)  
Opthalmology.—P. S. CHESTNUT MB FRCS (Cardiff)  
Laryngology and Otology.—DONALD R. PATTERSON MD FRCP (Cardiff)  
Tuberculosis.—H. MORRISON DAVIES M.D. M.Ch. FRCS (Glasgow)

Radiology and Physiotherapeutics.—OWEN LEWELLEN BAJS D (Cardiff)  
Preventive Medicine.—E. COLSTON WILLIAMS MD FRCS (Edinburgh)  
Public Health.—R. M. F. PICKEN MB ChB DPH (Cardiff)  
Medical Sociology.—W. E. THOMAS MD CM (London)  
Tropical Medicine.—I. H. M. O'NEILL MD MB FCP (London)  
History of Medicine.—WALTER G. SPENCER OBE MS FRCS (London)  
Therapeutics and Pharmacology.—W. LANGDON BROWN MD FRCS (London)  
Dermatology.—Sir ROBERT BOLLIE MD LL.D. FRCP (Cardiff)

#### Some Work of the Week

Under this heading we continue to publish short notes on some of the main items or current business dealt with at headquarters by the various committees or the

British Medical Association. All the committees report periodically to the Council. A good deal of their work, in the nature of things, is confidential or preparatory and does not lend itself to publication at any rate during the earlier stages or discussion but it is thought that members will be glad to have, from time to time, a few indications of what is being done at the centre.

#### Puerperal Morbidity and Mortality

The Committee on the Causation of Puerperal Morbidity and Mortality has reached a point in its labours at which it can profitably discuss the subject of its reference with other bodies. It was accordingly decided, at the meeting of the committee on November 20th, to call a representative conference on January 11th 1928 and to arrange for a discussion embracing the general position in regard to puerperal morbidity and mortality in this and other countries. It is proposed to secure short papers by a suitable research worker on the present state or research in the subject by a representative of the Ministry of Health from the point of view of the Ministry, by a general practitioner a medical officer of health and a representative of the Central Midwives Board. A précis of the papers to be read before the conference will be circulated in advance in order to facilitate a really useful discussion. An account of the conference will be before the committee then.

it comes to consider the preparation of its final report to the Council, and it is hoped that the final report will be available for circulation to the Divisions and for discussion by the Annual Representative Meeting in 1928. The committee has appointed a subcommittee, consisting of the chairman and deputy-chairman of the committee (Sir E. Macleod and Dr T. Watts Eden), Lady Burnett, Dr J. W. Bone, Dr C. E. S. Flemming, and Dr Everard Williams, which will endeavour to obtain some figures as to the comparative results secured where ante-natal supervision has been exercised and where it has been omitted. It is to be hoped that the inquiries of this subcommittee will meet with a better response than those hitherto sent out by the committee, the answers to which have so far been somewhat disappointing. While individuals can always be found to present reports of considerable interest, it seems far more difficult to secure the comprehensive series of figures essential as the basis for any sound conclusions.

#### *In International Medical Sea Code*

At its October meeting the Council of the Association appointed an *ad hoc* committee to consider the possibility of the formulation of an international medical sea code. The committee was to include, in addition to the *ex officio* officers, representatives of the Admiralty, the Board of Trade, the Postmaster-General, the Ministry of Health, the Cunard, White Star, Canadian Pacific, and P. and O. Steamship Companies, Commander Loring (Inspector of Wireless Telegraphy), Dr T. J. O'Donnell (Secretary of the Marine Section of the Association of Wireless Telegraphists), Dr D. F. Macintyre (editor of the *Ship Captain's Medical Guide*), Dr J. W. Bone, and Dr W. Piterson, with power to add not more than two additional members. The committee held its first meeting on November 24th, and elected Dr J. W. Bone (Luton) chairman. The representatives appointed by the several authorities named in the reference to the committee are as follows: Admiralty, Surgeon Captain T. B. Shaw, Board of Trade, Mr A. S. Hoskin, Postmaster-General, Commander Loring (deputy), Colonel C. G. & Crawley, R.M., Ministry of Health, Sir George S. Buchanan, Cunard Steamship Company, Dr T. Gwynne Maitland, White Star Line, Dr W. H. Broad, Canadian Pacific Steamships, Dr J. J. Hummel, P. and O. Steam Navigation Company, Dr Arnold Chaplin. The vacancies for co-opted members have not yet been filled. The session was occupied by a general discussion of the whole subject from the widely differing points of view of the several bodies represented, as a result of which it was decided that, in the opinion of the committee, there is a *prima facie* case for further consideration of the question of formulating an international medical sea code. The committee will resume its discussion in January.

#### *Meeting of the Dominions Committee*

The Dominions Committee, on November 25th, elected Dr W. Piterson (Willesden) chairman for the ensuing session. The committee had before it matters referred from the East African, Ceylon, Indian, and Malayan Branches, and from Palestine. It would seem that, for the time at least, a position of stable equilibrium has been reached in the East African and Malayan Medical Services, and that the Branches concerned consider that, in the main, conditions in these services may be considered reasonably satisfactory. The Ceylon Branch is at present facing a very serious threat to the progress of scientific medicine in the island. A committee was appointed by the Government to report

whether it is practicable for the Government to assist, financially or otherwise, in the training or those seeking to qualify themselves as practitioners of indigenous systems of medicine, and in the investigation of the medicinal value of the drugs used by those practising such systems, and, if practicable, to prepare a defined scheme of such training and investigation for the consideration of the Government.

This Committee reported in October, 1926, in favour of the constitution of a board of indigenous medicine to deal with all matters connected with the education of those seeking to qualify themselves as practitioners of the indigenous systems of medicine, the establishment of a college, with a hospital and outdoor dispensary attached, for training practitioners of these indigenous systems, the creation of a research institute in connexion with the Government

analyst's department, and the establishment of schools of pupils for the study of the Ayurvedic, Unani, and Siddi systems. A strong minority report, signed by the three qualified medical practitioners who were members of the committee of eleven, supplies an able criticism of the conclusions and proposals in the majority report, and this minority report the Ceylon Branch of the British Medical Association strongly supports. The Association has already made representations to the Colonial Office centrally in this connexion, and has received the assurance that when the matter is referred to the Colonial Office by the Government of Ceylon its representations will be considered. In view of the gravity of the situation as now reported from Ceylon additional representations are being made to the Colonial Office.

#### **Help to Individual Members**

The Association is in possession of a very large amount of information on all matters affecting medical practitioners in their professional lives. It is thus often able to help members individually in difficulties of a professional nature, and doing so constitutes a considerable part of its daily work. The Medical Department alone has some 5,000 files, dealing with all branches of medical activity. The Intelligence Department, besides assisting in the collecting and recording of information, has a supply of press cuttings on matters concerning the profession, and this information, together with that arising in the course of correspondence, is so far as possible filed in such a way as to be readily available for the help of members through the medium of the Editorial and Medical Departments. Inquiries by members, whether through the honorary secretaries of Divisions or Branches, or otherwise, on any matter of doubt or difficulty affecting them in their professional capacity are welcome, such inquiries should be addressed to the Medical Secretary. Expert opinion on medico-legal questions is affecting the profession is published in the *BRITISH MEDICAL JOURNAL*. The Solicitor of the Association is consulted when legal matters arise which affect the general interests of the profession.

### **Association Notices**

#### **BRANCH AND DIVISION MEETINGS TO BE HELD**

**BIRMINGHAM BRANCH.** COVENTRY DIVISION.—A meeting of the Coventry Division will take place at the Coventry and Warwickshire Hospital on Tuesday, December 6th at 8.30 p.m. Mr M. Anderson will read a paper on carelessness of the return.

**CAMBRIDGE AND HUNTINGDON BRANCH.**—A meeting of the Cambridge and Huntingdon Branch will be held at Addenbrook Hospital, today (Friday, December 2nd) at 2.30 p.m. Agenda: (1) "Convulsions in childhood," Dr L. B. Cole, (2) "Headache due to nasal diseases," Mr A. S. H. Walford.

**DORSET AND WEST HANTS BRANCH.** WEST DORSET DIVISION.—A meeting of the West Dorset Division will be held on Wednesday, December 14th at 2.45 p.m., at the Yeastown Hospital, Sherborne. Cases will be shown and discussed. Dr J. Girard Pearce will read a paper entitled "The problem of the neurotic abdominal test." Tea will be served at the close of the meeting. Members in North Dorset are particularly requested to note this date and to attend the meeting.

**EAST YORK AND NORTH L. Y. BRANCH.** EAST YORKSHIRE DIVISION.—The committee of the Scarborough Division have invited the members of the East Yorkshire Division to their second annual dance at the Crown Hotel on Thursday, December 8th.

**FIFE BRANCH.**—A clinical meeting of the Fife Branch will be held in the Maternity Home, Townsend Crescent, Kirkcaldy, on Thursday, December 15th at 3.30 p.m. Mr J. W. Struthers (Fifeburgh) will address the meeting on the surgical treatment of duodenal ulcer.

**GLOUCESTERSHIRE BRANCH.**—A meeting of the Gloucestershire Branch will be held on Thursday, December 8th at the Police Infirmary, Gloucester, at 6 p.m. Agenda: Report of representatives to Annual Representative Meeting, discussion "New growth of the breast." Supper at the Spread Eagle Hotel after the meeting (5s. each, exclusive of wine).

**KENT BRANCH.** ASHFORD DIVISION.—A meeting of the Ashford Division will be held in the North Street Club on Wednesday, December 7th, at 4 p.m. Dr W. J. Adie, physician to the National Hospital and to Charing Cross Hospital, will address on some sudden attacks of nervous origin.

**KENT BRANCH.** ISLE OF THANET DIVISION.—The annual dinner of the Isle of Thanet Division will be held on Thursday, December 15th, at the Albion Hotel, Broadstairs, at 7.15 for 7.30 p.m. Tickets 6s. (exclusive of wine). Members are asked to notify the honorary secretary of their intention to be present not later than Monday, December 12th. It is hoped that members will make a special effort to attend and bring guests.

Dr LE FLEMING said that this was a most opportune moment for such a discussion to be held as the very next day a bill was to be presented to Parliament a king for privilege for doctors in certain cases which came into the courts this was to protect patients attending venereal diseases clinics He said that the policy of the British Medical Association which represented over thirty thousand doctors was that there were occasions when a doctor should absolutely refuse to divulge professional secrets and that if a doctor was committed for contempt of court for so doing he would be backed by the full power and resources of the Association There were three great arguments for doctors being given privilege In the first place he was in honour bound not to betray confidence and in this connexion Dr Le Fleming mentioned three cases where a judge ruled that if a doctor answered questions put to him he would be betraying confidence imposed in him by a patient and that he need not therefore answer them Secondly there was no question but that the public demanded a limited privilege this was exemplified by a recent leading article in the *Times* and it was obvious that a nation would not confide a complete civil in a doctor as a central factor in the treatment of a doctor did not have a certain privilege it was therefore in the interests of the public that this should be recognized in the court He would like to mention one case where the court asked for some notes on a certificate from the Ministry of Pensions and this request was not granted—amongst the too as they were confidential He thought it a curious anomaly that a doctor practising in the venereal diseases clinic though under an obligation to the Ministry of Health to divulge any information derived from the clinic should be made to back his word by the court. Lastly he

wished to point out that in almost all the European countries, and in some of the States of America, doctors were privileged in the courts.

Mr MARSHALL HARVEY (Legal Society) said that whether or not a doctor should act as an informer was left to the conscience of the doctor. He stated that, as a general principle, there was no rule which did not occasionally work a hardship, but laws were made for the good of the public as a whole, and not for the individual. He suggested that where a doctor did not want to answer a question he should appeal to the judge, who would not press the question if it were not vital to the issue. Often medical evidence was the most important in the case, and if this was shut out justice could not be done on half a story, and surely this was not in the best interest of the public.

Dr L. A. WEATHERLY said that he had been asked at very short notice to speak for Dr Moise, who was ill. He referred to the address by Lord Riddell to the Medico-Legal Society of London a short while ago on this subject. Dr Weatherly then pointed out that in Scotland medical privilege was recognized, and that a doctor could be sued for slander if he broke confidence in court. He then made the suggestion that if a doctor was not granted privilege he should be allowed to give his evidence *in camera*. [A letter by Dr Weatherly, amplifying his remarks, is printed in the JOURNAL at page 1055.]

Mr D'ANGIBAU (Legal Society) said that ever since 1776 it had been recognized that doctors were not privileged persons, and a law which had been in force for so long would be difficult to change. He explained that a solicitor or barrister was acting on behalf of a client, and was his mouthpiece, whereas a doctor was only a witness, and it was therefore impossible to compare the position of a doctor with that of a lawyer. Out of the very large number of professional secrets confided in a doctor, what very small number was he asked to divulge under compulsion?

Mr STANBURY (Legal Society) said that the function of a court was to get at the truth, and this could not be arrived at, in a great many cases, if the doctor did not give evidence.

Dr SIMMONS said that the question was, What was for the good of the public? and the answer to this was that the doctor should not be compelled to divulge secrets, or patients would not come for treatment or confide in him as they should.

Mr MAUD (Legal Society) expressed the opinion that both doctors and priests should be privileged persons in courts of law.

Mr POWELL (Legal Society) said that if a doctor practising in a venereal diseases clinic was privileged, and he claimed the privilege in court not to answer a question, it would be patent to all from what source he got the information which was asked of him.

Dr RAMSAY thought that Dr Lo Fleming was too modest in his demands in his opening speech. The doctor was on his honour not to betray professional secrets, and therefore he should not do so. He for one would refuse to do so, and would risk the penalty.

Dr LE FLEMING, in his reply, said that he was very disappointed with what he had heard from the members of the Legal Society, they had not tried to refute his arguments or state their supporting medical privilege, but he supposed that that was because they were not able to do so.

Dr HOW WHITE (chairman of the Division) then thanked the Legal Society for their invitation to the joint meeting and for their hospitality.

#### METROPOLITAN COUNTIES BRANCH MARYLEBONE DIVISION

A MEETING of the Marylebone Division was held at the House of the British Medical Association on November 25th, when the chairman, Dr JONSON HORNE, presided. In the absence of Dr Masterman through illness, his paper was read by the HONORARY SECRETARY. The paper pointed out that the beds available in the London teaching schools numbered 5,025, and in the municipal hospitals 21,753. It drew attention to the excellence of the buildings of many of the municipal hospitals and to the work they were already doing in the way of surgical operations, the treatment of the ordinary sick, of accidents, emergencies, maternity cases, tuberculosis, paying patients and all varieties of acute and chronic illnesses, and the important part they were taking in the training of general and maternity nurses. Cooperation between the two hospital services was advocated as the alternative to (1) all hospitals becoming State hospitals, or (2) the municipal hospitals organizing a full service of their own, with consultant and visiting staffs independent of the voluntary hospitals.

The chief points emphasized during the ensuing discussion were: (1) the inadequacy of hospital accommodation in London the long waiting lists and the difficulty of getting patients admitted; (2) the scarcity in the teaching hospitals or resident posts for newly qualified men and women; and (3) the understaffing of the municipal hospitals. Cooperation between the two services was advocated with an interchange of staffs, students, nurses, and patients.

The following members took part in the discussion: Mr BISHOP, Mr DR HOLLIS, Dr POGGIE HUTCHINSON, Mr MCINTOSH, Dr FOLLES, Dr GRAHAM LITTLE, Dr STUBBS, Dr ROXBURGH, Dr SEWELL, Dr BATES, Mr DODDERVILLE HASTINGS, Mr SALGATELL SILLMONDS, and Dr TEMPLE GREE.

#### METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION

A MEETING of the Willesden Division was held at the Willesden General Hospital on November 16th.

Mr H. S. SOUTTAR read a short paper on minor malades of the rectum, showing how many of them could be cured by simple means. Discussing hemorrhoids, he pointed out the essential distinction between internal and external hemorrhoids, the former being varicosities of the anal canal, whilst the latter were probably due to the rupture of subcutaneous veins at the margin of the anus. Internal hemorrhoids produced symptoms either by bleeding or prolapse. The bleeding was sometimes very profuse, but was more often small in amount, although even in this case it might lead to quite severe anaemia. Prolapse might only occur when the bowels were opened, but in some cases it might occur at any time and cause severe discomfort. Should a prolapse become strangulated the pain was at once very severe. External hemorrhoids usually appeared quite suddenly and were acutely painful. A small firm swelling was found at the margin of the anus, so tender that the patient would not allow it to be touched. The pain could, however, be immediately relieved by making a small incision under local anaesthesia and turning out the clot. In the treatment of hemorrhoids Mr Souttar laid great stress on the use of carbolic injections, with which he had obtained excellent results. Through a rectal speculum each pile was injected with a few minims of 20 per cent carbolic acid in equal parts of glycerine and water. The result was immediate swelling of the pile, which afterwards shrank from interstitial fibrosis. It was essential never to insert the needle below the white line where the skin surface met the rectal mucosa, and to avoid the front of the anal canal, as injection in that region produced irritation of the trigone of the bladder. The method was almost entirely painless, and was as successful in stopping bleeding as in curing prolapse. The pathological anatomy of fistulae was described and a method of treatment was advised by which they could in many cases be got to heal without the usual long period of disability. Under local anaesthesia a short section of the fistula was slit up and allowed to heal by granulation. A week later the operation was repeated, and the procedure was repeated until the fistula was entirely cured or reduced to such small dimensions that its treatment by the usual methods was easy. In most cases, however, cure was rapid and complete. The patient led his ordinary life and the inconvenience was trivial.

After numerous questions had been asked and answered, a cordial vote of thanks to the lecturer for an exceptionally interesting and practical address was moved by Dr W. WOOLLEY STOKER, seconded by Dr C. WHITEHALL COOKE, and passed unanimously.

#### Annual Dinner

SOME three years ago the Division decided to extend the scope of its activities on the social side by the inauguration of an annual dinner, to be attended by members and their guests. The third of these annual events was held at the Criterion Restaurant on November 20th. The increasing popularity of the occasion was attested by the enlarged attendance over previous years. The guests of honour were Mr DUNCAN C. L. FITZWILLIAMS, Dr CHRISTOPHER M. MURRIEL and Dr REGINALD MILLER.

The toast to the Willesden Division was proposed in a witty speech by Mr FITZWILLIAMS. In his reply Dr J. WALKER BROWN, the chairman of the Division, spoke in hearty terms of the spirit of co-operation in which the many past chairmen, still members of the Division had assisted in the work of the Division. He also paid a well deserved tribute to the honorary secretary, Dr WILLIAM PATTERSON, whose unremitting zeal backed by his intimate knowledge of the organization and administration of the Association rendered him the Division's most indispensable member.

Dr CHRISTINE MURRIEL and Dr REGINALD MILLER both responded with graceful speeches to the toast of "The Guests" proposed by Dr C. F. T. SCOTT and the toast of "The Chairman" was proposed with characteristic Irish levity by Dr KATHLEEN O'BRIEN.

The success of the evening was largely due to the delightful entertainment provided by Miss Mignon Trevor, the Australian contralto from the Guildhall School of Music. Miss Jose Malone of the British National Opera Company, and Dr C. de B. THOMSON, Miss Trevor and Miss Malone rendered a number of charming solos and duets, and Dr THOMSON sang two very pleasing baritone solos.

#### SOUTHERN BRANCH PORTSMOUTH DIVISION

A CLINICAL meeting of the Portsmouth Division was held at the Royal Portsmouth Hospital on November 21st. Cases and special men were shown by Messrs BLACKBURN, LARCOM, PARSONS, ROBERTSON, ORD, MARTIN, DAVIS, TAYLOR, MULVAY, JONES, LITTLE, HILLMAN, LUNN, PIPROU and LOANE. The out-lying case was shown by Dr J. A. McVIE, a case of a lady, suffering from secondary carcinoma of the lung treated by lead with apparently complete cure. There were forty-two members present at the discussion and tea was given by the staff of the Royal Portsmouth Hospital.

#### YORKSHIRE BRANCH BRADFORD DIVISION

THE annual dinner of the Bradford Division was held at the Great Northern Victoria Hotel Bradford on November 24th. The chairman of the Division, Dr W. WILKINSON, O.B.E., presided. The Lord Mayor in proposing the toast of "The Bradford Division" spoke of the close co-operation which existed between the health and education authorities and the municipal authorities in the city. Dr WILKINSON replied to the toast of "The Guests" which was proposed by Mr JAMES PURVIS. The dinner was presided over by Dr JAMES PURVIS and the performance of vocal music and an exhibit of conjuring.

# The British Medical Association.

PATRON HIS MAJESTY THE KING

President Sir ROBERT PHILIP M.D., LL.D., F.R.C.P.E.D.,  
Honorary Physician to the King in Scotland Consulting Physician Royal Infirmary, Edinburgh.

## AN OPEN LETTER TO NON-MEMBERS

DEAR SIR OR MADAM

The close of the year affords an opportunity to draw your attention to the chief aims of the British Medical Association and to give you some information as to its work and organization

### OBJECTS

The BRITISH MEDICAL ASSOCIATION the largest oldest and most powerful of British medical organizations was founded in 1832 to promote the medical and allied sciences to maintain the honour and interests of the medical profession and to foster a feeling of friendship among the members of the profession The work of the Association is thus fourfold (i) It acts for the profession collectively throughout the Empire in medical matters affecting the common weal (ii) it guards the profession against unfair attack whether legislative or other (iii) by its work in promoting medical science and the spirit of comradeship it helps the individual practitioner to be more efficient and of greater use to the community and (iv) it helps its members individually

With these aims in view the Association and its local groups—namely the Divisions and Branches mentioned below—hold many thousands of meetings yearly at which medical medico-sociological and allied subjects are dealt with nor is the social side forgotten It publishes the BRITISH MEDICAL JOURNAL the *Archives of Disease in Childhood* the *Journal of Neurology and Psychopathology* an Annual Handbook a Handbook for Recently Qualified Medical Practitioners and other publications gives scholarships grants and prizes for clinical and research work owns a commodious building for the housing of its central activities is in possession of very considerable funds and resources and spares no effort in assisting its members individually in all aspects of their professional lives

### ASSOCIATION PREMISES

The new House of the Association at Tavistock Square London opened in the summer of 1925 by His Majesty the King is a popular meeting place for its members when visiting London There are also Houses or Offices of the Association at Adelaide Brisbane Capo Town Dublin Edinburgh, Melbourne, Perth (W.A.) Sydney Wellington (N.Z.) and elsewhere

### CONSTITUTION AND ADMINISTRATION

The Association is practically a federation of local medical societies called Divisions A Branch is a Division or (more frequently) group of Divisions A member of the Association is *ipso facto* a member of the Division and Branch in the area of which he or she lives The Divisions and Branches and the Association of which they form part are democratic bodies the government of which is in the hands of their members

The funds and resources of the Association are commensurate with a membership of over 33 500

The general control and direction of the policy and affairs of the Association are vested in the Representative Body, which is elected by the Divisions throughout the Empire and meets annually The Council or executive of the Association is elected partly by the Branches throughout the Empire and partly by the Representative Body and also includes representatives of the Royal Naval Royal Air Force Army and Indian Medical Services Among the Committees of the Association are Ethical Finance Hospitals Insurance Acts Journal, Medico-Political and Parliamentary Naval and Military Organization Public Health Science Scottish Irish Welsh, and Dominions Committees The Insurance Acts Committee is the executive of the Annual Conference of Representatives of Local Medical and Panel Committees which are the statutory local professional committees under the National Health Insurance Acts

### PRIVILEGES OF MEMBERSHIP

The privileges of a Member of the Association include —

1. Participation in the clinical, scientific, medico-political, ethical, and social activities of the Association local and central
2. Receipt weekly, free by post of the BRITISH MEDICAL JOURNAL and its SUPPLEMENT one of the leading medical journals of the world and one of the most widely read
3. Participation in the government of the Association, local and central and in the formulation of its policy
4. Use of the Headquarters Houses of the Association At the London House the facilities include Reference and Lending Libraries club room accommodation with facilities for refreshments garage and telephone facilities. From the Lending Library Members (British Isles) can borrow books free of charge
5. The advice and help of the Central Staff in matters affecting him or her individually

### SOME RECENT ACTIVITIES

Some of the activities of the Association during 1927 are summarized in page 1040 of this issue of the JOURNAL. Of special practical interest is the inauguration of the British Medical Bureau incorporating the old-established Scholastic Clerical, and Medical Association Ltd All kinds of medical agency work will be undertaken by the Bureau including transfers and partnerships at home and abroad introduction of assistants and locum tenens valuations accountancy and introduction of resident patients Members of the British Medical Association have the advantage of a reduced scale of charges The question of the protection of medical



practitioners in connexion with the working of the Lunacy Acts has been receiving the special attention of the Association in view of the prospect of early legislation. Collective investigations of varicose ulceration and its after-history of gastro-enterostomy are being instituted throughout the country. The question of the procedure for dealing with complaints against National Health Insurance practitioners was raised with the Ministry of Health, with the result that important alterations have been made in the Medical Benefit Regulations, and an entirely new and purely professional committee is to be set up within the Ministry, for the purpose of advising the Minister in every case involving questions of professional conduct before he promulgates his decision. Progress is being made with regard to securing a more general support throughout the Association for the medical charities.

The Association's work benefits every member of the profession, and as this work can be made more and more effective as it includes more and more practitioners, the Association unhesitatingly claims the support of every medical man and woman who is registered in the British Empire.

#### APPLICATION FOR MEMBERSHIP

You are most cordially invited, if not already a member of the Association, to apply for membership, and I would especially direct the attention of practitioners resident outside the British Isles, and of those recently qualified, to the liberal concessions made to them as regards subscription. Members of the Medical Services of the Navy, Army, Air Force, and India, on whose behalf the work of the Association is unceasing and invaluable, also enjoy a substantial concession in this respect.

The form of application for membership, printed at page 11 of this SUPPLEMENT, should be signed and sent to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1.

Inquiries as to the work of the Association are welcomed.

*Alfred Cox*

Medical Secretary.

## GROWTH OF THE ASSOCIATION.

### FIFTY YEARS' PROGRESS

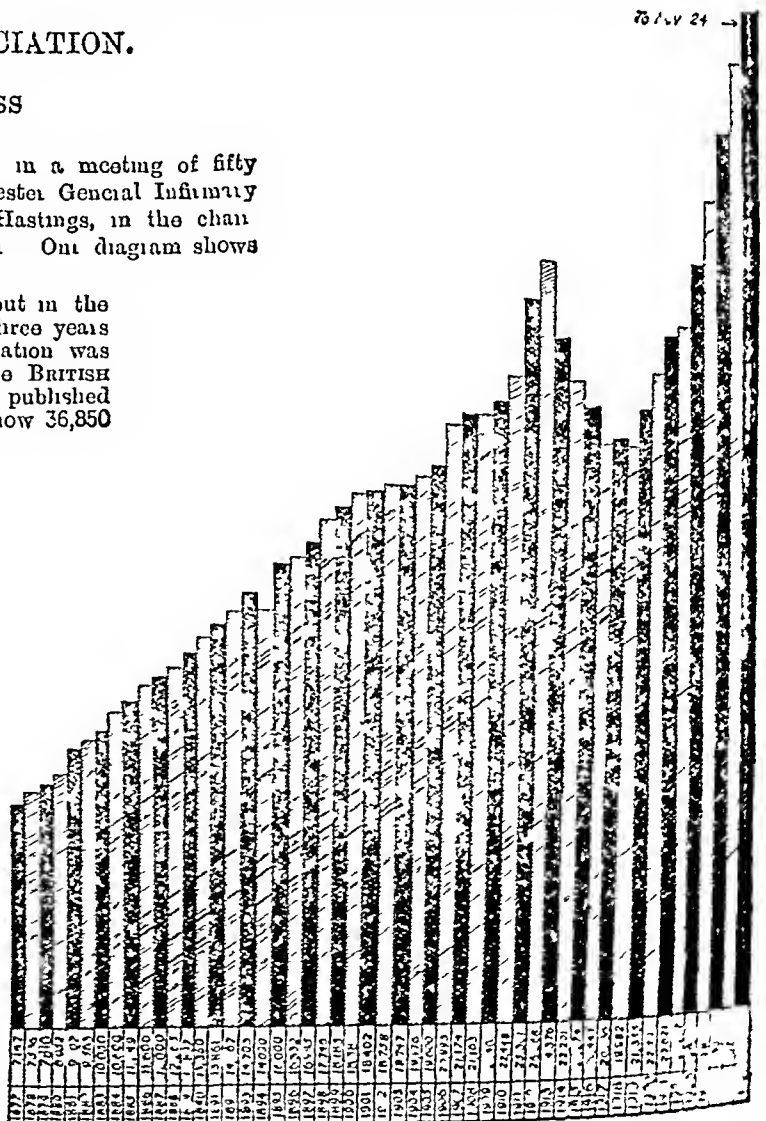
THE British Medical Association had its origin in a meeting of fifty medical men held in the Board Room of Worcester General Infirmary in July, 1832, with the Founder, Sir Charles Hastings, in the chair. The Association is thus in its ninety-sixth year. Our diagram shows the membership figures for the last fifty years.

From 1832 to 1854 the growth was slow, but in the latter year the figure of 2,000 was reached. Three years later, in 1857, the weekly Journal of the Association was issued for the first time under the title of the *BRITISH MEDICAL JOURNAL*. The *SUPPLEMENT* began to be published in 1904. The average issue of the Journal is now 36,850 copies a week.

From 1866 to 1912 the membership rose in staircase fashion from 2,462 to 26,568. In some of those forty-six years the step was comparatively small in others large, but the ascent was continuous.

The rapid rise in 1911 and 1912 was due to the professional upheaval that followed the introduction of the National Insurance scheme. Many practitioners who joined the Association solely on that account resigned soon afterwards and the fall from 1913 to 1918 was due to that and to the dispersal of a large part of the profession during the war. Since 1918 the ground lost has been far more than regained.

In 1914 the annual subscription was raised to 2 guineas, and this may have contributed in some degree to the fall in membership. Nevertheless, though the subscription was again raised, in January, 1921, to 3 guineas, no decrease of membership followed. On the contrary, the total number of members has grown year by year, and during the past twelve months there has been a further net gain of 1,300. The membership is now 33,600, representing an increase of 13,500 since the war, and of 9,000 during the past five years.



# BRITISH MEDICAL ASSOCIATION.

FOUNDED 1832

Patron HIS MAJESTY THE KING

THE BRITISH MEDICAL ASSOCIATION is established for the promotion of the Medical and allied Sciences, and the maintenance of the honour and interests of the Medical Profession. It has Divisions and Branches throughout the British Empire. There are 3 Branches, with 217 Divisions, in the United Kingdom, and 50 Branches, with 63 Divisions, in the British Empire Overseas.

Any Medical Practitioner registered in the United Kingdom under the Medical Acts, any Medical Practitioner who does not reside within the area of any Branch of the Association and who, though not so registered, is possessed of any qualification entitling him or her to be so registered, and any Medical Practitioner residing within the area of any Branch of the Association not in the United Kingdom who is so registered or possesses such medical qualification as shall (subject to the By-laws) be prescribed by the Rules of the said Branch, is eligible as a Member of the Association. Members of the Association are *ipso facto*, Members of the Division and Branch in the areas or which they reside.

The liability of Members is limited.

The annual subscription, which is due in advance on January 1st in each year, and entitles the Member to all the ordinary privileges of Membership of the Association, including Membership of the Division and Branch in which he or she resides, and the weekly supply of the *British Medical Journal*, post free, is as follows—

**(A) Members resident in the British Isles**

Ordinary Subscription	£3 0s
Member of not less than 40 years standing	£2 2s
Member of not less than 10 years standing retired from practice	£2 2s
Member engaged whole time in medical instruction or research and not in practice	£2 2s
Newly qualified practitioner elected within 2 years of registration	£1 11s 6d.
(up to end of 1st year after registration)	
Two Members being husband and wife residing together	£4 14s 6d.

**(B) Members resident outside the British Isles**

Member resident within the area of a Branch	£1 11s 6d.
Member resident where no Branch is organized	(or more according to Rules of Branch) £1 11s 6d.

**(C) Wherever resident**

Officer on the Active List of the Royal and Royal Air Force Regular Army or Indian Medical Service	£2 2s
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In the case of a Member elected after June 30th in any year, the subscription for that year is one-half the current annual subscription.

If you desire to become a Member of the Association, please fill in and post this form to the Association, British Medical Association House, Tavistock Square, London, W.C.1 with a cheque or postal order for your first subscription. Cheques or postal orders should be crossed and made payable to "The British Medical Association." Payment is ordinarily by the Council or the Branch in the area of which the Candidate resides, but in the case of Candidates resident in any area outside the United Kingdom where no Branch is organized is by the Council of the Association. In the case of most Branches no signature other than that of the Candidate is required (for Branches which require approving signatures see overleaf). For election by the Council (as above) two approving signatures are ordinarily required. Under no circumstances are approving signatures necessary in the case of Officers of the Royal Naval, Royal Air Force, Army, Indian, or Colonial Medical Service, on the Active List.

## APPLICATION FOR ELECTION

TO THE BRITISH MEDICAL ASSOCIATION,  
BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1

I, \_\_\_\_\_  
a Registered Medical Practitioner, am desirous of being and hereby apply to be elected a Member of the BRITISH MEDICAL ASSOCIATION, and I agree if elected to pay the subscription and to abide by the Articles and By-laws of the Association for the time being in force, and the Rules of the Division and Branch to which I may at any time be assigned.

Signature

Qualifications

Permanent Address

Address for Journal

Date 1937

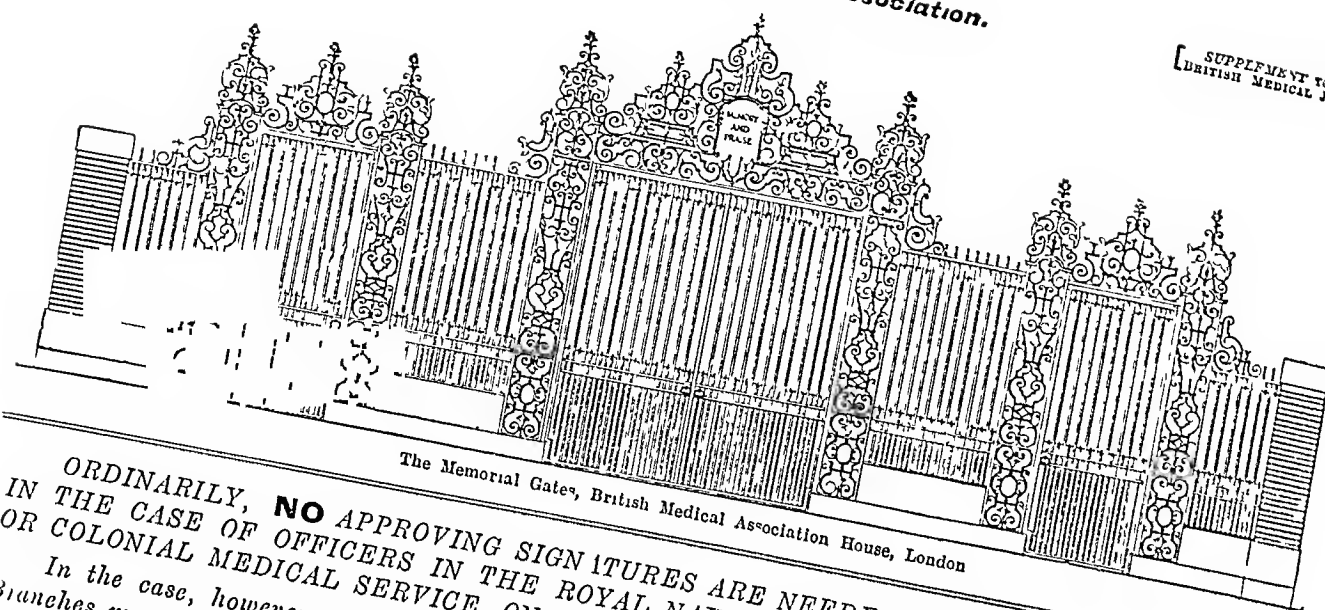
Additional Forms of Application for Membership and all particulars may be had on application to the MEDICAL SECRETARY, British Medical Association House, Tavistock Square, London, W.C.1

Applicants for Membership resident in the areas of the *Overseas Branches* should send their applications and remittances to the Honorary Secretary of the Branch if his or her address is known to them; failing which the application and remittance should be sent to the Head Office, British Medical Association House, Tavistock Square, London, W.C.1.

iv DEC 3, 1927]

# The British Medical Association.

[SUPPLEMENT TO THE  
BRITISH MEDICAL JOURNAL



The Memorial Gates, British Medical Association House, London

ORDINARILY, **NO** APPROVING SIGNATURES ARE NEEDED, NOR ARE THEY REQUIRED IN THE CASE OF OFFICERS IN THE ROYAL NAVAL, ROYAL AIR FORCE, ARMY, INDIAN, OR COLONIAL MEDICAL SERVICE, ON THE ACTIVE LIST

In the case, however, of a Candidate (other than a Service Candidate) resident within any of the Branches mentioned below, or resident in an area outside the British Isles in which there is no Branch, the certificate at the foot of this page should be filled in by a Member or Members of the Association (1, 2, or 3 as indicated), to whom the Candidate is personally known

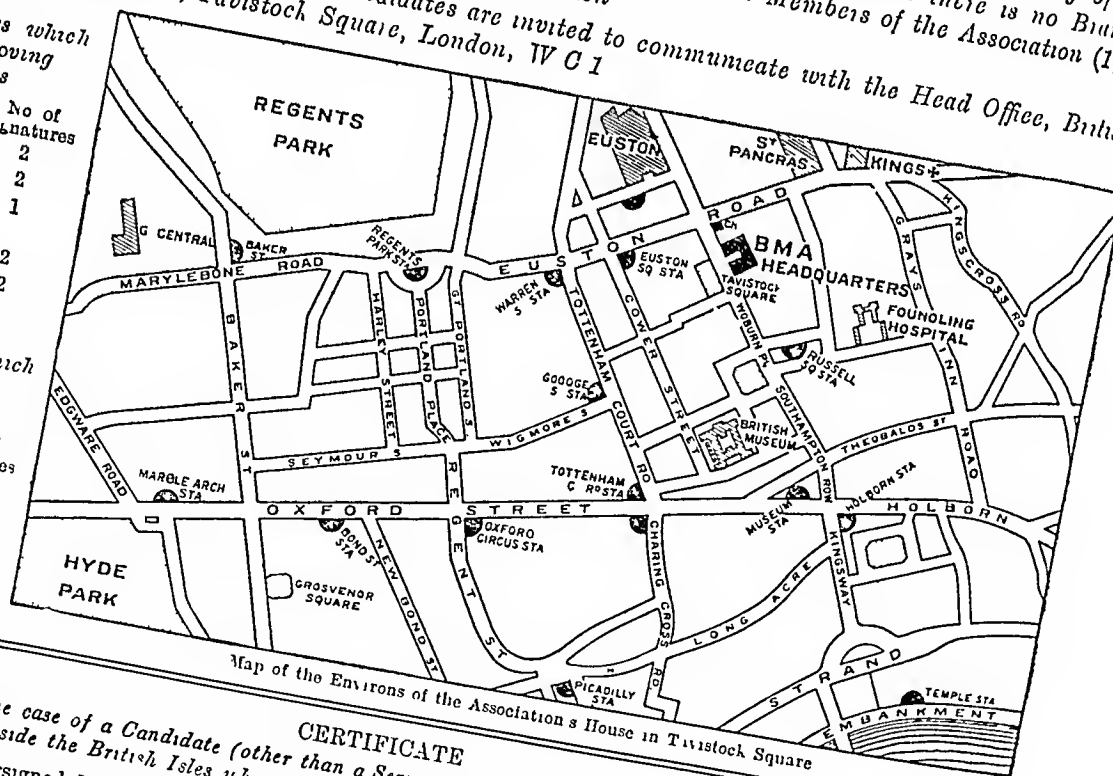
In any case of doubt or difficulty, Candidates are invited to communicate with the Head Office, British Medical Association House, Tavistock Square, London, W C 1

Home Branches which  
require Approving  
Signatures

Connaught	No of Signatures
Munster	2
North of England	2
South Wales and Monmouthshire	1
Staffordshire	2
	2

Oversea Branches which  
require Approving  
Signatures

British Guiana	No of Signatures
Mesopotamia	3
New South Wales	3
Punjab	3
	2



Map of the Environs of the Association's House in Tavistock Square

## CERTIFICATE

[For use **only** in the case of a Candidate (other than a Service Candidate) resident within the area of one of the Branches named above, or resident outside the British Isles where no Branch is organized]

I (We), the undersigned Member(s) of the BRITISH MEDICAL ASSOCIATION, hereby certify that  
named on the front page hereof, is personally known to me (us), and is a suitable person  
to be elected a Member of the BRITISH MEDICAL ASSOCIATION

(1)  
Signature(s) (2)  
(3)

## GENERAL COUNCIL

OF

## MEDICAL EDUCATION AND REGISTRATION

## WINTER SESSION, 1927

## ELECTIONS

The following were appointed to fill vacancies on the various Committees of the Council: Sir Farquhar Buzzard and Dr Lorrain Smith on the Education Committee, Dr Stopford on the Examination Committee, Dr Lorrain Smith on the Public Health Committee, and Sir Farquhar Buzzard on the Pharmacopoeia Committee.

## COMMITTEE REPORTS

The report of the Pharmacopoeia Committee dealt merely with the number of copies of the *British Pharmacopoeia* which had been sold, and that of the Dental Education and Examination Committee with the action taken in regard to applicants with various foreign qualifications. The Public Health Committee's report contained statistics furnished by the Ministry of Health and the Welsh and Scottish Boards of Health as to the total number of public health appointments available in the United Kingdom.

ENGLAND	Medical Officers	Diagnostic
Whole-time	351	620
Part-time	833	1,039
Totals	1,234	1,659
WALLES		
Whole-time	35	53
Part-time	122	142
Totals	157	200
SCOTLAND		
Whole-time	5	20
Part-time	70	92
Totals	121	332
Whole-time medical officers in Great Britain	431	
Part-time medical officers in Great Britain	1,651	

It was stated that, in addition to the above, many local authorities gave preference to medical men holding the Diploma of Public Health when appointing their specialist officers—maternity and child welfare, school medical work, tuberculosis, venereal disease, etc. All medical officers or health in Scotland were required to be holders of the diploma, whereas in England such officers must either hold the diploma or have had three years' experience as medical officers, or health.

## RESTORATIONS

After private deliberation by the Council the President announced that the following names had been restored to the *Medical Register* after erasure under Section 29 of the Medical Act 1853: William Lloyd (of Brook Street, London, W.), Sydney Edgar Price, and George Joseph Mary Fraser.

## REMOVAL OF NAME AT PRACTITIONER'S REQUEST

Henry Bown, registered M.R.C.S. Eng. L.R.C.P. Lond. 1926 applied for the removal of his name from the *Medical Register* on the ground that he had ceased to practise. The Royal College of Physicians and Surgeons were asked whether they had any valid objection to make, and stated that they had none. The Council acceded to the request.

## DISCIPLINARY CASES

*Adultery during Professional Relationship*

The Council on November 23rd, 24th and 25th considered two cases against practitioners who had recently been respondents in divorce proceedings.

The first was the case of Vernon Raymond Joseph de Boissiere registered as of Wellington Street, Verdun, Montreal, M.P.C.S. Eng. L.R.C.P. Lond. who was summoned on the charge that he had committed adultery with Mrs. Annie Dee during his professional relationship with her. He had been found guilty by the Decree of Divorce Division January 12th, 1927, made absolute July 25th in the case of Dee v. Dee and de Boissiere.

Dr. de Boissiere was not present at the hearing and it was ordered that following on the divorce proceeding he had gone to Canada. He was represented by Mr. G. O. Slade. There was no complaint and the facts of the case were stated by the Council's solicitor Mr. Harper who asked permission to amend the charge by the insertion of the following paragraph:

"And/or that being a registered medical practitioner you absconded with the patient by committing adultery with Annie Dee (a married woman) subsequent to the date of the service of the petition presented

in the said divorce proceedings following and arising out of the friendship which you had formed with her and Annie Dee during the period of such professional relationship.

Mr. Harper explained that in Dr. de Boissiere's affidavit received from Montreal he denied merely that he had committed adultery with Annie Dee on the dates alleged, but he did not deny—or admit—adultery on other occasions. Mrs. Dee however had alleged that adultery did take place but only subsequent to the date of the service of the divorce petition.

The Council gave permission for the amendment of the charge. Mr. Dee called by the Council's solicitor and examined said that she first met Dr. de Boissiere in 1918 on war service when she was a Nurse. Meeting later by accident their old acquaintanceship revived. Adultery never took place until after the divorce proceedings began. She denied strongly the statements made on behalf of Dr. de Boissiere that she had followed him about and threatened suicide if he broke off all relations with her. When, following the divorce proceeding, Dr. de Boissiere went to Canada he reserved a berth for her on the same ship but on reaching Quebec some difficulty arose about her passport and he had to return.

A legal argument arose over certain letters from Dr. de Boissiere to Mr. Dee written subsequently to his settlement in Canada. Mr. Slade on behalf of Dr. de Boissiere strongly protested against these letters being put in at the last moment against his absent client.

The President said that the Council could not take responsibility for Dr. de Boissiere being absent but counsel was entitled to make comments on the fact that these letters had not been included in the affidavit. The Council had before it on the one hand the decree of the divorce court and on the other certain evidence which might be elicited in the course of the inquiry and it would decide on the evidence as a whole at the conclusion of the case. He thought the opening words of the letters might be read but not the substance. The opening words or the letters were accordingly read they contained endearing expressions.

For the defence the first witness was Mrs. de Boissiere who in reply to counsel said that she had journeyed 3,000 miles to defend her husband with whom she was living happily in Montreal where he was commencing practice. She described a visit paid by Mrs. Dee to her house when in England. She alleged that her husband was followed about by Mrs. Dee who had on several occasions threatened—and on one or more occasions even attempted—suicide on his refusal to see her. Mrs. de Boissiere emphatically protested her husband's innocence. He did not defend the divorce suit partly because of his fear that Mrs. Dee might commit suicide and partly because of his desire to escape publicity. Mrs. Dee insisted on following him to Canada. The witness had preceded her husband to Canada in order to make a home and Dr. de Boissiere on finding that Mrs. Dee was intent on accompanying him got her (the witness's) sister to take steps to ensure that she did not land in Canada.

Mrs. Wallace Mrs. de Boissiere's sister gave evidence to the effect that on the instructions of Dr. de Boissiere he went to the Canadian Pacific offices in order that action might be taken against Mrs. Dee who was sailing under another name when the ship touched at Cherbourg but this being impossible action was taken by the immigration authorities at Quebec. The witness maintained in spite of some close questioning by the Legal Assessor that this action was due to her intervention on her brother-in-law's instruction.

After private deliberation the decision of the Council was conveyed to Mr. Slade by the President as follows:

I have to inform you on behalf of your client Mr. de Boissiere that the Council have found that the facts alleged both in the first part and in the second part of the charge set out in the Notice of Inquiry have been proved to their full satisfaction and that they have pronounced judgment on the facts as proved. Their judgment is that Mr. de Boissiere has been found guilty of infamous conduct in a professional respect and they have directed the Registrar to erase from the *Register* the name of Vernon Raymond Joseph de Boissiere.

The other case was that of Bernard Wilfred Goldstone registered as of Menck Road, Cricklewood, M.P.C.S. Eng. L.R.C.P. Lond. who was summoned on the charge that he had absconded with the patient by committing adultery with Mr. Therea Doris Froemberg with whom he stood in professional relationship of which adultery he had been found guilty by the decree of the Divorce Division July 25th, 1927 in the case of Froemberg v. Froemberg and Goldstone in which he was the respondent.

Dr. Goldstone was defended by Mr. Oswald Hempsion. The complainant Mr. Froemberg was represented by Mr. E. L. D. Zeffertt.

Mr. Zeffertt in opening the case said that he understood that Dr. Goldstone strongly denied that he ever stood in professional relationship to Mrs. Froemberg. The case therefore resolved itself into whether professional relationship existed or not. Mr. Froemberg was a young business man married in 1922 and living happily with his wife until 1926. He was away from home on business one week a month. The parties met while on holiday at Le Touquet in August 1926. During that visit the lady had a headache and Dr. Goldstone who had not then been registered, was called for her. Later in London on a social occasion when members of both families were present, Mrs. Froemberg had a fainting fit and Dr. Goldstone attended her. On March 20th, 1927 Mrs. Froemberg had an attack of influenza and Dr. Goldstone was summoned and attended her one of her maids. On subsequent days Dr. Goldstone attended her and was found that April 4th Mrs. Froemberg had a passport for her and they had gone together to Paris.

Mr. Froemberg gave evidence and said that he was a great deal of Dr. Goldstone's capabilities but he himself preferred a practical one of greater experience and at the same time had Dr.

Goldstone was attending his family a Dr. Morton was attending also. Dr. Goldstone's attendance began in November, 1926, he attended at first once every three or four weeks and later more frequently. He never sent in any account, although requested to do so. After his wife had disappeared the witness found several prescriptions in Dr. Goldstone's handwriting. In cross-examination, he admitted that he had never told Dr. Morton of Dr. Goldstone's attendances. He was aware that the treatment of the one doctor might handicap that of the other, but he did not have his own way in that matter. A point was made of the fact that in his affidavit witness had stated only that Dr. Goldstone had attended his wife in February and March, whereas in his evidence he now stated that the professional relationship began earlier, but he replied that the dates, February and March, coincided with the prescriptions which he found after his wife had left, and it was with these facts before him that he made his affidavit.

The evidence of two of Mrs. Froemberg's maids was given as to Dr. Goldstone's visits to the house. One of them said that he came sometimes professionally and sometimes socially, she knew when he came as a doctor because he brought his bag with him.

Dr. Goldstone, in evidence said that his age was 24. He met Mrs. Froemberg and her husband on several occasions socially. He never regarded himself as her medical attendant. He was told, when asked to go round, that the ordinary medical attendant was not available. He knew that she was under the permanent care of Dr. Morton. Under cross-examination, he said that adultery began in December, 1926.

Mrs. Froemberg gave confirmatory evidence. Dr. Goldstone had asked her why she did not send for her ordinary doctor, and she said that when he (Dr. Goldstone) was visiting the house socially she did not see why she should not give her some prescription. In cross-examination her diary was produced, in which, under March 20th and immediately subsequent dates, were such entries as "left rotten this morning, so ring Bernhard up" and "Bernhard came in to see me early this evening, I can go downstairs to-morrow."

Mr. Hempsion, for Dr. Goldstone, said that the Council was not a tribunal of morals. This was solely a question whether a professional offence had been committed. Did Dr. Goldstone abuse his position and make use of the confidence reposed in him as a medical man to steal Mrs. Froemberg from her husband? He claimed that such attendances as had been given were purely of an emergency character. If he, as a lawyer, were asked for his opinion on some social occasion, did the person so asking thereby become his client? There had never been the ordinary relationship of doctor and patient in this case. He adduced other cases, very similar in character in which there had been emergency attendances when the Council had found for the doctor.

Mr. Zeffert said that he made nothing of the "attendance at Le Touquet, but he submitted to the Council that some short time after that attendance Dr. Goldstone formed the design not only to commit adultery with Mrs. Froemberg, but to carry her away from her husband and the only way in which he, a young unestablished practitioner, could accomplish his plan she being in a well-to-do home, was to gain entry as a medical man. Mrs. Froemberg's diaries showed that the relationship of doctor and patient, at any rate in his view, existed.

After a long private deliberation the Council's decision was announced as follows:

Mr. Goldstone. I have to announce that the Council have found the fact alleged against you to have been proved to their satisfaction. They have found you to have been guilty of infamous conduct in a professional respect and have directed the Registrar to erase your name from the Medical Register.

#### Convictions

The case next considered was that of Victor Thomas William Eagles, M.C., registered as of Linwood Road, Bournemouth, L.R.C.P.Ed., L.R.C.S.D., L.R.F.P.S.Glasg. who appeared on the charge that in August last he was convicted at the Witham Petty Sessions of being drunk in charge of a motor car and fined £30, ordered to pay £3 10s costs, and disqualified from holding a driving licence for two years.

Mr. Hump in laying the facts before the Council said that it was not usual to bring a practitioner up on a single conviction of this kind, but this appeared rather a scandalous case. It was reported in the press under the headings, "Doctor drunk in charge of a car—young girl's remarkable story." Dr. Eagles first pleaded guilty to the charge, but on learning that the girl with whom he was driving at the time was to be called as a police witness he amended the plea to "Not guilty." The girl's evidence was that on August 4th the defendant came along in his car, smiled at her and invited her to have a lift. During the journey six public houses were visited. On returning after the last visit Dr. Eagles drove the car at an angle which caused it to turn over. The bench found that the doctor was drunk and quite unfit to drive a car, and only their consideration for his professional position prevented them from sending him to prison.

Dr. Eagles declined that he was a victim of police methods. He had never pleaded guilty to the charge and never would but in the way he sustained an injury to his leg and this accounted for the way in which he was standing over the car immediately after the accident which led to the inference on the part of one of the witnesses that he was drunk. The summons was taken out four days after the accident. Had the charge been made at the time he would have gone straight to the police station and submitted himself to examination. He also complained that the chairman of the bench or magistrates was a doctor who, he thought should have withdrawn in a case in which another man at the same profession was concerned for it left him out it would be said that he was showing favouritism. He agreed that he called at certain public houses on the journey and had some

drink, but he was not drunk. He knew exactly how much he could take. The girl to whom he gave a lift was in hysterical subject who continued to shriek after the car had turned over, and this brought out a crowd, who concluding that it was drunk, became menacing.

Dr. Brackenbury asked whether there was any medical evidence as to respondent's condition at the time.

Dr. Eagles said that no examination was made and no medical evidence was tendered. The evidence of the police constable was corroborated only by that of the hysterical girl and by the aggressive of the village crowd who had collected. He drove his car back home that same evening.

The decision of the Council was as follows:

Mr. Eagles. I have to inform you that the Council have found the conviction alleged against you in the Notice of Inquiry to be proved. Such a conviction against a medical man is dishonourable to him and to his profession. The Council however is inclined to believe that you will regard this appearance as a warning, aim at the course of conduct which has led to this conviction. Accordingly they have not seen fit to direct the Registrar to erase your name from the Medical Register.

The next case was that of John Joseph McBride, registered as of Brunswick Street, Chorlton on Medlock, Manchester, M.B., B.Ch., N.U.Irol. who was summoned on the charge that he had been convicted on four occasions in 1925 and 1926 of being drunk or drunk and disorderly.

Dr. McBride gave an explanation of the occurrences, admitting the convictions but stating that he had now been a total abstainer for some months, and he produced testimonials from several medical men.

The Council found the convictions proved, but postponed judgment until the November session of next year, when the respondent would be required to appear and produce professional testimonials as to his habits and conduct in the interval.

A similar case was taken with John McGhee registered as of Station Road, Gillingham, Kent, M.B., Ch.B., B.Glasg., who had been convicted in 1926 of driving a motor car to the danger of the public and of failing to stop after an accident, and in 1927 of being drunk whilst in charge of a motor car and of driving a car to the danger of the public.

Dr. McGhee admitted the two convictions, but denied that he was drunk on either occasion, or incapable of driving a car. He had now become a total abstainer and the Insurance Committee, with whom he was under contract, had accepted his assurances.

The Council found the convictions proved, but postponed judgment until the November session of next year.

The last case of this kind was that of Robert Moore registered as of Mawney Road, Romford, M.B., B.Ch., M.D. U.Dubl. who had been convicted in 1917 of being drunk and riotous and in 1927 of being drunk whilst in charge of a motor car.

Dr. Moore denied that he was drunk on either occasion, and he complained of one of the tests which he was required by the police surgeon to undergo on the second occasion. He gave assurances to the Council, however, as to his future conduct and stated in writing that "the human weakness of occasional inebriety will never occur again."

The Council again found the convictions proved but postponed judgement until May, 1928, on the usual conditions.

(To be continued)

### WILLIAMS-FREEMAN PRESENTATION FUND

The following is the third list of subscriptions received in response to the letter published in the SUPPLEMENT of October 1st, (p. 139)

Amount previously acknowledged	£	s	d
	865	9	6
<b>Local Medical and Panel Committee Contributions</b>			
East Riding of Yorkshire Panel Committee	11	0	0
West Sussex Local Medical and Panel Committee	23	10	6
Lincolnshire Local Medical and Panel Committee	3	3	0
Oxfordshire Local Medical and Panel Committee	31	10	0
Huntingdonshire Panel Committee	17	7	0
Carlisle Panel Committee	2	2	0
Kent Local Medical and Panel Committee	75	0	0
Bradford Local Medical and Panel Committee	5	5	0
Devon Panel Committee	122	3	6
Berkshire Panel Committee	30	6	0
Manchester Local Medical and Panel Committee	10	10	0
Hastings (Lincs) Panel Committee	21	6	0
<b>Individual Contributions</b>			
Dr. M. Mottram Buxhall, Suffolk	1	1	0
Dr. C. M. Stevenson Cambridge	1	1	0
Lieut. Colonel J. H. Yolland Bromley	2	2	0
Dr. D. G. Greenfield Rushden Northants	2	2	0
Dr. W. E. Walters, East Grinstead	1	1	0
Dr. J. D. Hamilton Lacock Wilts	1	1	0
Dr. M. Button and Partner, Rye Sussex	2	2	0
Dr. W. H. Fernald Hassocks Sussex	10	6	
Dr. P. W. Cress Edinburgh	1	1	0
Dr. S. Sweet Williams and Tuohey, Hockfield	1	1	0
Dr. F. L. Glegg London	2	2	0
Dr. J. W. Lone Luton			

Total to November 23rd (morning) £1,267 17 6

Cheques should be made payable to the Williams-Freeman Presentation Fund, and addressed to Dr. D. G. Greenfield, Treasurer, c/o the Medical Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1.





WESTERN OPTHALMIC HOSPITAL, Marchmont Road, N.W.1—Senior and Junior Non-Resident House Surgeons Salary £150 and £100 per annum respectively.

WHITDEN GENERAL HOSPITAL, N.W.10—Vice-Chief on Honorary Medical Staff.

CERTIFYING FACTORY SURGEON—The appointment at Halifax (York W.B.) is vacant. Applications to the Chief Inspector of Factories Home Office, Whitehall, S.W.1.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

## DIARY OF SOCIETIES AND LECTURES

### ROYAL SOCIETY OF MEDICINE

Section of Orthopaedics—Tues. 8.30 p.m. Discussion: Fractures of the Spine to be opened by Mr. Geoffrey Jeffers on followed by Dr. George Riddoch, Dr. Bertram Shires, Mr. George Stebbing, Mr. St. J. D. Buxton.

Section of Pathology—Tues. 8.30 p.m. Laboratory Meeting at the Imperial Cancer Research Fund, 811 Queen's Square, W.C.1. Papers and Demonstrations—W. Cramer: An Experimental Study of Pre-lymphatic and J. Murray: Histopathology of Endothelioma of the Powl. J. A. Lymph Nodes of the Fowl. R. J. Ludford: Papers and demonstrations.

Section of Pathology—Wed. 5 p.m. Fleet Surgeon W. E. Home: Professor of Materia Medica in Edinburgh. Reginald Binkitt: A Note on the Weekly.

Medico-Chirurgical and Philosophical Magazine.

Section of Surgery—Wed. 4 p.m.

4.30 p.m. Tea in the Shepherd.

on Trauma.

Professor.

Department.

J. B. Mennell and Baucus: In the

by Drs. Fildes and Shires: In the

Howarth and Mr. Romanus: 5 p.m. in the Clinical Theatre. Demon-

strations—(1) Cases by Mr. P. Sargent. (2) Genito-urinary Cases by Mr.

C. Nitch. (3) Group of Cases by Sir Cuthbert Wallace. (4) Cases showing

the Results of Operation for Osteoarthritis of the Hip by Mr. C. Max.

Page. (5) Orthopaedic Cases by Mr. W. Rowley-Bartow.

Section of Pathology—Thurs. 5.30 p.m. Samuel W. Memorial Lecture—

Dr. Whitridge Davies: Problems and Opportunities for Research in Spa

Treatment.

Section of Neurology—Thurs. 8.30 p.m. Discussion: Traumatic

Neurasthenia and the Litigation Neurosis to be opened by Sir Farquhar

Burford followed by the Right Hon. H. P. Macmillan, Sir James

Purvis, Stewart, Dr. Risien Russell, Dr. W. A. Bland and Dr. W.

Salisbury Sharp.

Section of Ophthalmology—Fri. 5 p.m. Clinical Meeting at the Royal

London Ophthalmic Hospital, City Road, E.C.1. Tea at 4.30 p.m. Cases,

including a number for slit lamp, will be shown. A demonstration will

be given of apparatus for exercising heterophoria and squint cases.

Clinical Section—Fri. 5 p.m. Cases.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11 Chandos Street, W.1.

Thurs. 7.45 p.m. Demonstration 8.15 p.m. Dr. William Fletcher.

Recent Work on Some Malarial Fevers illustrated by lantern slides.

BIOCHEMICAL SOCIETY, Imperial College of Science (Metallurgy Theatre,

Royal School of Mines, Prince Consort Road, South Kensington)—Fri.

4.45 p.m. H. Henderson Smith, M. Hume and I. Smedley MacLean:

Vitamin A and Pravitamin D in Yeast Fat.

R. Robinson: Diphosphorylated Methylhydrosides.

Acid J. Pryde and E. F. Waters: Organic.

Muscle. H. R. Hewer, H. Jamieson and S. B. Schriver: Chemical

Changes in Muscular Tissue Proteins when passing into Rigor. H. J.

Holman and S. B. Schriver: Basic Hydrolysis Products of Plant

Proteins. E. J. Candlin and S. B. Schriver: Relation of Pectin to

Hemicellulose. L. C. Gray: Nutrition of Pigeons. R. K. Christy and

W. Roosen: Estimation of Chlorides in Biological Fluids.

HUNTERIAN SOCIETY—Dinner Meeting at Simpson's Restaurant, Chemp-

side Mon. 7.30 p.m. Dinner 8.30 p.m. Discussion: Backache to be

opened by Dr. D. Barrett, Mr. C. Lamberton and Mr. G. A. Macdonald.

WEST HENT MEDICO-CHIRURGICAL SOCIETY, Muller General Hospital, Green-

wich, S.E.10.—Fri. 8.45 p.m. Purvis Oration by Mr. Victor Bonney.

M.D. I.R.C.S. Principal Sepsis.

## POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—Lecture at Medical Society, 11 Chandos Street, W.1. Mon. 5 p.m. Practical Hints in Medicine. Hospital for Diseases of the Skin, Blackfriars Road, S.E. Special Course afternoons only, fee 11s (for two weeks). Infants Hospital, Vincent Square, S.W.1. Afternoon Course, fee 23s (two weeks course). West End Hospital for Nervous Diseases, 75 Welbeck Street, W.1. Postgraduate Course in Neurology every afternoon at 4 p.m. until December 17th. All information, syllabus and tickets from the Secretary, Fellowship of Medicine, 1 Wimpole Street, W.1.

CLINICAL LONDON THROAT NOSE AND EAR HOSPITAL, Gray's Inn Road, W.C.1.—Fri. 4 p.m. Foreign Bodies in the Food and Air Passages.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.1.—Thurs. 4 p.m., Complications of Pneumonia.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester Square, W.C.2.—Tues. and Thurs. 5 p.m. Eczema.

NORTH WEST LONDON POST GRADUATE COLLEGE, Prince of Wales General Hospital, Tottenham, N.15.—Mon. 2.30 to 5 p.m. Medical Surgical and Gynaecological Clinics. Operations. Tues. 2.0 to 5 p.m. Medical Surgical, Throat, Nose and Ear Clinics. Operations. Wed. 2.30 to 5 p.m. Medical Skin and Eye Clinics. Operations. Thurs. 11.30 a.m. Dental Clinics. 2 p.m. Special Demonstration of Surgical Cases. 2.30 to 5 p.m. Medical Surgical and Ear, Nose and Throat Clinics. Operations. Fri. 10.30 a.m. Throat, Nose and Ear Clinics. 2.0 to 5 p.m. Surgical Medical and Children's Diseases Clinics. Operations.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11 Chandos Street, W.1.—Wed. 4 p.m. The Health of the Schoolboy.

ROYAL NORTH WEST LONDON HOSPITAL, Holloway Road, N.7.—Tues. 3.15 p.m. Disorders of Nutrition and their Clinical Significance.

SOUTH WEST LONDON HOSPITAL, Lambeth, S.W.12.—Thurs. 4 p.m. Clinical Demos. in relation to the

WEST LONDON HOSPITAL POST GRADUATE COLLEGE, Hammermith, N.6.—Mon. 10 a.m. to 1 p.m. Genito-urinary Operations. Skin Department. Surgical Wards. 2 p.m. Surgical Wards. Gynaecological and Eye Departments. Tues. 10 a.m. to 1 p.m. Medical Ward Visit. Demonstrations in General Diseases. 2 p.m. Medical Wards. Throat, Nose, and Ear Department. 4.30 p.m. Special Lectures. Diabetes Mellitus. Wed. 10 a.m. to 1 p.m. Medical Wards. Demonstrations in Surgical Wards. Eye Department. 4.0 p.m. Thurs. 10 a.m. to 1 p.m. Neurological of Fractures. 2 p.m. Eye and Gynaecological Ward. Fri. 10 a.m. to 1 p.m. 2 p.m. Throat, Nose, and Ear Department. Sat. 10 a.m. to 1 p.m. Bacterial Therapy. Medical Department. Daily Operations. Medical. 2 p.m. at 2 p.m.

GLASGOW POST GRADUATE MEDICAL ASSOCIATION—At Victoria Infirmary, W.2, 4.15 p.m. Skin Cases.

JAMES WICKES INSTITUTE FOR CLINICAL RESEARCH, St. Andrews—Tues. 4 p.m. Some Recent Views upon Carcinoma as applied to the Colon.

MANCHESTER ROYAL INFIRMARY—Thurs. 4.15 p.m. Pulmonary Hernia. Fri. 4.15 p.m. Gastric Analysis in Clinical Medicine and Research. Tea at 3.45 p.m.

SHEFFIELD UNIVERSITY POST GRADUATE CLINICS—At Royal Hospital, Fri. 3.30 p.m. Brachial Neuritis.

## British Medical Association.

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE,

TAVISTOCK SQUARE, W.C.1.

### Departments

VICE-PRESIDENTS (Financial Secretary and Business)

EDITOR, *British Medical Journal* (London) and *British Medical Journal* (Westcott).

Telephone numbers of British Medical Association and British Medical Journal, Museum, 9851, 9862, 9863, and 9864 (internal exchange, four lines).

SCOTTISH MEDICAL SECRETARY, 6 Drumshelton, (Glasgow) (Edinburgh) (Telegrams: Associate Edinburgh Tel. 24361, Edinburgh). IRISH MEDICAL SECRETARY, 16 South Frederick Street, Dublin (Telegrams: Baclius Dublin Tel. 4737, Dublin).

### Diary of the Association

DECEMBER.

- 2 Fri. London Ophthalmic Subcommittee, 2 p.m. London Regulations and Standing Orders Subcommittee. 2.0 p.m.
- 5 Mon. Hertford Division, 20 East Street, Hertford, 2.45 p.m.
- 6 Tues. City Division, Metropolitan Hospital, Sir John Thomson, Waller on Urinary Obstructions, 9.0 p.m. Coventry Division, Coventry and Warwickshire Hospital, Mr. V. McQuinn, 8.30 p.m. Finchley Memorial Hospital, Mr. Trevor Day, 8.45 p.m. South West Essex Division, Livingston College, Knott's Green, Leyton, Dr. Dan Velezquez on Unbroken Ways in Medical History, 5.30 p.m.
- 7 Wed. London Hospitals Subcommittee, 11 a.m. London Finance Committee, 2 p.m. London Scope of State and Hospital Medical Practice Committee, 3 p.m. Ashford Division, North Street Club, Dr. W. J. Atle on Some Sudden Attacks of Nervous Origin, 4 p.m. Hexham Division, Abbey Hotel, Hexham, Dr. F. J. Nattrass on Common Nervous Diseases, 3.30 p.m. Huddersfield Division, Dance Royal Infirmary, 8.45 p.m.
- 8 Thurs. London Ophthalmic Committee, 2 p.m. East Yorkshire Division, Invitation by Scarborough Division to Second Annual Dance, Crown Hotel. Gloucestershire Branch, Royal Infirmary, Gloucester, Discussion on New Growths of the Breast, 6 p.m. Supper, Spread Eagle Hotel after the meeting. Hampstead Division, Hampstead General Hospital, Mr. A. E. Hayward, Pinch on Radiation Therapy, 8.30 p.m. High Division, 5, Abbridge Town Hall, Address by Sir William Millham, 8.30 p.m. Portsmouth Division, Queens Hotel, Dr. F. M. R. Walshe on Faith Healing, Meeting preceded by Supper, 9 p.m. Swansea Division, General Hospital, Swansea, B.M.A. Lecture by Dr. S. A. Kinnier Wilson, 8.15 p.m. Wakefield, Pontefract and Calverley Division, Great Ball Restaurant, Weigate, Wakefield, Mr. F. R. Flint on Fractures, preceded by Supper, 7.45 p.m. West Middlesex Division, Dinner, Victoria Hall, Ealing, 7.30 p.m.
- 9 Fri. London Maternity and Child Welfare Subcommittee, 2.15 p.m. English Division, Annual Dinner, Cockermouth. Chesterfield Division, Maternity Hospital, Chesterfield, Mr. G. O'Rourke on Medicine and the Law, 8.15 p.m. Sheffield Division, The University, Sheffield, B.M.A. Lecture by Mr. H. Beal with White House on Practical Applications of Recent Views on the Menstrual Functions, 8.0 p.m.
- 14 Wed. London Council, 10 a.m.
- 19 Thurs. London Journal Committee, 2.30 p.m.

J. A. V. P.

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s. which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

DEATHS

On 1st—On November 28th, after a short illness, in his 53rd year, Walter Charles Orm, M.D., of 72 Redway Street, Liverpool, died. He was the son of John Charles Orm, of the Royal University, Dublin, and a former student of the University of London. He was a member of the Royal Society and the husband of Isabel W. Orm.

# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY DECEMBER 10TH 1927

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## PRIVATE PRACTICE AND THE PUBLIC MEDICAL SERVICES

BY

CHARLES E. S. FLEMING M.R.C.S., L.R.C.P.,  
B. Med. Off. Army

According to the report of the last meeting of the Council a committee has been appointed to consider resolutions passed at the Annual Representative Meeting the object of which was to safeguard private practice from the inroads of the public health services. The personnel of the committee is such that it must command the respect of the whole profession but I wish that the reference had been worded differently, so as to make it appear that the object of the Council was not "How can we prevent the public medical services encroaching on private practice?" but "How can the private practitioner best take part in the work of the public medical services?"

The Medical Secretary in one of his circular letters stated that

"We have an opportunity of convincing the public that all our talk about preventive medicine and desire for the welfare of the public is not mere common form but that we are really anxious to do our bit in educating the community in individual and collective hygiene. A man need not be a very acute observer of public affairs to see that the public expects more and more in this direction and if we do not give it other persons or bodies will and I venture to say they will not do it as well as we could do it."

A statement with which no doubt all will agree

"We all now realize the advance in and the necessity for the practice of preventive medicine. We also realize the dangers and disadvantages contingent to this service as conducted by the State but obvious as they are it is not easy to avert them. We realize that a new order is coming that it is as impossible to fight against the spread of preventive medicine as it was a century ago to stop the medical revolution of which every old the displacement of many artisans and craftsmen. But even so there is still a demand for artisans and craftsmen so there must still be general practitioners, and so far as one can see for a long while to come the greater part of the ordinary daily practice of medicine will be curative

Some seem to think that preventive medicine is going to displace curative that can never be but it will surely in time come to take an equal place in the outlook of most general practitioners. The general practitioner cannot hope always to continue to be entirely individualistic in his practice any more than the hospital surgeon who finds it necessary to work as one or a team. Remarks made by some of the speakers at the Annual Representative Meeting when this subject was under discussion reminded me of King Canute's courtiers who would have been more useful to the monarch if they had advised him to get into a boat and make the tide take him where he wanted. We cannot possibly stop the progress of preventive medicine but we can by sympathetic co-operation do much to direct its course and make it a part of our daily work.

There can really be no question of the repression of the general practitioner. We all desire the maintenance of the independence of the medical practitioner because we know what it means and we naturally dread the prospect of the loss of this independence which would result from his absorption into whole-time State service. Yet at the same time we realize that his co-operation in the work of preventive medicine would add enormously to its efficiency and if the committee recently appointed can suggest means by which he can so assist they will be doing an invaluable service to medicine and the State. The remedy is not to displace the general practitioner, but to find him the opportunity to give of his best for preventive medicine, yet at the same time to save all his old work.

The origin and growth of bureaucracy are probably due to the desire of the State to have authority and responsibility for the conduct of the affairs of the State to get things done efficiently promptly and completely. No Government would wish to undertake the work of any department if it was assured that it could otherwise be satisfactorily carried out, and if public health could be maintained by voluntary agencies it is no likely that the Ministry of Health would want to interfere but we know—experience has shown—that much of the work necessary for the proper conduct of preventive medicine could not be done without the control and authority and organization that can only be provided by the State.

Further reason for the interference of the State is partly economic partly the non-appreciation by the patient of his need, and partly the difficulty of the general

practitioner in finding and following up and, when found, in providing and enforcing proper treatment. This does not involve the efficiency of the medical man, who has not retrogressed in skill or knowledge in the laws of health and the science and art of medicine—quite the reverse, but the lay public has progressed in scientific knowledge and demands better treatment and better means for the maintenance of its health.

The region where there is most fear of interference with private practice is the communal clinic. In objecting to this work being undertaken by officials, we must remember that much of it is new work that we have never done before, so that we cannot say it is work that has been taken from us. We must also remember that the specialist clinics, tuberculous, venereal, orthopaedic, eye, throat and ear, have created a demand for a number of specialists, who, though part-time officials, certainly should be and frequently are private practitioners, and may be general practitioners, and all these clinics, to which the family doctor should have free access, bring to him the greatest advantage of in crisis available consultant service, of value both to himself and his patient.

But the general practitioner should be closely associated with the work of these clinics, in following up the treatment when possible in the home of the patient—and he might, under altered conditions, undertake the greater part, if not all, of the work of the other clinics—maternity, infant, school.

The clinic owes its success to opportunities it has that the general practitioner has not. Patients are searched for, then attendance is urged if not actually compulsory, and treatment is followed up, the clinic is advertised and the results of the work done there are collated and published, and the public has now become obsessed with the fetish of the clinic, endowing it with powers that are not cutely peculiar to it.

The drawbacks of the clinic include the method of staffing. (a) The medical officer in charge has not that direct personal knowledge of the patient's previous history, the patient's family, his home and surroundings, and his economic position and the conduct of the treatment prescribed, that he could have if he were the family doctor. (b) The whole-time medical officer requires a very large experience of a small number of diseased conditions. He has not the opportunity to attain a wide experience of general medicine, and when he has gathered much useful experience in this narrow field, if he is promoted, his work is probably changed and the value of his previous work is lost. The staffing of clinics by whole-time men is really a loss of good agents, and the absorption of men who would otherwise be useful general practitioners or part-time specialists.

The family doctor is under serious disadvantages. He only comes into contact with his patients when they have become diseased, and then only when asked to, and he has no means by which he can get at them during health or during the earlier stage of their illness, before they would in the ordinary course have sought medical advice. Also owing to the present conditions he suffers from a lack of method in applying his knowledge.

Attempts have been made to put some of this work into the hands of the private practitioner, but they have generally failed, partly and chiefly because he has found it impossible to adapt his practice to the methods and routine of the public official, and the attempt has sometimes given rise to interprofessional jealousy, also there has been a disinclination on the part of the practitioner to undertake this work under the conditions required.

Although we have perhaps failed to realize that the function of the medical practitioner is not only to treat disease, but to prevent it—to maintain health, although in the past he has to some extent failed to do this because he has not tried, although both his training and his practice have been it might be said that his failure has been as complete as many are apt to assume. He may fairly claim that much of the improvement in the health of the people—the lengthening of life, the decrease in infant mortality, the disappearance of whole or in part of many diseases—is due as much to his work as it is to the work of the medical officer or health.

The private practitioner and the medical officer of the clinic are members of the same profession with the same training but with ever-widening divergence in the character of their experience, and, given the opportunity, the private general practitioner should do, and do better, but for want of opportunity has not done, what is now being done in the clinic.

He has in his practice, and through his experience, great advantages. He has knowledge of the history of a large number of diseases under all sorts of conditions, and of their relation to one another. He becomes an expert diagnostician of the early stages of disease, the most difficult to recognize. He has a vast store-house of facts, not in end indexes, but in his brain, and as years go on he must have accumulated experience of the personal history of disease, its effect and its treatment, of the value of treatment under different conditions, which might be at the service of the public to a greater extent than it is at present. In following up a patient himself into his home and there examining the other members of his family, and noting his surroundings and the possibility of carrying out effective treatment, and its results, the proper agent should be the family doctor.

He can, and does, educate the public in the most valuable of clinics, the home. His value as a health missionary is too obvious to need emphasizing. The work of preventive medicine is done in the home or the consulting room should be far more valuable than that done at any clinic or lecture. His work is to listen on and to encourage, not to hinder preventive medicine, and his qualifications and opportunities for doing that are already great, but could and should be made much greater.

The work of the general practitioner should consist not only in treating existing disease, but in preventing by his advice and influence the recurrence of that disease or the damaging of the patient's constitution which may lead to other disease, or his falling a victim to those organisms which applied medical science has not been able to keep away or get under complete control.

There must be means by which his practice, with its wonted freedom of thought and method, can be combined with that required by the public health authorities, so that an intimate and hearty co-operation between both departments of medicine should together provide a complete and efficient service. Surely, too, there must be some means by which all this supply of valuable information, all these advantages of private practice, could be used in the interests of the community more effectively than they are at present.

A medical officer of health, in a letter about domiciliary work undertaken by his staff, says: "It is our duty to seek out and keep records of defective children and others, and to insist on treatment in its widest sense, in spite of parental neglect, obstinacy, or poverty. No such responsibility, as things are, can rest on the practitioner unless called in by the parent." This, of course, is a state of affairs that the extension of the national health insurance to wives and dependents could remedy.

A really efficient scheme would enable most of this work to be done by the general practitioner. Every home, every consulting room, would become in effect a clinic. It would give the medical man the opportunity of seeing everyone that required his services, whether for prevention or cure of disease, without any question of expense arising, so that cases seen by the school inspector, for instance, could be, and probably would be, referred to him. This would mean that all the work done at clinics that came within the competence of the general practitioner would have to be undertaken by him. Whether under these conditions the clinics would be looked upon by some medical men with the same jealous eye as they are at present is a moot point.

It would enable the practice of medicine to be rather and more effective in cure, more energetic in the reduction of morbid sequelae, and every day saved in illness, every recurrence saved, would be for our own benefit as well as for that of the community. It would, of course, be essential that the co-operation of the general practitioner should be something more than perfunctory. It would, I doubt until the keeping of certain records, and this is a

matter that would require very careful consideration by all concerned.

The first condition to come within the orbit of the clinic is the internal. This is work that certainly should be kept in the hands of the family doctor and while the extension of the national health insurance would make this easier, something more would be necessary, and no doubt practicable, to make this possible.

It is most important that we do not wait for work that we cannot or are not willing and competent to undertake. We did so, for instance, in the case of tonsils and adenoids and venereal disease and the results were not satisfactory.

With an increasing knowledge of the causes of disease the scope of preventive medicine is naturally ever widening, and many illnesses are now considered preventable that were not so considered thirty years ago, but this prevention is often complex in its requirements. For instance, anaemia, and all that it means and entails, its prevention, which has made enormous strides involved better housing and with it more fresh air—more sunshine, it required more exercise, more rest, less undue fatigue, better clothing, better food, better teeth, absence of diseased tonsils, and freedom from constipation. Nothing could show better the need for the co-operation of the medical officer of health, the specialist, the statistician and, most of all, the general medical practitioner.

This extension of insurance work would mean that every general practitioner would become in fact a medical officer of health. It would be both his duty and his interest to maintain health and to cure disease at the earliest possible moment.

This is a conception of private practice as an intimate and central part of a great national medical service. A change in our practice such as suggested would naturally require the utmost caution in its adoption, there would be difficulties to be overcome and dangers to be avoided but black opposition to the progress of public health medical services will be worse than useless and some means must be found by which the general practitioner who is no doubt the best suited for the work, can take an active part in it.

## RHEUMATISM IN CHILDHOOD

### A YEAR'S WORK OF A SUPERVISORY CENTRE

The following report on the first year's work at the Rheumatism Supervisory Centre, Paddington Green Children's Hospital, has been presented to the Science Committee of the British Medical Association by Dr. Reginald Miller, physician in charge, and Dr. Maud Sauderson, medical assistant.

The Centre was opened on October 9th 1926 and the following report deals with the period from October 9th 1926, to October 1st, 1927. During this time the Centre has been available every Saturday afternoon except on four occasions when the hospital was closed to out-patients. Since March 1st, 1927, acute rheumatism in children under 16 years of age has been a notifiable disease in Paddington. Up to the end of the period under review notifications of 24 cases resident in Paddington were received. As legally only cases in acute stages can be notified, it is clear that some years must elapse before the whole rheumatic juvenile population will be embraced in the scheme. The fact that the Kensington Borough Council has now followed suit (as from October 1st 1927) will probably be an aid to the work in Paddington. The homes of all cases notified are visited from the Centre but in this report only such children as have actually been examined at the Centre have been included.

### I MATERIAL INVESTIGATED

The number of children admitted to the Centre during its first year was 175. Of these, 6 were judged to be definitely non-rheumatic and are excluded from the remainder of this report.

Reports to the Science Committee on Rheumatic Heart Disease in Children published in the SUPPLEMENT of July 3rd 1928 and April 1st 1927.

### Admission of Cases

As far as the public health services are concerned, the Centre works directly only with those of the borough of Paddington, but children resident in any district are admissible, provided that they are already patients of the hospital. Tables I and II show respectively the areas from which the cases have been drawn, and through what agencies the Paddington cases have been sent to the Centre.

TABLE I—Sources of Cases

Paddington	71
St. Marylebone	11
Kenington	27
Willesden	25
Other areas	32

Following the opening of a similar centre at the Prince of Wales Hospital, additional cases from Kensington have been admitted to a temporary special department for Kenington of the Paddington Green Centre during the period May 13th to October 1st 1927.

TABLE II—Sources of Paddington Cases

Through the hospital	47
Through the school medical service	15
Through notification	7
Through practitioner as advised by medical officer of health	2
	71

### II CLASSIFICATION OF CASES

Table III shows the classification of all cases (169) based upon the condition present at their first examination at the Centre.

TABLE III—Classification of Rheumatic Condition at First Attendance

	Paddington Cases	All Cases
Potential and mild rheumatism	19	51
Active rheumatic infection	7	13
Quiescent rheumatic infection	45	106
	71	169

The large proportion of cases falling in the "potential and mild" group is ample evidence that the Centre is no mere "cardiac clinic." The observation, supervision, and treatment of children in the earliest stages of rheumatic infection with a view to studying the first appearance of serious disease and the prevention of heart disease are regarded as the most important functions of the Centre. The group labelled "potential and mild" includes three main types in which a positive diagnosis of rheumatic infection is not always possible at a first examination.

- Those with tonal and muscular pains only.
- Those with nervousness and fidgetiness, not amounting to definite chorea with or without sore throat and pains (potential choreic type).
- Those with hearts conforming to the types of suspected rheumatic heart disease (see below) but without other evidence of rheumatic infection.

Erythema nodosum (which will undoubtedly figure in notifications) is not regarded as rheumatic, and is excluded from this report.

### Condition of Heart

Table IV shows the classification of all cases (169) according to the condition of the heart as judged at the first examination.

TABLE IV—Showing Condition of Heart in All Cases at their First Attendance

	Paddington Cases	All Cases
Congenital abnormality	2	2
Rheumatic heart disease—		
Absent	37	99
Suspected	6	18
Present { acute	1	2
{ sclerotic	20	9
{ quiescent	22	39
	71	163

The cases classified as "suspected" heart disease include the following types:

- Those showing a systolic apical murmur in which we were not entirely satisfied that it was one of the common functional type occurring in a normal heart.
- Those showing as their only abnormality the presence of a third apical sound not amounting to a mid-diastolic bruit.
- Those showing nothing abnormal except persistent tachycardia.



Of the 18 cases at first classified as "suspected" heart disease, 10 have been re-examined after a varying number of months during the year under review, of these, 7 have remained unaltered, 2 have become normal, and 1 has developed mitral stenosis.

### III TREATMENT

#### *Co-operation with the Public Health Services*

The School Medical Service has been informed of every case. For the Paddington cases special cards, provided by the school medical authorities, have been used.

Housing conditions have been investigated in every case. In the Paddington cases all homes have been visited and the parents' statements verified, in the cases outside Paddington the statements have been noted. It is interesting to find that the particulars given by the parents on the subject of damp in their homes were found in the great majority of cases to be accurate on closer investigation by visiting. Several cases in the Paddington group were found to come from houses in an exceptionally bad state of repair, and through the action of the medical officer of health improvement in them has been effected. In a few instances families have been moved or offered alternative accommodation.

#### *Personal Treatment*

Table V shows the various forms of treatment which have been adopted in different cases. Full use has been made of the facilities for in-patient and out-patient treatment at the hospital.

TABLE V—Treatment

	Paddington Cases	All Cases
Treatment for active infection		
In hospital as in-patient	6	13
In hospital as out-patient	10	23
Referred to private doctor	3	3
Tonsillectomy		
As in-patient	6	8
As out-patient	16	25
Referred elsewhere	1	8
Recommended to heart home	0	2
Recommended to P.D. school	1	6*
Kept under supervision	29	78
Discharged	9	17
Lost sight of	2	5

\* Not including cases already attending special school before admitted to the Centre.

The patients discharged after their first attendance, numbering 17, were either too old for the Centre or lived at too great a distance. 5 patients failed to attend again after their first examination, although "remainder" cards were sent to their parents. It is perhaps gratifying that the number of such cases is so low.

### IV RESEARCH

1 *Relationship of Juvenile Rheumatism to Poverty, Overcrowding, and Dental Caries*—A series of 150 cases has been analysed on these points. The results confirm those of the first report of the British Medical Association Committee on Rheumatic Heart Disease in Children and those of other investigators.

(a) Juvenile rheumatism although markedly a disease of hospital as opposed to private consulting practice, does not vary directly in incidence with the degree of poverty. It is commoner in the upper than in the lower strata of the working class population.

(b) Overcrowding does not appear directly to predispose towards juvenile rheumatism.

(c) Dental caries although it is said to show the same peculiar class incidence as juvenile rheumatism does not seem to have any definite effect in predisposing towards the infection. Rheumatic children, taken as a class, have on the whole good teeth.

In these particulars similar results have now been obtained by so many investigators that it is unlikely that further study will upset these conclusions.

2 *Study of Earliest Stages of Rheumatic Infection*—We have now under observation 51 cases of rheumatism in

its very early stages. It is expected that by watching them over a period of years we shall be able (a) to reach more accurate conclusions on the earliest and doubtful phenomena of the disease, and (b) to study the factors responsible for the onset of the severer aspects of the infection.

3 *Study of Earliest Stages of Rheumatic Heart Disease*—Similarly we have a series of 18 rheumatic children in whom the heart shows slight departures from the normal as detailed above. It is hoped that further study of such cases over a long time will help to make clear the value of such cardiac signs as at present of doubtful significance.

4 *Relationship of Tonsillitis to Juvenile Rheumatism*—The present series of cases fully confirms this well known association. Out of 169 cases, 98 had undergone the operation of tonsillectomy, of the remainder, 19 were regarded as having normal tonsils.

5 *Value of Tonsillectomy in Rheumatic Children*—We have now under observation a number of rheumatic children whose tonsils have been completely removed, as well as a series showing tonsillar remnants after incomplete operation. We have already had some instances of rheumatism arising in tonsillectomized children, but these are too few as yet to be of much value. A point which we are investigating in this connection concerns the housing and other environmental influences in this series of cases.

6 *Relapsing Cases*—We are studying carefully such cases as show relapses and recurrences, but neither their number nor the time yet elapsed has been sufficient to enable us to reach any conclusions on this difficult type of case. It seems probable that in the earlier cases the child's environment may be so heavily against it as to predispose towards relapses, while in the later and more severe types the disease has such a hold on the patient that resistance is worn out. As yet we put forward this view as a mere speculation.

#### *7 Relationship of Damp Homes to Juvenile Rheumatism*

—In the present series damp has been found in 57.5 per cent of the homes of the Paddington rheumatic children, a proportion practically the same as that found in the cases investigated for the British Medical Association Report I. A small series of non-rheumatic families has been investigated by us on similar lines, and it has been found that the proportion of damp homes here sinks to 30 per cent. The value of such "control families" in checking results is probably not great, owing to the presence in them of a large number of children with diseased tonsils, an unknown proportion of which will probably develop rheumatism at some time. At present we are inclined to think that the best method of estimating and checking the influence of damp dwellings on the production of juvenile rheumatism is by a study of the geographical distribution of the disease in cities and districts.

8 *Rheumatic Map of Paddington*—In the period under review we were able to study the distribution of 71 cases of juvenile rheumatism in the borough of Paddington. This district contains rich and poor areas of every variety, and is traversed by a canal and submerged river. The number of cases is as yet insufficient for any assured conclusions, but it is interesting to us to find that there is one area of the borough which bears a disproportionately heavy incidence of the disease. As this corresponds to the district which we have for many years suspected is the richest in rheumatism, we think it is more than likely that further research will confirm our preliminary results. This area alluded to is far from being the poorest or the most overcrowded in the borough, and lies at some distance from the hospital. It lies, however, between the canal and a submerged river.

We beg gratefully to acknowledge the receipt of a report from the British Medical Association in aid of the research work undertaken in connexion with the Rheumatic Supervisory Centre at the Paddington Green Children's Hospital. Our thanks are also due to the Paddington Branch of the Invalid Children's Aid Association for the invaluable help that they have given us.

# GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION

WINTER SESSION, 1927

(Continued from page 215)

## REVISION OF THE MEDICAL CURRICULUM

SIR HENRY ROLESTON brought forward a final report of the Education Committee on the progress made throughout the country towards the readjustment of the medical curriculum in accordance with the resolutions of the Council adopted in May, 1922 which came into force on January 1st 1923. He said that although he himself was now in the chair of the committee, the brunt of this work had fallen upon his predecessor, Professor Mackay. The report showed that the resolutions of the Council had been generally adopted. It might be said that all the bodies accepting the University of St. Andrew's had modified their curricula as a result of the suggestions of the Council.

With regard to the pre-registration examination which was made with the object of lightening the preliminary part of the course the report stated that there could be no doubt that the Council intended that the medical apprentices of physics, chemistry, biology, anatomy and physiology should be studied throughout the distinctive practical part of the course, and that the student should know the applications should be tested in the final examination. In most cases teaching for it was provided in the medical school, either in special classes or in the ordinary classes of the faculties of science. The Council did not mean that the requirements of the examination should be satisfied by a pass in theoretical physics and chemistry of the preliminary or matriculation examination in general education. It was deemed a better plan in addition to an approved examination in general education such as the student passed at the close of his school career and before entering the university. One of the bodies apparently accepted a pass in the matriculation examination in physics and chemistry in place of the pre-registration examination. The Council also intended that the teaching work to be used by the theoretical and practical examination before registration should not be any part of the five years' medical course. Many bodies which gave pre-registration on courses of study had the same time lengthened their courses as a whole to five and a half or six years' study—this seemed to be the case in the Universities of London, Manchester, Oxford, Bristol and Wales. It would also seem (and the committee in its minority of the report) as though there were in the minds of the teachers in the medical schools a distrust of the physical science which was fitting in the secondary school and the great majority of the bodies had provided pre-registration teaching carried on within the medical school itself. It might be argued that if the old first professional examination in chemistry, physics and biology was still to occupy its position in the earlier part of the curriculum there was much to be said for making the instruction on which it was based a continuation of a pre-registration course provided at the same time that the professional course was not allowed to suffer in length.

As to the length of the course the Council recommended that the period of certified study should be not less than five academic years in the first three years of which chemical subjects should be studied. The great majority of the bodies had accepted and adopted the recommendation that three years should be devoted to chemical work after the completion of the examinations in anatomy and physiology at the close of the second year.

The additional subjects suggested for inclusion in the curriculum were about sixty in all. By the great majority of the bodies most of these had been expressly included. Many bodies had not definitely mentioned that out-patient work should be included at hospital was required, this was particularly noted in connexion with the Irish schools which as a whole did not seem to do full justice in their rules and regulations to actual hospital work though it was very

probable that in all the Irish schools out-patient attendance was either compulsory or general. Among the various subjects specially recommended for study by the Council, tuberculosis, venereal diseases, and ante-natal conditions appeared to the Education Committee of great importance in modern circumstances, the opportunities afforded to the student for their study had been inadequate. Sir George Newman had prepared a personal report on the whole subject, which had been circulated to the licensing bodies, and another report on the administration of anaesthetics by the late Professor Littlejohn had also been circulated.

Professor ASHLEY MCKINTOSH took exception on behalf of the University of Aberdeen to a statement in the report that except as regards the duration of the curriculum after the passing of the pre-registration examination, the regulations (in Aberdeen) were in general accordance with the resolutions of the Council. He pointed out that it was said of Edinburgh that by combining the pre-registration and the first professional examination the University seemed to have solved the apparently somewhat difficult problem of completing the second examination professional work in anatomy and physiology in the first two years of the curriculum. That was exactly what Aberdeen had done and yet Aberdeen was mentioned as if it was a time-grosser.

Professor LORRYN SMITH pointed out that in Aberdeen a candidate who commenced his course in the summer term and had been regularly successful in his examinations, would complete the fifth term at the close of a spring term and might graduate then. He would be unable to do that in Edinburgh where there was no graduation at the end of the spring term so that there the student beginning in the summer term had five years and three months.

Dr BRACKENBURY received an assurance from the President that the report would be available for general discussion later.

It was then noted that the report be received and entered on the minutes that the attention of all the licensing corporations be drawn to the conclusions of the committee on its regulation and that they be asked to forward their observations to the Council as soon as possible.

## CONDITIONS OF PROFESSIONAL EXAMINATIONS

SIR NORMAN WALKER, Chairman of the Examination Committee presented a report of that committee containing the conditions laid down by the various licensing bodies for the final examination and for the examinations in anatomy and physiology also the Council's recommendations adopted in 1922 to govern professional examinations. He said that the examinations in anatomy and physiology were combined in eighteen out of twenty-three licensing bodies, the other five might actually consider following the same course. With regard to the re-examination of certain examinations of the licensing bodies he found that in 1887 it was agreed on the motion of Mr. John Marshall that the principle on which the Council's visitations and inspections of examinations ought to be founded is that they should systematically cover within stated periods of time the professional examinations in all branches of knowledge which the Council deems essential to qualifications for licence. He thought however, that the other examinations had not been visited until the Examination Committee recently suggested that procedure to the Council. The visitors had been received not only with courtesy but with cordiality by all the bodies which had many times expressed their gratification that members of the Council should see the work in progress. In the United States the Association of American Colleges systematically visited and inspected examinations and class study and nine out of ten of the bodies concerned stated that such visitations did nothing but good. Sir Norman went on to say that it had proved extremely difficult to formulate the recommendations of the Council in such plain English as to give rise to no misunderstanding. One of the rules, for example was

Two examiners should always participate in the oral examination of a candidate except in subordinate parts or practical examinations.

The word "participate" appeared not altogether well chosen. The Council did not mean that such an examination might take place with a student and one examiner in one corner of the room, and another student and a second examiner in another corner, and yet in some quarters that was held to be "participating." He wished somebody would suggest a word other than "participate," which meant that the one candidate and the two examiners should be present at the same time. Another rule read

"Whatever may be the system of marking, the percentage of a pass in each subject should be not less than 50."

It was not enough if the total marks gave an average of over 50 for each subject, in no subject must they be below 50. He also drew attention to other rules, especially the one requiring as an essential to a pass 50 per cent of the marks assigned to the clinical examination, also that all candidates should be required to complete the three portions of the final examination within a period of nineteen months.

Professor R. J. JOHNSTONE said that a man who came up for the final examination might be so exceptionally ill prepared for it as to make it evident to the examiners that even in three months' time he would not be able to get up the subject sufficiently. The speaker thought it would be well if the Council definitely recommended that in such cases the examiners should have the discretion to refer the candidate back for six months.

Mr. NORMAN WALKER noted the suggestion, but thought that in this matter the tender-heartedness of the examiners came in.

Professor ARTHUR THOMSON expressed the fear that the regulations were being made too inflexible. Education was in some danger of being converted into a cruet-system, with every institution governed and controlled by the same set of regulations, which would apply as well to the minimum qualifications as to the higher. In the best interests of medical education a certain degree of licence ought to be allowed to the responsible bodies, he had sufficient faith in all of them to be sure that they would do their best to work to a common end.

The PRESIDENT pointed out that the aim of the Council had been to require each licensing body with what the others were doing.

The report was approved.

#### REGULATIONS FOR REGISTRATION OF STUDENTS

Mr. HUMPHRY ROLLESTON, Chairman of the Education Committee, brought forward a report on the revision of the regulations for the registration of students. These revisions have been before the Council on previous occasions. Recommendation IV has now been amended by the insertion of the words "theoretical and practical," so that it reads as follows:

"Before registration as a medical student every applicant should be required to have passed a recognized examination in general education and, in addition thereto, an examination (theoretical and practical) in elementary physics and elementary chemistry conducted or recognized by one of the licensing bodies."

This amendment has been made in order to draw attention to the fact that the ordinary matriculation standard is not regarded as sufficient for pre-registration purposes unless it includes a practical test. It has also been made more clear that, in order to fulfil the Council's requirements, the theoretical and practical examinations in these subjects must be in addition to the examination in the subjects of general education. A matriculation examination admitting to the faculties of arts and pure science is *ipso facto* recognized, but in other faculties the certificate must bear evidence of passes on the matriculation standard in four specified subjects.

The report was approved.

#### DISCIPLINARY INQUIRIES

##### Miscellaneous

At the outset of its disciplinary proceedings the Council dealt with a number of cases in which judgment had been postponed from previous sessions.

The first was that of Percy Bateman, registered as of New Cross Road, London, against whom certain convictions for drunkenness

had been proved (SUPPLEMENT, December 4th, 1926, p. 233). Dr. Bateman did not attend at the resumed hearing, and he was represented by Mrs. Bateman, who stated that her husband was too unwell to appear.

The Council's Solicitor, Mr. Harper, reported that Dr. Bateman had sent in three testimonials, one by Dr. J. P. Conway, another by Mr. W. Macmillan, L.D.S., and a third by Mrs. L. I. Clarke, a superintendent of child welfare under the London County Council. Miss Clarke also gave evidence on Dr. Bateman's behalf, stating that he had attended some of the children of whom she had charge, and his conduct in every respect had been that which was expected in a medical man. Mrs. Bateman said that her husband was suffering from a breakdown in health. Since the list of the convictions, in July, 1926, he had been an abstemious man.

After the Council had deliberated in private the President, addressing the Council's Solicitor, said:

In the absence of Mr. Bateman, the Council have had some difficulty in coming to the conclusion that the evidence asked for at the original hearing has been fully supplied and, in order to give Mr. Bateman the opportunity of supplying that evidence in satisfactory amount and character, they have adjourned the hearing until the meeting of the Council in May 1928, when Mr. Bateman will have a further opportunity of producing satisfactory evidence on his own behalf from his fellow practitioners and others.

The next case was that of Thomas Blaney, registered as of London Road, Norbury, against whom a conviction for drunkenness had been proved, and also the fact that he had been drunk or under the influence of drink when certain patients (named) were under, or were seeking, his professional care (SUPPLEMENT, December 4th, 1926, p. 237). Dr. Blaney attended, and was also represented by Mr. G. A. Davis, a solicitor. He put in letters from Dr. J. Sinclair, Dr. W. Edwards and Dr. W. A. MacWilliam, testifying to his exemplary conduct during the last twelve months, and stated that he had entirely given up the use of intoxicating liquor. The President, addressing Dr. Blaney, said:

I have to inform you that the Council have considered carefully the evidence as to your character and conduct since you were laid here, and they are satisfied that the evidence in your favour is sufficient. They have, therefore, decided not to direct the Registrar to erase your name from the Register.

##### Misleading Certification

The same result was reached in the adjourned case of Jogesh Chandra Bose, registered as of Cherrywood Road, Bunningham, against whom it had been found that he had issued a certificate in a lax and careless manner (SUPPLEMENT, June 11th, 1927, p. 235). Dr. Bose was represented by Mr. Oswald Hempton, who put in testimonials on his behalf by Drs. B. A. Lloyd, E. Bulmer, L. E. Samyraseen, K. M. Parthy, and B. S. Jun. The City of Birmingham Education Authority, which had brought forward the charge, offered no further evidence. The Council decided not to direct the Registrar to erase Dr. Bose's name from the Register.

##### Sale of Scheduled Poisons by Unqualified Assistant

The Council next took the case of the three Glasgow practitioners—Dr. Lawrence Crombie, Dr. Elmer Gelfer, and Dr. William Mason Hamilton—against whom it had been found at the previous hearing that they had kept an open shop or other place where scheduled poisons, or preparations containing such, had been sold to the public by an assistant not legally qualified to sell poisons, under the cover of their own qualifications (SUPPLEMENT, June 11th, 1927, p. 230).

All three respondents were present at the resumed hearing, and Mr. Oswald Hempton, on the instructions of the Medical Defence Union of Scotland, represented Dr. Crombie and Dr. Hamilton. Dr. Gelfer appeared on his own behalf. The Pharmaceutical Society, which had brought the complaint, was represented by Mr. W. H. Quinell, solicitor.

The case of Dr. Hamilton was first taken. No additional evidence was offered against Dr. Hamilton by the complainant, and Mr. Hempton put in letters testifying to Dr. Hamilton's excellent professional and personal character from Dr. D. Duff, Dr. A. Watt and Dr. I. Murray. It was also stated on behalf of Dr. Hamilton that since the previous hearing he had converted what had previously been an open shop into a place used solely as a dispensary for the use of his own practice, there was no longer any sale to the public.

The Council, after private deliberation, did not see fit to direct the Registrar to erase Dr. Hamilton's name.

On the case of Dr. Crombie Mr. Quinell said that the Pharmaceutical Society had proceeded at the end of October to make a further inquiry into the conduct of the premises occupied by Dr. Crombie as a medical hall or open shop. An inspector of the Society, in company with another person, visited the place and found a young lady assistant in charge. On asking for a box of Rankin's ointment it was supplied, though on a further request for lysol the assistant stated that she did not keep in things of that kind in the shop. The ointment, which was used for destroying vermin in the head, was clearly marked "Poison." In reply to questions after the inspector had revealed his identity the assistant stated that she was not legally qualified to dispense poisons, that she had been employed for three years by Dr. Crombie and dispensed his prescriptions, except those containing poisons.

Mr. Hempton, on behalf of Dr. Crombie, said that he could not admit the facts, and he proceeded to call the assistant in question, Miss Douglas, who in evidence, stated that immediately after the previous hearing of the case all preparations containing poisons were sent to a chemist at some distance. Mr. Armstrong, who was called by the Pharmaceutical Society, stated that he had seen Dr. Crombie wanted to use in his own practice at which he kept under lock and key. Strict instructions were given

[illegible]

The Court said it did not believe Dr. Giller was in the shop at the time of the shooting. The Court said it

[illegible][illegible]

*Dental Cases*  
Two cases were sent to the Council by the Dental Board. The first was a case of a dentist who had been convicted of a crime. The second was a case of a dentist who had been convicted of a crime. The Council decided to direct the Board to make an inquiry into the matter. The Board reported that the dentist had been convicted of a crime. The Council decided to direct the Board to make an inquiry into the matter. The Board reported that the dentist had been convicted of a crime. The Council decided to direct the Board to make an inquiry into the matter.

It is the case that of Frank Ernest Coe registered as a  
Dentist in Peabody, Maine, 1921 the charge was that he  
was a part member of an approved society to sign a  
Government dental letter that a denture had been com-  
pleted and had received from the approved society money for the  
denture when in fact the work had not been completed. Mr Coe,

who did not appear before the Dental Board, answered before the Council and explained the entire matter. The conduct of the patient made it seem unwise to him to proceed to compel the workman to hatch, but he did in fact complete it later and the patient had expressed himself entirely satisfied with the result. He had had no intention of doing anything wrong in receiving his payment and this was the first time in forty years that he had been in trouble. His conduct had been called in question and he had been told that the next inquiry into the case would be a severe one and he had been told that the Dental Board would be called upon to remove him and remit him back to the Dental Board advising Mr. Cow to be present on the next occasion.

### EXECUTIVE COMMITTEE

THE Executive Committee of the General Medical Council met under the chairmanship of Sir DONALD MACALISTER on November 21st. Several of the more important matters considered, such as the position with regard to practice in the Dominions, were touched upon by the President in his address to the Council on the following day (SUPPLEMENT, November 26th p. 210).

*Fascism and British Practitioners in Italy*—Correspondent was read with regard to a request made to a British practitioner in Italy to join the Fascist Medical Syndicate. On inquiries being made through the British Embassy in Rome it was stated by the Italian authorities that inscription to the syndicate is not a political act and is not intended to be in connexion in any way with Italian politics on the contrary it signifies the joining of the individual to a new economical organization of the State and obedience to its law. The practitioner was in consequence informed by the British Government that it had no objection to his joining the syndicate. The term of membership however, was said to be unsuitable in some respects for persons not Italian subject, but the Italian authorities suggested that probably no objection would be raised if certain questions were answered, and that if any local difficulty arose it should be referred to the Ministry for Foreign Affairs.

*Practice in Spain*.—Further correspondence has taken place through the Foreign Office with the Spanish authorities with regard to the application of a British practitioner to be allowed to take the examination of *Peritida* in order to obtain permission to practice in Spain. It was now stated that the Spanish authorities were willing to move in the matter of establishing a treaty of reciprocity with regard to medical practice. The committee decided to inform the Privy Council that the correspondence in relation to the practitioner's application had been received and recorded but that in the circumstances the committee did not propose at present to take active steps towards a formal agreement for medical reciprocity with Spain.

*Optometry in a British Colony.*—An ordinance recently passed in British Honduras for the registration of persons practising optometry was forwarded for the committee's observations. It provides that registration is necessary in order to practice optometry and the qualifications for registration are an optical diploma in Great Britain or a diploma granted by a body recognized by the Committee on Medical Registration. There is no direct reference in the provisions to medical practitioners, but the penalties exempt medical practitioners who assume the title of oculist and administer drugs for optical purposes. The Executive Committee decided to request the Colonial Office to forward to the authorities of British Honduras a copy of the memorandum by the president relating to the official recognition of opticians (SUPPLEMENT, June 11th 1927 p. 235).

The Society of Actinology and Actinotherapy" - a communication was read from the Board of Trade requesting an application from the Society of Actinology and Actinotherapy for a licence to enable it to be registered without the use of the word 'limited'. The committee decided to offer no observations except to suggest that it should be made clear that the diplomas and certificates proposed to be granted by the society did not confer any qualification recognized by law for the diagnosis and treatment of disease otherwise than under the personal supervision of a qualified medical practitioner.

# British Medical Association.

## CURRENT NOTES

## Current Notes.

SUPPLEMENT TO THE  
BRITISH MEDICAL JOURNAL

## Association Notices

### BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH** NUNEATON AND TAMWORTH DIVISION—An ordinary meeting of the Nuneaton and Tamworth Division will be held at the Nuneaton General Hospital on Wednesday, December 14th, at 3.30 p.m. Agenda—Business arising out of minutes the last meeting, a joint honorary secretary paper by Dr Brunsford. The dinner of the English Division will be held in the Globe Hotel, Birmingham, on Friday, December 9th, at 7.30 p.m. The dinner will be preceded by a meeting at 7 o'clock when Mr. Curd will read a paper on surgical practice at the Cumberland Infirmary eight years ago. The Executive Committee will meet at 6.30 p.m. Tickets for the dinner (10s. 6d., exclusive of wine) will be obtainable at the hotel from the secretary.

**BONNER COUNTIES BRANCH** ENGLISH DIVISION—The annual meeting of the West Hants Branch will be held on Wednesday, December 14th, at 2.45 p.m., at the Yeastown Hospital, Sherborne. Cases will be shown and discussed. Dr. J. Gerald Pearce will read a paper entitled "The problem of the neurotic abdominal cavity." Dorset are particularly requested to note this date and to attend the meeting.

**DORSET AND WEST HANTS BRANCH** WEST DORSET DIVISION—A meeting of the West Dorset Division will be held on Thursday, December 14th, at 2.45 p.m., at the Yeastown Hospital, Sherborne. Cases will be shown and discussed. Dr. J. Gerald Pearce will read a paper entitled "The problem of the neurotic abdominal cavity." Dorset are particularly requested to note this date and to attend the meeting.

**FIFE BRANCH**—A clinical meeting of the Fife Branch will be held in the Maternity Home, Townsend Crescent, Kirkcaldy, on Thursday, December 15th, at 3.30 p.m. Mr. J. W. Struthers (Dunburgh) will address the meeting on the surgical treatment of duodenal ulcer.

**KENT BRANCH** ISLE OF THANET DIVISION—The annual dinner of the Isle of Thanet Division will be held on Tuesday, December 13th, at 8.15 p.m., at the Albion Hotel, Broadstairs. Members are asked to notify the honorary secretary of their intention to be present not later than Monday, December 12th. It is hoped that members will make a special effort to attend and bring guests.

**LINCOLN AND CHESHIRE BRANCH** MANCHESTER DIVISION—A meeting of the Manchester Division will be held at the Skin Hospital, Quay Street, Manchester, on Tuesday, December 13th, at 9 p.m. Light refreshments will be served at 8.30. The following programme has been arranged: a short lecture, with case Dr. Savatard. Precocious conditions of the skin. Dr. Dyson. Persistent urticaria. Dr. Gibson. Injection treatment of varicose veins—lichen planus. Dr. Mumford. Routine physical examination in skin diseases. Drs. Reed and Higgins. Demonstration of lamps in the light department at 10 p.m. It is hoped that every member will try to attend, and medical friends introduced by members, will be welcome.

**METROPOLITAN COUNTIES BRANCH** CAMBERWELL DIVISION—A clinical meeting of the Camberwell Division will be held at St. George's Hospital, Camberwell, on Tuesday, December 13th, at 3.30 p.m. Cases will be shown by members of the hospital staff.

**METROPOLITAN COUNTIES BRANCH** KENSINGTON DIVISION—A general meeting of the Kensington Division will be held at the Kensington Palace Mansions Hotel (Meirick Rooms), De Vere Gardens, W.8, on Wednesday, December 14th, at 8.45 p.m. An address will be given by Sir William Willcox entitled "Diabetes its etiology and treatment." A cordial invitation to attend is extended to all medical non-members of the Association in the Division and light refreshments can be obtained at moderate charges during the meeting. Smoking. Members who intend to enter this year for the Treasurer's Cup golf competition are requested to notify the honorary secretary as soon as possible, enclosing entrance fee of 2s. 6d.

**METROPOLITAN COUNTIES BRANCH** LAMBETH AND SOUTHWARK DIVISION—The clinical meeting which was to have been held at the Belgrave Hospital, Clapham Road, on Wednesday, December 14th, has been cancelled. There will be a meeting at the Lambeth Club, Coldharbour Lane, S.W.9, on Wednesday, December 14th, at 9 p.m. instead, when a paper on menopausal haemorrhage will be read by Mr. R. Christie Brown of the obstetric department, Lambeth Hospital. At a meeting of the Division to be held on day January 25th 1928, Dr. A. G. G. Thompson the newly appointed medical officer of health for Lambeth will read a paper on the Schick test.

**METROPOLITAN COUNTIES BRANCH** LEWISHAM DIVISION—A meeting of the Lewisham Division will be held at the Town Hall, Catford, S.E.6, on Tuesday, December 20th, at 8.45 p.m. Dr. Ross Jordan will read a paper on the differential diagnosis of pulmonary tuberculosis.

**METROPOLITAN COUNTIES BRANCH** ST. PANCRAS DIVISION—A meeting of the St. Pancras Division will be held at the British Medical Association House, Tavistock Square, W.C.1, on Tuesday, December 13th, at 9 p.m. Dr. Eric Gordon Fleming will read a paper on chiropractic and common sense.

**METROPOLITAN COUNTIES BRANCH** WILLESDE DIVISION—A meeting of the Willesden Division will be held at the Willesden General Hospital, Harlesden Road, N.W.10, on Wednesday, December 21st, at 9 p.m. A paper on public education in health will be read by Dr. G. F. Buchanan, medical officer of health, Willesden Urban District, and Dr. A. R. Battie, a student of health.

**MIDLAND BRANCH** CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, to-day (Friday, December 9th) at 8.15 p.m. Mr. G. O'Rourke, LL.D., will speak on medicine and the law.

### Some Work of the Week

**Naval and Military Committee.** The Naval and Military Committee, at a meeting on November 29th, elected Dr. F. W. Goodbody (London) chairman in succession to Sir Richard Luce, M.P., who acted as chairman from 1921 to 1927. This period, covering the general reorganization of the medical services following upon the dislocation of war and demobilization, has been one of exceptional activity on the part of the Naval and Military Committee, and the committee placed on record its cordial appreciation of the great services of the retiring chairman, notably in the dispute over the position of retired surgeon commanders R.N. and the general improvement secured in conditions of service in the R.A.M.C. The committee also recorded its appreciation of the special services rendered by the late Major-General Sir William Mepheison, who was a member of the committee from 1920 to 1927 and an unfailing source of strength to the Association in dealing with those technical matters with which he was so familiar. The committee had before it representations made by the Portsmouth Division as to certain conditions of service in the Naval Medical Service considered by the Division to be unsatisfactory. Representatives of the Division attended the meeting and took part in a full discussion of the matter, after which it was decided to make representations to the Admiralty in respect of some of the points put forward. In connexion with an invitation from the secretary of the International Congress of Military Medicine and Pharmacy, which is to be held in London from May 6th to 11th, 1929, the committee is reporting to the Council in favour of the British Medical Association's participation in the Congress and the appointment of a representative of the Association on its organizing committee. The committee has under consideration the question of the concession of free passages between this country and India for Indian officers of the I.M.S. who entered the Service by competitive examination in London. It appears that whereas passage concessions are granted to Indian members of the I.C.S. who have entered the Service under similar conditions, these are not granted to members of the I.M.S., and the committee is taking the matter up with the India Office.

### Spa Practitioners' Group

In October the Council of the Association sanctioned the formation of a group of spa practitioners within the constitution of the British Medical Association, to consist of members who "regularly prescribe the mineral waters or baths of the spas in which they reside, or who are on the staff of a hospital or clinic where the use of local mineral waters is part of the routine treatment," and permission was given for the first meeting of the Spa Practitioners' Group to take place in London at an early date. Accordingly, on November 23rd, a conference composed of representative practitioners from the following spas met at the B.M.A. House, Bath, Buxton, Droitwich, Harrogate, Leamington, and Llandudnod Wells. The conference elected as its chairman Dr. F. G. Thomson (pre-President of the Association), and the following group committee for the session 1927-28: Dr. R. Acherley (Llandudnod Wells), Dr. J. B. Burt (Buxton), Dr. F. Clayton (Leamington), Dr. Hugh Powell (Cheltenham), Dr. G. L. K. Pringle (Harrogate), and Dr. F. G. Thomson (Bath). The committee is holding its first meeting on Thursday of this week at the Association's House.

### Medical Appointments Abroad

The head office of the British Medical Association has a good deal of information placed at its disposal by its Branches overseas, which may be very useful to those proposing to accept medical appointments abroad. Practitioners are cordially invited to apply to the Medical Secretary, B.M.A. House, Tavistock Square, W.C.1, for any information that may be available regarding overseas appointments in which they may be interested.



**HOLLAND DIVISION**—A meeting of the Holland Division will be held at Spalding on Friday, January 6th 1928 at 5 p.m. Sir Humphry Rolles, of Blk. Regius Professor of Physics in the University of Cambridge, will give a British Medical Association Lecture on the medical aspects of idiopathic rashes.

**NORTH OF ENGLAND BRANCH LUTON DIVISION**—The Luton Division is planning to have a singing concert in the Buffalo Hotel, Luton, on December 14th at 8 p.m. A short programme of music and songs will be provided and Professor Hume (Newcastle) will deliver an address on diabetes.

**NORTH BRANCH NORTH DIVISION**—A general meeting of the North Division will be held on Wednesday, December 14th at 8.30 p.m. in the Medical Library.

**SOUTHERN BRANCH JERSEY DIVISION**—A meeting of the Jersey Division will be held at the General Hospital on Thursday, December 15th, at 8.30 p.m. Mr C. F. Cuthbert will read a paper entitled "From Old to New".

**SOUTH WALES AND MONTGOMERYSHIRE BRANCH CARDIFF DIVISION**—A meeting of the Cardiff Division will be held in the Engineers Institute Park Place, Cardiff, on Thursday, December 15th, at 8.30 p.m. Professor W. E. Dixon, M.D. F.R.C.S., will give a British Medical Association Lecture on the trend of thought in modern therapy. After the lecture Professor Dixon will be entertained at a dinner at the Park Hotel, Cardiff (tickets 5 each). Members intending to be present are requested to notify the secretary as early as possible in order that catering arrangements may be made.

**SOUTH WALES BRANCH CROYDON DIVISION**—A meeting of the Croydon Division will be held at the Croydon General Hospital on Wednesday, December 14th, preceded by tea at 4 p.m. Mr A. H. Todd will give a lantern demonstration on selected orthopaedic cases of general interest.

**STREET BRANCH CROYDON DIVISION**—A meeting of the Croydon Division will be held at the Royal Surrey County Hospital, Guildford, on Thursday, January 5th 1928 at 4 p.m. Sir John Todd will give an address on "Where law and medicine meet". Tickets at 3.50 p.m.

**YORKSHIRE BRANCH BRADFORD DIVISION**—A continued clinical meeting of the Bradford Division and the Medical-Chirurgical Society will be held on Tuesday, December 15th.

**YORKSHIRE BRANCH SHEFFIELD DIVISION**—A general meeting of the Sheffield Division will be held to-day (Friday, December 9th) at the University of Sheffield at 8.30 p.m. when a British Medical Association Lecture will be delivered by Professor H. B. Smith on "Practical applications of recent researches on the renal functions".

## Meetings of Branches and Divisions

### EAST YORK AND NORTH LINCOLN BRANCH EAST YORK DIVISION

A meeting of the East York Division was held at Hammonds at 8 p.m. on November 16th. After supper there was a discussion on "Focal sepsis and its relation to diabetes". The members of the division, practising locally, were invited to take part. Dr. Macfarlane presided and attended by a number of visitors were present.

In opening the discussion Dr. Macfarlane referred to the various ways in which focal sepsis was said to act in relation to diabetes. He pointed out that an exaggerated importance was given to the work of Adams on subintention and of Fournier on chronic focalization. He suggested that an exaggerated importance was given to the work of Whipple, Minot and Murphy on the treatment of pancreatic diabetes. The results of the treatment were superior to those which depended on the treatment of the diabetes. Petering, who had been advocating the condition on which the results of the treatment of focal sepsis were given at 100 per cent, was asked to attend the condition on which the results of the treatment of focal sepsis were given at 100 per cent. He referred to the recent discussion at Edinburgh on the condition on which the results of the treatment of focal sepsis were given at 100 per cent. He claimed by rhinologists in this condition were capital in a general interpretation.

Dr. Gill mentioned the principal optic focus with which the condition dealt. The symptoms produced by chronic cholecystitis were described. For color infection temporary diabetes, with a large age was to be preferred to the more severe operation of cholecystitis except in typical cases of the colon.

Mr. Tuxton and Mr. Walsby spoke for the dental profession. The dental drew attention to the general condition of the body in its relation to the condition of the mouth. The general condition of the mouth might cure the focal sepsis.

Mr. Walsby pointed out how a vicious circle could be established as a result of focal sepsis due to organic disease aggravating the latter. In favour of oral sepsis having a general origin he mentioned the incidence of factors such as age of patient and diet. Prothrombin and carotene appeared to be antagonistic and statistics contrasting the populations of Halifax and Hull were given to show that in prothrombin an autosomal causing loss of calcium salts from the enamel had been suggested as a cause, this was perhaps due to lack of vitamins. Carotene on the other hand was possibly due to an autosomal.

Mr. J. R. Simpson pointed out that a septic focus could be present in the ear, nose or throat without producing obvious local symptoms, and careful examination of the nasal accessory sinuses was essential. The value of removal of nasal polyps and treatment of general suppuration in the ear, nose and throat and chronic sinusitis was mentioned as well as removal of adenoids in children and otitis.

Dr. Baxendale's remark which were contributed by Dr. Brewis in his speech were more concerned with the diagnosis of the focus such as root abscesses and sinuses. Attention was called to the possibility of finding bronchiectatic cavities and other foci in the chest by x-rays.

In the discussion which followed Mr. Upcott said that he did not agree with the idea of focal sepsis being a cause of general diabetes and did not find much improvement in most cases after removal of such a septic focus. Mr. R. J. Oliver pointed out the lack of complete knowledge of the paths of infection throughout the body. Dr. Lawrie considered that a septic focus must be treated and that it was the most important part of the treatment.

### KENT BRANCH DOVER DIVISION

A meeting of the Dover Division was held at the Lord Warden Hotel, Dover, on November 24th. Mr A. L. Morro of the Alexandra Orthopaedic Hospital, Swanley, opened a discussion on the treatment in general practice of some common deformities. Reference was made to the county orthopaedic scheme. Many members took part in the interesting discussion which followed. The meeting which was preceded by a dinner was a great success.

### METROPOLITAN COLTIES BRANCH LAMBETH AND SOUTHWARK DIVISION

A very interesting meeting of the Lambeth and Southwark Division was held at the Lambeth Carlton Club, Goldharbour Lane, S.W. 9, on November 22nd when Dr. P. G. W. Sebby was in the chair. Dr. E. H. Jebbs presented his report as representative at the Annual Representative Meeting held in Edinburgh, 1927. The report was detailed and many questions were asked. A vote of thanks was accorded to him for his excellent report. Mr. E. P. B. Ockman delivered a carefully prepared and instructive paper on common disabilities of the foot and ankle.

### SHEREPSHIRE AND MID-WALES BRANCH

The fifty-eighth annual general meeting of the Shropshire and Mid-Wales Branch was held at the Salop Infirmary on October 20th. Some thirty members were present. The following officers were elected:

President: Dr. W. H. Lewis. Representative in Representative E. W. Dr. Macfarlane. Honorary Secretary: Dr. F. D. Dwyer.

Dr. G. C. Asker, Deputy Medical Secretary of the Association, was present and gave valuable advice on various matters.

Dr. Lewis delivered his presidential address on "Notes on the development of English sanitary law. Starting from the thirteenth century, he described the earlier measures of public health and traced their development up to 1875 when the Public Health Act was passed. The subject of the address aroused much interest and the president was accorded a very hearty vote of thanks.

### Annual Dinner

The company subsequently adjourned in the afternoon to the Shrewsbury for the annual dinner being joined by several other members and guests. Seventy-one in all. Mr. Norton, chairman of the Montgomeryshire County Council, was one of the principal guests and proposed the toast of the British Medical Association in a very happy speech. Dr. G. C. Asker responded very ably in a speech interspersed with witty remarks which drew roars of laughter. The President, in responding to the toast of his own health, pointed out that he was the first member of Montgomeryshire to hold the office and hoped he had created a precedent thereby. There was a general consensus of opinion that the dinner was one of the most successful and enjoyable the Branch had held.

### SOUTHERN BRANCH WINCHESTER DIVISION

A meeting of the Winchester Division was held at the Royal Hants County Hospital on November 16th. There was a large attendance. It was decided that all matters in connection with the Executive Committee for 1928 be referred to the Executive Committee to carry through on similar lines in 1927. A hearty vote of thanks was accorded to Mr. Lockhart Stephens on his resignation of the post of honorary secretary to the Southern Branch for his past services and work for the Division and the congratulations of his fellow members were conveyed to Dr. C. Edwards on his election as mayor of Andover. A communication from the Executive Committee approving of the principles of the plan of the Association's pamphlet "Contributory Schemes for Hospital Benefit" was received and accepted and the Executive Committee was instructed to report further on local arrangements in Winchester.

Mr. B. H. Proctor, of the Royal Hants County Hospital, could not attend a very informative paper on the treatment of otitis media in children. Mr. Pidcock stressed the importance of prophylaxis by more careful and thorough treatment of all infections of the nasopharyngeal region and pleaded for greater insistence on public and other swimming baths. He then dealt in detail with the acute case strongly advocating early treatment when the case was seen before rupture of the paranasal sinuses. A description of the main points in connection with treatment of the chronic case and its common sequelae followed and on the conclusion of the paper the speaker was very heartily thanked for his valuable contribution.

A good dinner ensued in which many of the present took part.

## National Insurance

### LONDON PANEL COMMITTEE DINNER

#### *Presentation to Dr and Mrs Cardale*

THE eighth annual dinner and dance of the London Panel Committee, which took place at the New Princes Restaurant on December 1st, was made the occasion of a presentation to Dr H J Cardale, chairman of the committee, and Mrs Cardale.

The presentation was made by Dr E A GREGG, who spoke as the representative of all Dr Cardale's colleagues on the Panel Committee and of a very large number of practitioners outside that body. It was no mere matter of form, he said, that Dr Cardale should have been re-elected chairman of the Panel Committee year after year; it was a continuing expression of the esteem and affection of the members of the committee. The amount of work which Dr Cardale had done on behalf of the profession was such as few men could possibly undertake, for besides acting as chairman of the Panel Committee, which involved attendance at many meetings of subcommittees, he was a zealous representative of London practitioners on the Insurance Committee for the county and on the Insurance Acts Committee. Although Dr Cardale was in the habit of expressing his views with vigour, he had the grace of never being afraid to admit a mistake, and for what he was, as well as for what he had done, his colleagues held him in high honour.

Dr Gregg then presented to Dr and Mrs Cardale, on behalf of the committee, a silver tea and coffee service, and to each of them a cheque.

Dr CARDALE, with much feeling, expressed his appreciation of what he described as a most generous gift, and his pleasure that it should have been made by his old friend and colleague, the vice chairman of the committee, Dr Gregg. Another source of satisfaction to him was that his wife should be associated in the presentation, because without her co-operation it would not have been possible for him to have devoted so much time to public work on behalf of the profession. He could not feel that he deserved thanks for what he had done, but rather that he should thank his colleagues for having given him the opportunity to have so absorbing an interest. As for the Panel Committee, he believed that it might be of even yet greater influence. The more efficient the service under the National Insurance Act the greater the credit and honour to the medical profession. The Act was by no means perfect, but he looked forward to the time when under the Act there would be provided as perfect a medical service as could be found the world over.

Dr J SMITH WHITTAKER, in proposing the toast of "The London Panel Committee," said that so far as he was aware there was nothing analogous to the committee in the sickness insurance system of any other country. When he himself entered medical practice thirty-five years ago the town in which he practised, in common with many other towns, was much disturbed by what was then known as 'the battle of the clubs'. Practitioners were defeated in that fight because there was then no national professional organization capable of supporting the efforts of local bodies. The British Medical Association had been approached, however, and one of the most important questions, when reorganization took place in 1902, was with regard to contract practice. During the ensuing nine years the question was so thoroughly thrashed out, and the organization so well built up, that within one month from the introduction of the Insurance Bill the British Medical Association was able to formulate the desirable amendments, and these received the practically unanimous support of the profession, ultimately passing into law.

Dr A F HEALD, treasurer of the committee, responded to the toast, and expressed some regret that while the Panel Committee did such excellent work it should receive so little encouragement from a very large proportion of the insurance practitioners in London. A rather greater interest in its doings on the part of those for whom it worked would be very acceptable.

The dinner concluded with a dance.

### LONDON INSURANCE COMMITTEE

#### *Appeals to the Ministry by Insured Persons*

At the meeting of the London Insurance Committee on November 24th it was reported that two insured persons whose complaints against their practitioners had been dismissed by the committee, had appealed to the Ministry and that in one case the Ministry had found for the appellant and in the other for the respondent practitioner. The first case was one which had been before the committee on more than one occasion. The insured person, who was a branch secretary of an approved society, complained that his practitioner whom he went to see for bronchial trouble, made only a cursory examination in particular that he carried out a full scope examination through his clothing placing the

instrument over the lapel of his muer coat his overcoat being unbuttoned. He had offered to remove his clothing, but the practitioner said, "I have not time for that. To examine patients stripped would be the work of three doctors and I should never get done." The decision of the committee, after some amendments had been lost, was that the practitioner had not failed to comply with the terms of service. Against this decision the insured person appealed to the Ministry, and both parties were represented by counsel. The Minister's decision, after receiving the report of his officers, was that the appeal of the insured person must be allowed, the respondent to pay all the costs of the appellant. The final passage in the report made by the officers of the Ministry was as follows:

"It would be widely outside our province to attempt to formulate any general rule as to the methods which a medical practitioner should adopt in examining his patients. We are concerned only with the evidence given in this particular case, and on that evidence we feel bound to conclude:

"1 That in this case auscultation of the chest was necessary for the purpose of ascertaining the condition of the lungs the respondent stated that this was the purpose of his auscultation.

"2 That auscultation through the layers of clothing worn by the appellant when examined could not enable the respondent to ascertain the condition of the lungs.

"We therefore find the respondent did not render the proper and necessary medical services which he is required to render under Article 8 (1) of the terms of service for insurance practitioners."

In the other case the Ministry found that there had been no breach of the terms of service, and the Minister dismissed the appeal, making no order as to costs, but suggesting that, in the special circumstances of the case, the committee might reimburse the practitioner. It appeared that the accusation had arisen out of a misunderstanding due to the deafness of the insured person. It was also stated that the insured person, in an interview with the clerk of the committee, had expressed his willingness to withdraw the complaint, but the Medical Services Subcommittee proceeded with it, and found that there was no foundation for the allegation against the practitioner, whereupon the appellant refused to accept without question a finding that he had made a baseless allegation.

## Correspondence.

### *Ophthalmic Clinics for Insured Persons*

SIR,—If the approved societies have the best interests of their members at heart they will not be in favour of establishing ophthalmic clinics. What the members want is to be able to consult ophthalmic surgeons as if they were private patients, and to come at an hour which is most convenient for them. Among elderly patients this is often in the middle of the day.

Providing that all work is done by ophthalmic surgeons, I think we should be willing to accept a fee of 10s 6d per patient. If this remuneration is outside the menus of the societies—though I hardly think it is—I believe the members applying for the benefit would be willing to contribute the deficiency in order to have the services of ophthalmic surgeons.

A short time ago an optician told me that in looking over his books for the past quarter he found that all members who came to him had purchased spectacles at sums up to £1 12s 6d in excess of the amount allowed by the societies. Where members are willing to make these additional payments for optical appliances they would certainly be willing to pay say, 2s 6d, if they could be treated by ophthalmic surgeons—I am etc,

Watford, Nov. 26th

J E PRESTON

SIR,—In this matter two arguments alone will hold that of economy and that of efficiency.

(a) Applying these to the present scheme we must first have a full statement of facts before we decide either that it be restricted or be maintained at lower fees. The former—restriction—might well be tried, without any real loss of efficiency, before embarking on costly clinic equipment. I think all working the ophthalmic benefit scheme will admit that many cases are "slight." Many patients tell us they did not want to see us they only wanted reading glasses. In such a pathological condition is a rarity. But the panel doctor cannot conscientiously refer such to an optician. His choice, therefore, should be with the patient. This would, in my opinion, restrict the service by from 25 to 40 per cent. I think most ophthalmic surgeons would agree to such a policy of restriction, given assurance that the right of the patient to claim specialist service was conserved. No complaint, I understand, is made as to the efficiency of present arrangements.

(b) That of clinics is doubtful. Hospital surgeon are, in the provinces at any rate, working the scheme so that treatment in cases demanding it, is continuous. The patient is at ease

post on Tuesday morning

## APPOINTMENTS

BROWN, W. Russell M.D., Assistant Physician to the London Hospital  
 BROOKS, Ralph M.B., B.S. Lond., F.R.C.S. Eng., Honorary Orthopaedic Surgeon to the Royal West Sussex Hospital, Chichester  
 SCREFFEL, Jonathan A. M.R.C.S., L.R.C.P., Assistant Medical Officer, West Middlesex Hospital, Isleworth  
 TOD, Mrs. Marg, Surgeon to the

Honorary Assistant children

ILDFFA—Consulting

IG M.D., F.R.O.P.

, M.D., F.R.C.S.

ney A. Owen M.D.,

M. Handfield Jones

F.R.C.S. Assistant

R. C. Lightwood,

anet Aitken M.D.,

Ch, F.R.C.S. For,

R.C.S. Ophthalmic

Lewes N. Gibbs

F. Travers M.D. Miss

hipps, M.D., B.Ch. Medical

I. F. Carter Braine M.D.

F.R.C.S., D.P.H. Audiologist H. M. Worth M.R.C.S. L.R.C.P.

DMRE Dental Surgeon L. Russell Marsh, L.D.S. Pathologist

Robert Donaldson, M.D., I.R.C.S. D.P.H.

CARRINGTON PRACTICE SURGEONS—W. Combe M.B. Ch.B. Glas., for the

Snodland District, Kent, D. W. Kirk, M.B., Ch.B. Aberd., for the Deal

District, Kent

## DIARY OF SOCIETIES AND LECTURES.

## ROYAL SOCIETY OF MEDICINE

War Section—Mon., 5 p.m., Wing Commander T. S. Rippon, R.A.F.

The Danger of Insulin

Section of Therapeutics—Tues., 5 p.m., Discussion: The Action of

Synthalin, to be opened by Dr. H. H. Dale and Dr. George Graham

followed by Dr. R. D. Lawrence and Professor H. Macleod

ies, 8.30 p.m., Dr. William Culpin: The Minor

and Industrial Importance

0 p.m., Reception by the President and Lady

Berry 9.30 p.m., Sir Alexander Houston will give an address entitled

The Romance of London's Water Supply, to be followed by demon

strations. Exhibits will be on view. Music and light refreshments

, 4 p.m., Cases 5 p.m. Demonstration

possibilities of Colour Cinematography

p.m., Specimens Mr. Burt White: An

of Puerperal Sepsis

—Fri., 8.30 p.m., Mr. E. W. Twining: On

acial reference to mediastino-interlobar

effusion), Dr. C. G. Teall: A Radiological Study of the Bone Changes

in Renal Infantile Illness

CHURCHMAN CLINICAL SOCIETY, Hotel Rembrandt, Thurlow Place, S.W.—Tues.

8.30 p.m. Discussion: Orthopaedics in General Practice to be opened

by Mr. I. Jenner Verall, Mr. A. G. Timbrell Fisher and Mr. S. L.

Higgs: the meeting will be preceded by dinner at 7.30 p.m.

MEDICAL SOCIETY OF LONDON, 11 Chandos Street, W.1—Mon. 8.30 p.m.,

Discussion: Insomnia. To be introduced by Dr. Eustace M. Calender,

followed by Dr. Gordon Holmes and Sir Maurice Craig

## POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE, 1st GRADUATE MEDICAL ASSOCIATION—Lecture,

Street W. Mon. 5 p.m. Practical hints

Accommodation and Refraction of the Eye

e Skin, Blackfriars Road, S.E. Special

Courses afternoons only. Tues., Special Demonstration: Infants Hospital,

Vincent Square S.W.1. Afternoon Course: West End Hospital for

Nervous Diseases 73 Welbeck Street W.1. Last week of Postgraduate

Course in Neurology every afternoon at 5 p.m. All information,

syllabuses, and tickets (proportionate rates) from the Secretary

Fellowship of Medicine 1, Wimpole Street W.1

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Crays Inn Road,

W.O.1—Wed., 4 p.m., Consultations and Demonstrations of Interesting

Cases. Fri., 4 p.m., Pre-crebrellar Cysts

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester Square,

W.C.2—Tues., 5 p.m., Erythematous squamous Eruptions. Thurs., 5 p.m.,

Pathology Demonstration

NORTH EAST LONDON POST GRADUATE COLLEGE, Prince of Wales General

Hospital, Tottenham, N.15—Mon. 2 p.m., Special Demonstration of

Medical Cases 2.30 to 5 p.m. Medical Surgical and Gynaecological

Clinics Operations Tues., 2.30 to 5 p.m. Medical Surgical Throat,

Nose and Ear Clinics, Operations Wed. 2.30 to 5 p.m., Medical Skin,

and Eye Clinics Operations Thurs., 11.30 a.m. Dental Clinics 2.30 to

5 p.m., Medical Surgical and Ear, Nose and Throat Clinics Opera

tions Fri. 10.30 a.m. Throat, Nose and Ear Clinics, 2 p.m. Special

Demonstration of Surgical Cases 2.30 to 5 p.m., Surgical, Medical and

Children's Diseases Clinics Operations

WEST LONDON HOSPITAL POST GRADUATE 16—Mon.

10 a.m. to 1 p.m. Genito-urinary

Wards 2 p.m. Surgical Wards,

Tues. 10 a.m. to 1 p.m. Medical

Diseases 2 p.m. Medical Wards Throat, Nose and Ear Department

Wed. 10 a.m. to 1 p.m. Children's Medical Outpatients, Medical

Wards Demonstration in

Eye Department 4.30 p.m.

10 a.m. to 1 p.m. Neurology

2 p.m. Eye and Genito-urinary

4.30 p.m. Special Lecture

1 p.m. Gynaecological Operat

ments 2 p.m. Throat, Nose

1 p.m. Bacterial Therapy Department Children's Medical Department

Daily Operations Medical and Surgical Outpatients at 2 p.m.

ROYAL INSTITUTE OF PUBLIC HEALTH 37 Russell Square W.C.1—Wed.

4 p.m. The Changed Conditions of Quarantine

ROYAL NORTHAN HOSPITAL Holloway, N.—Tues. 3.15 p.m. A thma

SOUTH WEST LONDON POST GRADUATE ASSOCIATION, St. James's Hospital

Quek Road Balham S.W.12—Wed., 4 p.m., Clinical Demonstration

of Fracture Cases

GLASGOW POST GRADUATE MEDICAL ASSOCIATION—At Royal Infirmary Wed.

4.15 p.m. Surgical Cases

JAMES MCKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews—Tues.,

4 p.m. The Dissemination of Malignant Disease with Special Reference

to the Abdomen

MANCHESTER ROYAL INFIRMARY—Tues., 4.15 p.m., Surgical Disinfection Tea

at 3.45 p.m.

SHEFFIELD UNIVERSITY POST GRADUATE CLINICS—At Royal Hospital Fri.,

3.30 p.m., Radiology in Diagnosis

## British Medical Association.

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
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## Diary of the Association

## DECEMBER

9 Fri London Maternity and Child Welfare Subcommittee, 2.15 p.m.

13 Tues English Division Annual Dinner Cockermouth

London Asylum Medical Officers Subcommittee, 2.30 p.m.

Bradford Division Clinical Meeting

Cambridge Division Clinical Meeting, St. Giles's Hospital

Cambridge 3.30 p.m.

Manchester Division Skin Hospital, Quay Street, Manchester

9 p.m.

St. Pancras Division B.M.A. House Tavistock Square, W.C.1

Dr. E. Gordon Fleming, on Chiropractic and Common Sen

9 p.m.

14 Wed London Council 10 a.m.

Blyth Division Buffalo Hotel Blyth Professor Hume on

Diabetes Smoking Concert 8 p.m.

Croydon Division Croydon General Hospital Lecture Demon

stration by Mr. A. H. Todd on Orthopaedic Cases 4 p.m.

Kensington Division Kensington Palace Mansions 11.1

De Vere Gardens, W.8 Sir William Wilcock on Diabetes

8.45 p.m.

West Dorset Division Westman Hospital Sherborne Dr. J.

Gerrard Pearce on the Problem of the Neurotic Abdominal

Case 2.45 p.m.

Lambeth and Southwark Division Lambeth Carlton Club

Goldharbour Lane, S.W.9 Mr. R. Christie Brown on Men

strual Haemorrhage 8 p.m.

Norwich Division Medical Library 8.45 p.m.

Nuneaton and Tamworth Division Nuneaton General Hospital

Dr. Bradford on Radiology of the Alimentary Canal, 3.30 p.m.

15 Thurs Cardiff Division Engineers Institute 1.15 p.m. Cardiff

B.M.A. Lecture by Professor W. E. Dixon on the Trend of

Thought in Modern Therapy, 8.30 p.m. Supper after Lectur

at Park Hotel Cardiff

Five Branches Clinical Meeting, Maternity Home, Townend

Gravelly, Kirkcaldy Mr. J. W. Struthers on Duodenal

Ulcer 3.30 p.m.

Isle of Thorns Division Annual Dinner, Albion Hotel, Broad

stairs 7.30 p.m.

Jersey Division General Hospital Mr. C. F. Luthbert on

From Old to New 8.30 p.m.

16 Fri London Medical Officers of Public Schools Subcommittee

2.30 p.m.

20 Tues London Lunacy Law and Administration Committee 2.30 p.m.

Croydon Division Croydon General Hospital Mr. Gwaine

Williams on Cancer, 8.30 p.m.

Lewisburg Division Town Hall Cardiff S.E.6 Dr. R. A.

Jordan on Pulmonary Tuberculosis 8.45 p.m.

21 Wed Willesden Division Willesden General Hospital Harcourt

Road N.W. Dr. G. I. Buchanan on Public Education 1.1

Health, 9 p.m.

## JANUARY

5 Thurs Guildford Division Royal Surrey County Hospital Guildford

Sir John Collic on Where Law and Medicine Meet 4 p.m.

6 Fri Holland Division Spalding B.M.A. Lecture by Sir Humphry

Rollleston, Bart., on the Medical Aspects of Hysteria, 3

3 p.m.

19 Thurs London Journal Committee 2.30 p.m.

25 Wed Lambeth and Southwark Division Lambeth Carlton Cl

Goldharbour Lane S.W.9 Dr. A. G. Thompson on

Schick Test

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s. which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

## BIRTHS

DUFFIN—On November 30th to Anne T. Duffin M.B. wife of John D. T.

M.B. of 129 Grove Green Road, Extonstone, a son

PARRY—On November 23rd at Pall Mall North W.1, to Dr. Joan Parry

wife of Dr. R. H. Parry, a son

## MARRIAGES

CLAY—BLIST—At Cairo, Egypt, on November 28th Arundel Spencer Clay

C.L. Public Works Department, Baghdad, Iraq and Margaret L.

Blist B.Sc. M.B. Ch.B. Dundee

MONRO—CAMERON—On November 23rd 1927 at St. James's Church

Spanish Place W.1 Hector MacDonald Monro M.B. Ch.B. F.R.C.S.

youngest son of Mr. and Mrs. C. J. Monro of 141, 1

North St. Zealand to Miss Catherine Cameron, youngest daughter of Mr. and

Mrs. P. Cameron of A. Road, Kent and to Miss Mary Ann

ONP—WILLIAMS—On December 1st at Holy Trinity Church, Bath, the Rev. William

Williams (uncle of the bride) assisted by the Rev. Mr. J. H. H.

Henry vicar Dr. Hugh Campbell, youngest son of Mrs. Orr, Bath

Hamilton and Dr. L. L. Anne, eldest daughter of Dr. A. J. W.

Williams, Troedy Reu, Swanwick, At Home 2, Summerfield W.

Hampton January 11th and 12th

## BRITISH MEDICAL JOURNAL.

LONDON SATURDAY DECEMBER 17TH 1927

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## British Medical Association

## CURRENT NOTES

## Some Committee Work at Headquarters

On December 8th the committee elected by the Spas Practitioners' Group held its first meeting, and appointed Dr E. C. Thomson of Bath (President of the Association in 1925) chairman for the session. The committee is submitting to the Council through the Insurance Acts Committee a series of recommendations to cover the whole question of provision of spa treatment for insured persons at the several spas in the event of this form of treatment being adopted as an additional benefit under the Act by the approved societies.

The Maternity and Child Welfare Subcommittee on December 9th discussed with a deputation from the Association of Infant Welfare and Maternity Centres the policy of the formation of infant welfare centres for the benefit of mothers who are in a position to pay for such a service. A subcommittee was appointed consisting of the chairman (Dr William Pitterson, Wilkesdon), Dr L. R. Kothergill, Dr Rose Mollon, Dr Christine Murrell and Dr W. Ranton, to draft a full report on the subject and to formulate recommendations for submission to the next meeting of the subcommittee. The subcommittee also has under consideration the effect of the adoption of contributory schemes by voluntary hospitals upon the policy of education authorities in providing for the hospital treatment of school children found on inspection to be defective. This difficult problem is receiving careful consideration from both the Hospitals Committee and the Medico-Political Committee.

## Annual Handbook of the Association 1927-28

The Annual Handbook of the British Medical Association for 1927-28 is now available. Copies can be had by members gratis and post free, on application to the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1. Primarily intended as a book of reference for honorary secretaries and other workers of the Association, the Handbook should prove of interest and assistance to all members. The new edition is completely revised. It contains the decisions of the Representative Body of the Association on matters of policy, particularly about medical charities; information as to the constitution of the Association, and as to the British Medical Journal (the circulation of which is now 36,850 copies weekly) and other publications of the Association; lists of the members of the Council and central committees, officers and officials of the Association; and much other information regarding the work of the Association. To non-members the book is on sale at 3s. 6d. (post free 3s. 9d.).

## Meetings of Branches and Divisions

## DUNDEE BRANCH

A meeting of the Dundee Branch was held in the Medical School University College, Dundee on November 23rd when Dr A. H. Macklin gave a lecture on a Polar expedition with special reference to the medical aspect from his experiences in the *Endurance* and *Quest* expeditions to the Antarctic. The need for careful preparation was emphasized in the prevention of curves, the measures used were (1) dietetic, (2) elimination of toxins. Under the first heading came the use of Mediterranean sea water with the addition of 5 per cent alcohol to prevent freezing, dried and condensed milk, peas and lentils for germinating and the use of locally killed meat. The lodging quarters were described in detail. In the elimination of toxins autogenous sources were ruled out by careful medical selection of personnel and by rest on a daily movement of the bowel. With regard to frost bite local prevention consisted in placing and maintaining an air space between the skin and cold outer air by means of suitable clothing. As initial treatment gentle heat was used, this was usually applied by the patient's own body, or in the case of the feet by the body of one other person; sometimes relays were required, rubbing the affected part with snow was contraindicated. In the production of snow blindness it was found that dull day were the most dangerous; this was not entirely due to the continued accommodation necessary, but by lack of contrast in the surrounding since now goggles which did not give increased definition in diffused light prevented the onset. As to alcohol an occasional tot did no harm but the general rule was abstinence. The wanderings of the *Endurance* expedition were followed from the wreck of the ship to the eventual rescue from Elephant Island. The common fauna of the Antarctic were described. The lecture was illustrated by excellent lantern slides.

On the proposal of the president Dr George C. Burgess a vote of thanks was accorded to Dr Macklin for his very interesting and enjoyable lecture.

## NORTH OF ENGLAND BRANCH COVENT DIVISION

There was a good attendance of members of the Covent Division at the first combined general and social meeting of the winter season held in the Railway Hotel, Coventry on November 23rd.

After going through the business agenda and hearing the report of the representative on the work done at the Annual Representative Meeting which led to some discussion, the members adjourned to the dining room where they entertained Mr J. S. Arde, ophthalmic surgeon, Newcastle-on-Tyne to a complimentary supper when Dr Morrison (Catchgate) took the chair.

Afterward Mr Arde gave a most instructive and practical lecture on some commoner diseases of the eye and their treatment in which he dealt in a concise and helpful way with the external disease of the eye met with in general practice and the methods of treatment adopted in the ophthalmic department of the Newcastle-on-Tyne Royal Victoria Infirmary. The address was well received and the vote of thanks to the lecturer proposed by Dr Morrison (Blackhill) was carried with acclamation.

## NORTH OF ENGLAND BRANCH DARLINGTON DIVISION

The annual dinner of the Darlington Division was held at the Queen's Hall, Darlington on December 1st. The chair was occupied by the president Dr P. Marshall and a company of forty-two persons. The toasts were: The Protection of Medicine, The General and The Ladies and the toast of the local verger was amusing and some music was played. In the course of the evening the annual golf trophy was presented by the president to the



third time in succession to Dr Hug. The musical side of the programme was supplied by Drs Dawson, Kirk and Forsyth and it was midnight before the happy company dispersed. The bill of fare and the toast list were enhanced with a variety of apt quotations from English classics, old songs and other sources.

**OXFORD AND READING BRANCH WINDSOR DIVISION**  
A MEETING of the Windsor Division was held on December 2nd, when Dr J. J. PATERSON was in the chair. Dr ELIZABETH SLOAN CHESLER moved the following resolution:

In the opinion of this meeting the establishment of periodical medical and dental examinations of all persons insured under the national insurance laws is urgently called for as in economic position, having regard to the return so to be obtained in health and productive efficiency, every such insured person when accepted as a patient on a doctor's panel shall be by that doctor medically examined and the result of that examination placed on record. Preliminary examination should apply also to dental examination when that additional benefit is included and available under the national insurance laws.

Dr Sloan Chesler drew attention to the greatly increased expectation of life found among those insured with the Metropolitan Life Assurance Company in America who had submitted to the "annual overhaul." She pointed out that under the present panel system doctors were not able to examine their patients when they were supposed to be in normal health, so that many cases of disease were not detected until too late. She showed that any-thing that tended to lower the standard of accuracy in a doctor's work lowered his or her personal professional moral. The sum of the panel doctor must be the good health of all his patients and not merely to treat them when ill.

Dr PATERSON summed up the resolution as "school medical inspection for adults." He referred to the enormous break in medical care between the ages of 14 and 16, when both boys and girls needed it, and suggested that increased frequency of examination might well begin by requiring panel doctors to examine young people, at a special fee, when they came under the national health insurance at the age of 16. This examination would be most easily performed at some central place, such as the local general hospital. The inspection might be repeated between the ages of 21 and 25. Dr PATERSON added that the general improvement of health had falsified the calculations of the insurance societies, who were all richer than they expected to be, and the fee for special examination could be well afforded.

Dr ELIZABETH CHESLER said that for the first six months no sick benefit could be drawn by those aged 16, and the societies could well afford to pay a fee out of the money thus saved. She emphasized the great advantage of an examination which gave the panel practitioner a knowledge of each patient in normal health, it was unsatisfactory to treat persons seen for the first time only when very ill. Dr LLOYD and Mr SERRIOT also joined in the discussion.

It was unanimously decided to submit the resolution to the Representative Body of the British Medical Association.

#### PUNJAB BRANCH

The first meeting of the session of the Punjab Branch was held on November 2nd under the chairmanship of Colonel H. M. MACLEZIE when Dr PREY NATH SUR read a paper on the recent advances in the diagnosis and treatment of pulmonary tuberculosis. The lecture was illustrated by pictures shown with the aid of a lantern. Dr Suri dealing with recent work in diagnosis, and on the importance of radiograms, and especially the use of lipiodol. He also mentioned 'vital capacity' as an important aid in diagnosis. Turning to the treatment side, although best results had been obtained by controlled auto-inoculation and systematic medical supervision, individualization of treatment was an important factor in the use of tuberculin and phototherapy. These were potent aids in treatment but with lack of care in the selection of cases might do much harm. Dr Suri also, in passing, referred to Spahlinger's treatment and the use of krysolan and sanocrysin. In cases in which purely medical measures had failed, artificial pneumothorax, thoracoplasty and phrenicotomy were important aids in prolonging life. "The message of the twentieth century," he concluded, "was a message of hope, not only for the early but even for the advanced case."

At the conclusion of the paper a discussion was opened by Colonel MACLEZIE in which Colonel RAI, Major HARPER NELSON, Major MIRAJKER, Dr MAHARAJ KISHAN, and Dr V. NATH took part.

#### SOUTHERY BRANCH PORTSMOUTH DIVISION

At the Queen's Hall, Southsea, on December 8th a most successful meeting was held to which the local clergy were invited as private guests of the members. Over a hundred were present, of whom seventy-eight sat down to supper. Dr F. M. R. WALSHE, physician in charge of the neurological department University College Hospital, gave an address on some aspects of the faith cure, ancient and modern. The discussion was opened by the Bishop of Portsmouth. He was followed by many clergymen of various denominations who gave their views briefly. The debate excited so much interest that owing to the late hour the meeting had to be closed before all those interested in the subject could take part in the discussion.

The Division will be pleased to see at their meetings any members of other Divisions. A list of fixtures can be obtained from the honorary secretary, Dr F. C. B. Gittings, 15 Brading Avenue, Southsea. The annual dance in aid of medical charities is to take place on January 10th at the Savoy Café.

### Association Notices.

#### BRANCH AND DIVISION MEETINGS TO BE HELD

**PIPE BRANCH**—The Council of the Pipe Branch is arranging a complimentary dinner to Dr C. L. Douglas, to be held in the Station Hotel, Kinkaidy, on Thursday, December 22nd, at 6.15 p.m., tickets 12s 6d each. It is felt that the many services rendered by Dr Douglas to the Branch and the profession generally should be recognized on the occasion of his retirement from practice. Members of the Branch wishing to bring friends may do so on condition to the secretary. Members proposing to be present at the dinner are asked to notify Dr J. M. Johnstone, joint honorary secretary, Seaview House, Leven, by December 17th.

**METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION**—A meeting of the Lewisham Division will be held at the Town Hall, Catford, S.E.6, on Tuesday, December 20th, at 8.45 p.m. Dr Roso Jordan will read a paper on the differential diagnosis of pulmonary tuberculosis.

**METROPOLITAN COUNTIES BRANCH STRATFORD DIVISION**—A meeting of the Stratford Division will be held in the Board Room, Educational Offices, The Grove, Stratford, on Tuesday, December 20th, at 9.15 p.m., when Mr L. Carnae Rivett, surgeon to the Chelsea Hospital for Women and Queen Charlotte's Hospital, will give a lecture on pyrexia during the puerperium.

**METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION**—A meeting of the Willesden Division will be held at the Willesden General Hospital, Harlesden Road, N.W., on Wednesday, December 21st, at 9 p.m. A paper on public education in health will be read by Dr G. F. Buchan, medical officer of health, Willesden Urban District, and Dr N. R. Beattie, assistant medical officer of health.

**MIDLAND BRANCH HOLLAND DIVISION**—A meeting of the Holland Division will be held at Spalding on Friday, January 6th, 1928, at 3 p.m. Sir Humphry Rolleston Bt., Regius Professor of Physics in the University of Cambridge, will give a British Medical Association Lecture on the medical aspects of idiosyncrasies.

**NORTH OF ENGLAND BRANCH BISHOP AUCLAND DIVISION**—The next meeting of the Bishop Auckland Division will be held in the Cottage Hospital, Bishop Auckland, to-day (Friday, December 16th), at 8 p.m. Agenda: Correspondence, monthly circular, arrangements for annual dinner.

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—The Tyneside Division has arranged to hold a dinner on January 13th, 1928. Sir Robert Bolan has promised to attend, and the members of Parliament for Tyneside, Major West Russell, has been invited.

**SURREY BRANCH GUILDFORD DIVISION**—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford, on Thursday, January 5th, 1928, at 4 p.m. Sir John Colthe will give an address on "Where law and medicine meet." Tea served at 3.45 p.m.

### THE DENTAL BOARD

At the opening of the thirteenth session of the Dental Board, on November 8th, Sir FRANCIS DYLL ACLAND, Bt., the chairman, delivered an address in which he described the work of the Board during the past year. Up to now just over fifty students, whom the Board had assisted through their curriculum had qualified, and all but six or seven of them were already in practice. He also laid stress on the popular education in dental hygiene which the Board was disseminating. An experiment made in displaying dental posters on an underground railway in London had met with very great success, and similar work was being extended both in London and the provinces. An intensive campaign had been carried out with the help of the medical authorities in the county of Durham. The Board continued to bring home to various individuals the pains and penalties of practicing dentistry without registration. He had been rather surprised to find how numerous were the cases in which the Board had to take action. He was aware that the profession was greatly interested in the question of clinics. In this, as in other matters, the Board decided on the particular questions which might be brought before it, and would be ready to give the matter very careful consideration if either a definite charge was formulated against any dentist of doing, in connexion with a clinic, anything which was undesirable, or if the Board was asked to assist in the establishment of any clinic on lines to which no exception could be taken.

The Board considered two cases in which advertising was charged against dentists. Both cases were postponed in order to give the dentists concerned an opportunity of modifying their announcements on their premises or elsewhere, so as to comply with the Board's requirements. One dentist, who at the last session of the Board was charged with canvassing, and whose name was recommended by the Board for erasure from the Register, came again before the Board. The General Medical Council, to which the Board had referred the case, had, after hearing the respondent expressed the opinion that there should be further inquiry. The Board now made further inquiry, with the respondent appearing before it—he did not appear when the case was first considered—and came to the conclusion that the facts alleged against him had not been proved, and so dismissed the case.



## TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

To be Lieutenants J D Robertson and R Rutherford

## TERRITORIAL ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Lieutenant P M Speed from the active list to be Lieutenant

## COLONIAL MEDICAL SERVICES

Major G J Kane, DSO, to be Director of Medical and Sanitary Services Uganda. Dr P P Martin to be Medical Officer Nyasaland. Dr L U Leembruggen to be Provincial Surgeon Ceylon. Dr S Subramaniam to be Provincial Surgeon, Ceylon.

The following appointments have been made by the Secretary of State for the Colonies during November: Miss H M Russell M.B. Ch.B. M.R.C.P., D.T.M. and H. Assistant Pathologist Medical Department Cold Coast. G Shuter M.B. Ch.B. Medical Officer West African Medical Staff. I R W Snodgrass R.I.P. and S. Medical Officer Fiji. Blumheim M.B. Ch.B. Medical Officer Straits Settlements. A L Knowlton M.B. Ch.B. Colonial Hospital St Vincent Windward Islands. W I R Jones M.R.C.S. L.R.C.P. Assistant Colonial Surgeon Falkland Islands. Captain L A Celestin M.R.C.S. L.R.C.P., Second Resident Surgeon Civil Hospital Port Louis Mauritius. A I H Stewart M.R.C.S. L.R.C.P. Medical Officer District 2 (North) St Vincent. Windward Islands. J W Murdoch M.B. Ch.B., Second Assistant Medical Superintendent Central Medical Hospital, Federated Malay States. Miss M C Cairncross M.B. Ch.B. D.P.H. Local Medical Officer Federated Malay States. I. Wildlife I.M.S.S.A., Medical Officer, Gilbert and Ellice Islands Colony, Western Pacific.

## VACANCIES

ARCYLL AND BUTE DISTRICT MENTAL HOSPITAL, Loughalthead—Assistant Medical Officer (unmarried) Salary £300.  
BOLTON INFIRMARY AND DISPENSARY—House Surgeon (female) Salary £150 per annum.  
BRIGHTON NEW SUSSEX HOSPITAL FOR WOMEN—Radiologist (female) Honorarium £100 per annum.  
BURY INFIRMARY—Third House Surgeon (male) Salary at the rate of £150 per annum.  
CARDIFF ROYAL INFIRMARY—Honorary Surgeon to the Ear, Nose, and Throat Department.  
CHILSTON ROYAL INFIRMARY—Second Honorary Assistant Physician.  
COVENTRY AND WARWICKSHIRE HOSPITAL—Resident House Surgeon (male) Salary £125 per annum.  
DERBYSHIRE ROYAL INFIRMARY, Derby—House Surgeon (male) for General Surgical and Ear, Throat and Nose Department Salary £150 per annum.  
DURHAM COUNTY COUNCIL—Medical Superintendent of the Seaham Hall Sanatorium Salary at the rate of £600 per annum.  
ELDON MENTAL HOSPITAL, Exmouth—Junior Assistant Medical Officer (male unmarried) Salary £300 per annum, rising to £350.  
EXETER WORKHOUSE HOSPITAL—Medical Superintendent.  
HULL ROYAL INFIRMARY—Resident House Governor Salary £500 per annum.  
LIVERPOOL PARISH COUNCIL—Medical Officer and Vaccinator for the North Division and the Local Authority of the Borough of Ince-in-Chernab Joint salary £120 per annum.  
IPSWICH LINT SUFFOLK AND IPSWICH HOSPITAL—(1) House Surgeon (2) Casualty Officer (male) Salary £100 per annum each.  
KING'S COLLEGE HOSPITAL Denmark Hill, S.E.5—Senior Medical Registrar.  
LINCASHIRE COUNTY COUNCIL—Senior House Surgeon at the Biddulph Grange Orthopaedic Hospital Salary at the rate of £250 per annum.  
LIVERPOOL DAVID LEWIS NORTHERN HOSPITAL—Honorary Radiologist.  
LIVERPOOL EDUCATION COMMITTEE—T. Ray Specialist Clinic Remuneration 3 guineas per session.  
LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST—Honorary Physician.  
LIVERPOOL ROYAL SOUTHERN HOSPITAL—Honorary Anaesthetist Honorarium £50 per annum.  
LIVERPOOL STANLEY HOSPITAL—Honorary Radiologist.  
LONDON FLEMING'S HOSPITAL Hampstead Road N.W.1—(1) House-Physician (2) Casualty Officer (3) Medical Registrar Salary for (1) and (2) £100 and £120 per annum respectively and for (3) honorarium of 40 guineas.  
MILLER GENERAL HOSPITAL, Greenwich Road, S.E.10—House Surgeon (male, unmarried) Salary £125 per annum.  
NOTTINGHAM GENERAL HOSPITAL—House Surgeon Salary at the rate of £150 per annum.  
PENABONT RURAL DISTRICT COUNCIL AND BRIDGEND URBAN DISTRICT COUNCIL—Assistant Medical Officer of Health Salary £600 per annum.  
PLYMOUTH SOUTH DEVON AND EAST CORNWALL HOSPITAL—(1) Resident Surgical Officer salary £100 per annum (2) House Surgeon (3) Casualty House Surgeons Males.  
PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham N.15—Honorary Anaesthetist Honorarium £20 per annum.  
ST. PANCRA'S PARISH—Junior Assistant Medical Superintendent of the St. Pancras Hospital and Junior Assistant Medical Officer of the St. Pancras House adjacent Salary £50 per annum.  
ST. PETER'S HOSPITAL FOR STONE etc, Henrietta Street, W.C.2—Clinical Assistant.  
STOKE-ON-TRENT NORTH STAFFORDSHIRE ROYAL INFIRMARY—House Surgeon Salary £150 per annum.  
WILLESDEN GENERAL HOSPITAL Harle den Road N.W.10—Resident House Surgeon (male) Salary at the rate of £100 per annum.

CERTIFYING FACTORY SURGEONS—The following appointments are vacant: Hovlake (Weshire) and Cannock (Staffs) Applications to the Chief Inspector of Factories, Home Office Whitehall S.W.1.

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Tuesday morning.

## APPOINTMENTS

BOYD, Hilda M. Price, M.B. B.S. Lond., Out patient Medical Officer to the Royal Northern Hospital Holloway.  
CRITCHTON, J. W. M.B. Ch.B. Ed. Certifying Factory Surgeon for the Lydbrook District co. Gloucester.  
Messer, William, M.B. Ch.B. Ed., Physician to the Bradford Royal Infirmary.  
Smyth, Michael J. M.Ch., I.R.C.S. Eng. Assistant Surgeon to the Hospital of St. John and St. Elizabeth St. John's Wood.

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
TAVISTOCK SQUARE W.C.1

## Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams Articulate Western London.  
MEDICAL SECRETARY (Telegrams) Medical Western London.  
EDITOR *British Medical Journal* (Telegrams) Articulate Western London.

Telephone numbers of *British Medical Association* and *British Medical Journal*. M. cum 8661 8662 8663 and 8664 (internal exchange four lines).

SCOTTISH MEDICAL SECRETARY 6 (Telegrams) Associate Edinburgh.  
IRISH MEDICAL SECRETARY 16 (Telegrams) Baecillus Dublin Tel. 4737 Dublin.

## Diary of the Association

## MEMBER

- 16 Fri London Medical Officers of Public Schools Subcommittee, 2.0 p.m.  
20 Tues London Lunacy Law and Administration Committee 2.30 p.m.  
Crofton Division Crofton General Hospital Mr Gwynne Williams on Cancer 8.30 p.m.  
Leamington Division Town Hall Catford Dr R. C. Jordan on Pulmonary Tuberculosis 8.45 p.m.  
Stratford Division Educational Officers The Grove Stratford Mr L. Carnac Rivett on Puerperia during the Puerperium 9.15 p.m.  
21 Wed London Hospitals Subcommittee 11 a.m.  
Willesden Division Willesden General Hospital Harle den Road N.W. Dr G. E. Buchan on Public Education in Health 9 p.m.  
22 Thur Life Branch Complimentary Dinner to Dr C. E. Douglas, Station Hotel Kirkcaldy, 6.45 p.m.  
JANUARY  
5 Thurs Guildford Division Royal Surrey County Hospital Guildford. Sir John Colffe on Where Law and Medicine Meet, 4 p.m.  
6 Fri Holland Division Spalding B.M.A. lecture by Sir Humphry Rolleston on the Medical Aspects of Idiocy, 3 p.m.  
13 Fri Tyneside Division Dinner.  
19 Thurs London Journal Committee 2.30 p.m.  
25 Wed Lambeth and Southwark Division Lambeth Carlton Club Coldharbour Lane, S.W.9 Dr A. G. G. Thompson on the Schick Test.

## DIARY OF SOCIETIES AND LECTURES

## ROYAL SOCIETY OF MEDICINE

General Meeting of Fellows—Tues 5.30 p.m., Ballot for election to Fellowship.

## POST GRADUATE COURSES AND LECTURES

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital Leicester Square, W.C.2—Tues, 5 p.m., Urticaria.  
NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales General Hospital, Tottenham N.15—Mon 2.30 to 5 p.m. Medical Surgical and Gynaecological Clinics Operations Tues, 2.30 to 5 p.m. Medical, Surgical Throat, Nose, and Ear Clinics Operations Wed 2.30 to 5 p.m. Medical, Skin, and Eye Clinics Operations Thurs 11.30 a.m. and Dental Clinics 2.30 to 5 p.m. Medical Surgical, and Ear, Nose, and Throat Clinics Operations Fri, 10.30 a.m. Throat Nose and Ear Clinics 2.30 to 5 p.m. Surgical, Medical, and Children's Diseases Clinics Operations.  
ROYAL NORTHERN HOSPITAL, Holloway Road, N.7—Tues, 3.15 p.m., Chronic Intestinal Obstruction.  
SOUTH WEST LONDON POST GRADUATE ASSOCIATION, St James's Hospital Ouseley Road Baltham S.W.12—Wed, 4 p.m., Certification of Mental Patients.  
WEST LONDON HOSPITAL POST GRADUATE 10 a.m. to 1 p.m. Gynaecology Wards 2 p.m., Surgical Wards Tues, 10 a.m. to 1 p.m., Medical Diseases 2 p.m., Medical Wards Wed 10 a.m. to 1 p.m. Child Wards Demonstration in Medical Eye Department Thurs, 10 a.m. Demonstration of Fractures 2 p.m. Gynaecological Ward Fri 10 a.m. to 1 p.m. Gynaecological Operations, Dental Skin and Electrical Departments 2 p.m. Throat Nose and Ear Department Daily Operations Medical and Surgical Outpatients at 2 p.m.  
JAMES MCKENZIE INSTITUTE FOR CLINICAL RESEARCH St Andrews—Tues, 4 p.m. Some Pitfalls in the Diagnosis of Acute Abdominal Conditions.

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s. which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

## DEATHS

COX—On December 16th 1927, at Colfield Fairdene Road Collier's Florence Amelia the wife of Alfred Cox, M.B.  
MARRIAGE—At West Villa, Kenside Terrace, Richmond on Dec 12th Ellen Renfree wife of William Martin M.D. Service at St. Andrew's Parish Church on Monday December 12th, at noon and at St. Andrew's Old Cemetery immediately following.

# SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY DECEMBER 24th 1927

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## British Medical Association

### PROCEEDINGS OF COUNCIL

Wednesday, December 14th, 1927

A MEETING of the Council was held at the House of the Association, Tavistock Square London on Wednesday, December 14th. In the absence of Dr Brackenbury, Chairman of Council Dr C O Hawthorne, Chairman of the Representative Body, presided. Dr Hawthorne stated that Dr Brackenbury was making a satisfactory convalescence after his operation and hoped soon to be restored to his full work in the Association. The Council signified its desire that a message should be sent to Dr Brackenbury conveying good wishes.

In addition to Dr Hawthorne the following members were present:

Mr N Bishop Harman (Treasurer) Sir Ewen Maclean (President Elect) Dr A London (Deputy Chairman of Representative Body) Sir Robert Bolla (Immediate Past Chairman of Council) Dr J Blarney Anderson Dr J Armstrong Dr F J Baidon Dr J Perry Baile Smith Dr J W Bone Dr H C Bristowe Dr G F Buchanan Dr H Guy Dain Dr C E Douglas Mr T P Dunhill Mr W McAdam Eccles Dr D E Finlay Dr T Fraser Dr F J Gomer Dr F W Goodbody Dr R Wallace Henry Dr J Hudson Dr I W Johnson Dr R Langdon Down Dr E K Le Fleming Dr R W Leitch Dr J Livingston London Dr Richard Luce M.P. Dr S Morton Mackenzie Dr G Marriott Dr J C Matthews Dr G W Miller Dr Christine Murrell Lt Col F O'Hanlon Dr W Paterson Mr J Patrick Dr R C Peacock Dr J R Prytherch Dr F Radcliffe Dr E H Snell Mr H S Soatlar Dr E A Starling Lieut Colonel Ashton Street Dr W E Thomas Dr G Clark Trotter Mr E B Turner Dr J F Walker and Mr A M Webber.

Apologies for absence were read from the President (Sir Robert Philip) the Past President (Mr Hogarth) Sir Alfred Blenkinsop Dr G B Hillman Dr E Lewis Lloyd Dr J G McCutcheon Dr J A Macdonald Dr A Mankell Mr A W Nutball Group Captain N J Roche Dr E W Lockhart Stephens Dr J Stevens Sir Jenner Verrall Sir W Wheeler and Dr W E A Worley. The Medical Secretary stated that several of these absences were due to illness.

The Chairman said that since the last meeting of the Council the deaths had occurred of Sir William Macpherson and Dr J S Darling. The former had attained a very distinguished position in his branch of the profession and he had also given most valuable service to the Association as a member of Council and in other respects. Dr Darling had been also a very useful member of Council taking part seldom in debate but always impressing his colleagues by his sincerity and ever using in his own area a helpful personal influence for the benefit of the Association and of the profession as a whole. The Council agreed to authorize appropriate letters to be sent to the relatives of the deceased members.

#### Appointment of Delegate and his substitute

The Chairman said that the Council would learn with satisfaction that Dr Brackenbury had seen his way to accept the Council's invitation to attend as the Association's delegate at

the South African Medical Congress to be held in Bloemfontein in March next (Applause). In addition it had been found that three members of the Association from this country intended to be in South Africa at the time of the Congress—namely Sir Frank Colver well known for his work in odontology, Dr H B Densham or Stockton on Tynes formerly president of the North of England Branch and Dr C D Hatrick of New Barnet honorary secretary of the East Hertfordshire Division. It was proposed that the three gentlemen also be appointed official delegates and this was agreed to.

In respect to a communication from the Ministry of Health relative to the constitution of the General Nursing Council the following names were forwarded for the Minister's consideration—namely Lady Barnett Dr A H G Burton (medical officer of health for Hford) Sir Ewen Maclean Dr Christine Murrell, and Mr A M Webber (Nottingham).

The President (Sir Robert Philip) was appointed to represent the Association at the celebration in London in May next by the Royal College of Physicians of the tercentenary of the publication of Harvey's *De Motu Cordis*.

Mr Bishop Harman was appointed one of the two representatives of the Association on the council of the Smoke Abatement League for the remainder of the term for which the late Dr Pridley Bailey was elected the other representative is Dr Clark Trotter. Dr Hawthorne and Dr Lyndon were appointed representatives on the Joint Tuberculosis Council. Mr McAdam Eccles for three years on the Central Council for the Care of Cripples and Dr Matheson Mackay chairman of the East Yorkshire Division as representative of the Association on the governing body of University College Hull.

#### International Medical Organization

The Medical Secretary submitted a full and interesting report on the annual congress of the Association Professionnelle Internationale des Medecins held in Paris at the end of September which he attended as an observer. It appeared that the medical organizations of thirteen European countries were represented at the congress. The only two countries which have declined to join are Finland and Russia the latter for the reason that the other groups are not composed entirely of State medical servants. The work and scope of the international organization was discussed at the congress and in particular its relations with the International Labour Office.

The Chairman said that the practical issue which arose out of the report was the adherence or the non-adherence of the British Medical Association. One of the considerations which had helped to determine the Council's previous attitude towards this matter was the statement that the annual expenditure on quinquennial joining would be some £300 but it was now

stated by the Medical Secretary that the annual commitment would be no more than £125

Dr Wallace Henry asked whether, if the Association allied itself with this organization, it would be committed to the support of any scheme which was decided on by the congress from time to time. The Medical Secretary replied that the constitution resembled that of the League of Nations in this respect—that nothing could go forward which was not unanimous.

Dr Stirling said that the Council would agree that it must be beneficial to be associated with professional colleagues on the Continent, though in the exchange of experience it seemed likely that the profession in other countries would benefit rather than the profession in these islands. He did not wish to trespass on the prerogative of the Treasurer, but on reading the interesting and able report of the Medical Secretary he was struck by the remark that the expenditure to the Association, if it came in, would be £125 a year. This figure, however, was conditional upon the keeping down of expenses by an economical secretary. Other conditions might arise whereby the expenditure would be largely increased. The Council had a duty to the Association that money should be spent first for the benefit of the Association's membership and for the advancement of scientific knowledge.

An amendment by Dr Brucroft Anderson to refer the question to a committee of present and past officers was lost.

Sir Robert Bolam admitted that while, at first, he could not see the utility of this organization, later, and in part owing to the present report of the Medical Secretary, he had come to believe that the Council would act wisely in adhering to this international body. If, in time, it was found that the activities of the organization were not congenial it would be an easy matter for the Association to withdraw.

The Treasurer pointed out that while £125 per annum might seem a small sum, capitalized it was very considerable. There had also to be taken into account the travelling expenses of the Medical Secretary when attending these congresses, the additional clerical work thrown upon the office, possibly necessitating the appointment of another official, and the fact that all such bodies had a tendency to widen their sphere of operation and consequently to increase their expenditure. Moreover, once the Association was within the organization it would not be an easy matter to retire. No doubt the Association could help the international body by advice and information, but there was little that it could learn, for the medical organizations in many of the other countries were babies and sucklings compared with the British Medical Association. The Association might admit some missionary vocation, but it could not regard itself as living the world for its parish. He moved that the Finance Committee be first asked for its opinion with regard to the probable cost of the proposal.

Mr Turner, in seconding, said that for his own part he did not think that membership would be worth the expenditure. At such congresses there was, in his experience, a great deal of "fiat" and nothing was done.

It was agreed to refer the matter to the Finance Committee.

#### *Proposed Appointment of Whole-time Officer for Public Health and Poor Law Work in Rural District*

A long discussion took place on a report by the Medical Secretary upon a proposed appointment combining, in a whole-time post, the offices of medical officer of health and Poor Law medical officer and public vaccinator in a rural district. It appeared that in the past the Godstone (Surrey) guardians had employed a part-time practitioner as district medical officer and for the work of the Poor Law institution, the same medical man was also part-time medical officer of health to the rural district council, and was in private practice. On his recent retirement the authorities decided that the time was opportune to rearrange the duties and obtain a whole-time medical officer of health who should combine the health work and the Poor Law work. When the advertisement of the appointment was offered, the Medical Secretary wrote to the clerk of the guardians pointing out that the new appointment constituted a departure from the almost universal custom by which domiciliary Poor Law work was done by part-time practitioners. In a few large urban areas whole-time officers had been appointed to do the Poor Law (including domiciliary) work but the introduction of such a system into a country area appeared to be entirely

unknown. The advertisement was not accepted for the JOURNAL. A deputation from the Reigate Division met the local authorities, who, however, adhered to their decision.

The Chairman said that on this matter an appeal was made to the Council for guidance, and the Council might consider whether the principle involved was such as to warrant the insertion of an Important Notice.

Dr Snell said that he held no brief for the appointment by local authorities of whole-time men, but he thought it rather a Rip Van Winkle sort of attitude for the British Medical Association to discuss such a matter at this late day. There was nothing incompatible between the work of a medical officer of health and a Poor Law medical officer. The Birmingham board of guardians thirty years ago created whole-time district medical officers, and to-day there were many scores of medical men who combined the post of district Poor Law officer with that of medical officer of health. The only difference between these cases and the Godstone case was that these other men were also in private practice. If at Godstone the terms of the appointment had been such as to allow the officer to do private practice in addition probably not a word would have been said.

Dr Morton Mackenzie, who was spokesman for the deputation which met the authorities, pointed out the peculiar difficulties of members of the Division if such an appointment were made, and said that they were very anxious for some guidance.

Dr Christine Muirell thought that the grounds on which the Council proceeded, supposing it frowned upon the appointment should be very clearly stated. Was the objection on the ground that the man appointed was not to do private practice as well, or was it that the combination of offices was undesirable?

Dr Lyndon, who, as chairman of the Ethical Committee, had agreed to an "Important Notice" (which had not yet, however, been issued), pointed out that while in urban areas whole-time officers had been appointed to do the Poor Law (including domiciliary) work, this was something entirely new in rural areas. That was one ground of objection. It was another inroad upon the privileges of general practitioners in holding such part-time appointments.

Dr Hudson said this was a new encroachment on the domain of private practice, and Dr Thomas favoured the insertion of an Important Notice.

Sir Robert Bolam said that the situation was admittedly very difficult, but he did not see how an Important Notice could be justified. A local authority was making a new departure which was against the prevailing practice of the country. Whether a principle was at stake on which the Council should make a declaration was a matter to be considered, but he could not see at the moment that, because an authority in a rural area was doing the kind of thing which had not really been objected to in other areas of a different character, it was ground for the issue of an Important Notice. He suggested that the Medico-Political and Public Health Committees should get together and consider the point. Certainly the advertisement should be refused pending such consideration, but the insertion of an Important Notice was a different thing, and ought not to be the result of a "snap" decision. At the same time, the Council generally would feel that this was another encroachment upon private practice.

Dr Douglas did not think that what was proposed to be done by this local authority was at all a new departure, it would be more correct to describe it as a retrograde step. It was by no means a new idea for the offices of medical officer of health and Poor Law medical officer to be combined. Only as the duties of medical officer of health became more difficult and specialized was it realized to be not a good thing for the two offices to be held in that manner.

Dr Dain thought the Council might rightly consider this proposed appointment a retrograde step for the reason that the medical officer of health tended to become an administrative officer, whereas the Poor Law officer was required to be a practitioner treating patients. It was not in the interests of such patients that their treatment should be in the hands of an individual whose training and experience had been mainly in the administrative field. Where these posts had been held by someone who was also in private practice this difficulty obviously did not arise.

Dr Langdon Down thought that the main question should be considered by the Public Health Committee and perhaps by



the Medical Political Committee did. The intention of an Important Notice merely meant that any candidate being applied for a post was requested to communicate with the Medical Secretary or the Secretary for the Division and the reply that would be given in the present case would be simply that the matter was under consideration and that the principle had not been settled. Incidentally it would have the result that many men would not be disposed to apply for the post but it should be clearly understood that pending the decision of the Council after due consideration by the committee concerned, no further steps should be taken on the Important Notice. In this particular instance therefore it was in favour of referring it to the appropriate committee and informing in Important Notice.

Dr. Marcell pointed out that this would create a awkward position for a candidate. She thought the Council ought to legislate before sanctioning an Important Notice at this stage.

Dr. Wallace Henry said that in difficulty in supporting the Important Notice had been raised by the speech in its favour. It was said that what was proposed to God ten was no novel thing but on the contrary a retrograde step. How then could the chairman of the Ethical Committee and an on he ground that was a retrograde step. It was said that it was such an important question that the Ethical Committee must have been negligent in the past to allow it to be allowed in certain places. The whole matter ought to have been considered by some responsible committee before this position arose. If this was not a retrograde step he thought it was wrong to insert an Important Notice until the policy had been decided.

The Medical Secretary said that he had felt that it something was not done in this case the Council might be accused of the Annual Representative Meeting of permitting a further encroachment on the work of general practitioners. It was a new principle that a whole time medical officer of health should do, as a side-line, domiciliary Poor Law work.

Dr. Skill said that there was at least one in twelve where a whole time resident medical officer to a Poor Law institution was also medical officer of health of the district and did nothing else.

Dr. Morton Mackenzie again pointed out the difficult position in which local members of the Association were placed. Here it was proposed to bring into the area a medical man whose principal qualification was his knowledge and ability as an administrative officer but he would be required to undertake Poor Law duties consisting of medical supervision to the local hospital and institution and the work of public health inspector to a district of the union. He was required to live within two miles of the Poor Law institution he would have to see Poor Law patients at his house and would be in charge of the 120 inmates of the institution and 40 mental detainees. Incidentally the work hitherto done by a private practitioner would be swept away. The Poetgate Division felt it to be a serious inroad upon private practice.

Dr. Walker thought that the argument of Dr. Dain and Dr. Mackenzie gave good grounds on which quite properly in the interests of the patients themselves the Council could complain of such an appointment.

The Chairman in reply to a question as to the exact nature of an Important Notice, said that in his view there were no grade or degrees in Important Notices. If an Important Notice was issued anyone acting in contravention of that Notice subjected himself to the risk of ethical penalty.

Dr. Paterson thought that this was the kind of appointment to which all members of the Council might rightly object. There were all over the country public vaccinators and Poor Law officers who were also private practitioners. If such part time appointments were taken away it would be impossible for them in many cases to remain in practice in the area. He was perfectly certain that it would be the feeling of general practitioners in this case that an Important Notice should be put on.

Sir Richard Luce thought it a dangerous procedure to insert an Important Notice which would practically condemn any man taking up the appointment, when such notice was not based upon the infringement of any considered principle of the Association. The policy should first be definitely settled and then an Important Notice, if necessary, be inserted.

Dr. Morton Mackenzie moved and Dr. Walker seconded.

That the Council recognizing the correctness of the action taken by the chairman of the Ethical Committee in agreeing to inform that Notice confirm the refusal of the administration and authorize it to report of an Important Notice.

To this Sir Richard Luce moved in amendment which was seconded by Dr. Clute-Titter.

That the question be referred to the Medical Political and Public Health Committee and that no action be taken concerning an Important Notice be taken until after the report from those committees has been considered.

For the amendment thus voted in favour 18 Against 20. Dr. Mackenzie's original motion was then put and there voted in favour 23 Against 19. His motion was therefore carried. It was further agreed to submit the consideration of the general question—the Important Notice meanwhile being referred—to a joint meeting of the Medical Political and Public Health and Local Law Committee in consideration and report.

#### Amendment to Bill Christian Science Exemption

Dr. Bone moved as a matter of urgency the question of the report of the Government's acceptance of an amendment exempting Christian Science nursing homes from inspection under the Nursing Homes Bill. Dr. Bone reminded the Council that the Association had agreed not to oppose the bill but this point had arisen by the Government created a new situation. As the bill to do there were no exemptions but now it was proposed to exempt homes which should adopt and use the name of Christian Science nursing homes. It had been expected that the matter would come forward in the House of Commons the previous evening and after a hurried consultation at headquarters it was resolved to ask Sir Richard Luce to oppose the bill if this amendment were persisted in. Any notice of objection to the amendment would automatically cause the bill to be withdrawn. The bill however did not come on but it would be brought forward another day and he proposed accordingly that the Council should pass a resolution directing to any amendment of this kind, and declaring that if it was persisted in the further progress of the bill would be opposed also but this resolution be sent to the Minister of Health.

Dr. Wallace Henry seconded.

Dr. Buchanan hoped it would be made clear that the Council was opposing any exception whatever not merely this particular exception.

The resolution was carried unanimously.

#### Part of Committee

The Council had before it reports from seven committees several of these however were of a preliminary or interim character and concerned recommendations.

Sir Eben Mackenzie as chairman of the Committee on Causation of Puerperal Morbidity and Mortality reported that the committee already authorized to inquire into the causes of other bodies including the Ministry of Health the Medical Research Council the Royal Colleges and the Central Midwives Board would be held on January 11th when the general position in regard to the subject in this and other countries would be discussed.

Dr. Bone chairman of the International Medical Sea Code Committee reported that that committee had gone to work and had decided on certain lines of investigation and on certain authorities whose opinions it proposed to consult.

The Psycho Analysis Committee under Dr. Langdon Down had decided upon the form of a questionnaire which it had issued and could consider replies at the next meeting. One member of the committee Dr. H. Godwin Barnes had prepared for it an exposition of the Jung conception of psychological therapy.

The Private Practice Committee entrusted by the Council with the consideration of the resolutions of the last Annual Representative Meeting concerning the inroads upon private practice had held two meetings with Dr. Bone in the chair. All the whole time medical officers of health in England and Wales would be asked to supply the Association with a list of the health services undertaken by their authorities and the various conditions under which such services were given. The Medical Secretary had also been asked to make detailed investigations into the health services in certain representative areas—namely Durham Gloucestershire Birmingham Bradford Hants and Wiltshire. Mr. McAdam Eccles was elected a member of the committee.

*Finance and Building*

The principal matter brought forward by the Treasurer on the report of the Finance Committee was the establishment of a sinking fund for the redemption of the amount spent on the leasehold premises of the Association. The Council agreed that a sinking fund policy be taken out at an annual premium of £1,141 13s 4d in order to raise the sum of £100,000 at the end of forty years. Mr. Bishop Hume pointed out the advantages and disadvantages of such a policy, but in his view the money was in a sense locked up, it was not entirely beyond reach in the unlikely event of circumstances arising to compel the Association to liquidate its policy.

Several decisions were taken on the report of the Building Committee, presented by Sir Robert Bolam, relating to the property in Woburn Place, which has now come into the Association's possession under the terms of its ground lease from the Duke of Bedford's estate. The decisions related to the manner in which the work on the new buildings should be carried out, the cost of Messrs. Ford and Walton were appointed builders of the blocks in which building can be proceeded with at the present time. The vacated premises are now in course of demolition.

*Medical Charities*

Dr. Walker, in presenting the report of the Charities Committee, said that a sum of about £900 was standing to the credit of the trust fund for disposal. It included a donation of £350 from the Medical Insurance Agency, and a sum of more than £60, the proceeds of the collection at the official church service held in St. Giles's Cathedral, Edinburgh. The Council agreed to the allocation of the £900 to medical charities in the following proportions: Royal Medical Benevolent Fund, £400; Epsom College, £300; Royal Medical Benevolent Fund Guild, £150; Royal Medical Benevolent Society of Ireland, £30; and the surplus to the St. Charles Hastings Fund. In addition to these sums over £1,400 had been distributed to these various charities since January 1st, 1927. Dr. Walker said that the activities of the Divisions in respect to charity were increasing. It was proposed to ask each Division to report early next year what action it had taken during 1927. The organization of the work had been no easy matter, largely because there were already in existence in many local charities, or local branches of central charities, and to coordinate all the activities demanded the exercise of some patience. The economic situation was also reflected in the figures. When there was financial stringency, especially among the middle class population, medical men were the first to feel it, and the consequence was that then benefactions had to suffer.

*Science Activities*

On the motion of the Chairman of the Science Committee, Mr. Scott, the Council decided to call a conference of medical representatives from the medical schools to consider with the committee certain objections which have been raised to the Association's scale of salaries, agreed to at the Representative Meeting, 1926, for non-professional medical teachers and laboratory workers. Several of the bodies concerned have represented that the remuneration set out could not be realized under the existing conditions of university finance also that there were in the academic line of work considerable other than monetary which did not obtain in other civil appointments or in private practice.

On a further recommendation of the Science Committee the Council agreed to grant a further sum of £100 to aid the prosecution of the scheme of investigation being carried out at Children's Hospital, which was the subject of a report in the *STANDARD* of December 10th (p. 223). With regard to the prize of 25 guineas offered by the retiring Solicitor to the Association Mr. W. E. Hempton, the Science Committee recommended that this should be awarded for the best essay or treatise on a study of personal experiences in the medical inspection and treatment of school children under the auspices of any elementary education authority.

Dr. Stirling congratulated the committee on its timely choice of subject. Dr. Buchanan thought the subject too wide, and likely to lead to essays so widely differing in matter as to render the task of the judges exceptionally difficult. Mr. Scott, however, pointed out that what was intended was a

personal study, and from that point of view essays would be comparable even if they dealt with lines of investigation so diverse as squint and orthopedics. The recommendation was agreed to.

*The Pathologists' Group*

Dr. Hawthorne reported on the question of the proposed formation of a Pathologists' Group in the Association—matter which was referred at the last meeting of Council to the Science and Organization Committees. The petition for the formation of such a group had been signed, he said, by thirty-six members of the Association, and it was obvious that so small a number could not be said to represent all the members of the Association who might be described as pathologists. Further, there was reason to believe that there were some pathologists, members of the Association, who did not wish to be included in such a group. Upon inquiry it became evident that those who wished this group to be formed were chiefly those engaged in some qualifying term. The terms "clinical pathologist," "consulting pathologist," and "pathological practitioner" were considered, and the committees were of opinion that the second was most acceptable. He therefore proposed that the formation of a Consulting Pathologists' Group be approved, such a group to be composed of members of the Association (not being members of the public health service) who were working in institutional or private health service engaged in examining and reporting on specimens for clinical purposes. Sir Robert Bolam thought that the term used should be "clinical pathologists," the word "clinical" being more descriptive. Dr. Bone was of the same opinion, and said that a "consulting pathologist" would suggest the same relation to an ordinary physician as a consulting physician bore to an ordinary physician. Sir Percy Bassett Smith also supported the term "clinical." Sir Percy Bassett Smith also wished the pathologists concerned to have the word "consulting" or some term other than "clinical." These members represented a large proportion of pathologists, and were increasing in numbers. They were men who were working, and with practitioners all the time. It was true that they might be called "clinical" because they came to the bedside, but equally they were consulted there, and so might be termed "consultants."

An amendment to substitute the word "clinical" was lost, and the recommendation was agreed to. Dr. Morton Mackenzie desired to raise a point on the general question of the formation of groups within the Association—namely, the position of a member of the Association who, while obviously falling into one of the group categories, did not wish to be a member of the group, and whether *ipso facto* he became a member.

The Chairman deprecated the raising of a discussion on that point at the present stage, but said that if any doubt or uncertainty arose in a particular case it would be possible to refer the matter to the appropriate committee, probably the Organization Committee.

*Legal Actions*

Dr. Hawthorne in the absence of Dr. Brackenbury, reported to the Council the result of the recent cases of the British Medical Association v. Pulton (*JOURNAL*, November 19th, p. 962) and of the British Medical Association v. 'Daily News,' Limited (*JOURNAL*, December 3rd, p. 1056). With regard to the latter action he said that the object of the Association was to vindicate its position and its honour, it did not desire monetary damages. It had therefore agreed to the offer by the *Star* newspaper to publish a disclaimer in the columns of that periodical but had insisted that such disclaimer be read in open court before one of His Majesty's judges. This action had plainly announced to the press and to all concerned that the British Medical Association was not to be libelled with impunity. By the settlement on the terms stated the Association had avoided the inconvenience and the dislocation to the work of the office which would have been occasioned by a lengthy action.

Mr. Turner drew attention to what he considered to be a libellous statement against the Association in the review of a

book published in the *Daily Star*. It was evident that the writer was confusing one again the British Medical Association with the General Medical Council. Dr Hawthorne said that a communication had been received from the *Daily Star* expressing its regret and offering to make any correction. It was left to the Legal Actions Committee to consider what action should be taken.

### Lunacy Fair. The Protection of Medical Men

Dr Langdon Down, chairman of the Committee on Lunacy and Mental Disorder, brought forward a recommendation with regard to the protection of certifying medical practitioners. He said that since this matter was considered by the Council several things had happened—the debate in the Representative Body, the judgement of Mr Justice McCordie in a recent case and the announcement that legislation was imminent. Although it was not perhaps strictly logical in considering the report of the Royal Commission to take this matter first yet as it was first in the reference by the Council to his committee, the committee had given this its more immediate attention. The committee came to the conclusion that it was inadvisable to press for the complete immunity of the doctor on the ground that he was giving evidence before a justice. Even if it could be shown as suggested by Mr Justice McCordie that the justice and not the doctor was responsible for the order it would still be open for the doctor to be attacked on the ground that he had been careless or had acted in bad faith. Again it was felt to be undesirable for the profession to rest its case on the responsibility of the justice in this matter when in other parts of the recommendations, it was sought to diminish the justice. No doubt any such proposal would be controversial and this would mean a hindrance to legislation. It was hoped to have this question of protection included in an early non-controversial measure, controversial matters being left to be dealt with later. Dr Langdon Down here told the Council in private or certain conversation which had taken place with members of the Board of Control. In the proposal now brought forward the suggestion that the justice should be required in his order to put his signature under a statement that due care had been observed by the doctor had been omitted. Another departure from the previous suggestions was that instead of a king for medical assessors it should be asked that the judges might take the evidence of independent expert medical practitioners in any proceedings against the certifying medical man. The recommendation of his committee was as follows:

That the following recommendation of the Royal Commission on Lunacy and Mental Disorder—

We recommend that for the more effective protection of medical men and others in the bona fide discharge of their duties under the Act (i.e. Lunacy Act 1890) Section 330 should be amended so as to provide that any such person shall not be liable to civil or criminal proceedings unless he has acted in bad faith or without reasonable care and

That any proceedings taken against such a person shall be stayed upon a summary application to the High Court or a Judge in Chambers unless the court or judge is satisfied that there is substantial ground for alleging that such act was done in bad faith or without reasonable care.

As regards adequate and reasonable protection to the certifying medical practitioner provided that the Judge in Chambers or the High Court hearing a summary application or the Court of Appeal shall take the evidence of independent expert medical practitioners appointed for the purpose by the Government.

He took it that the law in any case would insist on retaining the final decision in its own hands and would not place it in the hands of medical assessors. The Council had to determine whether it desired to stick to the original idea of laying the onus on the justice. That would be to render futile the inclusion of this provision in any measure which it was desired should be of a non-controversial character. On the other hand, if this recommendation were accepted he thought it could be claimed that in substance it was non-controversial. The desire to accord reasonable and adequate protection to the medical man was now very strong both in Parliament and among members of the public and he thought that such protection as could be obtained within reason satisfied the profession was likely soon to be accorded. He added that the committee had arrived at the above recommendation without dissent.

Dr Hawthorne said that he recognized that in the new situation created by the recommendation of the Royal Com-

mission the onus of proof would be upon the plaintiff and not upon the defendant and that if the profession was not content with that it would be regarded as throwing the ball now in preparation into a controversial shape. It was obvious that the official view was in favour of supplying merely the additional protection suggested by the Royal Commission. But he was bound to ask the Council how it had come about that circumstances were what they were. What was now put forward was the slightest and weakest measure of protection that had ever been envisaged by the committee. By a gradual process of dilution and attenuation the committee had passed from a robust measure of protection to the slight degree of protection afforded in the recommendation now before the Council. The first proposal was that the practitioner should have complete immunity when signing a certificate. Even in May last the committee passed a resolution that the Council should be advised to continue to press for this full measure of protection. But in June a report from this committee departed from that proposal and put forward certain others. In July, in the Representative Body, the recommendations were weakened again and now the outcome was merely the recommendation of the Royal Commission plus medical assessors or expert witnesses. Dr Hawthorne deplored the delay that had marked the proceedings of the committee and thought that the committee ought to have prepared a case for the profession even if in the end it was necessary to withdraw from the full claim at least the profession would have had a document to serve as a guide and an inspiration to the members of the Association.

Dr Langdon Down said that he did not think he would be wise in entering into controversy; he was content to let Dr Hawthorne's remarks stand.

Dr Bone desired to amend the motion so that it would read shall have the assistance of instead of shall take the evidence of and he was also anxious that should it be found that the inclusion of the profession on medical assessors or the like imperilled the bill as a non-controversial measure this addition should not be pressed.

Dr Langdon Down thought that some such words as shall take steps to secure would leave sufficient latitude.

The recommendation was agreed to by the Council, without dissent in the following form:

That as in the opinion of the Council the following recommendation of the Royal Commission on Lunacy and Mental Disorder [the recommendation for an amendment of Section 330 as quoted above] affords adequate and reasonable protection to the certifying medical practitioner provided that the Judge in Chambers or the High Court hearing a summary application or the Court of Appeal shall have the assistance of an independent expert medical practitioner who shall be selected from a panel of practitioners appointed for the purpose by the Government steps be taken to secure by consent that effect be given thereto in any legislation on the matter that may be introduced into Parliament.

The differences between this and the original resolution in which changes Dr Langdon Down concerned are apart from the recommendation at the end, the substitution of the words shall have the assistance of an independent expert medical practitioner for shall take the evidence of independent expert medical practitioners.

### Other Business

Dr Drum on the report of the Insurance Acts Committee, stated that at the committee was now negotiating with the Government the putting into actual regulations of the disciplinary machinery proposals with regard to which were agreed to at the recent Panel Conference.

Dr Goodbody, chairman of the Naval and Military Committee, stated that the Association had been invited to co-operate in the management and organization of the ninth International Congress of Military Medicine and Pharmacology to be held in London in 1929. The Council accepted the invitation and appointed Major General Sir Alfred Blenkinsop the Association's representative on the organizing committee of the congress.

It was also stated by Dr Goodbody that the Naval and Military Committee was making representations to the Admiralty with regard to promotion in the Royal Naval Medical Service.

On the report of the Dominions Committee presented by Dr Pater on it was recommended that the name of the committee should be made more descriptive of the scope of its work,

so that it shall become the Dominions, India, Colonies, and Dependencies Committee. The Council agreed to make this recommendation to the Representative Body.

The report of action taken by the Dominions Committee covered a wide field. Dr Paterson specially drew attention to the same position which had arisen in Ceylon, where a majority on a Government committee had reported in favour of Government assistance for the training of practitioners of indigenous systems of medicine. The Ceylon Branch had passed a strong resolution against this report, and the Dominions Committee was urging the Colonial Office not to approve action on the lines of the report.

The matter of free treatment at Bombay public hospitals had also been brought to the notice of the committee through the Bombay Branch, and the Branch had been informed by the committee that it was considered contrary to public policy and inequitable to private practitioners that patients whose economic position enabled them to meet the ordinary charges of private medical practice should be admitted to a public hospital without payment of fees.

Mr McAdam Eccles presented the report of the Hospitals Committee, which contained no recommendations but dealt, among other matters, with the new contributory scheme for hospital benefit in Birmingham, which was the subject of an article in the JOURNAL of October 22nd (p. 751). The committee had directed the attention of the local Branch and Division secretaries to the fact that, according to the provisions of this scheme, any and every contributor, irrespective of income, would be eligible to obtain benefit at hospitals, and that the medical staff would not receive any portion of the money received by the hospital in respect of contributors to the scheme. The local units of the Association had been urged to take the matter into immediate and earnest consideration, and the chairman of the committee and the Chairman of Council had also been asked to watch the position and to take such action as might be necessary.

The report of the Office Committee dealt with several domestic matters. One of these concerned the regulations as to the use of the members' lounge and the library at the Association's House. There is reason to believe that these are used by non-members, and therefore the Council instructed the Financial Secretary to make arrangements for persons present in those rooms to sign the Members' Book on request. It was agreed also that the lounge be in future known as the "Members' Common Room."

The Council rose at 6.30 p.m., after an eight hour sitting.

## British Medical Association.

### CURRENT NOTES

#### Some Committee Work at Headquarters

ON December 13th the Asylum Medical Officers' Subcommittee settled the terms of its report and recommendations on the question of the adoption of a revised scale of salaries for assistant asylum medical officers. The existing scale was adopted by the Annual Representative Meeting in 1915, and there are good grounds for the conclusion that revision is now overdue. The report will be considered by the Medico-Political Committee at its next meeting on January 18th. The Medical Officers of Public Schools Subcommittee met on December 16th to discuss questions arising in connexion with the adoption by the Annual Representative Meeting at Edinburgh of certain resolutions as to the medical service of public schools. The subcommittee will report in due course to the Medico-Political Committee.

#### Grievances of Assistants

From time to time the Medical Secretary receives complaints from medical men and women who have accepted assistantships in private practice and have found the conditions to be unsatisfactory, and it is often suggested that the Association ought to take action, such as by refusing advertisements from certain doctors who are alleged to have victimized their assistants. Except in cases where there has been deliberate fraud such action is not possible. The old adage *cautat emptor* must rule the situation. It is not only the duty of principals to treat the colleagues

they employ fairly, but it is equally the duty of the assistant to see that his (or her) rights and privileges are safeguarded by a proper agreement before the duties are entered upon. The most common complaint is in reference to promises to give a partnership after a certain length of time if the assistant has been satisfactory, and almost frequently the complaint is with reference to holidays and time off duty. Members of the Association who are contemplating taking assistantships should in all cases insist upon a written agreement in which these points and others of importance are clearly specified.

#### The Association's Collection of Autographs

During the past few months the British Medical Association has begun a collection of autographs, a project which was favoured by the kindness of Mr Munhead Little, who consented to put the collection in order. The collection is founded on a number of autographs presented to the Association through Mr Munhead Little by Miss P. M. Bennett (daughter of the late Sir James Risdon Bennett, at one time President of the Royal College of Physicians of London), and the Council would welcome the gift of autographs of (a) persons who have held high official positions in the Association, (b) celebrated medical men and women, and (c) lay persons in some way connected with the medical profession or medical affairs. The collection may be inspected by members of the Association on application to the librarian.

## Association Notices

### BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH, NUNEATON AND TAMWORTH DIVISION**—The following programme of meetings for 1928 has been arranged by the Nuneaton and Tamworth Division.

- Jan 11th Nuneaton General Hospital Clinical and Pathological Meeting, arranged by Dr Percy.
- Feb 8th Nuneaton General Hospital Mr C. A. Risdon Surgical Conditions of the Biliary Tract. Arrangements for the Annual Dinner.
- Mar 8th Tamworth General Hospital Dr F. B. Gillespie Subject to be announced later.
- April 18th Nuneaton General Hospital Dr C. F. Rudd Paper on an ophthalmic subject.

It is hoped to hold the annual dinner in May. The annual meeting of the Division will be held in Nuneaton in June or July. Cases or specimens may be shown at any of the ordinary meetings. If possible, previous notice should be given to the secretary.

**METROPOLITAN COUNTIES BRANCH, CITY DIVISION**—A meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road E., on Tuesday, January 3rd, 1928, at 9.30 p.m. Dr Philip Hamill will read a paper on *brucella*.

**METROPOLITAN COUNTIES BRANCH, FINCHLEY DIVISION**—A meeting of the Finchley Division will be held at the Finchley Memorial Hospital on Tuesday, January 10th, 1928, at 8.45 p.m. Mr W. S. Peirson will read a paper.

**METROPOLITAN COUNTIES BRANCH, HAMPSTEAD DIVISION**—A meeting of the Hampstead Division will be held at the Hampstead General Hospital on Thursday, January 12th, 1928, at 8.30 p.m. Dr T. Izod Bennett will read a paper on the treatment of gastric ulcer.

**METROPOLITAN COUNTIES BRANCH, ST PANCRAS DIVISION**—A meeting of the St Pancras Division will be held at the British Medical Association House, Tavistock Square, W.C.1 on Tuesday, January 10th, 1928, at 9 p.m. Sir Squire Sprigge will read a paper entitled "The middle years."

**MIDLAND BRANCH, HOLLAND DIVISION**—A meeting of the Holland Division will be held at Spalding on Friday, January 6th, 1928, at 3 p.m. Sir Humphry Polleston, Bt. Regius Professor of Physics in the University of Cambridge, will give a British Medical Association Lecture on the medical aspects of idiocy and imbecility.

**OXFORD AND READING BRANCH, OXFORD DIVISION**—The following programme of meetings has been arranged by the Oxford Division. They will be held in the Radcliffe Infirmary on Wednesdays at 2.30 p.m.

- Jan 25th Dr T. Izod Bennett Recent Advances in Pernicious Anaemia.
- Mar 28th Dr J. Stann White Some Recent Aspects of Bacterial Therapy (with Cinematograph).
- May 23rd Dr F. G. Chandler Bronchiectasis—Early Diagnosis and Treatment.
- June 27th Clinical Meeting.
- Oct 24th Sir C. J. Fentall Cheate H. C. B. Clinical Signs of Impaired Changes in the Breast.
- Nov 28th Annual Meeting.

An extra clinical meeting will be held at the Horton Infirmary, Banbury on Friday, April 20th, at 3 p.m.

**SURREY BRANCH, GUILDFORD DIVISION**—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford on Thursday, January 5th, 1928, at 4 p.m. Sir J. E. Collier will give an address on "Where law and medicine meet." Tea served at 3.45 p.m.

## Meetings of Branches and Divisions

### METROPOLITAN COUNTIES BRANCH TOWN HAMLETS DIVISION

A clinical meeting was held at the East London Hospital for Children, Shadwell, L.I. on December 14th when about thirty members were present. The following were given by members of the staff: Mr. ACRO, Division of congenital dislocation of the hip; Mr. WYBURY, White, Division of dislocation of the pelvis with rupture of the pubic bone; a young man in the Dr. GEORGE BOWEN, Division of ophthalmic leucorrhoea and Galeses, splenically; Dr. COHEN, Division of Hodgkins disease and purpura rheumatica. A discussion followed in which the members participated.

On the motion of Dr. HATFIELD, the chairman of the Division a vote of thanks was accorded to the staff for the arrangements made.

### NORTH OF ENGLAND BRANCH NORTH NORTH IRELAND DIVISION

A meeting of the North Northern Ireland Division was held on November 23rd in the Infirmary, Brawkion, Telford, when Prof. or LOVELL GLENN (Edinburgh) delivered an address on the significance of heart murmurs. The address was of great interest and was much enjoyed by all present, and at the close Prof. or Gulland was heartily thanked. Tea was provided subsequently.

The annual dinner of the Division was held in the Plough Hotel, Alwark, on the evening of November 17th. The guests at the Division were Dr. John Clay of Newcastle and Dr. Frank Beaton of Alington. The toast of The British Medical Association was proposed by Dr. SCOTT and responded to by Dr. BEATON. Our Guest was proposed by Dr. BADDOCK and Dr. HUGH DCAIR of Morpeth replied. During the evening a musical programme was much enjoyed by all present and the whole evening was voted at the close to have been a great success.

### SUFFOLK BRANCH WEST SUFFOLK DIVISION

A series of post-graduate lectures and clinics was held during the autumn the course having been arranged with the assistance of the Fellowship of Medicine and the Committee of the West Suffolk General Hospital. Invitations were sent to all practitioners in the area whether members of the Association or not together with a programme of the course. The Saturday evening lecture was preceded by an informal dinner.

There are forty-nine men in active practice in the area. The average attendance at the lectures was twenty, and at the clinics fifteen. The course was much appreciated by those who attended and it is hoped to hold a similar one every spring and autumn.

### WILTSHIRE BRANCH TROUBIDGE DIVISION

The annual dinner of the Troubridge Division was held at the Angel Hotel, Chippenham, on November 23rd at which eighteen members and two guests were present.

The chair was taken by Dr. D. F. SPENCE, chairman in the absence of the chairman, Dr. CROLEY, through illness.

Mr. E. W. HAY GROVES gave an address on damage to bones and reputations which was greatly appreciated.

### YORKSHIRE BRANCH WAKEFIELD POTTEFRAT, AND CASTLEFORD DIVISION

A meeting of the Wakefield Pottefrat and Castleford Division was held at the Great Bull Restaurant, Wakefield, on December 8th when Dr. GIBSON was in the chair.

Mr. E. R. GIBSON, in an interesting address on fractures illustrated by a lantern demonstration dealt in detail with the care of the upper and lower limb, and emphasized the importance of reducing them within the first twenty-four hours after the injury, and in the majority of cases, of employing an anaesthetic and x-rays before and after reduction. He considered that splints should be dispensed with in three to four weeks in upper limb fracture, and in the case of the lower limbs in about eight weeks, many being started early and followed later by passive and active movement. Mr. Flint also dealt with the causes and treatment of delayed union in fractures.

Dr. GIBSON, BUTLER, GULLERTON, GREAVE, and HILL, all took part in the subsequent discussion. On the motion of Dr. SCHOLEFIELD a vote of thanks was accorded to the lecturer with acclamation.

## Correspondence

### Ophthalmic Clinics for Insured Persons

SIR—One of the correspondents in your issue of December 10th (p. 220) writes to say that if the approved societies have the best interests of their members at heart they will not be in favour of establishing ophthalmic clinics. Even ophthalmic surgeons will agree with this statement.

Approved societies can be divided into two classes—the good and the bad. From the insured person's point of view, and that of our own, it will be found that the good ones are those that have accepted the British Medical Association's scheme of ophthalmic benefit by private arrangement at the guinea fee. The bad societies have not taken advantage of the scheme, and placed no barrier as the cause to prevent doing so.

All societies should be able to afford the guinea fee per member. My grounds for this statement are:

1. The figures of National Health Insurance for England and Wales given by Mr. Neville Chamberlain in June 1926 show that the accumulated funds at the end of 1925 amounted to £113,000,000.

2. What one society has done should be done by all. For equal payments should give equal benefits in a national scheme.

3. At the last Government valuation the largest women's friendly society in the United Kingdom—the United Women's, originally formed in 1912—was found to possess a surplus of £239,255. This is proof that well-managed societies can afford the B.M.A. scheme, which this society has been giving to their members of twelve months standing for many years. Their other additional benefit is also second to none, and it must be remembered that many societies only give ophthalmic benefit after five years' membership.

We cannot compel the bad societies to give ophthalmic benefit, but we can encourage the good ones who are trying to improve their ways by accepting the scheme of ophthalmic benefit. The clinic system of ophthalmic benefit has been proposed by the poorer approved societies who are anxious to give their members the advantage of the services of ophthalmic surgeons. In this they are to be congratulated for it presents them with many of their members to the ophthalmic departments of hospitals where they are seen gratis by the surgeon. The National Insurance Benefit Society, representing some 2,000,000 insured persons in several different societies, have approached the British Medical Association because they do not find the present position satisfactory.

I think it that ophthalmic surgeons have no fault to find with the principle of the school clinic system of giving ophthalmic benefit to children. It is the case it is rather late to object to the same principle being applied to adults at the request of approved societies. I think all will agree that it is better than their flocking to hospitals or to opticians, which was the only alternative in the past for school children and now for adults in the poorer insurance societies.

Why should we refuse the societies offer provided the surgeon's capitation fee and terms of work are satisfactory? Medical men often forget that they are servants of the public. We cannot restrict as I have seen suggested, the number of cases applying for ophthalmic benefit. The approved societies are satisfied that the clinics will pay them, for they have had experience of them for the last five years.

If the insured public do not like the clinic system they have the remedy in their own hands. They can either join a society that has accepted the B.M.A. scheme or pay the difference between the capitation fee decided upon at the clinic and the guinea fee. At present this would be 14s. 6d., but the capitation fee now paid at the clinics has not the approval of the Ophthalmic Committee. The difference between the societies' figure and that of this committee is not great and one that will easily be settled to the mutual advantage of all concerned. The conditions of work to my mind are satisfactory. The present position of cases being forced to go to the opticians is wrong.

Surely the clinic system although not ideal is better for both patient and surgeon. The former will be seen with less delay in a clinic than at hospital, and the surgeon will be paid a fair fee for the work done. At present those who do not like the clinic scheme need not undertake the work. I remember that many of my colleagues who opposed the B.M.A. scheme are now strong supporters of it—I am, etc.

RICHARD BICKERTON,

A Member of the British Medical Association's Ophthalmic Committee.

Liverpool, Dec. 14th.

### Private Practice and the Public Medical Service

SIR—I have read with great interest Dr. Flemming's article on private practice and the public medical services, in the Supplement of December 10th.

It has occurred to me that the general practitioner could receive great help if the school medical officers records of children could be linked on to the panel practitioner. He would then receive valuable information on the child's medical record card. Doubtful cases of pulmonary tuberculosis or pharyngeal neoplasms would have a valuable check on them instead of being suddenly discovered at a late stage. I should be glad to know if this is possible—I am, etc.

New Malden, Surrey, Dec. 14th. NORMAN J. ENGLAND, M.B.



## Naval and Military Appointments.

## ROYAL NAVAL MEDICAL SERVICE

Surgeon Captains J H Ferguson to the *Egmont* for hospital ship  
*Yam* W W Keir C M G to the *Tamar* for R N Hospital Hong Kong  
 Surgeon Commanders H W Wlehm to the *Egmont* for hospital ship  
 Walsh to the *Revenge* B R Belford D S O, to the *Iron Duke* as  
 Squadron Medical Officer and as Specialist in Ophthalmology T W  
 Jeffery O B E, to the *Yelson* and as Specialist in Ophthalmology T W  
 to the *Victory* for Hospital and as Specialist in Ophthalmology T W  
 A R Schofield to the *Jersey* G H Hives to the *President* for six  
 month post graduate course H H Ormsby to the *Dartmouth* G A S  
 Hamilton to the *Tiger* H E Perkins to the *Osprey* W P Hingston,  
 C B to the *President* for R N College W Brabury, D S O to the  
 Birmingham and as Fleet Medical Officer  
 Surgeon Lieutenant Commander H F Stephen to be Surgeon  
 Commander  
 Surgeon Lieutenant Commanders R S Collings to the *Yelson* J T  
 Ainley to the *Victory* for R N Barracks C E Heath to the *President* for  
 three months post graduate course  
 Surgeon Lieutenants J C Cent to the *Yarborough* R Schofield to  
 the *Adamant* L P Spero to the *Reynold* on commissioning R W  
 Higgins to the *Impregnable* W J Moody to the *Iron Duke* R D  
 Stuart to the *Delphinium*

## ROYAL ARMY MEDICAL CORPS

Lieut Colonel S B Smith D S O O B E having attained the age  
 fixed for compulsory retirement retires on retired pay  
 Major J H Campbell D S O to be Lieutenant Colonel vice Lieut  
 Colonel S B Smith D S O O B E, to retired pay  
 Temporary Lieutenant A Nicolson relinquishes his commission  
 D W Stuart to be temporary Lieutenant

## ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenants C C J Nicolls to No 31 Squadron India T W  
 Wilson to No 27 Squadron India  
 Flying Officer C W Coffey to R A F Station Biggin Hill

## COLONIAL MEDICAL SERVICES

Dr E A Smith appointed V D Specialist Malayan Medical Service  
 Dr R M Burnie appointed Research Medical Officer Nigeria (trans-  
 fered from post of Medical Officer) Dr R A Hall appointed Medical  
 Officer Nigeria Drs A C Froeth C E Roberts and J J Mitchell  
 appointed District Medical Officers Culu Entebbe and Mulago Uganda  
 respectively Drs H J O D Burke Gaffney and R McKay are con-  
 firmed in their appointments as Medical Officers Tanganyika Dr E F  
 Ward promoted Senior Medical Officer Gold Coast Dr J M O'Brien  
 M B E promoted Medical Specialist Gold Coast Dr W D Whamond  
 appointed Medical Officer of Health (Sanitation Branch) Gold Coast

## VACANCIES

ABERDEEN ROYAL INFIRMARY—Junior Assistant Ophthalmic Surgeon  
 at the rate of £150 per annum  
 ARGILL AND BUTE DISTRICT HOSPITAL Tochnigilphed—Assistant  
 Medical Officer (unmarried) Salary £300  
 BIRMINGHAM BOROUGH—Female Assistant Medical Officer for Maternity  
 and Child Welfare Salary £600 per annum  
 BLACKBURN AND DIST LANCASHIRE ROYAL INFIRMARY—Third House Surgeon  
 (male) Salary £150 per annum  
 CHELTENHAM GENERAL AND EYE HOSPITALS—House Surgeon (male un-  
 married) at the Eye Ear Nose and Throat Hospital Salary £200 per  
 annum  
 COVENTRY AND WARWICKSHIRE HOSPITAL—Resident House Surgeon (male)  
 Salary £125 per annum  
 DORSETSHIRE ROYAL INFIRMARY Dorchester—Honorary Gynaecologist  
 Sanatorium Salary at the rate of £600 per annum  
 GLoucester Eye Infirmary—Radiologist  
 GUILDFORD UNION—Resident Assistant Medical Officer at the Institution  
 Salary at the rate of £150 per annum  
 HULLING HOSPITAL—Junior Assistant Medical Officer (male unmarried)  
 Salary £350 per annum rising to £425  
 HIRROGATE INFIRMARY—House Surgeon (male) Salary at the rate of £100  
 per annum  
 HEDDON UNION—Resident Deputy Medical Superintendent at the Redhill  
 Hospital Edgware Salary £300 per annum rising to £350  
 HULL ROYAL INFIRMARY—Second House Surgeon Salary at the rate of  
 £150 per annum  
 LINCOLN THE LANE—Medical Superintendent Salary at the rate of  
 Lowestoft and North Suffolk Hospital Lowestoft—House Surgeon  
 (male) Salary £120 per annum  
 MANCHESTER ROYAL INFIRMARY—Junior House Surgeon (lady) at the Central  
 Branch Salary at the rate of £100 per annum is Junior and Assistant  
 for eight months rising to £200 as Senior  
 MANCHESTER UNION—Junior Resident Assistant Medical Officers at (1)  
 Withington Hospitals (2) Crumpsall Infirmary (3) Pothall Infirmary  
 for Children Salary £275 per annum each  
 MINISTRY OF PENSIONS—Junior Resident Surgical Officer at the Inghbury  
 Group of Hospitals Birmingham Salary £300 per annum  
 NOTTINGHAM GENERAL HOSPITAL—House Surgeon Salary at the rate of  
 £150 per annum  
 PORTSMOUTH PUNISH—Third Assistant Resident Medical Officer for  
 St Mary's Infirmary Institution and Children's Home Salary £250  
 per annum  
 R M OF WALES GENERAL HOSPITAL Tottenham N 15—Honorary Anaes-  
 thetist Honorarium £20 per annum  
 ROYAL SOCIETY—Honorary Assistant Physician at the Hospital  
 for Tropical Diseases Ladbroke Gardens W C  
 SUFFOLK IL OF HOSPITAL FOR WOMEN—Two Assistant House Surgeons  
 Salary at the rate of £100 per annum  
 SOUTHERN VICTORIA HOSPITAL—Junior House Surgeon (male) Salary at  
 the rate of £150 per annum

[SUPPLEMENT TO THE  
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WAKEFIELD WEST RIDING MENTAL HOSPITAL—Junior Assistant Medical  
 Officer (male) Salary £500 per annum, rising to £600  
 WILLISDEN GENERAL HOSPITAL Harlesden Road N W 10—Resident House  
 Surgeon (male) Salary at the rate of £100 per annum  
 WOOD GREEN URBAN DISTRICT—Medical Officer of Health etc Salary £400  
 per annum rising to £1000

This list of vacancies is compiled from our advertisement columns,  
 where full particulars will be found. To ensure notice in this  
 column advertisements must be received not later than the first  
 post on Tuesday morning

## APPOINTMENTS

EDWARDS J C, M B, Ch B Liverpool House Surgeon, Liverpool Maternity  
 Hospital  
 SMITH Henry Gordon M D Lond, D P H C imb Medical Officer of Health  
 for Bournemouth  
 QUEEN CHARLOTTE'S MATERNITY HOSPITAL Marylebone Road N W 1—Senior  
 Resident Medical Officer C F C Peirce M B, B S Assistant Resident  
 Medical Officer George A Ross M B, Ch B

British Medical Association  
OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
211 STOCK SQUARE W C 1

## Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business  
 Manager Telegrams Articulate Westcent London)  
 MEDICAL SECRETARY (Telegrams Articulate Westcent London)  
 EDITOR *British Medical Journal* (Telegrams Articulate Westcent,  
 London)  
 Telephone numbers of *British Medical Association* and *British Medical  
 Journal* Museum 9861 2962 9863 and 9864 (internal exchange,  
 four lines)  
 SCOTTISH MEDICAL SECRETARY 6 Drumshough Cuthbert Edinburgh (Tele-  
 grams Associate Edinburgh Tel 24361 Edinburgh)  
 IRELAND MEDICAL SECRETARY 16 South Frederick Street Dublin (Tele-  
 grams Bacillus Dublin Tel 4737 Dublin)

## Diary of the Association

- 3 Tues City Division Metropolitan Hospital Kingsland Road E  
 Dr Philip Hamill on Bacilluria 9.30 p.m.  
 5 Thurs Guildford Division Royal Surrey County Hospital Guildford  
 Dr John Collie on Where Law and Medicine Meet 4 p.m.  
 6 Fri Holland Division Spalding B M A Lecture by Sir Humphry  
 Rolleston on the Medical Aspects of Adrenocorticism 3 p.m.  
 10 Tues Finchley Division Finchley Memorial Hospital 8.45 p.m.  
 Portsmouth Division Annual Dance, Savoy Cafe  
 St Pancras Division Annual Dinner, Savoy Cafe  
 11 Wed Sir Squire Spilage on The Middle Years 9 p.m.  
 London Conference on Puerperal Morbidity and Mortality,  
 2 p.m.  
 Croydon Division Croydon General Hospital Dr C Lewis  
 on Bazin's Disease 4 p.m.  
 Lanarkshire Division St Enoch Station Hotel Dr Douglas  
 Guthrie on the Septic Tonsil and Discharge Ear 3.30 p.m.  
 12 Thurs London Insurance Acts Committee 12 noon  
 Hampstead Division Hampstead General Hospital Dr T Izod  
 Bennett on Castore Uter 8.30 p.m.  
 Wakefield Pontefract and Castleford Division Great Bull  
 the Insurance Practitioner Supper 7.45 p.m.  
 13 Fri Chesterfield Division Maternity Hospital Cheshire Mr  
 W W King on Dysmenorrhoea 8.15 p.m.  
 Dewsbury Division Batley Hospital Mr L R Branthwaite  
 on Chronic Pains in the Right Iliac Fossa  
 17 Tues Tyneside Division Dinner  
 Lewisham Division Children's Hospital Sydenham  
 19 Thurs London Journal Committee 2.30 p.m.  
 Jersey Division General Hospital Dr H W Mirett Times  
 on Heredity 8.30 p.m.

## BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and  
 Deaths is 2s, which sum should be forwarded with the notice  
 not later than the first post on Tuesday morning, in order to  
 ensure insertion in the current issue

## BIRTH

STEWART—On December 16th at Hillside Umtali South Rhodesia to the  
 wife of Dr J Lennox Stewart D S O M C a son

## MARRIAGES

BULMER—WIFE—On December 15th at Wesleyan Church (the  
 Ven. Rev. the Archdeacon of Birmingham) Ernest Bulmer M B  
 M R C P Lond on of Mr and Mrs J Bulmer of  
 Newcastle on Tyne to Eileen Mary Wake M B Ch B older daughter  
 of Mr and Mrs C J Wake of School Road Mosely  
 PEIRCE—WIFE—On December 20th at St James the Less Church in  
 the Rectory of E Woolcombe Joseph Steele Peirce M R C S L S A  
 son of the late T Peirce M D and grand son of the late W L Peirce  
 M R C S L S A Laurence and Plymouth, to Ada Florence daughter  
 of the late T Mudge M R C S L S A Bodmin

## DEATHS

PEIRCE—At Villfranche sur Mer France Wilfrid W L Peirce M D M B,  
 late M O H Hong Kong, son of the late W L Peirce M D M B,  
 and grand son of the late W Peirce M R C S L S A (1871) Lond  
 and Plymouth  
 CRISWELL—On December 14th aged 71 years Albert Criswell M A  
 M D Oxon St Bart's at Rectory House South Essex

# SUPPLEMENT

TO THE

# BRITISH MEDICAL JOURNAL.

LONDON SATURDAY DECEMBER 31st, 1927

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## THE BRITISH MEDICAL ASSOCIATION AND COLLECTIVE INVESTIGATION

### PART I—PAST EXPERIENCE

'One work—a work that is really appertains to the Association the work of collective action of the pull together of the profession I mean the work of cumulative observation or accumulated data—has been too little attempted or if attempted has been productive of too little result. I am aware that anything on a large scale of this kind is a serious undertaking, a gigantic enterprise and I feel it is the more to be worthy of this gigantic Association. It is perhaps the only work in which all or a large part of the members can really and fully participate and to which each can contribute his mite. To engage the members of the Association as participants in any division of such work would prove one of the most powerful inducements to the cultivation of observation and thought respecting the mass of fact which are passing now too often unheeded or unnoticed before their eyes and would tend more than any other thing to deepen their interest in the science of medicine and to impart the charm of wider vision to the daily routine of life. (Sir George Murray Humphreys in his Presidential Address to the Association at Cambridge, 1920)

From time to time with varying success, the British Medical Association has sought to enlist the co-operation of the profession at large or of some special group of practitioners in scientific work which may be described as that of collective investigation or research. Generally speaking the appeal has been made incidentally when the elucidation of some particular problem undertaken by the Association has required data not obtainable by ordinary means. But there has emerged upon occasion a demand especially insistent during the last few years for a more general application of the method of collective investigation. It has been felt that in the records of individual experience could these be obtained in sufficient quantity lies the solution of many problems of pathology and treatment and that general combination, intelligently directed to a common end, should be a source of power in the scientific no less than in the economic field of action. A scheme for collective investigation formulated by a special sub-committee of the Science Committee in response to this demand was approved by the Representative Body at Edinburgh this year, and two inquiries—one into the treatment of varicose ulceration and the other into after-effects of gastro-enterotomy have been set on foot this month. Of these inquiries full particulars will appear in the British Medical Journal next week. Meanwhile, some light may be thrown on the possibilities and limitations of the present scheme by a review of the experience of the Association in earlier undertakings of a similar nature. This review will be confined to inquiries conducted by the method of collective investigation indicated above, which must be distinguished from two methods in more general use and far more easily directed and controlled—namely, the joint conduct of inquiry by a committee of

experts and the undertaking of specified pieces of related research by individual workers, whether or not under the direction of a committee.

### INCIDENTAL INVESTIGATIONS

The following is a brief account of collective investigation carried out in the course of special inquiries undertaken by the Association.

The first of these inquiries in point of time was that known as the success. At the thirteenth Annual Meeting of the Association in 1882 Dr C. Hurdnield Jones in making some remarks on remedies and on the study of their action suggested that medical practitioners should collect information on subjects to be determined by the Council of the Association and as a result of his representations a committee was formed in August of that year to inquire into the action of medicines. Schedule of questions on selected subjects were issued but although the membership of the Association was then about 2,200 only 46 replies were received to the questions sent out. The committee was reappointed in 1885 but there is no record of any further activities on its part. It may however be considered as the forerunner of the Therapeutic Committee of the Association which carried out a considerable amount of valuable work between 1887 and 1904.

The Therapeutic Committee was instructed to obtain from the medical profession its opinion regarding the utility or the best method of using well known or established drugs. While it would seem that the major part of the work consisted of the collection of inquiry by individual under expert scientific direction the method of collective investigation proposed was used on occasion. In some cases general appeal were made in others a number of practitioners were specially appointed to investigate the various therapeutic questions and record their result in a prescribed manner. Information obtained in this way was passed to the Therapeutic Committee by Branch secretaries. As the collective investigation conducted by this committee were necessarily on a small scale the individual contributor were a relatively 'feet body'. A considerable amount of useful work was done in this way. The committee ceased to exist in 1904 but its successor appointed in 1905 with a very similar reference worked until reduced to the rank of a standing sub-committee of the Science Committee in 1910. In this form it existed until the appointment of a pharmacology in 1912 made it unnecessary to continue its reference. An investigation undertaken by the Therapeutic Committee in 1905 into ether compounds is an example of complete failure of the collective method. The committee reported in 1906 that a circular requesting clinical information as to the value of the several ether compounds had been sent to nearly 300 members of the profession but owing to the small number of replies received the committee was not in a position to report on the subject.

The very extensive work on anaesthetics accomplished by the Association between 1887 and 1911 included a successful application of the method of collective investigation in striking contrast to the failure just described. An Anaesthetics Committee appointed on the recommendation of the Section of Therapeutics at the Annual Meeting in 1891 instituted an inquiry which covered all

cases in which accurate notes could be obtained of the administration of anaesthetics in the United Kingdom during 1892. The committee sent to all who undertook to co-operate in the work record books containing columns for noting all the requisite details. Observers also received a paper to be filled in at the end of the year of inquiry with a summary of the cases noted, and a general statement as to individual opinion and practice in the administration of anaesthetics, 136 record books were returned recording details of 25,920 cases. Of the inquiry papers, however, only 94 were returned. Statements without details were received in connexion with 6147 cases. Possibly the discrepancy between the number of record books and the number of summary sheets returned was due to a premature issue of the latter and then consequent loss before the end of the year. Interim reports on the progress of the work appeared in the *British Medical Journal* annually from 1892 until 1899. In the following year the committee made its final report. This experiment met with a degree of success which was possibly due to the immediately practical interest of the subject of inquiry and the fact that it took its place in a series of investigations undertaken by the Association over a relatively extended period.

An example of a somewhat different method of collective investigation is offered by the work of a committee of twelve on the treatment of simple fractures appointed on the recommendation of the Section of Surgery at the Annual Meeting of 1910. Notices were published in the *British Medical Journal* and *Lancet* requesting communications from those interested and able to show cases. These notices were supplemented by direct communication with the staffs of general hospitals through the surgical registrars. The several hospitals were then allocated to the different members of the committee who inspected the cases presented by the local profession and also hospital and individual records. The greatest possible care was taken to secure the adoption of a uniform standard by the several members of the committee. The report of the committee, published in 1912, contained, in addition to the notes of these cases and the conclusions of the committee, several original communications from English and foreign surgeons. The success of the method adopted is indicated by a request received from the American Surgical Association for advice and assistance in setting up a similar committee.

In each of these inquiries the method of collective investigation was clearly adopted as one means of elucidating some particular problem with which the Association was occupied at the time. The most systematic and comprehensive experiment in collective investigation made by the Association was, however, carried out rather with the object of exploring the possibilities of that method of research than as one line of attack upon a problem already under consideration. It took the form of a number of inquiries directed between 1880 and 1889 by a special committee known as the Collective Investigation Committee.

#### THE COLLECTIVE INVESTIGATION COMMITTEE, 1881-1888

In his presidential address at Cambridge, in 1880, Sir George Murray Humphry made the statement quoted at the head of this review. To that challenge the President of Council, Mr. Husband, responded by moving "that the Committee of Council be requested to consider how such suggestions can best be carried into effect." The motion was carried, and a special Committee on Collective Investigation was appointed, and presented a report adopted unanimously by the Annual Meeting at Ryde in 1881. The machinery set up after much discussion included a central committee, local committees, a body providing liaison between the central and local committees, and a secretary acting under the direction of the central committee. The central Collective Investigation Committee consisted of seven members appointed annually at the Michaelmas meeting of the Committee of Council "to arrange, superintend, and direct the work of combined observation." The local committees were formed in the Branches with the object of securing full local discussion on each subject of observation, and adequate co-operation in the conduct of the research. Fifty-four of these committees were actually appointed at an early date, with a membership of between 800 and 1,000. Their activities were not confined to the promotion of research undertaken centrally or the suggestion of further subjects for investigation, for in some cases local collective investigations were carried out under their auspices—for example, an inquiry into syphilis and its effects upon the civil population of various districts, undertaken by the East Anglian Branch, and an inquiry into diphtheria by the Thames Valley Branch. Inquiry forms

to be completed in connexion with the various subjects were distributed by these local committees.

Representatives of the local committees met the central body at the sessions of the joint committee, a plan which secured the maintenance of full liaison throughout the work. The services of the secretaries were invaluable, not only for the central secretarial work, the collation of records, and formulation of reports, but also for local meetings at which the nature and objects of the inquiries to be undertaken were reviewed. The work was done in part on an honorary basis, but it was later found necessary to retain the services of a paid official.

The first Collective Investigation Committee included three members of the Association who had been most active in promoting the project—Professor Humphry, Dr. W. R. Smith of Cheltenham, and Dr. Ransom. Dr. W. R. Smith of Cheltenham, the first nominee for the secretarial post, declined the office, and Dr. Mahomed was succeeded first by Dr. (afterwards Sir) Wilmot Heringham, and later by Dr. (afterwards Sir) Isambard Owen.

The several inquiries were initiated by the publication in the *BRITISH MEDICAL JOURNAL* of memorandums, specially drawn up by experts in the chosen subjects, indicating the limits of the knowledge already available in connexion with each problem and the particular questions on which it was hoped to throw some light by the method of collective inquiry. Cards of questions on each subject were then issued to individual practitioners, in some cases the secretaries or registrars of the local committees. The several inquiries were kept open for relatively long periods, during which in some cases interim reports or additional memorandums on the subjects were issued with a view to stimulating further interest. The form of the final report varied, but in every case the replies received were carefully collated and tabulated, and the results of this tabulation published, together with the report of which they formed the basis. In some cases the actual replies or précis of the replies were also published.

The reports appeared in the first instance in the *JOURNAL*, but a number were subsequently published in four separate volumes, which included not only the material already indicated, several papers and addresses on the subject of the collective investigation, and general reports from the Central Investigation Committee, but also the forms of inquiry and a number of original communications connected with the subjects of the special reports. The first of these volumes appeared in 1883 and the last in 1888.

Volume I contained a report on an inquiry into communicability of phthisis, based on 1,078 reports received by the committee on this subject. The general opinion as to its value may be indicated by an extract from a Lumleian Lecture by Dr. Andrew, in which it is described as offering "the largest collection (then available) of observations upon the communicability of phthisis amongst men, and by far the most important, inasmuch as it includes communications from men of large experience and of every shade of opinion." Many other complimentary references appeared in the contemporary medical press. This volume contained also preliminary reports on pneumonia, chorea, acute rheumatism, and diphtheria, each of which in the opinion of the committee "distinctly advanced the knowledge of the day in connexion with the subject under inquiry."

The chief contents of Volume 2 were a report on pneumonia, based on reports of 1,065 cases, and a preliminary report on some 400 cases of puerperal pyrexia.

Volume 3 included a review of 439 cases of chorea reported to the committee between April, 1882, and October, 1885, it that date "probably the largest number of original cases ever subjected to careful and detailed examination," a report on cancer of the breast, based on 210 returns made by 111 observers during 1885 and 1886, together with a large number of letters upon the subject of inquiry, and a collection of preliminary reports upon the general subject of old age, covering its incidental changes, its reports upon centenarians, and a report upon a number of post-mortem examinations of centenarians, based on returns received between May, 1884, and December, 1885.

The success of the inquiries on old age and emeer of the list was mainly due to the personal exertions of Professor Humphry and Sir Henry Bustin.

The last volume contains the final reports upon 655 cases of acute rheumatism, collected between April 22nd 1882, and June, 1886, upon the maladies of old age and the present condition habits and circumstances of aged persons, and upon the connexion of disease with habits of temperance. This list was based upon 2500 schedules covering more than 4234 cases returned by 178 contributors.

No further volumes of the record were issued after 1888 but a report on the cause of death amongst gouty men based on 2,852 returns and a report on the geographical distribution of various diseases were published in the JOURNAL early in 1889. The history of the latter is of interest. Sir William Gull, at the request of the Collective Investigation Committee brought the subject of international collective investigation before the Medical Congress at Copenhagen and a general meeting of the congress was devoted to its consideration. The scheme for this inquiry was subsequently drawn up by the International Committee of that Congress in 1884 presumably as the outcome of the deliberations thus initiated by the Association. Reports were prepared in Sweden, Norway, Denmark and America and presented at the meeting of the congress at Washington in 1887. In this country the inquiry papers were issued by the Association to its members and also at the personal cost of Professor Humphry to the remaining members of the profession. The report and maps compiled as a result of this inquiry were based upon 3000 returns.

The response to the inquiries issued though enthusiastic at first seems to have diminished gradually until it became so poor that the committee was unable to recommend any further extension of its activities. The abandonment of the work in October, 1889 was fore-shadowed in a speech made by Dr Carpenter in moving the report of the Collective Investigation Committee at Chicago in 1888. Dr Carpenter said his position was rather uncomfortable since the report would probably be the last presented by the committee to the Association. The fact was that they had been too ambitious seeking to cover too large an area and to obtain too much information at a time when members of the Association were not likely to adopt the suggestions made by the committee. They had however, done a full work but the time had come in the opinion of the Council when they ought to draw in their horns in regard to further allowances. As an illustration of the value of the committee's work he might refer to Dr Lombard Owen's observations on the effects of intemperance on life which had been suddenly taken up by the outside world and references had been drawn which were not borne out by those observations. That showed how the work of the committee would have developed if the opportunity had been afforded.

Consideration of the experience of the Collective Investigation Committee during the nine years of its work shows that whatever its ultimate success it was undertaken under the most favourable auspice. The Association financed its work on a generous scale actually spending over £6000 on the work of investigation and of publication of results at a time when its total annual income ranged roughly from £16000 to £31000. The whole scheme was developed in response to a real demand from all sections of the profession. It was undertaken at a time when the individual practitioner was far less burdened with clerical reports and certificates than he is at the present day and when the possibilities of medical statistics had been far less fully explored than is now the case. The enthusiasm for the experiment is evidenced by the number of local committees formed and the scope of their activities on the one hand and on the other by the large number of individuals who co-operated in the work. The detailed returns received in connexion with all the inquiries undertaken were no fewer than 8253 contributed by 6403 individuals and this during a period at the opening of which the total membership of the Association was little over 5000. Expert assistance was secured and required in the several July cases dealt with. The difficulties as well as the possibilities of such a scheme seem to have been very

fully appreciated and the addresses delivered on the subject of collective investigation might well (apart from references to current theories and methods of treatment) have been written during the last few weeks.

The reports actually issued received at the time very favourable comment and although the circulation of the record does not seem to have been very extensive, it must be remembered that the majority of the reports which it contained had already been published in the JOURNAL. In the face of all this it seems a little difficult to account for the gradual collapse of the movement. Possibly this was due to an overloading of machinery by the issue of so many inquiries during the same period and the policy of keeping a given inquiry open for so extended a term. This may well have tended to dissipation of energy and loss of the keener interest which might have been secured by a simultaneous concentration of all available energies upon a given subject for a shorter period. It is true, of course that the shorter the period the more restricted would be the series of reports which might be expected but in this connexion it may be pointed out that the inquiries were so drawn as to cover not only observations made during the course of the investigation but also records collected by any given individual at an earlier date.

[Part II will give particulars of the new venture in collective research now being undertaken by the British Medical Association.]

## British Medical Association

### CURRENT NOTES

#### The B.M.A. Charities Fund

Dr D. D. FRY, the honorary secretary of the South Eastern Division has forwarded the following contributions to the British Medical Association Charities Fund as additions to the list which was published in the SUPPLEMENT of October 15th, 1927.

	£	s	d
Dr G. Wilson (Weitch-on-Sea)	1	1	0
Dr C. H. T. Stovin (Weitch-on-Sea)	1	1	0
Dr V. J. Hodgson (Weitch-on-Sea)	1	1	0

#### Staff Annual Luncheon

The annual Christmas luncheon of the staff of the British Medical Association was held in the staff luncheon room at Tavistock Square on December 22nd when Mr Treasurer, chairman of the Staff Committee presided. The chairman having read letters from Sir Dawson Williams (Editor) and Mr L. F. F. Scott (Financial Secretary and Business Manager) regretting their absence conveyed the thanks of the staff to the officials whom they had the honour to entertain as guest and tendered the deep sympathy of all to Dr Alfred Cox in his recent bereavement. Dr Cox thanked the staff for their kind thought in inviting the officials to their annual luncheon. He believed that the staff of the British Medical Association was as happy a family as could be found in London and this was partly because the Council of the Association always endeavoured to make the staff comfortable in appreciation of the splendid work they did. Dr Cox then referred to the coming retirement of Sir Dawson Williams after nearly half a century's service with the Association for the last thirty years of which he had been Editor of the BRITISH MEDICAL JOURNAL. He spoke of the sincere character of Sir Dawson Williams of the great work he had done for the Association and the high esteem in which he was held by the journalistic profession of this country and by the medical press of the world. He suggested that the Staff Committee should send on behalf of the staff a message to Sir Dawson Williams hoping that his health would soon improve and regretting that his long and most distinguished connexion with the British Medical Association was coming to an end. Dr Cox concluded by thanking the staff for their sympathy in his retirement and Dr N. C. Horner joined with Dr Cox in expressing appreciation of the generous hospitality of the staff and in acknowledging the high standard of their work and their unflinching loyalty. Dr G. C. Anderson also endorsed very warmly what had been said of the staff. He

considered it was a happy thought that prompted such an annual gathering and hoped the custom would continue in order to give an opportunity for them to meet as a whole at least once in the year

## Association Notices.

### BRANCH AND DIVISION MEETINGS TO BE HELD

**BIRMINGHAM BRANCH NUNEATON AND TAMWORTH DIVISION**—A clinical and pathological meeting of the Nuneaton and Tamworth Division, arranged by Dr Price, will be held at the Nuneaton General Hospital on Wednesday, January 11th, 1928

**BORDER COUNTIES BRANCH ENGLISH DIVISION**—A meeting of the English Division will be held at Marport on Friday, January 27th, 1928. Dr J. N. Douglas Smith will read a paper on the early treatment of puerperal sepsis

**ESSEX BRANCH SOUTH ESSEX DIVISION**—The following meetings of the South Essex Division have been arranged

Jan 10th Address by Mr E. C. Hughes on Surgical Mistakes  
Feb 14th Dr A. S. Woodwill  
Mar 13th Medico Legal Meeting

**GLASGOW AND WEST OF SCOTLAND BRANCH LANCASHIRE DIVISION**—A meeting of the Lancashire Division will be held at St. Andrew Station Hotel on Wednesday, January 11th, 1928, at 3.30 p.m. Dr Douglas Guthrie (Edinburgh) will read a paper on the septic tonsil and discharging ear, with lantern illustrations

**LANCASHIRE AND CHESHIRE BRANCH HYDE DIVISION**—A clinical meeting of the Hyde Division will be held in the Maternity and Child Welfare Centre, Hyde, on Thursday, January 26th, 1928, at 8.30 p.m.

**METROPOLITAN COUNTIES BRANCH CITY DIVISION**—A meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road, E., on Tuesday, January 3rd, 1928, at 9.30 p.m. Dr Philip Hamill will read a paper on bacilluria

**METROPOLITAN COUNTIES BRANCH TYNCHLEY DIVISION**—A meeting of the Tynchley Division will be held at the Tynchley Memorial Hospital on Tuesday, January 10th, 1928, at 8.45 p.m. Mr W. S. Peillon will read a paper

**METROPOLITAN COUNTIES BRANCH HAMPSTEAD DIVISION**—A meeting of the Hampstead Division will be held at the Hampstead General Hospital on Thursday, January 12th, 1928, at 8.30 p.m. Dr T. Izod Bennett will read a paper on the treatment of gastric ulcer

**METROPOLITAN COUNTIES BRANCH LAMBETH AND SOUTHWARK DIVISION**—A meeting of the Lambeth and Southwark Division will be held at the Lambeth Carlton Club, Coldharbour Lane, S.W.9, on Wednesday, January 25th, 1928, when Dr A. G. G. Thompson, the newly appointed medical officer of health for Lambeth, will read a paper on the Schick test

**METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION**—A clinical evening arranged by the Lewisham Division will be held at the South Eastern Children's Hospital, Sydenham, on Tuesday, January 17th, 1928

**METROPOLITAN COUNTIES BRANCH NORTH MIDDLESEX DIVISION**—At the meeting of the North Middlesex Division to be held on Wednesday, January 25th, 1928, Mr T. H. C. Beuans will read a paper on local immunization and antiviral therapy

**METROPOLITAN COUNTIES BRANCH ST PANCRA'S DIVISION**—A meeting of the St Pancras Division will be held at the British Medical Association House, Tavistock Square, W.C.1, on Tuesday, January 10th, 1928, at 9 p.m. Sir Squire Sprigge will read a paper entitled "The middle years"

**MIDLAND BRANCH CHESTERFIELD DIVISION**—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, January 13th, 1928, at 8.15 p.m. Mr W. W. King will read a paper on dysentery—its cause and its symptom

**MIDLAND BRANCH HOLLAND DIVISION**—A meeting of the Holland Division will be held at Spalding on Friday, January 6th, 1928, at 3 p.m. Sir Humphry Rolleston, Bt, Regius Professor of Physic in the University of Cambridge will give a British Medical Association Lecture on the medical aspects of idiocynerasies

**NORTH OF ENGLAND BRANCH BISHOP AUCKLAND DIVISION**—A meeting of the Bishop Auckland Division will be held at the Cottage Hospital, Bishop Auckland on Friday, January 27th, 1928, at 8 p.m. Dr J. C. Spence will give a lecture on medical emergencies in children

**NORTH OF ENGLAND BRANCH TYNESIDE DIVISION**—The Tyneside Division has arranged to hold a dinner on January 13th, 1928. Sir Robert Bolam has promised to attend and the member of Parliament for Tyneside, Major West Russell has been invited

**OXFORD AND READING BRANCH OXFORD DIVISION**—A meeting of the Oxford Division will be held in the Radcliffe Infirmary on Wednesday, January 25th, 1928, at 2.30 p.m. Dr T. Izod Bennett will lecture on recent advances in pneumonia

**SOUTHERN BRANCH PORTSMOUTH DIVISION**—The annual dinner arranged by the Portsmouth Division in aid of medical charities will be held at the Savoy Cafe on Tuesday, January 10th, 1928

**SURREY BRANCH CROYDON DIVISION**—A meeting of the Croydon Division will be held at the Croydon General Hospital on Wednesday, January 11th, 1928, when Dr G. Lewin will give a lantern demonstration on Bazin's disease. The meeting will be preceded by tea at 4 p.m.

**SURREY BRANCH GUILDFORD DIVISION**—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford, on Thursday, January 5th, 1928, at 4 o'clock. Sir John Collic will give an address on "What law and medicine meet". Tea served at 3.45 p.m.

**YORKSHIRE BRANCH DEWSBURY DIVISION**—A meeting of the Dewsbury Division will be held at the Batley Hospital on Friday, January 13th, 1928. Mr L. R. Braithwaite (Leeds) will read a paper on chronic pyrosis in the night. Tea at 6.45

**YORKSHIRE BRANCH WAKEFIELD, PONTEFRAC T AND CASTLEFORD DIVISION**—A meeting of the Wakefield, Pontefract, and Castleford Division will be held at the Great Bull Restaurant, Westgate, Wakefield on Thursday, January 12th, 1928. Dr G. B. Hillman will give a lecture on the insurance practitioner and some of his relationships. Supper (2s. 6d.) at 7.45 p.m., will precede the lecture

## Meetings of Branches and Divisions

**BIRMINGHAM BRANCH NUNEATON AND TAMWORTH DIVISION**—A meeting of the Nuneaton and Tamworth Division was held at Nuneaton General Hospital on December 14th

Dr J. Chalmers of Tamworth was unanimously elected joint honorary secretary, vice Dr J. Cyriax (resigned on leaving the area)

Dr JAMES T. BRIDFORD of Birmingham read a paper on the radiology of the alimentary canal, illustrated by a large number of very excellent lantern slides. He emphasized the great importance of a preliminary general screening before proceeding to the examination by barium meal of the part suspected. He instanced cases where such lesions as multiple tubercle of the lungs, gall stones, renal stones, Paget's disease, cancer, and carcinoma of the spine and aneurysm had been so discovered when lesions of stomach, appendix, or intestine had been suspected from clinical examination, and where patients had been sent for x-ray examination of these organs. About 30 per cent of gall stones could be seen by ordinary screening and a very large proportion of the remaining 70 per cent could be demonstrated by modern methods of cholecystography when the iodine salt was used there was no reaction whatever in 80 per cent of cases. Dr Bridford then dealt with the radiology of the trachea, oesophagus, stomach, appendix, and small and large intestine, and showed illustrative slides

A discussion followed in which Drs PRACY DUBLEY, and JONES took part. On the motion of the Chairman, seconded by Dr I. N. NASO, a very hearty vote of thanks was recorded to Dr Bridford for his valuable paper and demonstration

Prior to this meeting medical practitioners in North Warwickshire made a presentation to Dr R. J. Cyriax, the tuberculous medical officer, on his leaving the area. Dr E. N. NASO occupied the chair, and expressed the regret of practitioners in the area at the departure of Dr Cyriax. Dr L. E. PRICE referred to the constant tact and unflinching courtesy shown by Dr Cyriax during his seven and a half years in the area. He said that it all public health medical officers did their work in a similar way there would be no chance of friction between them and the general practitioners. He thought that the feeling between the public health officer and the practitioner was improving, and that it was men like Dr Cyriax who helped so much towards this spirit of mutual understanding and co-operation. On behalf of the medical practitioners in the area he presented Dr Cyriax with a silver cigarette case suitably inscribed, and a cheque

Dr CYRIAX replied in a characteristically modest speech

**DOVELET AND WEST HANTS BRANCH WEST DORSET DIVISION**—A meeting of the West Dorset Division took place at the Yeatman Hospital, Sherborne, on December 14th. In the absence of Dr REES Dr UYENH presided

Dr J. WHITTINGHALE showed two cases: (a) A man of 50 with epithelioma of the hard palate. Dr Douglas Harner had performed a wide removal of the original growth by diathermy. Metastases had occurred in the superior deep cervical glands, which were being treated by the implantation of radium needles. The patient now had facial palsy and lancinating pains due to infiltration of the trigemino-temporal nerve and branches of the cervical plexus. So relief of the pain had been obtained by infiltration with quinine and mercuric iodide. (b) A woman of 52. In 1924 she suffered from acute appendicitis and had her appendix removed. At the operation a large mass was found in the pyloric end of the stomach, many enlarged and hard lymph glands along both curvatures, plaques of growth diffused over intestines, free fluid in the greater sac, and a hydronephrotic left kidney. The patient was now alive and well and free from any symptoms

Dr H. H. WOYLE showed two cases: (a) A lad of 15 presenting Frohlich's syndrome, dystrophia adiposogenitalis associated with interference of the function of the posterior lobe of the pituitary gland. The onset was in 1919 with epileptiform fits. In 1921 severe frontal headaches began. In the following year the patient had measles, followed by acute rheumatism. The obesity had gradually developed since then and the patient's weight was now 15 st 2 lb with a chest measurement of 38 in. His condition was gradually improving, he had some pubic hair and the testis were developing. (b) A woman of 30 who, on June 2nd last, had a fibrile attack similar to influenza, with frontal headache and temperature between 100° and 102°, spleen enlarged and level with the umbilicus, both kidneys movable, no albumin or



sugar in urine. On June 6th the spleen was larger, the urine contained many motile bacilli but no pus or blood. On June 13th blood films showed polymorphs 15 per cent, lymphocytes 82 per cent, large mononuclears 4 per cent, and myelocyte granules 1 per cent. Considerable anisocytosis and poikilocytosis were present, no nucleated red cells, blood platelets numerous. By August the patient was much improved, but the spleen was still enlarged. In November she had the same symptoms as in her initial attack. Temperature 102° to 103° F. for several days and raised for fourteen days. Spleen again enlarged. The diagnosis suggested was lymphoid leukaemia.

The cases were discussed and in regard to the last alternative diagnosis of malaria and paratyphoid fever were suggested.

Dr. Gerard Pearce read a paper entitled 'The problem of the neonatal abdominal case.' This dealt exhaustively with the subject, was supported by numerous references and relayed by many witty quotations. Many took part in the subsequent discussion and congratulated Dr. Gerard Pearce on the excellence of his paper.

At the close of the meeting tea was served by the kindness of the medical staff.

#### ESSEX BRANCH SOUTH EAST DIVISION

The annual general meeting of the South East Division was held at the Queens Hotel, Westcliff, on October 18th. Dr. J. H. (Ravleigh) occupied the chair, supported by a very large attendance. The following officers were elected for the coming year:

President Dr. H. C. Ellis, Vice-President Dr. W. F. Adams, Treasurer Dr. R. H. Norman, Secretary Mr. D. D. E. A. J.

Another meeting of the Division was held at the Queens Hotel, Westcliff, on November 6th. There was a very large gathering to welcome Dr. J. F. Walker, who gave a short interesting address on the different side lines of general practice. At the termination of the lecture the Division, through Dr. W. F. Adams, gave Dr. Walker a handsome caution of their deep appreciation of his valuable services to the Division as their secretary for a period of six months.

#### GLoucester HIRE BRANCH

The opening meeting of the Gloucester Hire Branch was held at the General Hospital, Cheltenham, on November 10th. Dr. J. R. Carter, Colwyn, presided and there were fifty-six members present.

Dr. Collier, after expressing the pleasure and profit his year of office had brought him, called on the president for the year, Dr. C. L. Coode, to deliver his presidential address.

Mr. Coode, who was received with acclamation, took as his subject 'A series of cases of gastric ulcer occurring in a small hospital. In all there were 101 cases, under in personal charge all of which showed at least two of the three cardinal symptoms: (1) Epigastric pain having a definite relation to the ingestion of food; (2) Vomiting of or after food; (3) Haemorrhage—that is, haematemesis or melæna. Cases of duodenal ulcer were included as in Mr. Coode's opinion these were in the acute stage indistinguishable from gastric cases. In the series there were 54 men and 47 women. Dealing first with the women's group the ages varied from 18 years to 72 years, the average being 32. This group was divided into two classes according to age: (1) 30 years and under—comprising 27 cases. All had symptoms (1) and (2), and two-thirds also had symptom (3). They all belonged to the anaemic, errant girl class. This type of case is rapidly disappearing. In this group there were 3 perforations all operated on, with 1 death. (2) Over 30 years—20 cases. In this group were 2 perforations, 6 operated on, and 1 death. 2 others died of haemorrhage. So that among the women there were 47 cases with 4 deaths. There were 54 cases among men. Of the 20 perforated, 14 being gastric ulcers and 6 duodenal. All were operated on, and 7 died. 2 others died from haemorrhage, 1 from tubercular abscess, and 1 from bronchitis. Among the men, therefore, there were 54 cases and 11 deaths. Two cases were connected with cancer of the stomach, one proved to be so at the time of operation and the other operated on at the age of 69, dying seven years later with symptoms pointing to malignant disease.

Mr. Coode gave interesting details of a number of the cases, and in discussing surgical treatment recorded his opinion that gastro-enterostomy should be done at the same time as closure of the perforation if at all possible, as it might save years of most acute discomfort and did not appear to add much of a load to the immediate chance of recovery. He concluded with a few remarks on the present position and immediate outlook of the general practitioner, his general idea being that unless the position were otherwise, the general practitioner would find himself ousted from his rightful place before he realized it.

On the motion of Mr. Campbell, seconded by Sir Harry Water, a vote of thanks to Mr. Coode for his address was carried by acclamation. Subsequently forty-six members had supper at the Cadena Cafe.

#### METROPOLITAN COUNTIES BRANCH SOUTH WEST DIVISION

A very successful reception and dance in aid of the P. M. A. Charities Fund was held in Leyton Town Hall on November 24th. Over one hundred and thirty guests were present, including the deputy mayor (Mr. Man Bulgin) and the late mayor (Sir James Stale). As a result the sum of £202.6d has been handed over to the Charities Secretary.

A meeting of the South West Essex Division was held in Livingstone College, on December 6th, when Dr. D. M. McKelvey gave a most interesting lecture illustrated by lantern slides on 'Unfounded ways in medical history.' He indicated the debt of medicine to folklore and the prevalence of the old traditional

medical beliefs in country districts. The bacterium had taken his place or the demon, but the theory of making the place too hot for the demon or bacterium—till held. The speaker traced the history of several drugs showing how some were till used for the same disease as previously while others, such as digitalis, were now used for quite different ones. Peter's case was made to the ancient belief that woman was fertilized by water. This probably originated in the Nile Valley where no seed was sown from year to year but the overflow of the Nile fertilized the seed left over from the year before. This threw light on the popularity of well treatment for sterility and to restore health to weak children. The ancient operations of Caesarean section and trephining were described. In times past Caesarean section was generally performed on a dead or dying woman to save the child, but it was also used at times on the living. A detailed description was quoted of a completely successful operation by an amateur negro surgeon on a young native primipara in Uganda in 1834, where the excellent technique had many resemblances to modern European surgery. Pictures of a Neolithic skull showing trephining holes were shown. The operation was performed for epilepsy and severe headache as well as for fracture. Mention was made of the popularity of trephining in Cornwall in comparatively recent times. Several members took part in the subsequent discussion and the meeting finished with an appreciative vote of thanks to Dr. McKelvey.

#### METROPOLITAN COUNTIES BRANCH CAMBERWELL DIVISION

A meeting of the Camberwell Division was held at St. Cuthbert's Hospital, Camberwell, on December 13th, when Dr. P. C. Cox was in the chair.

A clinical demonstration was given by members of the hospital staff under the direction of the deputy medical superintendent, Dr. Robert. Several cases of great interest and practical value were shown together with a series of x-ray plates. The demonstration was followed by tea and a discussion.

A vote of sympathy to Dr. McKelvey in his illness proposed by Dr. Cox and seconded by Dr. Hazzard was carried unanimously. The meeting closed with a hearty vote of thanks to the hospital staff.

#### NORTH OF ENGLAND BRANCH DARTFORD DIVISION

The smoking concert arranged by the Dartford Division was held on December 14th. Mr. Clarke and Mr. Macfarlane, dental surgeons, gave some entertaining items of song and recitation. Dr. C. H. H. officiated at the piano and Dr. J. Brown sang a song. Dr. H. or House of Durham University gave an address on diabetes which was thoroughly enjoyed. Voluntary contributions were added to the inquiry being undertaken by the Association into the treatment of varicose ulceration and several members undertook to participate.

#### NORTH OF ENGLAND BRANCH DARTFORD DIVISION

A clinical meeting of the Dartford Division was held at Greenbank Hospital, Dartford, on November 15th, when a lecture was given by Mr. Dr. H. G. Orange. The lecture, which was framed round the wrist and ankle. The lecture, which was very well illustrated by good lantern slides or diagrams, afforded material for a full and interesting discussion. A hearty vote of thanks was accorded Mr. Orange at the close.

#### NORTH OF ENGLAND BRANCH TYNSIDE DIVISION

At a well-attended meeting of the Tynside Division held on November 25th, Dr. J. C. Spruce read a most interesting paper on recent advances in medical treatment. Emphasizing the importance of close clinical observation with the judicious use of every method he illustrated how advances had recently been made in the treatment of infants in the treatment of such conditions as rickets, diabetes mellitus and pernicious anaemia. A keen discussion demonstrated the lively interest aroused.

#### OXFORD AND PEABODY BRANCH OXFORD DIVISION

The annual meeting of the Division was held at the Peabody Infirmary, Oxford, on Wednesday, November 23rd. Dr. William Collier, in the chair, and four members were present.

The following officers were elected for 1928: President Dr. J. C. Spruce, Vice-Chairman Dr. C. H. H. (Clarke), Treasurer Dr. J. C. Spruce, Secretary Dr. J. C. Spruce, Honorary Secretary Dr. J. C. Spruce.

Dr. Collier, the retiring chairman, then read a paper on 'Some changes in medical and surgical practice during the past fifty years.' Dr. Collier, who was one of the first clinical assistants, gave a graphic description of the gradual transition to antiseptic surgery and remarked that the appalling nature of the condition prior to its adoption had been in sufficient emphasis. He alluded to Sir Hector Cameron's account of the surgical wards in the Glasgow Infirmary when he commenced his work there, including the ravage of the pital gangrene, erysipelas, septicaemia and pyæmia, the sickening odour pervading the ward, due to purulent changes in the wound, and the roaring and cries of the unhappy patient. In the early part of the nineteenth century John Bell, a distinguished surgeon, had stated that the pital gangrene no treatment was of any value and had advocated amputation at the level of the hip joint. Sir James Simpson, on the discovery of chloroform, had collected from the hospital surgeons all the cases of the disease and had amputations of limbs and published the figures in 1850. Out of 1,000 amputations in hospital practice 85 patients had died, a proportion of 2 in 5, whereas out of 2,063 amputations in private

practice only 226 patients had died or 1 in every 9. Simpson deduced that the large hospitals ought to be destroyed or replaced by huts built of iron, and much criticism had been aroused. Dr Collier described Lister's introduction of antiseptic surgery, relating incidents which occurred at King's College Hospital, where he was one of Lister's clerks, and mentioned how the students of that time were the first to give enthusiastic support to the new methods. He added that at the Annual Meeting of the British Medical Association at Leeds, in 1869, a Leeds surgeon attacked Lister and ridiculed his methods, it was interesting to note that some fifty-seven years later the oration celebrating the centenary of Lister's birth had been delivered by another and more celebrated Leeds surgeon, Sir Berkeley Moynihan. Dr Collier then passed to the events following the discovery by Koch of the tubercle bacillus in 1882 and the therapeutic changes which had followed. He commented on the prophylactic value of vaccine injections in the South African and the recent war, and said he had used antitubercular vaccines successfully for many years. Other subjects dealt with included blood pressure, the endocrine secretions, and necessary food factors.

#### SIR PIERRE LEONE BRANCH

The thirteenth scientific meeting of the Sierra Leone Branch was held on November 3rd. In the absence of the president, Professor Blacklock, who was out of the colony, the vice president, Dr Pratt, took the chair.

Dr McDONALD showed a case of larva migrans in an African child aged 2 years. It had appeared three weeks previously as an itching point on the palm of the proximal phalanx of the first finger on the right hand. The itching point had travelled distally, leaving behind it a tortuous raised line 2 to 3 mm thick on the knuckles, bases of the fingers, and dorsum of the hand. The discussion centred on the probable cause of the eruption and on its treatment.

Dr WILKINSON showed a case of erythema in a pregnant African woman. The condition was one of horn-like papules, some acuminate, situated on the outer aspect of both legs and arms. The eruption was pruriginous. He also showed a case of molluscum contagiosum in a child aged 18 months. The mother had three children, the oldest 8 years, and all of them had suffered from the disease, although she had never had it.

Dr EASMON showed a catheter made locally by a blacksmith at Pujehun for a Gullin man who had stricture and perineal fistula for eighteen years. Also a self-retaining bladder drainage tube for permanent cystostomy, showing the marks of recent calculus formation. Its lumen was nearly blocked by calculus after being *in situ* for only six weeks. He also showed a patient with a history of dislocation of the jaw, for which forcible but ineffectual attempts at reduction had been made eighteen months previously, together with skirgisms of the case.

Dr ALEXANDER showed a male aged 19 years with tinea cruris involving a large area on face, neck, chest, and limbs undergoing treatment with tincture of iodine, also a case of flaccid paralysis of the lower limbs present since birth. Both legs were much wasted and the right anesthetic, but the trunk and arms were unusually powerful and the patient could move and climb anywhere.

Dr RENNER showed a case of clinical primary yaws treated with disappearance of eruption after two injections of sulfurarsol. A month later the case relapsed, with primary lesions. Sulfarsol treatment was repeated without result and bismuth sodium potassium tetrastearate had no effect after the administration of 60 grams. The patient was a Syrian boy and as there was a family history of penicillium dermatitidis it was considered expedient to have a laboratory examination of the lesions. Dr Renner undertook to show the case again at the next clinical meeting of the Branch.

Mr QUINN STEWART showed a Fallopian tube and ovary which he had removed from a patient the previous day. The tube presented the appearance of a very early ectopic gestation in its interstitial position with a small rupture. The case was interesting clinically from the fact that the patient denied any irregularity in menstrual function, stating that she had had a normal period fifteen days before the onset of her present illness, the other point being that, although rupture had occurred over two days before and the abdomen was found to be full of blood clots and fluid blood, the patient was not seriously collapsed. Bleeding had apparently been intermittent. Mr Stewart showed also a case of haematocoele of the tunica vaginalis with abscess of the testicle. The tunica was much thickened and the epididymis enlarged and fibrotic so that the hydrocele had apparently been present for a considerable time although the patient was now only 22 years of age. The haemorrhage into the sac of the hydrocele was evidently of recent date following the septic infection of the testicle, but what the origin of the latter was had not been determined.

**SOUTH WALES AND MONMOUTHSHIRE PRINCIPAL SWANSEA DIVISION**  
On December 8th an official British Medical Association Lecture was delivered at the Hotel Metropole, Swansea by Dr S. A. KENNEDY WILSON (London) on epileptic variants. At its conclusion he was warmly thanked by the chairman, Dr DAVID E. EVANS, supported by Dr SLADEN and by Dr FREDERICK (Port Talbot), chairman of the Division. The lecture was considered to be one of outstanding brilliance. It was most interesting and showed deep and clear thought and certainly one of the best lectures which we have heard in many years.

The lecture was followed by a supper, there was a very fine attendance of medical men from the town and district.

## National Insurance.

### LONDON PANEL COMMITTEE

A MEETING of the London Panel Committee was held on December 20th, Dr H. J. CARDALE was in the chair. It was announced that the administrative expenses of the committee for 1928 had been estimated at £3,600, for which sum application would be made to the Insurance Committee. The Chairman remarked that the Panel and Pharmaceutical Committees together were allowed up to an expenditure equal to 2d per insured person, but actually the budget of the Panel Committee represented less than one halfpenny, so that the committee could not certainly be accused of extravagance.

#### Financiers in Control of Practices

The CHAIRMAN drew the attention of the committee to the case of a practice in the East End of London which, he alleged, was controlled by a firm of financiers. Apparently it was the practice of this firm to put a doctor in charge as a certain salary while the firm took the profits, and he believed that the profits were very large, the takings, on the lines of a "sixpenny doctor" practice, amounting to £25 a week. Patients were attracted by cheap fees, and undesirable notices—of a tenor inviting insured persons to transfer to the practice—were exhibited in the surgery. The financing of practices by lay firms, the practitioners themselves being without capital, appeared to be on the increase. Dr GREGG and he had discussed the matter with the Deputy Medical Secretary of the British Medical Association, Dr H. B. MORGAN, who asked whether the General Medical Council could not act in the matter. The secretary (Dr BARRESON) replied that the Registrar of the Council had stated that from the legal point of view no action could be taken, if a practitioner chose to be employed by anyone, lay person or other, so long as the lay employer did not meddle with the medical work there was no ground for interference. The secretary of one of the medical defence organizations took the same view.

Dr G. JONES pointed out that the financiers were the principals and the doctor their agent, and should the doctor be brought in the practice the principals would be associated with him in any proceedings, which might be taken. Dr PARRIBONE said that the financiers—by whom, he supposed, were meant moneylenders—would be unable to enforce a bond on the part of a doctor not to practise within a given area, and if that were so, there was nothing to prevent these practitioners becoming independent and setting up a practice in the neighbourhood in which case the financiers would find it unprofitable.

The secretary was instructed to report again on the subject of this particular practice when it was known what effect certain representations had had upon the exhibition of undesirable notices in the surgery.

#### Practice Arrangements

The Insurance Committee had requested the Panel Committee to offer observations upon the application of a practitioner who resided and practised in North London for permission to attend and treat insured persons at an address in or near the City, almost four miles distant. The opinion of the Panel Committee was that the practitioner could not provide the personal treatment for his insured patients required by the terms of service at two addresses, so far apart. Members mentioned two other cases in which practitioners were said to conduct large practices, in each case at two addresses in quite different parts of London.

The CHAIRMAN stated that a letter had been received from the Ministry of Health to the effect that the Ministry had allowed the appeal of a practitioner against the decision of the Insurance Committee not to permit her to employ an assistant. The ground of the committee's refusal had been the smallness of the number of insured persons on the practitioner's list. The Chairman thought that the result of this appeal would be all to the good.

#### Surgery Accommodation

It was reported that a practitioner had, quite unnecessarily, written to the Insurance Committee asking whether he might have two waiting rooms, one for private and the other for insurance patients, and the Insurance Committee having referred this matter to the Panel Committee, it was proposed that the question be discussed by the joint consultative committee of the two bodies.

Dr GREGG thought that the number of waiting rooms which a practitioner might have should not even be the subject of discussion. He agreed that it was important to secure that insured patients were not kept waiting longer than private patients, but that was all. Dr MORGAN said that any attempt to separate insured and private patients into different categories would prejudice the insurance service in the eyes of the public.

Two or three members said that they were compelled to have more than one waiting room, not on account of any distinction between private and insured patients, as such, but because of the arrival of persons in very dirty clothing—for example a drunken man's coat from his car—would come in, to the annoyance of other people in the waiting room.

The CHAIRMAN said that there was no distinction of classes to the right of the doctor to exercise his discretion. In fact, there would be no harm in talking over the subject with the

representatives of the Insurance Committee who would also surely be convinced that the doctor must have liberty in this matter.

It was agreed that the question be discussed by the joint committee.

### Ethical Matters

The Ethical Subcommittee stated that it had investigated a complaint against a practitioner that taking charge of a practice as a locum tenens during the absence of the principal he had secured the transfer of many of the patients to his own list. The number of such transfers during ten weeks had been eighty. The subcommittee could not regard the practitioner's explanation as satisfactory and recommended that particulars of the case be forwarded to the General Medical Council. This was agreed to but it was stated that the Panel Committee would not appear as prosecutor.

Another case had reference to the neglect of a patient by a practitioner to improve his signature on his prescriptions. He had been warned twice previously but the signature remained quite illegible. The secretary was instructed to warn the practitioner again informing him that should a further adverse report be received the matter would be referred to the Medical Service Subcommittee.

### BOOKS ADDED TO THE LIBRARY

The following books were received by the Library of the Association during October and November, 1927.

- Anonim. The Secret and His Social Attitudes 1927  
 Baile T. H. The Life and Times of Adolf Kraus 1927  
 Baile W. H. The Cur of Imperfect Sight by Treatment without Glasses 1927  
 Baile and Skinn. Eruptions Pathologic in the Oral Cavity 1926  
 Baile A. The Physiology of Mucosa 1927  
 Broome G. E. Aid to Tropical Medicine. Third edition 1927  
 Brown A. Laing. The Endocrine in General Medicine 1927  
 Bulch A. Bacteriology for Dental Students 1927  
 Cancer Review. The Volume 1 and 2, 1926-27  
 Cattier. La Stille. Penicilline 1927  
 Chas. J. Comparative Histology of the Heart 1927  
 Chas. J. Les Arteries et la Clinique 1926  
 Chas. C. The Glance of Destiny 1927  
 Chas. P. G. Leprosy. Symptom, Diagnosis and Treatment. Compendium of the Physical and Mental from the Practitioner of the Disease. Reprint volume 1926-27  
 Conf. R. Diagnostics and Treatment of Puerperal Disease 1927  
 Dabrowski D. L. Angina of the Puerperal and Angina of the Puerperal 1927  
 Dabrowski J. Ann. La Rougeole 1926  
 Dabrowski A. The History of the Glands 1927  
 Dabrowski A. Clinical Notes and Deductions 1926  
 Dejeune J. S. Neurologie des Maladies du Système Nerveux 1927  
 Dental Board of the United Kingdom. History of the Month and Teeth 1927  
 Dickinson. The Patient Dilemma 1927  
 Dudgeon L. S. Bacterial Vaccine 1927  
 Evans and Jones. The Tilted Box of the Doctor 1927  
 Fitzwilliam D. C. L. The Tongue and its Diseases 1927  
 Frazer H. R. D. Nervous Matter in the Human Body 1927  
 Frazer H. R. D. Sweet Acid of the Physiology of the Human Body 1927  
 Fremantle F. E. The Health of the Nation. 1927  
 Guy Hospital Report. Volume 77 part 3 and 1 1927  
 Haberland H. F. O. Die operative Technik des Tier Experiment 1926  
 Hannan J. H. The Fluorine of the Metabolism 1927  
 Harvard Monographs on Education. Special Disabilities in Learning to Read and Write 1927  
 Harvey F. H. The Legation 1926  
 Haydel R. Blood Sugar Status. Acta Medica 1924  
 Haydel R. J. Fatigue or Freedom 1927  
 Hornbrook E. A. Whole Deal with Practical Recipes 1927  
 Hunt E. L. F. The Surgeon of Head Face and Neck 1926  
 Jerv. Sir John. On the Office and Duties of Coroner. Sixth edition edited by F. Danforth Thomas 1927  
 Johns Hopkins Hospital Reports. Volume 21 4 and 6 1923-4  
 King's College Hospital Pharmacopoeia 1927  
 La Liga Contra el Cancer. Diagnostico precoz del Cancer 1927  
 Late Sir Arbuthnot. The Secret of Good Health 1927  
 Lehmann M. M. Bakteriologische Diagnostik. 7. Aufl. 1 Bd 1926  
 Leers F. L. Exploration Clinique et Diagnostique Chirurgicale 1927  
 Lechart L. P. Short Manual of Industrial Hygiene 1927  
 Macdonald. The Nature of Disease. Volume 2 1927  
 Macdonald. Modern Methods in the Diagnosis and Treatment of Renal Disease. Fourth edition 1927  
 Meeker S. R. Mother and Lethal Child 1927  
 Medical Society of the County of Kings. Practical Lecture 1927  
 Meeker J. W. Comprehensive Treatise on Inorganic and Theoretical Chemistry. Volume 7 1927  
 Myers J. A. The Normal Child of Adult and Child 1927  
 Myers J. A. Antigenotherapie de la Tuberculose 1927  
 Nouveau Traite de Medecine. Fasc. IV. Sans 1927  
 O'awa T. Law and Practice relating to Coroners 1927  
 Pavlov I. P. Conditioned Reflexes 1927  
 Peabody F. W. The Care of the Patient 1927  
 Peltz M. and Dufour. Tuberculose Medicale de l'Enfance 1927  
 Pitt Rivers G. H. L. The Clash of Culture and the Contact of Races 1927  
 Ruland R. P. and Turner P. The Operations of Surgery. Two volumes. Sixth edition 1927  
 Radol G. de V. Therap. Act. Malaria 1927  
 Schell E. Das Autonome Nervensystem 1926  
 Schell E. A. Handbuch der Krankheiten des Blutes und der Blutscheidenden Organe. 1. Bd 1926  
 Schell E. A. La Leita Institut regular in Chirmania 1927  
 Smith A. R. Some Facts about Binocular Vision 1927  
 Sykes W. S. A Manual of General Practice 1927

- Van Gehuchten P. Les Maladies Nerveuses. Nouvelle édition 1926  
 Varrier Jones. Significance of Temperature Variations 1927  
 Ve der B. S. Inventive Pediatrics 1927  
 Waldstein L. The Subconscious Self 1926  
 Wallis J. S. The Teeth and Health 1926  
 Wallis J. E. Symptomatology and the Origin of the Species 1927  
 Wenzelbach and Winterberg. Unser gemeinsames Herz atigveit 1927

### Correspondence

#### The Future of General Practice

SIR—May I venture to draw your attention to a matter that has been on my mind for some time? I refer to the condition of the modern country general medical practitioner the world he is at present living in and the one he seems likely to come to.

Owing to a variety of causes the lot of the country doctor now is very different from what it was in the nineteenth century. All the savour of medical life is being gradually and steadily taken away. He is no longer the mainstay of our calling, strong and fit for any emergency, but his strength is being removed from him so that there is danger of his degenerating into a mere tag to the hospital surgeon and consultant, a scout to the maternity hospital and the nursing home, all the practice left to him being monopolized for the most part by the child welfare centre and the parish nurse or absorbed into the panel. All this of course is not any individual's fault. It is the direct result of what it would not become me to refer to. I need hardly say that there is no pleasure in posing as a medical Solomon Eagle. It is much nicer to think as so many do that everything is for the best in this best of all possible worlds, and that there is no need for us to clear our minds of cant.

There is no sound of alarm on this account or very little in the medical press, and still less interest is taken in this matter by the public but after wandering for more than forty years in the wilderness of general practice I know that what I say is true, and that so very sure to sound this note of discord. It may be that the open stable door has let most of the horses out but it is worth while to try to shut it and so save the few that remain—I am, etc.,

Derbyshire Dec 1st.

A COUNTY DOCTOR

#### Superannuation for Insurance Practitioners

SIR—No competent advocate has in recent times appeared to plead this special cause. So with apologies for intruding I crave a few lines to submit—crudely, I am afraid—a subject for possible consideration at the now no doubt imminent conference on remuneration of practitioners under the National Health Insurance Act. The point I should like to see a discussion on is that of superannuation—it is overdue—for such practitioners.

Among our representatives on various committees some at least are poor men's doctors. They have now done their bit by the N.H.I.C. and they have placed the public health departments on their pedestals. If our leaders now turn their eyes towards the poor doctor himself they will look on some of life's tragedies in the ranks of the plodding middle class practitioner into whose conditions in his no paternal commission has made inquiry, and who in life's winter has no guaranteed provision for the vagaries of fate.

The financial aspect is to some extent, a subject taboo with an honourable profession but we may as well be honest with ourselves. The riches of the majority have been acquired and few have entered the arena equipped with the proverbial silver spoon. The acquisition of substance is an indispensable feature in our lives and the profession owes something to those members who, amid their ministrations, have somewhat overlooked the importance of the material side in relation to self.

In connexion with the operations of the National Health Insurance Act a considerable sum of spare money has been amassed. Already pension schemes are in the field for the beneficiaries, the superintendents and the referees, and I certainly see no reason why the chief operators of the scheme the insurance doctors should not have a say in the share out.

Having decided on the general principle details could soon be arrived at. I might suggest a modest £500 per annum on attaining 60 years of age and after twenty years a satisfactory service under the National Insurance Act, the pensioner to at once relinquish both panel and private practice and not to engage in any remunerative employment. For those crippled by definite ill health a reduced allowance proportionate to length of service could be arranged. The capitation rate need not be raised and the bugbear of buying and selling practices could be eliminated.

Under such a scheme both panel practitioners and patients should profit. I am sure many practitioners hold views similar to my own and I trust they will endorse my remarks—I am, etc.,

December 17th

SENEX

## Naval and Military Appointments.

### ROYAL NAVAL MEDICAL SERVICE

Surgeon Lieutenant Commander T N Dacey to the *Calliope*

### ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Captain W K Mills, OBE, VD, is placed on the retired list.  
Surgeon Sublieutenant T A Brand to be Surgeon Lieutenant

### ROYAL ARMY MEDICAL CORPS

Major General S F St D Green, CB, CBE, RHP, late R.A.M.C., retires on retired pay.  
Colonel L Humphry, CMG, late R.A.M.C. to be Major General, vice Major General S F St D Green, CB, CBE, RHP, to retired pay.  
Lieut Colonel J F Martin, CMG, CBE, from R.A.M.C., to be Colonel, vice Colonel L Humphry, CMG, promoted.  
Lieut Colonel C R Sylvester Bradley is placed on the half pay list on account of ill health, August 12th 1927 (Substituted for notification in the *London Gazette* June 21st 1927).  
Major and Brevet Lieut Colonel C De la Cour OBE, from a Professor Royal Army Medical College is granted the rank of Temporary Colonel whilst employed as Consulting Surgeon to the British Army, vice Temporary Colonel J W West, CMG, KHS, vacated.  
Major H W Rusch OBE, to be Lieutenant Colonel, vice Lieut Colonel J I Martin CMG, CBE, promoted.

### ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenant J C Osborne to R.A.F. Station, Upper Heyford

### REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS  
Lieut Colonel A H McN Mitchell having attained the age limit of liability to recall ceases to belong to the Reserve of Officers.  
Lieutenant J R E Sansom, from A.E.C. Regular Army Reserve of Officers, to be Lieutenant and retains his present seniority.

### INDIAN MEDICAL SERVICE

Major General T H Simons CSI, OBE, has been nominated by the Governor General to be a member of the Council of State in succession to the Hon. Major General A Hooton CBE resigned.  
Colonel A B Fry, CBE, DSO, to be Honorary Surgeon to the Victoria General Hospital, Calcutta, vice Major General G Tate KHS, vacated.  
Lieut Colonel (Brevet Colonel) J N Waller to be Colonel, vice Colonel R V Kukday, CBE.  
Lieut Colonel J Anderson, an Agency Surgeon on return from leave, is posted as Civil Surgeon, Sibn.  
Major R W G Hingston MC, has retired.  
The services of Major R V Morrison are placed permanently at the disposal of the Government of Burma.

### TERRITORIAL ARMY

#### ROYAL ARMY MEDICAL CORPS

Major C E J A Robinson MC, TD, having attained the age limit is retired and retains his rank with permission to wear the prescribed uniform.  
Lieutenant A M Cooke to be Captain.  
To be Lieutenants: Second Lieutenant C T Huxley (late RFA), H Watson and I McD Walker.  
Hypnotic Companies—Lieutenant C M Wilcox, late RFA (Special Reserve) to be Lieutenant.

## VACANCIES

**ABERDEEN** ROYAL ABERDEEN HOSPITAL FOR SICK CHILDREN—Lady Superintendent

**ALINGTON** VICTORIA HOSPITAL—House Surgeon Salary £150 per annum

**PARVA** URBAN DISTRICT COUNCIL—House Surgeon at the Accident and Surgical Hospital Salary £200 per annum

**BRISTOL** GENERAL HOSPITAL—Honorary Medical Registrar

**DERBYSHIRE** ROYAL INFIRMARY Derby—Honorary Gynaecologist

**FINCHLEY** TREATMENT CENTRE—(1) Two Minor Ailment Surgeons (2) Anaesthetist (3) Secretaries

**CULFORD** UNION—Resident Assistant Medical Officer at the Institution. Salary at the rate of £150 per annum

**HOLTHAM** FOR CONSUMPTION AND DISEASES OF THE CHEST Thompson SW 3—Two House Physicians Honorarium £50 for six months

**HULL** ROYAL INFIRMARY—Second House Surgeon Salary at the rate of £150 per annum

**LEEDS** PUBLIC DISPENSARY—Junior Resident Medical Officer Salary £150 per annum

**LINCOLN** THE LANE—Medical Superintendent Salary £700 per annum

**MANCHESTER** ANCOATS HOSPITAL—House Surgeon (Orthopaedic) Salary £100 per annum

**MANCHESTER** ST MARY'S HOSPITALS—(1) Two House Surgeons for the Whitworth Street West Hospital (Maternity) (2) House Surgeon to the Whitworth Park Hospital (Children) Salary at the rate of £50 per annum each

**MINISTRY OF PENSIONS**—Junior Resident Surgical Officer at the Highbury Group of Hospitals Birmingham Salary £300 per annum

**NORTHAMPTON** CROYDON SANATORIUM—Medical Superintendent Salary at the rate of £550 per annum

**PRINCE OF WALES** CENTRAL HOSPITAL, Tottenham N 15—Honorary Anaesthetist Honorarium £20 per annum

**ROYAL FREE HOSPITAL** Gray's Inn Road, W C 1—(1) Clinical Assistants for (a) Surgical Outpatients (b) Children's Department Outpatients (c) Throat, Nose and Ear Department Outpatients (d) Electro-therapeutic and Light Department Outpatients (e) Clinical Assistants in Medical Surgical and

**SEAFORD** HOSPITAL SOCIETY—Honorary Assistant Physician at the Hospital for Tropical Diseases, Endleigh Gardens W C

**WOOD GREEN** URBAN DISTRICT—Medical Officer of Health etc Salary £900 per annum rising to £1000

**CHIEF OF FINCHLEY SURGEON**—The appointment at Bricknell (Perks) is vacant. Applications to the Chief Inspector of Factories Home Office Whitehall S W 1

MEDICAL RELIEF UNDER THE WORKMEN'S COMPENSATION ACT for the Districts of the Bristol Wells Weston Super Mare and Yellon County Courts (Circuit No 53) Applications to the District Secretary Home Office Whitehall S W 1, by January 21st 1928

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning

## British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,  
TAVISTOCK SQUARE W C 1

### Departments

EDITOR British Medical Association (London)  
Telephone numbers of British Medical Association and British Medical Journal Museum 9861 9862 9863 and 9864 (internal exchange four lines)  
SCOTTISH MEDICAL SECRETARY 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

### Diary of the Association

**3 Tues** City Division Metropolitan Hospital Kingsland Road, L Dr Philip Hamill on Bacillus 9.30 pm

**5 Thurs** Guildford Division Royal Surrey County Hospital Guildford Sir John Collic on Where Law and Medicine Meet 4 pm

**6 Fri** Holland Division St Andrew B.M.A. Lecture by Sir Humphry Rolleston on the Medical Aspects of Idiocy 3 pm

**10 Tues** Finchley Division Finchley Memorial Hospital 8.45 pm Portsmouth Division Annual Dinner Savoy Club

**11 Wed** St Pancras Division B.M.A. House, Tavistock Square, W C 1 Sir Squire Spill on The Middle Years, 8 pm

**12 Thurs** South Essex Division Mr E C Hughes on Surgical Mistakes London Conference on Puerperal Morbidity and Mortality, 4 pm

**13 Fri** London Hospitals Committee 2.15 pm Croydon Division Croydon General Hospital Dr C I win on Brain's Disease, 4 pm

**14 Sat** Lanarkshire Division St Enoch Station Hotel Dr Douglas Guthrie on the Septic Tonsil and Discharging Ear 3.0 pm

**15 Sun** Amputation and Tamworth Division Clinical Meeting, Amputation General Hospital

**16 Mon** London Insurance Acts Committee, 12 noon

**17 Tues** Hampstead Division Hampstead General Hospital Dr I Hood Bennett on Gastric Ulcer 8.30 pm

**18 Wed** London Public Health Committee 2.30 pm

**19 Thurs** London Medico-Political Committee, 2.15 pm

**20 Fri** London Journal Committee, 2.30 pm

## DIARY OF SOCIETIES AND LECTURES

**Section of History of** (1) 1.01 (2) 1.02 (3) 1.03 (4) 1.04 (5) 1.05 (6) 1.06 (7) 1.07 (8) 1.08 (9) 1.09 (10) 1.10 (11) 1.11 (12) 1.12 (13) 1.13 (14) 1.14 (15) 1.15 (16) 1.16 (17) 1.17 (18) 1.18 (19) 1.19 (20) 1.20 (21) 1.21 (22) 1.22 (23) 1.23 (24) 1.24 (25) 1.25 (26) 1.26 (27) 1.27 (28) 1.28 (29) 1.29 (30) 1.30 (31) 1.31 (32) 1.32 (33) 1.33 (34) 1.34 (35) 1.35 (36) 1.36 (37) 1.37 (38) 1.38 (39) 1.39 (40) 1.40 (41) 1.41 (42) 1.42 (43) 1.43 (44) 1.44 (45) 1.45 (46) 1.46 (47) 1.47 (48) 1.48 (49) 1.49 (50) 1.50 (51) 1.51 (52) 1.52 (53) 1.53 (54) 1.54 (55) 1.55 (56) 1.56 (57) 1.57 (58) 1.58 (59) 1.59 (60) 1.60 (61) 1.61 (62) 1.62 (63) 1.63 (64) 1.64 (65) 1.65 (66) 1.66 (67) 1.67 (68) 1.68 (69) 1.69 (70) 1.70 (71) 1.71 (72) 1.72 (73) 1.73 (74) 1.74 (75) 1.75 (76) 1.76 (77) 1.77 (78) 1.78 (79) 1.79 (80) 1.80 (81) 1.81 (82) 1.82 (83) 1.83 (84) 1.84 (85) 1.85 (86) 1.86 (87) 1.87 (88) 1.88 (89) 1.89 (90) 1.90 (91) 1.91 (92) 1.92 (93) 1.93 (94) 1.94 (95) 1.95 (96) 1.96 (97) 1.97 (98) 1.98 (99) 1.99 (100) 2.00 (101) 2.01 (102) 2.02 (103) 2.03 (104) 2.04 (105) 2.05 (106) 2.06 (107) 2.07 (108) 2.08 (109) 2.09 (110) 2.10 (111) 2.11 (112) 2.12 (113) 2.13 (114) 2.14 (115) 2.15 (116) 2.16 (117) 2.17 (118) 2.18 (119) 2.19 (120) 2.20 (121) 2.21 (122) 2.22 (123) 2.23 (124) 2.24 (125) 2.25 (126) 2.26 (127) 2.27 (128) 2.28 (129) 2.29 (130) 2.30 (131) 2.31 (132) 2.32 (133) 2.33 (134) 2.34 (135) 2.35 (136) 2.36 (137) 2.37 (138) 2.38 (139) 2.39 (140) 2.40 (141) 2.41 (142) 2.42 (143) 2.43 (144) 2.44 (145) 2.45 (146) 2.46 (147) 2.47 (148) 2.48 (149) 2.49 (150) 2.50 (151) 2.51 (152) 2.52 (153) 2.53 (154) 2.54 (155) 2.55 (156) 2.56 (157) 2.57 (158) 2.58 (159) 2.59 (160) 2.60 (161) 2.61 (162) 2.62 (163) 2.63 (164) 2.64 (165) 2.65 (166) 2.66 (167) 2.67 (168) 2.68 (169) 2.69 (170) 2.70 (171) 2.71 (172) 2.72 (173) 2.73 (174) 2.74 (175) 2.75 (176) 2.76 (177) 2.77 (178) 2.78 (179) 2.79 (180) 2.80 (181) 2.81 (182) 2.82 (183) 2.83 (184) 2.84 (185) 2.85 (186) 2.86 (187) 2.87 (188) 2.88 (189) 2.89 (190) 2.90 (191) 2.91 (192) 2.92 (193) 2.93 (194) 2.94 (195) 2.95 (196) 2.96 (197) 2.97 (198) 2.98 (199) 2.99 (200) 3.00 (201) 3.01 (202) 3.02 (203) 3.03 (204) 3.04 (205) 3.05 (206) 3.06 (207) 3.07 (208) 3.08 (209) 3.09 (210) 3.10 (211) 3.11 (212) 3.12 (213) 3.13 (214) 3.14 (215) 3.15 (216) 3.16 (217) 3.17 (218) 3.18 (219) 3.19 (220) 3.20 (221) 3.21 (222) 3.22 (223) 3.23 (224) 3.24 (225) 3.25 (226) 3.26 (227) 3.27 (228) 3.28 (229) 3.29 (230) 3.30 (231) 3.31 (232) 3.32 (233) 3.33 (234) 3.34 (235) 3.35 (236) 3.36 (237) 3.37 (238) 3.38 (239) 3.39 (240) 3.40 (241) 3.41 (242) 3.42 (243) 3.43 (244) 3.44 (245) 3.45 (246) 3.46 (247) 3.47 (248) 3.48 (249) 3.49 (250) 3.50 (251) 3.51 (252) 3.52 (253) 3.53 (254) 3.54 (255) 3.55 (256) 3.56 (257) 3.57 (258) 3.58 (259) 3.59 (260) 3.60 (261) 3.61 (262) 3.62 (263) 3.63 (264) 3.64 (265) 3.65 (266) 3.66 (267) 3.67 (268) 3.68 (269) 3.69 (270) 3.70 (271) 3.71 (272) 3.72 (273) 3.73 (274) 3.74 (275) 3.75 (276) 3.76 (277) 3.77 (278) 3.78 (279) 3.79 (280) 3.80 (281) 3.81 (282) 3.82 (283) 3.83 (284) 3.84 (285) 3.85 (286) 3.86 (287) 3.87 (288) 3.88 (289) 3.89 (290) 3.90 (291) 3.91 (292) 3.92 (293) 3.93 (294) 3.94 (295) 3.95 (296) 3.96 (297) 3.97 (298) 3.98 (299) 3.99 (300) 4.00 (301) 4.01 (302) 4.02 (303) 4.03 (304) 4.04 (305) 4.05 (306) 4.06 (307) 4.07 (308) 4.08 (309) 4.09 (310) 4.10 (311) 4.11 (312) 4.12 (313) 4.13 (314) 4.14 (315) 4.15 (316) 4.16 (317) 4.17 (318) 4.18 (319) 4.19 (320) 4.20 (321) 4.21 (322) 4.22 (323) 4.23 (324) 4.24 (325) 4.25 (326) 4.26 (327) 4.27 (328) 4.28 (329) 4.29 (330) 4.30 (331) 4.31 (332) 4.32 (333) 4.33 (334) 4.34 (335) 4.35 (336) 4.36 (337) 4.37 (338) 4.38 (339) 4.39 (340) 4.40 (341) 4.41 (342) 4.42 (343) 4.43 (344) 4.44 (345) 4.45 (346) 4.46 (347) 4.47 (348) 4.48 (349) 4.49 (350) 4.50 (351) 4.51 (352) 4.52 (353) 4.53 (354) 4.54 (355) 4.55 (356) 4.56 (357) 4.57 (358) 4.58 (359) 4.59 (360) 4.60 (361) 4.61 (362) 4.62 (363) 4.63 (364) 4.64 (365) 4.65 (366) 4.66 (367) 4.67 (368) 4.68 (369) 4.69 (370) 4.70 (371) 4.71 (372) 4.72 (373) 4.73 (374) 4.74 (375) 4.75 (376) 4.76 (377) 4.77 (378) 4.78 (379) 4.79 (380) 4.80 (381) 4.81 (382) 4.82 (383) 4.83 (384) 4.84 (385) 4.85 (386) 4.86 (387) 4.87 (388) 4.88 (389) 4.89 (390) 4.90 (391) 4.91 (392) 4.92 (393) 4.93 (394) 4.94 (395) 4.95 (396) 4.96 (397) 4.97 (398) 4.98 (399) 4.99 (400) 5.00 (401) 5.01 (402) 5.02 (403) 5.03 (404) 5.04 (405) 5.05 (406) 5.06 (407) 5.07 (408) 5.08 (409) 5.09 (410) 5.10 (411) 5.11 (412) 5.12 (413) 5.13 (414) 5.14 (415) 5.15 (416) 5.16 (417) 5.17 (418) 5.18 (419) 5.19 (420) 5.20 (421) 5.21 (422) 5.22 (423) 5.23 (424) 5.2

